Carlon® eCommerce Capabilities

Carlon® eConnect (www.carloneconnect.com)

An on-line order tracking website designed exclusively for Carlon distributor partners. Carlon eConnect provides easy, secured access to 'real-time' information from our SAP Business Enterprise System. It's available 24 hours a day, and is designed to improve the efficiency of order information flow.

Functions include

- Quick list of recent orders
- Search for orders
- Price and availability
- Electronic pricing files
- Order entry

Carlon® EDI

- 850 - Purchase orders
- 855 - PO acknowledgements
- 856 - Ship notice
- 810 - Invoices

Table of Contents

Electrical Products

Carflex® Liquidtight Flexible Tubing and Fittings 3
Chimes 15
Electrical Nonmetallic Tubing (ENT), Boxes and Fittings 19
Floor Boxes and Covers 33
Curved Lid J-Box 47
Weatherproof Covers, Lampholders & Fixtures 51
Wire Handling Products 57
Wire Safe® Wireway And Wiring Trough 61
Zip Box® Blue™ Outlet and Switch Boxes 69

Low Voltage Premise Products

Plenum-Gard® 88
Riser-Gard® 90
Hal-Free Riser-Gard® 92
General Purpose 93
Structured Cable Management Systems 103

Enclosures

Circuit-Safe® NEMA 112
Circuit-Safe® JIC 122
Himeline® HE 137
Himeline® HS 140
Himeline® HP 144
Himeline® HLA/HLS 150
Himeline® HLP 154
Slack and Splice 156

Conduit

Schedule 40 & 80 Conduit 168
Schedule 40 & 80 Elbows 170
Schedule 40 & 80 Fittings 174
Conduit Bodies 179
Junction Boxes 181
FS Boxes 181
Utility Conduit, Fittings & Elbows 190
P&C Duct 192
Telephone Duct 202
P&C Flex 209
PV-Mold 211
Slip Meter Risers 215
Split Duct 217
Cement 221
Spacers 225

Outside Plant Products

Bore-Gard® and Boreable Multi-Gard® Raceway 231
Multi-Gard® Multi-Cell Raceway 237
Intra-Gard® Multi-Cell Raceway 261
High Density Polyethylene (HDPE) Conduit 269
Cable and Installation Accessories 295

Index

Product Category 301
Part Number 302

Carlon® Carflex®
Liquidtight Flexible Tubing

Carflex®

Carflex® X-Flex™

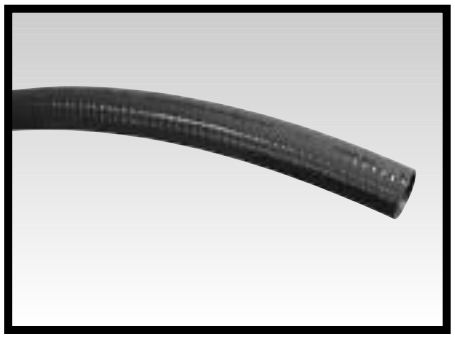
Fittings

Cord Grips

Pre-Wired Whips













Carflex® Liquidtight Flexible Conduit



Carflex Liquidtight Flexible Nonmetallic Conduit provides superior wire protection in harsh, damp environments. Carflex Conduit is nonconductive, noncorrosive, and resistant to oil, acid, ozone, and alkaline. Carflex Conduit is strong and lightweight, and because it weighs 50% less than metallic systems, it's easy to handle, transport and install. Carflex is ideal for industrial, air conditioning, heating, and outdoor lighting applications.

Features

- Nonconductive and noncorrosive
- Lightweight for easy handling, transportation, and installation
- Crush, abrasion, and strain resistant
- Provides superior wire protection
- Smooth interior ideal for pulling cable
- No jagged edges
- Maintains internal I.D. even in tight radius bends
- Type LFNC-B
- Resistant to oil, acid, ozone, and alkaline
- UL Listed for use as indicated in Article 356 of the 2002 NEC; and Section 12-1300 of the 2002 Canadian Electrical Code, Part 1.
- UL Listed for outdoor use
- UL Listed for sunlight resistant
- Trade sizes 1/2", 3/4", and 1" are UL Listed for direct bury
- Sequentially marked footage
- Suitable for use at conduit temperatures of 80°C dry, 60°C wet and 60°C oil resistant as required by section 15-6 of ANSI/NFPA 79-1985 and UL 1660.

  Note: Liquidtight flexible conduits, metallic and non-metallic, in contrast to rigid PVC conduit and electrical nonmetallic tubing, does not have wire temperature limitations. Any temperature rated wire (for example, 90° wire) can be used as long as the temperature conditions marked on the conduit are not exceeded. UL Listed conduits that are not marked are limited to a maximum temperature of 60°C wet or dry.

Applications

- Control and motor
- Air conditioning and heating
- Computer power distribution
- Machine tools
- Console wiring
- Transformer connections
- Outdoor lighting

Custom Orders

- Available in black and gray. Consult factory for custom colors.
- Custom cut lengths available; consult factory for details.

Coils

Part No.	Nom. Size (in.)	Std. Ctn. Qty. (ft.)	Std. Ctn. Wt. (lbs.)
15004-100	3/8"	100	11.70
15005-50	1/2"	50	6.50
15005-100*	1/2"	100	13.00
15005BK-100*	1/2"	100	13.00
15007-100*	3/4"	100	18.00
15008-100*	1"	100	28.00
15009-100	1-1/4"	100	37.60
15010-50	1-1/2"	50	22.55
15010-100	1-1/2"	100	47.80
15011-050	2"	50	34.10

Standard color Grey

Reels

Part No.	Nom. Size (in.)	Std. Ctn. Qty. (ft.)	Std. Ctn. Wt. (lbs.)
15004-001	3/8"	1000	145.0
15005-001	1/2"	1000	157.0
15005BK-001	1/2"	1000	157.0
15007-001	3/4"	1000	212.0
15008-500	1"	500	155.0
15009-200	1-1/4"	200	100.0
15010-150	1-1/2"	150	95.7
15011-100	2"	100	94.6

Standard color Grey

UL LISTED
E79553

*Joint listed UL/CSA Approved product available



Carflex X-Flex Extra Flexible Nonmetallic Conduit is ideal for applications requiring extra strength and flexibility such as robotics, and repetitive flexing arms. Carflex X-Flex is nonconductive, noncorrosive, and resistant to oil, acid, ozone, and alkaline. It's designed for use with standard Carflex fittings providing a complete nonmetallic system. Carflex X-Flex is lightweight for easier handling, transportation, and installation.

Features

- Extra strong and flexible to withstand repetitive motions
- Nonconductive and noncorrosive
- Resistant to oil, acid, ozone, and alkaline
- Lightweight for easy handling, transportation, and installation
- Crush, abrasion, and strain resistant
- Provides superior wire protection
- Smooth interior ideal for pulling cable
- No jagged edges
- Rated for continuous use at 60°C (140°F) ambient

Applications

- Repetitive Flexing Arms
- Robotics
- Machine Tools
- Automatic/Moving Machinery
- Control and motor

Specifications

Coils
(Available in Black only)

E80040
Where noted by *

LR88170
Where noted by ◆

Part No.	Nom. Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
*15104-100	3/8"	100	9.09
◆*15105-100	1/2"	100	10.01
◆*15107-100	3/4"	100	13.91
◆*15108-100	1"	100	18.25
*15109-100	1-1/4"	100	27.65
*15110-100	1-1/2"	100	38.00
*15111-050	2"	50	24.22

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Straight Fittings

- For use with Carflex® conduit and Carflex® X-Flex™ conduit

Image 1



Assembly

Image 2

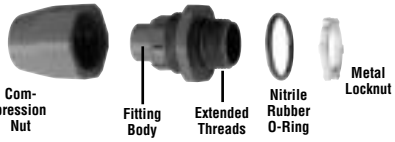
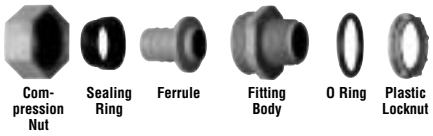


Image 3



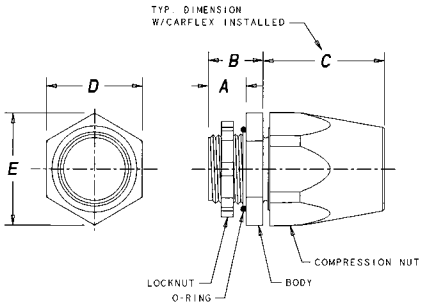
Assembly

Image 4

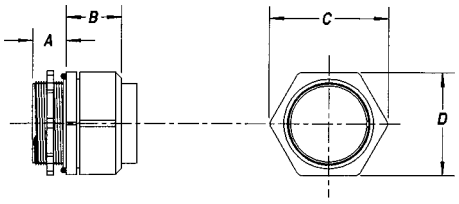


Features

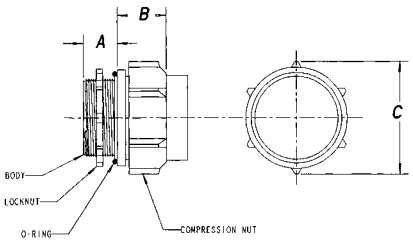
- Nonconductive and Noncorrosive
- Resistant to oil, acid, ozone, and alkaline
- Easy to install
- Nitrile rubber "O" ring for a liquidtight termination
- Temperatures up to 225°F (107°C)
- Meets UL Standard 514B



LT43C-CAR, LT43D-NEW, LT43E-NEW, LT43F



LT43G, LT43H



LT43J

Specifications

c UL us LISTED
E32447

Part No.	Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	A (inches)	B (inches)	C (inches)	D (inches)	E (inches)	Refer to Image
LT43C	3/8	50	3.6	.55	.75	1.60	1.30	1.40	1, 2
LT43C-CAR	3/8	15	1.4	.55	.75	1.60	1.30	1.40	1, 2
LT43D-NEW	1/2	50	4.2	.56	.91	1.62	1.30	1.40	1, 2
LT43E-NEW	3/4	50	6.6	.56	.91	1.88	1.61	1.71	1, 2
LT43F	1	25	5.5	.70	1.00	2.20	1.90	2.04	1, 2
LT43G	1-1/4	5	1.5	.71	1.16	2.50	2.17		3, 4
LT43H	1-1/2	5	2.0	.75	1.36	2.78	2.43		3, 4
LT43J	2	5	2.5	1.00	1.45	3.33			3, 4

90° Fittings

- For use with Carflex® conduit and Carflex® X-Flex™ conduit

Image 1



Image 2

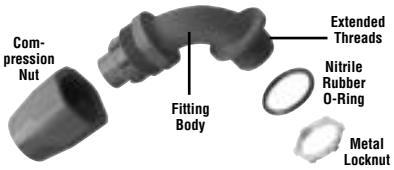


Image 3

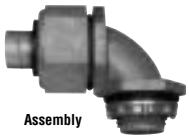
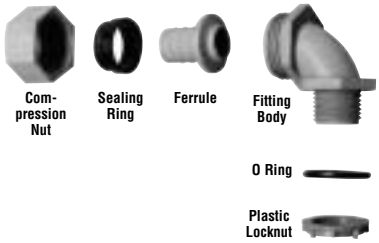
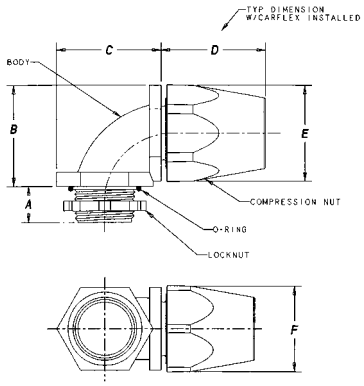


Image 4

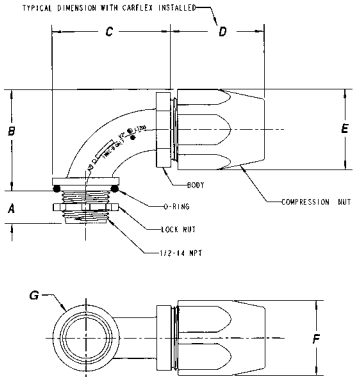


Features

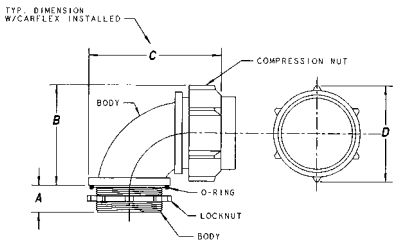
- Nonconductive and Noncorrosive
- Resistant to oil, acid, ozone, and alkaline
- Easy to install
- Nitrile rubber "O" ring for a liquidtight termination
- Temperatures up to 225°F (107°C)
- Meets UL Standard 514B



LT20C-CAR, LT20F-NEW



LT20D-NEW, LT20E-NEW



LT20G, LT20H, LT20J

Specifications

c UL us LISTED
E32447

Part No.	Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	A (inches)	B (inches)	C (inches)	D (inches)	E (inches)	F (inches)	G (inches)	Refer to Image
LT20C	3/8	50	4.9	.56	1.44	1.44	1.56	1.39	1.26		3, 4
LT20C-CAR	3/8	15	1.8	.56	1.44	1.44	1.56	1.39	1.26		3, 4
LT20D-NEW	1/2	50	4.9	.56	1.76	2.05	1.62	1.40	1.30	1.15	1, 2
LT20E-NEW	3/4	50	8.0	.56	2.04	2.35	1.88	1.71	1.61	1.50	1, 2
LT20F	1	25	6.9	.70	2.01	2.01	2.26	2.04	1.90		3, 4
LT20G	1-1/4	5	1.9	.75	2.50	3.55	2.48				3, 4
LT20H	1-1/2	5	2.2	.75	2.80	3.98	2.77				3, 4
LT20J	2	5	3.4	.94	3.48	4.56	3.33				3, 4



Unique Design

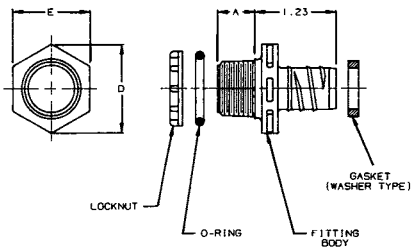
The simple, one piece body design of the Carflex One Piece Liquidtight Nonmetallic Fitting requires no disassembly of components for installation. The system is so strong that there is no need for a compression nut.

PVC Construction

PVC construction of the fitting and locknut provides unparalleled protection from water, oil and dust. Totally nonmetallic, the system is nonconductive and will not corrode or rust. Temperatures up to 140°F (60°C)

Straight Fittings



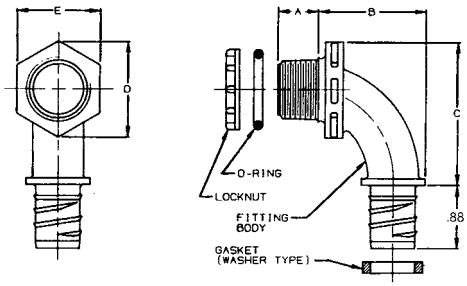


LR201397 c UL us LISTED E32447

Part No.	Trade Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	A (inches)	D (inches)	E (inches)
LN43DA	1/2 - 14 NPT	100	2.8	0.56	1.34	1.19
LN43EA	3/4 - 14 NPT	50	2.2	0.56	1.63	1.44
LN43FA	1 - 11 1/2 NPT	25	3	0.69	1.99	1.75
LN43FA-CAR	1 - 11 1/2 NPT	15	1	0.69	1.99	1.75

90° Fittings





LR201397 c UL us LISTED E32447

Part No.	Trade Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	Thread Size	A (inches)	B (inches)	C (inches)	D (inches)	E (inches)
LN20DA	1/2 - 14 NPT	100	4.3	1/2-14 NPT	0.56	1.50	1.99	1.34	1.19
LN20EA	3/4 - 14 NPT	50	3.1	3/4-14 NPT	0.56	1.73	2.25	1.63	1.44
LN20FA	1 - 11 1/2 NPT	25	3.2	1-11 1/2 NPT	0.69	1.86	2.58	1.99	1.75
LN20FA-CAR	1 - 11 1/2 NPT	10	1	1-11 1/2 NPT	0.69	1.86	2.58	1.99	1.75

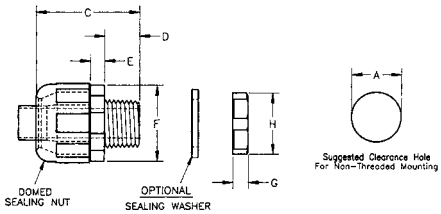
Straight



Features

- Available in sizes 3/8" through 1" conduit and tubing.
- All nylon construction resists salt water, weak acids, gasoline, alcohol, oil, grease and common solvents.
- No disassembly required.
- No threading of the conduit or tubing required to install.
- Complete Conduit/connector system is reusable.
- Suitable for indoor/outdoor use.
- Lower installed cost.
- Black connectors provided with nylon locknut.
- Gray connectors provided with assembled O-ring and metal locknuts.
- Protection class IP 68 per DIN 40050 up to 70 psi (5 bar) water pressure.
- Molded of type 6/6 nylon. ASTM D-4066-PA 111; flammability classification 94V-2.

LR201397 c UL us LISTED E32447



Specifications

Size	Part No. Black	Part No. Gray*	Description	Body & Sealing Unit A Clearance Hole in. (mm)	C Max O.A. Length in. (mm)	D Thread Length in. (mm)	E Wrenching Nut Thickness in. (mm)	F Wrenching Flats in. (mm)	Locking Nut G Thickness in. (mm)	H Wrenching Flats in. (mm)	Std. Ctn. Qty.
3/8"	LT38	LT38G	Straight L/T Fitting	.875 (22.2)	2.000 (50.8)	.625 (15.9)	.250 (6.3)	1.328 (33.7)	.266 (6.7)	1.062 (26.9)	50
1/2"	LT50	LT50G	Straight L/T Fitting	.875 (22.2)	2.000 (50.8)	.625 (15.9)	.250 (6.3)	1.328 (33.7)	.266 (6.7)	1.062 (26.9)	50
3/4"	LT75	LT75G	Straight L/T Fitting	1.109 (28.2)	2.031 (51.6)	.625 (15.9)	.250 (6.3)	1.562 (39.7)	.266 (6.7)	1.312 (33.3)	25
1"	LT100	LT100G	Straight L/T Fitting	1.375 (34.9)	2.250 (57.1)	.781 (19.8)	.250 (6.3)	1.875 (47.6)	.266 (6.7)	1.625 (41.3)	20

*Gray connectors provided with assembled o-ring and metal locknuts. Black connectors provided with nylon locknuts only.

90°

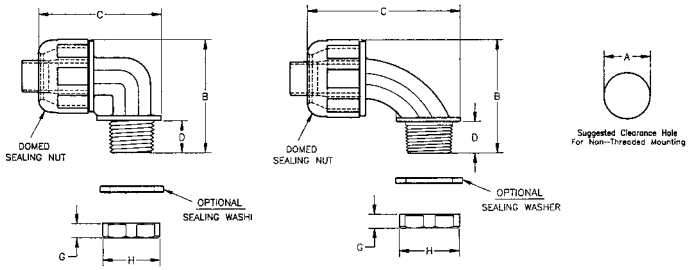


Features

- Available in sizes 3/8" through 1" conduit and tubing.
- Smooth internal surfaces for easier wire installation around corner angles.
- All nylon construction resists salt water, weak acids, gasoline, alcohol, oil, grease and common solvents.
- No disassembly required.
- No threading of the conduit or tubing required to install.
- Complete conduit/connector system is reusable.
- Use of a sealing washer may be required for wet locations.
- Suitable for indoor/outdoor use.
- Lower installed cost.
- Black connectors provided with nylon locknut, packed separately.
- Gray connectors provided with assembled O-ring and metal locknuts.
- Protection class IP 68 per DIN 40050 up to 70 psi (5 bar) water pressure.
- Molded of type 6/6 nylon. ASTM D-4066-PA 111; flammability classification 94V-2.

LR201397 c UL us LISTED E32447

1" **3/8" to 3/4"**



Specifications

Size	Part No. Black	Part No. Gray	Description	Body & Sealing Unit A Clearance Hole in. (mm)	B Max O.A. Height in. (mm)	C Max O.A. Length in. (mm)	D Thread Length in. (mm)	Locking Nut G Thickness in. (mm)	H Wrenching Flats in. (mm)	Std. Carton Qty.
3/8"	LT938	LT938G	90 degree L/T Fitting	.875 (22.2)	1.98 (50.3)	2.91 (73.9)	.52 (13.2)	.27 (6.8)	1.06 (26.9)	25
1/2"	LT950	LT950G	90 degree L/T Fitting	.875 (22.2)	1.98 (50.3)	2.91 (73.9)	.52 (13.2)	.27 (6.8)	1.06 (26.9)	25
3/4"	LT975	LT975G	90 degree L/T Fitting	1.109 (28.2)	2.29 (58.2)	3.17 (80.5)	.52 (13.2)	.27 (6.8)	1.31 (33.3)	20
1"	LT9100	LT9100G	90 degree L/T Fitting	1.375 (34.9)	2.84 (72.1)	3.18 (80.8)	.78 (19.8)	.27 (6.8)	1.61 (40.9)	10

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carflex Fittings Installation Instructions

LT43C-CAR, LT43F thru J, LT20C-CAR, LT20F thru J.

1. Cut the end of the Carflex conduit or Carflex® X-Flex™ tubing square.
2. Install compression nut and sealing gland ring over the end of the conduit or tubing.
3. Insert the ferrule end of the fitting into the conduit using a clockwise twisting action.
4. Screw fitting body into compression nut.
5. When installation is completed, use a wrench, tighten compression nut one-quarter (1/4) turn past hand-tight. Do not over tighten fitting.

*To prevent damage to conductors, conduit and fittings, do not twist Carflex during installation.

LT43D-New, LT43E-New, LT20D-New, LT20E-New.

1. Cut the end of the Carflex conduit or Carflex® X-Flex™ tubing square.
2. Install compression nut over the end of the conduit or tubing.
3. Insert the ferrule end of the fitting into the conduit using a clockwise twisting action. (Be sure conduit is fully inserted to the bottom of the fitting shoulder).
4. Screw compression nut onto fitting body.
5. Use a wrench, and tighten compression nut one (1) full turn past hand-tight. Do not over tighten fitting.

*To prevent damage to conductors, conduit and fittings, do not twist Carflex during installation.

Carflex Liquidtight Conduit Technical Information

1. There shall be no more than the equivalent of four (4) quarter (90°) bends (360° total) between pull points, conduit bodies, and boxes.
2. The radius of the curve of the center of the conduit or tubing shall not be less than that shown in the table below:

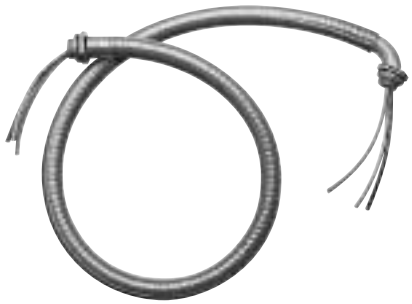
SIZE OF CONDUIT OR TUBING		RADIUS TO CENTER OF CONDUIT OR TUBING	
Inches	Metric Desgr.	Inches	(mm)
3/8	(14)	4	(101.6)
1/2	(16)	4	(101.6)
3/4	(21)	4 1/2	(114.3)
1	(27)	5 3/4	(146.0)
1 1/4	(35)	7 1/4	(184.1)
1 1/2	(41)	8 1/4	(209.5)
2	(53)	9 1/2	(241.3)

UL Listed for use as indicated in Article 356 of the National Electrical Code

- Cellular Metal Floor Raceways, Connections to Cabinets & Wall Outlets
- Class I, Div. 2, Hazardous Location
- Class II, Div. 1, Hazardous Location
- Class III, Div. 1, Hazardous Location
- Computer Room Raised Floor
- Concealed Locations
- Intrinsically Safe Systems
- Lighting Fixtures, Connection to Electric Discharge Fixture
- Nonmetallic Boxes
- RV Engine Generator
- Swimming Pool Pump Motor
- Tap Conductors (Fixture Whips)
- Underfloor Raceway, Connection to Cabinets & Wall Outlets
- Wireway, Extensions from Wireways, Wiring Methods
  - Agricultural Buildings, Flexible Connections
  - Electric Signs, 1000 Volts, Nominal, or Less
  - Electric Signs, Over 1000 Volts (per Section 600.32(A)(1)
  - Floating Buildings
  - Marinas and Boatyards
  - Service Entrance Conductors
- Wiring on Buildings, Outside Branch Circuits & Feeders

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com





UL LISTED E155504

Carflex® Liquidtight Whip assemblies save the customer time and hassle of having to hunt for the needed components. Our moisture tight, nonmetallic, flexible conduit system is ideal for installing swimming pool motors, hot tubs, spas, air conditioners, pumps, outdoor lighting and more.

Unlike plastic coated metal conduit, the Carlon® Carflex system has no metal core to fatigue, rust, or corrode. The Carflex system has no sharp edges or burrs to cut into the wire insulation. Metal conduit is subject to fatigue and penetration of moisture.

The Carflex Liquidtight Whip assembly is complete with Carflex moisture tight conduit, wire, one straight fitting, and one 90° fitting.

All this makes for quick and trouble free installation.

Features

- Designed for easy installation
- Will not rust or corrode
- Can be used for many commercial and residential applications.
- Many applications such as; swimming pool filters, hot tub spas, air conditioners, pumps, etc.
- Available in 1/2" and 3/4" diameters
- Available in 4' and 6' lengths
- Each kit contains (1) straight and (1) 90° fitting
- Complete with (3) 8, 10 or 12 gauge wires

Custom Orders

Also available in special configurations including different fitting combinations, wire types and sizes, and metal fitting variations. Consult factory for details.

Specifications

Part Number	Description	Wire Size (Gauge)	Standard Carton Quantity	Standard Carton Weight (lbs.)
WCD4	1/2" Carflex Whip - 4 foot	10	6 (poly bag)	10.6
WCD6	1/2" Carflex Whip - 6 foot	10	6 (poly bag)	15.8
WCE4	3/4" Carflex Whip - 4 foot	8	6 (poly bag)	12.4
WCE6	3/4" Carflex Whip - 6 foot	8	6 (poly bag)	15.8

Part Number	Description	Wire Size (Gauge)	Standard Carton Quantity	Standard Carton Weight (lbs.)
WCD3124	1/2" Carflex Whip - 4 foot	12	20 (bulk pack)	32.4
WCD3126	1/2" Carflex Whip - 6 foot	12	20 (bulk pack)	47.9
WCD3104	1/2" Carflex Whip - 4 foot	10	20 (bulk pack)	35.2
WCD3106	1/2" Carflex Whip - 6 foot	10	20 (bulk pack)	52.8
WCE3084	3/4" Carflex Whip - 4 foot	8	15 (bulk pack)	30.9
WCE3086	3/4" Carflex Whip - 6 foot	8	15 (bulk pack)	39.6

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

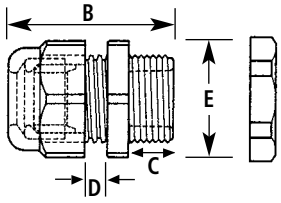
Straight PG Hubs



Features

- New threads on body prevent skipping, speed installation.
- PG hub threads are steel conduit per DIN 40430.
- Six sizes for cable, tubing, etc.: PG07, PG09, PG11, PG13.5, PG16, and PG21.
- All nylon construction with TPE gland resists salt water, weak acids, gasoline, alcohol, oil, grease and common solvents.
- Suitable for NEMA type 4 and 6 enclosures.
- Locknuts are included.
- Working temperatures: -22°F (-30°C) to 212°F (100°C). For short periods to 302°F (150°C).
- Protection Class IP68 per DIN 40050 up to 70 psi (5 Bar) water pressure.

Specifications





Suggested Clearance Hole For Nonthreaded Mounting

LISTED E51579

LR93876

Patented 4,900,068

Size (PG)	Straight Part No. Black	Std. Ctn. Qty.	Std. Ctn. Wt.	Diameter of Cable or Wire Accommodated in. (mm)	A	B	C	D	E
					Clearance Hole in. (mm)	Max O.A. Length in. (mm)	Thread Length in. (mm)	Wrenching Nut Thickness in. (mm)	Wrenching Flats in. (mm)
PG07	LH07	100	1.3	.114-.250 (2.9-6.4)	.492 (12.5)	1.17 (29.7)	.33 (8.4)	.22 (5.6)	.59 (15.0)
PG09	LH09	100	2.0	.181-.312 (4.6-7.9)	.599 (15.2)	1.30 (33.0)	.34 (8.6)	.20 (5.1)	.75 (19.1)
PG11	LH11	100	2.6	.230-.395 (5.8-10.0)	.733 (18.6)	1.46 (37.1)	.39 (9.9)	.20 (5.1)	.86 (21.8)
PG13.5	LH13	100	3.1	.170-.470 (4.3-11.9)	.804 (20.4)	1.53 (38.9)	.41 (10.4)	.20 (5.1)	.95 (24.1)
PG16	LH16	50	2.1	.230-.546 (5.8-13.9)	.886 (22.5)	1.66 (42.2)	.45 (11.4)	.23 (5.8)	1.05 (26.7)
PG21	LH21	50	3.2	.450-.709 (11.4-18.0)	1.115 (28.3)	1.87 (47.5)	.52 (13.2)	.23 (5.8)	1.30 (33.0)

Carlon® recommends using the smallest maximum diameter fitting that will suit your application.

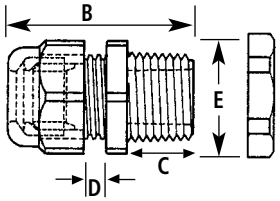
Straight NPT Hubs

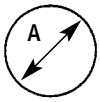


Features

- New threads on body prevent skipping, speed installation.
- Four sizes for cable, tubing, etc. with diameters of 3/8", 1/2", 3/4" and 1".
- All nylon construction with TPE gland resists salt water, weak acids, gasoline, alcohol, oil, grease and common solvents.
- Suitable for NEMA type 4 and 6 enclosures.
- Locknuts are included.
- Working temperatures: -22°F (-30°C) to 212°F (100°C). For short periods to 302°F (150°C).
- Protection Class IP68 per DIN 40050 up to 70 psi (5 Bar) water pressure.

Specifications





Suggested Clearance Hole For Nonthreaded Mounting

LISTED
E51579

LR93876

Patented 4,900,068

Size (NPT)	Straight Part No. Black	Straight Part No. Gray	Std. Ctn. Qty.	Std. Ctn. Wt.	Diameter of Cable or Wire Accommodated in. (mm)	A	B	C	D	E
						Clearance Hole in. (mm)	Max O.A. Length in. (mm)	Thread Length in. (mm)	Wrenching Nut Thickness in. (mm)	Wrenching Flats in. (mm)
3/8"	LH38	LH38G	100	1.9	.181-.312 (4.6-7.9)	.670 (17.0)	1.49 (37.8)	.53 (13.5)	.20 (5.1)	.75 (19.1)
1/2"	LH50	LH50G	100	2.9	.170-.470 (4.3-11.9)	.875 (22.2)	1.72 (43.7)	.62 (15.7)	.20 (5.1)	.95 (24.1)
3/4"	LH75	LH75G	50	2.7	.450-.709 (11.4-18.0)	1.068 (27.1)	1.97 (50.0)	.63 (16.0)	.23 (5.8)	1.30 (33.0)
1"	LH100	LH100G	25	2.6	.590-1.000 (15.0-25.4)	1.375 (35.0)	2.42 (61.5)	.78 (19.8)	.28 (7.1)	1.66 (42.2)

Carlon® recommends using the smallest maximum diameter fitting that will suit your application.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® Chimes

Contractor Kits
Plug-In Chime
Extend-A-Chime
Accessories

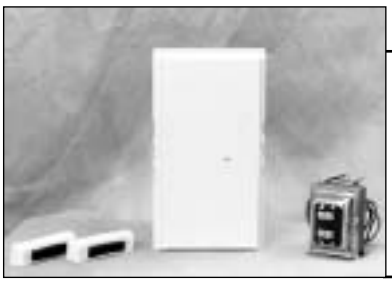


Contractor Kits Door Chimes & Buttons



CK225 Chime Kit with 2 Lighted Buttons

- Includes one contemporary white chime, two push buttons and one transformer
- Medium volume level
- Easy to install
- Two-note tone designates front entrance, one-note designates second entrance
- 120V AC input
- 16V AC 10VA output
- 3-year limited warranty



CK221RP Chime Kit with 2 Buttons

- Includes one contemporary white chime, two lighted push buttons and one transformer
- Medium volume level
- Easy to install
- Two-note tone designates front entrance, one-note designates second entrance
- 120V AC input
- 16V AC 10VA output
- 3-year limited warranty

Wireless Plug-In Door Chimes



RC3250 Plug-In Door Chime

- Six different selectable sounds
- Different sounds for front, back & other doors
- Adjustable volume control
- 32 changeable codes reduce interference
- Range: 150 ft.
- 5-year warranty



RC3252 Plug-In Door Chime

- Six different selectable sounds
- Includes two buttons
- Different sounds for front, back & other doors
- Adjustable volume control
- 32 changeable codes reduce interference
- Range: 150 ft.
- 5-year warranty

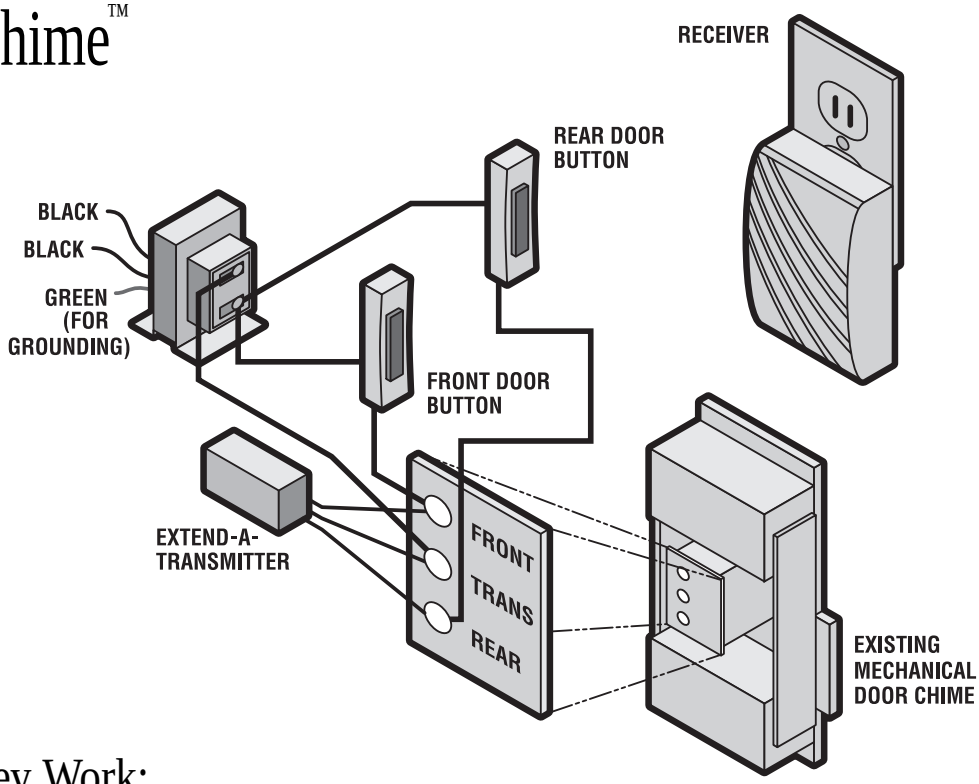


RC3253 Plug-In Add-On Door Chime

- Use with existing Dimango doorbells
- Six different selectable sounds for front, back & other doors
- Adjustable volume control
- 32 changeable codes reduce interference
- Works with Dimango products: RC3200, RC3250, RC3252, RC3260, RC3304, RC3306, RC3410, RC3610, & RC3720
- Range: 150 ft.
- 5-year warranty

Plug-In Chimes Sound Options Available: • Ding Dong • Dong • Westminster Chime • 12 Days of Christmas • Hail, Hail, The Gang's All Here • My Country 'Tis of Thee

Extend-A-Chime™



Here's How They Work:

1. Connect Extend-A-Chime™ transmitter to existing mechanical door chime.
2. Press existing doorbell button.
3. Existing doorbell rings and sends signal to Extend-A-Chime™.
4. Extend-A-Chime™ rings.
5. Extend-A-Chime™ may be placed anywhere user wants to hear doorbell ring:
   • Laundry Room • Garage • Work Shop • Deck



RC3200 Plug-In Extend-A-Chime™

- Use with existing doorbell
- Six different selectable sounds
- 32 changeable codes reduce interference
- Safe & easy to install
- 2 1/4" speaker provides excellent sound quality
- Range: 150 ft.
- 5-year warranty



RC3260 Plug-In Entrance Alert Chime

- Chime sounds when door is opened
- Six different sound options
- Ideal for small shops and businesses, or homes with small children
- 32 changeable codes reduce interference
- Sound set at button
- Range: 150 ft.
- 5-year warranty

Transmitters



RC3301 White Door Chime Button

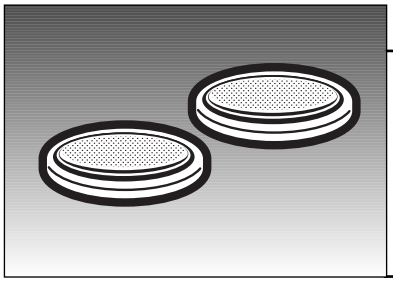
- Works with all 3200, 3300, 3400 & 3600 series and 3720
- Long-life button battery included
- Weatherproof – use indoors or out
- Button works from -30˚ to + 130˚F
- Range: 150 ft.
- 5-year warranty



RC3311 Black Door Chime Button

- Works with all 3200, 3300, 3400 & 3600 series and 3720
- Long-life button battery included
- Weatherproof – use indoors or out
- Button works from -30˚ to + 130˚F
- Range: 150 ft.
- 5-year warranty

Batteries



RC3395 3-Volt Button Cell Batteries

- Use in buttons RC3301, RC3311 and RC3321
- Two batteries per card
- Size CR2032 lithium battery
- Range: N/A

Carlon® Flex-Plus® Blue™ Electrical Nonmetallic Tubing (ENT) and Accessories

ENT Tubing

Adapters & Couplings

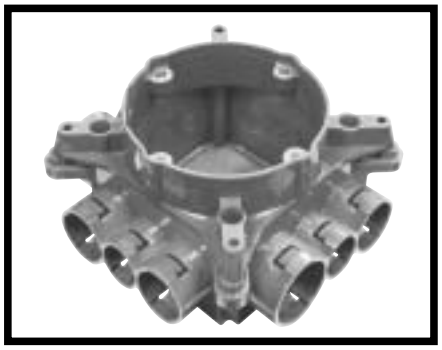
Mud Box Assemblies

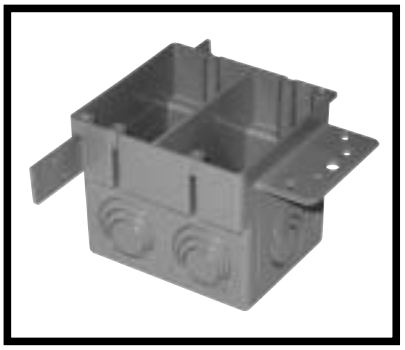
Stub Downs

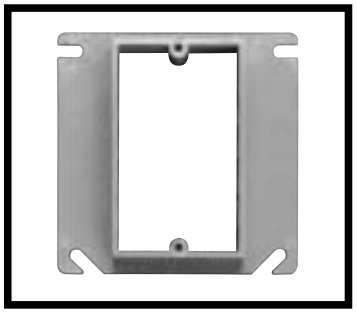
Outlet and Switch Boxes



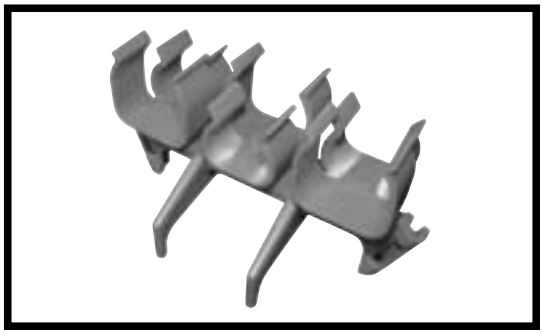
















Flex-Plus® Blue™ ENT

is a nonmetallic flexible raceway for use in walls, floors, and non-plenum ceilings. It's lightweight, hand bendable, and free from sharp edges, which reduces installation time and saves money.

See pages 31–32 for technical information.

UL LISTED E73317

Options:

- Sizes 1/2" through 2"
- Colors:
  - Yellow color for communication circuits and signaling cable
  - Red color for fire alarm circuits
  - Blue color for power circuits
- Packaging: Coils or Reels

Standard Stock – Reels

	Color	Part No.	Nom. I.D.	Nom. O.D.	Pull Tape	Min. Bend Radius	Reel Size (F x W)	Reel Type (W=Wood)	Reel Length	Reel Wt. (lbs.)	Wt. per 100 ft. (lbs.)
1/2"	Blue	12005AK-001	.56	.84	Empty	6"	36" x 24"	W	1500	40	10
	Yellow	1205AKY-001	.56	.84	Empty	6"	36" x 24"	W	1500	40	10
	Red	1205AKR-001	.56	.84	Empty	6"	36" x 24"	W	1500	40	10
3/4"	Blue	12007AA-001	.76	1.05	Empty	6"	36" x 24"	W	1000	40	14
	Yellow	1207AAY-001	.76	1.05	Empty.	6"	36" x 24"	W	1000	40	14
	Red	1207AAR-001	.76	1.05	Empty	6"	36" x 24"	W	1000	40	14
1"	Blue	12008-750	1.00	1.315	Empty	6"	36" x 24"	W	750	40	20
	Yellow	12008Y-750	1.00	1.315	Empty	6"	36" x 24"	W	750	40	20
	Red	12008R-750	1.00	1.315	Empty	6"	36" x 24"	W	750	40	20
1 1/4"	Blue	12009-750	1.402	1.66	Empty	7"	48" x 32"	W	750	90	19
1 1/2"	Blue	12010-750	1.554	1.90	Empty	8 1/4"	48" x 32"	W	750	90	39
2"	Blue	12011-500	2.030	2.375	Empty	9 1/2"	48" x 32"	W	500	90	32
	Red	12011R-500	2.030	2.375	Empty	9 1/2"	48" x 32"	W	500	90	32
	Yellow	12011Y-500	2.030	2.375	Empty	9 1/2"	48" x 32"	W	500	90	32

*1-1/4" - 2" available in yellow & red, made to order; consult factory.

Standard Stock – Coils

	Color	Part No.	Nom. I.D.	Nom. O.D.	Pull Tape	Min. Bend Radius	Coil Length (ft.)	Wt. per 100 ft. (lbs.)
1/2"	Blue	12005-200	.56	.84	Empty	6"	200	10
	Yellow	12005Y-200	.56	.84	Empty	6"	200	10
	Red	12005R-200	.56	.84	Empty	6"	200	10
3/4"	Blue	12007-100	.76	1.05	Empty	6"	100	14
	Yellow	12007Y-100	.76	1.05	Empty	6"	100	14
	Red	12007R-100	.76	1.05	Empty	6"	100	14
1"	Blue	12008-100	1.00	1.315	Empty	6"	100	22
	Yellow	12008Y-100	1.00	1.315	Empty	6"	100	22
	Red	12008R-100	1.00	1.315	Empty	6"	100	22

10 ft. Lengths

	Color	Part No.	Nom. I.D.	Nom. O.D.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
1/2"	Blue	12005-UPC	.56	.84	10 ft.	1.02
3/4"	Blue	12007-UPC	.76	1.05	10 ft.	1.46
1"	Blue	12008-010	1.00	1.315	10 ft.	2.93

NOTE: The solid blue color of ENT conduit is a registered trademark of Carlon.

ENT may show color deterioration in direct sunlight over an extended period of time. It is suggested that all ENT products not be stored outside. Since this product is not intended for use outdoors, it should not be exposed to extended periods of direct sunlight.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

NEW

Stub Downs

Vertical Stub Down



Carlon Vertical Stub Downs are designed to provide a quick, easy connection to a wood deck or transition from slab-to-slab using Carlon's "Quick Connect" snap-in design…simply snap the ENT in place. The integral snaps provide a secure mount – preventing the ENT from pulling out while maintaining the ability for easy removal of the fitting once the deck is removed. All in a concrete tight application. The underside of this fitting provides ample room to attach a Carlon coupling to the ENT to continue the run. Carlon Vertical Stub Downs are manufactured out of a highly engineered thermoplastic material to provide extra strength and durability, and are available in sizes 1/2", 3/4" and 1".

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A210D	1/2"	50	3.8
A210E	3/4"	50	3.7
A210F	1"	50	4.8

Patent Pending

Carlon Exclusive

Vertical Stub Down Transition Adapter

c UL us LISTED E86720



CARLON NONMETALLIC EXCLUSIVE…Carlon Vertical Stub Down Transition Adapters like our Vertical Stub Downs, provide a means to transition from ENT to another wire management product where code requires other wire management means i.e. "area of physical damage" [ref. NEC 362.12(10)]. The integral snaps provide a secure mount – preventing the ENT from slipping or pulling out, while the deck mount flange has a threaded port allowing connection to other conduit system using a terminal adapter. Carlon Vertical Stub Down Transition Adapters are manufactured out of polycarbonate material to provide extra strength and durability. They're concrete tight, and available in sizes 1/2", 3/4" and 1".

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A200D	1/2" Female ENT to NPSC (Female)	50	2.3
A200E	3/4" Female ENT to NPSC (Female)	50	2.8
A200F	1" Female ENT to NPSC (Female)	50	3.9

45° Stub Down



Carlon 45 Degree Stub Downs are designed to allow a smooth transition from cross deck ENT runs to vertical applications. The integral snaps provide a secure mount – preventing the ENT from slipping or pulling out- but also allow the stub to easily be removed. The underside of this fitting provides ample room to attach a Carlon coupling to the ENT to continue the run. Carlon 45 Degree Stub Downs are manufactured out of a highly engineered thermoplastic material to provide extra strength and durability. They're concrete tight, and available in sizes 1/2", 3/4" and 1".

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A220D	1/2"	25	1.8
A220E	3/4"	25	2.0
A220F	1"	25	2.6

Patent Pending

Carlon Exclusive

90° Stub Down Transition Adapter

c UL us LISTED E86720



CARLON NONMETALLIC EXCLUSIVE…Carlon 90 Degree Stub Downs are designed to allow a smooth transition from cross deck ENT runs to vertical applications where code requires other wire management means, i.e. "area of physical damage" [ref. NEC 362.12(10)]. The integral snaps provide a secure mount – preventing the ENT from slipping or pulling out, while the deck mount flange has a threaded port allowing connection to any conduit system using a terminal adapter. Carlon 90 Degree Stub Downs are manufactured out of polycarbonate material to provide extra strength and durability. They're concrete tight, and available in sizes 1/2", 3/4" and 1".

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A230D	1/2" Female ENT to NPSC (Female)	25	2.0
A230E	3/4" Female ENT to NPSC (Female)	25	2.4
A230F	1" Female ENT to NPSC (Female)	25	3.3

NEW

Mud Box Assemblies

UL LISTED E42728 c UL us LISTED E42728

Except where noted by ►

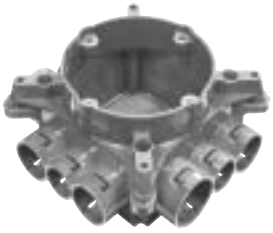
Carlon Mud Box Assemblies are available in five unique styles…blank, ceiling ring, one-gang, two-gang and 4 square. All Mud Box Assemblies are manufactured out of polycarbonate material to provide extra strength and durability, are concrete tight, and have twelve integral connectors…two-1", six-3/4", and four-1/2". Using our new ENT Reducers, this product will meet ANY jobsite application.



Mud Box Base with Blank Cover

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
► A863BC	Mud Box w/ Blank Cover	24	12.3

Patent Pending



Mud Box with Ceiling Ring

- Threaded brass inserts for fan (#10-32 screws) and fixture (#8-32 screws) mountings
- Listed for fixture support up to 50 lbs.
- Listed for ceiling fans up to 35 lbs.

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
► A863CF	Mud Box w/ Ceiling Ring	24	15.5
A863CFG	Mud Box w/ Ceiling Ring & Ground Lug	24	16.1

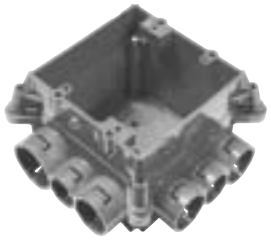
Patent Pending



Mud Box with One-Gang Ring

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
► A863S	Mud Box w/ One-Gang Ring	24	16.8
A863SG	Mud Box w/ One-Gang Ring & Ground Lug	24	16.2

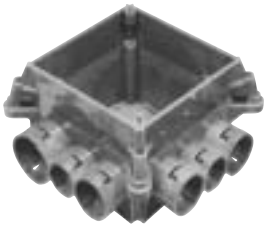
Patent Pending



Mud Box with Two-Gang Ring

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
► A863D	Mud Box w/ Two-Gang Ring	24	15.8
A863DG	Mud Box w/ Two-Gang Ring & Ground Lug	24	16.6

Patent Pending



Mud Box with 4 Square Ring

- 4 Square Ring not for luminaries.

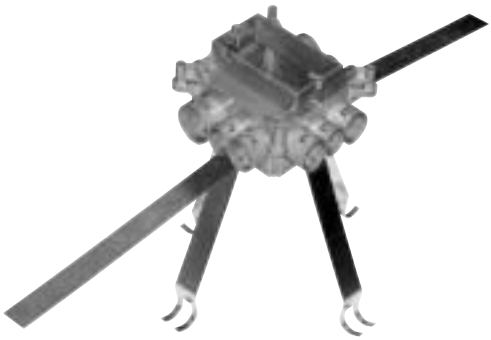
Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
► A863-4SQ	Mud Box w/ 4 Inch Square Ring	24	15.2

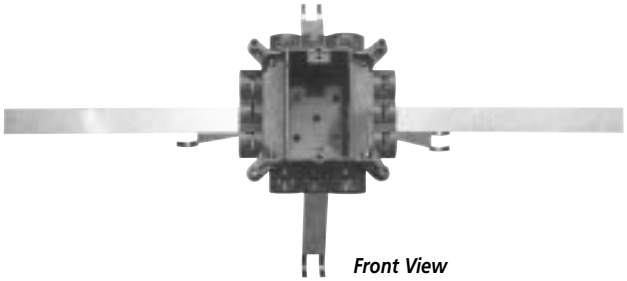
Patent Pending

NEW

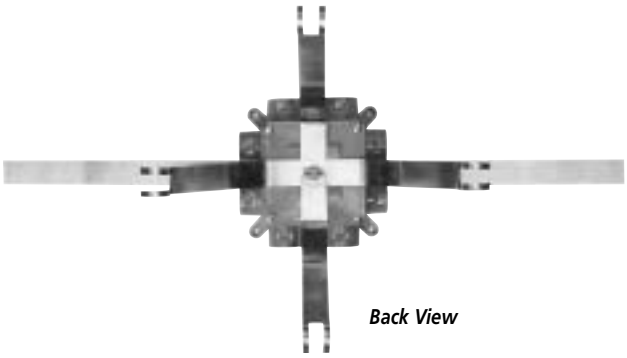
Mounting Brackets







Front View



Back View

Carlon Exclusive

CARLON EXCLUSIVE…The Carlon ENT Mounting Bracket is specifically designed for use with Carlon ENT Mud Box Assemblies in vertical concrete walls where one- or two-gang boxes are needed. The stainless steel spring-loaded mechanism provides a secure outlet box between concrete forms while the soft steel strap allows for the outlet box to be secured to rebar. The bracket combination assures a straight box opening and a concrete tight fit. Mud Box not included.

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A863MB	Mud Box Mounting Kit	1	.98

Patent Pending

NEW

ENT Bridge



Carlon Exclusive

CARLON EXCLUSIVE…The Carlon ENT Bridge is designed to support long ENT runs in concrete pour applications. This makes pulling wire/cable a snap. Installation is easy…simply mount the ENT bridge, using nails or screws, to the wood deck mounting and snap the ENT into place. The bridge is designed to hold the conduit in place while minimizing dips in the conduit over long runs. The Carlon ENT Bridge is manufactured out of a highly engineered thermoplastic material to provide extra strength and durability, and can accommodate ENT sizes 1/2", 3/4", and 1".

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A293DEF	ENT Bridge	50	9.0

Patent Pending

NEW

Transition Adapters

Male ENT to Schedule 40 & 80 PVC Conduit

c UL us LISTED E32447

Carlon Exclusive



CARLON EXCLUSIVE…Carlon Male ENT to Schedule 40 & 80 PVC Conduit Transition Adapters are designed to connect PVC conduit to Carlon Flex-Plus® Blue™ ENT boxes and fittings. Simply solvent cement the PVC adapter to the PVC conduit and snap the adapter into the Carlon's "Quick Connect" snap-in connector on the box or fitting. Carlon Male ENT to Schedule 40 & 80 Adapters are concrete tight and available in sizes 1/2", 3/4" and 1".

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A263D	1/2" ENT to 1/2" Sch. 40	100	2.4
A263E	3/4" ENT to 3/4" Sch. 40	100	3.2
A263F	1" ENT to 1" Sch. 401	100	4.5

Patent Pending

ENT to EMT

c UL us LISTED E86720



Carlon ENT to EMT Transition Adapters are designed to easily transition from Carlon Flex-Plus® Blue™ ENT to EMT using Carlon's "Quick Connect" snap-in design. The EMT is held securely in place using the small screw provided. This helps prevent the EMT from slipping/shifting out of the adapter. All ENT to EMT adapters are manufactured out of polycarbonate material to provide extra strength and durability. They're concrete tight, and available in sizes 1/2", 3/4" and 1".

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A245D	1/2" ENT to 1/2" EMT	100	3.4
A245E	3/4" ENT to 3/4" EMT	100	4.1
A245F	1" ENT to 1" EMT	100	5.4

Reducers

c UL us LISTED E86720

Carlon Exclusive



CARLON EXCLUSIVE…Carlon ENT Reducers are designed to provide an easy transition from 1" Carlon ENT to 3/4" ENT or from 3/4" Carlon ENT to 1/2" ENT. They're concrete tight, and manufactured out of polycarbonate material to provide extra strength and durability. Carlon ENT Reducers provide flexibility while on the jobsite by minimizing the need to carry size specific boxes and fittings. Carlon ENT Reducers provide the versatility to convert Carlon fittings and boxes to many different sizes and configurations.

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A273DE	3/4" to 1/2"	100	3.2
A273EF	1" to 3/4"	100	2.4

Patent Pending

NEW

Outlet and Switch Boxes - Eccentric Knockouts

Carlon Exclusive

Carlon ENT Outlet and Switch Boxes with Eccentric Knockouts are designed to allow selective ENT openings – 1/2", 3/4" and 1" – based on application needs. They provide the largest capacity available in the market today - 22 cu. in. Single Gang, and 38 cu. in. Double Gang – and can be mounted to wood or steel studs. Carlon ENT Outlet and Switch Boxes with Eccentric Knockouts are manufactured out of a highly engineered thermoplastic material to provide extra strength and durability, and are available in single gang and double gang styles. Note: The double gang version is also a 4 square box.

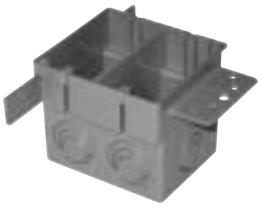
UL LISTED E42728



Single Gang – 22 cu. in.

Part. No.	Size	Capacity Cu. in.	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A122	Single-Gang	22	25	6.8

Patent Pending



Combination Two Gang/Four Square Box – 38 cu. in.

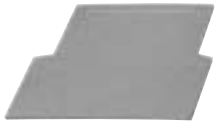
Part. No.	Size	Capacity Cu. in.	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A238	Two-Gang	38	25	8.9

Patent Pending

NEW

Outlet Box Divider

Carlon ENT Outlet Box Divider is specifically designed for applications where a combined high and low voltage closed back box is needed such as placement in a fire-rated wall. Just slip the divider into place, to give you the split box you need. The Carlon ENT Outlet Box Divider is UL Recognized for use with Carlon A122 & A238 boxes only.



Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
A238DIV	–	50	1.87

Quick Connect Adapters & Couplings

LR92248 LISTED E86720

- Carlon one piece ENT Quick Connect Couplings, Threaded Adapters and Snap-In Terminator Adapters are suitable for damp locations. Quick Connect Couplings and Threaded Adapters are concrete-tight when used with Carlon ENT.
- All Schedule 40 fittings are compatible with ENT when using ENT cement.
- Schedule 40 fittings are recommended for use with Carlon 1 1/4" – 2" Flex-Plus Blue ENT.
- Use of ENT Blue Quick-Set Cement is required. See page 31 for details.
- When One Piece Quick Connect Snap-In Terminator Adapters are installed in a concrete application, Carlon's flat sealing washers must be used on the box connection ends.

Couplings



Part. No.	Size	Standard Carton Quantity	Standard Carton Weight (lbs.)
A240D	1/2"	150	2.90
A240E	3/4"	100	3.00
A240F	1"	50	2.30

Threaded Adapters



Part. No.	Size	Standard Carton Quantity	Standard Carton Weight (lbs.)
A243D	1/2"	150	2.55
A243E	3/4"	100	2.30
A243F	1"	50	2.00

Snap-In Adapters



Part. No.	Size	Standard Carton Quantity	Standard Carton Weight (lbs.)
A253D	1/2"	150	2.70
A253E	3/4"	100	2.90
A253F	1"	50	2.30

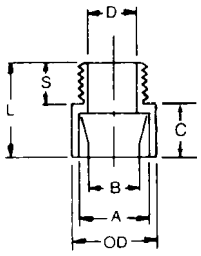
Rigid Nonmetallic Conduit Adapters and Couplings

LISTED E32447

Male Terminal Adapters



For adapting nonmetallic conduits to boxes, threaded fittings, metallic systems. Male threads on one end, socket end on other.



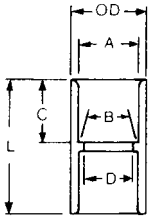
Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	Min. D	Max. OD	C Typical	S Typical	L Typical	Std. Ctn. Wt. (lbs.)
E943D	1/2	150	.852	.836	.597	1 1/8	5/8	9/16	1 5/16	2.8
E943E	3/4	125	1.064	1.046	.800	1 11/32	3/4	9/16	1 3/8	3.5
E943F	1	50	1.330	1.310	1.018	1 5/8	1	11/16	1 25/32	3
E943G	1 1/4	50	1.677	1.655	1.332	2 1/32	1	3/4	1 15/16	4
E943H	1 1/2	25	1.918	1.894	1.566	2 5/32	1 3/16	3/4	2 1/16	2.5
E943J	2	50	2.393	2.369	2.000	2 21/32	1 3/16	3/4	2 1/8	7

Standard Couplings

All socket fittings should be attached Using Carlon solvent cement. Using Carlon fittings with Carlon nonmetallic conduit insures system integrity.



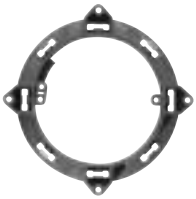
Socket type for joining nonmetallic conduit.



Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	Min. D	Max. OD	C Typical	L Typical	Std. Ctn. Wt. (lbs.)
E940D	1/2	150	.852	.836	.728	1 7/64	11/16	1 1/2	4.1
E940E	3/4	100	1.064	1.046	.840	1 5/16	3/4	1 5/8	4.4
E940F	1	50	1.330	1.310	1.210	1 5/8	15/16	2	3.5
E940G	1 1/4	30	1.677	1.655	1.535	1 63/64	1	2 1/8	3.5
E940H	1 1/2	25	1.918	1.894	1.755	2 15/64	1 1/8	2 3/8	3.9
E940J	2	30	2.393	2.369	2.190	2 47/64	1 3/16	2 1/2	5.25

2 1/2" & 4" Mud Boxes and Covers

UL LISTED E42728 CSA LR31146



Base Rings

Listed for use with ceiling fans up to 35 lbs. and for fixture support up to 50 lbs.

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt.
A861	Without ground lug	10	2.5
CA861G	With ground lug	10	2.0



Covers

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt.
A862D	2 1/2" Deep (1/2" KO's)	10	2.5
A862E	2 1/2" Deep (3/4" KO's)	10	2.1
A864D	4" Deep (1/2" KO's)	10	2.9
A864E	4" Deep (3/4" KO's)	10	2.9
A864F	4" Deep (1" KO's)	10	3.0

Quick Connect Outlet and Switch Boxes

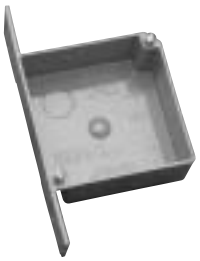
UL LISTED E42728

- Suitable for masonry walls
- Meets NEMA OS-2



Single Gang – 16 cu. in.

Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A58381D	3 x 2 1/4 x 3 (1/2" KO's)	25	4.6
A58381E	3 x 2 1/4 x 3 (3/4" KO's)	25	4.6



4 Inch Square – 20 cu. in.

Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A52151D	4 x 4 x 1 1/2 (1/2" KO's)	100	22.6
A52151E	4 x 4 x 1 1/2 (3/4" KO's)	100	22.6
A521DE	4 x 4 x 1 1/2 (1/2" & 3/4" KO's)	100	22.6



4 Inch Square – 30.3 cu. in.

Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A52171D	4 x 4 x 2 3/8 (1/2" KO's)	25	7.6
A52171E	4 x 4 x 2 3/8 (3/4" KO's)	25	7.6
A5217DE	4 x 4 x 2 3/8 (1/2" & 3/4" KO's)	25	7.6

ENT Box with Adapters

UL LISTED E42728 Except where noted by ▶



4 Inch Square – 24.75 cu. in. ENT Box with Adapters

Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A5329DE	4 x 4 x 1 3/4 (1/2" & 3/4" KO's)	50	14.8

Box Back Wall Support



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
▶A540DS	For use with 1/2" Knockout	100	2.1

ENT Box Extenders

UL LISTED E42728



Single Gang

Part. No.	Rise	Cu. in.	Standard Carton Quantity	Standard Carton Weight (lbs.)
A410	1/2"	3.5	100	7.7
A411	5/8"	4.2	50	4.6
A412	3/4"	5.0	50	5.1
A413	1"	6.6	40	5
A414	1 1/4"	8.1	30	4.4

Two Gang

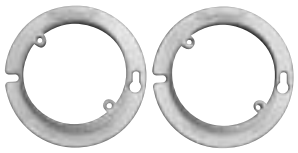
Part. No.	Rise	Cu. in.	Standard Carton Quantity	Standard Carton Weight (lbs.)
A400	Blank	-	100	7.7
A420	1/2"	6.1	75	5.0
A421	5/8"	7.4	50	4.2
A422	3/4"	8.8	50	4.8

Round Covers for Octagon Ceiling Boxes

UL LISTED E42728

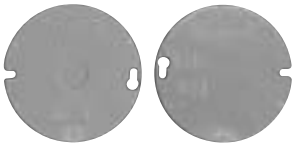
Round Plaster Rings

• Suitable for fixture support



Part. No.	Rise	Cu. in.	Standard Carton Quantity	Standard Carton Weight (lbs.)
A471	1/2"	3.2	100	3.3
A472	3/4"	4.0	100	3.7

Round Blank Covers



Part. No.	Rise	Cu. in.	Standard Carton Quantity	Standard Carton Weight (lbs.)
E460R-CAR	Blank	-	35	2.2
A470D	Blank with 1/2" KO	-	100	4.7

Quick Connect 4" Octagon Ceiling Boxes

LISTED
E42728
Except where noted by ▶

- Carlon ceiling boxes and round plaster rings are produced from a special high heat resistant engineered plastic material developed specifically for fixture support.
- Listed for fixture support up to 50 lbs.

Ceiling Box – 20.5 cu. in.



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A615D	4 - 2 1/8" Deep (1/2" KO's)	50	6.4
A615E	4 - 2 1/8" Deep (3/4" KO's)	50	6.4
A615DE	4 - 2 1/8" Deep (1/2" & 3/4" KO's)	50	6.4

Ceiling Box with J Mount – 20.5 cu. in.



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A615DJ	4 - 2 1/8" Deep (1/2" KO's)	50	18.7

Ceiling Box with L Bracket – 20.5 cu. in.



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A615DL	4 - 2 1/8" Deep (1/2" KO's)	50	6.4

Ceiling Box with Adjustable Hanger Bar – 20.5 cu. in.

Adjust from 14 1/4" to 23 1/4"



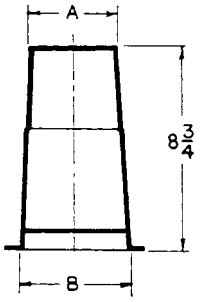
Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A615DH	4 - 2 1/8" Deep (1/2" KO's)	25	13.6

HOLFORM™ Concrete Sleeves

HOLFORM nonmetallic concrete sleeve forms are the easy way to form holes in concrete. They install in seconds with nails, screws or staples and are easily removed. Concrete will not adhere to them. HOLFORMS are adjustable to any slab thickness.



Part No.	Min. O.D. A	B	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E92CSH	1 1/2	1 3/4	20	3
▶ E92CSJ	2	2 13/32	25	6
▶ E92CSL	3	3 13/32	25	8
▶ E92CSN	4	4 13/32	18	8
▶ E92CSP	5	5 13/32	15	8
▶ E92CSR	6	6 13/32	12	8



PVC Conduit Cutters

Small Cutter



For fast, smooth field cuts of 1/2" through 1" Flex-Plus® Blue™ ENT.

Part No.	Size	Std. Ctn. Qty.
CC120B	8"	10

Medium Cutter



Hand held cutter makes fast square, smooth field cuts on conduit, sizes 1/2" through 1 1/4". Produces burr-free cut with no shavings. Fits into pocket or pouch.

Part No.	Size	Std. Ctn. Qty.
CC125	9"	12

Large Cutter

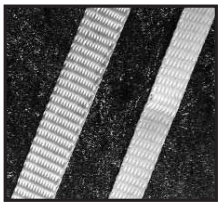


For clean cuts of conduit, sizes 1/2" through 2".

Part No.	Size	Std. Ctn. Qty.
CC122	17 1/2"	1

Tape

Prelubricated, woven polyester tape made from low friction, high abrasion resistant yarns providing a low coefficient of friction. Tape is printed with sequential footage markings for accurate measurements.



Part. No.	Size	Tensile Strength	Reel Lengths
TL14505	1/2"	1250 lbs.	5,000 ft.
TL14510	1/2"	1250 lbs.	10,000 ft.
TL38203	5/8"	1800 lbs.	3,000 ft.
TL38265	5/8"	1800 lbs.	6,500 ft.
TL38210	5/8"	1800 lbs.	10,000 ft.

Other tapes are available. Consult your sales service location for additional information.

Carlon® Cement

(MSDS sheets available at www.carlon.com)
*Meets ASTM D2564

All-Weather ENT Blue "Quick-Set" Solvent Cement with brush*



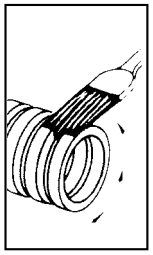
Part No.	Size	Std. Ctn. Qty.
VC9992	Quart	12

ENT cement required for use with ENT

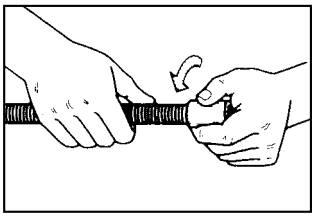
Recommended pipe application and sizes	Set-up time (Evaporation Rate)	Recommended installation temperature	Lap Shear @ 73˚F	Viscosity at 75˚ as manufactured
Recommended for use with Flex-Plus® Blue™ ENT (Electrical Nonmetallic Tubing), Riser-Gard®, P&C Flex®, and Carlon PVC fittings. Up through 4" diameter.	**10˚-30˚F** 4-5 minutes **30˚-50˚F** 3-4 minutes **50˚-70˚F** 1-2 minutes **70˚-90˚F** 1/2-1 1/2 minutes	4˚ to 100˚F	**2 hrs.** 350 psi **16 hrs.** 800 psi **72 hrs.** 1,500 psi	400-700 cps

Concrete Encasement Guidelines

1. Cut ENT square and cleanly.
2. Insert end into fitting, making sure two (2) full corrugations are snapped into fitting beyond flexible tabs (2 clicks).
3. ENT should be tied to rebar at 2-3 foot intervals to prevent flotation. Keep ENT straight. Small deflections over a long run may accumulate significant degrees of bend which will affect conductor installation. Suitable materials include wire, tie wraps, and tape.
4. When using UL solvent weld fittings for concrete tight performance:



A. Do not use chemical primer or cleaner.
B. Apply a light, uniform coat of cement labeled for use with ENT on the coupling and ENT.
C. Do not use a dauber.
D. Brush excess cement out of ENT grooves.
E. Promptly insert ENT into fitting while cement is wet, until the stop is reached, and give a quarter turn.
F. Do not disturb until joint is set.



Specifications

1.1 Electrical Nonmetallic Tubing (ENT), is designed to replace EMT, flexible metal conduit or other raceway or cable systems, for installation in accordance with Article 362 of the National Electrical Code, other applicable sections of the Code, and local codes.

1.2 Any ENT used shall meet the requirements of UL Standard UL 1653 and shall be listed by Underwriters Laboratories, Inc., as suitable for its intended purpose.

1.3 ENT shall be recognized by a National Evaluation Report for use in 1-hour and 2-hour rated construction.

1.4 Penetration of fire rated walls, floors or ceilings shall use classified Through-Penetration Firestop Systems described in the current Underwriters Laboratories Fire Resistance Directory.

1.5 Fittings and outlet boxes shall be designed for use with ENT and listed by Underwriters Laboratories. All fittings, boxes and accessories shall be from one manufacturer.

1.6 Only Carlon ENT Blue cement recommended specifically for use with ENT shall be used.

1.7 Unless indicated differently on drawings, ENT systems shall be color coded: BLUE for branch and feeder circuit wiring, YELLOW for communications, and RED for fire alarm and emergency systems.

1.8 ENT, fittings, and accessories shall be manufactured by Carlon.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Features

- UL recognizes the use of PVC RNC cement type fittings with all sizes of ENT
- ENT rated for 90 deg C conductors
- One piece ENT Coupling, Threaded Terminator and RNC Transition Fitting are rated concrete tight without tape by UL
- Recognized for use in 2-hour fire resistive nonload bearing and load bearing wall assemblies
- Recognized for use in 1-hour fire resistive nonload bearing wall assemblies
- Recognized for use in a fire resistive ceiling assembly (up to 3 hours)
- Recognized for Through-Penetration Firestop systems as classified by UL to meet BOCA, SBCCI and ICBO codes.
- Conductors easily push through the raceway (up to approximately 50 feet)*
- For use in buildings in accordance with NEC Article 362
- Approved for installations of a one and two hour fire rated wall assembly and up to a three hour rated floor/ceiling assembly
- Outside Diameters meet IPS Dimensions
- Storage -4°F to 158°F
- Handling -4°F to 104°F

Approved Uses:

- Concrete slab – NEC Article 362
- Walls - wood stud, masonry and metal stud – NEC Article 362.
- Ceilings - permanent or dropped (free air only) – NEC Article 362.
- Exposed – NEC Article 362
- Public Assembly – NEC Section 518.4, in nonfire rated and certain five rated structures
- Prewired – NEC Article 362
- Classified by UL 1479 for Through Penetration Firestop Systems in UL Guide Category XHEZ and current UL Fire Resistance Directory
- Three hour rated floor/ceiling assemble
- Raised Floors – NEC Section 645.5(D)(2)
- Exposed or concealed in building above three floors when a fire sprinkler system is installed in accordance with NFPA 13 – NEC Section 362.10(2)
- For use in residential attics up to 3 feet above the bottom of the ceiling joist.

Typical Applications:

- Residential: Low or high rise – multi or single family
- Commercial: Low or high rise – office, retail, hotel/motel, restaurant, etc.
- Nursing Homes/Hospitals in nonpatient care areas only
- Schools, classrooms, dormitories, offices
- Fire Alarm Systems
- Recreational vehicles and parks
- Solar Photovoltaic systems
- Marinas and boatyards
- Other uses per the current NEC

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® Floor Boxes and Covers

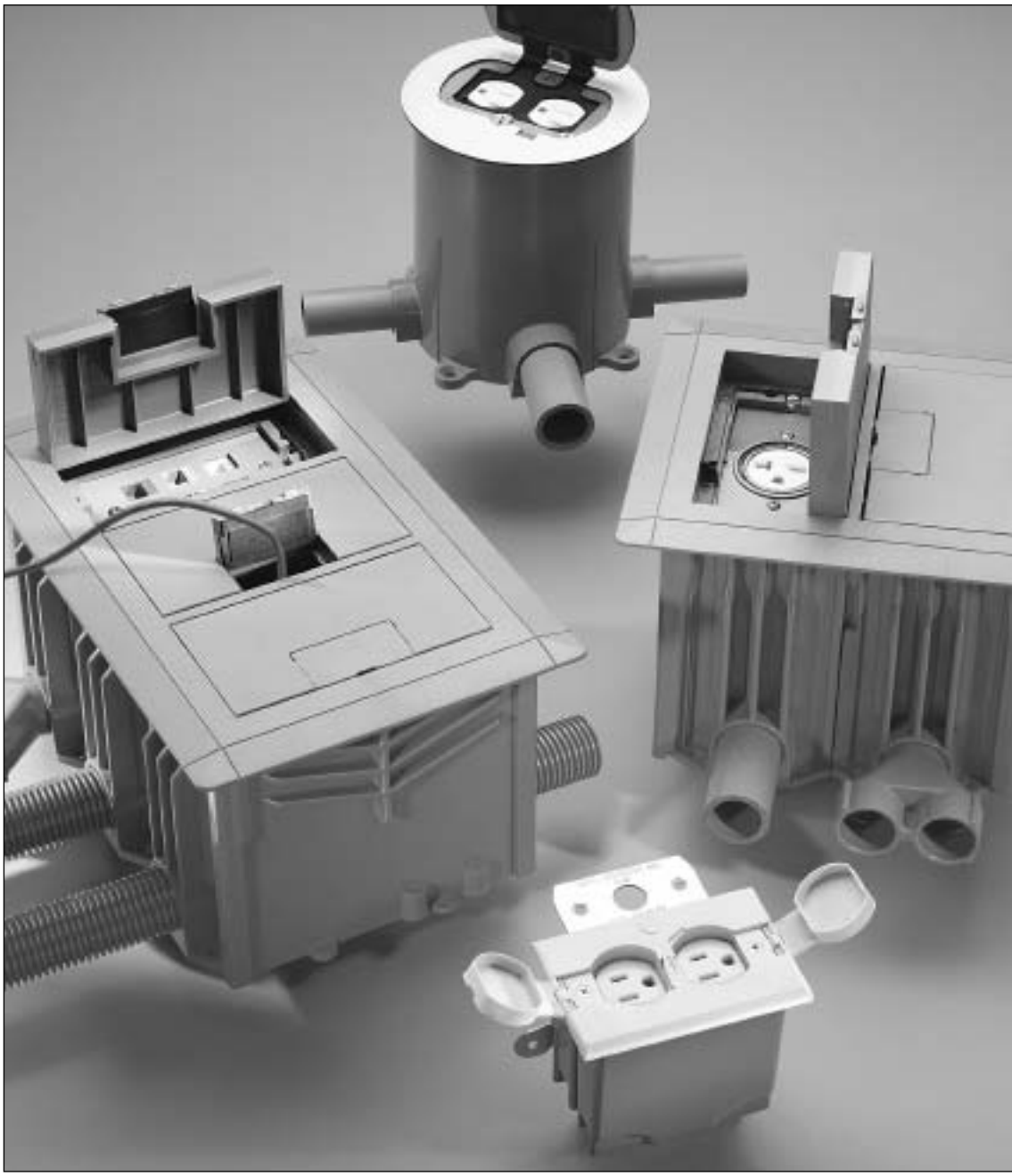
Round Floor Boxes

1-, 2-, and 3-Gang Rectangular Floor Boxes

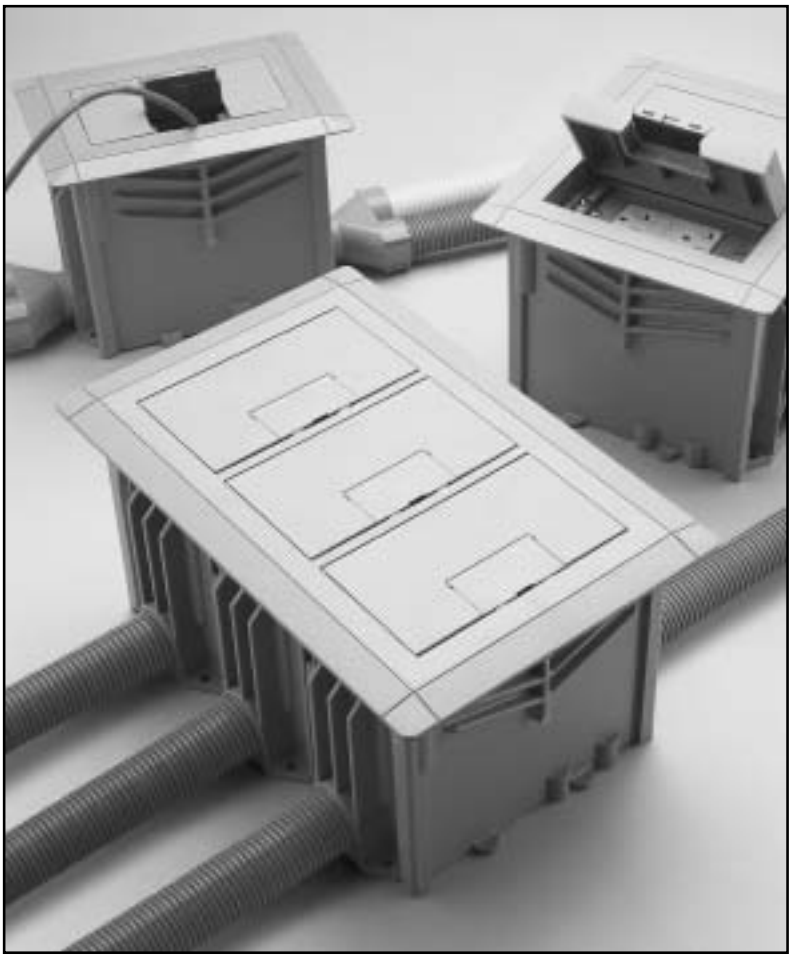
Residential Floor Boxes

Brass Covers

Nonmetallic Covers



1-, 2-, and 3-Gang



*U.S. Patent 5,866,845

Carlon® Rectangular Floor Box Systems – three-way power, data, and communications plus easy double or triple ganging, too.

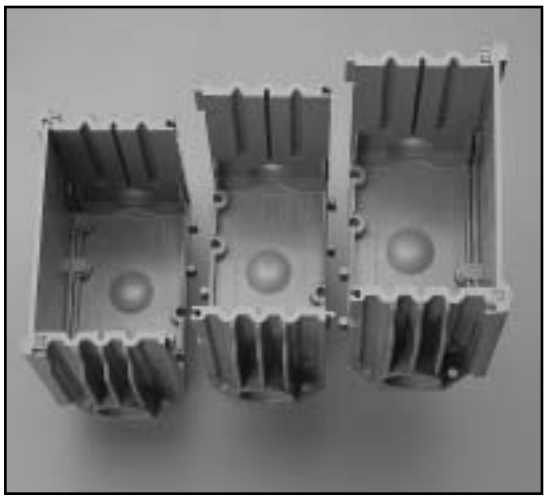
Compared to metal boxes, Carlon rectangular floor boxes cost less and install faster to save you money on every job. Three-in-one power, data, and communications capability cuts installation time and cost even more, while simple two- and three-gang modularity gives you the flexibility, installation ease, and cost-savings no other nonmetallic boxes can match. The covers attach without the use of fasteners, providing a professional, clean installation as well as preserving the aesthetic life of the product. Take a closer look at all our rectangular floor box systems offer you.

Features

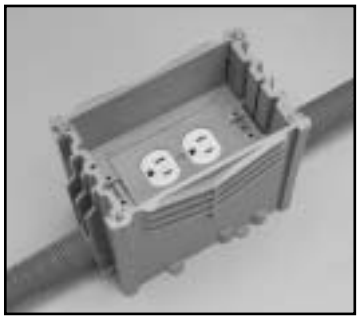
- Covers require no adjusting collar. Two screws assure a flush, secure installation.
- Nonmetallic PVC construction, watertight gasket, and corrosion-resistant hardware assure long life and reliable performance even in harsh and/or corrosive environments.
- One consistent box depth simplifies ordering time and reduces inventory.
- Saves time and money on installations with simple saw cut to floor level.
- Concrete tight and suitable for any on grade/ below grade application; concrete or wood sub-floor construction approved.
- Convenient cubic inch capacity markings on inside allow for easy inspection.
- PVC molded ports and reducer plugs included.
- Accepts 1/2", 3/4", and 1" conduit, tubing or raceway.
- Rectangular sides are drillable.
- For tile and carpet applications.
- Cover options include solid brass or thermoplastic (brown, slate, and caramel).
- UL scrub water tested.

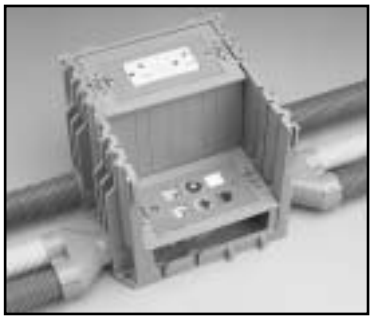
Installation

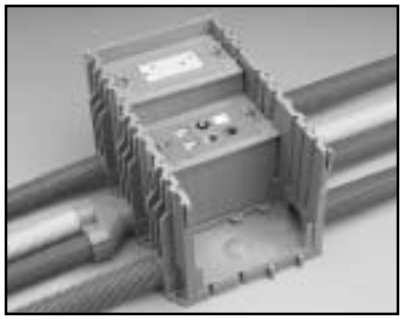
c UL us LISTED
E42728



With our rectangular boxes, one SKU is all you ever need. Simply remove appropriate sides and slide boxes together to create two- or three-gang boxes for on-the-job flexibility no competitor offers.

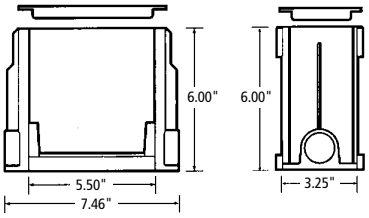






Specifications

Rectangular Floor Box



Part No.	Material	Size	Internal Volume (cu. in.)	Min. Concrete Depth	Hubs	Reducer Plugs	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
E976RFB	PVC	1-Gang	97.4 (16.8 per inch of Depth)	3 1/2"	(2) 1"	(2) 1" x 3/4" (2) 3/4" x 1/2"	3	6.92

Activation Kit

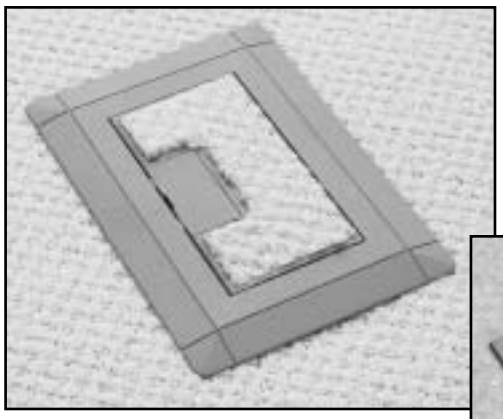


Activation kit provides components to accommodate all standard power, data, and communications devices plus a divider to separate power from data and communications – all in a single SKU. Device yokes can be adjusted to store excess cord in the box.

Part No.	Material	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E976AK2	PVC	3	2.47

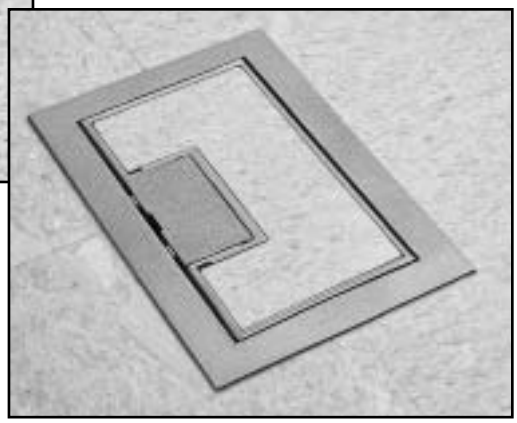
c UL us LISTED E42728

1-, 2-, and 3-Gang Nonmetallic



*U.S. Patent 5,866,845

On-the-job flexibility extends to our rectangular box covers. Each one-, two-, or three-gang cover is suitable for any wiring application and can be used with any floor surface. Nonmetallic covers are even field reversible for tile or carpet. Double door feature allows easy access to the device and helps keep stray cords organized.



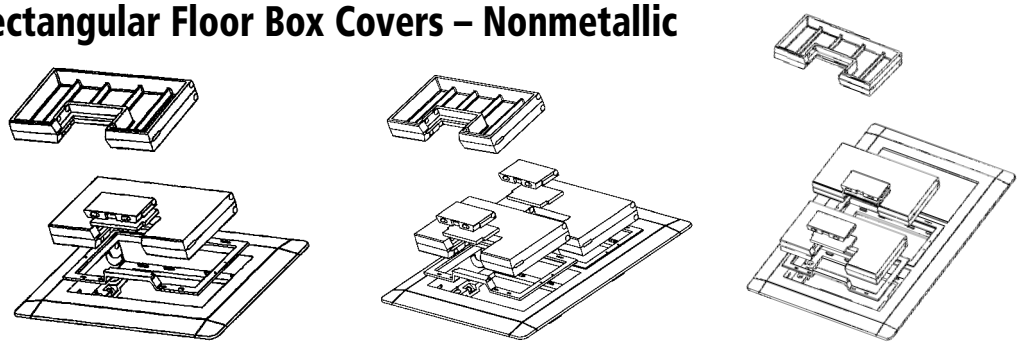
Carlon Rectangular Floor box covers do not require a separate carpet flange. The carpet flange is part of the cover and may be removed for tile application.

Features

- High impact resistant thermoplastic
- Field reversible for tile or carpet
- Gasketed for a watertight seal
- Double door design
- For tile and carpet applications
- UL scrub water tested

Specifications

Rectangular Floor Box Covers – Nonmetallic

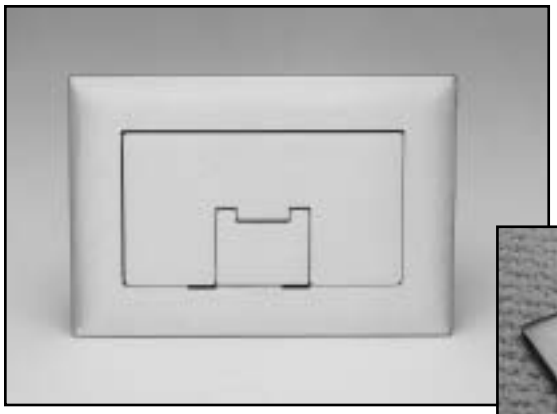


Part No.	Description	Dimensions (W x L)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E9761B	Brown Single-Gang Cover/Carpet Flange	7.13" x 5.00"	3	1.7
E9762B	Brown Double-Gang Cover/Carpet Flange	7.13" x 8.25"	9	8.5
E9763B	Brown Triple-Gang Cover/Carpet Flange	7.13" x 11.50"	6	7.5
E9761C	Caramel Single-Gang Cover/Carpet Flange	7.13" x 5.00"	3	1.7
E9762C	Caramel Double-Gang Cover/Carpet Flange	7.13" x 8.25"	9	8.5
E9763C	Caramel Triple-Gang Cover/Carpet Flange	7.13" x 11.50"	6	7.5
E9761S	Slate Single-Gang Cover/Carpet Flange	7.13" x 5.00"	3	1.7
E9762S	Slate Double-Gang Cover/Carpet Flange	7.13" x 8.25"	9	8.5
E9763S	Slate Triple-Gang Cover/Carpet Flange	7.13" x 11.50"	6	7.5

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

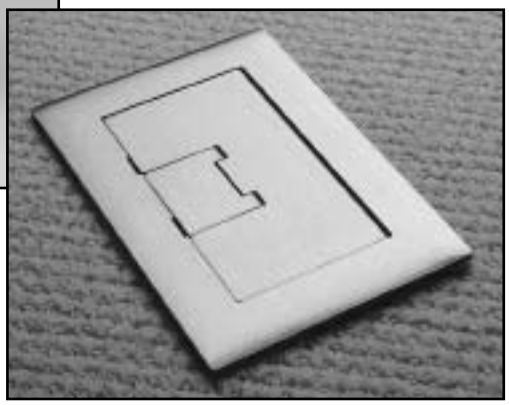
1-, 2-, and 3-Gang Solid Brass

c UL us LISTED E42728



*U.S. Patent 6,265,662

Carlon® Brass rectangular Floor Box Covers add a classic touch to all floor box installations and are particularly suited for use in high-traffic areas because of the resistance to wear. The gasket gives a watertight seal, and the light lacquer finish provides extra protection.

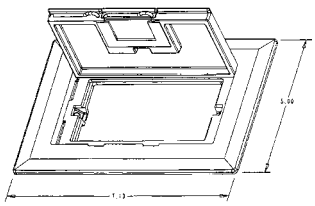


Features

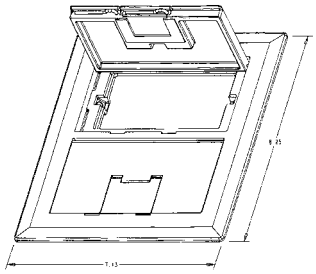
- Rugged solid brass construction.
- Brushed finish coated with a light lacquer for protection.
- Rectangular brass covers include a cord door.
- Gasketed for watertight applications.
- Rectangular brass covers allow for single, duplex, GFCI receptacles, and low voltage.
- For tile and carpet applications.
- UL scrub water tested.

Specifications

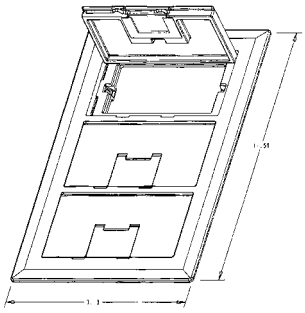
Rectangular Floor Box Covers – Brass



E9761BR



E9762BR



E9763BR

Part No.	Description	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E9761BR	Brass Single-Gang Cover	3	6.8
E9762BR	Brass Double-Gang Cover	3	9.9
E9763BR	Brass Triple-Gang Cover	3	12.1
E976AK2	Rectangular Floor Box Activation Kit	3	1.3

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com



Carlon® Round Floor Box Systems – three-way versatility for power, data, and communications.

Carlon round floor boxes give you the same cost-saving advantages over metal boxes as our rectangular boxes. By letting you combine power, data, and communications in the same box, you can dramatically reduce your installation time and cost compared to other nonmetallic boxes. In addition, multi-use covers mean fewer SKUs to deal with and greater jobsite flexibility to increase your savings further. Take a closer look at all their advantages for yourself.

Features

- Nonmetallic PVC construction, watertight gasket, and corrosion-resistant hardware assure long life and reliable performance even in harsh and/or corrosive environments.
- Brass and an assortment of nonmetallic covers are available for a variety of applications.
- The same box depth simplifies ordering and reduces inventory.
- For tile and carpet applications.
- Concrete tight and suitable for any on grade/below grade application; concrete or wood floor construction approved.
- Y-connector (E972Y) allows you to feed parallel runs of 3/4" conduit or to feed in/out from the same side for increased wiring flexibility and faster installation.
- PVC molded ports and reducer plugs included.
- Accepts 1/2", 3/4", and 1" conduit, tubing or raceway.
- UL scrub water tested.

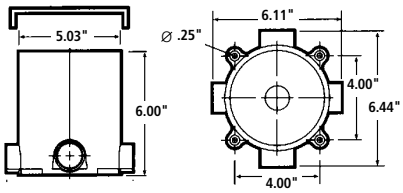
Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Where noted by ◆

c UL us LISTED E42728

Specifications

Round Floor Box



Carlon Round Floor Boxes allow for various thickness of concrete pours. Trim out is easy – just use a handsaw to cut off box at desired height to accommodate carpet, tile, or other flooring. Carlon leveling ring guarantees a level top every time, even if the box is tipped slightly during the pouring process.

Part No.	Internal Volume (cu. in.)	Min. Concrete Depth	Hubs	Reducer Plugs	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
◆ E971FB	90.0 (15.5 per inch of Depth)	3 1/2"	(2) 1" and (2) 3/4"	(2) 1" x 3/4" and (2) 3/4" x 1/2"	10	15.6

Accessories

Multi-Service Divider Kit



Multi-service divider kit for separate power, data, and communications compartments provides unbeatable flexibility and money-saving installation speed.
For use with nonmetallic boxes only.

Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
◆ E973K	10	3

3/4" Y Fitting



The 3/4" Y Fitting provides for in and out service from a single 1" port, and allows for two 3/4" parallel conduit runs to adapt into a single conduit body port.

Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E972Y	10	2.1

Reducer Plugs



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E971C	3/4" x 1/2"	100	2.1
E971D	1" x 3/4"	100	3.2

Nonmetallic Covers


Caramel


Slate


Ivory


Taupe


Brown

U.S. Patent 6,450,353

Features

c UL us LISTED E42728

- High impact resistant thermoplastic
- Compatible with standard NEMA Duplex, and 1 1/4" NPS receptacles
- Drill points (3/8") provided for low voltage cable pass throughs
- 1 1/4" NPS plugs may be modified to accept smaller fittings (3/8", 1/2", and 3/4")
- For tile and carpet applications
- UL scrub water tested

Duplex Covers



Part No.	Color	Description	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E97DSI	Ivory	Duplex Cover	10	5.2
E97DSC	Caramel	Duplex Cover	10	5.7
E97DST	Taupe	Duplex Cover	10	5.7
E97DSS	Slate	Duplex Cover	10	5.6
E97DSB	Brown	Duplex Cover	10	5.8

1 1/4" NPS Covers



Part No.	Color	Description	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E97SSRB	Brown	NPS Cover	10	3.8
E97SSRC	Caramel	NPS Cover	10	3.8
E97SSRS	Slate	NPS Cover	10	3.8

Metal Cover Adapter Ring

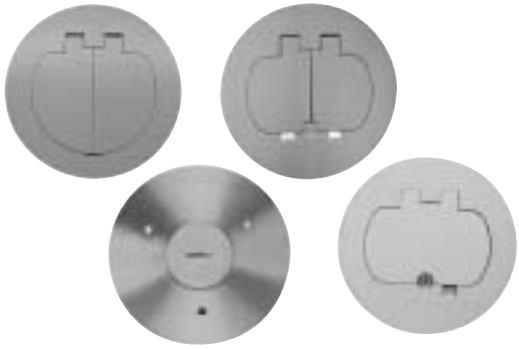


Part No.	Devices	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E97ABR2	One-Piece Metal Cover Adapter	10	3.3

Clear Cover Carpet Ring

Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E97CCR	Clear	10	1.2

Brass Covers



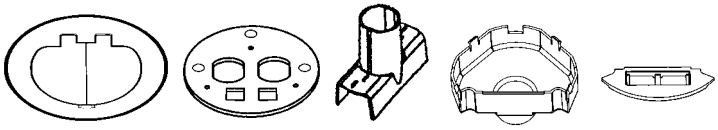
U.S. Patent 6,179,634

Features

c UL us LISTED
E42728

- Screws concealed under doors
- Rugged solid brass construction
- Brushed finish coated with a light lacquer for protection
- Resistance to wear – suited for high traffic areas
- Gasketed for watertight applications
- Available in four styles – Single Door, Two Door, NPS Opening, and Two Door Dual Service
- For tile and carpet applications
- UL scrub water tested

Two Door Dual Service
(Divider Kit included)

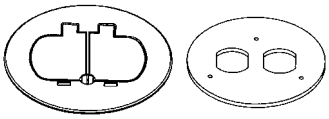


NEW!



Part No.	Devices	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E97BR2D	Duplex and Two Data Ports	5	9.2

Two Door

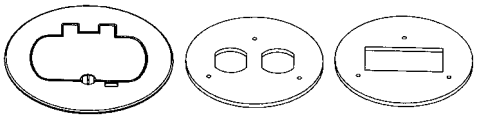


NEW!



Part No.	Devices	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E97BR2	Duplex	5	7

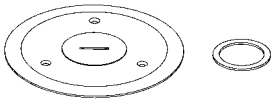
Single Door





Part No.	Devices	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E97BR	GFCI and Duplex	5	7

NPS Opening





Part No.	Devices	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E97BRG	1 1/4" Outlet and Single Receptacle	5	7.5

One-Gang



Nonmetallic (White)



Nonmetallic (Ivory)



Brass

*U.S. Patent 5,289,934

Features

- Adjusts to most finished floor heights (From 0" to 1 3/4")
- 20 cubic in. capacity
- Available with nonmetallic or brass cover
- Complete assembly includes box, duplex receptacle, cover, molded-in cable clamps, mounting bracket and mounting hardware
- Ideal for home offices and entertainment rooms
- UL listed Floor Box
- UL scrub water tested
- 2 hour floor fire classification

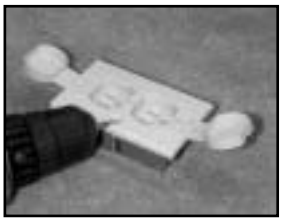
Installation



Install clip over subfloor.



Screw in to adjust to height of flooring or carpet



Beautiful flush fit every time!

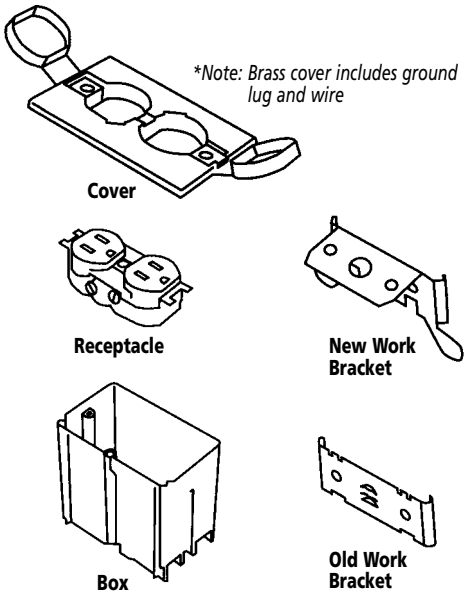
Specifications

UL LISTED E42728

Part Number	Size	Cover	Cubic In.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
B121BFBRW	One-Gang	White	20	8	7.02
B121BFBR	One-Gang	Ivory	20	8	7.02
B121BFBB	One-Gang	Brass	20	8	14.50

Kit includes:





Mounting Hardware:

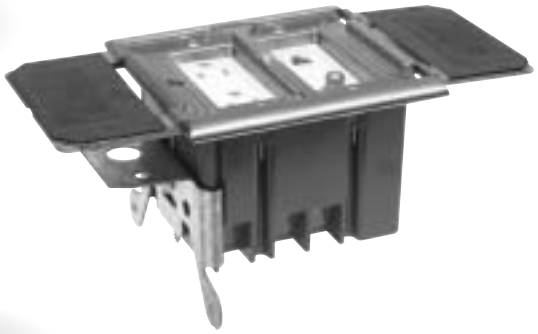
Ivory/White Cover:

- Two (2) 6-32x1 flat head machine screws
- Four (4) #6 1-1/4 self-tapping flat head screws
- Two (2) #6 1-5/8 drywall screws
- One (1) cover plug

Brass Cover:

- Two (2) 6-32x1 brass plated flat head machine screws
- Four (4) #6 1-1/4 self-tapping flat head screws
- Two (2) #6 1-5/8 drywall screws

Two-Gang





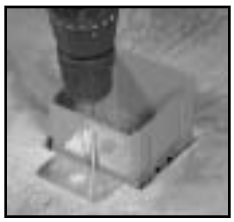
Features

- Adjusts to most finished floor heights (From 0" to 1 3/4")
- Dual voltage capability
- 34 cubic in. capacity
- Complete assembly includes box, cover, dual voltage divider, molded-in cable clamps, mounting bracket and mounting hardware **(Note: Devices not included)**
- Ideal for home offices and entertainment rooms
- UL listed Floor Box
- UL scrub water tested
- 2 hour floor fire classification

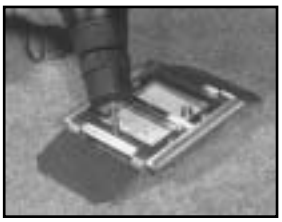
Installation



Install clip over subfloor.



Screw in to adjust to height of flooring or carpet



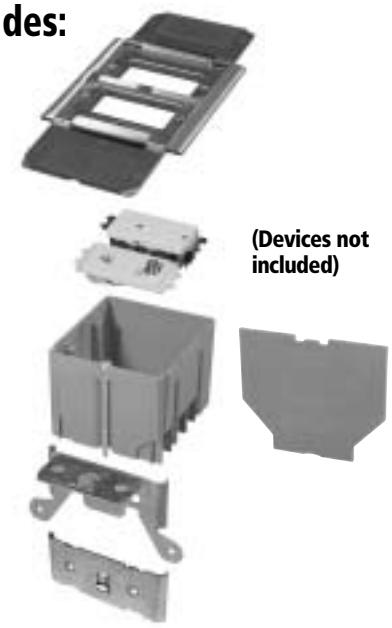
Beautiful flush fit every time!

Specifications

UL LISTED E42728

Part Number	Size	Cover	Cubic In.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
B234BFBB	Two-Gang	Brass	34	4	9.976

Kit includes:



(Devices not included)

- One (1) New Work Bracket
- One (1) Old Work Bracket
- One (1) 34 cubic in. UL Listed Floor Box
- One (1) Dual Voltage Divider
- One (1) UL Listed Brass Floor Cover
- Four (4) #6-32x1" flat head machine screws
- Four (4) #6 x 1-1/4" flat head self-tapping screws
- Two (2) #6x1-5/8" square drive trim head screws
- Green ground wire
- Installation instructions

Carlon® Drop-In Floor Box

NEW!

The Carlon Drop-In Floor Box with Brass Cover combines many of the same features in our existing Floor Box line with the strength, durability and style necessary to accommodate today's residential electrical/telecommunication needs.



The Carlon Drop-In Floor Box is the fastest easiest way for contractors to put a floor socket anywhere they need it! It's designed to accommodate high and low voltage applications and comes complete with everything needed for installation - *Floor box, Brass Cover, hole saw, wired receptacle, two-hole low voltage plate, blank plate, mounting screws, and wire nuts.*

Note: The Drop-In Floor Box is available with or without a hole saw.

Installed:





Features:

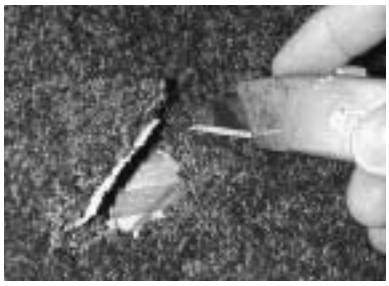
- Single hole installation
- Solid brass cover has a light lacquer finish to resist wear - Ideal for high traffic areas
- Accommodates high and low voltage applications
- Includes single gang grounded receptacle, low voltage telephone/cable plate (data jacks not included), and blank plate for custom installations
- Eliminates the need for extension cords
- Superior aesthetics - Ideal for home offices and entertainment rooms
- C-UL-US Listed Nonmetallic Outlet Box

Specifications

c UL us LISTED
E42728

Part Number	UPC Code	Description	Std. Carton Qty.	Std. Carton Wt. (lbs.)
E971FBDI	034481186601	Drop-In Floor Box w/Hole Saw	5	6.5
E971FBDIB	034481189459	Drop-In Floor Box without Hole Saw	20	17.6

Installation



1. Cut 2-3/8" hole through carpeting before using hole saw.



2. Drill hole in floor using hole saw.



3. Pull romex through floor.



4. Connect receptacle wires to romex. Be sure to match wire color(s).



5. Secure wire clamp on bottom of tube.



6. Brass cover snaps into place. Use a small screwdriver to pry open brass cover to plug in appliance.

Carlon® Nonmetallic Curved Lid J-Box

To give you a better way to install parking lot lights, we started at the bottom.



Curved Lid J-Box



Anyone who's worked with parking lot light poles knows the problem. Those tiny integral hand holes for electrical wiring can really slow a project down. But now there's a better answer for shopping centers, car dealerships, sports arenas, office complexes, or anywhere you need pole lighting for large parking lot areas – the Carlon nonmetallic curved lid J-Boxes.

Carlon curved lid J-Boxes are listed in accordance with UL 50 specifications for Electrical Enclosures as well as NEMA 1, 2, 3, 3R, 3S, 4, 4X, 12, 13 ratings. They are available in sizes 8"x8" or 12"x12". Both the base and lid are made from PVC to eliminate rust and corrosion and are supplied with tamper-resistant screws.

Designed specifically for use with 24" diameter concrete piers, J-Boxes are installed, along with all necessary conduit and fittings, when piers are poured. This gives installers a giant junction box at the base of every pole to ease wiring, facilitate circuit management, and provide easy post-installation maintenance. Just take a closer look, and you'll see why our nonmetallic J-Boxes are a better choice for you.

Features

- NEMA 1, 2, 3, 3R, 3S, 4, 4X, 12, 13
- UL Listed and CSA Certified
- Paintable lid
- Dividers available to separate high and low voltage, and can be retrofitted into existing applications
- Lids provide locations to mount weatherproof covers:
  - 8" x 8" - One location
  - 12" x 12" - Three locations
- Nonconductive and noncorrosive
- Designed for a 24" radius concrete pier

NOTE: The J-Box can also be installed in concrete piers from 18" to 36" in diameter. Contact your Carlon Sales Rep for installation details.

Install Carlon® Weatherproof Covers



Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

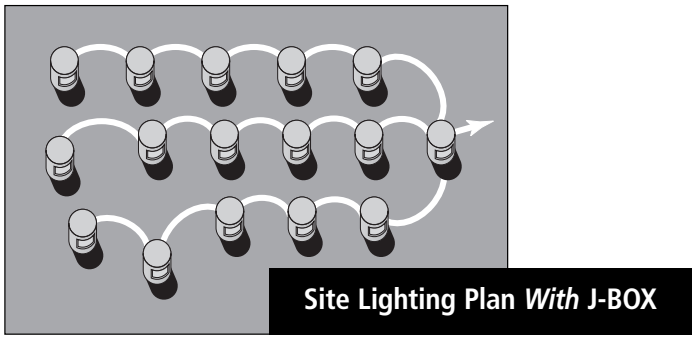
Faster, easier wiring for greater productivity.



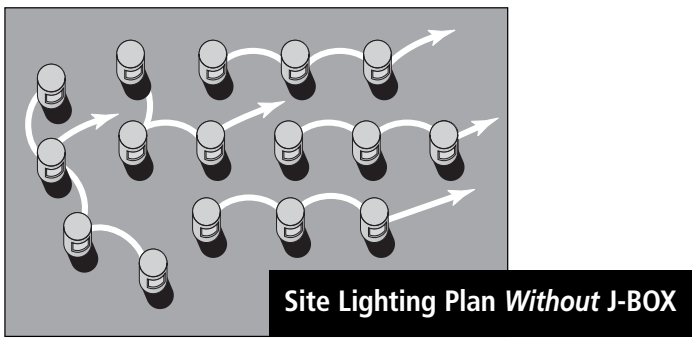
Once your J-Boxes are installed, you can speed projects along by pre-wiring before poles arrive. Or you can install poles first and use them to mount cable pulling equipment – a particular advantage for long, difficult wire pulls. Of course, all the extra hand room our J-Boxes offer makes splicing much easier and faster than working through cramped pole access holes.

More flexibility, fewer home runs, and easier maintenance, too.

Extra room also gives you splicing space for options like zone lighting or to reduce the number of home runs, which can lower trenching and associated materials costs by up to 30%. In addition, the box lids provide locations to mount receptacles and weatherproof covers for even more flexibility. For easy maintenance, fixture protection can be placed at the base, and if need be, poles can even be removed and replaced in the middle of the circuit without affecting overall lighting.



Site Lighting Plan *With* J-BOX



Site Lighting Plan *Without* J-BOX

Easy to Install



1. J-Box, with all conduit and fittings placed as desired, is temporarily attached to the concrete form – base and lid inside.



2. Remove form after concrete has been poured and allowed to cure.



3. Pop off the J-Box lid, leaving an 8" x 8" x 4" or 12" x 12" x 4" access area, depending on the J-Box selected.



4. After wiring is completed, the lid is replaced to complete the installation.

LISTED E54381 LR31146 Except where noted by ◆

Specifications

J-Box Assemblies

Part No.	Size	Std. Ctn. Qty.	Std. Ctn Wt. (lbs.)
E88C24	8"x 8"x 4"	6	28.3
E1212C24	12"x 12"x 4"	2	9.7



Accessories

Replacement Lids

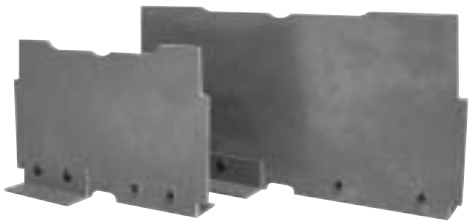
Part No.	Size	Std. Ctn. Qty.	Std. Ctn Wt. (lbs.)
E88L24	8"x 8"	1	2.1
E1212L24	12"x 12"	1	2.3



Dividers

The **National Electrical Code (NEC)** allows electrical conductors to share an outlet box when the conductors and communication cables are separated by a barrier within the box.

Part No.	Std. Ctn. Qty.	Std. Ctn Wt. (lbs.)
◆ E88DIV (For use with Part No. E88C24)	6	2.1
◆ E1212DIV (For use with Part No. E1212C24)	2	2.3



J-Box Dividers are used to separate high and low voltage devices, and solvent cement into place

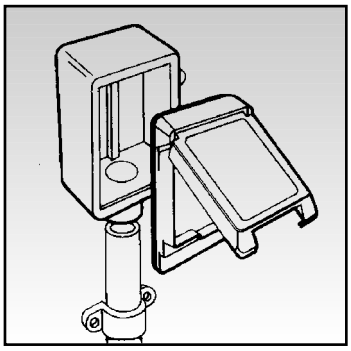
LR31146

MARINE UL LISTED E42728

Carlon® weatherproof covers are rain-tight and drip-proof when the cover is closed. They are intended for wet environments and offer protection to outdoor electrical devices. They may be mounted to Type FS boxes or a smooth, flat nonporous surface. Lids snap-off for easy access to top screw holes.

Features

- **Nonconductive**
- **Nonmetallic**
- **Noncorrosive**
- **Durable**
- **Paintable**
- **Easy to install**



Installation Instructions

- **Turn off power when installing electrical devices.**
- Place gasket on top of outlet box.
- Fasten cover to outlet box with enclosed screws.

This cover must be installed in accordance with the National Electrical Code (NEC) and local codes.

These covers can be mounted to Type FS boxes, or a smooth, flat nonporous mounting surface. (Use 1/4"bead RTV type, silicone, neoprene, urethane, or polyurethane caulking between gasket and mounting surface on non-box mountings.)

Single Gang Covers

15 AMP Receptacle Cover

For 15 amp or other single receptacles under 1.375" diameter.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98SRCN-CAR	Grey	10	2.1

20 AMP Receptacle Cover

For 20 amp or other single receptacles under 1.625" diameter.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98G20N	Grey	20	4.1

30 AMP Receptacle Cover

For 30 amp or other single receptacles under 1.750" diameter.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98G30N-CAR	Grey	10	2.1

50 AMP Receptacle Cover

For 50 amp or other single receptacles under 2.250" diameter.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98G5FN-CAR	Grey	10	2

Duplex Receptacle Cover

For single gang duplex receptacle applications.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98GDRN-CAR	Grey	10	2

GFI Receptacle Cover

For GFI receptacle applications. Device opening dimensions: 2.63" H x 1.31" W.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98GFCN-CAR	Grey	10	2

Single Gang Covers

Duplex Receptacle Cover – Horizontal Mount

For single gang duplex receptacle applications.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98DHGN-CAR	Grey	10	3.9

GFI Horizontal Cover

For GFI receptacle applications. Device opening dimensions: 2.63" W x 1.31" H.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98GHGN-CAR	Grey	10	1.9

Circuit Breaker Cover

For circuit breaker applications up to 4 single poles. Device opening dimensions: 2.845" H x 2.265" W.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98GCBN	Grey	20	3.9

Single Switch Cover

For single switches.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98SSCN-CAR	Grey	10	2.1

Toggle Switch Cover

For single weatherproof toggle switch applications.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E98TSCN-CAR	Grey	5	1.1

Two Gang Covers

Double Duplex

For two gang duplex receptacle applications.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E9G2DDN-CAR	Grey	10	2.3

Double Toggle Cover

For two gang weatherproof toggle switch applications.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E9G2SSN	Grey	6	3.2

Combination Toggle/GFI Cover

For two gang GFI and weatherproof toggle switch applications.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E9G2GTN-CAR	Grey	5	1.3

Combination Toggle/Duplex Receptacle Cover

For two gang duplex receptacles, and weatherproof toggle switch applications.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E9G2DSN-CAR	Grey	10	1.3

Blank Covers

Single Gang Cover

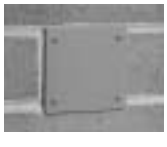
Fits Carlon® single gang FS boxes. Supplied with stainless steel mounting screws and gasket.



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E980CN-CAR	Grey	12	1.60
E980CM-CAR	White	12	1.60

Two Gang Cover

Fits Carlon® two gang FS boxes and other nonmetallic and metallic FS boxes. Supplied with stainless steel mounting screws and gasket.



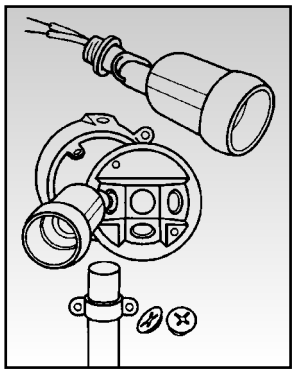
Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E9802CN-CAR	Grey	10	2.17

c UL us LISTED
E70380
E183934
Except where noted by ▶

Carlon® Nonmetallic Lampholders are ideal for outdoor residential or commercial applications. Our lampholders are nonconductive and safe for wet or damp locations. Available in white, they will compliment any exterior.

Features

- **Nonmetallic**
- **Nonconductive**
- **Easy to install**
- **Paintable**
- **Durable**
- **Rust proof**



Installation Instructions

1. Turn off electricity before starting.
2. Bring power leads into the outlet box and connect using proper wire nuts or insulation materials.
3. Use drill or nail to knock out holes on lampholder cover that align with outlet box. When completed, be sure visual perimeter of weatherproof gasket is even to assure proper seal.
4. Floodlight lampholders can be positioned using two different adjustments. Loosen locknut to turn lampholder assembly to desired position. Tighten locknut. Then depress pushbutton to adjust lampholder to final position.

Lampholders

Rectangular Lampholder Cover



Part No.	Color	Std. Wt. (lbs.)	Std. Ctn. Ctn. Qty.
P7901W-CAR	White	.9	12

No-Tool-Lampholder with Gasket



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
P8001W-CAR	White	24	5.5

Round Lampholder Cover



Part No.	Color	Std. Wt. (lbs.)	Std. Ctn. Ctn. Qty.
P7801W-CAR	White	1.6	16

No-Tool-Lampholder with Round Cover Kit



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
P8060W-CAR	White	6	5.8

Two Lampholders with Rectangular Cover



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
P8005W-CAR	White	6	3.8

Closure Plugs



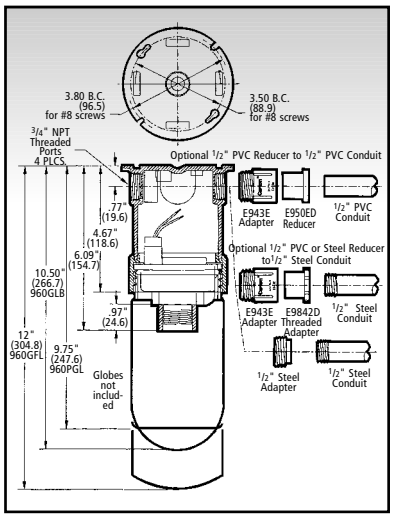
Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶P7701W-CAR	White	30	1.3

Two Lampholders with Round Cover



Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
P8010W-CAR	White	6	3.9

Carlon® Nonmetallic Weatherproof Fixture is designed for indoor or outdoor use and is suitable for damp, wet or corrosive environments. The one-piece design offers a 20.25 cu. in. wiring capacity and is approved for 60° AWG wire with the use of a 150 watt lamp. It will accommodate 8 no. 12 AWG through branch circuit conductors and is approved for through branch wiring.



E183934

E42728
Where noted by ▶

Features

- **Nonmetallic - corrosive resistant**
- **Ceramic socket - long life**
- **Silicone gasket**
- **Drill point located on back**
- **Approved for dwellings**
- **Junction box approved**



Fixture Base



Part No.	Hub Size	Std. Ctn. Qty	Std. Ctn. Wt. (lbs.)
E962E	3/4"	6	4.5

Weatherproof Lighting Globes

Clear Glass Globe



Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E960GLB (Clear Glass)	6	6.6

Clear Polycarbonate Globe



Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E960PGL(Clear Plastic)	6	6.6

Rippled Polycarbonate Globe



Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E960GFL	6	4.9

Weatherproof "T" Boxes

Carlon® Weatherproof "T" Boxes are for use with nonmetallic wiring systems only. Can be used with Carlon Par Lamp Holders.

Single Gang "T" Box

With three 1/2" threaded holes. Mounting feet included.



Part No.	Color	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶*E381D-CAR	Grey	1/2"	10	2.3
▶*E381DW-CAR	White	1/2"	10	1.8

Double Gang "T" Box

With three 1/2" and four 3/4" threaded holes. Mounting feet included.



Part No.	Color	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶*E382DE	Grey	1/2"	6	3.6
▶*E382DEW	White	1/2"	6	3.6

Round "T" Box

With five 1/2" threaded holes. Mounting feet included.

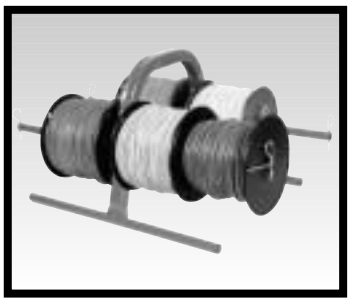
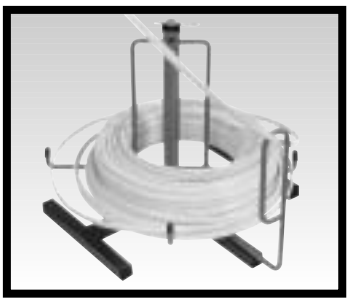


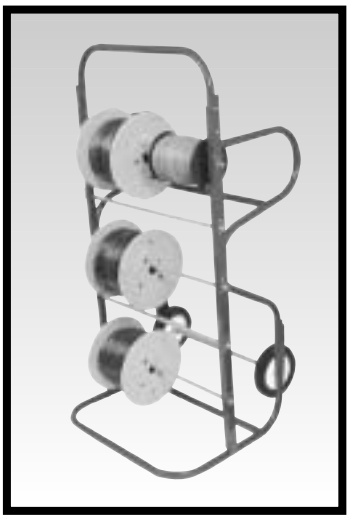
Part No.	Color	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶*E365D-CAR	Grey	1/2"	10	1.2
▶*E365DW-CAR	White	1/2"	10	1.2

*E381D-CAR, E365D-CAR and E382DE are for use with nonmetallic wiring systems only.

Carlon®
Wire Handling Products

Kaddies
Karts
Dispensers

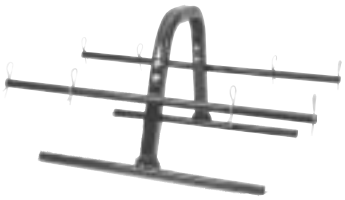







Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Wire Kaddy™





- Dispense small quantities of spooled wire.
- Convenient hand carrying design.
- Constructed of steel tubing with premium powder coat finish.
- 3/8" hitch pin clip allows easy spool changes.

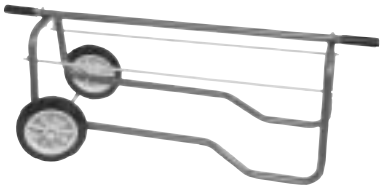
Part No.	Dimensions	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	CAPACITY	
				Qty. of Spools	Spool Dimensions
WK7001	22.75"L x 14"W x 11"H	4	25	8	7" diameter x 5" wide
				4	7" diameter x 6"-10" wide

Shipping/Storage:



- 4 units per master
- 64 pieces per pallet (16 masters)
- More than 4 times more product than the competition
- Lower freight costs

Wire Handling Kart™





- Dispense quantities of spooled wire.
- Constructed of steel tubing with premium powder coat finish.
- 3/8" hitch pin clip allows easy spool changes.

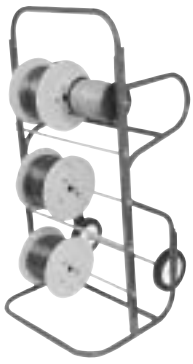
Part No.	Dimensions	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	CAPACITY	
				Qty. of Spools	Spool Dimensions
WK7101	44.25"L x 16"W x 17.5"H	2	47	12	7" diameter x 5" wide
				6	7" diameter x 6"-10" wide

Shipping/Storage:



- 2 units per master
- 36 pieces per pallet (18 masters)
- Lower freight costs

Multi-Purpose Wire Kart



- Dispense large quantities of spool wire.
- Heavy-duty construction with premium powder coat finish.
- 5 wire spool axles.
- 3/8" hitch pin clip allows easy spool changes.
- Built-in wire guide on handle allows horizontal dispensing.
- Large 8" heavy-duty wheels with adjustable axle position.
- Designed to pass through a 28" opening.

Part No.	Dimensions	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	CAPACITY	
				Qty. of Spools	Spool Dimensions
WK7103	25"L x 28"W x 55"H	1	58.6	6	2500' – up to 16" diameter
				15	500' – 7" diameter x 5" wide

Shipping/Storage:



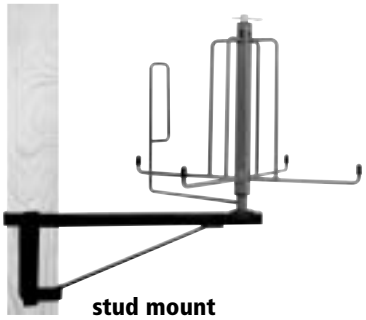
- 14 pieces per pallet
- Lower freight costs

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Cable Dispenser



floor mount



stud mount

- **Two mounting styles in one product vs competitive offering.**
- Floor, or stud mount
- Smoothly dispense coils of armored cable or NM-B.
- Swivel eyelet prevents tangles while paying out.
- Wide base for stability.
- Easy assembly, no tools required.

Part No.	Dimensions	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	CAPACITY	
				Coil Dimensions	Spool Dimensions
WK7203	15.5"H x 19"W	3	45.5	Inside	5.50" min, inside coil dia.
				Outside	17" max. outside coil dia.
				Max. Weight	50 lbs.

Shipping/Storage:



- 3 units per master
- 36 pieces per pallet (12 masters)

6 Reel Wire Dispenser



- Dispense large quantities of spool wire.
- Heavy-duty construction with premium powder coat finish.
- 6 angled spindles keep reels in place without locking.
- Built in wire guide.
- 2 fixed wheels, 1 locking swivel wheel.
- Designed to pass through a 30" opening.

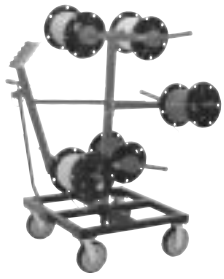
Part No.	Dimensions	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	CAPACITY	
				Qty. of Spools	Spool Dimensions
WK7201	44"L x 29"W x 33"H	1	80	6	2500' – up to 18" diameter

Shipping/Storage:



- 10 pieces per pallet
- Lower freight costs

10 Reel Wire Dispenser



- All-steel construction
- Premium powder coated finish
- Easy loading, dispensing and changing of spooled wire
- Adjustable wire guide
- Two fixed and two swivel locking casters for stability
- Angled spindles keep spools in place during use
- 360° rotating reel frame
- Fits through a 36" door opening
- Heavy duty
- Easy assembly

Part No.	Dimensions	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	CAPACITY	
				Qty. of Spools	Spool Dimensions
WK7202	50"L x 32"W x 57.5"H	1	190	10	2500' – up to 18" diameter

Shipping/Storage:



- Each unit shipped in 2 cartons
- 2 pieces per pallet

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® Wire Safe® Wireway And Wiring Trough

Tough on the job,
easy on you.



Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

No wires to pull, no hard-to-work-with metal components.

Carlon® leads the way with the world's broadest line of nonmetallic wiring management products designed for easier installation, greater performance, and lower installed cost. That includes our Carlon® Wire Safe® wireway, wiring trough, and fittings. It's the perfect solution for containing electrical, electronic, and communication wire and cable. That's because it's easy to install, provides durable protection, and eliminates the need to pull conductors, too. Just compare it point for point against the competition, and you'll see why it's the best alternative for you.



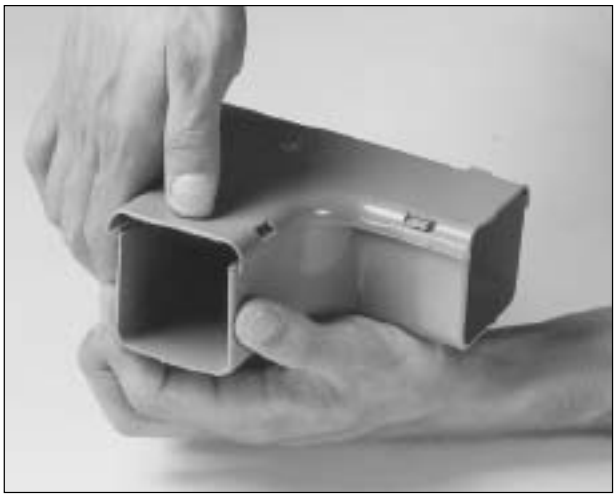
Rugged Yet Lightweight.

UV stabilized, high-impact resistant PVC provides a strong, durable, non-corrosive, non-conductive housing for wire and cable. At the same time, components are so light and easy to handle that installation can be done by one person.



Easy To Cut And Assemble.

Wireway and trough can be cut easily and cleanly with either a hacksaw or fine tooth saw to make field fabrication a snap. And it's equally easy to couple components either with Carlon primer and PVC cement or nonmetallic push rivets.



No Wires To Pull.

Once your wireway or trough is installed, just lay your wire and cable in, pop the cover on, and you're done. It's as easy as that, and that's a lot easier than pulling wire or cable.

Easy To Rewire.

"Clip-on" cover design allows easy access for adding or removing wire and cable after initial installation.



Application Flexibility.

Wireway and trough are suitable for a wide range of applications from the most demanding commercial and industrial uses including food service companies and chemical plants to communication and computer facilities. Both wireway and trough can be used on walls, ceilings, or across supports.

A Complete Nonmetallic System.

Both wireway and trough are available in 2" x 2", 3" x 3", 4" x 4" and 6" x 6" dimensions. Wireway comes cut in easy-to-use 10' lengths for larger jobs, and for tighter spaces, we offer specific lengths of wiring trough to fit distances of 1' to 10'. Both can be used with our nonmetallic enclosures, conduit, and fittings to create a total nonmetallic wire and cable management system far superior to metal counterparts.



Improved NEMA 12 Wireway End Caps.

Our new wireway end caps are now made with pre-installed adhesive backed gaskets. This new design makes them easier to use and also qualifies them for a NEMA 12 rating.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Wiresafe® Wireway

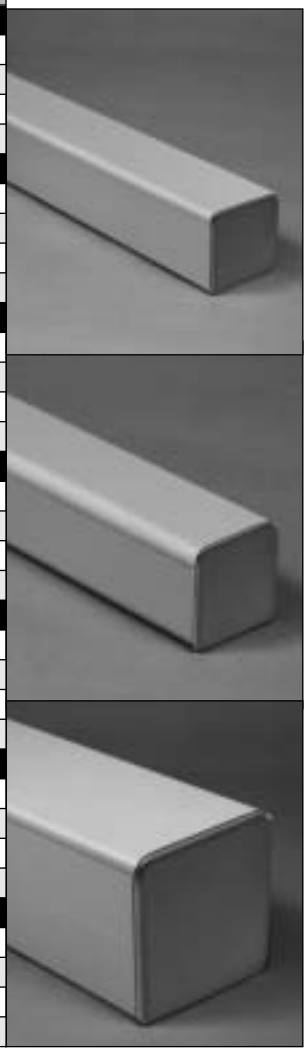
UL LISTED E151021 Except where noted by ▶

Part No.	Outside Nominal Dimensions	Length	Std. Ctn. Qty.	Wt. (lbs.) per 10'
17011	2 x 2	10'	1	4.7
17013	3 x 3	10'	1	11.2
17015	4 x 4	10'	1	11.2
17017	6 x 6	10'	1	21.4



Wiresafe® Wiring Trough

Part Number	Outside Nominal Dimensions	Standard Carton Qty.	Wt./Lbs. Each
12" Trough			
18111	2 x 2	1	0.6
18113	3 x 3	1	1.0
18115	4 x 4	1	1.4
18117	6 x 6	1	3.1
24" Trough			
18211	2 x 2	1	1.1
18213	3 x 3	1	1.8
18215	4 x 4	1	2.6
18217	6 x 6	1	5.3
36" Trough			
18311	2 x 2	1	1.5
18313	3 x 3	1	2.6
18315	4 x 4	1	3.7
18317	6 x 6	1	7.4
48" Trough			
18411	2 x 2	1	2.0
18413	3 x 3	1	3.3
18415	4 x 4	1	4.8
18417	6 x 6	1	9.6
60" Trough			
18511	2 x 2	1	2.5
18513	3 x 3	1	4.1
18515	4 x 4	1	5.9
18517	6 x 6	1	11.7
72" Trough			
18611	2 x 2	1	2.9
18613	3 x 3	1	4.9
18615	4 x 4	1	7.1
18617	6 x 6	1	13.8
120" Trough			
18011	2 x 2	1	4.8
18013	3 x 3	1	8.1
18015	4 x 4	1	11.6
18017	6 x 6	1	22.4

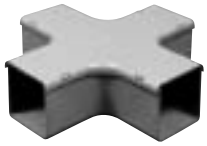


All wiring trough is made to order and is supplied with a pair of end caps.

Wiresafe® Fittings

Flat Cross (Clip-on Cover)

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
* EGFCJ	2 x 2	1	0.5
* EGFCL	3 x 3	1	1.3
† EGFCN	4 x 4	1	1.7
† EGFCR	6 x 6	1	4.8



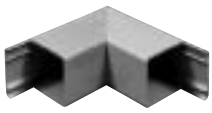
90° Bend Flat Cover (Clip-on Cover)

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
* EGLFJ	2 x 2	1	0.3
* EGLFL	3 x 3	1	0.6
† EGLFN	4 x 4	1	1.1
† EGLFR	6 x 6	1	3.3



90° Bend External Cover (Clip-on Cover)

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
* EGLEJ	2 x 2	1	0.3
† EGLEL	3 x 3	1	0.8
† EGLEN	4 x 4	1	1.2
† EGLER	6 x 6	1	3.3



Flange

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
► EGFJ	2 x 2	10	1.1
► EGFL	3 x 3	10	1.4
► EGFN	4 x 4	10	2.2
► EGFR	6 x 6	10	3.0



End Cap (UL NEMA 12 Rated)

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
* EGSEJ	2 x 2	10 Pair	0.6
* EGSEL	3 x 3	10 Pair	0.9
* EGSEN	4 x 4	10 Pair	1.6
†† EGSER	6 x 6	10 Pair	5.0



External Coupling

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
EGCEJ	2 x 2	10	1.3
EGCEL	3 x 3	10	2.2
EGCEN	4 x 4	10	2.5
EGCER	6 x 6	10	7.8



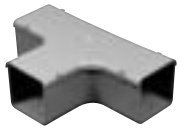
90° Bend Internal Cover (Clip-on Cover)

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
* EGLIJ	2 x 2	1	0.3
† EGLIL	3 x 3	1	0.7
† EGLIN	4 x 4	1	1.1
† EGLIR	6 x 6	1	3.0



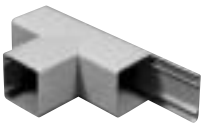
Tee Flat Cover (Clip-on Cover)

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
* EGTFJ	2 x 2	1	0.4
* EGTFL	3 x 3	1	0.9
† EGTFN	4 x 4	1	1.4
† EGTFR	6 x 6	1	3.8



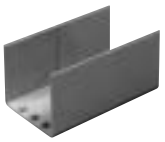
Tee External Cover (Clip-on Cover)

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
† EGTEJ	2 x 2	1	0.4
† EGTEL	3 x 3	1	0.9
† EGTEN	4 x 4	1	1.4
† EGTER	6 x 6	1	3.8



Internal Coupling

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
► EGCIJ	2 x 2	10	1.3
► EGCIL	3 x 3	10	2.2
► EGCIN	4 x 4	10	2.5
–	6 x 6	N/A	N/A



Push Rivets

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
► EGPR	N/A	200	0.4



Hangers

Part No.	Size	Std. Ctn. Qty.	Wt. (lbs.) ea.
► EGSBJ	2 x 2	10	0.9
► EGSBL	3 x 3	10	1.3
► EGSBN	4 x 4	10	1.9
► EGSBR	6 x 6	10	2.8



* Molded fitting–couplings not needed

† Fabricated fitting–order couplings separately

†† No coupling is required for 6" fabricated end cap

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Installation Instructions

Description. Carlon Wire Safe wireway and wiring troughs are manufactured from extruded PVC. The standard color is gray. The wireway consists of a base channel that is formed to receive a "clip-on" cover. Wiring troughs include a pair of ready-to-install end caps.

Cover Installation and Removal. The cover can be installed by exerting hand pressure along its front face in such a manner as to engage and clip projections on the side walls of the base channel. The cover can be removed by inserting a tool (i.e., a screwdriver shaft) into one end of the wireway enclosure and exerting pressure against the underside of the cover, which is then "peeled off" from the base.

Wireway Fittings. Fittings enable the wireway to be positioned around corners and enable tees and crosses to be created without detracting from the protective characteristics. Interconnecting pieces can be assembled using couplings and rivets or cement as necessary.

Molded fittings do not require couplings since they fit on the exterior of the wireway. However, primer and solvent cement are needed. See cementing instructions.

Fabricated fittings do require internal or external couplings, and these must be ordered separately. To install fittings, a 9/32" diameter hole should be drilled in the wireway to match the external coupling hole. A push rivet should be used to connect the two pieces. To connect an internal coupling to the inside of a fitting, use Carlon Quick-Set Clear Cement.

Applications. These systems are designed for use in commercial and industrial areas. They may be used for the containment of electrical wiring/cables for power and lighting circuits and also communication and computer facilities. They are suitable for mounting on the surface of walls or ceilings or suspended across
suitably positioned supports. Ambient temperatures should not exceed 122^0 F.

Installation.

1. Mark the surface upon which the wireway is to be mounted.
2. Measure, run, and identify position of fittings.
3. Remove cover from wireway, starting at one end, with a peeling action (use of a screwdriver or similar lever is recommended).
4. Drill mounting holes through base at 60" centers maximum. Two rows of mounting holes should be drilled, adjacent to each wall of the wireway in order to evenly distribute the load.
5. The holes in the wireway should be drilled oversize to allow for expansion. Washers should be mounted under the head of the mounting device, which should not be tightened to its full extent.
6. Mount the wireway using screws or bolts.
7. Affix the wireway cover by aligning it to the wireway base and then pressing it into its engaged position, starting at one end.
8. The cover should be made to overlap the base joint in order to improve rigidity of the joint.

Engineering Specifications

Code Approvals. Carlon's Wire Safe Wireway and Wiring Trough is recognized by the current National Electrical Code, Article 378, for nonmetallic wireways.It is UL Listed for electrical wiring up to 600 volts. UL File Numbers: UL E151021.

Specification for Carlon Wire Safe Wireway and Wiring Trough.

The wireway and wiring troughs shall be Carlon Wire Safe Wireway and Wiring Trough.

The Carlon Wire Safe Wireway and Wiring Trough shall provide protection for electrical, low voltage, data and communication wiring or cables.

The Carlon Wire Safe Wireway and Wiring Trough shall be listed and installed per the NEC Article 378 for nonmetallic wireways.

The Carlon Wire Safe Wireway and Wiring Trough shall be manufactured from gray precision extruded Polyvinyl Chloride (PVC) meeting UL 94 V-O requirements and shall be suitable for field painting.

The Carlon Wire Safe Wireway and Wiring Trough shall include base, cover, fittings, etc.

The Carlon Wire Safe Wireway and Wiring Trough shall provide all fittings required to form a complete, integrated surface raceway system. End caps shall be gasketed and shall have a NEMA Type 12 rating.

The Carlon Wire Safe Wireway and Wiring Trough shall provide raceway with the following cross sectional areas:

1. 2 x 2 - 3.165 in.^{2} (20.4 cm^2)
2. 3 x 3 - 7.378 in.^{2} (47 cm^2)
3. 4 x 4 - 13.694 in.^{2} (88 cm^2)
4. 6 x 6 - 31.871 in.^{2} (205 cm^2)

Fittings. Internal and external elbow shall be a fitting cover that snaps onto the main base. Flat elbows and flat tees shall be a fitting cover that snaps on to the main base. End caps shall be gasketed and NEMA Type 12 rated.

Installation. Install in accordance with the manufacturer's instructions, NFPA 70 and NECA standard.
Install base, cover, fittings, accessories, etc., as necessary for a complete system.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Cementing Instructions

1. Make a square cut using a miter box or precisely marked line on the wireway to provide a smooth connection.
2. Make certain surfaces to be bonded are free of dirt, dust, etc., by wiping them clean with a rag, and by removing sawcut burrs with a knife or rasp.
3. With a dauber, place a coating of Carlon Clear Primer on the wireway and its mating parts. Thoroughly coat the surfaces to be mated.
4. Allow the Carlon Clear Primer a few seconds to soften the PVC surface (the time may need to be adjusted, depending upon the temperature).
5. Apply a complete coating of Carlon Quick-Set Clear Cement to matching ends that will be joined.
6. Hold the parts in position by exerting pressure on the surfaces with clamps.
7. Allow 15 minutes or more before removing clamps.

Clear Primer

Part Number	Standard Size	Standard Carton Qty.	Standard Carton Wt.
VC9903	Pint Dauber Top	24	25.0 lbs.
VC9902	Quart Dauber Top	12	24.0 lbs.

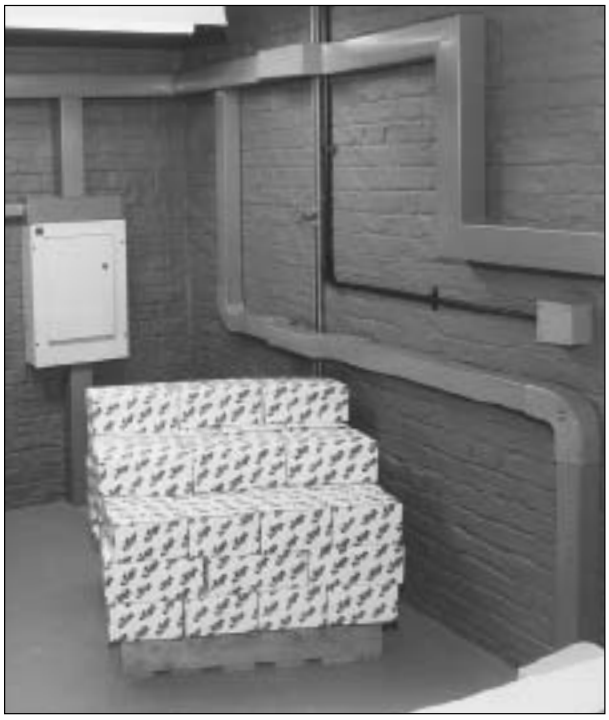
Cement and primer not needed for end caps.

All Weather Quick-Set Clear Cement

Part Number	Standard Size	Standard Carton Qty.	Standard Carton Wt.
VC9984	1/2 Pint Dauber Top	10	6.0 lbs.
VC9983	Pint Dauber Top	24	30.0 lbs.
VC9982	Quart Dauber Top	12	29.0 lbs.
VC9981P	Gallon Pour Top	6	53.0 lbs.

Expansion And Contraction

Wireway will expand or contract with variations in temperatures. To compensate for this expansion and contraction, during installation leave 0.25" gap at joint,glue only one side of internal coupling, or use external coupling with push rivets. All mounting holes should be drilled oversize, and fasteners should not be tightened fully to allow for expansion and contraction.



Materials

PVC Homopolymer (ASTM F1784)	minimum cell class 12354B
Specific Gravity (ASTM D792)	1.46
Thermal Conductivity (ASTM C177)	1.3 Btu/hr./ft.^{2}/^{0}F/in.
Heat Deflection Temperature @264 psi (ASTM D648)	70^{0}C
Tensile Strength (ASTM D638)	6000 psi
Flammability (UL 94)	V-O

Physical Properties

Size	Crush Strength[1] (lbs.)	Impact Strength[2] (ft.-lbs.)
2 x 2	650	40
3 x 3	500	30
4 x 4	500	40
6 x 6	600	50

1. Load on 6" long sample just prior to wall buckling; fully recoverable.
2. Five lb. weight with 1-1/4" dia. face at 73^0 F.

Dimensions

Outside Nominal Size (in.)	Outside Actual Size (in.)	Inside Height (in.)	Inside Width (in.)	Inside Area (in.^{2})	Wireway Thickness (in.)	Cover Thickness (in.)	Wt./Ft. (lb./ft.)
2 x 2	1.97 x 1.97	1.8	1.79	3.31	0.09	.08	0.6
3 x 3	2.96 x 2.96	2.8	2.76	7.94	0.10	.08	0.85
4 x 4	3.94 x 3.94	3.75	3.72	14.39	0.11	.08	1.48
6 x 6	5.91 x 5.91	5.67	5.67	13.48	0.12	.12	2.29

All information represents typical values and does not represent a minimum performance specification.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Wirefill Chart

Conductor Size AWG-MCM	Area of Conductor (sq. in.) A RFH-2, RH, RHH, ***RHW, ***SF-2	B TF, THW, †TW	C TFN, THHN, THWN	D XHHW, ††ZW	Wire Safe Wireway Size and Maximum Number of Conductors Allowed (Areas shown are 20% of the full interior cross sectional area of the wireway.) 2x2 (0.6 in.²) A	B	C	D	3x3 (1.5 in.²) A	B	C	D	4x4 (2.7 in.²) A	B	C	D	6x6 (6.4 in.²) A	B	C	D
18	.0167	.0088	.0062	–	36	68	96	–	89	170	241	–	161	306	435	–	383	727	1032	–
6	.0196	.0109	.0079	–	31	55	76	–	76	137	189	–	137	247	341	–	326	587	810	–
14	.0230	.0135	.0087	–	26	44	69	–	65	111	172	–	117	200	310	–	278	474	735	–
14	*.0327	–	–	–	18	–	–	–	45	–	–	–	82	–	–	–	195	–	–	–
14	–	†.0206	–	.0131	–	29	–	46	–	72	–	114	–	131	–	206	–	310	–	488
12	.0278	.0172	.0117	–	21	35	51	–	53	87	128	–	97	156	230	–	230	372	547	–
12	*.0384	–	–	–	16	–	–	–	39	–	–	–	70	–	–	–	166	–	–	–
12	–	†.0252	–	.0167	–	24	–	36	–	59	–	89	–	107	–	161	–	253	–	383
10	.0460	.0222	.0184	–	13	27	33	–	32	67	81	–	58	121	146	–	139	288	347	–
10	–	.0311	–	.0216	–	19	–	28	–	48	–	69	–	86	–	125	–	205	–	296
8	.0845	.0471	.0373	–	7	13	16	–	17	31	40	–	31	57	72	–	75	135	171	–
8	–	†.0598	–	.0456	–	10	–	13	–	25	–	32	–	45	–	59	–	107	–	140
6	.1238	.0819	.0519	.0625	4	7	11	10	12	18	28	24	21	32	52	43	51	78	123	102
4	.1605	.1087	.0845	.0845	4	6	7	7	9	13	17	17	16	24	31	31	39	58	75	75
3	.1817	.1263	.0995	.0995	3	5	6	6	8	11	15	15	14	21	27	27	35	50	64	64
2	.2067	.1473	.1182	.1182	3	4	5	5	7	10	12	12	13	18	22	22	30	43	54	54
1	.2715	.2027	.1590	.1590	2	3	4	4	5	7	9	9	9	13	16	16	23	31	40	40
1/0	.3107	.2367	.1893	.1893	2	2	3	3	4	6	7	7	8	11	14	14	20	27	33	33
2/0	.3578	.2781	.2265	.2265	1	2	2	2	4	5	6	6	7	9	11	11	17	23	28	28
3/0	.4151	.3288	.2715	.2715	1	1	2	2	3	4	5	5	6	8	9	9	15	19	23	23
4/0	.4840	.3904	.3278	.3278	1	1	1	1	3	4	4	4	5	6	8	8	13	16	19	19
250	.5917	.4877	.4026	.4026	1	1	1	1	2	3	3	3	4	5	6	6	10	13	15	15
300	.6837	.5581	.4669	.4669	–	1	1	1	2	2	3	3	3	4	5	5	9	11	13	13
350	.7620	.6291	.5307	.5307	–	–	1	1	1	2	2	2	3	4	5	5	8	10	12	12
400	.8365	.6969	.5931	.5931	–	–	1	1	1	2	2	2	3	3	4	4	7	9	10	10
500	.9834	.8316	.7163	.7163	–	–	–	–	1	1	2	2	2	3	3	3	6	7	8	8
600	1.1940	1.0261	.8791	.9043	–	–	–	–	1	1	1	1	2	2	3	3	5	6	7	7
700	1.3355	1.1575	1.0011	1.0297	–	–	–	–	1	1	1	1	2	2	2	2	4	5	6	6
750	1.4082	1.2252	1.0623	1.0936	–	–	–	–	1	1	1	1	1	2	2	2	4	5	6	5
800	1.4784	1.2908	1.1234	1.1499	–	–	–	–	1	1	1	1	1	2	2	2	4	4	5	5
900	1.6173	1.4208	1.2449	1.2668	–	–	–	–	–	1	1	1	1	1	2	2	3	4	5	5
1000	1.7530	1.5482	1.3623	1.3893	–	–	–	–	–	–	1	1	1	1	1	1	3	4	4	4
1250	2.2062	1.9532	–	1.7671	–	–	–	–	–	–	–	–	1	1	–	1	2	3	–	3
1500	2.5475	2.2751	–	2.0612	–	–	–	–	–	–	–	–	1	1	–	1	2	2	–	3
1750	2.8832	2.5930	–	2.3779	–	–	–	–	–	–	–	–	–	1	–	1	2	2	–	2
2000	3.2079	2.9013	–	2.6590	–	–	–	–	–	–	–	–	–	–	–	1	1	2	–	2

* Dimensions of RHH and RHW.
*** Dimensions of RHH and RHW without outer covering are the same as THW No. 18 through No. 10, solid as well as No. 8 and larger, stranded.
† Dimensions of THW in sizes No. 14 through No. 8. No. 6 THW and larger are same dimension as TW.
†† No. 14 through No. 2.

NOTES: 1) The ampacities of the conductors shall be reduced as shown in the table at right.
2) Refer to the National Electrical Code for ambient temperature correction factors.

Number of Conductors	Column A – Percent of Values In Tables as Adjusted for Ambient Temperature if Necessary	Number of Conductors	Column B** – Percent of Values In Tables as Adjusted for Ambient Temperature if Necessary
4 through 6	80	4 through 6	80
7 through 9	70	7 through 9	70
10 through 24*	70	10 through 20	50
25 through 42*	60	21 through 30	45
43 and above*	50	31 through 40	40
		41 through 60	35

* These factors include the effects of a load diversity of 50 percent. ** No diversity.

Carlon® Zip Box® Blue™ Switch and Outlet Boxes

Adjustable

Single Gang

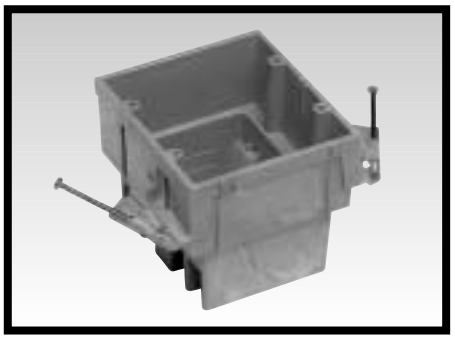
2, 3, 4 Gang

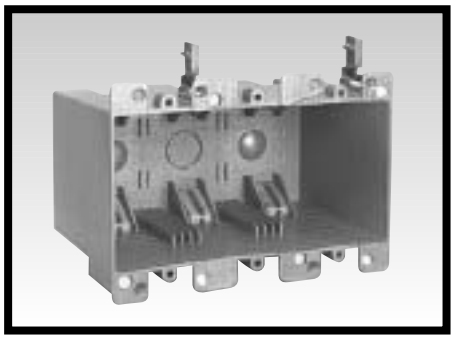
Old Work

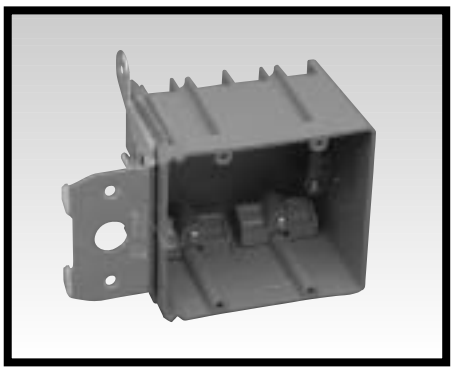
Ceiling Boxes

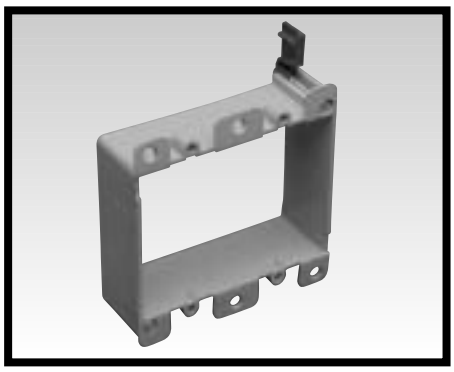
SuperBlue™

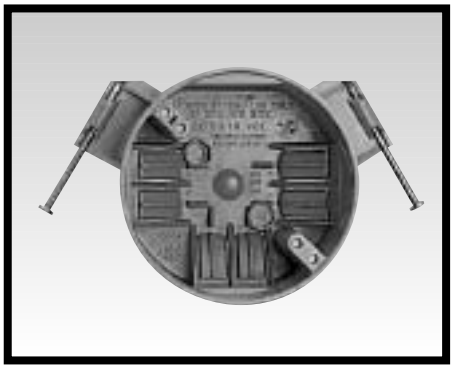
Covers

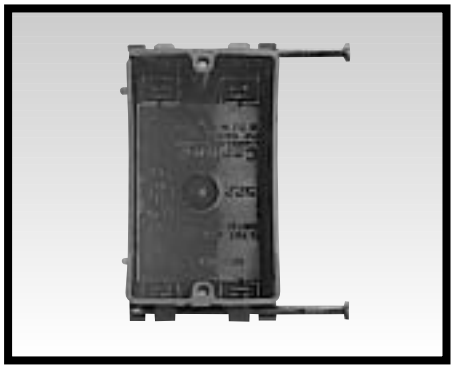












CarIon® Zip Box® Blue™

nonmetallic switch and outlet boxes – the contractor's choice for easy installation. Carlon has long been the leader with the world's broadest line of nonmetallic, nonconductive wiring management products designed for easier installation, greater performance, and lower installation cost. And that includes our full line of Zip Box® Blue™ nonmetallic switch and outlet boxes. Designed for use with nonmetallic sheathed cable in accordance with Article 314 of the National Electrical Code®, they make fast work of any residential or light commercial application. Take a closer look, and you'll see more reasons why they're the right choice for you.

Features

- UL Listed, File No. E42728, for use as indicated in Article 314 of the NEC.
- UL Classified for fire resistance, File No. R8326. Reference UL Electrical Construction Equipment Directory, in product category QBWY or the UL Fire Resistance Directory, for two-hours or less classification period.
- UL Classified for fire resistance Category CEYY, in a two-hour fire resistive wall within the same partition cavity on opposite sides of the wall. Requires the use of mineral wool batt insulation on putty pad when separation is less than 24".
- Refer to International Building Code Section 712.3.2 Exception 2 for other separation options in fire resistive wall assemblies.
- UL Classified Report, File No. R8326, covers use in two-hour or less fire resistive wall and floor-ceiling assembly.

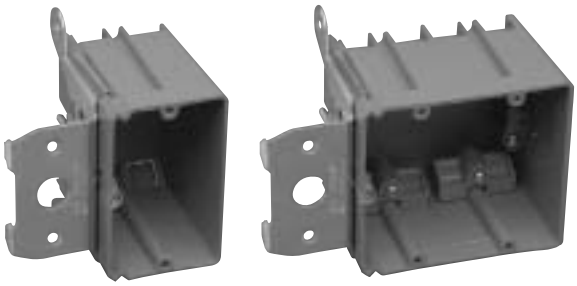
Understanding Zip Box® Blue™ Part Numbers

First Position	Second Position	Third Position	and/or	Fourth Position	Fourth or Fifth Position	and/or	Sixth Position
_____	_____	(_____		_____)	_____		_____
B-Zip Box **BH-SuperBlue**	**Gang Size** **1,2,3, or 4**	**Available cubic inches (ml) within the box**			**Securing Methods** **A** = Nail On **B** = 3/8" – 5/8" (9.5mm – 15.9mm) Wallboard Bracket for Wood or Steel Studs **H** = 14 1/4" – 23 1/2" (362mm – 596.9mm) Adjustable Bar Hanger **K** = 18 1/4" – 26 3/4" (463.6mm – 679.5mm) Adjustable Bar Hanger **L** = Metal "L" Bracket for Ceilings **P** = Standard Nail On Box w/ Grounding Lug **R** = Old Work Box, includes Integral Clamps **S** = Screw On		**Grounding Features** **G** = Grounding Lug included **P** = Grounding Lug included

For Example:

B 1 18 A

(**B** = Zip Box Blue, **1** = single gang, **18** = cubic inch (295 ml) capacity, **A** = Nail On.)



The Carlon Adjust-A-Box features a patented design that allows the box to be adjusted to most wall thicknesses with the turn of a screw. To install, simply clip the bracket onto the stud, secure with two screws to ensure the box won't move, then turn the adjustment screw clockwise or counterclockwise, and adjust the box flush with the wall covering.

The Adjust-A-Box is available in one- and two-gang versions, and by removing the box from the bracket the one-gang can easily be upgraded to a two-gang, an ideal feature for old work applications.

The Carlon Adjust-A-Box achieves professional results every time.

Features

- Adjusts to any wall thickness
- Ideal for new work or retrofit applications
- Available in backed box or backless bracket designer
- One- and two-gang versions
- Upgrades made easy
- Nonmetallic and durable
- UL Listed
- Meets NEMA OS-2
- 1 3/4" Adjustability

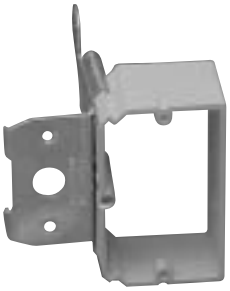


B121ADJ

High Voltage

UL LISTED E42728

Part No.	Volume (cu. in.)	Description	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
B121ADJ	21	Single Gang Adjustable Wall Box	3 7/8"W x 3 3/4"H x 3 3/8"D	24	10
B234ADJC	34	Double Gang Adjustable Wall Box w/ Range Knockout	5 5/8"W x 3 5/8"H x 3"D	16	8.5
B234ADJ	34	Double Gang Adjustable Wall Box	5 5/8"W x 3 5/8"H x 3"D	16	8.5

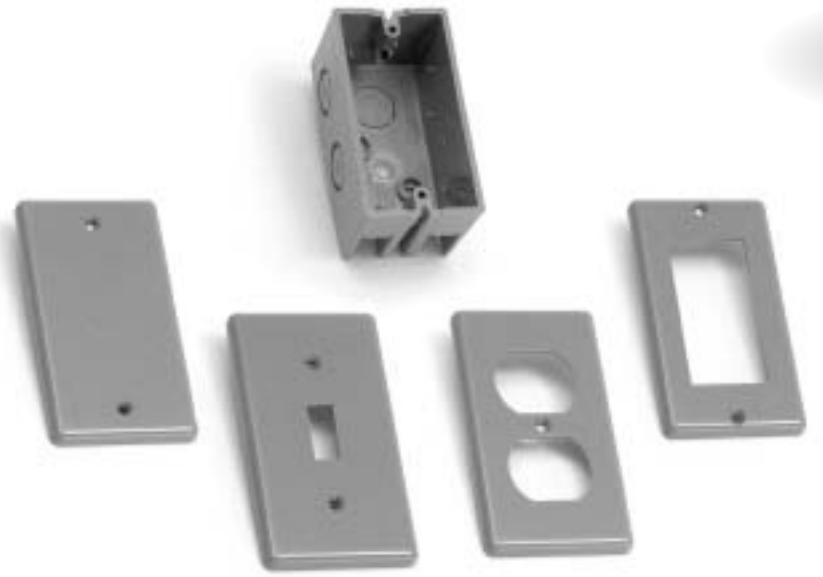


SC100ADJC

Low Voltage

c UL us LISTED E216492

Part No.	Description	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100ADJC	Single Gang Adjustable Backless Bracket	3 7/8"W x 3 3/4"H	24	7.5
SC100ADJC	Double Gang Adjustable Backless Bracket	5 5/8"W x 3 5/8"H	20	6.9



The Carlon Handy Box is a non-metallic switch and outlet box specifically designed for use with nonmetallic conduit systems and nonmetallic sheathed cabling.

Unlike metal boxes, the Carlon Handy Box has two integral cable clamps. These clamps hold nonmetallic cable firmly in place without the need for separate clamps... simply push the wire into the clamp-opening, and the cable is held securely in place. The Carlon Handy Box also comes with six 1/2" knockouts on the sides and back for easier wiring and a variety of mounting options.

The Carlon Handy Box is constructed out of a thermoplastic material, which resists rust and corrosion. The Carlon Handy Box can be used with most wiring devices including ground fault circuit interrupters (GFCI). The Handy Box is designed to accept standard metal covers or the NEW Carlon nonmetallic Handy Box covers.

The Carlon Handy Box covers are made from a durable polycarbonate material for extra strength and durability. They're available in four styles including a duplex receptacle, toggle switch, ground fault circuit interrupter (GFCI), and a blank cover (the blank cover has a molded-in 1/2" knockout in the center). Corrosion resistant stainless screws are provided with each cover.

Features

- Flexible, can be used for many applications
- Thermoplastic construction that will not rust or conduct electricity
- Built in cable clamps to hold wire firmly in place
- Six knockouts for easier wiring
- Four cover styles – blank, toggle switch, duplex receptacle, and GFCI
- UL Listed (E42728) and two hour fire classified for walls and ceilings



Box

UL LISTED E42728

Part No.	Description	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
B112HB	Handy Box – Single Gang	1 7/8" x 4" x 2 1/8"	50	10.96

Covers

UL LISTED E42728

Part No.	Description	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HB1BL	Single Gang Nonmetallic Cover – Blank	.25" x 4.30" x 2.38"	25	1.0
HB1SW	Single Gang Nonmetallic Cover – Toggle Switch	.25" x 4.30" x 2.38"	25	1.0
HB1DP	Single Gang Nonmetallic Cover – Duplex Receptacle	.25" x 4.30" x 2.38"	25	1.0
HB1GF	Single Gang Nonmetallic Cover – GFCI Cover	.25" x 4.30" x 2.38"	25	1.0

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Switch/Outlet Boxes

UL LISTED E42728

- Meets NEMA OS-2
- UL Listed to UL 514C


B108B-UPC


B118A


B120A-UPC


B118B-UPC


B122A-UPC

Single Gang

Part No.	Volume (cu. in.)	Description	Size	Knockouts	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
B108B-UPC	8	Single Gang Bracketed Shallow Box	1 1/4"D x 2 3/8"W x 3 5/8"L	–	25	3
•B118A	18	Single Gang with captive nails	2 7/8"D x 2 1/4"W x 3 3/4"L	4 (2 each end)	100	22
•B120A-UPC	20	Single Gang with captive nails	3 1/4"D x 2 1/4"W x 3 7/8"L	4 (2 each end)	100	24
•B118B-UPC	18	Single Gang with bracket for 3/8" to 5/8" wallboard – steel & wood stud mounting	2 15/16"D x 2 1/4"W x 3 3/4"L	4 (2 each end)	50	10
•B122A-UPC	22	Single Gang with captive nails	3 1/2"D x 2 1/4"W x 3 3/4"L	4 (2 each end)	100	25

• Suitable for masonry walls

Low Voltage Backless Bracket



c UL us LISTED E216492

Open-backed to easily accommodate the bend radiuses required for low voltage cabling and deep devices such as volume controls, and is designed to fit a standard one-gang faceplate. It also features an easy nail-on mounting or screw-in bracket, while the hard shell provides increased durability and no racking. Resi-Rings accept 3/4", 1", and 1 1/4" Resi-Gard.

Part No.	Vol. cu. in.	Description	Size	Knockouts	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100A	–	Single Gang Backless Bracket	2.32" W x 3.73"L	–	24	7.5

Low Voltage Add-On Bracket



c UL us LISTED E216492

This low voltage bracket provides a low voltage outlet next to a previously installed high voltage outlet. Great for both new construction and rework, it attaches easily to most electrical boxes, and is designed to fit a standard two-gang faceplate. Resi-Rings accept 3/4" Resi-Gard only

Part No.	Vol. cu. in.	Description	Size	Knockouts	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100SC	–	Single Gang Add-On Bracket	1.80" W x 3.68"L	–	24	2.3

Switch/Outlet Boxes

LISTED E42728

- Meets NEMA OS-2
- UL Listed to UL 514C


B232A-UPC


B232B-UPC


B344AB


B455A-UPC


B455AH

Two-Gang

Three-Gang

Four-Gang

Part No.	Volume (cu. in.)	Description	Size	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
•B232A-UPC	32	Two Gang with captive nails	3"D x 4"W x 3 3/4"L	8 (4 each side)	50	16
B232B-UPC	32	Two Gang with bracket for 3/8"to 5/8" wallboard – steel or wood stud mounting	3"D x 4"W x 3 3/4"L	8 (4 each side)	50	20
•B344AB	44	Three Gang with captive nails and bracket support	2 11/16"D x 3 3/4"W x 5 5/8"L	12 (6 each side)	30	14
•B455A-UPC	55	Four Gang with captive nails and bracket support	2 1/2"D x 3 7/10"W x 7 3/5"L	16 (8 each side)	25	14
•B455AH	55	Four Gang with captive nails, bracket support, and Hanger Bar	2 1/2"D x 3 7/10"W x 7 3/5"L	16 (8 each side)	25	18

• Suitable for masonry walls


B418A-UPC


B432A-UPC

LISTED E42728

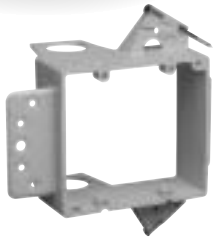
4" Square

Part No.	Volume (cu. in.)	Description	Size	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
•B418A-UPC	18	Four Square with captive nails	1 5/8"D x 4"W x 4"L	10 (3 top, 3 bottom, 2 each side)	75	19
•B432A-UPC	32	Four Square with captive nails	2 5/8"D x 4"W x 4"L	10 (3 top, 3 bottom, 2 each side)	50	16
•B432AR-UPC	32	Four Square with captive nails	2 5/8"D x 4"W x 4"L	10 (3 top, 3 bottom, 2 each side)	8	3

• Suitable for masonry walls

Low Voltage Backless Bracket

c UL us LISTED E216492



Open-backed to easily accommodate the bend radiuses required for low voltage cabling and deep devices such as volume controls, and is designed to fit a standard two-gang faceplate. It also features an easy nail-on mounting or screw-in bracket, while more hard shell provides increased durability and no racking. Accepts 3/4" Resi-Gard only.

Part No.	Vol. cu. in.	Description	Size	Knockouts	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC200A	–	Two Gang Backless Bracket	5.35" W x 3.81"L	–	24	7.7

Old Work Boxes

- Meets NEMA OS-2
- UL Listed to UL 514C



B108R-UPC



B114R-UPC



B120R

UL LISTED E42728

One-Gang

Part No.	Volume (cu. in.)	Description	Size	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
†B108R-UPC	8	Single Gang Flanged Shallow Box	1 1/4"D x 2 3/8"W x 3 5/8"L	–	25	3
•†B114R-UPC	14	Single Gang Old Work Wall Case 2 Zip-Mount™ retainers and mounting ears	2 3/4"D x 2 1/4"W x 4 1/8"L	4 (2 each end)	50	10
•†B114RR-UPC	14	Single Gang Old Work Wall Case 2 Zip-Mount™ retainers and mounting ears	2 3/4"D x 2 1/4"W x 4 1/8"L	4 (2 each end)	25	5
•†B120R	20	Single Gang with captive nails 2 Zip-Mount™ retainers and mounting ears	3 5/8"D x 2 5/16"W x 4 1/8"L	4 (2 each end)	50	12

• Suitable for masonry walls
† Not UL Classified for Fire Resistance

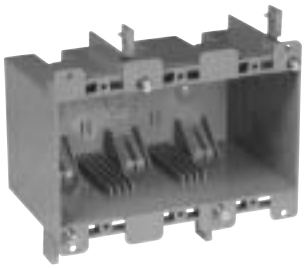


UL LISTED E42728

Two-Gang

Part No.	Volume (cu. in.)	Description	Size	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
•†B225R-UPC	25	Two-Gang Old Work Case 2 Zip-Mount™ retainers and mounting flanges	2 3/4"D x 3 1/8"W x 3 15/16"L	6 (3 each side)	30	8

• Suitable for masonry walls
† Not UL Classified for Fire Resistance

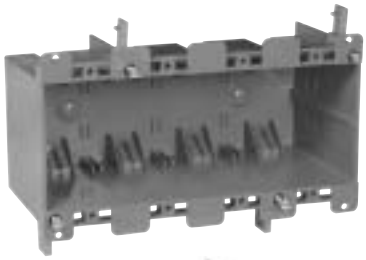


UL LISTED E42728

Three-Gang

Part No.	Volume (cu. in.)	Description	Size	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
•†B355R	55	Three Gang Old Work Box with mounting ears	3.69"D x 2.79"W x 5.72"L	6	6	3

• Suitable for masonry walls
† Not UL Classified for Fire Resistance



UL LISTED E42728

Four-Gang

Part No.	Volume (cu. in.)	Description	Size	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
•†B468R	68	Four Gang Old Work Box with mounting ears	3.56"D x 2.89"W x 7.57"L	8	6	4.03

• Suitable for masonry walls
† Not UL Classified for Fire Resistance



UL LISTED E42728

Round Old Work Box

Part No.	Volume (cu. in.)	Description	Size	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
†B618R-UPC	18	Round Old Work Case 3 Zip-Mount™ retainers	4 1/4"Dia.	4	100	24
†B618RP-UPC	18	Round Old Work Case 3 Zip-Mount™ retainers & Ground Lug	4 1/4"Dia.	4	100	26

† Not UL Classified for Fire Resistance or used for Fixture Support in the Ceiling.

Old Work Backless Brackets



Box Extender

LISTED
E42728

Part No.	Volume (cu. in.)	Description	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
B1EXTB	N/A	Single Gang Box Extender	2 1/4" x 3 1/4"	25	3

Low Voltage Old Work Brackets



Single Gang

LISTED
E216492

Part No.	Volume (cu. in.)	Description	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
†SC100RR	N/A	Single Gang Backless Old Work Bracket	2 1/4" x 3 1/4"	12	1.4

† Not UL Classified for Fire Resistance



Two-Gang

LISTED
E216492

Part No.	Volume (cu. in.)	Description	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
†SC200RR	N/A	Two-Gang Backless Old Work Bracket	3.92" x 4.00"	6	.9

† Not UL Classified for Fire Resistance

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Ceiling Boxes

All ceiling boxes are produced from a high heat-resistant material developed specifically for fixture support applications.

- Meets NEMA OS-2
- UL Listed to UL 514C



B518P-UPC

3/0

LISTED E42728

Part No.	Volume (cu. in.)	Description	Diameter	Depth	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
• B518A-UPC	18	Ceiling Box with captive nails	3"	2 3/4"	4	75	19
• B518P-UPC	18	Ceiling Box with captive nails Ground lug and screw attached	3"	2 3/4"	4	75	20

• Listed for fixture support up to 50 lbs.



B520A-UPC



B520P-UPC



B620L-UPC



B720-SHK
35 lbs. maximum fan weight

LISTED E42728

3/0 - 4/0 Combination

Part No.	Volume (cu. in.)	Description	Diameter	Depth	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
• B520A-UPC	20	Ceiling Box with captive nails Fixture spacing for 2 3/4" and 3"	4"	2 1/4"	6	75	18
• B520P-UPC	20	Ceiling Box with captive nails Ground lug and screw attached Fixture spacing for 2 3/4" and 3 1/2"	4"	2 1/4"	6	75	18
• B620L-UPC	20	Ceiling Box with metal L bracket Fixture spacing for 2 3/4" and 3 1/2"	4"	2 1/4"	6	100	31
• B720-SHK	20	Ceiling Box Outlet Box with mounting screws	4"	2 1/4"	6	18	5

• Listed for fixture support up to 50 lbs.



35 lbs. maximum fan weight

4/0

LISTED E42728

Part No.	Volume (cu. in.)	Description	Diameter	Depth	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
• B708-SHK	8	Shallow Ceiling Fan Outlet Box with mounting screws	4"	5/8"	1	18	3

• Listed for fixture support up to 50 lbs.

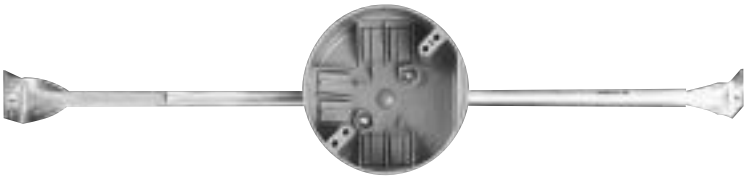
Ceiling Boxes with Bar Hanger

- Meets NEMA OS-2

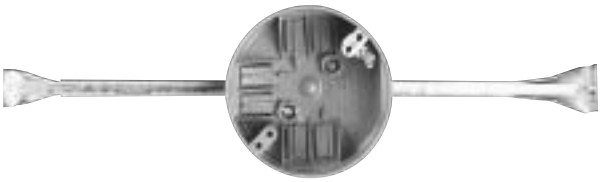
UL LISTED
E42728



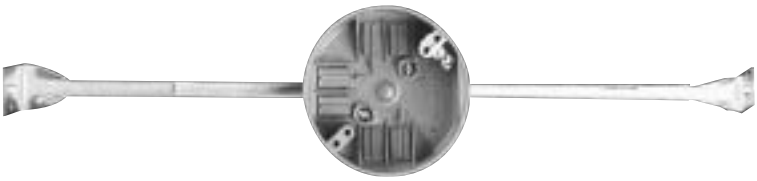
B620H-UPC



B620K



B620HG-UPC



B620KG-UPC

3/0 - 4/0 Combination

Part No.	Volume (cu. in.)	Description	Diameter	Depth	Integral Clamps	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
• B620H-UPC	20	Ceiling Box with 14 1/4" - 23 1/2" adjustable bar hanger Fixture spacing for 2 3/4" and 3 1/2"	4"	2 1/4"	6	75	43
• B620K	20	Ceiling Box with 18 1/4" - 26 3/4" adjustable bar hanger Fixture spacing for 2 3/4" and 3 1/2"	4"	2 1/4"	6	75	46
• B620HG-UPC	20	Ceiling Box with 14 1/4" - 23 1/2" adjustable bar hanger Ground lug and screw attached Fixture spacing for 2 3/4" and 3 1/2"	4"	2 1/4"	6	75	44
• B620KG-UPC	20	Ceiling Box with 18 1/4" - 26 3/4" adjustable bar hanger Ground lug and screw attached Fixture spacing for 2 3/4" and 3 1/2"	4"	2 1/4"	6	75	46
• B620DC	20	Ceiling Box with 24" T-Grid bar hanger Fixture spacing for 2 3/4" and 3 1/2"	4"	2 1/4"	6	16	10

• Listed for fixture support up to 50 lbs.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® SUPERBLUE™



The Carlon® SuperBlue™ Hard Shell Boxes combine the features of the hard shell thermoset box and the thermoplastic PVC style box to create a "new" rigid nonmetallic wiring box. Molded out of specially formulated thermoplastic material, Carlon SuperBlue boxes are so strong they won't crack or break, even in extreme environments. So rigid, they resist flexing and hold their shape even under the worst conditions.

They provide the largest wirefill capacity in their class, and come with molded-in nailing flanges as well as molded-in clamps to make installation faster. Carlon SuperBlue boxes are lightweight, noncorrosive and nonconductive. They are designed to nest inside one another so they take up less shelf space and are easier to transport to job sites.

Features

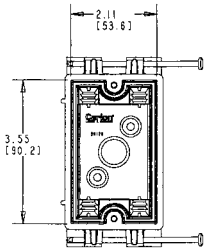
- Largest wirefill capacity in their class
- Won't crack or break in extreme environments
- Resist flexing
- Hold their shape
- Molded-in flanges and clamps
- Faster installation
- Lightweight
- Noncorrosive and nonconductive
- Nest inside one another
- UL Listed to UL 514C
- UL Classified for two hour or less fire wall assemblies
- Meets NEMA OS-2

Wall Boxes

UL LISTED
E42728

Single Gang

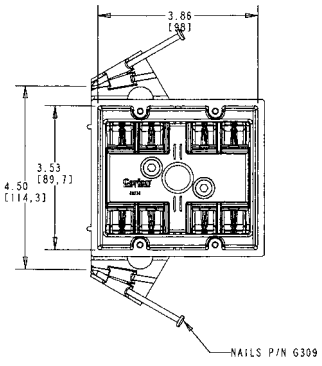




Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
BH122A	Single Gang	22 cu. in.	3.63	100	31.3
BH122S	Single Gang with Screws	22 cu. in.	3.63	100	31.3

Two Gang



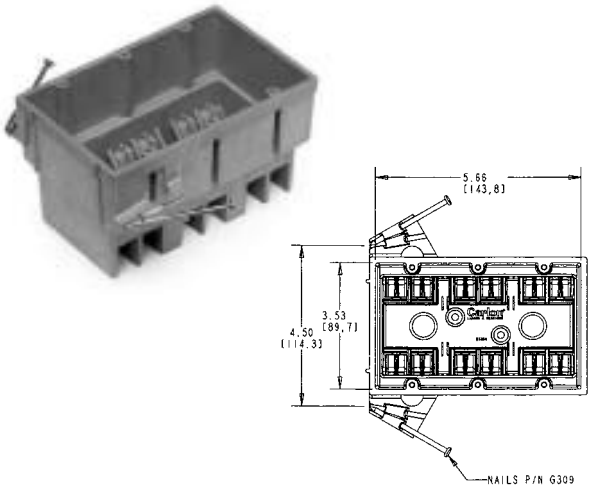


Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
BH235A	Two Gang	35 cu. in.	3.50	48	21.3
BH235S	Two Gang with Screws	35 cu. in.	3.50	48	21.3

Wall Boxes

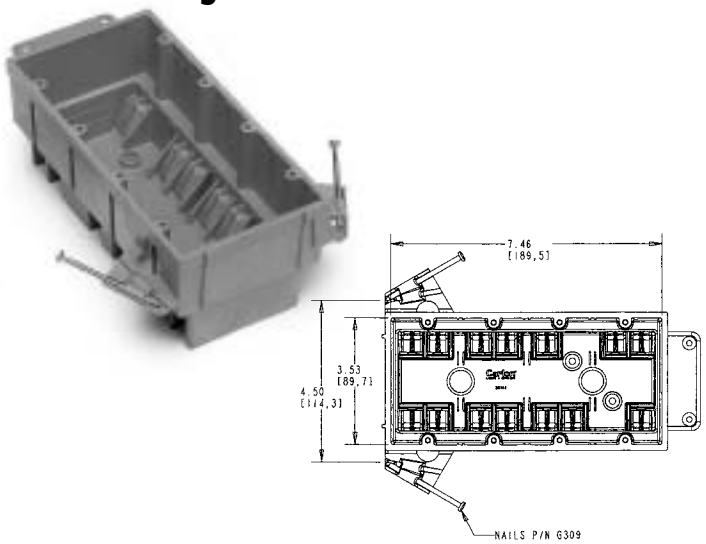
UL LISTED E42728

Three Gang



Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
BH353A	Three Gang	53 cu. in.	3.50	24	14.0
BH353S	Three Gang with Screws	53 cu. in.	3.50	24	14.0

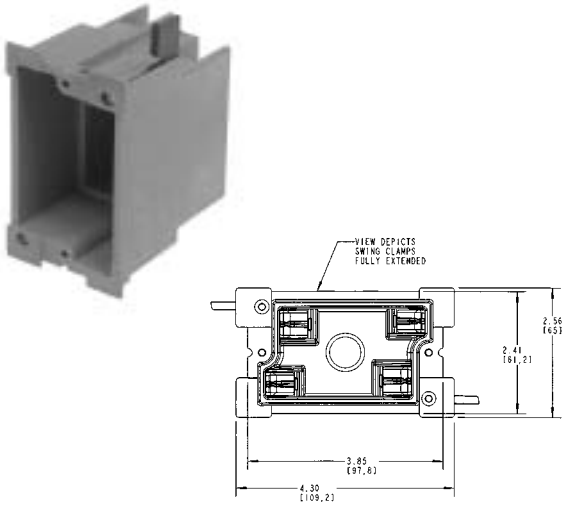
Four Gang



Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
BH464A	Four Gang	64 cu. in.	3.18	24	17.4
BH464S	Four Gang with Screws	64 cu. in.	3.18	24	17.4

Old Work Boxes

Single Gang Old Work

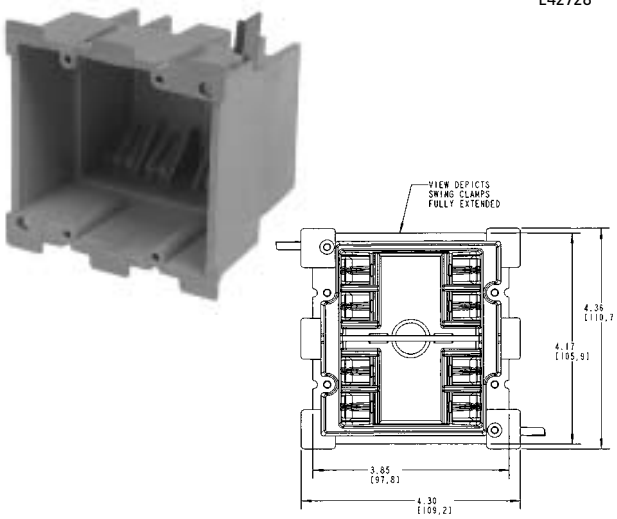


Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
†BH118R	Single Gang Old Work	18 cu. in.	3.64	36	10.9

† Not UL Classified for Fire Resistance

Two Gang Old Work

UL LISTED E42728



Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
†BH234R	Two Gang Old Work	34 cu. in.	3.59	18	7.71

† Not UL Classified for Fire Resistance

Low Voltage Divider Plate





Carlon SuperBlue boxes are easily divided into both high and low voltage use. Just insert the Low Voltage Divider Plate, and you're ready to go!

The National Electrical Code allows electrical conductors to share an outlet box when the conductors and signaling or communication cables are separated by a barrier within the box.

Features

- Transforms a high voltage box into an accepted high and low voltage box
- Orange color signifies low voltage installations
- Designed to be used with Carlon's 2-, 3-, and 4- gang SuperBlue Boxes
- UL Listed
- Noncorrosive and nonconductive
- Great for situations requiring a high/low voltage fire-classified box



Part No.	Description	cu. in.	Std. Ctn. Qty.	Std. Ctn. Wt.
SCDIV	Low Voltage Divider Plate	-	50	2.2

UL LISTED E42728

Installation





Ceiling Box

3/0 Round Old Work Box

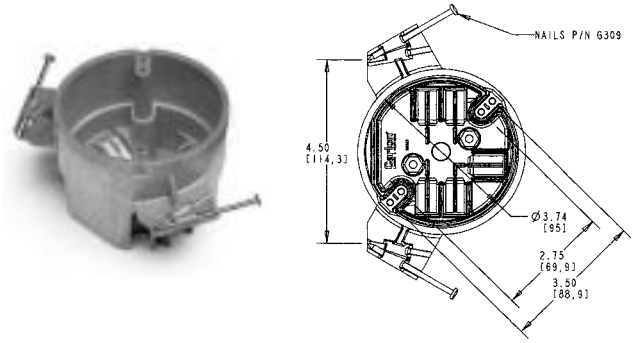


Part No.	Description	Capacity	Std. Ctn. Qty.	Std. Ctn. Wt.
BH614R	3/0 Round Old Work Box	14 cu. in.	20	5.0
BH614RP	Four Gang with Screws w/Ground Lug	14 cu. in.	20	5.0

3/0 - 4/0 Combination Ceiling Boxes

UL LISTED
E42728

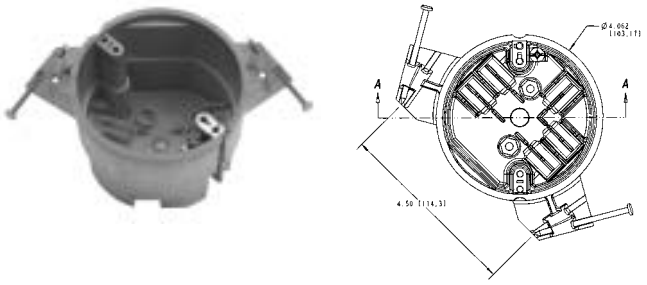
Ceiling Box



Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
• BH525A	Ceiling Box	25 cu. in.	3.00	48	16.3
• BH525S	Ceiling Box with Screws	25 cu. in.	3.00	48	16.3

• Listed for fixture support up to 50 lbs.

Ceiling Box with Grounding Lug

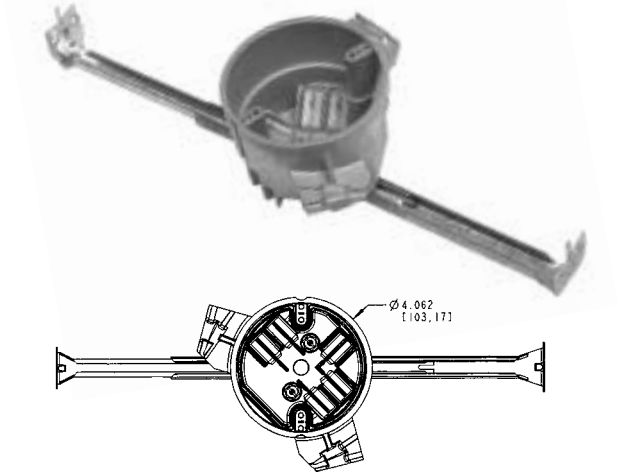


Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
• BH525P	Ceiling Box with Grounding Lug	25 cu. in.	3.00	24	9.4
• BH525SP	Ceiling Box w/Grounding Lug w/Screws	25 cu. in.	3.00	24	9.4

• Listed for fixture support up to 50 lbs.

Ceiling Box with Hanger Bar

***Hanger Bar adjusts from 11 1/2" to 18 1/2"**

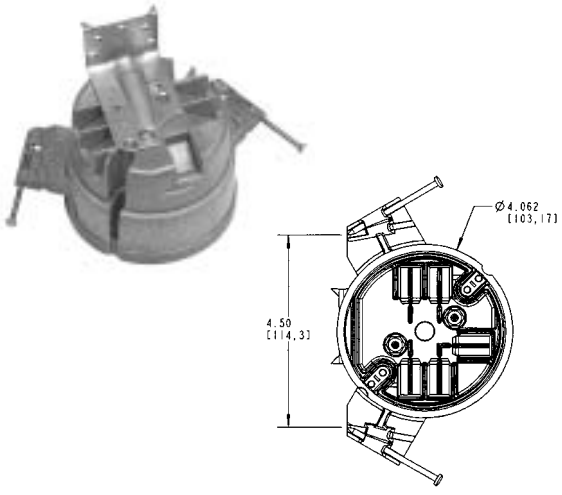


Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
• BH525H	Ceiling Box with Hanger Bar	25 cu. in.	2.95	20	13.2
• BH525HP	Ceiling Box with Hanger Bar with Grounding Lug	25 cu. in.	2.95	20	13.2

• Listed for fixture support up to 50 lbs.

Ceiling Fan Box

Listed for fan support up to 35 lbs.

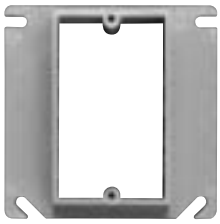


Part No.	Description	Capacity	Depth	Std. Ctn. Qty.	Std. Ctn. Wt.
• BH525L	Ceiling Fan Box with Nails	25 cu. in.	3.06	24	12.2
• BH525LP	Ceiling Fan Box with Grounding Lug with Nails	25 cu. in.	3.06	24	12.2

• Listed for fan support up to 35 lbs. and fixture support up to 50 lbs.

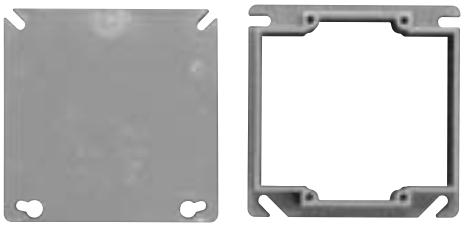
Covers

UL LISTED E42728



Single-Gang – Covers

Part No.	Rise	Cu. in.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
A410	1/2"	3.5	100	8.0
A411	5/8"	4.2	50	6.0
A412	3/4"	5.0	50	6.0
A413	1"	6.6	40	5.0
A414	1 1/4"	8.1	30	5.0



Two-Gang – Covers

Part No.	Rise	Cu. in.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
A400	Blank	–	100	9.0
A420	1/2"	6.1	75	6.0
A421	5/8"	7.4	50	4.2
A422	3/4"	8.8	50	4.8



Round Plaster Ring

Listed for fixture support up to 50 lbs.

Part No.	Rise	Vol. (cu. in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
A471	1/2"	3.2	100	3.3
A472	5/8"	4.0	100	3.8



Round Blank Cover

Part No.	Rise	Vol. (cu. in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
A470D	Blank with 1/2" KO	–	100	4.7
E460R-CAR	Blank	–	35	2.2

Ceiling Box Cover – White

Part No.	Rise	Vol. (cu. in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
CPC4WH	White Ceiling Box Cover	–	12	1.3

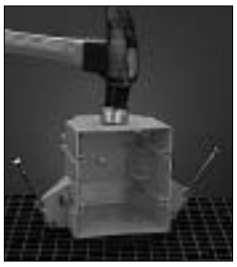
General Features



Carlon Trademark Blue Color



Ceiling boxes with special engineered high heat resistant material for fixture support



High Impact PVC Wall Boxes



Nonconductive...no need to ground box



Lightweight



Engraved NEC Wire Fill



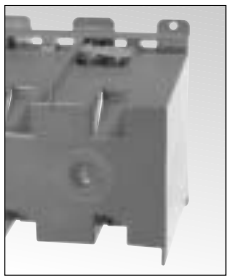
Leveling Guides



Clean Easy Knockout (Single Gang Only)

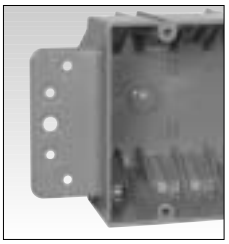


Pre-installed Angled Nails



Integral Clamps (Multi-Gang Boxes)

Special Nail-on and Bracket Boxes



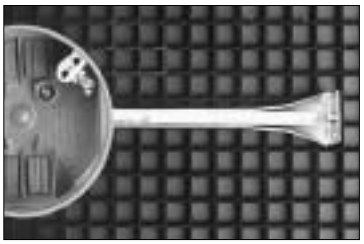
Type B



Type L



Type H



Type K

Zip Clamp™ Easy to wire, simply...


Align Wire


Push Through


Secure Clamp

Grounding Lugs (No need to ground box itself) Easy to wire...


Pre-installed Lugs


Make Grounding Connection

Old Work Boxes Easy to rework, simply...


Trace Box


Cut on Lines


Insert Wires


Place Box in Wall


Secure Box in Wall

Carlon® Flexible Raceway Systems

Plenum-Gard®

Riser-Gard®

Hal-Free Riser-Gard®

General Purpose











Applications: Plenum, Riser, and General Purpose

c UL us LISTED
E151168

FT-6 Rated

Plenum-Gard is a UL Listed non-metallic corrugated flexible conduit for use in Plenum, Riser and General Purpose applications.

Plenum-Gard is manufactured from PVDF resin, which is extremely durable and resistant to abrasion and mechanical damage before/after cable installation.

Plenum-Gard is listed to UL 2024 in accordance with the National Electrical Code for Plenum, Riser, General Purpose, and other cabling optical fiber /telecommunication applications as defined in Articles 725, 770, 800 and 820.

Important: Installed cables must be plenum rated and the UL Listing must be printed on the product. Abandoned cables MUST be removed (Reference NEC).

Technical Info:

UL Standard 2024	Value
Maximum Flame Propagation	5 ft.
Max. Peak Optical Smoke Density	0.5
Max. Average Optical Smoke Density	0.15

- Storage -4°F to 158°F
- Handling -4°F to 104°F
- No UV protection (not suitable for outdoor use)
- Do NOT store outside

NEW 1/2" & 3/4" with tape

Standard Stock – Reels

	Color	Part No.	Min. Pull Tape	Reel Size (F x W)	Reel Type	Reel Length	Wt. (lbs.)	Wt. per 100 ft. (lbs.)
3/4"	Orange	CE4X1-1000	Empty	36" x 24"	W	1000	35	8
	Orange	CE4X1-1000S	Empty	36" x 24"	W	1000	35	8
1"	Orange	CF4X1C-500	900 lb.	36" x 24"	W	500	35	10
	Orange	CF4X1C-1000	900 lb.	48" x 32"	W	1000	90	10
	Orange	CF4X1C-1500	900 lb.	48" x 32"	W	1500	90	10
	Orange	CF4X1C-5200	900 lb.	66" x 41"	W	5200	265	10
	Orange	CF4X1C-6500	900 lb.	72" x 41"	W	6500	302	10
	Orange	CF4X1C-8000	900 lb.	82" x 41"	W	8000	375	10
1 1/4"	Orange	CG4X1C-500	900 lb.	36" x 24"	W	500	35	16
	Orange	CG4X1C-900	900 lb.	48" x 32"	W	900	90	16
	Orange	CG4X1C-1600	900 lb.	48" x 46"	W	1600	105	16
	Orange	CG4X1C-3200	900 lb.	66" x 41"	W	3200	265	16
	Orange	CG4X1C-6500	900 lb.	96" x 41"	W	6500	700	16
	Orange	CG4X1-900S	Empty	48" x 32"	W	900	90	16
1 1/2"	Orange	CH4X1C-350	900 lb.	48" x 32"	W	350	90	20
	Orange	CH4X1C-1200	900 lb.	48" x 46"	W	1200	105	20
	Orange	CH4X1C-4000	900 lb.	82" x 41"	W	4000	375	20
2"	Orange	CJ4X1C-225	900 lb.	48" x 32"	W	225	90	23
	Orange	CJ4X1C-700	900 lb.	48" x 46"	W	700	105	23
	Orange	CJ4X1C-2000	900 lb.	82" x 41"	W	2000	375	23
	Orange	CJ4X1C-2800	900 lb.	82" x 41"	W	2800	375	23

W = Wood

Features:

- For use in Plenum areas per Articles 725, 770, 800 and 820.
- Sizes 1/2" through 2"
- Pre-installed pull tape available in sizes 1/2" through 2"
- Outside Diameters meet IPS Dimensions
- UL Listed raceway meeting UL 2024
- Footage sequentially marked
- Single peak design

Standard Stock – Coils

	Color	Part No.	Pull Tape	Coil Length (ft.)	Wt. per 100 ft. (lbs.)
3/4"	Orange	CE4X1-350*	Empty	350	8
1"	Orange	CF4X1C-100*	900 lb.	100	10
	Orange	CF4X1C-250*	900 lb.	250	10
	Orange	CF4X1-250	Empty	250	10
	Orange	CF4X1-250S*	Empty	250	10
1 1/4"	Orange	CG4X1C-200*	900 lb.	200	16
1 1/2"	Orange	CH4X1C-150*	900 lb.	150	20
2"	Orange	CJ4X1C-100*	900 lb.	100	23

* Overnight Shippable

Specifications

Size	I.D. Min. Ref.	Min. O.D.	Max. O.D.	Min. Bend Radius
1/2"	.60	.815	.835	2"
3/4"	.74	1.025	1.045	2"
1"	1.00	1.292	1.312	3"
1 1/4"	1.35	1.630	1.650	3"
1 1/2"	1.50	1.868	1.888	4"
2"	2.00	2.329	2.349	4"

Custom Orders

How to Build a Part Number

Position 1 Product	Position 2 Size	Position 3 Configuration	Position 4 Wall	Position 5 Color	Position 6 Pull Line	Position 7 Length
C = Plenum-Gard	D = 1/2" E = 3/4" F = 1" G = 1 1/4" H = 1 1/2" J = 2"	4 = Corrugated	X = Standard	1 = Orange 2 = Black 3 = Gray 4 = White 5 = Blue 7 = Yellow 8 = Red	C = 900 lb. Tape	Example -1000 = Feet -1000S = 1000 Feet Split

- Custom Orders are not returnable
- Custom lengths are available in minimum order quantities of 1000 ft.
- Custom color runs are available in minimum order quantities of 10,000 ft.

Options:

- Color: Black, Blue, Gray, Red, White and Yellow
- Two, three, or four way parallel
- Split Duct
- Custom print line

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com



c UL us LISTED
E151168

FT-4 Rated

Applications: Riser and General Purpose

Riser-Gard is a nonmetallic flexible raceway for use in Riser and General Purpose applications. Riser-Gard is UL Listed and is available with tape pre-installed.

Riser-Gard is listed to UL 2024 Standard for Riser Applications or optical fiber/communications raceways.

Riser-Gard is listed to UL 2024 in accordance with the National Electrical Code per Articles 725, 770, 800 and 820 for Riser, General Purpose, and other cabling optical fiber/telecommunication applications. Riser-Gard is suitable for use in vertical runs in a shaft or between floors, as well as areas other than the plenum.
Important: Installed cables must be of suitable rating for the application.

Technical Info:

UL Listed to 2024	Test Method	Maximum Value
Maximum Flame Propagation	UL 2024	6.0 ft.
Maximum Air Temperature at 12 ft.	UL 2024	372°F

- Storage -4°F to 158°F
- Handling -4°F to 104°F
- No UV protection (not suitable for outdoor use)
- Do NOT store outside

Standard Stock – Reels

	Color	Part No.	Pull Tape	Reel Size (F x W)	Reel Type	Reel Length	Reel Wt. (lbs.)	Product Wt. per 100 ft. (lbs.)
3/4"	Orange	DE4X1-1000	Empty	36" x 24"	W	1000	35	9
1"	Orange	DF4X1C-500R	900 lb.	42" x 24"	W	500	50	14
	Orange	DF4X1C-1000	900 lb.	48" x 32"	W	1000	90	14
	Orange	DF4X1C-1500	900 lb.	48" x 32"	W	1500	90	14
	Orange	DF4X1C-2700	900 lb.	48" x 46"	W	2700	105	14
	Orange	DF4X1C-5200	900 lb.	66" x 41"	W	5200	265	14
	Orange	DF4X1C-6500	900 lb.	72" x 41"	W	6500	302	14
	Orange	DF4X1C-7000	900 lb.	72" x 45"	S	7000	148	14
	Orange	DF4X1C-9400	900 lb.	84" x 45"	S	9400	199	14
1 1/4"	Orange	DG4X1C-900	900 lb.	48" x 32"	W	900	90	17
	Orange	DG4X1C-500R	900 lb.	42" x 24"	W	500	50	17
	Orange	DG4X1C-1500	900 lb.	48" x 46"	W	1500	105	17
	Orange	DG4X1C-1600	900 lb.	48" x 46"	W	1600	105	17
	Orange	DG4X1C-3200	900 lb.	66" x 41"	W	3200	265	17
	Orange	DG4X1C-4500	900 lb.	72" x 45"	S	4500	148	17
	Orange	DG4X1C-5600	900 lb.	84" x 46"	W	5600	600	17
	Orange	DG4X1C-6500	900 lb.	96" x 45"	S	6500	220	17
1 1/2"	Orange	DH4X1C-1200	900 lb.	48" x 46"	W	1200	105	22
	Orange	DH4X1C-4000	900 lb.	82" x 45"	S	4000	193	22
	Orange	DH4X1C-4500	900 lb.	84" x 45"	S	4500	199	22
2"	Orange	DJ4X1C-700	900 lb.	48" x 46"	W	700	105	26
	Orange	DJ4X1C-2000	900 lb.	82" x 41"	W	2000	375	26
	Orange	DJ4X1C-2800	900 lb.	84" x 45"	S	2800	199	26

W = Wood, S = Steel

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Features:

- For use in Riser and General Purpose areas per Articles 725, 770, 800 and 820 of the NEC.
- Riser-Gard is also suitable for direct burial. Not approved for exposed applications.
  NOTE: UL has not evaluated Riser-Gard for this application.
- UL Listed Raceway meeting UL 2024
- Available in sizes 3/4" through 2"
- Pull tape can be factory pre-installed in 1" through 2"
- Outside Diameters meet IPS Dimensions
- Footage sequentially marked

Standard Stock – Coils

	Color	Part No.	Pull Tape	Coil Length (ft.)	Product Wt. per 100 ft. (lbs.)
3/4"	Orange	DE4X1-350*	Empty	350	9
1"	Orange	DF4X1C-250*	900 lb.	250	14
	Orange	DF4X1C-500	900 lb.	500	14
	Orange	DF4X1-250S*	Empty	250	14
1 1/4"	Orange	DG4X1-200	Empty	200	17
	Orange	DG4X1C-200*	900 lb.	200	17
	Orange	DG4X1C-500	900 lb.	500	17
	Orange	DG4X1-200S*	Empty	200	17
1 1/2"	Orange	DH4X1C-150*	900 lb.	150	22
2"	Orange	DJ4X1C-100*	900 lb.	100	26

* Overnight Shippable

Specifications

Size	I.D. Min. Ref.	Min. O.D.	Max. O.D.	Min. Bend Radius
3/4"	.74	1.025	1.075	6"
1"	.98	1.290	1.340	6"
1 1/4"	1.31	1.640	1.690	7"
1 1/2"	1.54	1.880	1.930	8 1/4"
2"	2.00	2.350	2.400	9 1/2"

Custom Orders

How to Build a Part Number

Position 1 Product	Position 2 Size	Position 3 Configuration	Position 4 Wall	Position 5 Color	Position 6 Pull Line	Position 7 Length
D = Riser-Gard	E = 3/4" F = 1" G = 1 1/4" H = 1 1/2" J = 2"	4 = Corrugated	X = Standard	1 = Orange 2 = Black 3 = Gray 4 = White 5 = Blue 7 = Yellow 8 = Red	C = 900 lb. Tape	Example -1000 = Feet -1000S = 1000 Feet Split

- Custom Orders are not returnable
- Custom lengths are available in minimum order quantities of 1000 ft.
- Custom color runs are available in minimum order quantities of 10,000 ft.

Options:

- Color: Black, Blue, Gray, Red, White and Yellow
- Two, three, or four way parallel
- Split Duct
- Custom print line

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Hal-Free Riser-Gard®



Applications: Riser and General Purpose

c UL us LISTED
E143102
FT-4 Rated

Hal-Free Riser-Gard is a halogen free nonmetallic flexible raceway for use in riser and general purpose applications. In the event of a fire, this product will not release halogen elements into the air, which makes it ideal for applications in tunnels, laboratories and high-tech environments.

Hal-Free Riser-Gard is listed to UL 2024 in accordance with NEC Articles 725, 770, 800 and 820.

Custom lengths and split ducts are available upon request. Hal-Free Riser-Gard is available in white only.

Features:

- Free from halogen elements
- Compliant with NEC Articles 725, 770, 800 and 820
- Available in sizes 1" through 2"
- Available in white only
- Sequentially marked footage

Technical Info:

UL Listed to 2024	Test Method	Maximum Value
Maximum Flame Propagation	UL 2024	3'6"
Maximum Air Temperature	UL 2024	387°F

- Storage and Handling -4°F to 150°F
- No UV protection (not suitable for outdoor use)
- Do NOT store outside

Standard Stock – Reels

	Color	Part No.	Nom. I.D.	Nom. O.D.	Pull Tape	Reel Size	Reel Type	Reel Length (feet)	Reel Weight (lbs.)	Wt. per 100 ft. (lbs.)
1"	White	HF4X4C-5000	1.049	1.365	900 lb.	72" x 41"	W	5000	302	7.3
1 1/4"	White	HG4X4C-4000	1.250	1.550	900 lb.	72" x 41"	W	4000	302	9.2
1 1/2"	White	HH4X4C-2000	1.500	1.850	900 lb.	66" x 41"	W	2000	265	12.0
2"	White	HJ4X4C-2000	2.000	2.425	900 lb.	82" x 41"	W	2000	375	20.8

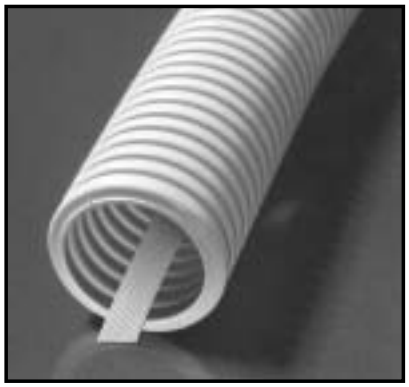
W = Wood

Custom Orders

How to Build a Part Number

Position 1 Product	Position 2 Size	Position 3 Configuration	Position 4 Wall	Position 5 Color	Position 6 Pull Line	Position 7 Length
H = Hal-Free Riser-Gard	F = 1" G = 1 1/4" H = 1 1/2" J = 2"	4 = Corrugated	X = Standard	4 = White	C = 900 lb. Tape	Example -1000 = Feet -1000S = 1000 Feet Split

- Custom orders not returnable
- Custom lengths available in minimum order quantities of 1000 ft.



Applications: General Purpose

c UL us LISTED
E151168
FT-1 Rated

General Purpose is nonmetallic flexible raceway for use in General Purpose applications only. It is UL Listed and available with tape pre-installed.

General Purpose raceway is listed to UL 2024 in accordance with the National Electrical Code per Articles 725, 770, 800 and 820 for General Purpose and other cabling optical fiber/telecommunication applications.

Features:

- For use in General Purpose areas per Articles 725, 770, 800 and 820 of the NEC.
- Available in sizes 3/4" through 2"
- Pull tape can be factory pre-installed in 1" through 2"
- Outside Diameters meet IPS Dimensions
- Footage sequentially marked

Technical Info:

UL Listed to 2024	Test Method	Maximum Value
Maximum Flame Propagation	UL 2024	6.0 ft.
Maximum Air Temperature at 12 ft.	UL 2024	372°F

- Storage -4°F to 158°F
- Handling -4°F to 104°F
- No UV protection (not suitable for outdoor use)
- Do not store outside

Standard Stock – Reels

	Color	Part No.	I.D. Min. Ref.	Min. O.D.	Max. O.D.	Pull Tape	Min. Bend Radius	Reel Size (F x W)	Reel Type	Reel Length	Reel Wt. (lbs.)	Product Wt. per 100 ft. (lbs.)
1"	Orange	BF4X1B-8000	.98	1.29	1.34	1130 lb.	6"	82" x 41"	W	8000	375	14
1 1/4"	Orange	BG4X1B-5600	1.31	1.64	1.69	1130 lb.	7"	72" x 41"	W	5600	302	17
1 1/2"	Orange	BH4X1B-4500	1.54	1.88	1.93	1130 lb.	8 1/4"	82" x 41"	W	4500	375	22
2"	Orange	BJ4X1B-8000	2.00	2.35	2.40	1130 lb.	9 1/2"	82" x 41"	W	2000	375	26

W = Wood

Custom Orders

How to Build a Part Number

Position 1 Product	Position 2 Size	Position 3 Configuration	Position 4 Wall	Position 5 Color	Position 6 Pull Line	Position 7 Length
B = General Purpose	F = 1" G = 1 1/4" H = 1 1/2" J = 2"	4 = Corrugated	X = Standard	1 = Orange 2 = Black 3 = Gray 4 = White 5 = Blue 7 = Yellow 8 = Red	B = 1130 lb. Tape	Example -1000 = Feet

- Custom Orders are not returnable
- Custom lengths are available in minimum order quantities of 1000 ft.
- Custom color runs are available in minimum order quantities of 10,000 ft.

Options:

- Color: Black, Blue, Gray, Red, White and Yellow
- Two, three, or four way parallel
- Split Duct
- Custom print line

Nonmetallic Adapters & Couplings

LISTED LR31146

- For use with Riser-Gard® and General Purpose



Couplings

Part. No.	Size	Color	Standard Carton Quantity	Standard Carton Weight (lbs.)
SCA240E	3/4"	Orange	25	.783
SCA240F	1"	Orange	20	.972



Threaded Adapters

Part. No.	Size	Color	Standard Carton Quantity	Standard Carton Weight (lbs.)
SCA243E	3/4"	Orange	100	2.30
SCA243F	1"	Orange	50	2.00



Snap-In Adapters

Part. No.	Size	Color	Standard Carton Quantity	Standard Carton Weight (lbs.)
SCA253E	3/4"	Orange	100	2.90
SCA253F	1"	Orange	50	2.30

Nonmetallic Adapters & Couplings

LISTED

- For use with Plenum-Gard®



Couplings

Part. No.	Size	Color	Standard Carton Quantity	Standard Carton Weight (lbs.)
A340F	1"	Orange	50	2.50



Couplings

Part. No.	Size	Color	Standard Carton Quantity	Standard Carton Weight (lbs.)
A343F	1"	Orange	50	1.55



Couplings

Part. No.	Size	Color	Standard Carton Quantity	Standard Carton Weight (lbs.)
A353F	1"	Orange	50	3.00

Nonmetallic Adapters and Couplings

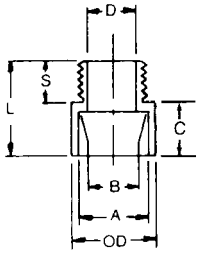
• For use with Riser-Gard® and General Purpose

UL LISTED
E32447
Except where noted by ▶

Male Terminal Adapters



For adapting nonmetallic conduits to boxes, threaded fittings, metallic systems. Male threads on one end, socket end on other.



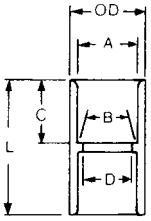
Part No.	Size	Std. Ctn. Qty.	Color	A Typical	B Typical	Min. D	Max. OD	C Typical	T Typical	L Typical	Std. Ctn. Wt. (lbs.)
E943E	3/4	125	Gray	1.064	1.046	.800	1 11/32	3/4	9/16	1 3/8	3.5
E943F	1	50	Gray	1.330	1.310	1.018	1 5/8	1	11/16	1 25/32	3
E943G	1 1/4	50	Gray	1.677	1.655	1.332	2 1/32	1	3/4	1 15/16	4
E943H	1 1/2	25	Gray	1.918	1.894	1.566	2 5/32	1 3/16	3/4	2 1/16	2.5
E943J	2	50	Gray	2.393	2.369	2.000	2 21/32	1 3/16	3/4	2 1/8	7
SCE943G	1 1/4	50	Orange	1.677	1.655	1.332	2 1/32	1	3/4	1 15/16	4
SCE943H	1 1/2	25	Orange	1.918	1.894	1.566	2 5/32	1 3/16	3/4	2 1/16	2.5
SCE943J	2	50	Orange	2.393	2.369	2.000	2 21/32	1 3/16	3/4	2 1/8	7

Standard Couplings

All socket fittings should be attached Using Carlon solvent cement. Using Carlon fittings with Carlon nonmetallic conduit insures system integrity.



Socket type for joining nonmetallic conduit.



Part No.	Size	Std. Ctn. Qty.	Color	A Typical	B Typical	Min. D	Max. OD	C Typical	L Typical	Std. Ctn. Wt. (lbs.)
E940E	3/4	100	Gray	1.064	1.046	.840	1 5/16	3/4	1 5/8	4.4
E940F	1	50	Gray	1.330	1.310	1.210	1 5/8	15/16	2	3.5
E940G	1 1/4	30	Gray	1.677	1.655	1.535	1 63/64	1	2 1/8	3.5
E940H	1 1/2	25	Gray	1.918	1.894	1.755	2 15/64	1 1/8	2 3/8	3.9
E940J	2	30	Gray	2.393	2.369	2.190	2 47/64	1 3/16	2 1/2	5.25
SCE940G	1 1/4	30	Orange	1.677	1.655	1.535	1 63/64	1	2 1/8	3.5
SCE940H	1 1/2	25	Orange	1.918	1.894	1.755	2 15/64	1 1/8	2 3/8	3.9
SCE940J	2	30	Orange	2.393	2.369	2.190	2 47/64	1 3/16	2 1/2	5.25

Metallic Adapters and Couplings

Universal Aluminum Couplings

• For use with Plenum-Gard®, Riser-Gard®, Hal-Free Riser-Gard®, and General Purpose

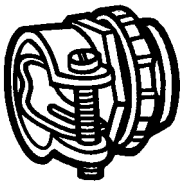
Self-threading, which draws each end of the conduit into the center of the coupler.



Part. No.	Size	Duct O.D. Range	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶P75	3/4"	.91 – 1.08	10	12
▶P100	1"	1.21 – 1.41	100	25
▶P125	1 1/4"	1.44 – 1.68	100	28
▶P150CPLR	1 1/2"	1.80 – 2.02	100	35
▶P200	2"	2.31 – 2.48	50	19

Metallic Terminal Adapter

• For use with Plenum-Gard®



Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E147E	3/4"	1	.7
▶ E147F	1"	25	1.5

Terminating Connector



• For use with Plenum-Gard® and Hal-Free Riser-Gard®

Part No.	Size	Nom. O.D. Range	Std. Ctn. Qty.	Std. Ctn. Wt.
TC100	1"	.91 – 1.08	12	50
TC125	1 1/4"	1.495 – 1.70	12	52
TC150	1 1/2"	1.80 – 2.00	12	56
TC200	2"	2.31 – 2.52	12	58

Washers Flat Sealing Washer

Where a waterproof termination is required into any enclosure (metallic or nonmetallic), install the neoprene washer over the threads of a terminal adapter before inserting into the enclosure. Use a standard locknut or threaded bushing to secure the assembly.



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E943EW	3/4"	125	.45
▶ E943FW	1"	100	.46
▶ E943GW	1 1/4"	50	.44
▶ E943HW	1 1/2"	50	.45
▶ E943JW	2"	25	.42

Low Voltage Boxes & Brackets

Dual Voltage Box/Bracket*

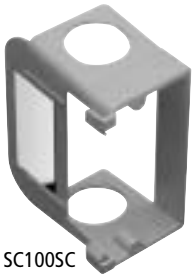

SC200DV

Part No.	Size	Volume	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC200DV	1-Gang	20.5 cu. in.	16	6.4

*U.S. Patent D463,376

UL LISTED E42728

Low Voltage Add-On Bracket*

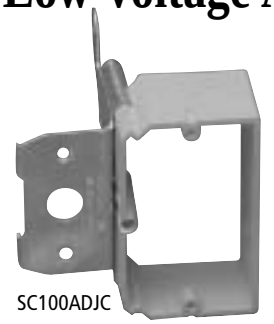

SC100SC

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100SC	1-Gang	24	2.3

*U.S. Patent D459,312
U.S. Patent 6,710,245

c UL us LISTED E216492

Low Voltage Adjustable Brackets*


SC100ADJC

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100ADJC	1-Gang	24	7.5
SC200ADJC	2-Gang	20	6.9

*U.S. Patent 5,289,934

c UL us LISTED E216492

Low Voltage Brackets*


SC100A


SC200A

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100A	1-Gang	24	5.3
SC200A (3/4" Resi-Rings)	2-Gang	24	7.7

*U.S. Patent D457,140
D462,664

* ℗ Lamson & Sessions

c UL us LISTED E216492

NEW

Mud Box Assemblies

UL LISTED E42728 | c UL us LISTED E42728

Except where noted by ▶

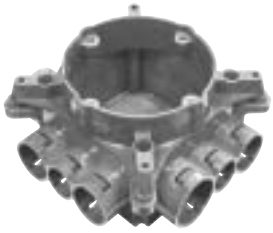
Carlon Mud Box Assemblies are available in five unique styles…blank, ceiling ring, one-gang, two-gang and 4 square. All Mud Box Assemblies are manufactured out of polycarbonate material to provide extra strength and durability, are concrete tight, and have twelve integral connectors…two-1", six-3/4", and four-1/2". Using our new ENT Reducers, this product will meet ANY jobsite application.



Mud Box Base with Blank Cover

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
▶ A863BC	Mud Box w/ Blank Cover	24	12.3

Patent Pending

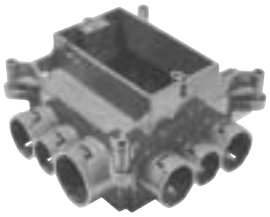


Mud Box with Ceiling Ring

- Threaded brass inserts for fan (#10-32 screws) and fixture (#8-32 screws) mountings
- Listed for fixture support up to 50 lbs.
- Listed for ceiling fans up to 35 lbs.

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
▶ A863CF	Mud Box w/ Ceiling Ring	24	15.5
A863CFG	Mud Box w/ Ceiling Ring & Ground Lug	24	16.1

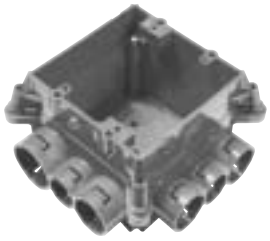
Patent Pending



Mud Box with One-Gang Ring

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
▶ A863S	Mud Box w/ One-Gang Ring	24	16.8
A863SG	Mud Box w/ One-Gang Ring & Ground Lug	24	16.2

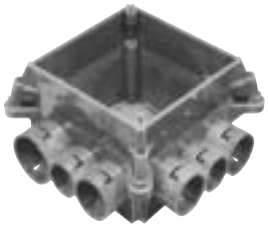
Patent Pending



Mud Box with Two-Gang Ring

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
▶ A863D	Mud Box w/ Two-Gang Ring	24	15.8
A863DG	Mud Box w/ Two-Gang Ring & Ground Lug	24	16.6

Patent Pending



Mud Box with 4 Square Ring

- 4 Square Ring not for luminaries.

Part. No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. lbs.
▶ A863-4SQ	Mud Box w/ 4 Inch Square Ring	24	15.2

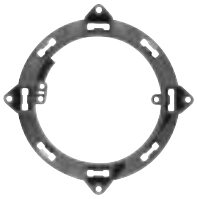
Patent Pending

2½" & 4" Mud Boxes with Covers

- For use with Riser-Gard® and General Purpose

UL LISTED E42728 CSA LR31146

Base Rings



Listed for use with ceiling fans up to 35 lbs. and for fixture support up to 50 lbs.

Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A861	Without ground lug	10	2.5
CA861G	With ground lug	10	2.0

Covers



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A862D	2 1/2" Deep (1/2" KO's)	10	2.5
A862E	2 1/2" Deep (3/4" KO's)	10	2.1
A864D	4" Deep (1/2" KO's)	10	2.9
A864E	4" Deep (3/4" KO's)	10	2.9
A864F	4" Deep (1" KO's)	10	3.0

Quick Connect Outlet and Switch Boxes

- For use with Riser-Gard® and General Purpose
- Suitable for masonry walls
- Meets NEMA OS-2

UL LISTED E42728

Single Gang – 16 cu. in.



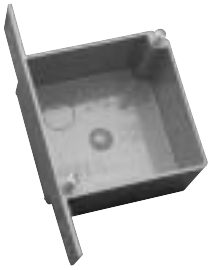
Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A58381D	3 x 2 1/4 x 3 (1/2" KO's)	25	4.6
A58381E	3 x 2 1/4 x 3 (3/4" KO's)	25	4.6

Two Gang – 20 cu. in.



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A52151D	4 x 4 x 1 1/2 (1/2" KO's)	100	22.6
A52151E	4 x 4 x 1 1/2 (3/4" KO's)	100	22.6
A521DE	4 x 4 x 1 1/2 (1/2" & 3/4" KO's)	100	22.6

Two Gang – 30.3 cu. in.



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A52171D	4 x 4 x 2 3/8 (1/2" KO's)	25	7.6
A52171E	4 x 4 x 2 3/8 (3/4" KO's)	25	7.6
A5217DE	4 x 4 x 2 3/8 (1/2" & 3/4" KO's)	25	7.6

ENT Box with Adapters

• For use with Riser-Gard® and General Purpose

UL LISTED E42728 Except where noted by ▶



Two Gang – 24.75 cu. in. ENT Box with Adapters

Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A5329DE	4 x 4 x 1 3/4 (1/2" & 3/4" KO's)	50	14.8

Box Back Wall Support

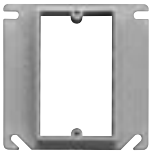


Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
▶ A540DS	For use with 1/2" Knockout	100	2.1

ENT Box Extenders

• For use with Riser-Gard® and General Purpose

UL LISTED E42728







Single Gang

Part. No.	Rise	Cu. in.	Standard Carton Quantity	Standard Carton Weight (lbs.)
A410	1/2"	3.5	100	7.7
A411	5/8"	4.2	50	4.6
A412	3/4"	5.0	50	5.1
A413	1"	6.6	40	5
A414	1 1/4"	8.1	30	4.4

Two Gang

Part. No.	Rise	Cu. in.	Standard Carton Quantity	Standard Carton Weight (lbs.)
A400	Blank	-	100	7.7
A420	1/2"	6.1	75	5.0
A421	5/8"	7.4	50	4.2
A422	3/4"	8.8	50	4.8

Round Covers for Octagon Ceiling Boxes

• For use with Riser-Gard® and General Purpose

UL LISTED E42728

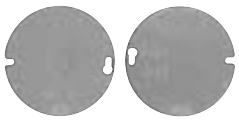
Round Plaster Rings

• Suitable for fixture support



Part. No.	Rise	Cu. in.	Standard Carton Quantity	Standard Carton Weight (lbs.)
A471	1/2"	3.2	100	3.3
A472	3/4"	4.0	100	3.7

Round Blank Covers



Part. No.	Rise	Cu. in.	Standard Carton Quantity	Standard Carton Weight (lbs.)
E460R-CAR	Blank	-	35	2.2
A470D	Blank with 1/2" KO	-	100	4.7

Quick Connect 4" Octagon Ceiling Boxes

LISTED
E42728
Except where noted by ▶

- For use with Riser-Gard® and General Purpose
- Carlon ceiling boxes and round plaster rings are produced from a special high heat resistant engineered plastic material developed specifically for fixture support.
- LIsted for fixture support up to 50 lbs.

Ceiling Box – 20.5 cu. in.



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A615D	4 - 2 1/8" Deep (1/2" KO's)	50	6.4
A615E	4 - 2 1/8" Deep (3/4" KO's)	50	6.4
A615DE	4 - 2 1/8" Deep (1/2" & 3/4" KO's)	50	6.4

Ceiling Box with J Mount – 20.5 cu. in.



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A615DJ	4 - 2 1/8" Deep (1/2" KO's)	50	18.7

Ceiling Box with L Bracket – 20.5 cu. in.



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A615DL	4 - 2 1/8" Deep (1/2" KO's)	50	6.4

Ceiling Box with Adjustable Hanger Bar – 20.5 cu. in.

Adjust from 14 1/4" to 23 1/4"



Part. No.	Description	Standard Carton Quantity	Standard Carton Weight (lbs.)
A615DH	4 - 2 1/8" Deep (1/2" KO's)	25	13.6

PVC Conduit Cutters

Small Cutter



For fast, smooth field cuts of 1/2" through 1" Riser-Gard® and Plenum-Gard.

Part No.	Size	Std. Ctn. Qty.
▶CC120B	8"	10

Medium Cutter



Hand held cutter makes fast square, smooth field cuts on conduit from 1/2" through 1 1/4". Produces burr-free cut with no shavings. Fits into pocket or pouch.

Part No.	Size	Std. Ctn. Qty.
▶CC125	9"	12

Large Cutter



For clean cuts of conduit 1/2" through 2".

Part No.	Size	Std. Ctn. Qty.
▶CC122	17 1/2"	1

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Tape

Prelubricated, woven polyester tape made from low friction, high abrasion resistant yarns providing a low coefficient of friction. Tape is printed with sequential footage markings for accurate measurements.



Part. No.	Size	Tensile Strength	Reel Lengths
TL14505	1/2"	1250 lbs.	5,000 ft.
TL14510	1/2"	1250 lbs.	10,000 ft.
TL38203	5/8"	1800 lbs.	3,000 ft.
TL38265	5/8"	1800 lbs.	6,500 ft.
TL38210	5/8"	1800 lbs.	10,000 ft.

Other ropes and tapes are available. Consult your sales service location for additional information.

Carlon® Cement

(MSDS sheets available at www.carlon.com)
*Meets ASTM D2564

	Recommended pipe application and sizes	Set-up time (Evaporation Rate)	Recommended installation temperature	Lap Shear @ 73˚F	Viscosity at 75˚ as manufactured
Medium Bodied Clear PVC Solvent Cement with dauber*	Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus® Blue™ ENT (Electrical Nonmetallic Tubing.) Up through 6" diameter.	**10˚-30˚F** Not recommended **30˚-50˚F** 5-6 minutes **50˚-70˚F** 3-4 minutes **70˚-90˚F** 1-2 minutes	40˚ to 100˚F	**2 hrs.** 350 psi **16 hrs.** 800 psi **72 hrs.** 1,500 psi	500-900 cps



Part No.	Size	Std. Ctn. Qty.
VC9964	1/2 Pint	10
VC9963	Pint	24
VC9962	Quart	12
VC9961P	Gallon	6

	Recommended pipe application and sizes	Set-up time (Evaporation Rate)	Recommended installation temperature	Lap Shear @ 73˚F	Viscosity at 75˚ as manufactured
All-Weather "Quick-Set" Clear Solvent Cement with dauber*	Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus® Blue™ ENT (Electrical Nonmetallic Tubing.) Up through 6" diameter.	**10˚-30˚F** 4-5 minutes **30˚-50˚F** 3-4 minutes **50˚-70˚F** 1-2 minutes **70˚-90˚F** 1/2-1 1/2 minutes	-5˚ to 100˚F	**2 hrs.** 350 psi **16 hrs.** 800 psi **72 hrs.** 1,500 psi	400-700 cps



Part No.	Size	Std. Ctn. Qty.
VC9984	1/2 Pint	10
VC9983	Pint	24
VC9982	Quart	12
VC9981P	Gallon	6

	Recommended pipe application and sizes	Set-up time (Evaporation Rate)	Recommended installation temperature	Lap Shear @ 73˚F	Viscosity at 75˚ as manufactured
Low VOC Gray PVC Solvent Cement with dauber*	Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus® Blue™ ENT (Electrical Nonmetallic Tubing.) Up through 6" diameter. VOC emission of 490 grams/liter per the Bay and South Coast test method.	**10˚-30˚F** Not recommended **30˚-50˚F** 5-6 minutes **50˚-70˚F** 3-4 minutes **70˚-90˚F** 1-2 minutes	40˚ to 100˚F	**2 hrs.** 350 psi **16 hrs.** 800 psi **72 hrs.** 1,500 psi	500-900 cps



Part No.	Size	Std. Ctn. Qty.
VC9LV4	1/2 Pint	10
VC9LV3	Pint	24
VC9LV2	Quart	12

Carlon® Innerduct Guide

Where is Innerduct being used?

Inside the Building

Plenum

- Must be UL Listed
- Plenum cable must be installed
- Color: Industry standard=orange
- Pull tape pre-installed in sizes 1/2" through 2"
- Plenum-Gard® product numbers:

1/2"	CD4X1C
3/4"	CE4X1C
1"	CF4X1C
1 1/4"	CG4X1C
1 1/2"	CH4X1C
2"	CJ4X1C

General Purpose & Riser

- Must be UL Listed
- Riser rated cable must be used in riser applications
- Color: Industry standard=orange
- Riser-Gard® product numbers:

3/4"	DE4X1C
1"	DF4X1C
1 1/4"	DG4X1C
1 1/4"	DH4X1C
2"	DJ4X1C

- General Purpose product numbers:

1"	BF4X1B
1 1/4"	BG4X1B
1 1/4"	BH4X1B
2"	BJ4X1B

Note:

- HDPE innerduct will not meet code

Outside the Building

Pulled into a Conduit

- HDPE True sized duct recommended 1.00" ID or 1.25" ID
- Corrugated (Riser-Gard and HDPE) duct for newer conduit runs & shorter distance pulls
- HDPE Solidwall for older conduit runs & longer distance pulls

Plowed or Trenched

- HDPE SDR sized duct recommended (1 1/4" or larger)
- HDPE SDR 13 wall thickness for non-rocky soil conditions
- HDPE SDR 11 wall thickness for rocky conditions
- Riser-Gard approved for direct bury applications but NOT exposed applications

NOTE:

- Aerial HDPE for exposed applications

Options

- Color
- Striping
- Factory installed pull lines
- Segmented or paralleled reels
- Pre-lubricated duct

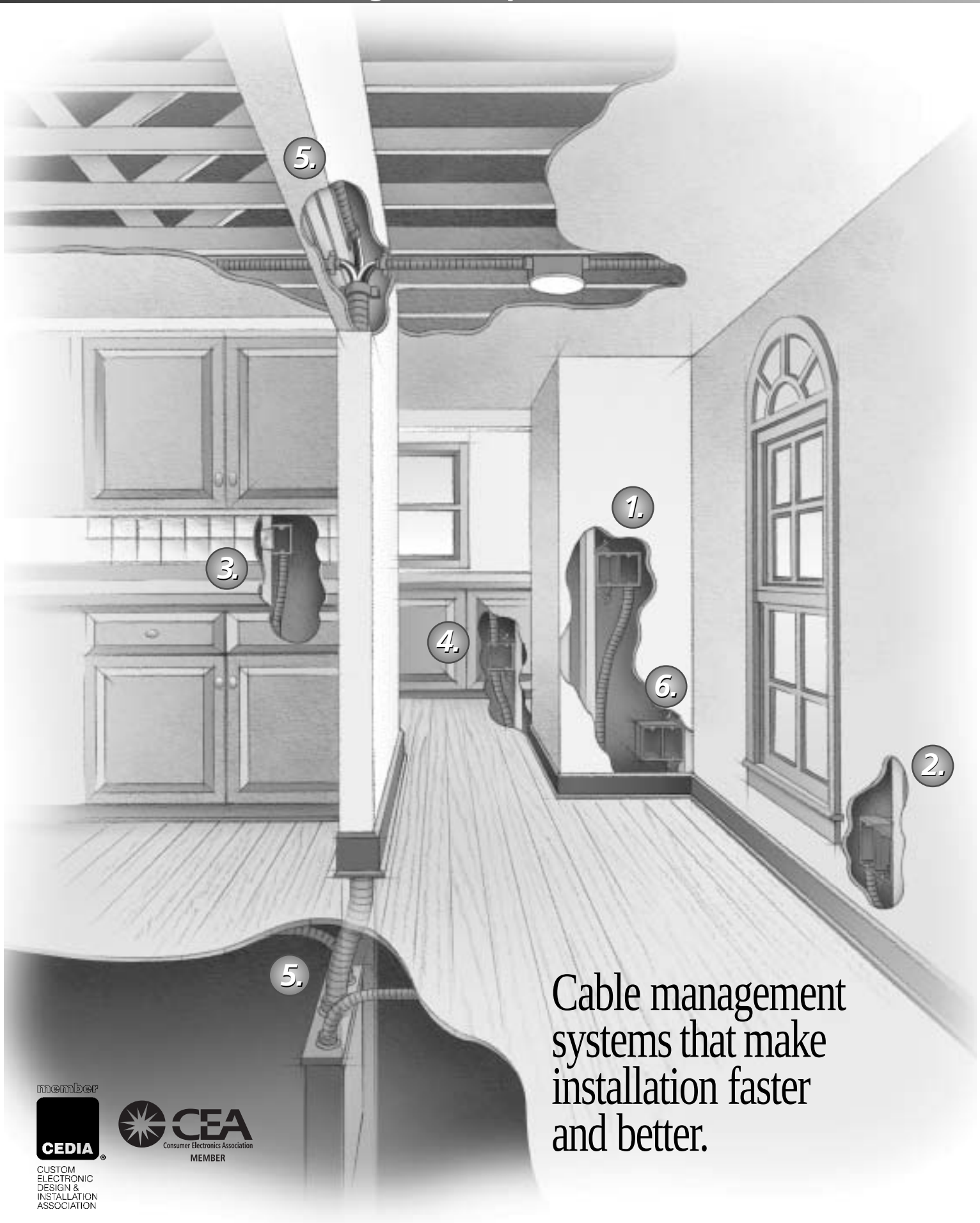
Specifying and installing UL Listed innerducts with the anticipation of future upgrades provides the building owner with a low cost solution for the removal of abandoned cables.

Carlon®
Structured Cable Management Systems





Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com



Cable management systems that make installation faster and better.

member CEDIA CUSTOM ELECTRONIC DESIGN & INSTALLATION ASSOCIATION

CEA Consumer Electronics Association MEMBER



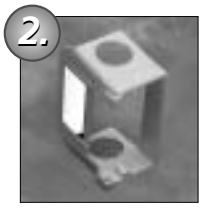
Dual Voltage Box/Bracket

Here's a smart alternative where you would normally use separate high and low voltage boxes. Designed to fit a standard two-gang faceplate, this component combines an electrical box and low voltage bracket into a single unit for fast, easy installation. No alignment tools are required, and easy nail-on mounting provides precise placement and a professional finished appearance. Resi-Rings accept 3/4" Resi-Gard only SC200DV

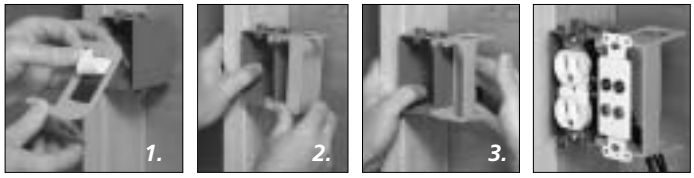


Why waste time mounting, then trying to line up separate high voltage and low voltage boxes, and still end up with something not quite right? Our Dual Voltage Box/Bracket lets you do it all in one fast, easy step with perfect alignment every time.

Low Voltage Add-On Bracket



This low voltage bracket provides a low voltage outlet next to a previously installed high voltage outlet. Great for both new construction and rework, it attaches easily to most electrical boxes, and is designed to fit a standard two-gang faceplate. Resi-Rings accept 3/4" Resi-Gard only SC100SC

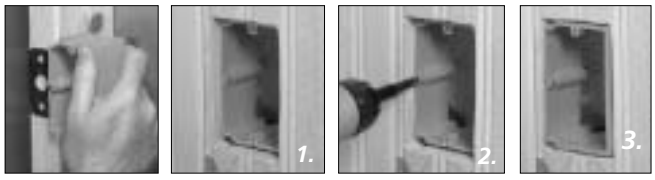


Attaching the Add-On Bracket is a "snap." You just remove the back of the double-sided tape (1), clip the bracket in place (2), and press on the bracket to secure it against the box (3). Allows for the installation of most decora style yoke plates



Low Voltage Adjustable Brackets

Our Low Voltage Adjustable Brackets are the perfect solution for tile, paneling, or stucco. A bracket allows for quick, easy stud mounting, and a turn of the screw adjusts to any wall thickness. It's great for retrofit/ installation upgrades. Replace the single-gang bracket with a two-gang bracket, or switch services to a high-voltage Adjust-A-Box™ ... SC100ADJC (shown)
SC200ADJC



Our Low Voltage Adjustable Brackets simplify installation with tile, paneling, or stucco to save you time and effort. Just use the quick-mount bracket to clip it to the stud (1), add a screw for extra support if you want it (2), then use the adjustment screw to accommodate wall thickness (3). Also available in a two-gang version.

Low Voltage Brackets



Here's the fast installation choice where only low voltage is required. Designed to fit a standard one- or two-gang faceplate, these low voltage brackets feature an easy nail-on mounting or screw-in bracket, while a hard shell provides increased durability and no racking. SC100A – Accepts 3/4", 1", and 1-1/4" Resi-Gard
SC200A (shown) – Accepts 3/4" Resi-Gard only

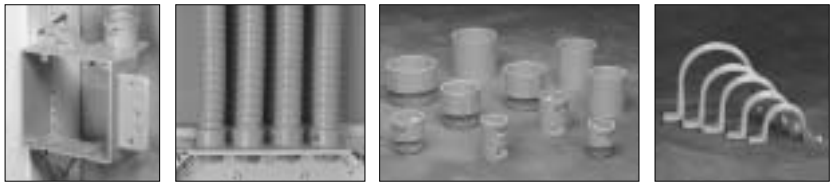


Our Low Voltage Brackets are open-backed to easily accommodate the bend radiuses required for low voltage cabling and deep devices such as volume controls, while molded-in ports make it easy to connect flexible raceway for future-proofing. Or you can use them to tie off cable to the bracket. They can also be attached to wood or steel studs.



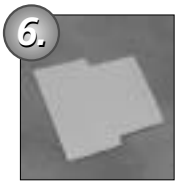
Resi-Gard® Flexible Raceway And Fittings

Available in 5 sizes from 3/4" to 2", with factory installed pull tape in sizes 1" to 2", our Resi-Gard Flexible Raceway provides a main chase from the main distribution panel to a secondary hub in the attic or basement. Ideal for easy access to add cable or service upgrades, or leave empty for future expansion
.....See page 100 for part numbers

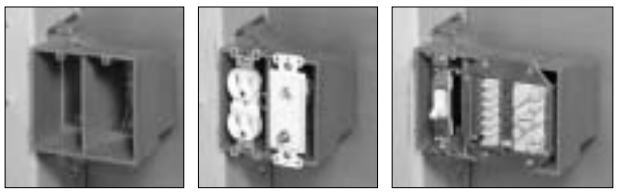


Our complete line of quick-connect couplings, adapters, cable clips, conduit clamps, and solvent cement make for quick, easy professional installation of Resi-Gard Flexible Raceway.

Low Voltage Divider Plate



For applications where a combined high and low voltage closed back box is needed, such as placement in a fire-rated wall, we offer our Carlon SuperBlue™ two-, three-, and four-gang wiring boxes with a slip-in-place divider to give you the split box you need for the low voltage outlet ..... SCDIV



What could be easier than converting one of our Carlon SuperBlue boxes for both high and low voltage use? Just slip the divider into place, and you're ready to go. Great for situations requiring a dual voltage fire-rated box.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Resi-Gard® Flexible Raceway

c UL us LISTED
E151168
FT-1

Ideal for providing a main chase from the main distribution panel to a secondary hub in the attic or basement, Resi-Gard nonmetallic flexible raceway is available in 3/4" to 2" diameter sizes with factory installed pull tape in sizes 1" to 2". The raceway is hand bendable, lightweight and easily cut to length to reduce scrap. Bright orange color clearly signifies a low voltage installation.



Standard Length Coils

Size	Pull Tape	Part No.	Coil Length	Prod. Wt. (lbs.) Coil
3/4"	Empty*	SCE4X1-100	100	11.5
1"	900 lbs.	SCF4X1C-100	100	17.9
1 1/4"	900 lbs.	SCG4X1C-100	100	21.5
1 1/2"	900 lbs.	SCH4X1C-50	50	11.2
2"	900 lbs.	SCJ4X1C-50	50	13.4

*If installing own tape, a lubricated polyester is recommended.

Standard Length Reels*

Size	Pull Tape	Part No.	Reel Length	Prod. Wt. (lbs.) Reel
3/4"	Empty	SCE4X1-1000	1000	115.0
1"	900 lbs.	SCF4X1C-1500	1500	268.5
2"	900 lbs.	SCJ4X1C-500	500	133.5

* Made to order

Resi-Gard® Fittings

A complete line of Carlon one-piece quick connect couplings, threaded adapters, and snap-in terminator adapters are available for quick, easy professional installation of Resi-Gard Flexible Raceway.

UL LISTED E86720 SA LR92248

UL LISTED E32447 Except where noted by ▶ SA LR31146



Quick Connect Coupling

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SCA240E	3/4"	25	.783
SCA240F	1"	20	.972



Male Terminal Adapter*

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SCE943G	1 1/4"	50	3
SCE943H	1 1/2"	25	2.5
SCE943J	2"	50	6.8



Quick Connect Threaded Adapter

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SCA243E	3/4"	25	.633
SCA243F	1"	20	.778



Standard Couplings*

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SCE940G	1 1/4"	30	3.5
SCE940H	1 1/2"	25	3.9
SCE940J	2"	30	5.2

* Must be cemented to Resi-Gard® Flexible Raceway using ONLY Resi-Gard Solvent Cement



Quick Connect Snap-In Adapter

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SCA253E	3/4"	25	.783
SCA253F	1"	20	.918



PVC Lock Nut

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ LT9LE	3/4"	700	4
▶ LT9LF	1"	600	4

Structured Cabling Boxes and Brackets

Carlon's new and innovative family of Structured Cabling Boxes and Brackets for all your installation requirements.

Dual Voltage Box/Bracket*



SC200DV

Features:

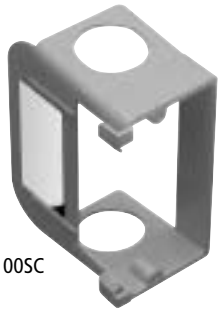
- Dual Voltage Capability
- Accepts a two-gang face plate.
- 3/4" Resi-Rings
- Backless Design accommodates large/deep low voltage devices.
- Eliminates cutting the backs off Electrical Boxes.
- Accommodates bend radius requirements for low voltage cabling.
- Provides ample space for installation.

Part No.	Size	Volume	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC200DV	1-Gang	20.5 cu. in.	16	6.4

*U.S. Patent D463,376

UL LISTED E42728

Low Voltage Add-On Bracket*



SC100SC

Features:

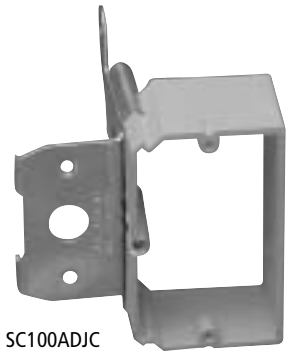
- Dual Voltage Capability accommodates high and low voltage devices in the same box.
- Accepts a two-gang face plate.
- Attaches to virtually any nonmetallic electrical box as long as there's a side for the tape to stick to.
- 3/4" Resi-Rings
- Allows for the installation of most decora style yoke plates

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100SC	1-Gang	24	2.3

*U.S. Patent D459,312
U.S. Patent 6,710,245

c UL us LISTED E216492

Low Voltage Adjustable Brackets*



SC100ADJC

Features:

- Accommodates varying finished wall thicknesses – ideal for wood paneling, tile or stucco walls.
- With the turn of a screw, adjust to any wall thickness.
- Steel Mounting Bracket provides a secure mount.
- Backless Design accommodates large/deep low voltage devices.
- Eliminates cutting the backs off Electrical Boxes.
- Accommodates bend radius requirements for low voltage cabling.
- Provides ample space for installation.
- Removable Bracket and Interchangeable Mounting Bracket – upgrade from a one-gang to a two-gang anytime.

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100ADJC	1-Gang	24	7.5
SC200ADJC	2-Gang	20	6.9

*U.S. Patent 5,289,934

c UL us LISTED E216492

Low Voltage Brackets*



SC100A



SC200A

Features:

- Backless Design accommodates large/deep low voltage devices.
- Eliminates cutting the backs off Electrical Boxes.
- Accommodates bend radius requirements for low voltage cabling.
- Provides ample space for installation.
- Breakaway Drywall Support Flange provides easy alignment for 1/2" drywall.
- Mount Flange for steel stud application
- Screw mount option

One-Gang Low Voltage Bracket:

- Resi-Rings with Concentric Knockouts
- Accepts 3/4", 1", and 1-1/4" Resi-Gard.
- Horizontal Mounting Bracket
- Bracket can be mounted horizontally on wood or steel studs.
- Breakaway Vertical Mounting Flange
- Breakaway feature allows the use of the Low Voltage Add-On Bracket.

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100A	1-Gang	24	5.3
SC200A (3/4" Resi-Rings)	2-Gang	24	7.7

*U.S. Patent D457,140 D462,664 U.S. Patent No. 6,812,405

*ⓓLamson & Sessions

c UL us LISTED E216492

Old Work Brackets



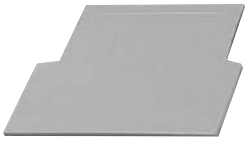
Features:

- Rectangular Flange for faster/easier installation.
- Chamfered Corners – Prevents Racking.
- Shallow Bracket – Less material, easier to work with.
- Marking hole for wall opening.
- Thinner Flange for less protrusion on the wall.
- SINGLE GANG ONLY – Clamps stop at center point to prevent the bracket from twisting or bending out of the wall.

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100RR	1-Gang	12	1.4
SC200RR	2-Gang	6	.9

c UL us LISTED E216492

Low Voltage Divider Plate



SCDIV

Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SCDIV	50	2.2

For use with Carlon® SuperBlue™ boxes only (Refer to pages 79-81)

Mud Ring

(4" sq. 1/2" Raised Cover)

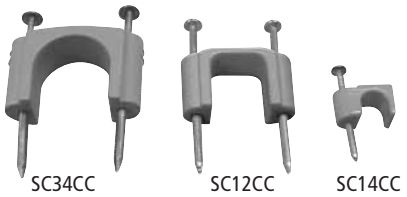


Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SCA410	1-Gang	20	1.54

Cable Clips

Carlon's cable clips with pre-installed nails provide fast and easy installation for either a single cable, 2-3 cables, or 1 bundled cable.

Size	Part No.	Standard Bag Quantity	Std. Ctn. Wt. (lbs.)	Std. Ctn. Qty.
1/4"	SC14CC	1 ea. (Equals one bag of 100 Clips	2.23	10 Bags of 100
1/2"	SC12CC	1 ea. (Equals one bag of 25 Clips	2.31	10 Bags of 25
3/4"	SC34CC	1 ea. (Equals one bag of 10 Clips	2.96	20 Bags of 10



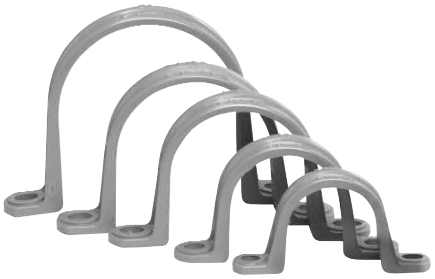


Conduit Clamps

Carlon's orange conduit clamps are designed to secure Resi-Gard raceway or bundled cable.

Size	Part No.	Standard Bag Quantity	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
3/4"	SCE977EC	1 ea. (Equals one bag of 5 Clamps	20 Bags of 5	1.5
1"	SCE977FC	1 ea. (Equals one bag of 5 Clamps	12 Bags of 5	1.3
11/4"	SCE977GC	1 ea. (Equals one bag of 5 Clamps	8 Bags of 5	1.1
11/2"	SCE977HC	1 ea. (Equals one bag of 5 Clamps	6 Bags of 5	1.0
2"	SCE977JC	1 ea. (Equals one bag of 5 Clamps	6 Bags of 5	1.5

NOTE: Each clamp requires 2 screws, 2 nuts, and/or 2 bolts



Resi-Gard® Solvent Cement

Resi-Gard Solvent Cement is ideal for easy, tight installation of all Resi-Gard flexible nonmetallic raceway and fittings and accessories. Available in pint sizes with convenient brush top applicator.

Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
VC9963SC	24	28.6



Resi-Gard® Cutters

Carlon's Kwikcut Cutter is ideal for fast, smooth field cuts for up to 1" diameter Resi-Gard nonmetallic flexible raceway. Carlon's Large PVC Cutter is ideal for cuts up to 2" diameter nonmetallic rigid and flexible raceway.

Small Cutter

For fast, smooth field cuts of 1/2" through 1" innerduct.



Part No.	Size	Std. Ctn. Qty.
CC120B	8"	10

Large Cutter

For clean cuts of conduit 1/2" through 2".



Part No.	Size	Std. Ctn. Qty.
CC122	17 1/2"	1

Low Voltage Adjustable Floor Bracket w/ Cover



The Carlon Low Voltage Adjustable Floor Bracket is specifically designed for the low voltage, structured cabling market…***the floor bracket is industry standard orange to identify low voltage applications, the open design provides the space needed for low voltage bend radius requirements, and the Leviton QuickPort® Quad 106® Insert provides up to four low voltage outlet ports.*** The Carlon Low Voltage Adjustable Floor Bracket is ideal for any residential or commercial low voltage application.

The floor bracket also features a patented screw design allowing it to be adjusted to most finished floor heights by simply turning the screw clockwise or counterclockwise and adjusting flush to the floor.

The floor bracket kit comes complete with a nonmetallic (white or ivory) or brass cover, a Leviton QuickPort Quad 106 Insert, new work and old work metal mounting brackets, and mounting screws.

Carlon Structured Cable Management Systems…Your Total Systems Solution!

Features:

- White, Ivory, or Brass Cover
- Orange – Identifies Low Voltage Installations
- Open Design Floor Bracket – Accommodates Low Voltage Bend Radius Requirements
- Patented Adjustable Screw – Bracket Adjusts to Most Finished Floor Depths
- Leviton QuickPort Quad 106 Insert – Install up to 4 Low Voltage Inserts
- Two-Door Design
- C-UL-US Listed

Installation:



Install clip over subfloor.



Screw in to adjust to height of flooring or carpet.



Beautiful flush fit every time!

Specifications:

Part No.	Cover	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
SC100FBWC	Nonmetallic – White	8	5.62
SC100FBVC	Nonmetallic – Ivory	8	5.62
SC100FBBC	Brass	8	13.78

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon®
Nonmetallic Enclosures

Circuit Safe® NEMA

Circuit Safe® JIC

Himeline® HE

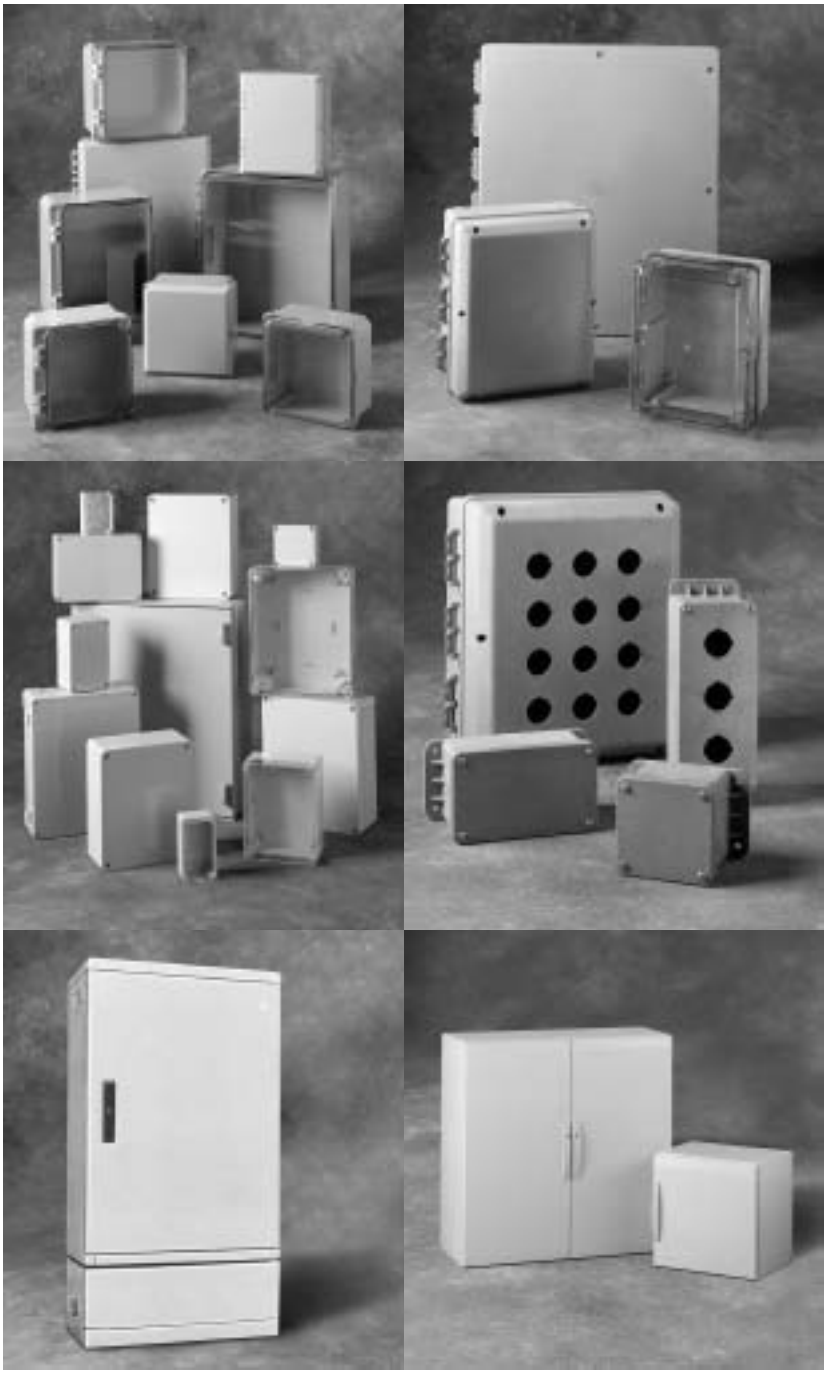
Himeline® HS

Himeline® HP

Himeline® HLA/HLS

Himeline® HLP

Slack and Splice Enclosures



Circuit Safe NEMA Enclosures

LISTED E110981 LR96563



Manufactured from polycarbonate material (bodies and covers), Carlon® NEMA enclosures deliver high temperature stability (-30° F to 230° F), exceptional corrosion resistance, and greater performance than traditional steel and stainless steel enclosures. Less than half the weight of metal enclosures, they're also easier to machine without fear of fracture and easier to install, while offering both a lower installed cost and longer service life. In addition, these attractive enclosures offer molded-in features not found in metal enclosures along with no rough edges, sharp corners, or burrs. Rated for use in all NEMA Type 1, 2, 3, 3S, 3X, 3SX, 4, 4X, 12, and 13 environments, Carlon NEMA enclosures meet or exceed both UL and CSA requirements. They are available in 10 different styles and 11 sizes from 6 x 4 x 4 to 16 x 14 x 6 with screw or hinged design, clear or opaque covers, and quick-release latches.

Features

- Captive stainless steel cover screws.
- Brass inserts for cover, mounting flanges and panel mounting screws.
- Back panel provisions accept standard size panels.
- Dove tailed corners for mounting panels or swing out panels at any depth. (Use optional adjustable back panel kit or swing out panel kit.)
- Oil resistant continuous gasket.
- Removable nonmetallic mounting rails included with factory assembled units.
- Tapered edge keeps liquids away from door opening.
- Ultraviolet stabilized for outdoor use.
- Optional steel or PVC back panels available.

Applications

- Junction boxes
- Terminal block enclosures
- Motor control housings
- Instrument cases
- Electronic equipment cases
- Splice and pull boxes
- Pushbutton housings

Standards

- Meets NEMA Type 1, 2, 3, 3S, 3X, 3SX, 4, 4X, 12, 13
- Per UL 50, enclosures for electrical equipment.
- CSA certified as indicated.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

NEMA Enclosure Styles

Circuit Safe® NEMA enclosures are available in three different cover options and a wide range of sizes. From our screw cover style enclosures to our hidden hinge cover style enclosures to our external hinge cover style enclosures, Carlon has a Circuit Safe NEMA enclosure to meet your application-specific need.

Styles

- Screw Cover
- External Hinge
- Hidden Hinge

Cover Color Options

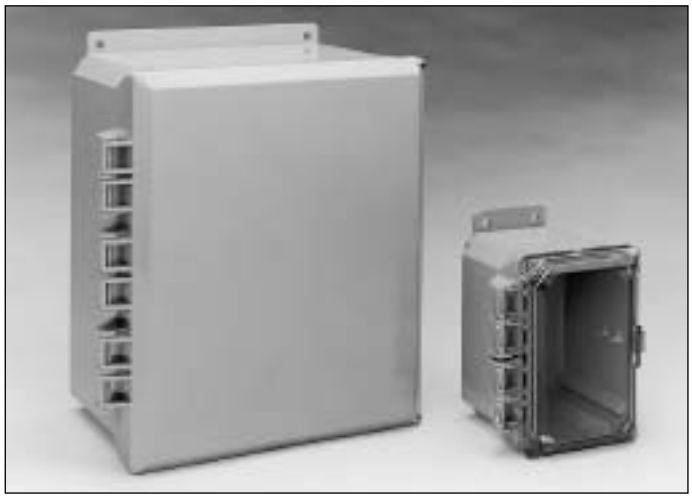
- Opaque
- Clear

Material

- Polycarbonate (Bases and Lids)



Screw Cover



External Hinge Cover



Hidden Hinge Cover

Screw-On Cover

Meets NEMA 1, 2, 3, 3S, 3X, 3SX, 4, 4X, 12

UL LISTED E110981 CSA LR96563



Opaque Cover



Clear Cover

Factory Assembled

Size	Opaque Cover Assembly*	Clear Cover Assembly*	Back Panels** Steel/PVC	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.) Opaque/Clear
6 x 4 x 4	NS644	NV644	JP64 / JP64P	1	Opa 1.8 / Clr 1.9
6 x 6 x 4	NS664	NV664	JP66 / JP66P	1	Opa 2.4 / Clr 2.4
8 x 6 x 4	NS864	NV864	JP86 / JP86P	1	Opa 2.9 / Clr 2.8
8 x 8 x 4	NS884	NV884	JP88 / JP88P	1	Opa 3.2 / Clr 3.3
10 x 8 x 4	NS1084	NV1084	JP108 / JP108P	1	Opa 4.0 / Clr 3.9
10 x 8 x 6	NS1086	NV1086	JP108 / JP108P	1	Opa 4.6 / Clr 4.5
10 x 10 x 6	NS10106	NV10106	JP1010 / JP1010P	1	Opa 5.3 / Clr 4.9
12 x 10 x 6	NS12106	NV12106	JP1210 / JP1210P	1	Opa 6.1 / Clr 5.2
12 x 12 x 6	NS12126	NV12126	JP1212 / JP1212P	1	Opa 6.8 / Clr 6.1
14 x 12 x 6	NS14126	NV14126	JP1412 / JP1412P	1	Opa 7.4 / Clr 7.0
16 x 14 x 6	NS16146	NV16146	JP1614 / JP1614P	1	Opa 9.2 / Clr 8.1

* Kitted Enclosures include body, lid and mounting rail kit.
** Order back panels separately.

Individual Components

Enclosure Size	Enclosure Base* Part Nos.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	Enclosure Lids Opaque Lids	Clear Lids	Std. Ctn . Qty.	Std. Ctn. Wt. (lbs.)	Back Panels** Steel /PVC Part Nos.	Std. Ctn Qty.
6 x 4 x 4	NP644B	18	21	NS64L	NV64L	16	Opa 6.4 / Clr 5.7	JP64 / JP64P	1
6 x 6 x 4	NP664B	12	17	NS66L	NV66L	12	Opa 6.2 / Clr 5.7	JP66 / JP66P	1
8 x 6 x 4	NP864B	12	18	NS86L	NV86L	9	Opa 6 / Clr 4.4	JP86 / JP86P	1
8 x 8 x 4	NP884B	14	28	NS88L	NV88L	18	Opa 14 / Clr 11.2	JP88 / JP88P	1
10 x 8 x 4	NP1084B	12	26	NS108L	NV108L	12	Opa 13 / Clr 11	JP108 / JP108P	1
10 x 8 x 6	NP1086B	8	23	NS108L	NV108L	12	Opa 13 / Clr 11	JP108 / JP108P	1
10 x 10 x 6	NP1010B	6	20	NS1010L	NV1010L	11	Opa 14 / Clr 12	JP1010 / JP1010P	1
12 x 10 x 6	NP1210B	6	23	NS1210L	NV1210L	12	Opa 15 / Clr 15	JP1210 / JP1210P	1
12 x 12 x 6	NP1212B	5	22	NS1212L	NV1212L	10	Opa 15 / Clr 14	JP1212 / JP1212P	1
14 x 12 x 6	NP1412B	5	24	NS1412L	NV1412L	5	Opa 9 / Clr 9	JP1412 / JP1412P	1
16 x 14 x 6	NP1614B	4	31	NS1614L	NV1614L	5	Opa 11 / Clr 11	JP1614 / JP1614P	1

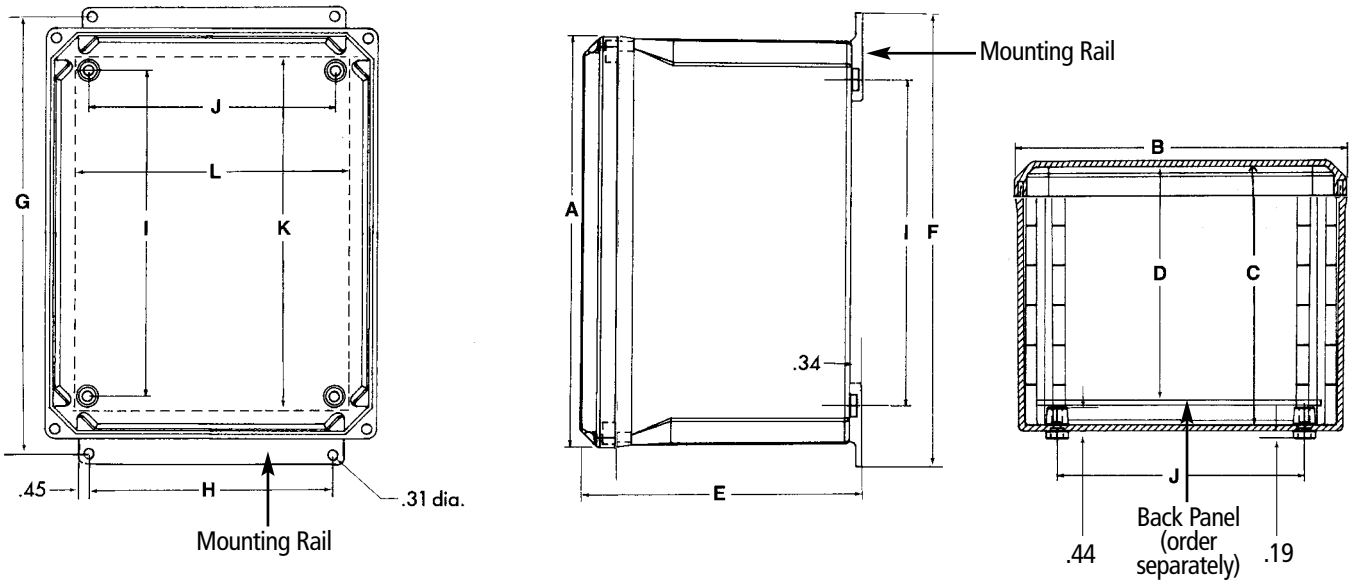
* Mounting rails are not included. See "Mounting Rails" listed in the Enclosure Accessories section.
** Order back panels separately.

Screw-On Cover

Specifications

Enclosure With Clear Lid Part Nos.*	Enclosure With Opaque Lid Part Nos.*	Enclosure Size A	B	C	D	E	F	Enclosure Mounting Hole Spacing G	H	Panel Mounting Hole Spacing I	J	Back Panel Size K	L	Back Panel** Part Nos. Steel	PVC
NV644	NS644	6.40	4.40	4.49	3.98	5.13	7.69	6.75	2.00	4.25	2.25	4.88	2.88	JP64	JP64P
NV664	NS664	6.40	6.40	4.49	3.98	5.13	7.69	6.75	4.00	4.25	4.25	4.88	4.88	JP66	JP66P
NV864	NS864	8.40	6.40	4.49	3.98	5.13	9.69	8.75	4.00	6.25	4.25	6.75	4.88	JP86	JP86P
NV884	NS884	8.40	8.40	4.49	3.98	5.13	9.69	8.75	6.00	6.25	6.25	6.75	6.88	JP88	JP88P
NV1084	NS1084	10.40	8.40	4.49	3.98	5.13	11.69	10.75	6.00	8.25	6.25	8.75	6.88	JP108	JP108P
NV1086	NS1086	10.40	8.40	6.49	5.98	7.13	11.69	10.75	6.00	8.25	6.25	8.75	6.88	JP108	JP108P
NV10106	NS10106	10.40	10.40	6.49	5.98	7.13	11.69	10.75	8.00	8.25	8.25	8.75	8.88	JP1010	JP1010P
NV12106	NS12106	12.40	10.40	6.49	5.98	7.13	13.69	12.75	8.00	10.25	8.25	10.75	8.88	JP1210	JP1210P
NV12126	NS12126	12.40	12.40	6.49	5.98	7.13	13.69	12.75	10.00	10.25	10.25	10.75	10.88	JP1212	JP1212P
NV14126	NS14126	14.40	12.40	6.49	5.98	7.13	15.69	14.75	10.00	12.25	10.25	12.75	10.88	JP1412	JP1412P
NV16146	NS16146	16.40	14.40	6.49	5.98	7.13	17.69	16.75	12.00	14.25	12.25	14.75	12.88	JP1614	JP1612P

* Packaged-To-Order Enclosures include body, lid and mounting rail kit.
** Order back panels separately. ($^{10}/_{32}$ – $^{3}/_{8}$ Back Panel screws not supplied.)



Hidden Hinge Cover

Meets NEMA 1, 2, 3, 3S, 3X, 3SX, 4, 4X, 12

UL LISTED E110981 CSA LR96563



Opaque Cover



Clear Cover

Factory Assembled

Size	Opaque Cover Assembly*	Clear Cover Assembly*	Back Panels** Steel/PVC	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.) Opaque/Clear
6 x 4 x 5 (y)	NH644	NI644	JP64 / JP64P	1	Opa 2.2 / Clr 2.8
6 x 6 x 5	NH664	NI664	JP66 / JP66P	1	Opa 2.7 / Clr 3.2
8 x 6 x 5	NH864	NI864	JP86 / JP86P	1	Opa 3.3 / Clr 3.8
8 x 8 x 5	NH884	NI884	JP88 / JP88P	1	Opa 3.8 / Clr 3.8
10 x 8 x 5	NH1084	NI1084	JP108 / JP108P	1	Opa 4.0 / Clr 4.5
10 x 8 x 7	NH1086	NI1086	JP108 / JP108P	1	Opa 5.2 / Clr 5.1
10 x 10 x 7	NH10106	NI10106	JP1010 / JP1010P	1	Opa 5.7 / Clr 5.8
12 x 10 x 7	NH12106	NI12106	JP1210 / JP1210P	1	Opa 6.9 / Clr 6.1
12 x 12 x 7	NH12126	NI12126	JP1212 / JP1212P	1	Opa 7.7 / Clr 7.2
14 x 12 x 7	NH14126	NI14126	JP1412 / JP1412P	1	Opa 8.3 / Clr 7.9
16 x 14 x 7	NH16146	NI16146	JP1614 / JP1614P	1	Opa 10.1 / Clr 9.6

* Packaged-To-Order Enclosures (except NI1084) include body, lid and mounting rail kit.
** Order back panels separately.
(y) 6 x 4 x 5 size not available with quick-release latches.

Individual Components

	Enclosure Base*			Enclosure Lids				Collars			Back Panels**	
Enclosure Size	Part Nos.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	Opaque Lids Part Nos.	Clear Lids Part Nos.	Std. Ctn . Qty.	Std. Ctn. Wt. (lbs.)	Part Nos.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	Steel /PVC Part Nos.	Std. Ctn Qty.
6 x 4 x 5(y)	NP644B	18	21	NH64L	NI64L	16	Opa 6.8 / Clr 6.3	NH64C	16	6	JP64 / JP64P	1
6 x 6 x 5	NP664B	12	17	NH66L	NI66L	12	Opa 6.8 / Clr 6.3	NH66C	12	5	JP66 / JP66P	1
8 x 6 x 5	NP864B	12	18	NH86L	NI86L	9	Opa 6.3 / Clr 5.7	NH86C	9	4	JP86 / JP86P	1
8 x 8 x 5	NP884B	14	28	NH88L	NI88L	18	Opa 16 / Clr 15	NH88C	9	3.6	JP88 / JP88P	1
10 x 8 x 5	NP1084B	12	26	NH108L	NI108L	12	Opa 13 / Clr 12	NH108C	12	7.8	JP108 / JP108P	1
10 x 8 x 7	NP1086B	8	23	NH108L	NI108L	12	Opa 13 / Clr 12	NH108C	12	7.8	JP108 / JP108P	1
10 x 10 x 7	NP1010B	6	20	NH1010L	NI1010L	11	Opa 14 / Clr 13	NH1010C	11	7.5	JP1010 / JP1010P	1
12 x 10 x 7(z)	NP1210B	6	23	NH1210L	NI1210L	12	Opa 17 / Clr 6	NH1210C	12	8	JP1210 / JP1210P	1
12 x 12 x 7(z)	NP1212B	5	22	NH1212L	NI1212L	10	Opa 17 / Clr 16	NH1212C	12	7.7	JP1212 / JP1212P	1
14 x 12 x 7(z)	NP1412B	5	24	NH1412L	NI1412L	5	Opa 10 / Clr 10	NH1412C	5	4.7	JP1412 / JP1412P	1
16 x 14 x 7(z)	NP1614B	4	31	NH1614L	NI1614L	5	Opa 13 / Clr 12	NH1614C	5	5.6	JP1614 / JP1614P	1

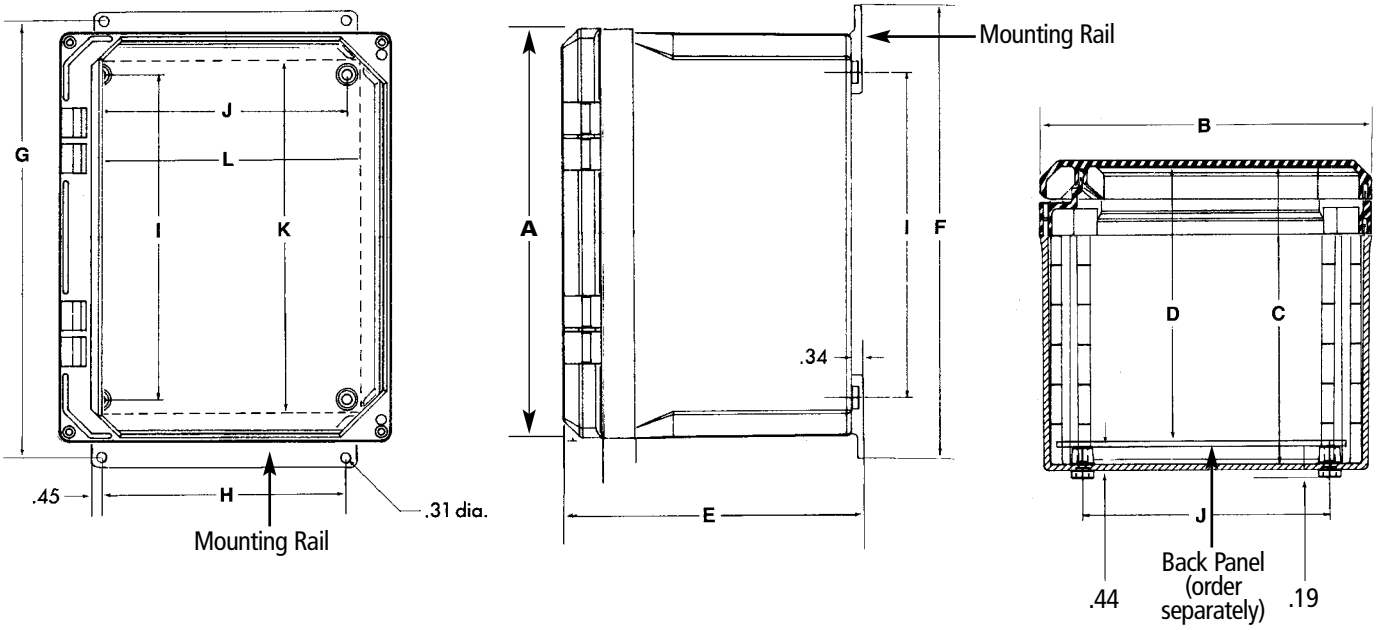
* Mounting rails are not included. See "Mounting Rails" listed in the Enclosure Accessories section.
** Order back panels separately.
(y) 6 x 4 x 5 enclosures are not available with quick-release latches.
(z) Sizes 12 x 10 and larger require two (2) latches per enclosure.

Hidden Hinge Cover

Specifications

Enclosure With Opaque Lid Part Nos.*	Enclosure With Clear Lid Part Nos.*	Enclosure Size A	B	C	D	E	F	Enclosure Mounting Hole Spacing G	H	Panel Mounting Hole Spacing I	J	Back Panel Size K	L	Back Panel** Part Nos. Steel	PVC
NH644	NI644	6.40	4.40	5.30	4.79	5.94	7.69	6.75	2.00	4.25	2.25	4.88	2.88	JP64	JP64P
NH664	NI664	6.40	6.40	5.30	4.79	5.94	7.69	6.75	4.00	4.25	4.25	4.88	4.88	JP66	JP66P
NH864	NI864	8.40	6.40	5.30	4.79	5.94	9.69	8.75	4.00	6.25	4.25	6.75	4.88	JP86	JP86P
NH884	NI884	8.40	8.40	5.30	4.79	5.94	9.69	8.75	6.00	6.25	6.25	6.75	6.88	JP88	JP88P
NH1084	NI1084	10.40	8.40	5.30	4.79	5.94	11.69	10.75	6.00	8.25	6.25	8.75	6.88	JP108	JP108P
NH1086	NI1086	10.40	8.40	7.30	6.79	7.94	11.69	10.75	6.00	8.25	6.25	8.75	6.88	JP108	JP108P
NH10106	NI10106	10.40	10.40	7.30	6.79	7.94	11.59	10.75	8.00	8.25	8.25	8.75	8.88	JP1010	JP1010P
NH12106	NI12106	12.40	10.40	7.30	6.79	7.94	13.69	12.75	8.00	10.25	8.25	10.75	8.88	JP1210	JP1210P
NH12126	NI12126	12.40	12.40	7.30	6.79	7.94	13.69	12.75	10.00	10.25	10.25	10.75	10.88	JP1212	JP1212P
NH14126	NI14126	14.40	12.40	7.30	6.79	7.94	15.69	14.75	10.00	12.25	10.25	12.75	10.88	JP1412	JP1412P
NH16146	NI16146	16.40	14.40	7.30	6.79	7.94	17.69	16.75	12.00	14.25	12.25	14.75	12.88	JP1614	JP1612P

* Packaged-To-Order Enclosures (except NI1084) include body, lid and mounting rail kit.
** Order back panels separately. ($^{10}/_{32}$ – $^{3}/_{8}$ Back Panel screws not supplied.)



External Hinge Cover

Meets NEMA 1, 2, 3, 3S, 3X, 3SX, 4, 4X, 12

UL LISTED E110981 CSA LR96563



Opaque Cover



Clear Cover

Factory Assembled

Size	Opaque Cover Assembly*	Clear Cover Assembly*	Back Panels** Steel/PVC	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.) Opaque/Clear
6 x 4 x 4 (y)	NJ644	NC644	JP64 / JP64P	1	Opa 1.9 / Clr 2
6 x 6 x 4	NJ664	NC664	JP66 / JP66P	1	Opa 2.4 / Clr 2.4
8 x 6 x 4	NJ864	NC864	JP86 / JP86P	1	Opa 2.9 / Clr 2.9
8 x 8 x 4	NJ884	NC884	JP88 / JP88P	1	Opa 3.3 / Clr 3.3
10 x 8 x 4	NJ1084	NC1084	JP108 / JP108P	1	Opa 4 / Clr 4
10 x 8 x 6	NJ1086	NC1086	JP108 / JP108P	1	Opa 4.6 / Clr 4.7
10 x 10 x 6	NJ10106	NC10106	JP1010 / JP1010P	1	Opa 5.6 / Clr 5.3
12 x 10 x 6	NJ12106	NC12106	JP1210 / JP1210P	1	Opa 6.3 / Clr 5.8
12 x 12 x 6	NJ12126	NC12126	JP1212 / JP1212P	1	Opa 6.9 / Clr 6.6
14 x 12 x 6	NJ14126	NC14126	JP1412 / JP1412P	1	Opa 7.7 / Clr 7
16 x 14 x 6	NJ16146	NC16146	JP1614 / JP1614P	1	Opa 8.2 / Clr 8

* Packaged-To-Order Enclosures include body, lid and mounting rail kit.
** Order back panels separately.
(y) Quick-release latch not available in 6 x 4 x 4 size.

Individual Components

	Enclosure Base*			Enclosure Lids				Back Panels**	
Enclosure Size	Part Nos.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	Opaque Lids	Clear Lids	Std. Ctn . Qty.	Std. Ctn. Wt. (lbs.)	Steel /PVC Part Nos.	Std. Ctn Qty.
6 x 4 x 4 (y)	NL644B	18	29	NJ64L	NC64L	16	Opa 6.4 / Clr 4.2	JP64 / JP64P	1
6 x 6 x 4	NL664B	12	18	NJ66L	NC66L	12	Opa 5.0 / Clr 5.9	JP66 / JP66P	1
8 x 6 x 4	NL864B	8	14	NJ86L	NC86L	9	Opa 6 / Clr 5.3	JP86 / JP86P	1
8 x 8 x 4	NL884B	14	28	NJ88L	NC88L	18	Opa 15 / Clr 13.5	JP88 / JP88P	1
10 x 8 x 4	NL1084B	12	32	NJ108L	NC108L	12	Opa 13 / Clr 11.7	JP108 / JP108P	1
10 x 8 x 6	NL1086B	8	15	NJ108L	NC108L	12	Opa 13 / Clr 11.7	JP108 / JP108P	1
10 x 10 x 6	NL1010B	6	20	NJ1010L	NC1010L	11	Opa 14 / Clr 13	JP1010 / JP1010P	1
12 x 10 x 6(z)	NL1210B	6	24	NJ1210L	NC1210L	12	Opa 14 / Clr 15	JP1210 / JP1210P	1
12 x 12 x 6(y)	NL1212B	5	21.8	NJ1212L	NC1212L	10	Opa 16 / Clr 14	JP1212 / JP1212P	1
14 x 12 x 6(y)	NL1412B	4	19	NJ1412L	NC1412L	5	Opa 10 / Clr 9	JP1412 / JP1412P	1
16 x 12 x 6(y)	NL1614B	4	31	NJ1614L	NC1614L	5	Opa 13.5 / Clr 12	JP1614 / JP1614P	1

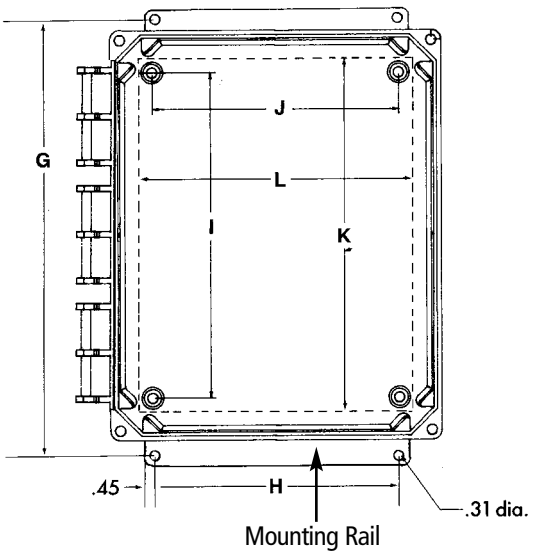
* Mounting rails are not included. See "Mounting Rails" listed in the Enclosure Accessories section.
** Order back panels separately.
(z) Sizes 12 x 10 and larger require two (2) latches per enclosure.
(y) Quick-release latch not available in 6 x 4 x 4 size.

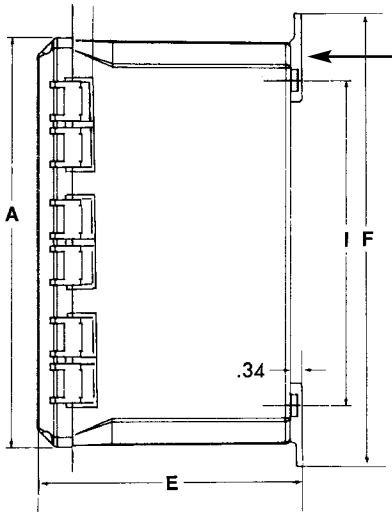
External Hinge Cover

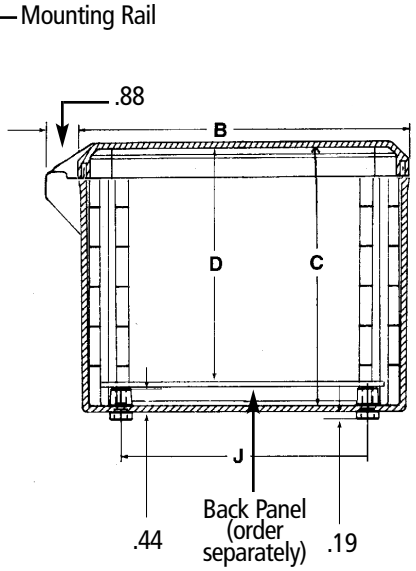
Specifications

Enclosure With Clear Lid Part Nos.*	Enclosure With Opaque Lid Part Nos.*	Enclosure Size A	B	C	D	E	F	Enclosure Mounting Hole Spacing G	H	Panel Mounting Hole Spacing I	J	Back Panel Size K	L	Back Panel** Part Nos. Steel	PVC
NC644	NJ644	6.40	4.40	4.49	3.98	5.13	7.69	6.75	2.00	4.25	2.25	4.88	2.88	JP64	JP64P
NC664	NJ664	6.40	6.40	4.49	3.98	5.13	7.69	6.75	4.00	4.25	4.25	4.88	4.88	JP66	JP66P
NC864	NJ864	8.40	6.40	4.49	3.98	5.13	9.69	8.75	4.00	6.25	4.25	6.75	4.88	JP86	JP86P
NC884	NJ884	8.40	8.40	4.49	3.98	5.13	9.69	8.75	6.00	6.25	6.25	6.75	6.88	JP88	JP88P
NC1084	NJ1084	10.40	8.40	4.49	3.98	5.13	11.69	10.75	6.00	8.25	6.25	8.75	6.88	JP108	JP108P
NC1086	NJ1086	10.40	8.40	6.49	5.98	7.13	11.69	10.75	6.00	8.25	6.25	8.75	6.88	JP108	JP108P
NC10106	NJ10106	10.40	10.40	6.49	5.98	7.13	11.69	10.75	8.00	8.25	8.25	8.75	8.88	JP1010	JP1010P
NC12106	NJ12106	12.40	10.40	6.49	5.98	7.13	13.69	12.75	8.00	10.25	8.25	10.75	8.88	JP1210	JP1210P
NC12126	NJ12126	12.40	12.40	6.49	5.98	7.13	13.69	12.75	10.00	10.25	10.25	10.75	10.88	JP1212	JP1212P
NC14126	NJ14126	14.40	12.40	6.49	5.98	7.13	15.69	14.75	10.00	12.25	10.25	12.75	10.88	JP1412	JP1412P
NC16146	NJ16146	16.40	14.40	6.49	5.98	7.13	17.69	16.75	12.00	14.25	12.25	14.75	12.88	JP1614	JP1614P

* Packaged-To-Order Enclosures; include body, lid and mounting rail kit.
** Order back panels separately. ($^{10}/_{32}$ – $^{3}/_{8}$ Back Panel screws not supplied.)







Quick Reference

Screw-On Cover Style

Complete Enclosures (no Panel or Latches)		Individual Components							
						Back Panels		Latches (Qty. needed)	
Opaque Lid	Clear Lid	Body	Lid	Collar	Mtg. Rails	Steel	PVC	Steel	PVC
NS644		NP644B	NS64L	N/A	NMK4V	JP64	JP64P	N/A	N/A
	NV644	NP644B	NV64L	N/A	NMK4V	JP64	JP64P	N/A	N/A
NS664		NP664B	NS66L	N/A	NMK6V	JP66	JP66P	N/A	N/A
	NV664	NP664B	NV66L	N/A	NMK6V	JP66	JP66P	N/A	N/A
NS864		NP864B	NS86L	N/A	NMK6V	JP86	JP86P	N/A	N/A
	NV864	NP864B	NV86L	N/A	NMK6V	JP86	JP86P	N/A	N/A
NS884		NP884B	NS88L	N/A	NMK8V	JP88	JP88P	N/A	N/A
	NV884	NP884B	NV88L	N/A	NMK8V	JP88	JP88P	N/A	N/A
NS1084		NP1084B	NS108L	N/A	NMK8V	JP108	JP108P	N/A	N/A
	NV1084	NP1084B	NV108L	N/A	NMK8V	JP108	JP108P	N/A	N/A
NS1086		NP1086B	NS108L	N/A	NMK8V	JP108	JP108P	N/A	N/A
	NV1086	NP1086B	NV108L	N/A	NMK8V	JP108	JP108P	N/A	N/A
NS10106		NP1010B	NS1010L	N/A	NMK10V	JP1010	JP1010P	N/A	N/A
	NV10106	NP1010B	NV1010L	N/A	NMK10V	JP1010	JP1010P	N/A	N/A
NS12106		NP1210B	NS1210L	N/A	NMK10V	JP1210	JP1210P	N/A	N/A
	NV12106	NP1210B	NV1210L	N/A	NMK10V	JP1210	JP1210P	N/A	N/A
NS12126		NP1212B	NS1212L	N/A	NMK12V	JP1212	JP1212P	N/A	N/A
	NV12126	NP1212B	NV1212L	N/A	NMK12V	JP1212	JP1212P	N/A	N/A
NS14126		NP1412B	NS1412L	N/A	NMK12V	JP1412	JP1412P	N/A	N/A
	NV14126	NP1412B	NV1412L	N/A	NMK12V	JP1412	JP1412P	N/A	N/A
NS16146		NP1614B	NS1614L	N/A	NMK14V	JP1614	JP1614P	N/A	N/A
	NV16146	NP1614B	NV1614L	N/A	NMK14V	JP1614	JP1614P	N/A	N/A

External Hinge Cover Style

Complete Enclosures (no Panel or Latches)		Individual Components							
						Back Panels		Latches (Qty. needed)	
Opaque Lid	Clear Lid	Body	Lid	Collar	Mtg. Rails	Steel	PVC	Steel	PVC
NJ644		NL644B	NJ64L	N/A	NMK4V	JP64	JP64P	SSLS (1)	NPL1S (1)
	NC644	NL644B	NC64L	N/A	NMK4V	JP64	JP64P	SSLS (1)	NPL1S (1)
NJ664		NL664B	NJ66L	N/A	NMK6V	JP66	JP66P	SSLS (1)	NPL1S (1)
	NC664	NL664B	NC66L	N/A	NMK6V	JP66	JP66P	SSLS (1)	NPL1S (1)
NJ864		NL864B	NJ86L	N/A	NMK6V	JP86	JP86P	SSLS (1)	NPL1S (1)
	NC864	NL864B	NC86L	N/A	NMK6V	JP86	JP86P	SSLS (1)	NPL1S (1)
NJ884		NL884B	NJ88L	N/A	NMK8V	JP88	JP88P	SSLS (1)	NPL1S (1)
	NC884	NL884B	NC88L	N/A	NMK8V	JP88	JP88P	SSLS (1)	NPL1S (1)
NJ1084		NL1084B	NJ108L	N/A	NMK8V	JP108	JP108P	SSLS (1)	NPL1S (1)
	NC1084	NL1084B	NC108L	N/A	NMK8V	JP108	JP108P	SSLS (1)	NPL1S (1)
NJ1086		NL1086B	NJ108L	N/A	NMK8V	JP108	JP108P	SSLS (1)	NPL1S (1)
	NC1086	NL1086B	NC108L	N/A	NMK8V	JP108	JP108P	SSLS (1)	NPL1S (1)
NJ10106		NL1010B	NJ1010L	N/A	NMK10V	JP1010	JP1010P	SSLS (1)	NPL1S (1)
	NC10106	NL1010B	NC1010L	N/A	NMK10V	JP1010	JP1010P	SSLS (1)	NPL1S (1)
NJ12106		NL1210B	NJ1210L	N/A	NMK10V	JP1210	JP1210P	SSLS (2)	NPL1S (2)
	NC12106	NL1210B	NC1210L	N/A	NMK10V	JP1210	JP1210P	SSLS (2)	NPL1S (2)
NJ12126		NL1212B	NJ1212L	N/A	NMK12V	JP1212	JP1212P	SSLS (2)	NPL1S (2)
	NC12126	NL1212B	NC1212L	N/A	NMK12V	JP1212	JP1212P	SSLS (2)	NPL1S (2)
NJ14126		NL1412B	NJ1412L	N/A	NMK12V	JP1412	JP1412P	SSLS (2)	NPL1S (2)
	NC14126	NL1412B	NC1412L	N/A	NMK12V	JP1412	JP1412P	SSLS (2)	NPL1S (2)
NJ16146		NL1614B	NJ1614L	N/A	NMK14V	JP1614	JP1614P	SSLS (2)	NPL1S (2)
	NC16146	NL1614B	NC1614L	N/A	NMK14V	JP1614	JP1614P	SSLS (2)	NPL1S (2)

Quick Reference

Hidden Hinge Cover Style

Complete Enclosures (no Panel or Latches)		Individual Components							
						Back Panels		Latches (Qty. needed)	
Opaque Lid	Clear Lid	Body	Lid	Collar	Mtg. Rails	Steel	PVC	Steel	PVC
NH644		NP644B	NH64L	NH64C	NMK4V	JP64	JP64P	SSLL (1)	NPL1L (1)
	NI644	NP644B	NI64L	NH64C	NMK4V	JP64	JP64P	SSLL (1)	NPL1L (1)
NH664		NP664B	NH66L	NH66C	NMK6V	JP66	JP66P	SSLL (1)	NPL1L (1)
	NI664	NP664B	NI66L	NH66C	NMK6V	JP66	JP66P	SSLL (1)	NPL1L (1)
NH864		NP864B	NH86L	NH86C	NMK6V	JP86	JP86P	SSLL (1)	NPL1L (1)
	NI864	NP864B	NI86L	NH86C	NMK6V	JP86	JP86P	SSLL (1)	NPL1L (1)
NH884		NP884B	NH88L	NH88C	NMK8V	JP88	JP88P	SSLL (1)	NPL1L (1)
	NI884	NP884B	NI88L	NH88C	NMK8V	JP88	JP88P	SSLL (1)	NPL1L (1)
NH1084		NP1084B	NH108L	NH108C	NMK8V	JP108	JP108P	SSLL (1)	NPL1L (1)
	NI1084	NP1084B	NI108L	NH108C	NMK8V	JP108	JP108P	SSLL (1)	NPL1L (1)
NH1086		NP1086B	NH108L	NH108C	NMK8V	JP108	JP108P	SSLL (1)	NPL1L (1)
	NI1086	NP1086B	NI108L	NH108C	NMK8V	JP108	JP108P	SSLL (1)	NPL1L (1)
NH10106		NP1010B	NH1010L	NH1010C	NMK10V	JP1010	JP1010P	SSLL (1)	NPL1L (1)
	NI10106	NP1010B	NI1010L	NH1010C	NMK10V	JP1010	JP1010P	SSLL (1)	NPL1L (1)
NH12106		NP1210B	NH1210L	NH1210C	NMK10V	JP1210	JP1210P	SSLL (2)	NPL1L (2)
	NI12106	NP1210B	NI1210L	NH1210C	NMK10V	JP1210	JP1210P	SSLL (2)	NPL1L (2)
NH12126		NP1212B	NH1212L	NH1212C	NMK12V	JP1212	JP1212P	SSLL (2)	NPL1L (2)
	NI12126	NP1212B	NI1212L	NH1212C	NMK12V	JP1212	JP1212P	SSLL (2)	NPL1L (2)
NH14126		NP1412B	NH1412L	NH1412C	NMK12V	JP1412	JP1412P	SSLL (2)	NPL1L (2)
	NI14126	NP1412B	NI1412L	NH1412C	NMK12V	JP1412	JP1412P	SSLL (2)	NPL1L (2)
NH16146		NP1614B	NH1614L	NH1614C	NMK14V	JP1614	JP1614P	SSLL (2)	NPL1L (2)
	NI16146	NP1614B	NI1614L	NH1614C	NMK14V	JP1614	JP1614P	SSLL (2)	NPL1L (2)

Circuit Safe JIC Enclosures



Manufactured from structural foam thermoplastic, Carlon® Circuit Safe® JIC enclosures provide high impact strength to eliminate dents and deformations along with high dielectric strength, excellent weathering capabilities, and excellent resistance to a wide range of corrosive agents, acids, alkalines, and salts. These UL approved and CSA recognized enclosures also withstand wet and dirty environments, while their thick wall construction make them a particularly good choice wherever condensation is a concern. Rated for use in Type 1, 3, 3S, 3X, 3SX, 4, 4X, 12, and 13 environments, Carlon Circuit Safe JIC enclosures are suited for virtually all indoor/outdoor industrial, MRO, and OEM applications. They are available in 10 sizes from 6 x 6 x 5 through 30 x 24 x 12 with a choice of screw or hinged design, opaque covers, or clear polycarbonate covers which protect devices from hostile environments while allowing monitoring of instrumentation and/or electrical functions.

Features

- Hinge caps make covers captive.
- Nonmetallic molded-in hinges on hinged models.
- No rough corners, sharp edges, or burrs.
- Nonconductive — eliminates danger of electrical shock.
- Lid design provides greater usable internal volume.
- Ample interior space for ease of wiring.
- Fully gasketed.
- Ultraviolet stabilized for outdoor use.

Applications

- Instrument case.
- Junction and terminal boxes.
- Control and switching enclosures.
- Splice and pull boxes.
- Starter, pushbutton, and transformer housings.
- Meter and transformer cabinets.

Standards

- Meets NEMA Types 1, 3, 3S, 3X, 3SX, 4, 4X, 12, 13 as indicated.
- UL Listed per UL 50, enclosures for electrical equipment.
- CSA certified.
- JIC compliance.

Hinged Cover

Meets NEMA 1, 3, 3S, 3X, 3SX, 4, 4X, 12, 13

LISTED E54381 LR31146



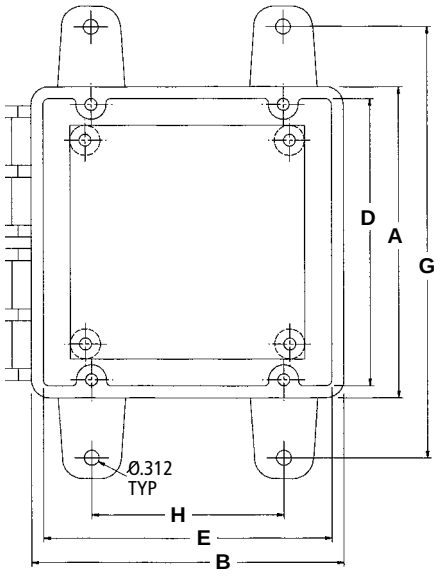
Features

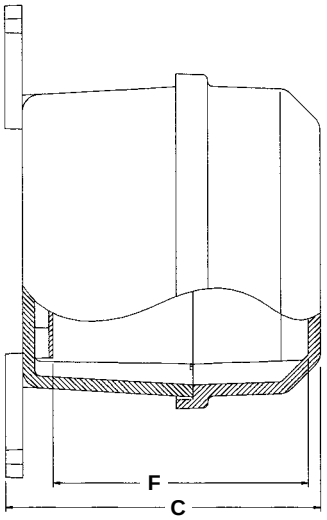
- Nonmetallic mounting feet and all mounting hardware included.
- White painted 14 gauge steel or 1/4" PVC back panel (order separately).
- 304 (18-8) stainless steel screws (10-32 / 1 1/8").
- Lid design provides greater usable internal volume.
- Completely nonmetallic hinges.
- Brass screw inserts.
- Temperature Range: -30° to 230°F
- Material: polycarbonate molded base and cover.

Factory Assembled

Opaque Cover Part Nos.	Clear Cover Part Nos.	Dimensions External A	B	C	Internal D	E	F	Mounting G	H	Std. Ctn. Qty. (lbs.) Opaque/Clear	Back Panel* Part Nos. Steel/PVC	Panel Size	Std. Ctn. Qty. (lbs.) Steel/PVC
CJ665	CC665	6.50	6.50	6.69	6.00	6.00	5.45	9.00	4.00	1 (Opa 3.5) / 1 (Clr 3.1)	JP66/JP66P	4.88 x 4.88	1 (1.0) / 1 (0.3)
CJ863	CC863	8.50	6.50	4.49	8.00	6.00	3.25	11.00	4.00	1 (Opa 2.8) / 1 (Clr 3.1)	JP86/JP86P	6.75 x 4.88	1 (1.0) / 1 (0.78)
CJ1085	CC1085	10.50	8.50	6.69	10.00	8.00	5.45	13.00	6.00	1 (Opa 5.2) / 1 (Clr 5.2)	JP108/JP108P	8.75 x 6.88	1 (1.5) / 1 (0.7)
CJ12106	CC12106	12.50	10.50	7.69	12.00	10.00	6.45	15.00	8.00	1 (Opa 7.1) / 1 (Clr 8.4)	JP1210/JP1210P	10.75 x 8.88	1 (2.0) / 1 (1.2)
CJ14126	CC14126	14.50	12.50	7.72	14.00	12.00	6.48	17.00	10.00	1 (Opa 9.0) / 1 (Clr 8.6)	JP1412/JP1412P	12.75 x 10.88	1 (3.2) / 1 (1.7)
CJ16147	CC16147	16.50	14.50	8.46	16.00	14.00	7.22	19.00	12.00	1 (Opa 10.6) / 1 (Clr 11.9)	JP1614/JP1614P	14.75 x 12.88	1 (4.7) / 1 (2.3)

*Order back panels separately.
Enclosures shipped with mounting feet, hinge caps and screws.
For factory installed pad lockable latch, consult Customer Service for price and delivery.





Screw-On Cover

Meets NEMA 1, 3, 3S, 3X, 3SX, 4, 4X, 12, 13

UL LISTED E54381 CSA LR31146



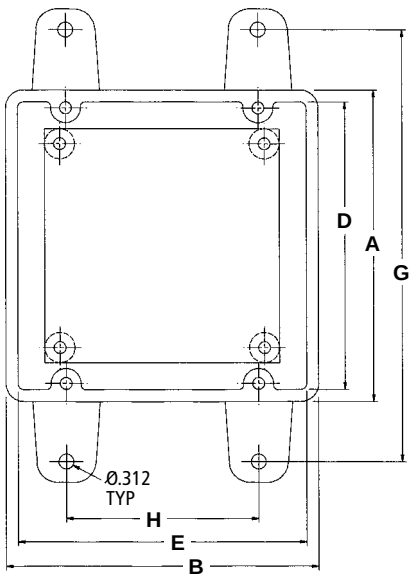
Features

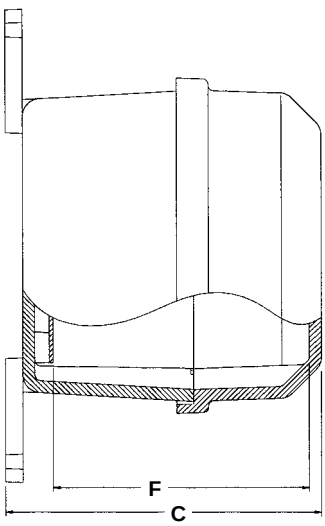
- Nonmetallic mounting feet and all mounting hardware included.
- 304 (18-8) stainless steel screws (10-32 / 1 1/8").
- Brass screw inserts.
- Clear polycarbonate cover available.
- White painted 14 gauge steel or 1/4" PVC back panel (order separately).
- Lid design provides greater usable internal volume.
- Temperature Range: -30° to 230°F
- Material: polycarbonate molded base and cover.

Factory Assembled

Opaque Cover Part Nos.	Clear Cover Part Nos.	Dimensions External A	B	C	Internal D	E	F	Mounting G	H	Std. Ctn. Qty. (lbs.) Opaque/Clear	Back Panel* Part Nos. Steel/PVC	Panel Size	Std. Ctn. Qty. (lbs.) Steel/PVC
CS665	CV665	6.50	6.50	6.69	6.00	6.00	5.45	9.00	4.00	1 (Opa 2.7) / 1 (Clr 2.9)	JP66/JP66P	4.88 x 4.88	1 (1.0) / 1 (0.3)
CS863	CV863	8.50	6.50	4.49	8.00	6.00	3.25	11.00	4.00	1 (Opa 2.9) / 1 (Clr 2.9)	JP86/JP86P	6.75 x 4.88	1 (1.0) / 1 (0.4)
CS1085	CV1085	10.50	8.50	6.69	10.00	8.00	5.45	13.00	6.00	1 (Opa 5.0) / 1 (Clr 5.0)	JP108/JP108P	8.75 x 6.88	1 (1.5) / 1 (0.7)
CS12106	CV12106	12.50	10.50	7.69	12.00	10.00	6.45	15.00	8.00	1 (Opa 6.5) / 1 (Clr 7.2)	JP1210/JP1210P	10.75 x 8.88	1 (2.0) / 1 (1.2)
CS14126	CV14126	14.50	12.50	7.72	14.00	12.00	6.48	17.00	10.00	1 (Opa 8.0) / 1 (Clr 8.8)	JP1412/JP1412P	12.75 x 10.88	1 (3.2) / 1 (1.7)
CS16147	CV16147	16.50	14.50	8.46	16.00	14.00	7.22	19.00	12.00	1 (Opa 11.5) / 1 (Clr 10.8)	JP1614/JP1614P	14.75 x 12.88	1 (4.7) / 1 (2.3)

*Order back panels separately.
Enclosures shipped with mounting feet and panel mounting hardware.





Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Medium Hinged Cover

Meets NEMA 1, 3, 3S, 3X, 3SX, 4, 4X, 12, 13

LISTED E54381 LR31146



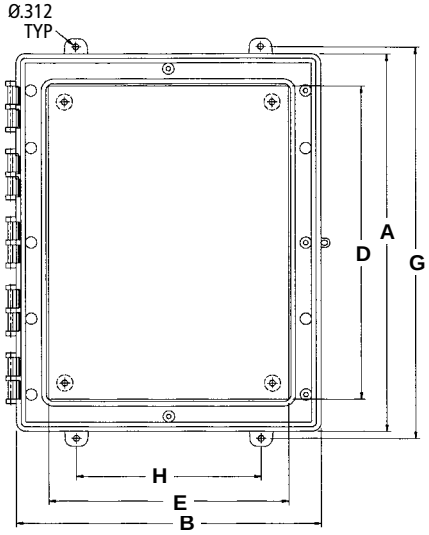
Features

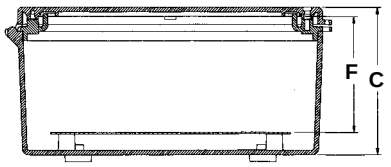
- Nonmetallic mounting feet and all mounting hardware included.
- White painted 14 gauge steel or 1/4" PVC back panel (order separately).
- 304 (18-8) stainless steel screws (10-32 / 1 1/8").
- Completely nonmetallic hinges.
- Brass screw inserts.
- Temperature Range: -40° to 185°F
- Material: NORYL base and cover.

Factory Assembled

Part Nos.*	Dimensions External A	External B	External C	Internal D	Internal E	Internal F	Mounting G	Mounting H	Std. Ctn. Qty. (lbs.)	Back Panel* Part Nos. Steel/PVC	Panel Size	Std. Ctn. Qty. (lbs.) Steel/PVC
C2016A4	20.50	16.50	8.36	17.25	13.25	6.28	21.26	10.00	1 (15.1)	NP2016/NP2016P	17 x 13.25	1 (7.0) / 1 (6.1)
C2016B4	20.50	16.50	10.36	17.25	13.25	8.28	21.26	10.00	1 (17.2)	NP2016/NP2016P	17 x 13.25	1 (7.0) / 1 (6.1)
C2016C4	20.50	16.50	12.36	17.25	13.25	10.28	21.26	10.00	1 (19.7)	NP2016/NP2016P	17 x 13.25	1 (7.0) / 1 (6.1)
C2420A4	24.50	20.50	8.36	21.25	17.25	6.28	25.26	14.00	1 (21.5)	NP2420/NP2420P	21 x 17	1 (10.4) / 1 (4.7)
C2420B4	24.50	20.50	10.36	21.25	17.25	8.28	25.26	14.00	1 (24)	NP2420/NP2420P	21 x 17	1 (10.4) / 1 (4.7)
C2420C4	24.50	20.50	12.36	21.25	17.25	10.28	25.26	14.00	1 (24.9)	NP2420/NP2420P	21 x 17	1 (10.4) / 1 (4.7)
C3024A4	30.50	24.50	8.36	27.25	21.25	6.28	31.26	18.00	1 (28.4)	NP3024/NP3024P	27 x 21	1 (18.0) / 1 (9.8)
C3024B4	30.50	24.50	10.36	27.25	21.25	8.28	31.26	18.00	1 (31.4)	NP3024/NP3024P	27 x 21	1 (18.0) / 1 (9.8)
C3024C4	30.50	24.50	12.36	27.25	21.25	10.28	31.26	18.00	1 (33.8)	NP3024/NP3024P	27 x 21	1 (18.0) / 1 (9.8)

*Enclosure only available with opaque hinged cover.
Enclosures shipped with mounting feet, hinge caps and screws.
**Order back panels separately.
For factory installed pad lockable latch, consult Customer Service for price and delivery.





Hinged Window Cover

Meets NEMA 1, 3, 3S, 3X, 3SX, 4, 4X, 12, 13

LISTED E54381 LR31146



Features

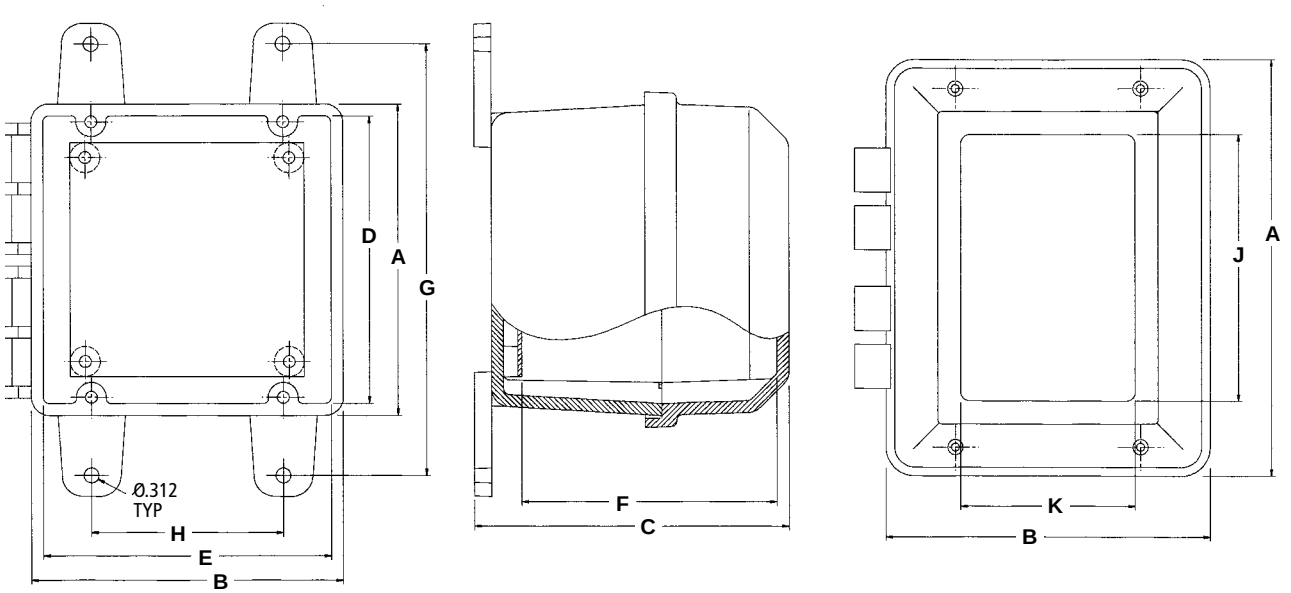
- Nonmetallic mounting feet and all mounting hardware included.
- 304 (18-8) stainless steel screw (10-32 / 1 1/8").
- White painted 14 gauge steel or 1/4" PVC back panel (order separately).
- Completely nonmetallic hinges.
- Lid design provides greater usable internal volume.
- Brass screw inserts.
- Material: polycarbonate molded base and cover.

Note: Window material 1/8" thick clear polycarbonate is permanently bonded to the cover.

Factory Assembled

Part Nos.	Dimensions External A	B	C	D	Internal E	F	G	Mounting H	J	K	Std. Ctn. Qty. (lbs.)	Back Panel* Part Nos. Steel/PVC	Panel Size	Std. Ctn. Qty. (lbs.) Steel/PVC
J665W	6.50	6.50	6.69	6.00	6.00	5.45	9.00	4.00	4.70	4.70	1 (3.1)	JP66/JP66P	4.88 x 4.88	1 (1.0) / 1 (0.3)
J863W	8.50	6.50	4.49	8.00	6.00	3.25	11.00	4.00	4.70	4.70	1 (3.2)	JP86/JP86P	6.75 x 4.88	1 (1.0) / 1 (0.78)
J1085W	10.50	8.50	6.69	10.00	8.00	5.45	13.00	6.00	8.70	6.70	1 (5.6)	JP108/JP108P	8.75 x 6.88	1 (1.5) / 1 (0.7)
J12106W	12.50	10.50	7.69	12.00	10.00	6.45	15.00	8.00	10.70	8.70	1 (7.4)	JP1210/JP1210P	10.75 x 8.88	1 (2.0) / 1 (1.2)
J14126W	14.50	12.50	7.72	14.00	12.00	6.48	17.00	10.00	12.70	10.70	1 (9)	JP1412/JP1412P	12.75 x 10.88	1 (3.2) / 1 (1.7)
J16147W	16.50	14.50	8.46	16.00	14.00	7.22	19.00	12.00	14.70	12.70	1 (9.3)	JP1614/JP1614P	14.75 x 12.88	1 (4.7) / 1 (2.3)

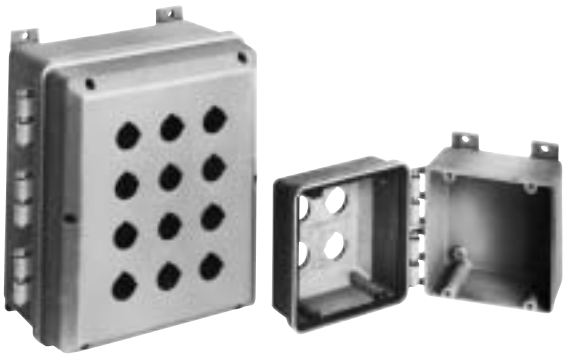
Enclosures shipped with mounting feet, hinge caps and screws.
*Order back panels separately.
For factory installed pad lockable quick-release latch, consult Customer Service for price and delivery.



Circuit Safe Pushbutton Enclosures







Circuit Safe® nonmetallic pushbutton enclosures are molded from engineered thermoplastic material that is resistant to most corrosive agents. Whether predrilled 1-2-3 hole enclosures, blank cover enclosures or enclosures with multiple hole openings, Carlon's pushbutton enclosure series offers high impact strength, chemical resistance, high dielectric strength and excellent durability for the correct application.

Features

- Engineered thermoplastic base and cover.
- 304 stainless steel screws.
- Brass screw inserts.
- High-impact strength.
- Temperature range from -40° F to 185° F.

Applications

- Standard oil-tight pushbuttons, switches and pilot lights.
- Conduit entries.
- Junction boxes.
- MRO and OEM applications.

Standards

- Standards vary by product.
- Screw cover pushbutton enclosures with 1-2-3 hole openings are Listed per UL 50 for industrial controls.
- Narrow profile blank screw cover enclosures are listed per UL 50 for industrial controls and meets NEMA Type 1, 3, 3S, 3X, 3SX, 4, 4X, 12, and 13.
- Nonmetallic hinged cover enclosures with multiple hole openings are UL Listed.

Screw Cover Enclosures with 1-2-3 Hole Openings

UL Listed per UL 50 for Industrial Controls

UL LISTED E54381

CSA LR31146



Wall mount pushbutton enclosures are molded from gray, engineered thermoplastic material that is resistant to most corrosive agents. Universal pushbutton holes are designed to accommodate all standard oil-tight pushbuttons, switches and pilot lights. A grounding plate is included on the cover. Auxiliary devices must be rated for appropriate NEMA applications.

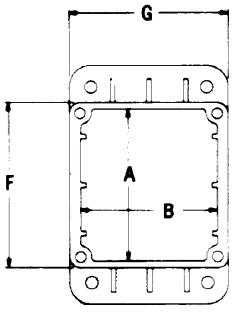
Features

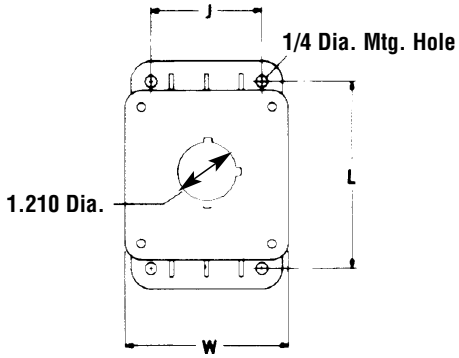
- 30.5 mm keyed pushbutton holes.*
- Material: nylon base and cover.
- Integrally molded mounting flange.
- Brass screw inserts.
- 304 (18-8) stainless screws (8-32 / 3/8").
- Temperature range from - 40˚F to 185˚F.

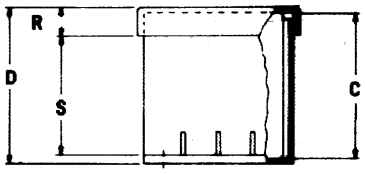
30.5 mm Pushbutton Enclosures

Part Nos.	Style	Inside Box Size A x B x C	Mounting L x J	Overall Outside Including Mounting Bracket H x W x D	F	G	R	S	Pieces/ Pkg.	Weight (lbs.)/Unit
CP100N	One Opening	3.13 x 2.81 x 3	4 x 2.38	4.88 x 3.50 x 3.38	3.38	3.25	.63	2.5	12	8.90
CP200N	Two Openings	5.38 x 2.81 x 3	6.25 x 2.38	7.13 x 3.50 x 3.38	5.63	3.25	.63	2.5	8	11.25
CP300N	Three Openings	7.38 x 2.81 x 3	8.50 x 2.38	9.38 x 3.50 x 3.38	7.88	3.25	.63	2.5	6	7.60

* 22 mm Pushbutton holes available upon request.







Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Narrow Profile Blank Screw Cover Enclosures for Small Instrumentation and Control Applications

UL LISTED E54381 LR31146

UL Listed per UL 50 for Industrial Controls
Meets NEMA 1, 3, 3S, 3X, 3SX, 4, 4X, 12, 13



Blank cover enclosures can be easily drilled with a standard hole saw for conduit entries and pushbuttons. Wall mount enclosures are molded from gray, engineered thermoplastic material and are resistant to most corrosive agents.

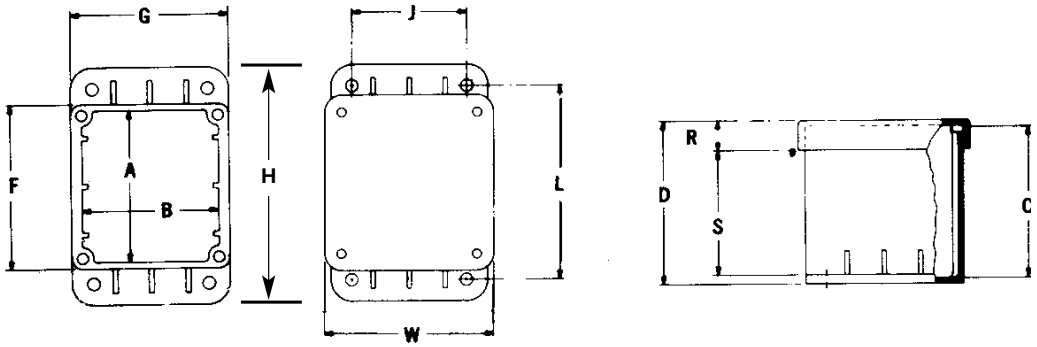
Features

- Brass screw inserts.
- Material: nylon base and cover.
- Integrally molded mounting flange.
- 304 (18-8) stainless screws (10-32 / 3/8").
- Temperature range from - 40˚F to 185˚F.

Blank Screw Cover Enclosures*

Part Nos.	Style	Inside Box Size A x B x C	Mounting L x J	Overall Outside Including Mounting Bracket H x W x D	F	G	R	S	Pieces/ Pkg.	Weight (lbs.)/Unit
CP100NB	Blank Cover	3.13 x 2.81 x 3	4 x 2.38	4.88 x 3.50 x 3.38	3.38	3.25	.63	2.5	12	9.60
CP200NB	Blank Cover	5.38 x 2.81 x 3	6.25 x 2.38	7.13 x 3.50 x 3.38	5.63	3.25	.63	2.5	8	8.8
CP300NB	Blank Cover	7.38 x 2.81 x 3	8.50 x 2.38	9.38 x 3.50 x 3.38	7.88	3.25	.63	2.5	6	8.20

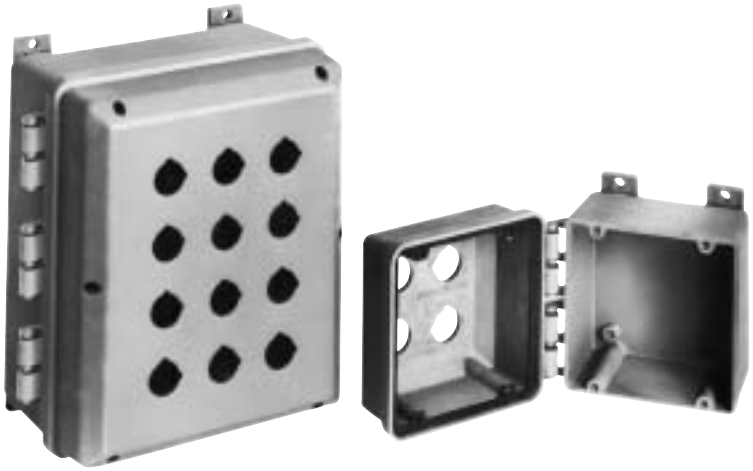
* Special openings or positionings available on request.



Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Hinged Cover Enclosures with Multiple Hole Openings

LISTED E54381 LR31146



Made from engineered thermoplastic material, these enclosures are ideal for applications that require high-impact strength, chemical resistance, high dielectric strength, and excellent weathering capabilities, including indoor/outdoor industrial, MRO, and OEM applications. Nonmetallic hinges are an integral part of the mold. Hinge caps make cover captive and removable cover allows for easy field adjustment. Auxiliary devices must be rated for appropriate NEMA applications.

Features

- Nonmetallic mounting feet and all mounting hardware included.
- White painted 14 gauge steel or 1 1/8" PVC back panel (order separately).
- Material: engineered thermoplastic base and cover.
- 304 stainless steel screws.
- Brass screw inserts.
- Lid design provides greater usable volume.
- Completely nonmetallic hinges.
- Temperature range from - 40˚F to 185˚F.

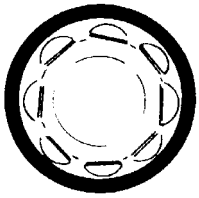
Screw Cover Pushbutton Enclosures With Multiple 30.5 mm Openings*

Part Nos.	Openings	Inside Box size	Weight	Qty.	Panel Part Nos.	Size Steel/PVC
J665P	4	6 x 6 x 5.88	2.42	1	JP66 / JP66P	4.88 x 4.88
J863P	6	8 x 6 x 3.63	1.86	1	JP86 / JP86P	6.75 x 4.88
J1085P	9	10 x 8 x 5.88	3.59	1	JP108 / JP108P	8.75 x 6.88
J12106P	12	12 x 10 x 6.88	4.29	1	JP1210 / JP1210P	10.75 x 8.88
J14126P	20	14 x 12 x 6.88	7.19	1	JP1412 / JP1412P	12.75 x 10.88
J16147P	25	16 x 14 x 7.63	11.20	1	JP1614 / JP1614P	14.75 x 12.88

For enclosures larger than 25 position, please call Customer Service.
* All Circuit Safe pushbutton enclosures are furnished with standard hole dimensions: 1 7/32" diameter with keyways at 12 o'clock and 3 o'clock.
Special openings or positionings available on request.

Accessories

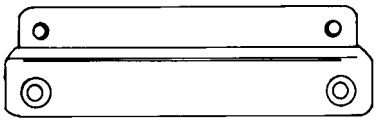
Gasketed Pushbutton Hole Plug



Part Number	Size	Standard Carton Qty.	Standard Weight (lbs.)
CP900	Standard PB hole	100	2.0

Circuit Safe® NEMA Accessories

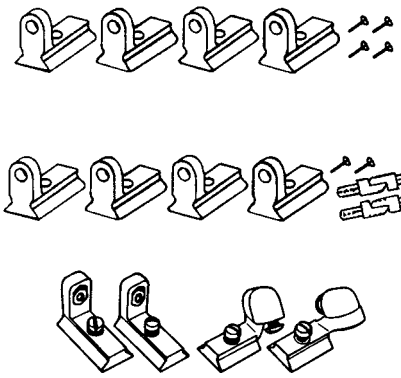
Mounting Rails*



Mounting Rail Kits Part Number	Size (in.)	Std. Ctn. Qty.	Weight (lbs.)
NMK4V	4	25	5
NMK6V	6	24	7.7
NMK8V	8	24	10.25
NMK10V	10	20	13.26
NMK12V	12	20	11.4
NMK14V	14	25	17.76

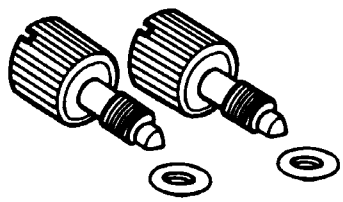
*Mounting rails can be mounted on long or short side of enclosure. Does not apply to 16" enclosure.

Panel Adjuster Kits



Product	Part Numbers	Description	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
Panel Adjuster Kit	NBPADJ2	4 panel adjusters 4 #10-32 screws to mount panel	10 kits	2.07
180° Swing Out Panel Kit	NBPSWG	4 panel adjusters 2 hinges 2 #10-32 screws to mount panel	10 kits	2.68
Swing Out Panel Adjuster Kit	NBPSWG2	2 hinged adjusters 2 panel adjusters 4 #10-32 screws	10 kits	1.80

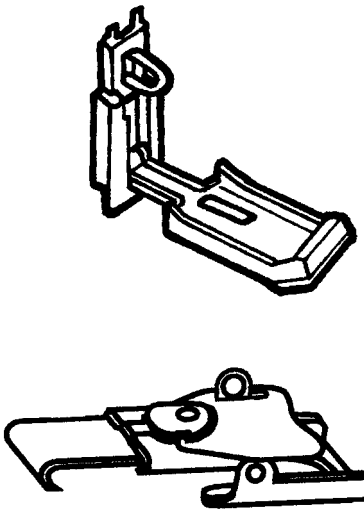
#10-32 Panel Thumb Screws Used on internal hinge door only.



Part Number	Description	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
NBPTSK	2 #10-32 thumb screws 2 nonmetallic washers	10 kits	1.2

Circuit Safe® NEMA Accessories

Latch Kits For NEMA hinged enclosures.

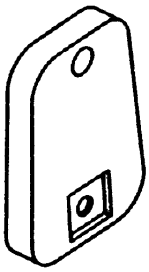


Product	Part Numbers	Description	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
Nonmetallic Quick-Release Latch Kit	NPL1L	Quick-Release Latch Kit for use with hidden hinge enclosure for NH & NI Series	25	2.00
Nonmetallic Quick-Release Latch Kit	NPL1S	Quick-Release Latch Kit for use with external hinge enclosure for NJ & NC Series	25	2.00
304 Stainless Steel Quick-Release Latch Kit	SSLL	Quick-Release Latch Kit for use with hidden hinge enclosure for NH & NI Series	25	4.27
304 Stainless Steel Quick-Release Latch Kit	SSLS	Quick-Release Latch Kit for use with external hinge enclosure for NJ & NC Series	25	3.41

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Circuit Safe® JIC Accessories

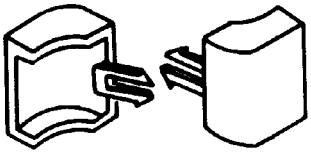
Mounting Feet
For Circuit Safe Enclosures – Type CC, CJ, CS, CV, J



Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
CJB159*	As required	0.04

*CJB159 nonmetallic mounting feet provide 1/4" standoff and may be used to mount enclosures in horizontal or vertical mode. They are shipped with all Circuit Safe JIC enclosures. No screws are provided when mounting feet are ordered separately.

Hinge Caps*
For Circuit Safe Enclosures – Type CC, CJ, J



Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
CH100R	As required	0.03

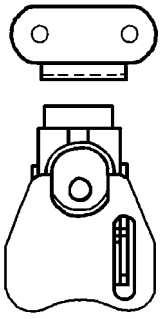
*For Circuit Safe enclosures to secure covers to bases. Shipped as standard with hinge cover enclosure.

JIC Installation Kits*

Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
CH208	1 Kit	0.25

*Installation kit is included as standard equipment with all JIC enclosures. Information listed here for purposes of additional purchase only. Kit includes 4 mounting feet, 8 hinge caps, and 8 screws.

JIC Latch Kits*



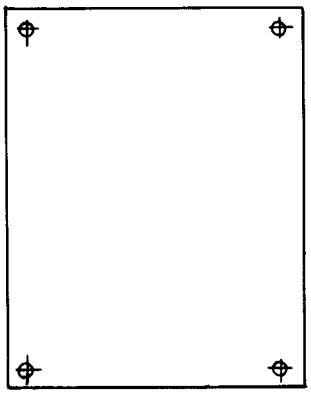
Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
CJTL	1 Kit	0.25

Stainless steel. Kit includes latch and keeper.
*Factory installed. Consult customer service for price and delivery.

Circuit Safe® NEMA and JIC Accessories

Steel Back Panels*

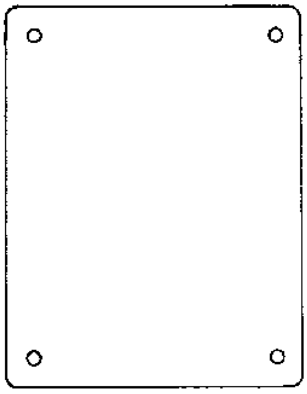
Steel back panels are white painted 14 gauge steel.



Part Nos.	Thickness (in.)	Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
JP64	14 gauge	4.88 x 2.88	1	0.6
JP66	14 gauge	4.88 x 4.88	1	1.0
JP86	14 gauge	6.75 x 4.88	1	1.0
JP88	14 gauge	6.75 x 6.88	1	1.2
JP108	14 gauge	8.75 x 6.88	1	1.5
JP1010	14 gauge	8.75 x 8.88	1	2.3
JP1210	14 gauge	10.75 x 8.88	1	2.7
JP1212	14 gauge	10.75 x 10.88	1	3.5
JP1412	14 gauge	12.75 x 10.88	1	3.8
JP1614	14 gauge	14.75 x 12.88	1	4.7

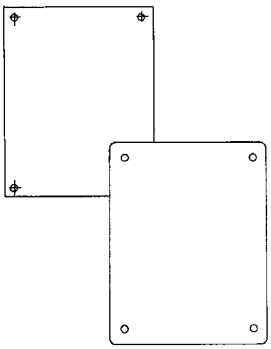
PVC Back Panels*

PVC back panels are made from 1/4" PVC and meet UL94 V-O.



Part Nos.	Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
JP64P	4 7/8 x 2 7/8	1	0.3
JP66P	4 7/8 x 4 7/8	1	0.3
JP86P	6 3/4 x 4 7/8	1	0.4
JP88P	6 3/4 x 6 7/8	1	0.5
JP108P	8 3/4 x 8 7/8	1	0.7
JP1010P	8 3/4 x 8 7/8	1	0.9
JP1210P	10 3/4 x 10 7/8	1	1.2
JP1212P	10 3/4 x 10 7/8	1	1.5
JP1412P	12 3/4 x 10 7/8	1	1.7
JP1614P	14 3/4 x 12 7/8	1	2.3

Medium NEMA Back Panels*

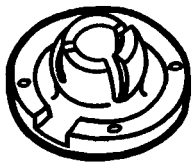


Part Nos. Steel/PVC	Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
NP2016 / NP2016P	17 x 13	1	7.0 / 6.125
NP2420 / NP2420P	21 x 17	1	10.4 / 4.71
NP3024 / NP3024P	27 x 21	1	18.0 / 9.781

*Circuit Safe NEMA enclosures are not shipped with back panels which must be ordered separately. All accessories can be factory installed. Consult Customer Service for price and delivery.

Circuit Safe® NEMA and JIC Accessories

Draining Device* For 3R Rating and condensation build-up.



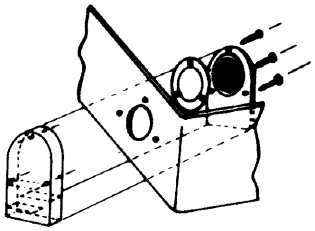
Part Number	Standard Carton Qty.
HPVEA9	1

Air Vents* NEMA 1 Rated only.



Part Numbers	Style	Standard Carton Qty.
HPVM25	For fitting outside of all enclosures	1
HPVM35	For fitting inside of all enclosures	1

Enclosure Ventilator* Allows any size enclosure to breathe, yet remains watertight.



Part Number	Standard Carton Qty.
HVM27	1

*Factory installation available.

Window Kits

c UL us LISTED
E110981

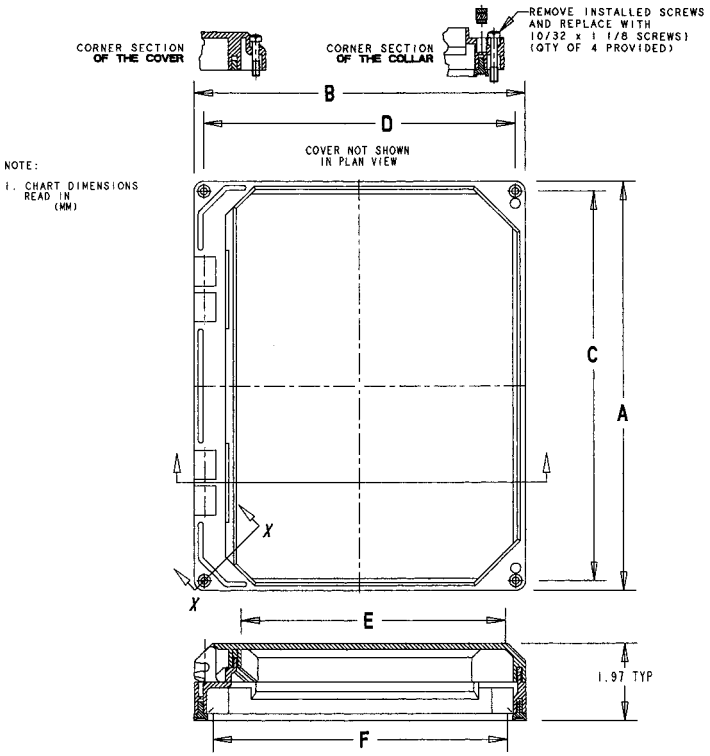
Except where noted by ►

NEMA 4X Rated

Window kits are easily field-installed. Nonmetallic construction and double gaskets ensure environmental integrity. For circuit breaker and other surface mounted instruments.

Part Nos.*	Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
NI64W	6 x 4	1	.8
NI66W	6 x 6	1	.9
NI86W	8 x 6	1	1.17
NI88W	8 x 8	1	1.4
NI108W	10 x 8	1	1.5
NI1010W	10 x 10	1	1.82
NI1210W	12 x 10	1	2.12
NI1212W	12 x 12	1	2.65
NI1412W	14 x 12	1	2.67
► NI1614W	16 x 14	1	3.10

All window kits can be factory installed to Carlon® enclosures.
Consult factory for price and delivery.
* Non-stock factory order only – consult Customer Service.



Size	A	B	C	D	E	F
NI64W	6.42 (163.1)	4.41 (112.0)	5.92 (150.4)	3.92 (99.6)	2.72 (69.1)	3.80 (96.5)
NI66W	6.42 (163.1)	6.42 (163.1)	5.92 (150.4)	5.92 (150.4)	4.72 (119.9)	5.80 (147.3)
NI86W	8.42 (213.9)	6.42 (163.1)	7.92 (201.2)	5.92 (150.4)	4.72 (119.9)	5.80 (147.3)
NI88W	8.42 (213.9)	8.42 (213.9)	7.92 (201.2)	7.92 (201.2)	6.72 (170.7)	7.80 (198.1)
NI108W	10.42 (264.7)	8.42 (213.9)	9.92 (252.0)	7.92 (201.2)	6.72 (170.7)	7.80 (198.1)
NI1010W	10.42 (264.7)	10.42 (264.7)	9.92 (251.9)	9.92 (251.9)	8.72 (221.5)	9.80 (248.9)
NI1210W	12.42 (315.5)	10.42 (264.7)	11.92 (302.7)	9.92 (251.9)	8.72 (221.5)	9.80 (248.9)
NI1212W	12.42 (315.5)	12.42 (315.5)	11.92 (302.7)	11.92 (302.7)	10.72 (272.3)	11.80 (299.7)
NI1412W	14.42 (366.3)	12.42 (315.5)	13.92 (353.6)	11.92 (302.7)	10.72 (272.3)	11.80 (299.7)
NI1614W	16.42 (417.1)	14.42 (366.3)	15.92 (404.4)	13.92 (353.6)	12.72 (323.1)	13.80 (350.5)

Features

- High-impact strength.
- Excellent weathering capabilities.
- High dielectric strength.
- Corrosion resistant.
- Suitable for indoor and outdoor use.
- Fully gasketed.
- Extended temperature range -30˚F to 230˚F.
- Lightweight.

Standards

- UL Listed and meets NEMA Type 4X with the exception of NI1614W. All sizes are NEMA Type 12 rated.

Applications

- Instrument case.
- Junction and terminal boxes.
- Control and switching enclosures
- Meter and transformer cabinets.
- Small device enclosures.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Himeline Enclosures HE, HS, HP, HLA/HLS Series



Carlon® Himeline® enclosures are the ideal alternative to expensive stainless steel enclosures. They have excellent corrosion resistant properties; are impervious to sunlight, dirt, and moisture. Available in four series (HE, HS, HP, and HLA/HLS), with sizes ranging from 4 x 3 x 2 through 50 x 40 x 17, these enclosures offer choices that include double doors, clear or opaque covers, hinged and screw versions, single or three point closure mechanisms, 4X windows, DIN rail mounting, and adjustable depth door in door option that allow you to customize your enclosures by separating power from communications.

Features

- High-impact strength.
- High dielectric strength.
- Suitable for indoor and outdoor use.
- Fully gasketed.
- Lightweight.

Applications

- Instrument case.
- Junction and terminal boxes.
- Control and switching enclosures.
- Meter and transformer cabinets.
- Small device enclosures.

Standards

- Meets NEMA and IP standards as indicated in appropriate section.
- UL Listed as indicated.
- CSA certified as indicated.

HE Series

(Small Electronic Enclosures/Insulated Industrial Boxes – Except Hinged Boxes)



Features

- Hidden hinges open 185° for easy access.
- M8x18 screws for back panel mounting (included).
- Sealing gasket on all models.
- Mounting plate available for specific sizes.
- Hinged versions available (factory installed). *For more information contact your Carlon Sales Representative.
- Optional internal/external hinges.
- Enclosures attach directly or with wall brackets.

Material

- Opaque – lids and bases - PVC
- Clear – lids and bases - polycarbonate

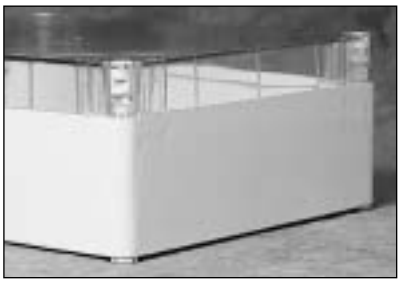
Standards

- NEMA 4X Rated.
- Meets IP 55.

Lid Options



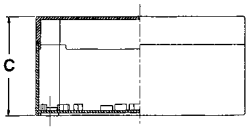
Opaque low lid. "BASIC" model.

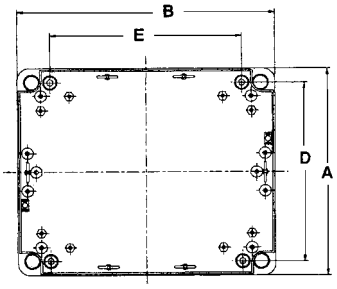


Transparent low lid. "C" models.

Carlon® Himeline® HE Series Enclosures are small Electronic Enclosures/Insulated Industrial Boxes ranging in size from 4 x 3 x 2 to 13 x 11x 4. They have a high-impact, high dielectric resistance, and are lightweight, fully gasketed and suitable for indoor and outdoor applications. The HE Series Enclosures meet IP 55 and are NEMA 4X Rated. All these features combined make these enclosures the ideal alternative to expensive stainless steel enclosures.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com





UL LISTED E54381

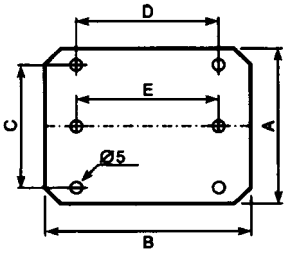
Except where noted by ►

Opaque Cover Assembly	Clear Cover Assembly	Dimensions External A	B	C	Internal D	E	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	Unit Wt. (lbs.)	Locking Screw Type
HE432	HE432C	4.33	2.96	2.29	4.14	2.76	5	1.1	5.2	Stainless Steel
HE443	HE443C	4.14	4.14	2.60	3.90	3.90	6	3.1	7.5	Stainless Steel
HE533	HE533C	5.32	2.92	2.84	5.12	2.72	5	2.4	6.3	Stainless Steel
HE743	HE743C	6.70	4.14	3.23	6.46	3.90	2	1.2	12.4	Polyamide
HE974	HE974C	8.66	6.62	4.18	8.43	6.38	1	1.1	–	Polyamide
HE1194	–	10.63	8.66	4.14	7.48	9.81	1	2.7	–	Polyamide
HE12105	HE1210C	12.33	9.97	4.53	11.82	9.45	1	3.0	–	Polyamide
HE14114	HE1411C	13.78	11.02	4.14	12.92	10.16	1	4.0	–	Polyamide

Accessories

Mounting Plates

To be fitted directly into the boxes with self-tapping screws included in the standard supply. Made of zinc coated steel, 1.5 mm thick.



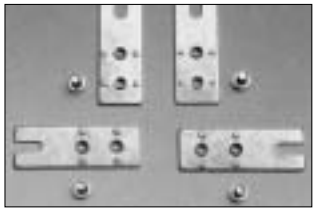
Part Number	Dimensions A	B	C	D	E	Std.Ctn. Qty.	Std.Ctn. Wt. (lbs.)
EMP743	3.74 (95)	6.15 (156)			5.12 (130)	10	10
EMP974	6.15 (156)	8.07 (205)	5.12 (130)	5.91 (150)		10	8.5
EMP1194	8.19 (208)	10.16 (258)	6.34 (161)	8.70 (221)		10	13
EMP1210	9.26 (235)	11.62 (295)	6.15 (156)	8.51 (216)		5	4.1
EMP1411	9.85 (250)	12.60 (320)	8.27 (210)	9.85 (250)		5	3

Air Vents* NEMA 1 Rated only.



Part Numbers	Style	Std. Ctn. Qty.
►HPVM25	For fitting outside of all enclosures	1
►HPVM35	For fitting inside of all enclosures	1

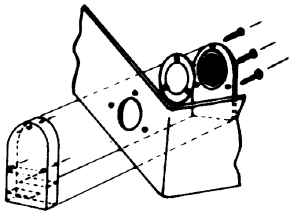
Wall Mounting Bracket



Part Number	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
►HEWMB	1	.35

Enclosure Ventilator*

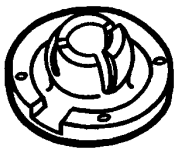
Allows any size enclosure to breathe, yet remains watertight.



Part Number	Std. Ctn. Qty.
►HVM27	1

Draining Device*

For 3R Rating and condensation build-up.



Part Number	Std. Ctn. Qty.
►HPVEA9	1

*Factory installation available.

HS Series Screw-On Fastened and Hinged Cover Enclosures

- **Meets NEMA 1, 3, 3S, 4, 4X, 12, 13**
- **Meets IP 65**



Himeline® HS Series enclosures are designed for use as junction boxes, terminal wiring boxes, instrument and control housings, and small device enclosure applications. Molded under high pressure, Himeline HS Series enclosures provide high-impact strength, chemical resistance, high dielectric strength, and excellent weathering capabilities.

Features

- Standard slotted locking screw.
- High impact strength.
- Chemical resistance.
- High dielectric strength.
- Excellent weathering capabilities.
- Sealing gasket on all models.

Applications

- Junction boxes.
- Terminal wiring boxes.
- Instrument and control housings.
- Small device enclosure applications.
- Indoor or outdoor use.
- Sunlight resistant.

Standards

- Meets NEMA 1, 3, 3S, 4, 4X, 12, 13 standards as indicated.
- UL Listed per UL 50, enclosures for electrical equipment.
- CSA certified.
- Meets IP 65.
- UL Listed (E54381).

Material

- Opaque/Clear Lid – Polycarbonate
- Base – Fiberglass Reinforced Polyester

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

HS Series Screw-On Fastened and Hinged Cover Enclosures

LISTED E54381 LR701839



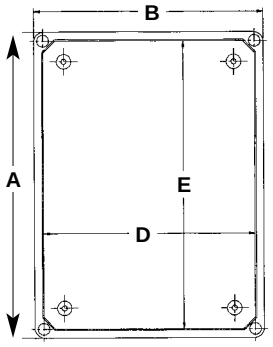
Features

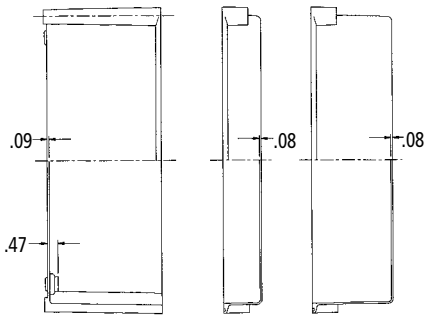
- Molded under high pressure.
- High impact strength.
- Chemical resistance.
- High dielectric strength.
- Excellent weathering capabilities.
- Clear cover available.

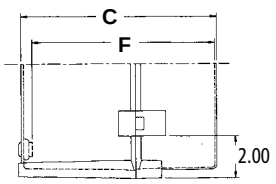
Specifications

Opaque Screw-On Cover Part Nos.	Clear Screw-On Cover Part Nos.	Opaque Hinged Cover Part Nos.	Clear Hinged Cover Part Nos.	External A	External B	External C	Internal D	Internal E	Internal F	Opaque Wt. (lbs.) each Screw/ Hinged	Clear Wt. (lbs.) each Screw/ Hinged	Std. Pkg.	Back Panel Part Nos.	Dimensions H x W	Thick-ness	Wt. (lbs.)	Std. Ctn. Qty.
HS7A7	HS7A7C	HH7A7	HH7A7C	10.63	7.09	7.09	6.26	9.80	6.54	10.7 / 7	10.9 / 6.2	4	HS7ABP	5.51 x 9.05	.08	1.1	1
HS11A7	HS11A7C	HH11A7	HH11A7C	10.63	10.63	7.09	9.80	9.80	6.54	15.2 / 8.5	14 / 8	4	HS11ABP	9.05 x 9.05	.08	1.7	1
HS11B7	HS11B7C	HH11B7	HH11B7C	14.17	10.63	7.09	9.80	13.35	6.54	17 / 4	18 / 4	4	HS11BBP	9.05 x 12.60	.08	2.4	1
HS11C7	HS11C7C	HH11C7	HH11C7C	21.26	10.63	7.09	9.80	20.43	6.54	13 / 13	12.5 / 13	2	HS11CBP	9.05 x 19.68	.08	3.9	1
HS15C7	HS15C7C	HH15C7	HH15C7C	21.26	14.17	7.09	13.35	20.43	6.54	17.7 / 11	18 / 11	2	HS15CBP	12.60 x 19.68	.08	6.6	1
HS21C7	HS21C7C	HH21C7	HH21C7C	21.26	21.26	7.09	20.43	20.43	6.54	12.5 / 13	12 / 13	1	HS21CBP	19.68 x 19.68	.08	8.8	1
HS11A9	HS11A9C	HH11A9	HH11A9C	10.63	10.63	9.06	9.80	9.80	8.47	15 / 4	16.6/5	4	HS11ABP	9.05 x 9.05	.08	1.7	1
HS11B9	HS11B9C	HH11B9	HH11B9C	14.17	10.63	9.06	9.80	13.35	8.47	20 / 6	19 / 6	4	HS11BBP	9.05 x 12.60	.08	2.5	1
HS11C9	HS11C9C	HH11C9	HH11C9C	21.26	10.63	9.06	9.80	20.43	8.47	14 / 9	14 / 9	2	HS11CBP	9.05 x 19.68	.08	3.9	1
HS15C9	HS15C9C	HH15C9	HH15C9C	21.26	14.17	9.06	13.35	20.43	8.47	18.5 / 11	19 / 11	2	HS15CBP	12.60 x 19.68	.08	6.6	1
HS21C9	HS21C9C	HH21C9	HH21C9C	21.26	21.26	9.06	20.43	20.43	8.47	13 / 14	14 / 14	1	HS21CBP	19.68 x 19.68	.08	8.8	1
HS15D9	HS15D9C	HH15D9	HH15D9C	28.35	14.17	9.06	13.35	27.52	8.47	13 / 13	13 / 13	1	HS15DBP	12.60 x 26.77	.10	9.5	1
HS21D9	HS21D9C	HH21D9	HH21D9C	28.35	21.26	9.06	20.43	27.52	8.47	18 / 18	17 / 18	1	HS21DBP	19.68 x 26.77	.10	15.5	1

Back panels and mounting feet must be ordered separately.



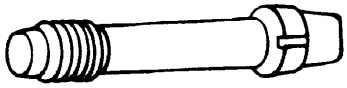




Placement of part P/N HSEH Hinge Kit at top and bottom of long side of HH Series enclosures.

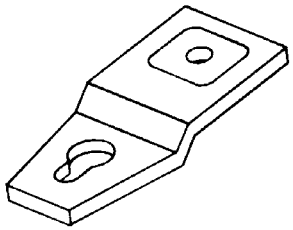
Accessories

Thumb Screws – For Himeline HS Enclosures



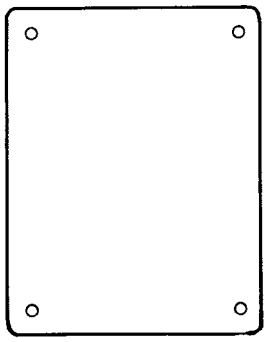
Part Numbers	Standard Carton Qty.	Standard Carton Wt. (lbs.).
HSTS4	4	0.1
HSTS6	6	0.15

Mounting Feet – For Himeline HS Enclosures



Part Numbers	Description	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HSMFZ	Zinc dichromated Steel	4/set	0.2
HSMFSS	304 Stainless Steel	4/set	0.2

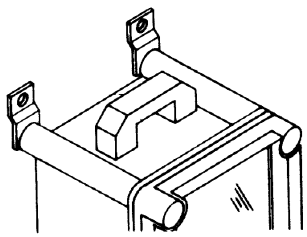
Back Panels – For Himeline HS Enclosures* Metal back panels are white painted 14 gauge steel.



Part Nos.	Size (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HS7ABP	5.51 x 9.05	1	1.2
HS11ABP	9.05 x 9.05	1	2.0
HS11BBP	9.05 x 12.60	1	2.7
HS11CBP	9.05 x 19.68	1	4.3
HS15CBP	12.60 x 19.68	1	7.1
HS21CBP	19.68 x 19.68	1	9.6
HS15DBP	12.60 x 26.77	1	10.2
HS21DBP	19.68 x 26.77	1	16.6

*Himeline HS enclosures are not shipped with back panels. Order separately.
PVC back panels available upon request. Consult Customer Service.

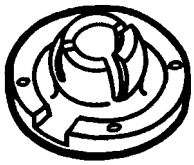
Nonmetallic Carrying Handle Converts enclosures to portable units for meters and portable power.



Part Numbers	Standard Carton Qty.	Standard Carton Wt. (lbs.).
HSCH	1	0.2

Accessories

Draining Device* For 3R Rating and condensation build-up.



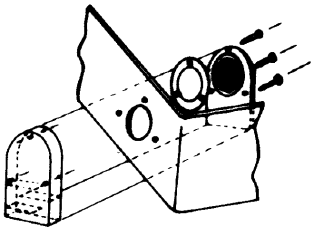
Part Number	Standard Carton Qty.
HPVEA9	1

Air Vents* NEMA 1 Rated only.



Part Numbers	Style	Standard Carton Qty.
HPVM25	For fitting outside of all enclosures	1
HPVM35	For fitting inside of all enclosures	1

Enclosure Ventilator* Allows any size enclosure to breathe, yet remains watertight.



Part Number	Standard Carton Qty.
HVM27	1

*Factory installation available.

HP Series Enclosures with Hinged Quick-Release Cover

- **Meets NEMA 1, 3, 3S, 4, 4X, 12, 13**
- **Meets IP 66**



Himeline® HP Series enclosures for medium sized devices and equipment provide superior performance as junction and terminal wiring boxes, and instrument and control housing applications.

For indoor/outdoor industrial, MRO, and OEM applications. HP Series enclosures are resistant to corrosion, sunlight, chemicals, dirt, and moisture. Temperature range from -58° F to 320° F.

Features

- Projections for affixing cover mounted panel.
- Door locking mechanism convertible to key lock.
- M8x18 studs for back panel mounting (included).
- Hidden hinges open 185° for easy access.
- Multipositional DIN rail fixing components.
- Removable stainless steel hinge pins.
- Single piece construction.
- Opaque or tempered glass window option.
- Steel, nonmetallic & slotted back panels available.
- External & internal venting available.
- Hinged variable height inner panel option.
- Quick lock 1/4-turn entry.
- Underside grid pattern on inner door panel.
- Self-positioning panel depth adjusters.
- Pole mounting kit.
- Pedestal mounting capability.
- Sunlight resistant.

Applications

- Junction boxes.
- Terminal wiring boxes.
- Instrument and control housing.
- Indoor or outdoor use.

Standards

- NEMA Type 1, 3, 3S, 4, 4X, 12, 13.
- UL Listed per UL 50, enclosures for electrical equipment.
- CSA certified.
- Meets IP 66.

Material

- Lids/Bases – Fiberglass reinforced polyester.

HP Series Enclosures with Hinged Quick-Release Cover

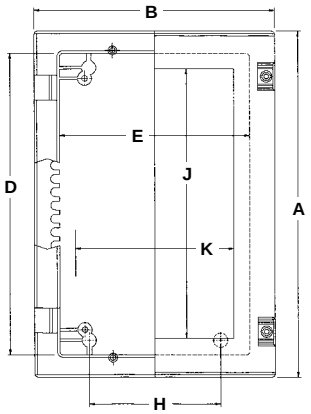
LISTED E54381 LR701839

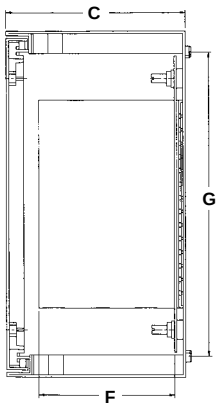
Specifications

Enclosure With Opaque Cover Part Nos.	Std. Ctn. Wt. (lbs.)	Enclosure With Clear Window*	Std. Ctn. Wt. (lbs.)	Window Dimension (H x W) (in.)	Dimensions External A	B	C	Internal D	E	F	Mounting G	H	Window J	K	Std. Ctn. Qty.
HP1612B	11.04	HC1612B	12.5	11 x 7.87	16.93	12.99	7.87	14.96	10.24	6.61	14.76	5.91	11.02	7.87	1
HP2016B	16.80	HC2016B	17.2	14.96 x 11.81	20.87	16.93	7.87	18.90	14.17	6.61	18.70	9.84	14.96	11.81	1
HP2416C	21.13	HC2416C	24.12	18.89 x 11.81	25.47	17.17	9.84	22.83	14.17	8.35	22.64	9.84	18.90	11.81	1
HP3020D	32.28	HC3020D**	36.02	22.83 x 15.74	29.41	21.10	11.81	26.77	18.11	10.28	26.57	13.78	22.83	15.75	1
HP3325D	39.00	HC3325D**	43.12	26.77 x 19.68	33.35	25.04	11.81	30.71	22.05	10.28	30.51	17.72	26.77	19.69	1

* HC Enclosures are IP 65 Rated. Clear window is glass.

** This series of enclosures come standard with body, lid and mounting rail kit.



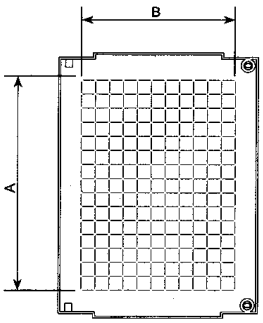


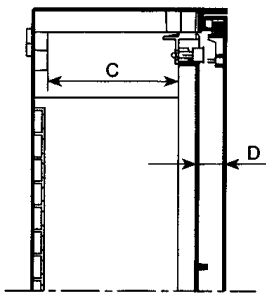
Depth with back panel installed

Hinged Internal Door

- Internal fiberglass reinforced polyester door assembly.
- Grid pattern on the inside for quicker positioning of equipment.
- Quick locking 1/4-turn entry.

Part Numbers	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
PID1612	12.40	(315)	18.07	(205)	5.98	(152)	1.02	(26)	1	2.05
PID2016	16.34	(415)	12.00	(305)	5.98	(152)	1.02	(26)	1	3.15
PID2416	20.28	(515)	12.00	(305)	7.64	(194)	1.26	(32)	1	4.50
PID3020	24.21	(615)	15.94	(405)	9.61	(244)	1.26	(32)	1	6.50
PID3325	28.15	(715)	19.88	(505)	9.61	(244)	1.26	(32)	1	8.45





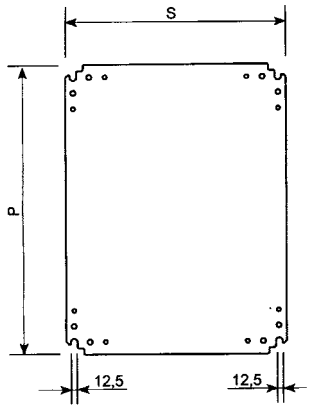
Accessories

Back Panels Dimensions

A complete range of plates, which can be directly fixed to the enclosure supports or to the adjustable depth supports.

Steel Back Panels

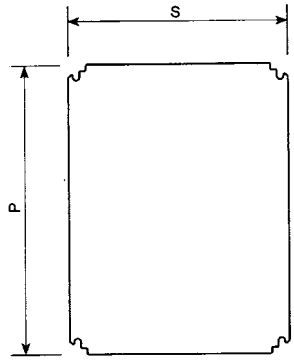
Steel back panels are white painted 14 gauge steel.



To Fit Enclosures	Part Numbers	Thickness in.	(mm)	Weight lbs.	(kg)	P in.	S in.
HP1612B	PMM1612	.079	(2)	3.10	(1.6)	14.37	9.84
HP2016B	PMM2016	.079	(2)	6.15	(2.5)	18.30	13.78
HP2416C	PMM2416	.079	(2)	8.0	(3.1)	22.24	13.78
HP3020D	PMM3020	.079	(2)	12.04	(4.6)	26.18	17.72
HP3325D	PMM3325	.118	(3)	20.0	(9.9)	30.11	21.65

PVC Insulating Back Panels

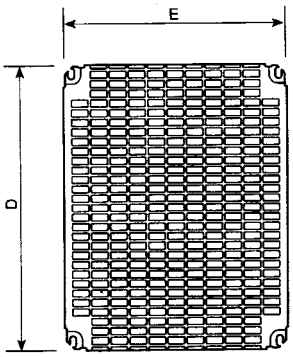
PVC back panels are made from 1/4" PVC and meet UL94 V-O.



To Fit Enclosures	Part Numbers	Weight lbs.	(kg)	P in.	(mm)	S in.	(mm)
HP1612B	PMB1612	1.10	(0.5)	14.37	(365)	9.84	(250)
HP2016B	PMB2016	2.65	(1.2)	18.30	(465)	13.78	(350)
HP2416C	PMB2416	3.09	(1.4)	22.24	(565)	13.78	(350)
HP3020D	PMB3020	4.63	(2.1)	26.18	(665)	17.72	(450)
HP3325D	PMB3325	6.62	(3.0)	30.11	(765)	21.65	(550)

Slotted Back Panels

Zinc dichromated coated steel plates perforated for addition of electrical circuitry.

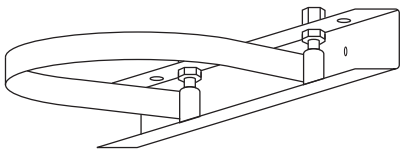


To Fit Enclosures	Part Numbers	Weight lbs.	(kg)	D in.	(mm)	E in.	(mm)
HP1612B	PMR1612	1.54	(0.7)	13.74	(349)	9.8	(251)
HP2016B	PMR2016	2.87	(1.3)	17.72	(450)	13.82	(351)
HP2416C	PMR2416	3.53	(1.6)	21.85	(555)	13.82	(351)
HP3020D	PMR3020	5.07	(2.3)	25.39	(645)	17.76	(451)
HP3325D	PMR3325	7.06	(3.2)	29.53	(750)	21.69	(551)

Refer to the Enclosure Accessories section for back panel accessories.

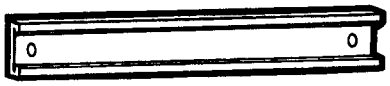
Accessories

Pole Mounting Set



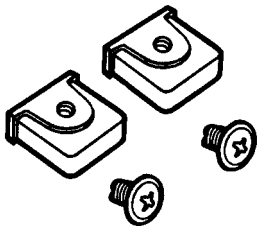
Part Numbers	To Fit To Enclosures	Standard Carton Quantity
HPPF300	HP1612B	1
HPPF400	HP2016B HP2416C	1
HPPF500	HP3020D	1
HPPF600	HP3325D	1

35 mm Symmetrical DIN Rail



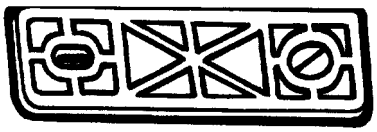
Part Numbers	To Fit To Enclosures	Width (in.)	Std. Ctn. Qty.
HPCO300	HP1612B	11.02	1
HPCO400	HP2016B, HP2416C	14.96	1
HPCO500	HP3020D	18.90	1

Rail Mounting Insert



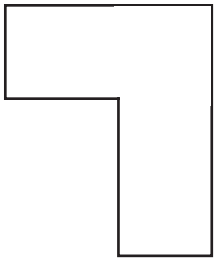
Part Number	Features	Standard Carton Quantity
HPRFK	Fits all enclosures	1

Wall Mounting Set (includes brass inserts and installation tools)



Part Number	Standard Carton Quantity	Standard Carton Weight (lbs.)
HPWMF	4	0.1

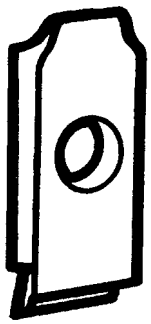
Blanking Grommet To close off openings on enclosure backs.



Part Numbers	Fits Enclosure Sizes	Description	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HPBNGB	16 x 12 and 20 x 16	Blanking Grommet	Set of 4	1.00
HPBNGC	24 x 16, 30 x 20 and 33 x 25	Blanking Grommet	Set of 4	1.00

Accessories

Fixing Accessories For Slotted Plates

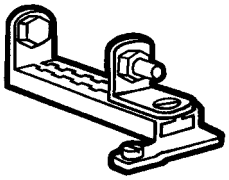


FIXING NUT			FIXING BOLT WITH WASHER		
Part Numbers	Type Of Thread	Std. Ctn. Qty.	Part Numbers	Length (in.)	Std. Ctn. Qty.
HPFA4	M4	100	HPFB104	.39	100
HPFA4	M4	100	HPFB164	.63	100
HPFA5	M5	100	HPFB125	.47	100
HPFA5	M5	100	HPFB185	.71	100
HPFA6	M6	100	HPFB126	.47	100
HPFA6	M6	100	HPFB186	.71	100

For slotted back panels, see page 34

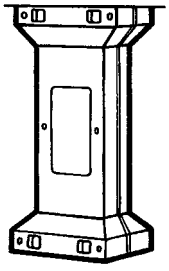
Back Panel Depth Adjustable Supports

Supports designed to fit 7.87" (200 mm), 9.84" (250 mm), 11.81" (300 mm) and 13.78" (350 mm) deep enclosures. Self-positioning slots allow for adjustment every .49" (12.5 mm). Made of zinc dichromated coated steel.



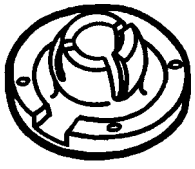
To Fit Enclosures	Part Numbers	A in./mm	B in./mm	Standard Carton Quantity
HP1612B & HP2016B	HPLM200 HPLM200	5.98/152	3.90/99	1 set of 4
HP2416C	HPLM250	8.07/205	4.13/105	1 set of 4
HP3020D & HP3325D	HPLM300 HPLM300	10.04/255	8.07/205	1 set of 4

Pedestal Mount



Part Number	To Fit To Enclosures	Standard Carton Qty.
HPSFS1	HP2016B HP2416C	1

Draining Device* For 3R Rating and condensation build-up.



Part Number	Standard Carton Qty.
HPVEA9	1

*Factory installation available.

Accessories

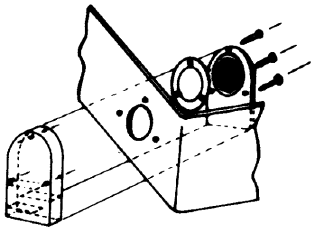
Air Vents* NEMA 1 Rated only.



Part Numbers	Style	Standard Carton Qty.
HPVM25	For fitting outside of all enclosures	1
HPVM35	For fitting inside of all enclosures	1

*Factory installation available.

Enclosure Ventilator* Allows any size enclosure to breathe, yet remains watertight.



Part Number	Standard Carton Qty.
HVM27	1

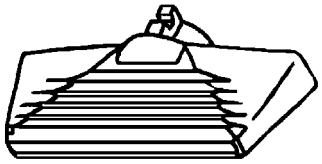
*Factory installation available.

Coupling Frame For Himeline HP Enclosures HP3020D and HP3325D



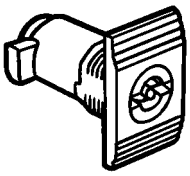
Part Number	Standard Carton Qty.
HPBU	1

Replacement Standard Handle



Part Number	Standard Carton Quantity	Standard Carton Weight (lbs.)
HPRSH	1	0.05

Locks For Himeline HP Enclosures



Replacement Door Lock

Part Number	Std. Ctn. Qty.
HPRLA	1

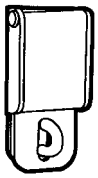
For replacement handle, order HPRSH.



Cylinder Key Lock (Keyed Alike)

Part Number	Std. Ctn. Qty.
HPTPLM	1

For replacement key, order HPRKO.



Padlocking Service

Part Number	Std. Ctn. Qty.
HPPLH	1

HLA/HLS Series Enclosures



Carlon® Himeline® HLA/HLS Series Enclosures are large Fiber Reinforced Polyester Cabinets ranging in sizes 20 x 20 x 17 to 50 x 40 x 17 and 20 x 20 x 12 to 50 x 40 x 12, respectively. They have operating temperatures of -50° to 150° C and can accommodate large devices and equipment for a wide range of applications including junction and terminal wiring boxes, instruments, and control housings. They are ideal for indoor/outdoor industrial, MRO and OEM applications, and offer superior strength and high resistance to corrosion, moisture, dust, oil and UV light, enabling them to withstand the harshest of environments.

The HLA/HLS Series Enclosures are fitted with a watertight gasket and are available in one-and two-door configurations. These cabinets have a closed top and bottom and the two-door version includes a central upright to maintain rigidity.

To maintain the watertight seal, the locking mechanism is positioned outside the gasketed area. A wide variety of accessories are available such as steel and nonmetallic back panels, self-positioning panel depth adjusters, and ventilator kits.

Carlon Enclosures…the ideal alternative to expensive stainless steel enclosures.

Features

- Fiber reinforced polyester.
- Temperature range of -58° to 302° F (-50° to 150° C).
- Indoor/outdoor applications.
- Superior strength.
- High resistance to harsh environments.
- Watertight gasket seal.
- One- and two-door configurations.
- Locking mechanism and hinge are outside gasketed area.
- Floor or wall mounted.

Applications

- Contain large devices and equipment.
- Junction and terminal wiring boxes.
- Instrument and control housings.

Standards

- IP 65 Rating (Single door versions only)
- 4/4X Rated (Single door versions only)
- UL Listed
- CSA Certified

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

HLA/HLS Series Single and Double Hinged Cover Enclosures with Latches

c UL us LISTED E54381 LR96563

One Door NEMA Types 1, 2, 3, 3R, 4, 4X, 5, 12, 13



HLA One Door (17" Deep)

Part No.	Dimensions H	W	D	Std. Ctn. Qty.	Std. Ctn. Wt.
HLA2020	20	20	17	1	38.3
HLA2030	20	30	17	1	53.9
HLA3020	30	20	17	1	53.9
HLA3030	30	30	17	1	60.7
HLA4020	40	20	17	1	63.1
HLA4030	40	30	17	1	81.0
HLA5020	50	20	17	1	78.7
HLA5030	50	30	17	1	96.7

HLS One Door (12" Deep)

Part No.	Dimensions H	W	D	Std. Ctn. Qty.	Std. Ctn. Wt.
HLS2020	20	20	12	1	29.8
HLS2030	20	30	12	1	40.59
HLS3020	30	20	12	1	49.5
HLS3030	30	30	12	1	55.1
HLS4020	40	20	12	1	56.81
HLS4030	40	30	12	1	61.7
HLS5020	50	20	12	1	67.56
HLS5030	50	30	12	1	76.83

Two Door NEMA Types 1, 2, 12, 13



HLA Two Door (17" Deep)

Part No.	Dimensions H	W	D	Std. Ctn. Qty.	Std. Ctn. Wt.
HLA30402	30	40	17	1	81.0
HLA40402	40	40	17	1	114.7
HLA40502	40	50	17	1	135.0
HLA50402	50	40	17	1	135.0

HLS Two Door (12" Deep)

Part No.	Dimensions H	W	D	Std. Ctn. Qty.	Std. Ctn. Wt.
HLS30402	30	40	12	1	62.57
HLS40402	40	40	12	1	87.59
HLS40502	40	50	12	1	104.28
HLS50402	50	40	12	1	104.28

Accessories

Nonmetallic Thermosetting Plastic (Bakelite)



One Door

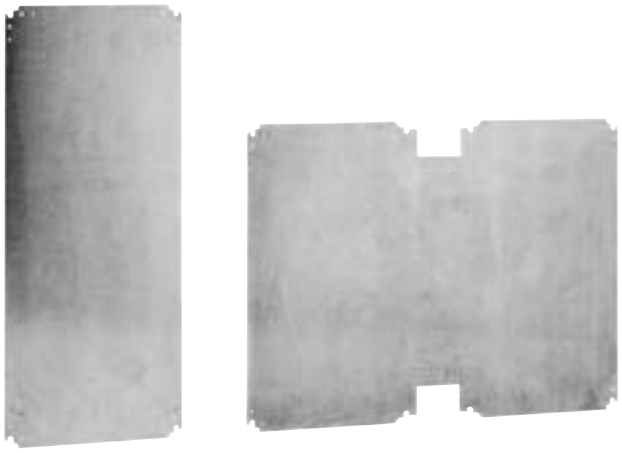
Part No.	Dimensions H	W	Std. Ctn. Qty.	Std. Ctn. Wt.
LP2020BP	15.4	14.8	1	2.1
LP3020BP*	25.2	14.8	1	3.0
LP3030BP	25.2	24.6	1	6.3
LP4020BP	35.0	14.8	1	5.2
LP4030BP	35.0	24.6	1	8.8
LP5020BP	44.3	14.8	1	6.7
LP5030BP	44.3	24.6	1	11.2

* Use Back Panel LP3020BP for Enclosures HLA2030, HLA3020, HLS2030 and HLS3020

Two Door

Part No.	Dimensions H	W	Std. Ctn. Qty.	Std. Ctn. Wt.
LP30402BP	25.2	34.4	1	8.8
LP40402BP	35.0	34.4	1	12.3
LP40502BP	35.0	44.3	1	16.1
LP50402BP	44.3	34.4	1	16.1

Metal – Galvanized Steel



One Door

Part No.	Dimensions H	W	Std. Ctn. Qty.	Std. Ctn. Wt.
LA2020BP	15.4	14.8	1	5.6
LA3020BP*	25.2	14.8	1	8.6
LA3030BP	25.2	24.6	1	17.6
LA4020BP	35.0	14.8	1	14.6
LA4030BP	35.0	24.6	1	24.3
LA5020BP	44.3	14.8	1	19.4
LA5030BP	44.3	24.6	1	31.9

* Use Back Panel LA3020BP for Enclosures HLA2030, HLA3020, HLS2030 and HLS3020

Two Door

Part No.	Dimensions H	W	Std. Ctn. Qty.	Std. Ctn. Wt.
LA30402BP	25.2	34.4	1	24.1
LA40402BP	35.0	34.4	1	33.8
LA40502BP	35.0	44.3	1	43.4
LA50402BP	44.3	34.4	1	43.7

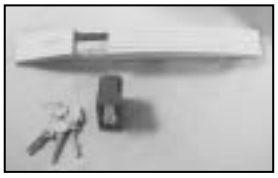
Accessories

Mounting Feet



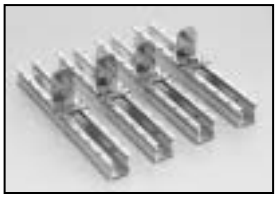
Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HLAMFSS	1 ea. (set of 4)	.6

Replacement Handle with Cylinder Key Lock



Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HLATEL	1 ea.	.41

Panel Adjuster Kit



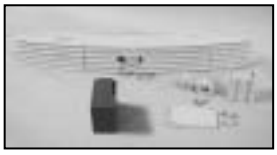
Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HLABPA4	1 ea. (set of 4)	.31

Standard Replacement Bar Lock with Key



Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HLATD	1 ea.	.21

Padlock Device

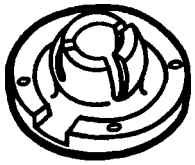


Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HLAPAD	1 ea.	.61

Replacement Handle with Push Button

Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
HLAHAN	1	.40

Draining Device*



Part No.	Std. Ctn. Qty.
HPVEA9	1

For 3R Rating and condensation build-up.

Air Vents*

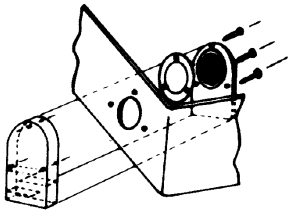


Part No.	Style	Std. Ctn. Wt. (lbs.)
HPVM25	For fitting outside of all enclosures	1
HPVM35	For fitting inside of all enclosures	1

NEMA 1 Rated only.

*Factory installation available.

Enclosure Ventilator*



Part No.	Std. Ctn. Qty.
HVM27	1

Allows any size enclosure to breathe, yet remains watertight.

Distribution Enclosure and Pedestal



Carlon® Distribution Enclosures and Pedestals are designed to accommodate all types of electrical equipment for electrical distribution applications. The enclosure may be directly installed on the ground or on top of a pedestal, and the pedestal is approved for direct bury applications. Both are manufactured using fiber reinforced polyester to provide high impact resistance and allow effortless modifications. And each have an IP-43 Self-Ventilated and IP-54 Watertight rating and a temperature range of -58°F to 302°F.

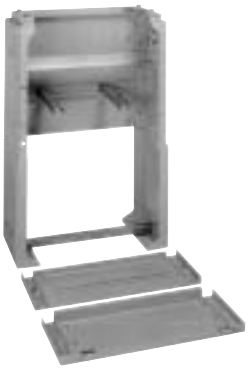
Enclosure



Features

- High impact resistance
- Nonconductive and noncorrosive.
- Fits all type of electrical equipment
- IP-43 Self-Ventilated.
- IP-54 Watertight.
- One and two door configurations.
- Install directly on the ground or on a pedestal.
- Removable inner hinges for great access.
- Doors open 180°

Pedestal



Features

- Can be direct buried.
- Nonconductive and noncorrosive
- Detachable upper front for easy access.
- High impact resistance.
- Auxiliary outlet on the side.
- IP-43 Self-Ventilated.
- IP-54 Watertight.
- Floor or wall mountable.

Material

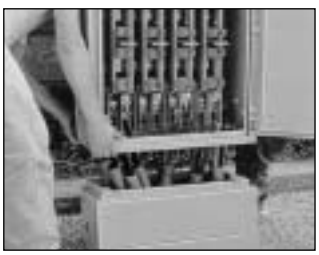
- Fiberglass Reinforced Polyester

Applications







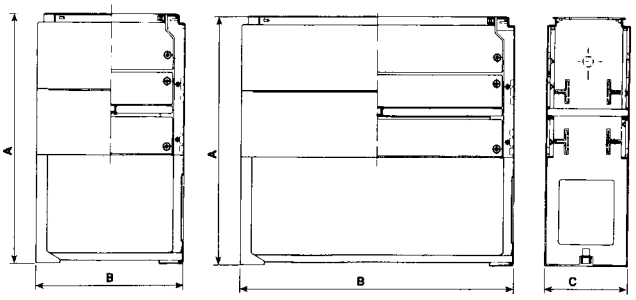


Distribution Enclosure and Pedestal

Specifications

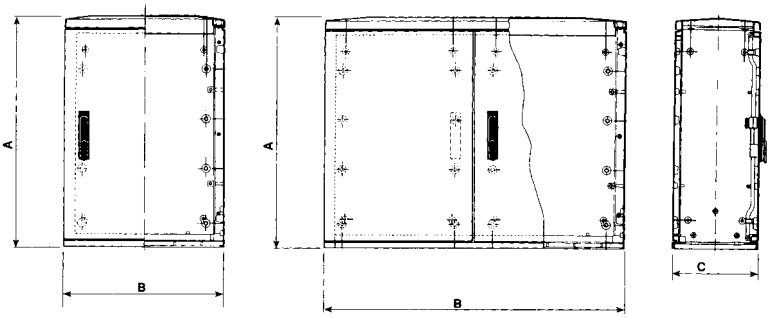
Enclosures

Part No.	No. of Doors	No. of Locks	A Height	B Width	C Depth	Ctn. Qty.	Wt. (lbs.)
HLP3318	1	1	33.46	18.31	12.60	1	40.79
HLP3323	1	1	33.46	23.23	12.60	1	48.50
HLP3331	1	1	33.46	30.91	12.60	1	55.12
HLP33442	2	1	33.46	43.90	12.60	1	77.16
HLP33442L	2	2	33.46	43.90	12.60	1	77.16



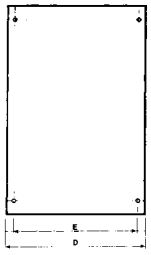
Pedestals

Part No.	A Height	B Width	C Depth	Ctn. Qty.	Weight (lbs.)
HLPED3318	35.43	18.31	12.20	1	33.10
HLPED3323	35.43	23.23	12.20	1	37.48
HLPED3331	35.43	30.91	12.20	1	44.10
HLPED33442	35.43	43.90	12.20	1	55.12



Mounting Plates

Part No.	# of Plates per Encl.	D	E	Thick-ness	Carton Qty.	Weight (lbs.)
LA1412BP	1	14.02	11.97	.20	1	4.41
LA1816BP	2	17.64	15.59	.20	1	11.02
LA1916BP	1	18.94	16.89	.20	1	6.00
LA2725BP	1	26.61	24.57	.20	1	8.38



Accessories

Gasket

Part No.	Size H x W x D	Carton Qty.	Weight (lbs.)
HLP3318G	33 x 18 x 12	1	2.2
HLP3323G	33 x 23 x 12	1	2.2
HLP3331G	33 x 31 x 12	1	2.2
HLP3344G	33 x 44 x 12	1	2.2

Slack and Splice Enclosures



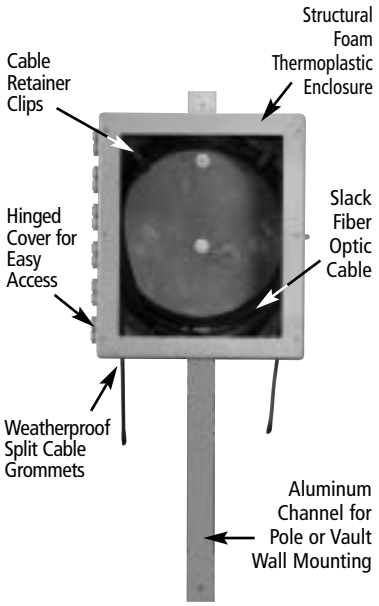
Carlon's state-of-the-art modification capabilities allow for design of Slack and Splice Enclosures to meet specific application requirements.

Features

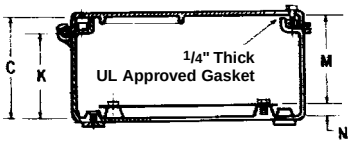
- Slack and Splice Enclosures provide maximum protection of slack fiber and splice unit assemblies.
- Eliminates need for difficult aerial and vault splicing.
- Stores adequate slack fiber to facilitate splicing at ground level work station.
- Enclosure sized to maintain minimum required radius of fiber optic cable.
- Splice tube to accommodate industry standard splice and tray assemblies (Splice enclosure only).

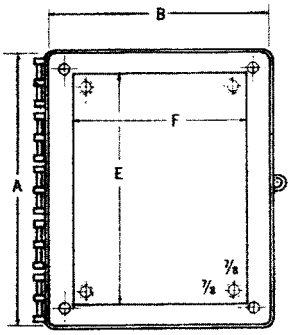
Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Slack Enclosures

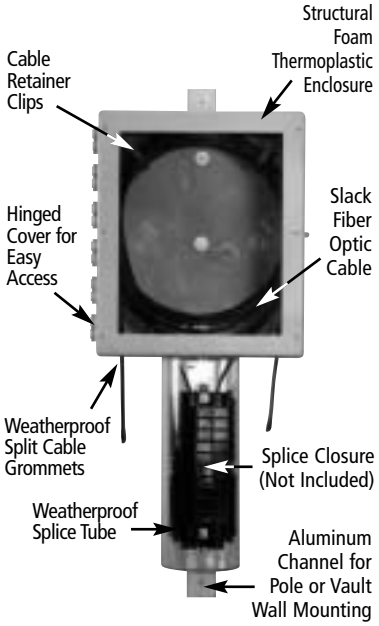


Part Number	Inside Box Size A x B x C	Box Opening E x F	Dimensions K	M	N
SLK11	30 x 24 x 11 1/2	27 1/4 x 21 1/4	10 1/4	10 1/2	1
SLK12	30 x 24 x 9 1/2	27 1/4 x 21 1/4	8 1/4	8 1/2	1
SLK21	24 x 20 x 11 1/2	21 1/4 x 17 1/4	10 1/4	10 1/2	1
SLK22	24 x 20 x 9 1/2	21 1/4 x 17 1/4	8 1/4	8 1/2	1
SLK31	20 x 16 x 11 1/2	17 1/4 x 13 1/4	10 1/4	10 1/2	1
SLK32	20 x 16 x 9 1/2	17 1/4 x 13 1/4	10 1/4	10 1/2	1





Splice Enclosures



Part Number	Inside Box Size A x B x C	Tube Size	Box Opening E x F	Dimensions K	M	N
SPL111	30 x 24 x 11 1/2	10"	27 1/4 x 21 1/4	10 1/4	10 1/2	1
SPL122	30 x 24 x 9 1/2	8"	27 1/4 x 21 1/4	8 1/4	8 1/2	1
SPL211	24 x 20 x 11 1/2	10"	21 1/4 x 17 1/4	10 1/4	10 1/2	1
SPL222	24 x 20 x 9 1/2	8"	21 1/4 x 17 1/4	8 1/4	8 1/2	1

For All Enclosures



Painted JIC enclosure with painted back panel. Installed clear cover with handle and quick-release latch.



Color molded JIC unit with addition of window and pushbuttons.



Molded junction box painted with addition of mounted in-use weatherproof cover.



Painted JIC enclosure with pocket installed in cover for control pad.

Color Molded Enclosures

All Circuit Safe® enclosures can be molded in a variety of colors. Minimum quantities for single shipment or releases against blanket orders are required.

Painted/Silkscreened Enclosures

All enclosures can be painted, interior and exterior, or by special request. Enclosure covers can also be silkscreened on request.

EMI/RFI Protection

For applications where Radio Frequency Interference is a factor, the interior can be coated with an acrylic base paint with a nickel filler. Windows can be covered with fine copper mesh.

Other Modifications Available

Our factory is capable of modifying any of our enclosures to a customer's specifications. Factory's capabilities include:

- Precision milling of button holes, windows, and pockets for keypad installations.
- Hole tapping.
- Ventilators.
- Mounting bosses.
- Access windows.
- Hinged windows.
- Mounted in use weatherproof covers.
- Handles for portable units.
- Latches.
- Enclosure coolers.
- Cylinder locking systems.
- And more!

NEMA Types – Definitions Pertaining to Nonhazardous Locations

Enclosures for Electrical Equipment

An enclosure is a surrounding case constructed to provide protection from accidental contact with the enclosed equipment and to provide protection to the enclosed equipment from specified environmental conditions. A brief description of the more common types of enclosures used by the electrical industry follows.

Type 1 Enclosure: Intended for indoor use primarily to provide protection against contact with enclosed equipment and a degree of protection against falling dirt.

Type 2 Enclosure: Intended for indoor use primarily to provide a degree of protection against limited amounts of falling water and dirt.

Type 3 Enclosure: Intended for outdoor use primarily to provide a degree of protection against wind-blown dust, rain, sleet and external ice formation.

Type 3R Enclosure: Intended for outdoor use primarily to provide a degree of protection against falling rain, sleet and external ice formation.

Type 3S Enclosure: Intended for outdoor use primarily to provide a degree of protection against wind-blown dust, rain, and sleet, and to provide for operation of external mechanism when ice laden.

Type 3X Enclosure: Intended for outdoor use primarily to provide a degree of protection against wind-blown dust, rain, sleet, external ice formation, and corrosion.

Type 3SX Enclosure: Intended for outdoor use primarily to provide a degree of protection against wind-blown dust, rain, sleet, and corrosion,and to provide for operation of external mechanism when ice laden.

Type 4 Enclosure: Intended for indoor or outdoor use primarily to provide a degree of protection against wind-blown dust and rain, splashing water and hose-directed water.

Type 4X Enclosure: Intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, wind-blown dust and rain, splashing water and hose-directed water.

Type 6 Enclosure: Intended for indoor or outdoor use primarily to avoid a degree of protection against contact with enclosed equipment, falling dirt, hose-directed water, entry of water during occasional temporary submersion at a limited depth and external ice formation.

Type 6P Enclosure: Intended for indoor or outdoor use primarily to provide a degree of protection against contact with enclosed equipment, falling dirt, hose-directed water, entry of water during prolonged submersion at a limited depth and external ice formation.

Type 12 Enclosure: Intended for indoor use primarily to provide a degree of protection against dust, falling dirt and dripping noncorrosive liquids.

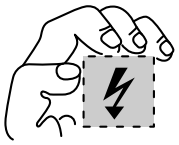
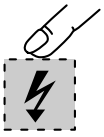
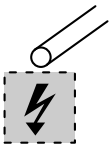
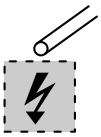
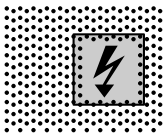
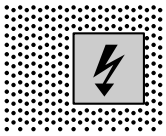
Type 13 Enclosure: Intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil and noncorrosive coolant.

International Standards IP Protection Classification Data

The letters IP followed by three characteristic numbers symbolize the degree of protection.

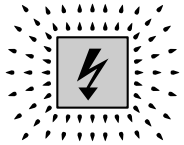
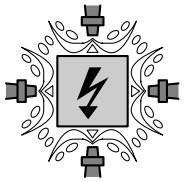
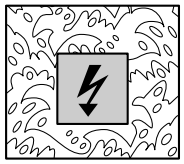
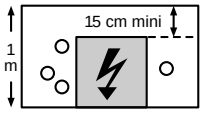
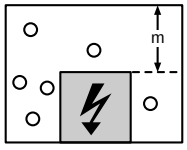
First Digit

Protection Against Solid Bodies

IP	Test	
0		No protection
1		Protection against solid bodies larger than 50 mm (for example accidentally touching with the hand)
2		Protection against solid bodies larger than 12 mm (for example a finger)
3		Protection against solid bodies larger than 2.5 mm (tools, wires)
4		Protection against solid bodies larger than 1 mm (tools, small wires)
5		Protection against dust (no harmful deposits)
6		Complete protection against dust

Second Digit

Protection Against Liquids

IP	Test	
0		No protection
1		Protection against vertical water drops condensation
2		Protected against water drops at up to 15° from the vertical
3		Protected against rain at up to 60° from the vertical
4		Protected against water splashing from all directions
5		Protected against water sprayed from a hose from all directions
6		Protected against water projections similar to sea wave splashes
7		Protected against the effector immersion
8		...m Protected against effects of prolonged immersion under pressure

Clearance Holes For Carflex® Fittings or PVC Male Terminal Adapters

Carflex Fittings & PVC Male Terminal Adapters Trade Sizes	Nominal Size (in.)	Actual Size (in.)	Actual Size (mm)
1/2	.875	.879	22.4
3/4	1.093	1.107	28.2
1	1.344	1.357	34.6
1 1/4	1.813	1.699	43.2
1 1/2	1.938	1.949	49.6
2	2.375	2.413	61.5
2 1/2	2.875	2.914	74.0
3	3.5	3.539	89.8
3 1/2	4	4.044	102.7
4	4.5	4.544	115.4
5	5.625	5.675	143.7

Engineering Properties Of Enclosures

Property	Test Method	Opaque Polycarbonate Covers & Boxes	Clear Polycarbonate Cover	FRP
Thermal And Mechanical				
Temperature Range (°F)	-	-30° to 230°	-30° to 230°	-58° to 320°
Specific Gravity (oz./in^3)	ASTM D792	1.20	1.20	1.79
Thermal Conductivity (BTU•in/hr•ft^2•°F)	ASTM D177	1.35	1.35	1.68
Heat Deflection Temperature @ 264 PSI (°F)	ASTM D648	265	260	392
Tensile Strength (PSI)	ASTM D638	8,800	9,000	13,000
Flexural Strength (PSI)	ASTM D790	13,500	14,000	19,000
Compressive Strength @ 10% Deformation (PSI)	ASTM D695	12,500	12,500	24,000
Impact Strength IZOD Notched (ft.lbs./in.)	ASTM D256	12	12	12
Water Absorption – 24 hrs. @ 73°F (%)	ASTM D570	0.15	0.15	0.17
Electrical				
Dielectric Strength (VOLTS/MIL.)	ASTM D149	380	380	467
Dielectric Constant	ASTM D150			
60 Hz		3.0	3.0	-
100 Hz		-	-	-
106		2.96	2.96	-
Volume Resistivity @ 73°F (OHM-CM)	ASTM D257	>10^{16}	>10^{16}	2.0 x 10^{15}
Arc Resistance (SEC)	ASTM D495	120	120	200+

Chemical Resistance Data

Environmental Resistance Table: ***E–Excellent, G–Good, L–Limited, U–Unsatisfactory***

IMPORTANT: These environmental resistance ratings are based upon tests where the specimens were placed in complete submergence in the reagent listed. Ratings listed in this chart apply to a 48-Hour exposure period. **(The information in this chart is to be used ONLY as a guide in selecting equipment for appropriate chemical compatibility. Before permanent installation, test the equipment with the chemicals and under the specific conditions of your application.)**

Chemical	PVC Himeline HE - Opaque Cover w/Base	Polycarbonate Circuit Safe NEMA Circuit Safe JIC Himeline HE - Clear Cover w/Base Himeline HS - Opaque w/Clear Lids	FRP (Fiberglass Reinforced Polyester) Himeline HS - Bases Himeline HP Himeline HLA/HLS Himeline HLP	Noryl Circuit Safe Medium JIC
Acetaldehyde	U	L	-	-
Acetamide	U	U	-	-
Acetate Solvent	U	-	-	U
Acetic Acid	U	G	E	E
Acetic Acid 20%	U	E	E	E
Acetic Acid 80%	L	G	E	E
Acetic Acid, Glacial	U	G	E	E
Acetic Anhydride	U	U	E	U
Acetone	U	U	U	U
Acetyl Bromide	U	-	-	-
Acetyl Chloride (dry)	L	U	-	U
Acetylene	E	U	-	-
Acrylonitrile	G	U	-	-
Adipic Acid	E	-	-	-
Alcohols:Amyl	E	G	-	L
Alcohols:Benzyl	U	-	-	U
Alcohols:Butyl	E	E	-	E
Alcohols:Diacetone	G	-	-	E
Alcohols:Ethyl	L	G	-	E
Alcohols:Hexyl	E	-	-	E
Alcohols:Isobutyl	E	-	-	E
Alcohols:Isopropyl	E	E	-	E
Alcohols:Methyl	E	G	-	E
Alcohols:Octyl	-	-	-	E
Alcohols:Propyl	E	-	-	E
Aluminum Chloride	E	E	E	E
Aluminum Chloride 20%	E	E	-	E
Aluminum Fluoride	E	-	-	E
Aluminum Hydroxide	E	G	-	E
Aluminum Nitrate	G	E	-	-
Aluminum Potassium Sulfate 10%	E	E	-	E
Aluminum Potassium Sulfate 100%	E	E	-	E
Aluminum Sulfate	E	E	E	E
Amines	U	U	-	U
Ammonia 10%	G	U	-	E
Ammonia Nitrate	G	-	-	E
Ammonia, anhydrous	E	U	-	G
Ammonia, liquid	E	U	L	-
Ammonium Acetate	E	-	-	-
Ammonium Bifluoride	E	-	-	E
Ammonium Carbonate	E	-	L	E
Ammonium Caseinate	-	-	-	E
Ammonium Chloride	E	E	E	E
Ammonium Hydroxide	E	U	L	E
Ammonium Nitrate	E	-	L	E
Ammonium Oxalate	E	E	-	-
Ammonium Persulfate	E	-	-	E
Ammonium Phosphate, Dibasic	E	E	-	E
Ammonium Phosphate, Monobasic	E	-	-	E
Ammonium Phosphate, Tribasic	E	-	-	E
Ammonium Sulfate	E	E	E	E
Ammonium Sulfite	E	-	E	E
Amyl Acetate	U	U	L	U
Amyl Alcohol	E	G	L	L
Amyl Chloride	U	-	U	U
Aniline	L	U	U	U
Aniline Hydrochloride	G	U	-	-
Antifreeze	E	-	-	E
Antimony Trichloride	E	E	E	E
Aqua Regia (80% HCl, 20% HNO3)	L	U	-	U

Chemical	PVC Himeline HE - Opaque Cover w/Base	Polycarbonate Circuit Safe NEMA Circuit Safe JIC Himeline HE - Clear Cover w/Base Himeline HS - Opaque w/Clear Lids	FRP (Fiberglass Reinforced Polyester) Himeline HS - Bases Himeline HP Himeline HLA/HLS Himeline HLP	Noryl Circuit Safe Medium JIC
Aromatic Hydrocarbons	U	-	-	U
Arsenic Acid	E	E	-	E
Arsenic Salts	E	-	-	-
Asphalt	E	U	-	-
Barium Carbonate	E	E	E	E
Barium Chloride	E	E	E	E
Barium Cyanide	U	-	-	-
Barium Hydroxide	E	U	U	E
Barium Nitrate	E	U	-	E
Barium Sulfate	G	U	E	E
Barium Sulfide	E	-	E	E
Beer	E	E	-	E
Beet Sugar Liquids	E	-	-	E
Benzaldehyde	U	U	U	G
Benzene	L	U	L	U
Benzene Sulfonic Acid	E	U	E	E
Benzoic Acid	E	G	-	G
Benzol	-	U	-	G
Benzonitrile	-	E	-	-
Benzyl Chloride	-	-	-	U
Bleaching Liquors	E	-	-	-
Borax (Sodium Borate)	E	-	-	E
Boric Acid	E	-	E	E
Bromine	L	L	-	E
Butadiene	L	U	-	U
Butane	L	U	-	U
Butanol (Butyl Alcohol)	L	G	-	E
Butyl Amine	U	U	-	U
Butyl Ether	E	-	-	U
Butyl Phthalate	-	U	-	E
Butylacetate	U	U	U	G
Butylene	E	U	-	-
Butyric Acid	G	U	-	U
Calcium Bisulfate	-	U	-	-
Calcium Bisulfide	E	-	-	E
Calcium Bisulfite	G	U	-	E
Calcium Carbonate	E	L	E	E
Calcium Chlorate	G	-	E	-
Calcium Chloride	L	-	E	E
Calcium Hydroxide	G	U	U	E
Calcium Hypochlorite	G	U	L	E
Calcium Nitrate	E	E	E	E
Calcium Oxide	G	-	-	E
Calcium Sulfate	G	E	E	E
Calgon	-	-	-	E
Cane Juice	E	-	-	-
Carbolic Acid (Phenol)	U	U	-	U
Carbon Bisulfide	U	-	L	-
Carbon Dioxide (dry)	E	-	-	E
Carbon Dioxide (wet)	E	-	-	E
Carbon Disulfide	U	U	-	U
Carbon Monoxide	E	-	-	E
Carbon Tetrachloride	U	U	E	U
Carbon Tetrachloride (dry)	-	-	-	U
Carbon Tetrachloride (wet)	-	-	-	U
Carbonated Water	E	-	-	E
Carbonic Acid	E	E	-	E
Catsup	E	-	-	E
Chloric Acid	E	-	-	U
Chlorine (dry)	U	-	-	G

Chemical Resistance Data

Environmental Resistance Table: *E–Excellent, G–Good, L–Limited, U–Unsatisfactory*

IMPORTANT: These environmental resistance ratings are based upon tests where the specimens were placed in complete submergence in the reagent listed. Ratings listed in this chart apply to a 48-Hour exposure period. **(The information in this chart is to be used ONLY as a guide in selecting equipment for appropriate chemical compatibility. Before permanent installation, test the equipment with the chemicals and under the specific conditions of your application.)**

Chemical	PVC Himeline HE - Opaque Cover w/Base	Polycarbonate Circuit Safe NEMA Circuit Safe JIC Himeline HE - Clear Cover w/Base Himeline HS - Opaque w/Clear Lids	FRP (Fiberglass Reinforced Polyester) Himeline HS - Bases Himeline HP Himeline HLA/HLS Himeline HLP	Noryl Circuit Safe Medium JIC
Chlorine Water	E	-	E	L
Chlorine, Anhydrous Liquid	U	L	-	G
Chloroacetic Acid	G	U	-	-
Chlorobenzene (Mono)	U	U	U	U
Chlorobromomethane	U	-	-	-
Chloroform	U	U	-	U
Chlorosulfonic Acid	U	L	-	U
Chocolate Syrup	-	E	-	E
Chromic Acid 10%	E	G	E	E
Chromic Acid 30%	E	L	-	U
Chromic Acid 5%	E	G	-	E
Chromic Acid 50%	U	U	-	U
Chromium Salts	E	-	-	-
Citric Acid	G	E	E	E
Citric Oils	-	-	-	E
Clorox® (Bleach)	E	-	-	E
Copper Chloride	E	-	-	E
Copper Cyanide	E	U	-	E
Copper Fluoborate	E	-	-	-
Copper Nitrate	E	U	-	E
Copper Sulfate >5%	E	E	-	E
Copper Sulfate 5%	E	E	-	E
Cresols	U	U	U	U
Cresylic Acid	U	U	-	-
Cupric Acid	E	E	-	E
Cyclohexane	U	G	-	U
Cyclohexanone	U	U	-	U
Detergents	E	E	-	E
Diacetone Alcohol	U	U	-	-
Dichlorobenzene	U	U	-	-
Dichloroethane	U	U	-	E
Diesel Fuel	E	E	-	U
Diethyl Ether	U	U	-	-
Diethylamine	U	U	-	-
Diethylene Glycol	L	G	-	E
Dimethyl Aniline	U	U	U	U
Dimethyl Formamide	U	U	-	U
Diphenyl Oxide	U	-	-	-
Dyes	G	-	-	E
Epsom Salts (Magnesium Sulfate)	E	E	-	E
Ethane	E	-	-	-
Ethanol	L	G	-	E
Ethanolamine	U	-	-	E
Ether	U	-	L	U
Ethyl Acetate	U	U	L	E
Ethyl Benzoate	U	U	-	E
Ethyl Chloride	U	U	L	U
Ethyl Ether	U	-	U	U
Ethylene Bromide	U	U	-	-
Ethylene Chloride	U	U	-	U
Ethylene Chlorohydrin	U	U	E	-
Ethylene Diamine	U	E	-	U
Ethylene Dichloride	U	U	U	U
Ethylene Glycol	E	G	E	E
Ethylene Oxide	U	L	-	E
Fatty Acids	E	G	-	E
Ferric Chloride	E	E	E	E
Ferric Nitrate	E	E	E	E
Ferric Sulfate	E	E	E	E
Ferrous Chloride	E	U	E	E

Chemical	PVC Himeline HE - Opaque Cover w/Base	Polycarbonate Circuit Safe NEMA Circuit Safe JIC Himeline HE - Clear Cover w/Base Himeline HS - Opaque w/Clear Lids	FRP (Fiberglass Reinforced Polyester) Himeline HS - Bases Himeline HP Himeline HLA/HLS Himeline HLP	Noryl Circuit Safe Medium JIC
Ferrous Sulfate	E	E	E	E
Fluoboric Acid	E	-	-	E
Fluorine	U	L	-	-
Fluosilicic Acid	U	E	-	E
Formaldehyde 100%	E	E	-	E
Formaldehyde 40%	E	E	E	E
Formic Acid	E	E	L	E
Freon 113	G	G	-	U
Freon 12	E	-	-	U
Freon 22	E	-	-	G
Freon TF	G	-	-	-
Freon® 11	E	-	-	G
Fuel Oils	E	G	-	G
Furan Resin	E	-	-	-
Furfural	U	U	L	U
Gallic Acid	G	-	-	E
Gasoline (high-aromatic)	E	E	-	G
Gasoline, leaded, ref.	G	E	E	G
Gasoline, unleaded	L	E	-	U
Gelatin	G	-	-	E
Glucose	E	E	E	E
Glue, P.V.A.	L	-	-	-
Glycerin	E	E	E	E
Glycolic Acid	G	-	-	-
Grease	E	-	-	-
Heptane	L	G	E	G
Hexane	G	U	U	G
Hydraulic Oil (Petro)	E	-	-	-
Hydraulic Oil (Synthetic)	E	-	-	-
Hydrazine	-	U	-	-
Hydrobromic Acid 100%	E	-	-	G
Hydrobromic Acid 20%	G	-	-	G
Hydrochloric Acid 100%	U	U	-	E
Hydrochloric Acid 20%	E	G	E	E
Hydrochloric Acid 37%	G	U	L	E
Hydrochloric Acid, Dry Gas	E	-	-	E
Hydrocyanic Acid	G	-	-	E
Hydrocyanic Acid (Gas 10%)	E	G	-	L
Hydrofluoric Acid 100%	L	U	-	U
Hydrofluoric Acid 20%	G	U	-	L
Hydrofluoric Acid 50%	G	U	-	U
Hydrofluoric Acid 75%	L	U	-	U
Hydrofluosilicic Acid 100%	G	-	-	G
Hydrofluosilicic Acid 20%	E	-	-	G
Hydrogen Gas	E	E	-	E
Hydrogen Peroxide 10%	E	E	-	E
Hydrogen Peroxide 100%	E	E	-	E
Hydrogen Peroxide 30%	E	E	E	E
Hydrogen Peroxide 50%	E	E	E	-
Hydrogen Sulfide (aqua)	G	E	-	E
Hydrogen Sulfide (dry)	E	-	-	-
Hydroquinone	G	-	-	-
Hydroxyacetic Acid 70%	U	-	-	-
Ink	L	-	-	-
Iodine	E	-	-	L
Iodine (in alcohol)	E	-	-	-
Iodoform	E	-	-	-
Isooctane	E	G	-	U
Isopropyl Acetate	U	U	-	-
Isopropyl Ether	G	U	-	-

Chemical Resistance Data

Environmental Resistance Table: ***E–Excellent, G–Good, L–Limited, U–Unsatisfactory***

IMPORTANT: These environmental resistance ratings are based upon tests where the specimens were placed in complete submergence in the reagent listed. Ratings listed in this chart apply to a 48-Hour exposure period. **(The information in this chart is to be used ONLY as a guide in selecting equipment for appropriate chemical compatibility. Before permanent installation, test the equipment with the chemicals and under the specific conditions of your application.)**

Chemical	**PVC** Himeline HE - Opaque Cover w/Base	**Polycarbonate** Circuit Safe NEMA Circuit Safe JIC Himeline HE - Clear Cover w/Base Himeline HS - Opaque w/Clear Lids	**FRP** (Fiberglass Reinforced Polyester) Himeline HS - Bases Himeline HP Himeline HLA/HLS Himeline HLP	**Noryl** Circuit Safe Medium JIC
Isotane	E	-	-	-
Jet Fuel (JP3, JP4, JP5)	L	E	-	U
Kerosene	E	U	-	U
Ketones	U	U	-	U
Lacquer Thinners	U	G	-	U
Lacquers	U	U	-	U
Lactic Acid	G	G	E	E
Lard	E	E	-	E
Lead Acetate	G	-	-	E
Lead Nitrate	E	-	-	E
Lead Sulfamate	G	E	-	-
Lime	G	-	-	-
Linoleic Acid	E	-	-	-
Lithium Chloride	U	G	-	-
Lithium Hydroxide	-	U	-	-
Lubricants	G	E	-	L
Lye: Ca(OH)2 Calcium Hydroxide	G	U	-	E
Lye: KOH Potassium Hydroxide	G	U	-	E
Lye: NaOH Sodium Hydroxide	E	U	-	E
Magnesium Bisulfate	E	E	-	-
Magnesium Carbonate	G	E	E	E
Magnesium Chloride	G	E	E	E
Magnesium Hydroxide	E	E	G	E
Magnesium Nitrate	E	E	-	E
Magnesium Oxide	-	-	-	-
Magnesium Sulfate (Epsom Salts)	E	E	E	E
Maleic Acid	E	-	-	E
Malic Acid	E	-	-	-
Manganese Sulfate	L	E	-	E
Mayonnaise	U	-	-	-
Melamine	U	-	-	-
Mercuric Chloride (dilute)	E	E	-	E
Mercuric Cyanide	E	-	-	-
Mercurous Nitrate	E	E	-	E
Mercury	E	U	-	E
Methane	G	-	-	-
Methanol (Methyl Alcohol)	E	G	L	E
Methyl Acetate	U	U	-	-
Methyl Acetone	U	-	-	-
Methyl Alcohol 10%	E	G	-	E
Methyl Bromide	U	-	-	-
Methyl Butyl Ketone	E	U	-	-
Methyl Cellosolve	U	U	-	-
Methyl Chloride	U	U	-	U
Methyl Dichloride	E	-	-	-
Methyl Ethyl Ketone	U	U	E	U
Methyl Isobutyl Ketone	U	U	-	U
Methyl Isopropyl Ketone	U	U	-	U
Methyl Methacrylate	E	-	-	-
Methylamine	U	-	-	-
Methylene Chloride	U	U	U	U
Mineral Spirits	E	L	-	E
Monochloroacetic acid	-	U	-	-
Monoethanolamine	U	-	-	E
Morpholine	-	U	-	U
Motor oil	G	E	-	E
Naphtha	E	G	E	U
Naphthalene	U	-	-	U
Natural Gas	E	-	-	-
Nickel Chloride	E	E	-	E

Chemical	**PVC** Himeline HE - Opaque Cover w/Base	**Polycarbonate** Circuit Safe NEMA Circuit Safe JIC Himeline HE - Clear Cover w/Base Himeline HS - Opaque w/Clear Lids	**FRP** (Fiberglass Reinforced Polyester) Himeline HS - Bases Himeline HP Himeline HLA/HLS Himeline HLP	**Noryl** Circuit Safe Medium JIC
Nickel Nitrate	E	U	-	E
Nickel Sulfate	E	E	-	E
Nitrating Acid (<15% HNO3)	U	-	-	-
Nitrating Acid (>15% H2SO4)	U	-	-	-
Nitrating Acid (_1% Acid)	U	-	-	-
Nitrating Acid (_15% H2SO4)	U	-	-	-
Nitric Acid (20%)	E	G	G	G
Nitric Acid (50%)	G	G	-	G
Nitric Acid (5-10%)	E	E	-	E
Nitric Acid (Concentrated)	G	L	-	G
Nitrobenzene	U	U	L	U
Nitromethane	G	U	-	U
Nitrous Acid	E	-	-	-
Nitrous Oxide	E	-	-	-
Oils:Aniline	U	-	-	U
Oils:Citric	G	E	-	E
Oils:Creosote	L	-	-	U
Oils:Diesel Fuel (20, 30, 40, 50)	G	-	-	U
Oils:Fuel (1, 2, 3, 5A, 5B, 6)	E	G	-	E
Oils:Hydraulic Oil (Petro)	E	-	-	-
Oils:Hydraulic Oil (Synthetic)	E	-	-	-
Oils:Mineral	G	G	-	E
Oils:Olive	L	E	-	E
Oils:Orange	L	L	-	-
Oils:Pine	U	E	-	-
Oils:Rosin	L	-	-	-
Oils:Silicone	E	-	-	E
Oils:Transformer	G	-	-	-
Oils:Turbine	E	-	-	-
Oleic Acid	L	-	E	E
Oleum 100%	U	-	-	E
Oleum 25%	U	-	-	-
Oxalic Acid (cold)	G	-	E	E
Ozone	G	E	-	-
Palmitic Acid	G	-	-	-
Paraffin	G	E	-	E
Pentane	E	E	-	-
Perchloric Acid	L	-	-	-
Perchloroethylene	L	U	-	U
Petrolatum	G	-	-	-
Petroleum	-	-	-	U
Phenol (10%)	L	G	L	U
Phenol (Carbolic Acid)	U	U	-	U
Phosphoric Acid (>40%)	G	E	-	E
Phosphoric Acid (crude)	G	E	-	E
Phosphoric Acid (molten)	U	-	-	-
Phosphoric Acid (_40%)	G	E	-	E
Phosphoric Acid Anhydride	-	U	-	-
Phosphorus	E	-	-	-
Phosphorus Trichloride	U	L	-	-
Photographic Developer	E	E	-	E
Photographic Solutions	E	E	-	E
Phthalic Anhydride	U	E	-	-
Picric Acid	U	U	-	-
Potash (Potassium Carbonate)	E	-	L	E
Potassium Bicarbonate	E	-	-	E
Potassium Bromide	E	E	-	E
Potassium Chlorate	E	E	-	E
Potassium Chloride	E	E	E	E
Potassium Chromate	E	-	E	E

Chemical Resistance Data

Environmental Resistance Table: *E–Excellent, G–Good, L–Limited, U–Unsatisfactory*

IMPORTANT: These environmental resistance ratings are based upon tests where the specimens were placed in complete submergence in the reagent listed. Ratings listed in this chart apply to a 48-Hour exposure period. **(The information in this chart is to be used ONLY as a guide in selecting equipment for appropriate chemical compatibility. Before permanent installation, test the equipment with the chemicals and under the specific conditions of your application.)**

Chemical	**PVC** Himeline HE - Opaque Cover w/Base	**Polycarbonate** Circuit Safe NEMA Circuit Safe JIC Himeline HE - Clear Cover w/Base Himeline HS - Opaque w/Clear Lids	**FRP** (Fiberglass Reinforced Polyester) Himeline HS - Bases Himeline HP Himeline HLA/HLS Himeline HLP	**Noryl** Circuit Safe Medium JIC
Potassium Cyanide Solutions	E	-	-	E
Potassium Dichromate	E	E	-	E
Potassium Ferricyanide	E	-	E	E
Potassium Ferrocyanide	E	-	E	E
Potassium Hydroxide (Caustic Potash)	E	U	L	E
Potassium Hypochlorite	G	-	-	-
Potassium Iodide	E	-	-	-
Potassium Nitrate	E	E	E	E
Potassium Oxalate	-	-	-	-
Potassium Permanganate	E	E	E	E
Potassium Sulfate	E	E	E	E
Potassium Sulfide	E	-	-	E
Propane (liquefied)	E	L	-	E
Propylene	G	-	-	-
Propylene Glycol	L	G	-	-
Pyridine	U	U	-	G
Pyrogallic Acid	E	-	-	-
Resorcinal	L	G	-	-
Rosins	L	-	-	-
Salicylic Acid	G	E	-	-
Salt Brine (NaCl saturated)	E	E	-	E
Sea Water	E	E	-	E
Silicone	E	E	-	E
Silver Bromide	-	-	-	E
Silver Nitrate	E	E	-	E
Soap Solutions	E	E	-	E
Soda Ash (see Sodium Carbonate)	E	E	-	E
Sodium Acetate	G	E	E	E
Sodium Aluminate	-	-	-	E
Sodium Benzoate	G	E	-	-
Sodium Bicarbonate	E	E	E	E
Sodium Bisulfate	E	E	-	E
Sodium Bisulfite	E	E	-	E
Sodium Borate (Borax)	E	E	-	E
Sodium Bromide	G	-	E	E
Sodium Carbonate	E	E	-	E
Sodium Chlorate	E	E	E	E
Sodium Chloride	E	E	E	E
Sodium Chromate	-	E	-	E
Sodium Cyanide	E	-	-	E
Sodium Ferrocyanide	E	-	E	E
Sodium Fluoride	E	-	-	E
Sodium Hydrosulfite	L	-	-	-
Sodium Hydroxide (20%)	E	E	U	E
Sodium Hydroxide (50%)	E	U	U	E
Sodium Hydroxide (80%)	E	U	U	E
Sodium Hypochlorite (<20%)	E	L	L	E
Sodium Hypochlorite (100%)	G	-	-	E
Sodium Metaphosphate	E	-	-	-
Sodium Metasilicate	E	-	-	-
Sodium Nitrate	E	-	U	E
Sodium Perborate	E	-	-	E
Sodium Peroxide	G	E	-	-
Sodium Polyphosphate	E	-	-	E
Sodium Silicate	E	-	-	E
Sodium Sulfate	E	E	E	E
Sodium Sulfide	E	U	U	E
Sodium Sulfite	E	-	E	E
Sodium Tetraborate	E	-	-	E
Sodium Thiosulfate (hypo)	E	U	-	E

Chemical	**PVC** Himeline HE - Opaque Cover w/Base	**Polycarbonate** Circuit Safe NEMA Circuit Safe JIC Himeline HE - Clear Cover w/Base Himeline HS - Opaque w/Clear Lids	**FRP** (Fiberglass Reinforced Polyester) Himeline HS - Bases Himeline HP Himeline HLA/HLS Himeline HLP	**Noryl** Circuit Safe Medium JIC
Stannic Chloride	E	E	-	E
Stannic Fluoborate	-	-	-	E
Stannous Chloride	E	-	-	E
Stearic Acid	G	E	-	E
Stoddard Solvent	L	E	-	U
Styrene	U	U	-	E
Sulfate (Liquors)	G	-	-	-
Sulfur Chloride	L	-	-	E
Sulfur Dioxide	E	-	-	E
Sulfur Dioxide (dry)	E	E	-	E
Sulfur Hexafluoride	G	-	-	-
Sulfur Trioxide	E	-	-	U
Sulfur Trioxide (dry)	E	-	-	U
Sulfuric Acid (<10%)	E	E	E	E
Sulfuric Acid (10-75%)	E	G	U	E
Sulfuric Acid (75-100%)	U	U	-	E
Sulfuric Acid (cold concentrated)	U	-	-	E
Sulfuric Acid (hot concentrated)	U	U	-	U
Sulfurous Acid	E	-	-	E
Tallow	-	-	-	E
Tannic Acid	E	L	-	E
Tanning Liquors	E	-	-	E
Tartaric Acid	E	-	E	E
Tetrachloroethane	L	-	-	U
Tetrachloroethylene	U	U	-	U
Tetrahydrofuran	U	U	L	U
Tin Salts	E	-	-	-
Toluene (Toluol)	U	U	-	U
Trichloroacetic Acid	G	U	-	-
Trichloroethane	L	U	-	U
Trichloroethylene	U	-	U	U
Trichloropropane	-	-	-	U
Tricresylphosphate	U	-	-	E
Triethylamine	G	-	-	G
Trisodium Phosphate	E	-	-	E
Turpentine	U	U	E	U
Urea	U	U	L	E
Uric Acid	E	-	-	-
Varnish	U	-	-	U
Vinegar	G	E	E	E
Vinyl Acetate	U	-	-	-
Vinyl Chloride	U	-	-	-
Water, Acid, Mine	G	G	-	-
Water, Deionized	E	-	-	E
Water, Distilled	E	E	-	E
Water, Fresh	G	E	-	E
Water, Salt	G	E	-	E
Whiskey & Wines	E	E	-	E
White Liquor (Pulp Mill)	E	-	-	E
White Water (Paper Mill)	E	-	-	U
Xylene	U	U	E	G
Zinc Chloride	G	E	E	E
Zinc Hydrosulfite	-	-	-	E
Zinc Sulfate	E	E	E	E

Carlon® Conduit, Fittings and Accessories

Schedule 40 & 80 Conduit

Schedule 40 & 80 Elbows

Junction Boxes

FS Boxes

Utility Conduit, Fittings & Elbows

P&C Duct

Telephone Duct

P&C Flex

PV-Mold

Slip Meter Risers

Split Duct

Cement

Spacers









Carlon® Rigid Nonmetallic Conduit (RNC), Fittings & Accessories

Carlon® manufactures the most complete line of nonmetallic conduits and fittings in the electrical industry. Carlon Schedule 40 and Schedule 80 conduits are designed for use aboveground and underground as described in the National Electrical Code. Specify only Carlon conduits and fittings to insure raceway system integrity.

Features

Ease of Installation Nonmetallic conduits are 1/4 to 1/5 the weight of metallic systems, can be installed in less than half the time, and are easily fabricated on the job.

Safety Nonmetallic conduits are nonconductive, assuring a safe system.

Impact Resistant Carlon Schedule 40 and Schedule 80 nonmetallic conduits are resistant to sunlight and are listed for exposed or outdoor usage. The use of expansion fittings allows the system to expand and contract with temperature variations.

Corrosion Resistant Carlon conduits and fittings are nonmetallic and will not rust or corrode.

Carlon nonmetallic Schedule 40 and Schedule 80 conduits and elbows are manufactured to NEMA TC-2, Federal specification WC1O94A and UL 651 specifications. Fittings are manufactured to NEMA TC-3, Federal specification WC1094A and UL514B. Both conduit and fittings carry respective UL or ETL Listings and UL or ETL labels.

Schedule 40 PVC Rigid Nonmetallic Conduit (RNC).

(Heavy Wall EPC)

ETL Listed to UL 651 in compliance to the NEC

UL LISTED E35297

RUS Listed

Listed for underground applications encased in concrete or direct burial. Also for use in exposed or concealed applications aboveground.

• Sunlight resistant • Rated for use with 90˚C conductors • Superior weathering characteristics

With Integral Bell*



Schedule 40 Heavy Wall

Part No.			Std. Crate Qty.		Wt. Per	Dimensions		
10'	20'	Nom. Size	10'	20'	100'	O.D.	I.D.	Wall
49005-010		1/2"	6000'		17	.840	.622	.109
49007-010	49007-020	3/4"	4400'	8800'	23	1.050	.824	.113
49008-010	49008-020	1"	3600'	7200'	34	1.315	1.049	.133
49009-010	49009-020	1 1/4"	3300'	6600'	46	1.660	1.380	.140
49010-010	49010-020	1 1/2"	2250'	4500'	55	1.900	1.610	.145
49011-010	49011-020	2"	1400'	2800'	73	2.375	2.067	.154
49012-010	49012-020	2 1/2"	930'	1860'	124	2.875	2.469	.203
49013-010	49013-020	3"	880'	1760'	163	3.500	3.068	.216
49014-010	49014-020	3 1/2"	630'	1260'	196	4.000	3.548	.226
49015-010	49015-020	4"	570'	1140'	232	4.500	4.026	.237
49016-010	49016-020	5"	380'	760'	315	5.563	5.047	.258
49017-010	49017-020	6"	260'	520'	409	6.625	6.065	.280

Rigid nonmetallic conduit is normally supplied in standard 10' lengths, with one belled end per length. For specific requirements, it may be produced in lengths shorter or longer than 10', with or without belled ends.

Use RNC Fittings with Schedule 40 and Schedule 80 Conduit.

Notes: 1. Special fittings and conduit sizes will be quoted on request.
2. DON'T FORGET TO ORDER CEMENT.
3. Carlon reserves the right to ship to the nearest unitized quantity.

Schedule 80 PVC Rigid Nonmetallic Conduit (RNC)

(Extra Heavy Wall EPC-80)

ETL Listed to UL 651 in compliance to the NEC

UL LISTED E35297

RUS Listed

Listed for use in aboveground and belowground applications that are subject to physical damage.

- Sunlight resistant
- Rated for use with 90°C conductors
- Superior weathering characteristics
- For use in areas subject to physical damage

With Integral Bell*



Schedule 80 Extra Heavy Wall

Part No. 10'	Part No. 20'	Nom. Size	Std. Crate Qty. 10'	Std. Crate Qty. 20'	Wt. Per 100'	Dimensions O.D.	Dimensions I.D.	Wall
49405-010	49405-020	1/2"	6000'	12000'	21	.840	.546	.147
49407-010	49407-020	3/4"	4400'	8000'	30	1.050	.742	.154
49408-010	49408-020	1"	3600'	7200'	44	1.315	.957	.179
49409-010	49409-020	1 1/4"	3300'	6600'	60	1.660	1.278	.191
49410-010	49410-020	1 1/2"	2250'	3600'	72	1.900	1.500	.200
49411-010	49411-020	2"	1400'	2800'	101	2.375	1.939	.218
49412-010	49412-020	2 1/2"	930'	1880	154	2.875	2.323	.276
49413-010	49413-020	3"	880'	1760'	210	3.500	2.900	.300
49415-010	49415-020	4"	570'	1140'	308	4.500	3.826	.337
49416-010	–	5"	380'	–	428	5.563	4.813	.375
49417-010	49417-020	6"	260'	520'	588	6.625	5.761	4.32

Rigid nonmetallic conduit is normally supplied in standard 10' lengths, with one belled end per length. For specific requirements, it may be produced in lengths shorter or longer than 10', with or without belled ends.

Use RNC Fittings with Schedule 40 and Schedule 80 Conduit.

Notes: 1. Special fittings and conduit sizes will be quoted on request.
2. DON'T FORGET TO ORDER CEMENT.
3. Carlon reserves the right to ship to the nearest unitized quantity.

Support of Carlon Rigid Nonmetallic Conduit in Aboveground Installations

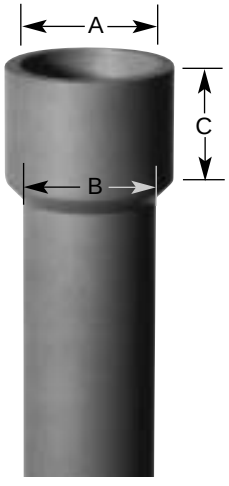
Table 352.30(B) NEC shows the support requirements for Schedule 40 and Schedule 80 rigid PVC nonmetallic conduit.

Plastic conduit should always be installed away from steam lines, etc. Support straps should allow for lineal movement caused by expansion and contraction.

Maximum ambient temperature is 122°F (50°C).

Table 352.30(B), NEC

Trade Size	Maximum Spacing Between Supports (feet)
1/2 - 1	3
1 1/4 - 2	5
2 1/2 - 3	6
3 1/2 - 5	7
6	8



Acceptable Dimensions in Inches of Integral Bell per UL 651

Trade Size	A At Entrance (in.) Maximum	A At Entrance (in.) Minimum	B At Bottom (in.) Maximum	B At Bottom (in.) Minimum	C Nominal Bell Depth (in.)
1/2	0.860	0.844	0.844	0.828	1.375
3/4	1.074	1.054	1.056	1.036	1.500
1	1.340	1.320	1.320	1.300	1.750
1 1/4	1.689	1.665	1.667	1.643	1.875
1 1/2	1.930	1.906	1.906	1.882	2.750
2	2.405	2.381	2.381	2.357	3.250
2 1/2	2.905	2.875	2.883	2.853	3.250
3	3.530	3.500	3.507	3.477	3.875
3 1/2	4.065	3.965	4.007	3.977	3.875
4	4.565	4.465	4.506	4.476	4.625
5	5.643	5.543	5.583	5.523	5.625
6	6.708	6.608	6.644	6.584	6.375

Schedule 40 Elbows Standard Radius

Available in plain and integral belled end for use with nonmetallic solvent weld fittings.

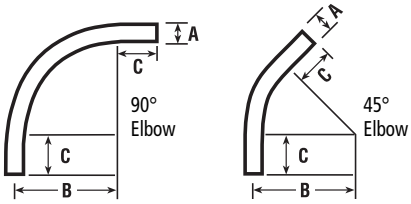
ETL Listed to UL 651 in compliance to the NEC

LISTED E35297

Item	Plain End Part No.	Belled End Part No.	Size	Plain End Std. Ctn. Qty.	Belled End Std. Ctn. Qty.
90° Elbow	UA9AD	UA9ADB	1/2"	50	50
	UA9ADR-CAR	UA9ADB	1/2"	25	50
	UA9AE	UA9AEB	3/4"	25	25
	UA9AFR-CTN	UA9AFB-CTN	1"	25	25
	UA9AG	UA9AGB	1 1/4"	20	20
	UA9AH	UA9AHB	1 1/2"	25	25
	UA9AJ	UA9AJB	2"	20	20
	UA9AJ-CAR	UA9AJB	2"	5	20
	UA9AK-CAR	UA9AKB-CAR	2 1/2"	10	10
	UA9AL	UA9ALB-CAR	3"	1	5
	UA9AM	UA9AMB	3 1/2"	1	20
	UA9AN	UA9ANB	4"	1	1
	UA9AP	UA9APB	5"	1	1
	UA9AR	UA9ARB	6"	1	1
45° Elbow	UA7AD	UA7ADB	1/2"	50	50
	UA7AE	UA7AEB	3/4"	25	25
	UA7AER-CAR	UA7AEB	3/4"	15	25
	UA7AF	UA7AFB	1"	20	20
	UA7AF-CAR	UA7AFB	1"	15	20
	UA7AG	UA7AGB	1 1/4"	20	20
	UA7AH	UA7AHB	1 1/2"	20	20
	UA7AJ	UA7AJB	2"	20	20
	UA7AJ-CAR	UA7AJB-CAR	2"	4	4
	UA7AK	UA7AKB	2 1/2"	20	20
	UA7AK-CAR	UA7AKB-CAR	2 1/2"	5	5
	UA7AL-CAR	UA7ALB	3"	5	25
	UA7AL-CAR	UA7ALB-CAR	3"	5	10
	UA7AM	UA7AMB	3 1/2"	1	20
	UA7AN	UA7ANB	4"	1	20
	UA7AP	UA7APB	5"	1	1
	UA7AR	UA7ARB	6"	1	1
30° Elbow	UA6AD	UA6ADB	1/2"	50	50
	UA6AE	UA6AEB	3/4"	25	25
	UA6AF	UA6AFB	1"	25	1
	UA6AG	UA6AGB	1 1/4"	20	20
	UA6AH	UA6AHB	1 1/2"	25	1
	UA6AJ	UA6AJB	2"	20	20
	UA6AK	UA6AKB	2 1/2"	10	20
	UA6AL	UA6ALB	3"	1	1
	UA6AM	UA6AMB	3 1/2"	1	1
	UA6AN	UA6ANB	4"	1	1
	UA6AP	UA6APB	5"	1	1
	UA6AR	UA6ARB	6"	1	1

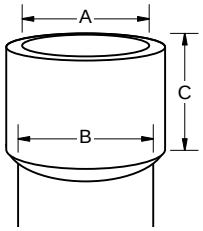
Item	Plain End Part No.	Belled End Part No.	Size	Plain End Std. Ctn. Qty.	Belled End Std. Ctn. Qty.
22 1/2° Elbow	UA5AD	–	1/2"	1	–
	UA5AE	–	3/4"	1	–
	UA5AF	–	1"	1	–
	UA5AG	–	1 1/4"	1	–
	UA5AH	–	1 1/2"	1	–
	UA5AJ	UA5AJB	2"	25	1
	UA5AK	–	2 1/2"	20	–
	UA5AL	UA5ALB	3"	5	1
	UA5AM	–	3 1/2"	1	–
	UA5AN	UA5ANB	4"	1	1
	UA5AP	UA5APB	5"	1	1
	UA5AR	UA5ARB	6"	1	1
11 1/4° Elbow	UA3AD	–	1/2"	1	–
	UA3AE	–	3/4"	1	–
	UA3AF	–	1"	1	–
	UA3AG	–	1 1/4"	1	–
	UA3AH	–	1 1/2"	1	–
	UA3AJ	–	2"	1	–
	UA3AK	–	2 1/2"	1	–
	UA3AL	–	3"	1	–
	UA3AM	–	3 1/2"	1	–
	UA3AN	UA3ANB	4"	1	1
	UA3AP	–	5"	1	–
	UA3AR	–	6"	1	–

Standard Radius Elbow Dimensions



Size	A	B Min. (Radius)	C Min.
1/2"	.840	4"	1 1/2"
3/4"	1.050	4 1/2"	1 1/2"
1"	1.315	5 3/4"	1 7/8"
1 1/4"	1.660	7 1/4"	2"
1 1/2"	1.900	8 1/4"	2"
2"	2.375	9 1/2"	2"
2 1/2"	2.875	10 1/2"	3"
3"	3.500	13"	3 1/8"
3 1/2"	4.000	15"	3 1/4"
4"	4.500	16"	3 3/8"
5"	5.563	24"	3 5/8"
6"	6.625	30"	3 3/4"

Integral Belled End Dimensions



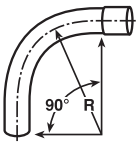
Trade Size	A At Entrance Max.	A At Entrance Min.	B At Bottom Max.	B At Bottom Min.	C Socket Depth Max.	C Socket Depth Min.
1/2"	.860	0.844	0.844	0.828	1.500	0.652
3/4"	1.074	1.054	1.056	1.036	1.500	0.719
1"	1.340	1.320	1.320	1.300	1.875	0.875
1 1/4"	1.689	1.665	1.667	1.643	2.000	0.938
1 1/2"	1.930	1.906	1.906	1.882	2.000	1.062
2"	2.405	2.381	2.381	2.357	2.000	1.125
2 1/2"	2.905	2.875	2.883	2.853	3.000	1.469
3"	3.530	3.500	3.507	3.477	3.125	1.594
3 1/2"	4.065	3.965	4.007	3.977	3.250	1.687
4"	4.565	4.465	4.506	4.476	3.375	1.750
5"	5.643	5.543	5.583	5.523	3.625	1.937
6"	6.708	6.608	6.644	6.584	3.750	2.125

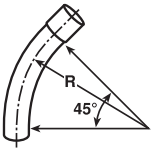
Schedule 40 Elbows Special Radius

*Consult factory for additional sizes/configurations

ETL Listed to UL 651 in compliance to the NEC

LISTED E35297

Segment	Plain End Part No.	Belled End Part No.	Nom. Diam.	Radius (in.)	Plain End Std. Ctn. Qty.	Belled End Std. Ctn. Qty.
90° Elbow 	UA9CF	UA9CFB	1"	18"	1	1
	UA9DF	UA9DFB	1"	24"	1	1
	UA9EF	UA9EFB	1"	30"	1	1
	UA9FF	–	1"	36"	1	–
	UA9HF	–	1"	48"	1	–
	UA9CG	UA9CGB	1 1/4"	18"	1	1
	UA9DG	UA9DGB	1 1/4"	24"	1	1
	UA9EG	UA9EGB	1 1/4"	30"	1	1
	UA9FG	UA9FGB	1 1/4"	36"	1	1
	UA9HG	–	1 1/4"	48"	1	–
	UA9CH	UA9CHB	1 1/2"	18"	1	1
	UA9DH	UA9DHB	1 1/2"	24"	1	1
	UA9EH	UA9EHB	1 1/2"	30"	1	1
	UA9FH	UA9FHB	1 1/2"	36"	1	1
	UA9HH	–	1 1/2"	48"	1	–
	UA9CJ	UA9CJB	2"	18"	1	1
	UA9DJ	UA9DJB-UPC	2"	24"	1	1
	UA9EJ	UA9EJB	2"	30"	1	1
	UA9FJ-UPC	UA9FJB	2"	36"	1	1
	UA9HJ	UA9HJB	2"	48"	1	1
	UA9JJ	–	2"	72"	1	–
	UA9CK	UA9CKB	2 1/2"	18"	1	1
	UA9DK	UA9DKB-UPC	2 1/2"	24"	1	1
	UA9EK	UA9EKB	2 1/2"	30"	1	1
	UA9FK-UPC	UA9FKB	2 1/2"	36"	1	1
	UA9HK	UA9HKB	2 1/2"	48"	1	1
	UA9CL	UA9CLB	3"	18"	1	1
	UA9DL	UA9DLB-UPC	3"	24"	1	1
	UA9EL	UA9ELB	3"	30"	1	1
	UA9FL	UA9FLB	3"	36"	1	1
	UA9HL	UA9HLB	3"	48"	1	1
	UA9IL	–	3"	60"	1	–
	UA9DM	UA9DMB	3 1/2"	24"	1	1
	UA9EM	UA9EMB	3 1/2"	30"	1	1
	UA9FM	UA9FMB	3 1/2"	36"	1	1
	UA9HM	UA9HMB	3 1/2"	48"	1	1
	–	UA9CNB	4"	18"	–	1
	UA9DN	UA9DNB	4"	24"	1	1
	UA9EN	UA9ENB	4"	30"	1	1
	UA9FN	UA9FNB	4"	36"	1	1
	UA9HN	UA9HNB	4"	48"	1	1
	UA9IN	UA9INB	4"	60"	1	1
	UA9JN	–	4"	72"	1	1
	UA9EP	UA9EPB	5"	30"	1	1
	UA9FP	UA9FPB	5"	36"	1	1
	UA9HP	UA9HPB	5"	48"	1	1
	UA9IP	UA9IPB	5"	60"	1	1
	UA9FR	UA9FRB	6"	36"	1	1
	UA9HR	UA9HRB	6"	48"	1	1
	UA9IR	UA9IRB	6"	60"	1	1
	–	UA9TRB	6"	180"	–	1
	UA9HT	–	8"	48"	1	1

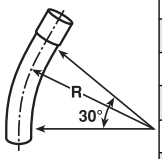
Segment	Plain End Part No.	Belled End Part No.	Nom. Diam.	Radius (in.)	Plain End Std. Ctn. Qty.	Belled End Std. Ctn. Qty.
45° Elbow 	UA7CF	–	1"	18"	1	–
	UA7DF	–	1"	24"	1	–
	UA7EF	–	1"	30"	1	–
	UA7FF	–	1"	36"	1	–
	UA7HF	–	1"	48"	1	–
	UA7CG	–	1 1/4"	18"	1	–
	UA7DG	–	1 1/4"	24"	1	–
	UA7EG	–	1 1/4"	30"	1	–
	UA7FG	–	1 1/4"	36"	1	–
	UA7HG	–	1 1/4"	48"	1	–
	UA7CH	–	1 1/2"	18"	1	–
	UA7DH	–	1 1/2"	24"	1	–
	UA7EH	–	1 1/2"	30"	1	–
	UA7FH	UA7FHB	1 1/2"	36"	1	1
	UA7HH	–	1 1/2"	48"	1	–
	–	UA7BJB	2"	12"	–	1
	UA7CJ	UA7CJB	2"	18"	1	1
	UA7DJ	UA7DJB	2"	24"	1	1
	UA7EJ	UA7EJB	2"	30"	1	1
	UA7FJ	UA7FJB	2"	36"	1	1
	UA7HJ	UA7HJB	2"	48"	1	1
	UA7SJ	–	2"	150"	1	–
	UA7CK	–	2 1/2"	18"	1	–
	UA7DK	UA7DKB	2 1/2"	24"	1	1
	UA7EK	–	2 1/2"	30"	1	–
	UA7FK	UA7FKB	2 1/2"	36"	1	1
	UA7HK	–	2 1/2"	48"	1	–
	UA7CL	UA7CLB	3"	18"	1	1
	UA7DL	UA7DLB	3"	24"	1	1
	UA7EL	UA7ELB	3"	30"	1	1
	UA7FL	UA7FLB	3"	36"	1	1
	–	UA7HLB	3"	48"	–	1
	UA7DM	–	3 1/2"	24"	1	–
	UA7EM	–	3 1/2"	30"	1	–
	UA7FM	–	3 1/2"	36"	1	–
	UA7DN	UA7DNB	4"	24"	1	1
	UA7EN	UA7ENB	4"	30"	1	1
	UA7FN	UA7FNB	4"	36"	1	1
	UA7HN	UA7HNB	4"	48"	1	1
	–	UA7NNB	4"	120"	–	1
	UA7SN	UA7SNB	4"	150"	1	–
	UA7EP	UA7EPB	5"	30"	1	1
	UA7FP	UA7FPB	5"	36"	1	1
	UA7HP	UA7HPB	5"	48"	1	1
	–	UA7IPB	5"	60"	–	1
	–	UA7NPB	5"	120"	–	1
	–	UA7SPB	5"	150"	–	1
	UA7FR	UA7FRB	6"	36"	1	1
	UA7HR	UA7HRB	6"	48"	1	1
	UA7FT	–	8"	36"	1	–
	UA7HT	–	8"	48"	1	–

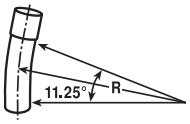
Schedule 40 Elbows Special Radius

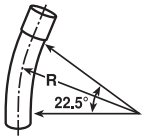
ETL Listed to UL 651 in compliance to the NEC

LISTED E35297

*Consult factory for additional sizes/configurations

Segment	Plain End Part No.	Belled End Part No.	Nom. Diam.	Radius (in.)	Plain End Std. Ctn. Qty.	Belled End Std. Ctn. Qty.
30° Elbow	UA6CJ	–	2"	18"	1	–
	UA6DJ	UA6DJB	2"	24"	1	1
	UA6FJ	UA6FJB	2"	36"	1	1
	UA6HJ	UA6HJB	2"	48"	1	1
	UA6CK	–	2 1/2"	18"	1	–
	UA6DK	–	2 1/2"	24"	1	–
	UA6CL	–	3"	18"	1	–
	UA6DL	UA6DLB	3"	24"	1	1
	UA6FL	UA6FLB	3"	36"	1	1
	UA6HL	UA6HLB	3"	48"	1	1
	UA6DM	–	3 1/2"	24"	1	–
	UA6FM	–	3 1/2"	36"	1	–
	UA6HM	–	3 1/2"	48"	1	–
	UA6DN	–	4"	24"	1	–
	UA6FN	UA6FNB	4"	36"	1	1
	UA6HN	UA6HNB	4"	48"	1	1
	UA6FP	UA6FPB	5"	36"	1	1
	UA6HP	UA6HPB	5"	48"	1	1
	UA6FR	UA6FRB	6"	36"	1	1
	UA6HR	UA6HRB	6"	48"	1	1

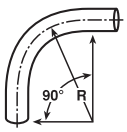
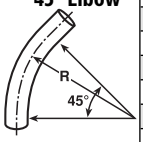
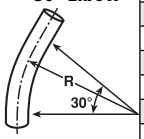
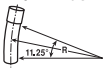
Segment	Plain End Part No.	Belled End Part No.	Nom. Diam.	Radius (in.)	Plain End Std. Ctn. Qty.	Belled End Std. Ctn. Qty.
11 1/4° Elbow	UA3DJ	UA3DJB	2"	24"	1	25
	UA3FJ	UA3FJB	2"	36"	1	1
	UA3HJ	–	2"	48"	1	–
	UA3HK	–	2 1/2"	48"	1	–
	UA3DL	UA3DLB	3"	24"	1	1
	UA3FL	UA3FLB	3"	36"	1	1
	UA3HL	–	3"	48"	1	–
	UA3DM	–	3 1/2"	24"	1	–
	UA3HM	–	3 1/2"	48"	1	–
	UA3DN	UA3DNB	4"	24"	1	1
	UA3FN	UA3FNB	4"	36"	1	1
	–	UA3SNB	4"	150"	–	1
	UA3HN	UA3HNB	4"	48"	1	1
	UA3FP	UA3FPB	5"	36"	1	1
	UA3HP	–	5"	48"	1	–
	–	UA3UPB	5"	240"	–	1
	UA3FR	UA3FRB	6"	36"	1	1
	UA3HR	–	6"	48"	1	–
	UA3FT	–	8"	36"	1	–

Segment	Plain End Part No.	Belled End Part No.	Nom. Diam.	Radius (in.)	Plain End Std. Ctn. Qty.	Belled End Std. Ctn. Qty.
22 1/2° Elbow	UA5FF	–	1"	36"	1	–
	UA5FG	–	1 1/4"	36"	1	–
	UA5FH	UA5FHB	1 1/2"	36"	1	1
	UA5CJ	UA5CJB	2"	18"	1	1
	UA5DJ	UA5DJB	2"	24"	1	25
	UA5EJ	UA5EJB	2"	30"	1	1
	UA5FJ	UA5FJB	2"	36"	1	1
	UA5HJ	–	2"	48"	1	–
	UA5VJ	–	2"	300"	1	–
	UA5CK	–	2 1/2"	18"	1	–
	UA5DK	–	2 1/2"	24"	1	–
	UA5EK	–	2 1/2"	30"	1	–
	UA5FK	–	2 1/2"	36"	1	–
	UA5HK	–	2 1/2"	48"	1	–
	–	UA5CLB	3"	18"	1	1
	UA5DL	UA5DLB	3"	24"	1	1
	UA5EL	UA5ELB	3"	30"	1	1
	UA5FL	UA5FLB	3"	36"	1	1
	UA5HL	–	3"	48"	1	–
	UA5VL	–	3"	300"	1	–
	UA5DM	–	3 1/2"	24"	1	–
	UA5EM	–	3 1/2"	30"	1	–
	UA5FM	–	3 1/2"	36"	1	–
	UA5HM	–	3 1/2"	48"	1	–
	UA5DN	UA5DNB	4"	24"	1	1
	UA5EN	UA5ENB	4"	30"	1	1
	UA5FN	UA5FNB	4"	36"	1	1
	UA5HN	UA5HNB	4"	48"	1	
	UA5IN	–	4"	60"	1	–
	UA5JN	–	4"	72"	1	–
	UA5SN	UA5SNB	4"	150"	1	
	–	UA5UNB	4"	240"	–	1
	–	UA5VNB	4"	300"	–	1
	–	UA5DPB	5"	24"	1	1
	UA5EP	UA5EPB	5"	30"	1	1
	UA5FP	UA5FPB	5"	36"	1	1
	UA5HP	UA5HPB	5"	48"	1	1
	UA5IP	–	5"	60"	1	–
	UA5SP	–	5"	150"	1	–
	–	UA5UPB	5"	240"	–	1
	–	UA5VPB	5"	300"	–	1
	UA5FR	UA5FRB	6"	36"	1	1
	UA5HR	UA5HRB	6"	48"	1	1
	UA5IR	–	6"	60"	1	–
	UA5RR	–	6"	144"	1	–
	UA5SR	–	6"	150"	1	–
	UA5VR	–	6"	300"	1	–
	UA5FT	–	8"	36"	1	–
	UA5HT	–	8"	48"	1	–

Schedule 80 Elbows

Standard Radius

Available in plain end only for use with nonmetallic solvent weld fittings.

Item	Plain End Part No.	Belled End Part No.	Size	Plain End Std. Ctn. Qty.	Belled End Std. Ctn. Qty.
90° Elbow 	UB9AD	–	1/2"	50	–
	UB9AD-CAR	–	1/2"	25	–
	UB9AE	–	3/4"	25	–
	UB9AE-CAR	–	3/4"	15	–
	UB9AF	–	1"	25	–
	UB9AF-CAR	–	1"	10	–
	UB9AG	–	1 1/4"	20	–
	UB9AG-CAR	–	1 1/4"	5	–
	UB9AH	–	1 1/2"	25	–
	UB9AH-CAR	–	1 1/2"	5	–
	UB9AJ	–	2"	20	–
	UB9AJ-CAR	–	2"	5	–
	UB9AK-CAR	–	2 1/2"	10	–
	UB9AL-CAR	–	3"	5	–
	UB9AN	–	4"	1	–
	UB9AP	UB9APB	5"	1	1
	UB9AR		6"	1	–
45° Elbow 	UB7AD	–	1/2"	50	–
	UB7AE-UPC	–	3/4"	25	–
	UB7AF-UPC	–	1"	20	–
	UB7AG	–	1 1/4"	20	–
	UB7AH	–	1 1/2"	20	–
	UB7AH-CAR	–	1 1/2"	5	–
	UB7AJ-UPC	–	2"	20	–
	UB7AK	–	2 1/2"	20	–
	UB7AL	–	3"	1	–
	UB7AN	–	4"	1	–
	UB7AP	UB7APB	5"	1	1
	UB7AR	–	6"	1	–
30° Elbow 	UB6AD	–	1/2"	50	–
	UB6AE	–	3/4"	25	–
	UB6AF	–	1"	25	–
	UB6AG	–	1 1/4"	5	–
	UB6AH	–	1 1/2"	25	–
	UB6AJ	–	2"	20	–
	UB6AK	–	2 1/2"	1	–
	UB6AL	–	3"	1	–
	UB6AN	–	4"	1	–
	UB6AP	–	5"	1	–
	UB6AR	–	6"	1	–
22 1/2° Elbow 	UB5AL	–	3"	5	–
	UB5AN	–	4"	1	–
	UB5AP	UB5APB	5"	1	1
11 1/4° Elbow 	UB3AL	–	3"	1	–
	UB3AR	–	6"	1	–

Flexible PVC Elbows



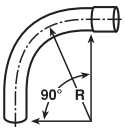
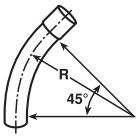
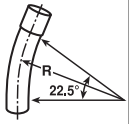
- UL listed for exposed and direct burial applications in accordance with Article 356 of 2002 NEC
- 0° - 90° bending and offset applications
- O-ring seal for moisture tight connections
- Maintains round shape throughout bend
- Sunlight resistant
- Non-corrosive – all PVC and Neoprene material
- Fully assembled and ready to use

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	Length Fully Assembled
UAFAD	1/2"	8	1.6	8.5"
UAFAE	3/4"	6	1.9	9.6"
UAFAF	1"	6	2.4	11.9"

Special Radius

ETL Listed to UL 651 in compliance to the NEC

LISTED E35297

Segment	Plain End Part No.	Belled End Part No.	Nom. Diam.	Radius (in.)	Plain End Std. Ctn. Qty.	Belled End Std. Ctn. Qty.
90° Elbow 	UB9CF	–	1"	18"	1	–
	UB9DF	–	1"	24"	1	–
	UB9FF	–	1"	36"	1	–
	UB9HF	–	1"	48"	1	–
	UB9CG	–	1 1/4"	18"	1	–
	UB9DG	–	1 1/4"	24"	1	–
	UB9FG	–	1 1/4"	36"	1	–
	UB9HG	–	1 1/4"	48"	1	–
	UB9CH	–	1 1/2"	18"	1	–
	UB9DH-UPC	UB9DHB	1 1/2"	24"	1	1
	UB9FH	–	1 1/2"	36"	1	–
	UB9HH	–	1 1/2"	48"	1	–
	UB9CJ	–	2"	18"	1	–
	UB9DJ-UPC	UB9DJB	2"	24"	1	1
	UB9FJ	UB9FJB	2"	36"	1	1
	UB9HJ	–	2"	48"	1	–
	UB9CK	–	2 1/2"	18"	1	–
	UB9DK-UPC	UB9DKB	2 1/2"	24"	1	1
	UB9FK	UB9FKB	2 1/2"	36"	1	1
	UB9HK	–	2 1/2"	48"	1	–
	UB9CL	–	3"	18"	1	–
	UB9DL	UB9DLB	3"	24"	1	1
	UB9FL	UB9FLB	3"	36"	1	1
	UB9HL	–	3"	48"	1	–
	UB9DN	UB9DNB	4"	24"	1	1
	UB9FN	UB9FNB	4"	36"	1	1
	UB9HN	UB9HNB	4"	48"	1	1
	UB9NN	–	4"	120"	1	–
	UB9FP	–	5"	36"	1	–
	UB9HP	–	5"	48"	1	–
	UB9IP	–	5"	60"	1	–
	UB9FR	–	6"	36"	1	–
	UB9HR	–	6"	48"	1	–
	UB9IR	–	6"	60"	1	–
45° Elbow 	UB7CF	–	1"	18"	1	–
	UB7DF	–	1"	24"	1	–
	UB7FF	–	1"	36"	1	–
	UB7HF	–	1"	48"	1	–
	UB7DG	–	1 1/4"	24"	1	–
	UB7FG	–	1 1/4"	36"	1	–
	UB7HG	–	1 1/4"	48"	1	–
	UB7CH	–	1 1/2"	18"	1	–
	UB7DH	UB7DHB	1 1/2"	24"	1	1
	UB7FH	–	1 1/2"	36"	1	–
	UB7HH	–	1 1/2"	48"	1	–
	UB7CJ	–	2"	18"	1	–
	UB7DJ	UB7DJB	2"	24"	1	1
	UB7FJ	UB7FJB	2"	36"	1	1
	UB7HJ	–	2"	48"	1	–
	UB7DK	UB7DKB	2 1/2"	24"	1	1
	UB7FK	–	2 1/2"	36"	1	–
	UB7HK	–	2 1/2"	48"	1	–
	UB7CL	–	3"	18"	1	–
	UB7DL	UB7DLB	3"	24"	1	1
	UB7FL	UB7FLB	3"	36"	1	1
	UB7HL	–	3"	48"	1	–
	UB7DN	UB7DNB	4"	24"	1	1
	UB7FN	UB7FNB	4"	36"	1	1
	UB7HN	–	4"	48"	1	–
	UB7FP	–	5"	36"	1	–
	UB7HP	–	5"	48"	1	–
	UB7FR	–	6"	36"	1	–
	UB7HR	–	6"	48"	1	–
	UB7IR	–	6"	60"	1	–
30° Elbow	UB6FN	–	4"	36"	1	–
	UB6FR	–	6"	36"	1	–
22 1/2° Elbow 	–	UB5DHB	1 1/2"	24"	–	20
	–	UB5DJB	2"	24"	–	20
	–	UB5FJB	2"	36"	–	25
	–	UB5DKB	2 1/2"	24"	–	15
	UB5DL	UB5DLB	3"	24"	1	10
	–	UB5FLB	3"	36"	–	1
	UB5DN	UB5DNB	4"	24"	1	5
	–	UB5FNB	4"	36"	–	1
	UB5FP	–	5"	36"	1	–
11 1/4° Elbow	UB3FP	–	5"	36"	1	–

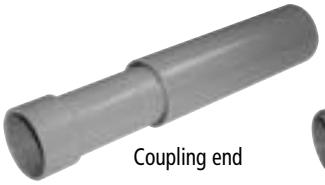
Expansion Fittings

c UL us LISTED E33447

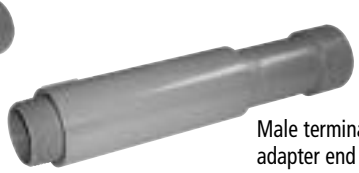
(For Use with Schedule 40 & 80 Conduit)

E945 series expansion fittings are designed to compensate for length changes due to temperature variations in exposed conduit runs.

- EXCLUSIVE Molded in Mid-point indicator on the piston.
- EXCLUSIVE 2" Expansion Fitting with an 8" travel distance.
- Two-piece molded design with lubricated seals for easier movement for the life of the product.
- Ridges on the fitting for easier installation (Sizes 2" through 6" only).
- Male terminal Adapter End design (1/2" – 2" NPT Threads, and 2 1/2" – 6" NPSC Threads).
- Two O-Rings to prevent leakage.
- Can be installed vertically or horizontally.



Coupling end



Male terminal adapter end

Coupling End Part No.	Male Terminal Adapter End Part No.	Size	Std. Ctn. Qty.	Travel Length (in.)
E945D	E945DX	1/2	20	4"
E945E	E945EX	3/4	15	4"
E945F	E945FX	1	10	4"
E945G	E945GX	1 1/4	5	4"
E945H	E945HX	1 1/2	5	4"
E945J	E945JX	2	15	8"
E945K	E945KX	2 1/2	10	8"
E945L	E945LX	3	10	8"
E945M	E945MX	3 1/2	5	8"
E945N	E945NX	4	5	8"
E945P	E945PX	5	1	8"
E945R	E945RX	6	1	8"

Short Expansion Couplings

c UL us LISTED E32447

(Expands to a maximum of 2")



Part No.	Size	Std. Ctn. Qty.
E955D	1/2	40
E955E	3/4	40
E955F	1	25
E955G	1 1/4	15
E955H	1 1/2	10
E955J	2	6

Couplings

Standard Couplings

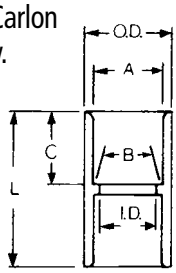
UL LISTED E32447

Except where noted by ▶

All socket fittings should be attached Using Carlon solvent cement. Using Carlon fittings with Carlon nonmetallic conduit insures system integrity.



Socket type for joining nonmetallic conduit.



Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	I.D.	O.D.	C Typical	L Typical
E940D	1/2	150	.852	.836	.728	17/64	11/16	1 1/2
E940E	3/4	100	1.064	1.046	.840	15/16	3/4	1 5/8
E940F	1	50	1.330	1.310	1.210	1 5/8	15/16	2
E940G	1 1/4	30	1.677	1.655	1.535	1 63/64	1	2 1/8
E940H	1 1/2	25	1.918	1.894	1.755	2 15/64	1 1/8	2 3/8
E940J	2	30	2.393	2.369	2.190	2 47/64	1 3/16	2 1/2
E940K	2 1/2	20	2.890	2.868	2.688	3 5/16	1 33/64	3 3/16
E940K-CAR	2 1/2	4	2.890	2.868	2.688	3 5/16	1 33/64	3 3/16
E940L	3	25	3.515	3.492	3.375	3 31/32	1 3/4	3 13/32
E940L-CAR	3	5	3.515	3.492	3.375	3 31/32	1 3/4	3 13/32
E940M	3 1/2	20	4.015	3.992	3.780	4 9/16	1 3/4	3 5/8
E940N	4	15	4.515	4.491	4.265	5 3/32	1 25/32	3 3/4
E940N-CAR	4	5	4.515	4.491	4.265	5 3/32	1 25/32	3 3/4
E940P	5	8	5.593	5.553	5.097	6 1/4	1 5/16	4 1/16
E940R	6	5	6.658	6.614	6.115	7 1/2	2 3/16	4 5/8

Special Long Line Couplings



Long Line Couplings

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E941H	1 1/2	40	9
E941J	2	25	8
E941K	2 1/2	15	8
E941L	3	15	14
E941N	4	10	15
E941PF	5	4	12
▶ E941RF	6	5	21

Fabricated Expansion Couplings



UL LISTED E33447

Part No.	Size	Std. Ctn. Qty.	Travel Length (in.)
E945KXL	2 1/2	10	12

Couplings

Special Long Line Couplings – Sleeve Couplings



Sleeve Coupling *(For Repair Work)*
No Internal Stop

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E948H	1 1/2	25	6
▶ E948J	2	25	5
▶ E948K	2 1/2	25	16
▶ E948L	3	25	13
▶ E948N	4	10	8
▶ E948P	5	14	33
▶ E948R	6	6	16
▶ E948JR	2" (6" long)	15	8
▶ E948JS	2" (Sch. 40 Split Duct)	25	6
▶ E948L12	3" (12" long)	1	1
▶ E948L6	3" (6" long)	15	15
▶ E948LS	3" (Sch. 40 Split Duct)	25	17
▶ E948N12	4" (12" long)	10	28
▶ E948N7	4" (7" long)	15	25
▶ E948NS	4" (Sch. 40 Split Duct)	10	15
▶ E948PS	5" (Sch. 40 Split Duct)	1	2
▶ E948R10	6" (10" long)	6	25
▶ E948R12	6" (12" long)	6	25
▶ E948RS	6" (Sch. 40 Split Duct)	1	2

Special Schedule 40 Swedge Couplings

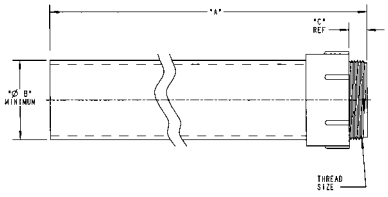
*Consult factory for additional sizes



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E442K	2 1/2	20	13
▶ E442R	6	6	27
▶ E442T	8	2	17

Risers

Schedule 40





Part No.	Size	A (Length)	B (Min.)	C	Thread Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E954HX	1 1/2	80.00	1.567	.950	1 1/2" NPT	1	3.8
E954J	2	60.00	2.024	.825	2" NPT	1	3.7
E954JX	2	80.00	2.024	.825	2" NPT	1	5.0
E954K	2 1/2	60.00	2.418	.812	2 1/2" NPSC	1	6.0
E954KX	2 1/2	80.00	2.418	.812	2 1/2" NPSC	1	8.4
E954L	3	60.00	3.012	.798	3" NPSC	1	8.7
E954LX	3	80.00	3.012	.798	3" NPSC	1	11.0

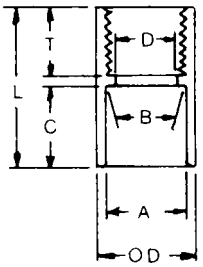
Adapters

UL LISTED
E32447
Except where noted by ▶

Female Adapters



For adapting nonmetallic conduits to threaded fittings, metallic systems. Female threads on one end, socket end on other.



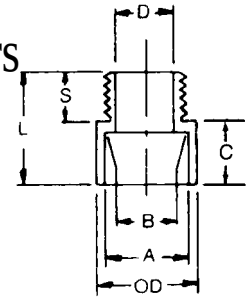
Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	Min. D	Max. OD	C Typical	T Typical	L Typical
E942D	1/2	150	.852	.836	.620	17/64	11/16	3/4	19/16
E942E	3/4	100	1.064	1.046	.822	15/16	13/16	3/4	15/8
E942F	1	50	1.330	1.310	1.046	15/8	15/16	7/8	1 15/16
E942G	1 1/4	30	1.677	1.655	1.377	1 63/64	1	7/8	2
E942H	1 1/2	25	1.918	1.894	1.607	2 5/32	1 1/8	7/8	2 7/32
E942J	2	30	2.393	2.369	2.064	2 47/64	13/16	1	2 5/16
E942K	2 1/2	20	2.890	2.868	2.450	3 11/32	15/8	1 1/8	2 15/16
E942K-CAR	2 1/2	4	2.890	2.868	2.450	3 11/32	15/8	1 1/8	2 15/16
E942L	3	25	3.515	3.492	3.000	3 31/32	13/4	1 1/8	3 1/16
E942L-CAR	3	3	3.515	3.492	3.000	3 31/32	13/4	1 1/8	3 1/16
E942M	3 1/2	20	4.015	3.992	3.500	4 1/2	17/8	1 1/8	3 1/4
E942N	4	15	4.515	4.491	4.000	5 1/64	2	1 1/8	3 13/64
E942N-CAR	4	7	4.515	4.491	4.000	5 1/64	2	1 1/8	3 13/64
E942NX9*	4	15	(Call for information)						
E942P	5	8	5.593	5.553	5.047	6 1/4	1 15/16	1 1/16	3 3/16
E942R	6	6	6.658	6.614	6.055	7 1/4	2 1/8	1 1/16	3 3/8
E942RX*	6	6	(Call for information)						

* Long Line Adapter

Male Terminal Adapters



For adapting nonmetallic conduits to boxes, threaded fittings, metallic systems. Male threads on one end, socket end on other.



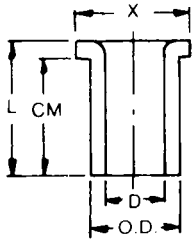
Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	Min. D	Max. OD	C Typical	S Typical	L Typical
E943D	1/2	150	.852	.836	.597	1 1/8	5/8	9/16	15/16
E943E	3/4	125	1.064	1.046	.800	1 11/32	3/4	9/16	1 3/8
E943F	1	50	1.330	1.310	1.018	1 5/8	1	11/16	1 25/32
E943G	1 1/4	50	1.677	1.655	1.332	2 1/32	1	3/4	1 15/16
E943H	1 1/2	25	1.918	1.894	1.566	2 5/32	1 3/16	3/4	2 1/16
E943J	2	50	2.393	2.369	2.000	2 21/32	1 3/16	3/4	2 1/8
E943K	2 1/2	25	2.890	2.868	2.376	3 5/16	1 3/4	7/8	2 7/8
E943K-CAR	2 1/2	5	2.890	2.868	2.376	3 5/16	1 3/4	7/8	2 7/8
E943L	3	45	3.515	3.492	2.954	4	1 15/16	7/8	3 1/16
E943L-CAR	3	5	3.515	3.492	2.954	4	1 15/16	7/8	3 1/16
E943M	3 1/2	30	4.015	3.992	3.440	4 1/2	2 7/16	1 7/8	3 7/16
E943N	4	20	4.515	4.491	3.940	5 3/32	2 3/8	7/8	3 1/2
E943N-CAR	4	20	4.515	4.491	3.940	5 3/32	2 3/8	7/8	3 1/2
E943P	5	5	5.593	5.553	4.815	6 1/4	2 1/3	1	3 15/16
E943R	6	10	6.658	6.614	5.860	7 1/2	2 3/8	1	3 3/8

Adapters

Box Adapters for Enclosures



Adapts nonmetallic conduit to all electrical enclosures by inserting adapter through knockout and cementing into Carlon couplings.



Part No.	Size	Std. Ctn. Qty.	Min D	OD Typical	Max X	CM Typical	L Typical
E996D	1/2	100	.662	.840	17/64	23/32	27/32
E996E	3/4	100	.824	1.050	1 21/64	25/32	29/32
E996F	1	100	1.049	1.315	1 5/8	61/64	1 3/32
E996G	1 1/4	50	1.380	1.660	1 31/32	1 1/16	1 1/4
E996H	1 1/2	50	1.610	1.900	2 13/64	1 3/16	1 3/8
E996J	2	25	2.067	2.375	2 29/32	1 1/4	1 7/16
E996K-CAR	2 1/2	10	2.469	2.875	3 7/16	1 7/8	1 15/16
E996L	3	20	3.068	3.500	4 1/8	2	2 1/16
E996L-CAR	3	5	3.068	3.500	4 1/8	2	2 1/16
E996N	4	10	4.026	4.500	5 1/8	2 1/2	2 1/4

Threaded Adapters



Part No.	Size	Std. Ctn. Qty.
E9842D [1]	1/2	25
E9842E [2]	3/4	25

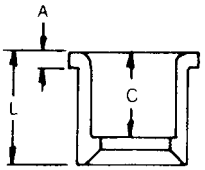
[1] Fits 3/4" sockets [2] Fits 1" sockets

Reducers

Reducer Bushings



For connecting different sizes of conduit. Bell x Spigot.



Part No.	Size	Std. Ctn. Qty.	L Typical	A Typical	C Typical
E950ED	3/4" x 1/2"	100	1 5/32	13/64	1 1/32
E950FD-CAR	1" x 1/2"	25	1 11/32	3/16	57/64
E950FE	1" x 3/4"	100	1 11/32	3/16	1 1/64
E950GE-CAR	1 1/4" x 3/4"	10	1 15/32	3/16	1 1/64
E950GF	1 1/4" x 1"	50	1 15/32	3/16	1 9/64
E950HF-CAR	1 1/2" x 1"	10	1 19/32	3/16	1 9/64
E950HG-CAR	1 1/2" x 1 1/4"	10	1 19/32	3/16	1 17/64
E950JG-CAR	2" x 1 1/4"	10	1 3/4	7/32	1 17/64
E950JH-CAR	2" x 1 1/2"	10	1 3/4	7/32	1 25/64
E950KJ-CAR	2 1/2" x 2"	10	2 5/32	3/8	1 27/64
E950LJ-CAR	3" x 2"	10	2 1/8	1/4	1 7/8
▶ E950LK	3" x 2 1/2"	25	1 15/16	1/4	1 11/16
E950NL	4" x 3"	25	2 3/4	5/16	1 15/16

Reducers

UL LISTED
E32447
Except where noted by ▶

Fabricated Reducers



Fabricated Reducers (Male x Male)

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E952KJ	2 1/2" x 2"	48	28
▶ E952LJ	3" x 2"	36	21
▶ E952LK	3" x 2 1/2"	36	31
▶ E952NL	4" x 3"	15	23
▶ E952NM	4" x 3 1/2"	15	25
▶ E952PN	5" x 4"	12	26
▶ E952RP	6" x 5"	10	31

Plugs

Reducer Plugs



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E971C	3/4" x 1/2"	100	2
▶ E971D	1" x 3/4"	100	3

Plugs (Polyethylene)



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ P258H	1 1/2"	50	2
▶ P258K	2 1/2"	25	1.5

Plugs with Pull Tabs (Polyethylene)



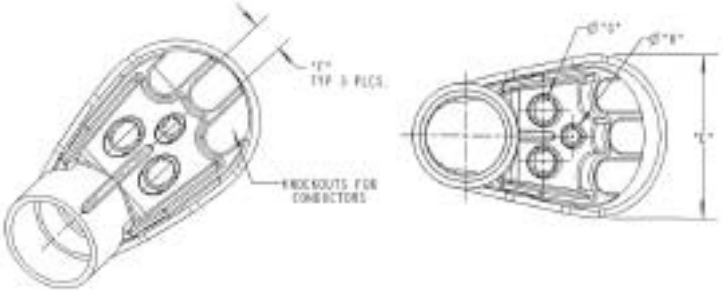
Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ P258JT	2	60	3
▶ P258LT	3	30	3
▶ P258NT	4	48	8
▶ P258PT	5	30	6
▶ P258RT	6	30	9

Caps

Service Entrance Caps



Part No.	Size	Std. Ctn. Qty.	Dimensions (in.) F	G	H
E998D	1/2	5	.45	.45	–
E998E	3/4	20	.45	.45	–
E998E-CAR	3/4	5	.45	.45	–
E998F	1	15	.59	.58	–
E998F-CAR	1	5	.59	.58	–
E998G-CAR	1 1/4	5	.74	.71	.50
E998H-CAR	1 1/2	5	.74	.71	.50
E998J-CAR	2	5	.83	.78	.56
E998K-UPC	2 1/2	2	1.70	1.31	1.00
E998L	3	2	1.70	1.31	1.00
E998N	4	2	2.25	1.88	1.31



End Caps



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E958D	1/2	100	3
▶ E958E	3/4	100	4
▶ E958F	1	75	5
▶ E958G	1 1/4	40	4
▶ E958H	1 1/2	30	4
▶ E958J	2	25	5
▶ E958K	2 1/2	10	4
▶ E958L	3	10	5
▶ E958N	4	5	17
▶ E958P	5	5	11
▶ E958R	6	5	13

PVC Riser Caps



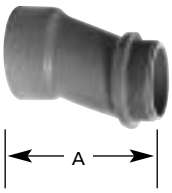
Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E935J	2	25	9
▶ E935L	3	25	18
▶ E935N	4	25	18
▶ E935P	5	25	35
▶ E935R	6	10	13

Offsets

UL LISTED E32447

Except where noted by ▶

Meter Offset



Part No.	Size	Std. Ctn. Qty.	Offset	A
▶E995G	1 1/4	15	0.758	4.230
E995G-CTN	1 1/4	6	0.758	4.230
▶E995J	2	8	0.684	4.270

Offset



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Qty. Wt. (lbs.)
▶E994DR-CAR	1/2	25	3
▶E994ER-CAR	3/4	15	2
▶E994F	1	50	12

End Bells

End Bells



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E997F	1	50	1
▶ E997F-CAR	1	15	1
▶ E997G	1 1/4	35	1
▶ E997G-CAR	1 1/4	15	1
▶ E997H	1 1/2	30	1
▶ E997H-CAR	1 1/2	10	1
▶ E997J	2	40	1
▶ E997J-CAR	2	10	1
▶ E997K	2 1/2	30	2
▶ E997K-CAR	2 1/2	10	2
▶ E997L	3	50	2
▶ E997L-CAR	3	10	2
▶ E997M	3 1/2	40	10
▶ E997N	4	30	11
▶ E997P	5	15	10
▶ E997R	6	10	7.4
▶ E997T	8	3	14.55

Fabricated End Bells Schedule 40



Part No.	Size	Std. Ctn. Qty.	Std. Wt. (lbs.)
E949J5	2" x 5"	50	10
E949J6	2" x 6"	25	12
E949JN	2" x 4"	25	7
E949JX	2" x 8"	12	7
E949LR	3" x 6"	20	21
E949N5	4" x 5"	20	2
E949NR	4" x 6"	15	21
E949R5	6" x 5"	12	27
E949RX	6" x 8"	6	17

Washers

Flat Sealing Washer

Where a waterproof termination is required into any enclosure (metallic or nonmetallic), install the neoprene washer over the threads of a terminal adapter before inserting into the enclosure. Use a standard locknut or threaded bushing to secure the assembly.



Part No.	Size	Std. Ctn. Qty.
▶ E943DW	1/2	125
▶ E943EW	3/4	125
▶ E943FW	1	100
▶ E943GW	1 1/4	50
▶ E943HW	1 1/2	50
▶ E943JW	2	25

Lock Nuts

PVC Lock Nut



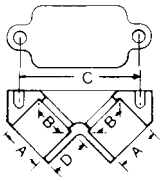
Part No.	Size	Std. Ctn. Qty.
▶ LT9LD	1/2	1200
▶ LT9LE	3/4	700
▶ LT9LF	1	600

Pull Elbows

Access Pull Elbows



Gasket included.



Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	C Typical	D Typical
E990D	1/2	75	.852	.836	2.187	.718
E990DR-CAR	1/2	25	.852	.836	2.187	.718
E990E	3/4	50	1.064	1.046	2.531	.781
E990ER-CAR	3/4	20	1.064	1.046	2.531	.781

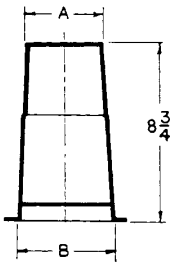
Sleeves

UL LISTED
E32447
Except where noted by ▶

HOLFORM™ Concrete Sleeves

HOLFORM nonmetallic concrete sleeve forms are the easy way to form holes in concrete. They install in seconds with nails, screws or staples and are easily removed. Concrete will not adhere to them. HOLFORMS are adjustable to any slab thickness.





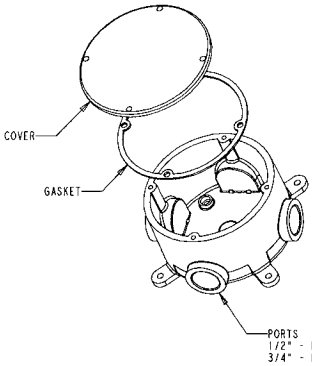
Part No.	Min. O.D. A	B	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E92CSH	1 1/2	1 3/4	20	3
▶ E92CSJ	2	2 13/32	25	6
▶ E92CSL	3	3 13/32	25	8
▶ E92CSN	4	4 13/32	18	8
▶ E92CSP	5	5 13/32	15	8
▶ E92CSR	6	6 13/32	12	8

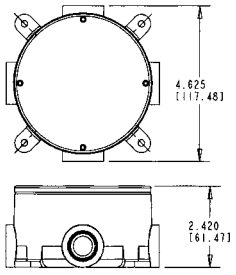
Conduit Bodies

Type X with Cover

Four knock-out type socket openings, 90° spacing. Available with 1/2" or 3/4" socket outlets. Includes cover and gasket.







Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E970CD	1/2	15.16	15
E970CE	3/4	15.16	15

Supplied with 4 stainless steel cover screws. Diameter 4 1/8", Thickness 1/4".
*Not designed for use with wiring devices or light fixtures.

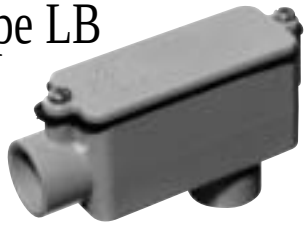
Conduit Bodies

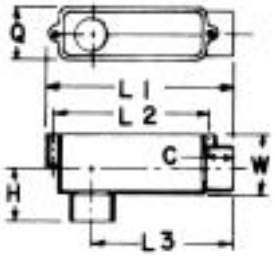
• Hubs are not threaded • Textured lids • Foam-in-place gasket

UL LISTED E42728

Except where noted by ▶

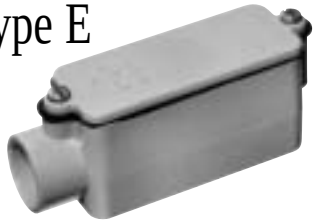
Type LB

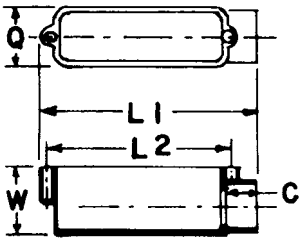




Part No.	Size	Std. Ctn. Qty.	C Typical	Max. L1	L2 Typical	L3 Typical	Max H	Max Q	Max. W	Vol. Cu. In.
E986D-CAR	1/2	10	11/16	4 5/16	3 7/32	3 1/16	1 5/16	1 11/32	1 1/2	4.0
E986E-CAR	3/4	10	29/32	6 9/32	5 9/32	4 25/32	1 25/32	1 3/4	2 1/32	12.0
E986F-CAR	1	10	29/32	6 9/32	5 9/32	4 25/32	1 25/32	1 3/4	2 1/32	12.0
E986G-CAR	1 1/4	5	1 3/32	7 31/32	6 13/32	6	2 5/16	2 1/2	2 3/4	32.0
E986H-CAR	1 1/2	5	1 3/32	7 31/32	6 13/32	6	2 5/16	2 1/2	2 3/4	32.0
E986J	2	10	1 5/32	9 31/32	8 13/32	7 1/4	2 9/16	3 5/32	3 15/32	63.0
▶ E986K	2 1/2	4	1 5/8	14 7/8	13 1/4	11 31/32	3 3/4	4 11/32	4 5/8	210.
▶ E986L	3	4	1 5/8	14 7/8	13 1/4	11 31/32	3 3/4	4 11/32	4 5/8	210.
▶ E986M	3 1/2	4	1 25/32	17 23/32	15 7/8	14 17/64	4 7/16	5 11/32	5 21/32	390.
▶ E986N	4	4	1 25/32	17 23/32	15 7/8	14 17/64	4 7/16	5 11/32	5 21/32	390.

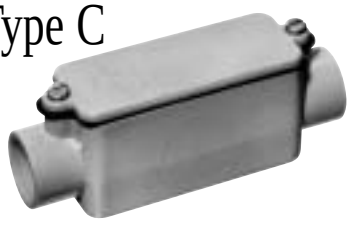
Type E

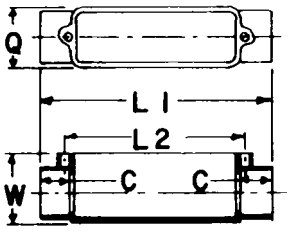




Part No.	Size	Std. Ctn. Qty.	C	L1	L2	Q	W	Vol. Cu. In.
E988D-CAR	1/2	5	11/16	4 5/16	3 1/2	1 11/32	1 1/2	4.0
E988E	3/4	20	29/32	6 11/32	5 9/32	1 3/4	2 1/32	12.0
E988F-CAR	1	10	29/32	6 11/32	5 9/32	1 3/4	2 1/32	12.0
E988G-CAR	1 1/4	5	1 3/32	8	6 13/32	2 1/2	2 3/4	32.0
E988H-CAR	1 1/2	5	1 3/32	8	6 13/32	2 1/2	2 3/4	32.0
E988J	2	5	1 5/32	9 15/32	8 13/32	3 5/32	3 15/32	63.0

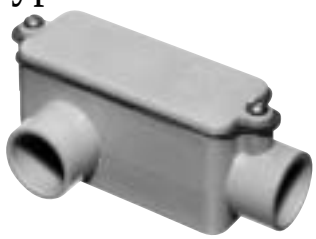
Type C

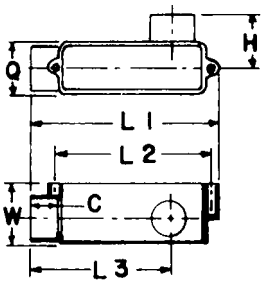




Part No.	Size	Std. Ctn. Qty.	C Typical	Max. L1	L2 Typical	Max Q	Max. W	Vol. Cu. In.
E987D-CAR	1/2	10	11/16	4 11/16	3 1/2	1 11/32	1 1/2	4.0
E987E-CAR	3/4	10	29/32	6 7/8	5 32/64	1 3/4	2 1/32	12.0
E987F-CAR	1	10	29/32	6 7/8	5 9/32	1 3/4	2 1/32	12.0
E987G-CAR	1 1/4	5	1 3/32	8 21/32	6 13/32	2 1/2	2 3/4	32.0
E987H-CAR	1 1/2	4	1 3/32	8 21/32	6 13/32	2 1/2	2 3/4	32.0
E987J	2	15	1 5/32	10 5/16	8 13/32	3 5/32	3 15/32	63.0

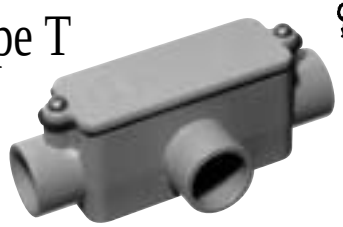
Type LR

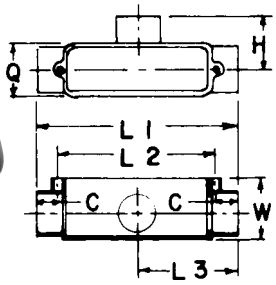




Part No.	Size	Std. Ctn. Qty.	C Typical	Max. L1	L2 Typical	L3 Typical	Max. H	Max. Q	Max. W	Vol. Cu. In.
E985D-CAR	1/2	10	11/16	4 5/16	3 7/32	3 1/16	1 5/16	1 11/32	1 1/2	4.0
E985E-CAR	3/4	10	29/32	6 9/32	5 9/32	4 25/32	1 25/32	1 3/4	2 1/32	12.0
E985F-CAR	1	10	29/32	6 9/32	5 9/32	4 25/32	1 25/32	1 3/4	2 1/32	12.0
E985G-CAR	1 1/4	5	1 3/32	7 31/32	6 13/32	6	2 5/16	2 1/2	2 3/4	32.0
E985H-CAR	1 1/2	5	1 3/32	7 31/32	6 13/32	6	2 5/16	2 1/2	2 3/4	32.0
E985J	2	10	1 5/32	9 9/32	8 13/32	7 1/4	2 9/16	3 5/32	3 15/32	63.0

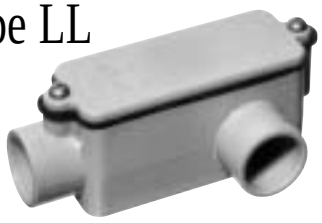
Type T

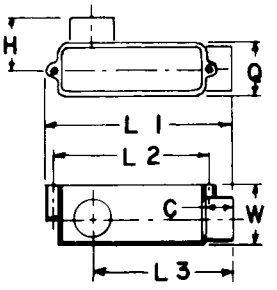




Part No.	Size	Std. Ctn.Qty.	C Typical	Max. L1	L2 Typical	L3 Typical	Max H	Max Q	Max. W	Vol. Cu. In.
E983D-CAR	1/2	10	11/16	4 11/16	3 7/32	2 11/32	1 5/16	1 11/32	1 1/2	4.0
E983E-CAR	3/4	10	29/32	6 7/8	5 9/32	4 7/16	1 25/32	1 3/4	2 1/32	12.0
E983F	1	20	29/32	6 7/8	5 9/32	3 7/16	1 25/32	1 3/4	2 1/32	12.0
E983G	1 1/4	10	1 3/32	8 21/32	6 13/32	4 21/64	2 5/16	2 1/2	2 3/4	32.0
E983H-CAR	1 1/2	4	1 3/32	8 21/32	6 13/32	4 21/64	2 5/16	2 1/2	2 3/4	32.0
E983J	2	10	1 5/32	10 5/16	8 13/32	5 5/32	2 9/16	3 5/32	3 15/16	63.0

Type LL





Part No.	Size	Std. Ctn. Qty.	C Typical	Max. L1	L2 Typical	L3 Typical	Max H	Max Q	Max. W	Vol. Cu. In.
E984D-CAR	1/2	10	11/16	4 5/16	3 7/32	3 1/16	1 5/16	1 11/32	1 1/2	4.0
E984E-CAR	3/4	8	2 29/32	6 9/32	5 9/32	4 25/32	1 25/32	1 3/4	2 1/32	12.0
E984F-CAR	1	10	2 29/32	6 9/32	5 9/32	4 25/32	1 25/32	1 3/4	2 1/32	12.0
E984G-CAR	1 1/4	5	1 3/32	7 31/32	6 13/32	6	2 5/16	2 1/2	2 3/4	32.0
E984H-CAR	1 1/2	5	1 3/32	7 31/32	6 13/32	6	2 5/16	2 1/2	2 3/4	32.0
E984J	2	10	1 5/32	9 9/32	8 13/32	7 1/4	2 9/16	3 5/32	3 15/32	63.0
E984J-CAR	2	3	1 5/32	9 9/32	8 13/32	7 1/4	2 9/16	3 5/32	3 15/32	63.0

Molded Nonmetallic Junction Boxes 6P Rated

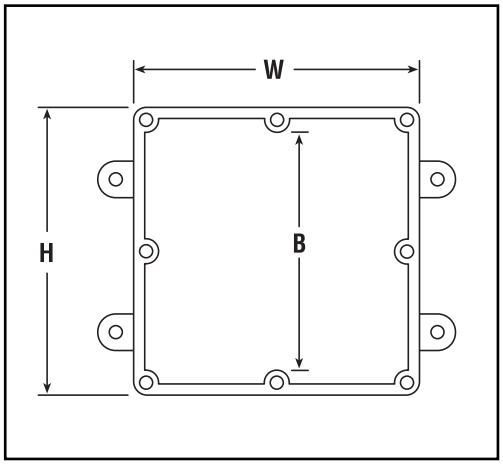
Except where noted by †

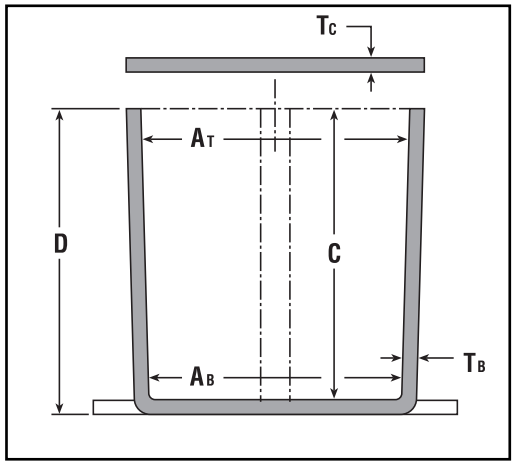
LISTED E42728

It's another first from Carlon® - the first nonmetallic junction boxes UL Listed with a NEMA 6P rating per Section 314.29, Exception of the National Electrical Code. Manufactured from PVC or PPO thermoplastic molding compound and featuring foam-in-place gasketed lids attached with stainless steel screws, these rugged enclosures offer all the corrosion resistance and physical properties you need for direct burial applications.

Type 6P enclosures are intended for indoor or outdoor use, primarily to provide a degree of protection against contact with enclosed equipment, falling dirt, hose-directed water, entry of water during prolonged submersion at a limited depth, and external ice formation.







- All Carlon Junction Boxes are UL Listed and maintain a minimum of a NEMA Type 4/4x Rating.
- Parts numbers with an asterisk (*) are UL Listed and maintain a NEMA Type 6P Rating and Type 4/4X Rating.

Part No.	Size in Inches H x W x D	Std. Ctn. Qty.	Min AT	Min. AB	Min. B	Min. C	Ta Typical	Tc Typical	Material PVC	Material Thermo-plastic	Std. Ctn. Wt. (Lbs.)
E989NNJ-CAR*	4 x 4 x 2	5	3 11/16	3 5/8	N/A	2	.160	.155	X		3
E987N-CAR*	4 x 4 x 4	5	3 11/16	3 1/2	N/A	4	.160	.155	X		4
†E989NNR-CAR*	4 x 4 x 6	4	3 11/16	3 3/8	N/A	6	.160	.200	X		5
E989PPJ-CAR*	5 x 5 x 2	4	4 11/16	4 1/2	N/A	2	.110	.150		X	3
E987R-CAR*	6 x 6 x 4	2	6	5 5/8	N/A	4	.190	.190		X	3
E989RRR-UPC*	6 x 6 x 6	8	5 5/8	5 3/8	N/A	6	.160	.150		X	14
E989N-CAR	8 x 8 x 4	1	8	8	N/A	4	.185	.190		X	2
E989SSX-UPC	8 x 8 x 7	2	7 21/32	7 5/16	N/A	7	.160	.150		X	6
E989UUN	12 x 12 x 4	3	11 5/8	11 1/2	11 1/8	4	.160	.150		X	12
E989R-UPC	12 x 12 x 6	2	11 15/16	11 7/8	11 7/16	6	.265	.185		X	10

Single Gang FS Boxes

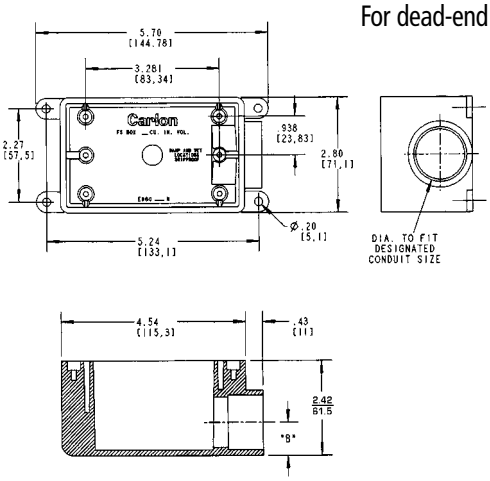
UL LISTED
E42728

Type FSE

All sizes take standard covers and accessories or devices. Integral mounting feet provide easy mounting.



For dead-end terminations.



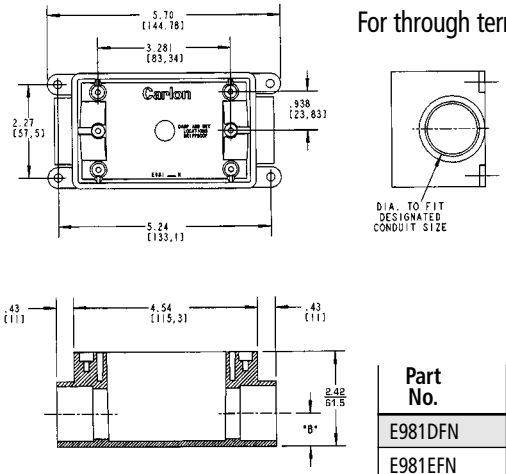
Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E980DFN	1/2	19	10
E980EFN	3/4	19	10
E980FFN	1	19	18
E980FFN-CAR	1	19	10

Type FSC

All sizes take standard covers and accessories or devices. Detachable mounting feet provide easy mounting.



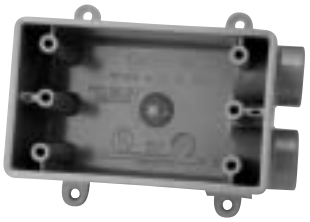
For through terminations.

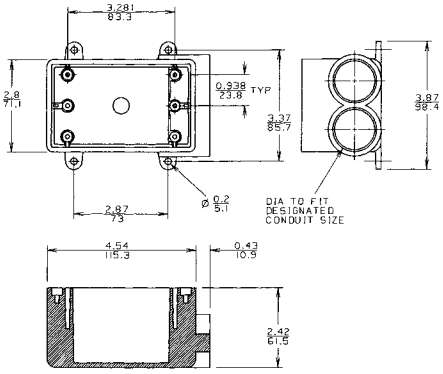


Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E981DFN	1/2	19	15
E981EFN	3/4	19	15
E981FFN	1	19	18
E981FFN-CAR	1	19	10

Type FSS

All sizes take standard covers and accessories or devices. Detachable mounting feet provide easy mounting.



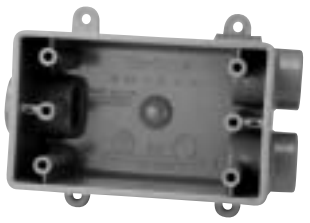


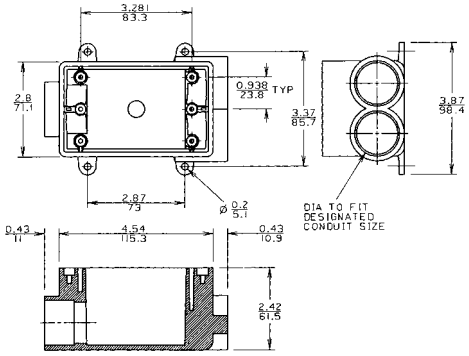
For multiple dead-end circuit terminations or where additional support is required in stub-up applications.

Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E982DFN	1/2	19	10
E982EFN	3/4	19	10
E982FFN-CTN	1	19	8

Type FSCC

All sizes take standard covers and accessories or devices. Detachable mounting feet provide easy mounting.





For multiple through circuit terminations or where additional support is required in stub-up applications.

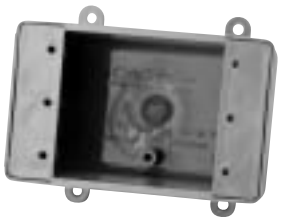
Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E979DFN-CAR	1/2	19	10
E979EFN-CAR	3/4	19	10
E979FFN	1	19	15

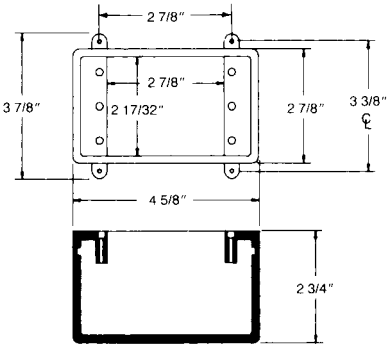
Single Gang FD Deep Device Boxes

UL LISTED E42728

Type FD

All sizes take standard covers and accessories or devices. Integral mounting feet provide easy mounting.



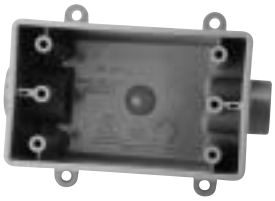


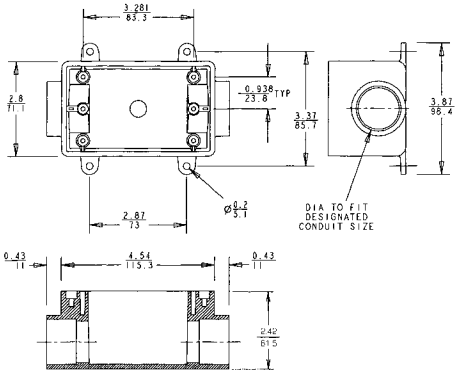
For terminations where hub requirements vary according to application – hubs easily made with flared wood bit or hole saw.

Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E9801	N/A	25	10

Type FDC

All sizes take standard covers and accessories or devices. Integral mounting feet provide easy mounting.



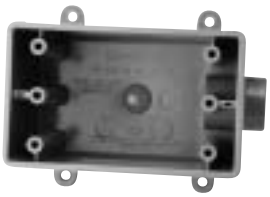


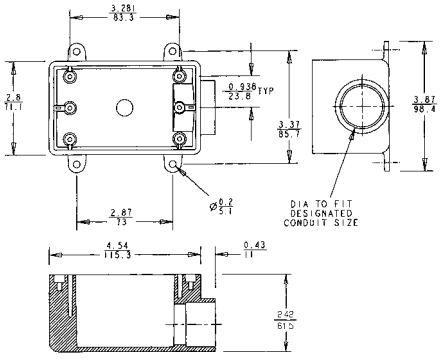
For through terminations where large devices or additional wiring capacity is required.

Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E9811DN	1/2	25	10
E9811EN	3/4	25	10
E9811FN	1	25	10

Type FDE

All sizes take standard covers and accessories or devices. Integral mounting feet provide easy mounting.





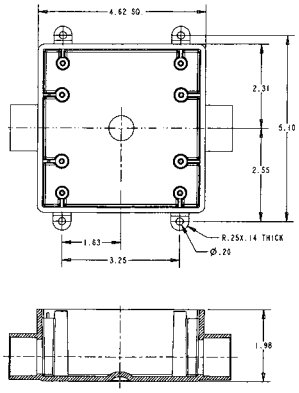
For dead-end terminations where large devices or additional wiring capacity is required.

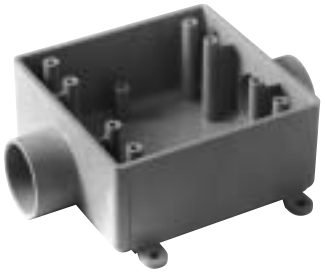
Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E9801DN	1/2	25	10
E9801EN	3/4	25	10
E9801FN	1	25	10

Two Gang FS Boxes

Type 2FSC

All sizes take standard covers and accessories or devices. Integral mounting feet provide easy mounting.



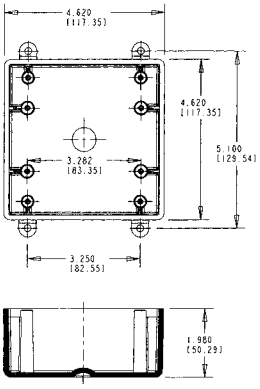


For through terminations where two devices or additional wiring capacity is required.

Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E9812D	1/2	32	10
E9812E	3/4	32	10
E9812F	1	32	10

Type FS

All sizes take standard covers and accessories or devices. Integral mounting feet provide easy mounting.



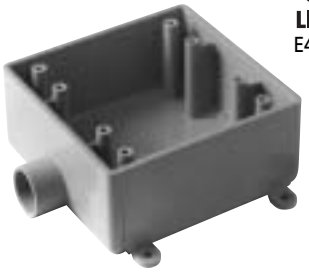


For terminations where hub requirements vary according to application - hubs easily made with flared wood bit or hole saw.

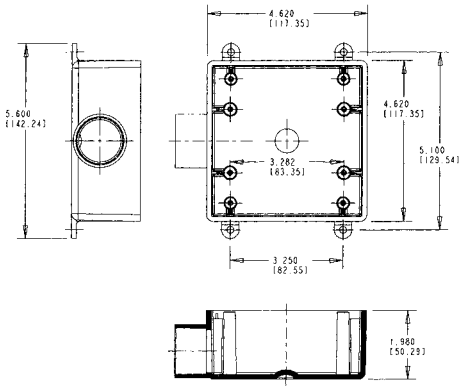
Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E9802	N/A	32	10

Type 2FSE

All sizes take standard covers and accessories or devices. Integral mounting feet provide easy mounting.



LISTED E42728



For dead-end terminations where two devices or additional wiring capacity is required.

Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E9802D	1/2	32	10
E9802E	3/4	32	10
E9802F	1	32	10

Blank Covers

Single Gang



Fits Carlon® single gang FS boxes. Supplied with stainless steel mounting screws and gasket.

Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E980CN-CAR	Gray	12	1.60
E980CM-CAR	White	12	1.60

Two Gang

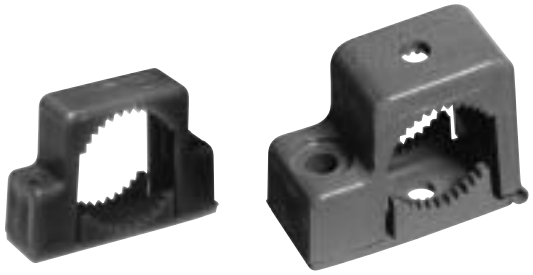


Fits Carlon® two gang FS boxes, other nonmetallic and metallic FS boxes. Supplied with stainless steel mounting screws and gasket.

Part No.	Color	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E9802CN-CAR	Gray	10	2.17

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Snap Strap® Conduit Support Straps

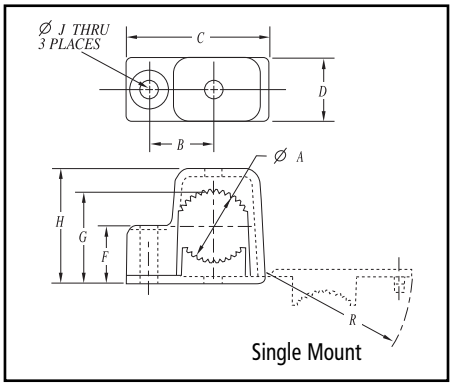


Carlon's Snap Strap® offers a unique support strap designed especially for the installation of PVC conduit. Also usable for installations of rigid steel. This high strength, nonmetallic clamp allows conduit to expand and contract freely, eliminating the bowing commonly seen from the expansion and contraction of conduit caused by varying temperature changes. Finished installations have a neat, attractive appearance on exposed applications.

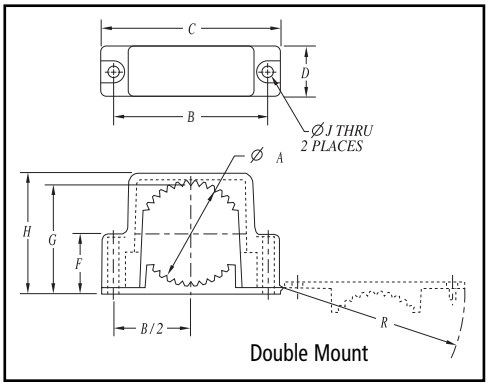
To be used in accordance with conduit spacing requirements per the NEC, Section 352.30. This part is not supplied with screws.

- UV inhibited for use in direct sunlight





Single Mount



Double Mount

Single Mount

Part No.	Size: inches (mm)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	A	B	C	D	F	G	H	J	R
E978DC-CAR	1/2" (16)	40	1	0.80 (20.3)	.75 (1.90)	1.63 (41.4)	0.75 (19.1)	.59 (14.9)	.99 (25.1)	1.36 (34.5)	.21 (5.33)	1.67 (42.4)
E978EC-CAR	3/4" (21)	40	3	1.00 (25.4)	.88 (22.4)	1.92 (48.7)	0.75 (19.1)	.70 (17.8)	1.20 (30.4)	1.57 (39.9)	.21 (5.33)	1.96 (49.8)
E978FC-CAR	1" (27)	30	4	1.20 (30.5)	1.02 (25.9)	2.17 (55.1)	0.75 (19.1)	.83 (21.1)	1.43 (36.3)	1.84 (46.7)	.21 (5.33)	2.22 (56.3)

Double Mount

Part No.	Size: inches (mm)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	A	B	C	D	F	G	H	J	R
E978GC-CAR	1 1/4" (35)	15	4	1.66 (42.16)	2.75 (69.9)	3.23 (82.0)	1.00 (25.4)	.95 (24.1)	1.78 (45.2)	2.15 (54.61)	.218 (5.54)	3.28 (83.3)
E978HC-CAR	1 1/2" (41)	15	5	1.92 (48.77)	3.05 (77.5)	3.53 (89.7)	1.00 (25.4)	1.08 (27.4)	2.04 (51.8)	2.40 (60.96)	.218 (5.54)	3.58 (90.9)
E978JC-CAR	2" (53)	10	5	2.34 (59.44)	3.50 (88.9)	4.00 (101.6)	1.00 (25.4)	1.31 (33.3)	2.48 (63.0)	2.86 (72.64)	.218 (5.54)	4.06 (103.1)

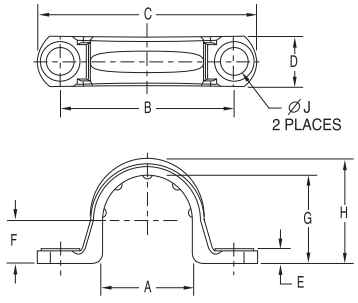
Nonmetallic Clamps



Nonmetallic clamps offer the same chemical resistance as Carlon nonmetallic conduits for a complete, corrosion resistant system.

To be used in accordance with conduit spacing requirements per the NEC, Section 352.30.

- UV inhibited for use in direct sunlight



Conduit Clamp

Conduit Clamps

Part No.	Size: inches (mm)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	A	B	C	D	E	F	G	H	J
E977DC	1/2" (16)	100	1.2	0.892 (22.6)	1.71 (43.4)	2.16 (54.8)	0.50 (12.7)	.14 (3.5)	.42 (10.6)	.866 (21.9)	1.04 (26.4)	.260 (6.6)
E977EC	3/4" (21)	100	1.4	1.102 (27.9)	1.97 (50.0)	2.40 (60.9)	0.50 (12.7)	.14 (3.5)	.525 (13.3)	1.076 (27.3)	1.255 (31.8)	.260 (6.6)
E977FC	1" (27)	100	2	1.39 (35.3)	2.25 (57.1)	2.81 (71.3)	0.594 (15.0)	.14 (3.5)	.658 (16.7)	1.342 (34.0)	1.574 (39.9)	.260 (6.6)
E977GC	1 1/4" (35)	50	5	1.714 (43.5)	2.68 (68.0)	3.28 (83.3)	.64 (16.2)	.15 (3.8)	.83 (21.0)	1.687 (42.8)	1.89 (48.0)	.320 (8.1)
E977HC	1 1/2" (41)	50	6	1.92 (48.7)	2.82 (71.6)	3.44 (87.3)	.70 (17.7)	.15 (3.8)	.97 (24.6)	1.93 (49.0)	2.12 (53.8)	.312 (7.9)
E977JC	2" (53)	25	4.5	2.54 (64.5)	3.54 (89.9)	4.18 (106.1)	.76 (19.3)	.16 (4.0)	1.05 (26.6)	2.29 (58.1)	2.49 (63.2)	.315 (8.0)
E977KC-CAR	2 1/2" (63)	25	1.4	2.86 (72.6)	4.50 (114.3)	5.46 (138.7)	1.00 (25.4)	.20 (5.08)	1.43 (36.3)	2.86 (72.6)	3.12 (79.2)	.36 (9.14)
E977LC-CAR	3" (78)	20	1.4	3.47 (88.2)	5.00 (127.0)	6.00 (152.4)	1.00 (25.4)	.20 (5.08)	1.74 (44.3)	3.48 (88.4)	3.70 (94.0)	.36 (9.14)
E977NC-CAR	4" (103)	15	12.2	4.366 (110.9)	6.15 (156.2)	7.20 (182.9)	1.00 (25.4)	.20 (5.08)	2.32 (58.8)	4.50 (114.3	4.70 (119.4)	.36 (9.14)

*Note: Some clamp applications require 2 screws, 2 nuts and 2 washers.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Typical Properties of Conduit Raw Material Compound

Thermal

	ASTM Test	Typical Values
Co-efficient of Thermal Expansion-inch/inch/°F (properties @ 73.4°F)	D696	3.38×10^{-5}
Heat Distortion °F at 264 psi	D648	160°F
Thermal Conductivity BTU (hr.) (ft.) (°F/in.)	N/A	1.3

Mechanical

	ASTM Test	Typical Values
Specific Gravity	D792	1.43 - 1.6
Tensile Strength (psi) @ 73.4°F	D638	5,000-6,500
Izod Impact ft lbs./in. of notch	D256	0.65 - 1.5
Flexural Strength (psi)	D790	12,500
Compressive Strength (psi)	D695	9,000
Hardness (Durometer D)	D2240	85

Electrical

	ASTM Test	Typical Values
Dielectrical Strength volts/mil	D149	1100
Dielectric Constant 60 CPS @ 30°C	D150	4.00
Power Factor 60 CPS @ 30°C	D150	1.93

Impedance (Volts lost per ampere per 100 feet)

	3∅90% P.F.	80% P.F.	1∅90% P.F.	80% P.F.
Steel Conduit	.0118	.0123	.0136	.0142
Schedule 40®	.0105	.0106	.0121	.0122

Using 250 KCmil Cu. conductor. comparable values for other conductor sizes.

Wire Fill

Maximum number of conductors in Schedule 40 PVC conduit

(Based on Table 1, Chapter 9 of the NEC)

Type Letters	Conductor Size AWG, MCM	Trade Size ½	¾	1	1¼	1½	2	2½	3	3½	4	4¼	5	6	8
THWN	14	13	24	39	69	94	154								
	12	10	18	29	51	79	114	164							
	10	6	11	18	32	44	73	194	160						
	8	3	5	9	19	22	36	51	71	106	136				
THHN	6	1	4	6	11	15	26	37	57	76	98	125	154		
	4	1	2	4	7	9	16	22	35	47	60	75	94	137	236
FEP (14 thru 2)	3	1	1	3	6	8	13	19	29	39	51	64	90	116	201
	2	1	1	3	5	7	11	16	25	33	43	54	67	97	169
FEPB (14 thru 8)	1		1	1	3	5	9	12	18	25	32	49	59	72	125
	1/0		1	1	3	4	7	10	15	21	27	33	42	61	105
PFA (14 thru 4/0)	2/0		1	1	2	3	6	8	13	17	22	28	35	51	88
	3/0		1	1	1	3	5	7	11	14	18	23	29	42	73
PFAH (14 thru 4/0)	4/0		1	1	1	2	4	6	9	12	15	19	24	35	61
	250			1	1	1	3	4	7	10	12	16	20	28	49
Z (14 thru 4/0)	300			1	1	1	3	4	6	8	11	13	17	24	42
	350			1	1	1	2	3	5	7	9	12	15	21	37
XHHW (4 thru 500MCM)	400				1	1	1	3	5	6	8	10	13	19	33
	500				1	1	1	2	4	5	7	9	11	16	27
	600				1	1	1	1	3	4	5	7	9	13	22
	700					1	1	1	3	4	5	6	8	11	19
	750					1	1	1	2	3	4	6	7	11	19
	6	1	3	5	9	13	21	30	47	63	81	102	128	185	320
	600				1	1	1	1	3	4	5	7	9	13	22
XHHW	700					1	1	1	3	4	5	6	7	11	19
	750					1	1	1	2	3	4	6	7	10	18

Maximum number of conductors in Schedule 80 PVC conduit

(Based on Table 1, Chapter 9 of the NEC)

Conductor Size AWG, MCM		Trade Size ½	¾	1	1¼	1½	2	2½	3	4	5
# 14	THW	4	8	13	24	34	57	82	128		
	THHN	10	19	33	58	81	135	194	0		
12	THW	3	6	11	20	28	47	67	105	183	
	THHN	8	14	24	43	60	100	144	0		
10	THW	3	5	9	16	22	37	54	85	148	
	THHN	5	9	15	27	38	64	92	143		
8	THW	1	2	4	8	11	19	28	44	77	121
	THHN	1	4	7	13	18	31	45	70	123	195
6	THW	1	1	3	6	8	14	20	32	56	88
	THHN	1	3	5	9	13	22	32	50	88	140
4	THW	0	1	2	4	6	10	15	24	42	66
	THHN	1	1	3	6	8	13	20	31	54	86
3	THW	0	1	1	4	5	9	13	20	36	57
	THHN	1	1	2	5	7	11	17	26	46	73
2	THW	0	1	1	3	4	8	11	17	31	49
	THHN	1	1	1	4	5	9	14	22	38	61
1	THW	0	1	1	1	3	5	8	13	22	35
	THHN	0	1	1	3	4	7	10	16	28	45
0	THW	0	0	1	1	2	4	7	11	19	30
	THHN	0	1	1	2	3	6	8	13	24	38
00	THW	0	0	1	1	1	4	6	9	16	26
	THHN	0	1	1	1	3	5	7	11	20	32
000	THW	0	0	1	1	1	3	5	8	14	22
	THHN	0	0	1	1	2	4	6	9	16	26
0000	THW	0	0	1	1	1	3	4	6	11	18
	THHN	0	0	1	1	1	3	5	8	14	22
250	THW	0	0	0	1	1	1	3	5	9	14
	THHN	0	0	0	1	1	2	4	6	11	18
300	ThW	0	0	0	1	1	1	3	4	8	13
	THHN	0	0	0	1	1	1	3	5	9	15
350	THW	0	0	0	1	1	1	2	4	7	11
	THHN	0	0	0	1	1	1	3	4	8	13
400	THW	0	0	0	0	1	1	1	3	6	10
	THHN	0	0	0	1	1	1	2	4	7	12
500	THW	0	0	0	0	1	1	1	3	5	8
	THHN	0	0	0	0	1	1	1	3	6	10
600	THW	0	0	0	0	0	1	1	1	4	7
	THHN	0	0	0	0	1	1	1	3	5	8
700	THW	0	0	0	0	0	1	1	1	3	6

Weight Comparison

Carlon Schedule 40® rigid nonmetallic conduit compared to other rigid conduit in pounds per 100 feet (approx.)

Nom. Size	Carlon Schedule 40® Rigid Nonmetallic Conduit	Carlon Schedule 80® Rigid Nonmetallic Conduit	Aluminum	Electrical Metallic Tubing (EMT)	Intermediate Metal Conduit (IMC)	Rigid Metal Conduit (RMC)
½	18	22	27	30	57	79
¾	23	29	36	46	78	105
1	35	43	53	66	112	153
1¼	48	60	70	96	114	201
1½	57	72	86	112	176	246
2	76	100	116	142	230	334
2½	125	153	183	230	393	527
3	164	212	239	270	483	690
3½	198		288	350	561	831
4	234	310	340	400	625	982
5	317	431	465	Not Made	Not Made	1344
6	412	592	612	Not Made	Not Made	1770

Expansion and Contraction

Temperature Considerations for Rigid Nonmetallic Conduit Compensation for Linear Expansion

Like all construction materials, PVC will expand or contract with variations in temperatures. The coefficient of linear expansion in PVC conduit is 3.38 x 10^{-5} in./in./°F as compared to 1.2 x 10^{-5} for aluminum and 0.6 x 10^{-5} for steel. An expansion coupling is needed whenever the change in length due to temperature variation will exceed 1/2 in.

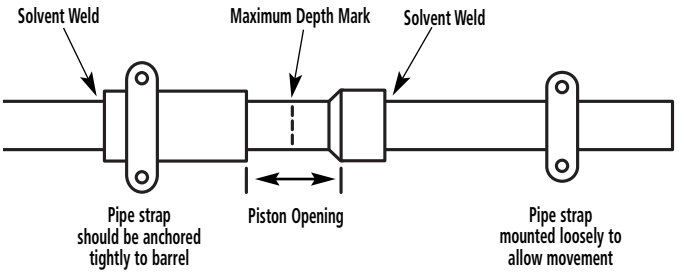
Add 30°F to the estimated temperature range when conduit is installed in direct sunlight to allow for radiant heating.

An expansion coupling consists of two sections of conduit, one telescoping inside another. When installing expansion couplings, alignment of piston and barrel is important. Be sure to mount expansion joint level for best performance.

For a vertical run, the expansion coupling must be installed close to the top of the run with the barrel jointing down, in order that rain water does not run into the opening. The lower end of the conduit run must be secured at the bottom so that any length change due to temperature variation will result in an upward movement.

Expansion Characteristics of PVC Rigid Nonmetallic Conduit
Coefficient of Thermal Expansion = 3.38 x 10^{-5} in./in./°F

Temperature Change in Degrees F	Length Change in inches per 100 Ft. of PVC Conduit	Temperature Change in Degrees F	Length Change in inches per 100 Ft. of PVC Conduit	Temperature Change in Degrees F	Length Change in inches per 100 Ft. of PVC Conduit	Temperature Change in Degrees F	Length Change in inches per 100 Ft. of PVC Conduit
5	0.2	55	2.2	105	4.2	155	6.3
10	0.4	60	2.4	110	4.5	160	6.5
15	0.6	65	2.6	115	4.7	165	6.7
20	0.8	70	2.8	120	4.9	170	6.9
25	1.0	75	3.0	125	5.1	175	7.1
30	1.2	80	3.2	130	5.3	180	7.3
35	1.4	85	3.4	135	5.5	185	7.5
40	1.6	90	3.6	140	5.7	190	7.7
45	1.8	95	3.8	145	5.9	195	7.9
50	2.0	100	4.1	150	6.1	200	8.1



Determine the Piston Opening

The expansion joint must be installed to allow both expansion and contraction of the conduit run. The correct piston opening for any installation condition should use the following formula:

$$O = \left[\frac{T\ max - T\ installed}{\Delta T} \right] E$$

Where:

O	=	Piston opening (in.)
T max	=	Maximum anticipated temperature of conduit (°F)
T inst.	=	Temperature of conduit at time of installation (°F)
Δ T	=	Total change in temperature of conduit (°F)
E	=	Expansion allowance built into each expansion coupling (in.)

Example

380 ft. of conduit is to be installed on the outside of a building exposed to the sun in a single straight run. It is expected that the conduit will vary in temperature from 0°F in the winter to 140°F in the summer (this includes the 30°F for radiant heating from the sun.) The installation is to be made at a conduit temperature of 90°F. From the table, a 140°F temperature change will cause a 5.7 in. length change in 100 ft. of conduit. The total change for this example is 5.7" x 3.8 = 21.67" which should be rounded to 22". The number of expansion couplings will be 22" x coupling range (4" for Carlon trade sizes 1/2" through 1-1/2", and 8" for sizes 2" through 6".) If the E945D coupling is used, the number will be 22" x 4 = 5.50 which should be rounded to 6. The coupling should be placed at 62 ft. intervals (380 x 6). the proper piston setting at the time of installation is calculated as explained above.

$$O = \left[\frac{140 - 90}{140} \right] 4.0 = 1.4 \text{ in.}$$

Insert the piston into the barrel to the maximum depth. Place a mark on the piston at the end of the barrel. To properly set the piston, pull the piston out of the barrel to correspond to the 2.1 in. calculated above. See drawing at lower left.

Summary

1. Anticipate expansion and contraction of PVC conduit in aboveground, exposed installation.
2. Use an expansion coupling when length change due to temperature variation will exceed 1/2".
3. PVC conduit expands 4.1" for each 100 feet of run and a 100°F temperature change.
4. Align expansion coupling with the conduit run to prevent binding.
5. Follow the instructions to set the piston opening.
6. Rigidly fix the outer barrel of the expansion coupling so it cannot move. Mount the conduit connected to the piston loosely enough to allow the conduit to move as the temperature changes.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Corrosion Resistance of Carlon Schedule 40 and Schedule 80 PVC Conduit and Fittings

Carlon Schedule 40 and Schedule 80 are generally acceptable for use in environments containing the chemicals below. These environmental resistance ratings are based upon tests where the specimens were placed in complete submergence in the reagent listed. Schedule 40 and Schedule 80 can be used in many process areas where chemicals not on this list are manufactured or used because worker safety requirements dictate that any air presence or splashing be at a very low level.

If there are any questions for specific suitability in a given environment, prototype samples should be tested under actual conditions.

Acetic Acid 0-20%
Acetic Acid 20-30%
Acetic Acid 30-60%
Acetic Acid 80%
Acetic Acid – Glacial
Acetic Acid Vapors
Acetylene
Adipic Acid
Alum
Aluminum Chloride
Aluminum Fluoride
Aluminum Hydroxide
Aluminum Oxychloride
Aluminum Nitrate
Aluminum Sulfate
Ammonia-Dry Gas
Ammonium Bifluoride
Ammonium Carbonate
Ammonium Chloride
Ammonium Hydroxide 28%
Ammonium Metaphosphate
Ammonium Nitrate
Ammonium Persulfate
Ammonium Phosphate – Neutral
Ammonium Sulfate
Ammonium Sulfide
Ammonium Thiocyanate
Amyl Alcohol
Anthraquinone
Anthraquinonesulfonic Acid
Antimony Trichloride
Aqua Regia
Arsenic Acid 80%
Arylsulfonic Acid
Barium Carbonate
Barium Chloride
Barium Hydroxide
Barium Sulfate
Barium Sulfide
Beet – Sugar Liquor
Benzine Sulfonic Acid 10%
Benzoic Acid
Bismuth Carbonate
Black Liquor (Paper Industry)
Bleach – 12.5% Active CL_2
Borax
Boric Acid
Brine
Breeder Pellets – Dane. Fish
Bromic Acid
Bromine – Water
Butane
Butadiene
Butyl Alcohol
Butyl Phenol
Butylene
Butyric Acid
Calcium Bisulfite
Calcium Carbonate
Calcium Chlorate
Calcium Chloride
Calcium Hydroxide
Calcium Hypochlorite
Calcium Nitrate
Calcium Sulfate
Carbonic Acid
Carbon Dioxide Gas – Wet
Carbon Dioxide – Aqueous Solution
Carbon Monoxide
Caustic Potash
Caustic Soda
Chloracatic Acid
Chloral Hydrate
Chlorine Gas (Dry)
Chlorine Gas (Moist)
Chlorine Water
Chlorosulfonic Acid
Chrome Alum
Chromic Acid 10%
Chromic Acid 30%
Chromic Acid 40%
Chromic Acid 50%
Citric Acid
Copper Chloride
Copper Cyanide
Copper Fluoride
Copper Nitrate
Copper Sulfate
Cottonseed Oil
Cresylic Acid 50%
Crude Oil – Sour
Crude Oil – Sweet
Demineralized Water
Dextrin
Dextrose
Diglycolic Acid
Disodium Phosphate
Ethyl Alcohol
Ethylene Glycol
Fatty Acids
Ferric Chloride
Ferric Nitrate
Ferric Sulfate
Ferrous Chloride
Ferrous Sulfate
Fluorine Gas – Wet
Fluorine Gas – Dry
Fluoroboric Acid
Fluorosilicic Acid
Formaldehyde
Formic Acid
Fructose
Gallic Acid
Gas – Coke Oven
Gas – Natural (Dry)
Gas – Natural (Wet)
Gasoline – Sour
Gasoline – Refined
Glucose
Glycerine (Glycerol)
Glycol
Glycolic Acid
Green Liquor (Paper Industry)
Heptane
Hexanol, Tertiary
Hydrobromic Acid 20%
Hydrochloric Acid 0% - 25%
Hydrochloric Acid 25% - 40%
Hydrocyanic Acid or Hydrogen Cyanide
Hydrofluoric Acid 10%
Hydrofluorosilicic Acid
Hydrogen Phosphide
Hydrogen Sulfide – Dry
Hydrogen Sulfide – Aqueous Solution
Hydroquinone
Hydroxylamine Sulfate
Iodine
Kerosene
Lactic Acid 28%
Lauric Acid
Lauryl Chloride
Lauryl Sulfate
Lead Acetate
Lime Sulfur
Linoleic Acid
Linseed Oil
Lubricating Oils
Magnesium Carbonate
Magnesium Chloride
Magnesium Hydroxide
Magnesium Nitrate
Magnesium Sulfate
Maleic Acid
Malic Acid
Mercuric Chloride
Mercuric Cyanide
Mercurous Nitrate
Mercury
Methyl Sulfate
Methylene Chloride
Mineral Oils
Naphthalene
Nickel Chloride
Nickel Nitrate
Nitric Acid, Anydrous
Nitric Acid 20%
Nitric Acid 40%
Nitric Acid 60%
Nitrobenzene
Nitrous Oxide
Oils and Fats
Oils – Petroleum – (See Type)
Oleic Acid
Oxalic Acid
Palmitic Acid 10%
Perchloric Acid 10%
Phenylhydrazine Hydrochloride
Phosgene, Gas
Phosphoric Acid – 0-25%
Phosphoric Acid – 25-50%
Phosphoric Acid – 50-85%
Photographic Chemicals
Plating Solutions
Potassium Bicarbonate
Potassium Bichromate
Potassium Borate
Potassium Bromide
Potassium Carbonate
Potassium Chloride
Potassium Chromate
Potassium Cyanide
Potassium Dichromate
Potassium Ferricyanide
Potassium Ferrocyanide
Potassium Fluoride
Potassium Hydroxide
Potassium Nitrate
Potassium Perborate
Potassium Perchlorite
Potassium Permanganate 10%
Potassium Persulfate
Potassium Sulfate
Propane
Propyl Alcohol
Silicic Acid
Silver Cyanide
Silver Nitrate
Silver Plating Solutions
Sodium Acetate
Sodium Arsenite
Sodium Benzoate
Sodium Bicarbonate
Sodium Bisulfate
Sodium Bisulfite
Sodium Bromide
Sodium Chlorate
Sodium Chloride
Sodium Cyanide
Sodium Dichromate
Sodium Ferricyanide
Sodium Ferrocyanide
Sodium Fluoride
Sodium Hydroxide
Sodium Hypochlorite
Sodium Nitrate
Sodium Nitrite
Sodium Sulfate
Sodium Sulfide
Sodium Sulfite
Sodium Thiosulfate (Hypo)
Stannic Chloride
Stannous Chloride
Stearic Acid
Sulfur
Sulfur Dioxide – Gas Dry
Sulfur Trioxide
Sulfuric Acid – 0-10%
Sulfuric Acid – 10-75%
Sulfuric Acid – 75-90%
Sulfurous Acid
Tannic Acid
Tanning Liquors
Tartaric Acid
Titanium Tetrachloride
Triethanolamine
Trimethyl Propane
Trisodium Phosphate
Turpentine
Urea
Vinegar
Whiskey
White Liquor (Paper Industry)
Wines
Zinc Chloride
Zinc Chromate
Zinc Cyanide
Zinc Nitrate
Zinc Sulfate

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Suggested Format for Specifying Carlon Nonmetallic Conduit, Conduit Fittings and Junction Boxes

A. The Carlon rigid nonmetallic conduit system shall be installed as indicated on the drawings and as specified herein.

B. All wiring shall be installed in Carlon rigid nonmetallic conduit. All conduit shall be secured by means of proper fittings. All fittings shall be Carlon.

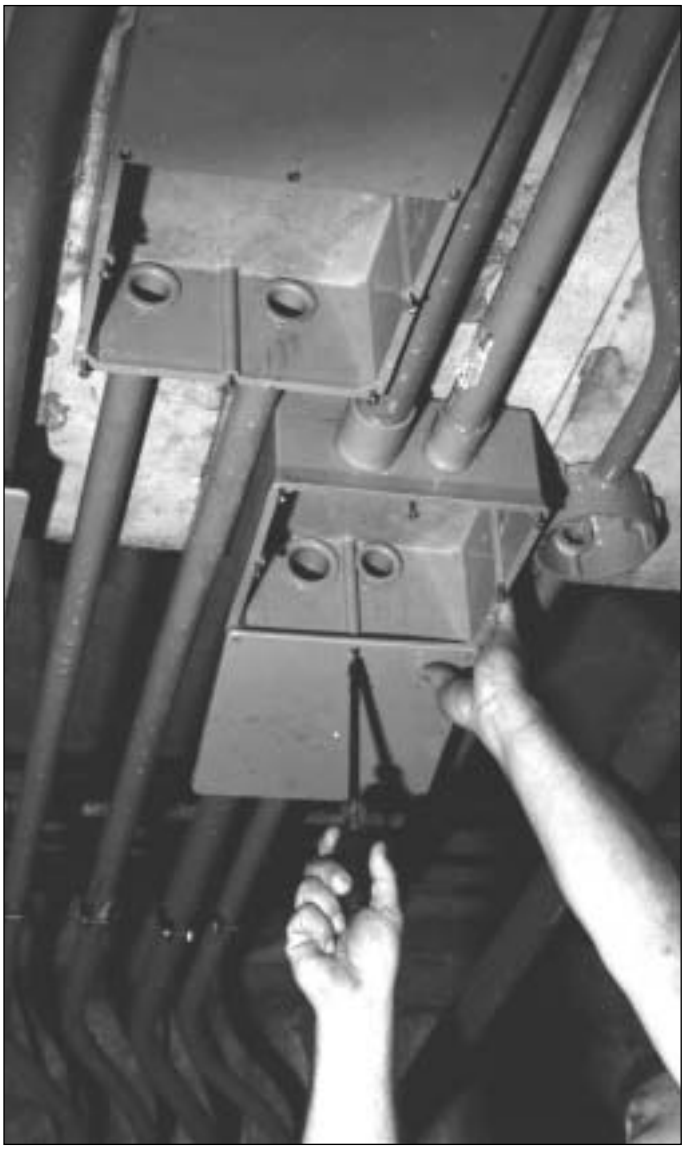
C. Carlon outlet boxes, fittings and junction boxes shall be used for all outlets, pull boxes and junction points. (Lighting fixtures shall not be supported or hung from PVC junction boxes but be supported in position by other means.)

D. Exposed conduits shall be mounted securely by suitable hangers or straps with the maximum spacing of points of supports not greater than indicated by Section 352.30 of the NEC.

E. Except where embedded in concrete or direct buried, Carlon conduit shall be supported to permit adequate lineal movement to allow for expansion and contraction of conduit due to temperature change.

F. For aboveground installations where temperature change in excess of 14°C (25°F) is anticipated, expansion joints shall be installed. See Table 352.44(A) NEC for expansion characteristics.

G. Proper care shall be taken when field bending is employed to maintain the internal diameter and wall thickness of the conduit.







Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Heavy Wall Rigid Schedule 40 Utility Conduit

Non-UL Listed

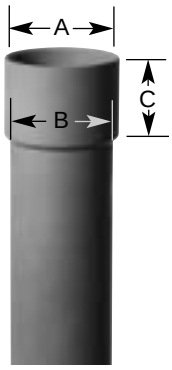
- Rated for 90°C conductors or cable
- For direct earth burial and concrete encasement, specifically designed for the power utility specifications.

With Integral Bell*



*Limited geographical area

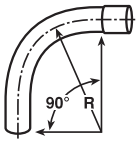
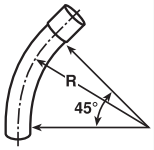
Part No. 20'	Part No. 10'	Std. Crate Qty. 20'	Std. Crate Qty. 10'	Nom. Size	Dimensions O.D.	Dimensions I.D.	Wall	Wt. Per 100'
59610-020	59610-010	4500'	2250'	1/2"	1.900	1.610	.145	56
59611-020	59611-010	2800'	1400'	2"	2.375	2.067	.154	75
59612-020	59612-010	1860'	930'	2 1/2"	2.875	2.469	.203	124
59613-020	59613-010	1760'	880'	3"	3.500	3.068	.216	172
59615-020	59615-010	1140'	570'	4"	4.500	4.026	.237	244
59616-020	59616-010	760'	380'	5"	5.563	5.047	.258	331
59617-020	59617-010	520'	260'	6"	6.625	6.065	.280	430
59618-020	59618-010	300'	150'	8"	8.625	7.981	.322	647

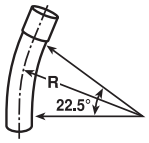


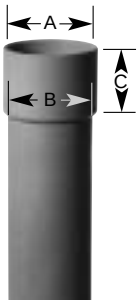
Dimensions in Inches of Utility Conduit Integral Bells

Trade Size	A At Entrance Maximum	A At Entrance Minimum	B At Bottom Maximum	B At Bottom Minimum	C Nominal Bell Depth
1 1/2	1.926	1.916	1.911	1.901	2.750
2	2.405	2.395	2.386	2.376	3.250
2 1/2	2.911	2.901	2.887	2.877	3.250
3	3.543	3.533	3.513	3.503	3.875
4	4.549	4.539	4.514	4.504	3.875
5	5.619	5.609	5.578	5.568	4.625
6	6.692	6.682	6.641	6.631	5.625
8	8.692	8.682	8.614	8.631	6.375

Deep Socket Schedule 40 Utility Elbows with Integral Belled Ends

Segment	Part No.	Nom. Diameter	Radius (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
90° Elbow 	UC9BHB	1 1/2"	12"	20	25.00
	UC9DHB	1 1/2"	24"	1	2.13
	UC9FHB	1 1/2"	36"	1	3.05
	UC9BJB	2"	12"	1	1.44
	UC9DJB	2"	24"	1	2.82
	UC9FJB	2"	36"	1	4.14
	UC9HJB	2"	48"	1	5.15
	UC9DKB	2 1/2"	24"	1	5.00
	UC9FKB	2 1/2"	36"	1	7.15
	UC9DLB	3"	24"	1	6.57
	UC9FLB	3"	36"	1	9.15
	UC9DNB	4"	24"	1	10.59
	UC9FNB	4"	36"	1	13.64
	UC9HNB	4"	48"	1	17.72
	UC9FRB	6"	36"	1	25.80
	UC9HRB	6"	48"	1	32.24
45° Elbow 	UC7FHB	1 1/2"	36"	1	1.74
	UC7FJB	2"	36"	1	2.07
	UC7CKB	2 1/2"	18"	1	2.27
	UC7FKB	2 1/2"	36"	1	4.12
	UC7FLB	3"	36"	1	5.00
	UC7FNB	4"	36"	1	8.15
	UC7HNB	4"	48"	1	9.36
	UC7HRB	6"	48"	1	17.19
	UC7ITB	8"	60"	1	33.00

Segment	Part No.	Nom. Diameter	Radius (in.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
22 1/2° Elbow 	UC5CKB	2 1/2"	18"	1	1.45
	UC5FKB	2 1/2"	36"	1	2.49
	UC5FNB	4"	36"	1	5.18
	UC5FRB	6"	36"	1	11.82
	UC5HNB	4"	48"	1	5.57

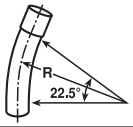
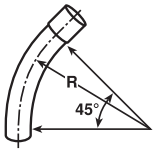
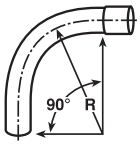


Dimensions in Inches of Utility Elbows Bells

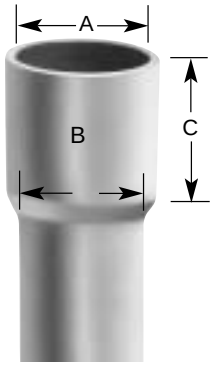
Trade Size	A At Entrance Max.	A At Entrance Min.	B At Bottom Max.	B At Bottom Min.	C Nominal Bell Max.	C Nominal Bell Min.
1 1/2	1.926	1.916	1.900	1.888	2.750	2.500
2	2.405	2.395	2.381	2.357	2.875	2.625
2 1/2	2.911	2.901	2.875	2.861	3.125	2.875
3	3.543	3.533	3.500	3.484	3.125	2.875
4	4.549	4.539	4.500	4.482	3.750	3.500
5	5.619	5.609	5.563	5.543	4.250	4.000
6	6.692	6.682	6.625	6.603	5.250	5.000
8	8.692	8.682	8.641	8.631	6.250	6.000

Elbows – Long Belled

Non-UL Listed

	Part Number	Nom. Diameter	Radius (In.)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
22 1/2° Elbow 	UC5FRBLB	6"	36	1	9.6
45° Elbow 	UC7CJBLB	2"	18	1	1.3
	UC7DJBLB	2"	24	1	1.4
	UC7DLBLB	3"	24	1	5.0
	UC7DNBLB	4"	24	1	5.8
	UC7DPBLB	5"	24	1	8.5
	UC7FJBLB	2"	36	1	2.2
	UC7FLBLB	3"	36	1	5.2
	UC7FNBLB	4"	36	1	7.8
	UC7FPBLB	5"	36	1	11.1
	UC7FRBLB	6"	36	1	9.6
	UC7HJBLB	2"	48	1	2.8
	UC7HLBLB	3"	48	1	6.6
	UC7HNBLB	4"	48	1	9.7
	UC7HPBLB	5"	48	1	13.7
	UC7HRBLB	6"	48	1	18.1
90° Elbow 	UC7CJBLB	2"	18	1	1.3
	UC7DJBLB	2"	24	1	1.4
	UC7DLBLB	3"	24	1	5.0
	UC7DNBLB	4"	24	1	5.8
	UC7DPBLB	5"	24	1	8.5
	UC7FJBLB	2"	36	1	2.2
	UC7FLBLB	3"	36	1	5.2
	UC7FNBLB	4"	36	1	7.8
	UC7FPBLB	5"	36	1	11.1
	UC7FRBLB	6"	36	1	9.6
	UC7HJBLB	2"	48	1	2.8
	UC7HNBLB	4"	48	1	9.7
	UC7HPBLB	5"	48	1	13.7
	UC7HRBLB	6"	48	1	18.1

Integral Belled End Dimensions



Trade Size	A At Entrance (in.) Maximum	A At Entrance (in.) Minimum	B At Bottom (in.) Maximum	B At Bottom (in.) Minimum	C Nominal Bell Depth (in.)
1 - 1 1/2"	1.924	1.912	1.900	1.888	2 3/4"
2"	2.399	2.387	2.375	2.363	3 1/4"
2 - 2 1/2"	2.897	2.883	2.875	2.861	3 1/4"
3"	3.523	3.507	3.500	3.484	4"
4"	4.524	4.506	4.500	4.482	4 3/4"
5"	5.603	5.583	5.563	5.543	5 3/4"
6"	6.669	6.647	6.625	6.603	6 1/4"

Carlon® P&C® Duct

Carlon P&C (Power & Communications) Duct and fittings are designed and formulated specifically for concrete encased and direct burial applications of power utility primaries, secondaries, street lighting and distribution systems. Carlon P&C Duct complies with NEMA Standard TC-6 & 8, and ASTM F-512 for utility duct. Both EB and DB duct are rated for use with 90°C conductors. P&C Duct fittings comply with NEMA TC-9 Standard.

Carlon Telephone Duct complies with NEMA TC-10. Bellcore CAO 8546, GT8343, and other applicable telephone standards.

Advantages:

- Manufactured for high modulus C-250 compound
- High impact strength
- Excellent structural strength
- Superior load bearing
- Multiple duct banks can be pre-assembled and lowered into trench
- No special cutting or tapering devices required
- Provides easy bending around obstructions minimizing the need for special angle couplings and sweeps
- Superior aging and weathering characteristics

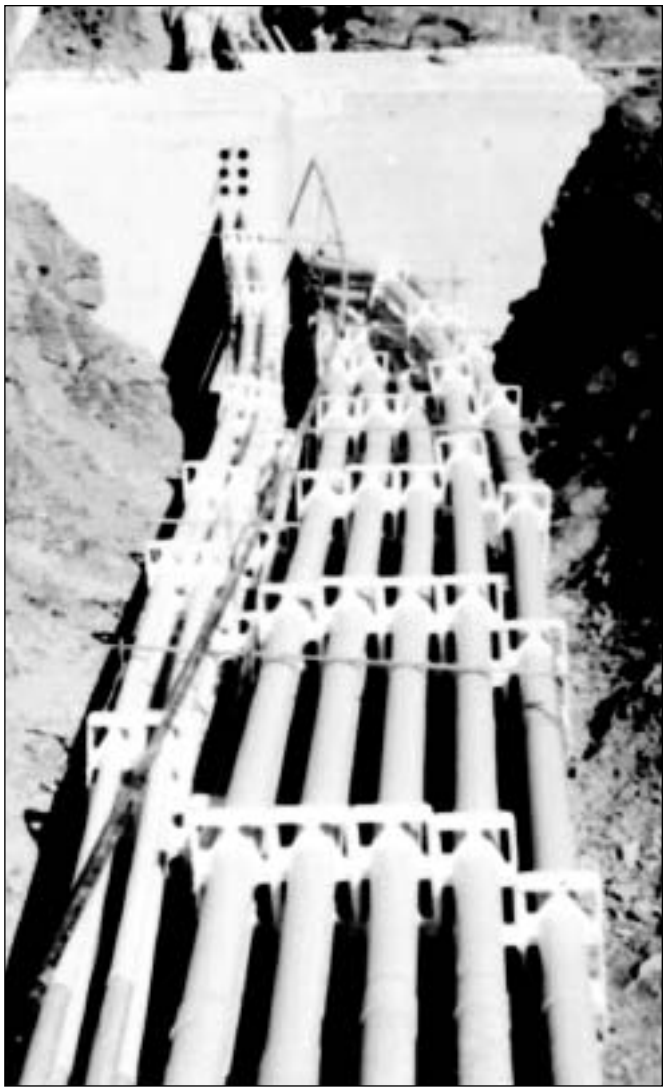
Features:

- Heat resistant
- Fire resistant
- Conforms to NEMA Standard TC-6 & 8 and ASTM Standard F-512 for utility duct*
- Carlon P&C Duct Type EB-20 is ETL Listed
- Low coefficient of expansion
- Continuous rigid control
- Smooth inner wall and smooth transition between joints

Engineering Features:

Chemical Inertness resists water absorption and is totally immune to galvanic or electrolytic attacks.

Solvent Cemented Joints provide leakproof duct runs tested at 25 psi. This type of joint eliminates the need for costly mechanical rodding procedure. Carlon P&C Duct can be rodded pneumatically.





Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® P&C® Duct Type EB

Carlon nonmetallic P&C Duct Type EB is manufactured from Carlon's exclusive high modulus C-600 compound, developed especially for power and communications applications, and is designed for use in concrete encased installations. Type EB is rated for 90°C Cable.







RUS Listed

ETL Listed to UL 651A in compliance to the NEC

P&C Duct Type EB-20

Meets NEMA Standard TC-6 & 8
EB-20/ASTM F-512

Nom. Size	Part Number 10'	Part Number 20'	Std. Crate Qty. 10'	Std. Crate Qty. 20'	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
2	–	48711-020	–	2,800	36	2.375	.060
3	–	48713-020	–	2,000	59	3.500	.061
4	48715-010	48715-020	570	1,140	98	4.500	.082
5	48716-010	48716-020	380	760	148	5.563	.103
6	48717-010	48717-020	260	520	212	6.625	.125

*Min. wall thickness relates to 500,000 modulus
Note: One belled end per 20' length

P&C Duct Type EB-35 Heavy Wall

Meets NEMA Standard TC-6 & 8
EB-35/ASTM F-512

Nom. Size	Part Number 10'	Part Number 20'	Std. Crate Qty. 10'	Std. Crate Qty. 20'	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
2	–	68711-020	–	2,800	39	2.375	.060
3	–	68713-020	–	2,000	72	3.500	.076
4	–	68715-020	–	1,140	116	4.500	.100
5	68716-010	68716-020	380	760	177	5.563	.126
6	–	68717-020**	–	520	251	6.625	.152

*Min. wall thickness relates to 500,000 modulus
**Special order item
Note: One belled end per 20' length

Use DB Sweeps with EB Duct.

Carlon® P&C® Duct Type DB

RUS Listed

Carlon nonmetallic P&C Duct Type DB is manufactured from Carlon's exclusive high modulus C-600 compound, developed especially for power and communications applications, and is designed for use in direct burial or concrete encased installations. Type DB is rated for 90°C Cable.



Trenching:

Trench should be graded true and free from stones and soft spots. Backfill should also be free of stones and be firmly tamped around the sides of the conduit, to develop maximum supporting strength. Tamping on top of the conduit is not recommended.

Backfill:

In rocky soil where it is impossible to have an even trench bottom, a selected backfill should be put in before laying the conduit. Selected backfill (not tamped) at least 6" over the top of the conduit is recommended. After final backfill is placed, tamping may be used to finish the grade.

The method of direct burial varies with soil condition, load conditions, and engineering preferences. A common practice is to lay one tier at a time, backfill, and repeat with the desired spacing of ducts being made as ducts are layered.

Many companies have used the heavier wall Type DB-120 in a duct-to-duct formation. Where limited loads occur, this type of installation has proven satisfactory.

P&C Duct Type DB-60

Meets NEMA Standard TC-6 & 8
DB-60/ASTM F-512

Nom. Size	Part Number	Std. Crate Qty.	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
2	48811-020	2,800	38	2.375	.060
3	48813-020	2,000	81	3.500	.092
3 1/2	48814-020	2,000	108	4.000	.107
4	48815-020	1,140	133	4.500	.121
5	48816-020	760	202	5.563	.152
6	48817-020	520	288	6.625	.182

*Min. wall thickness relates to 500,000 modulus
Note: One belled end per 20' length

P&C Duct Type DB-120 Heavy Wall

Meets NEMA Standard TC-6 & 8
DB-120/ASTM F-512

Nom. Size	Part Number 10'	Part Number 20'	Std. Crate Qty. 10'	Std. Crate Qty. 20'	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
1	–	48808-020	–	8,000	18	1.315	.060
1 1/2	–	48810-020	–	4,500	28	1.900	.060
2	–	68811-020	–	2,800	47	2.375	.077
3	–	68813-020	–	2,000	99	3.500	.118
4	–	68815-020	–	1,140	165	4.500	.154
5	–	68816-020	–	760	251	5.563	.191
6	68817-010	68817-020	260	520	356	6.625	.227

*Min. wall thickness relates to 500,000 modulus
Note: One belled end per 20' length

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon Special California Rigid Nonmetallic DB-100 P&C® Duct & Sweeps

RUS Listed



Carlon DB-100 nonmetallic P&C Duct Type DB is manufactured to NEMA Standard TC-6 & 8 and to specifications that exist within the State of California, and is designed for use in direct burial or concrete encased installations. Rated for use with 90°C cable.

P&C Duct Type DB-100

Meets NEMA Standard TC-6 & 8 and ASTM F-512

Nom. Size	Part Number	Std. Crate Qty.	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
4	68915-020	1,140	154	4.500	.155
5	68916-020	760	237	5.563	.192
6	68917-020	520	337	6.625	.229

*Min. wall thickness relates to 500,000 modulus
Note: One belled end per 20' length

P&C Duct Type DB-100 DWP Approved

Meets NEMA Standard TC-6 & 8 and ASTM F-512

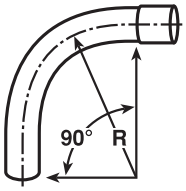
Nom. Size	Part Number	Std. Crate Qty.	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
3	68913D-020	2,000	95	4.500	.155
4	68915D-020	1,140	156	5.563	.192
5	68916D-020	760	237	6.625	.229

*Min. wall thickness relates to 500,000 modulus

DB-100 Sweeps – Belled

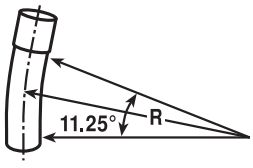
*Consult factory for additional sizes

90° Sweep – 48" Radius



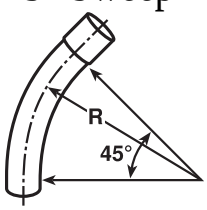
Part No.	Size	Std. Ctn. Qty.
PE9HN	4"	1
PE9HP	5"	1

11¼° Sweep – 150" Radius



Part No.	Size	Std. Ctn. Qty.
PE3SP	5"	1

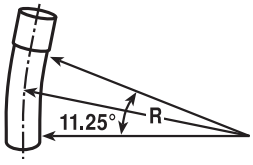
45° Sweep – 150" Radius



Part No.	Size	Std. Ctn. Qty.
PE7SP	5"	1

11¼° Sweep – 150" Radius

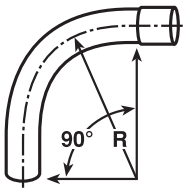
(Segmented sweeps)

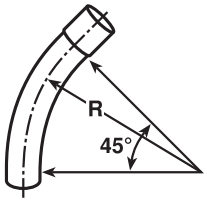


Part No.	Size	Std. Ctn. Qty.
PE3SNS	4"	1
PE3SPS	5"	1
PE3SRS	6"	1

DB-60 Sweeps

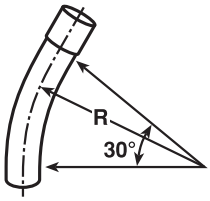
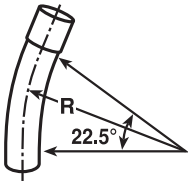
*Consult factory for additional sizes/configurations

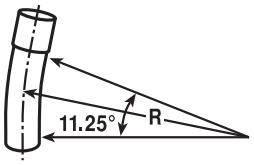
Segment	Part No.	Size	Radius (in.)	Std. Ctn. Qty.
90° Sweep 	PF9CH	1 1/2"	18"	1
	PF9CJ	2"	18"	1
	PF9CL	3"	18"	1
	PF9CN	4"	18"	1
	PF9DF	1"	24"	1
	PF9DH	1 1/2"	24"	1
	PF9DJ	2"	24"	1
	PF9DL	3"	24"	1
	PF9DN	4"	24"	1
	PF9DP	5"	24"	1
	PF9FF	1"	36"	1
	PF9FJ	2"	36"	1
	PF9FL	3"	36"	1
	PF9FN	4"	36"	1
	PF9FP	5"	36"	1
	PF9FR	6"	36"	1
	PF9HL	3"	48"	1
	PF9HN	4"	48"	1
	PF9HP	5"	48"	1
	PF9HR	6"	48"	1
	PF9IL	3"	60"	1
	PF9IN	4"	60"	1
	PF9IP	5"	60"	1
	PF9IR	6"	60"	1
	PF9SH	1 1/2"	150"	1
	PF9SJ	2"	150"	1
	PF9SL	3"	150"	1
	PF9SR	6"	150"	1
	PF9VL	3"	300"	1
	PF9VN	4"	300"	1
	PF9VP	5"	300"	1

Segment	Part No.	Size	Radius (in.)	Std. Ctn. Qty.
45° Sweep 	PF7CF	1"	18"	1
	PF7CH	1 1/2"	18"	1
	PF7CJ	2"	18"	1
	PF7CL	3"	18"	1
	PF7DF	1"	24"	1
	PF7DH	1 1/2"	24"	1
	PF7DJ	2"	24"	1
	PF7DL	3"	24"	1
	PF7DN	4"	24"	1
	PF7FF	1"	36"	1
	PF7FH	1 1/2"	36"	1
	PF7FJ	2"	36"	1
	PF7FL	3"	36"	1
	PF7FN	4"	36"	1
	PF7FP	5"	36"	1
	PF7FR	6"	36"	1
	PF7HJ	2"	48"	1
	PF7HL	3"	48"	1
	PF7HN	4"	48"	1
	PF7HP	5"	48"	1
	PF7HR	6"	48"	1
	PF7IL	3"	60"	1
	PF7IP	5"	60"	1
	PF7NN	4"	120"	1
	PF7SH	1 1/2"	150"	1
	PF7SJ	2"	150"	1
	PF7SL	3"	150"	1
	PF7SN	4"	150"	1
	PF7SP	5"	150"	1
	PF7SR	6"	150"	1
	PF7VN	4"	300"	1
	PF7VP	5"	300"	1
	PF7VR	6"	300"	1

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

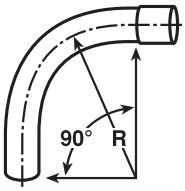
DB-60 Sweeps *Consult factory for additional sizes/configurations

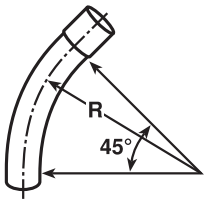
Segment	Part No.	Size	Radius (in.)	Std. Ctn. Qty.
30° Sweep	PF6CJ	2"	18"	1
	PF6CL	3"	18"	1
	PF6DL	3"	24"	1
	PF6DN	4"	24"	1
	PF6DP	5"	24"	1
	PF6CH	1 1/2"	30"	1
	PF6FJ	2"	36"	1
	PF6FL	3"	36"	1
	PF6FN	4"	36"	1
	PF6FR	6"	36"	1
	PF6HJ	2"	48"	1
	PF6HN	4"	48"	1
	PF6HP	5"	48"	1
	PF6HR	6"	48"	1
	PF6IN	4"	60"	1
	PF6IP	5"	60"	1
	PF6SJ	2"	150"	1
	PF6SN	4"	150"	1
	PF6SP	5"	150"	1
	PF6VJ	2"	300"	1
	PF6VN	4"	300"	1
	PF6VR	6"	300"	1
22 1/2° Sweep	PH5DL	3"	24"	1
	PF5DN	4"	24"	1
	PF5DP	5"	24"	1
	PF5FF	1"	36"	1
	PF5FL	3"	36"	1
	PF5FN	4"	36"	1
	PF5FP	5"	36"	1
	PF5FR	6"	36"	1
	PF5HL	3"	48"	1
	PF5HN	4"	48"	1
	PF5HR	6"	48"	1
	PF5IJ	2"	60"	1
	PF5IL	3"	60"	1
	PF5IP	5"	60"	1
	PF5IR	6"	60"	1
	PF5SL	3"	150"	1
	PF5SN	4"	150"	1
	PF5SP	5"	150"	1
	PF5SR	6"	150"	1
	PF5VN	4"	300"	1
	PF5VP	5"	300"	1
	PF5VR	6"	300"	1

Segment	Part No.	Size	Radius (in.)	Std. Ctn. Qty.
11 1/4° Sweep	PF3CJ	2"	18"	1
	PF3CL	3"	18"	1
	PF3DF	1"	24"	1
	PF3DH	1 1/2"	24"	1
	PF3DP	5"	24"	1
	PF3FJ	2"	36"	1
	PF3FL	3"	36"	1
	PF3FN	4"	36"	1
	PF3FP	5"	36"	1
	PF3FR	6"	36"	1
	PF3HL	3"	48"	1
	PF3HN	4"	48"	1
	PF3HP	5"	48"	1
	PF3HR	6"	48"	1
	PF3IJ	2"	60"	1
	PF3IR	6"	60"	1
	PF3SJ	2"	150"	1
	PF3SN	4"	150"	1
	PF3SP	5"	150"	1
	PF3SR	6"	150"	1
	PF3VJ	2"	300"	1
	PF3VL	3"	300"	1
	PF3VN	4"	300"	1
	PF3VP	5"	300"	1

DB-120 Sweeps

*Consult factory for additional sizes/configurations

Segment	Part No.	Size	Radius (in.)	Std. Ctn. Qty.
90° Sweep 	PH9CJ	2"	18"	1
	PH9CL	3"	18"	1
	PH9CN	4"	18"	1
	PH9DJ	2"	24"	1
	PH9DL	3"	24"	1
	PH9DN	4"	24"	1
	PH9DP	5"	24"	1
	PH9FJ	2"	36"	1
	PH9FL	3"	36"	1
	PH9FN	4"	36"	1
	PH9FP	5"	36"	1
	PH9FR	6"	36"	1
	PH9HJ	2"	48"	1
	PH9HL	3"	48"	1
	PH9HN	4"	48"	1
	PH9HP	5"	48"	1
	PH9HR	6"	48"	1
	PH9IJ	2"	60"	1
	PH9IL	3"	60"	1
	PH9IN	4"	60"	1
	PH9IR	6"	60"	1
	PH9OJ	2"	66"	1
	PH9SJ	2"	150"	1
	PH9SL	3"	150"	1
	PH9SN	4"	150"	1
	PH9SP	5"	150"	1
	PH9SR	6"	150"	1
	PH9VN	4"	300"	1
	PH9VP	5"	300"	1
	PH9VR	6"	300"	1

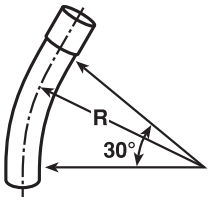
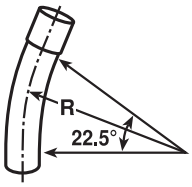
Segment	Part No.	Size	Radius (in.)	Std. Ctn. Qty.
45° Sweep 	PH7CJ	2"	18"	1
	PH7CL	3"	18"	1
	PH7CN	4"	18"	1
	PH7DJ	2"	24"	1
	PH7DL	3"	24"	1
	PH7DN	4"	24"	1
	PH7DP	5"	24"	1
	PH7FJ	2"	36"	1
	PH7FL	3"	36"	1
	PH7FN	4"	36"	1
	PH7FP	5"	36"	1
	PH7FR	6"	36"	1
	PH7HJ	2"	48"	1
	PH7HL	3"	48"	1
	PH7HN	4"	48"	1
	PH7HP	5"	48"	1
	PH7HR	6"	48"	1
	PH7IJ	2"	60"	1
	PH7IL	3"	60"	1
	PH7IP	5"	60"	1
	PH7IR	6"	60"	1
	PH7SJ	2"	150"	1
	PH7SN	4"	150"	1
	PH7SP	5"	150"	1
	PH7SR	6"	150"	1

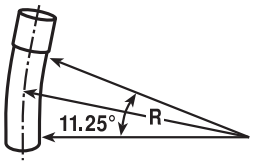
Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

DB-120 Sweeps

Note: For Nom. Diameter of 1": use 1" DB-60 Sweeps
For Nom. Diameter of 1 1/2": use 1 1/2" DB-60 Sweeps

*Consult factory for additional sizes/configurations

Segment	Part No.	Size	Radius (in.)	Std. Ctn. Qty.
30° Sweep	PH6CJ	2"	18"	1
	PH6CL	3"	18"	1
	PH6CN	4"	18"	1
	PH6DJ	2"	24"	1
	PH6DN	4"	24"	1
	PH6DP	5"	24"	1
	PH6FJ	2"	36"	1
	PH6FL	3"	36"	1
	PH6FN	4"	36"	1
	PH6FP	5"	36"	1
	PH6FR	6"	36"	1
	PH6HN	4"	48"	1
	PH6HR	6"	48"	1
	PH6IN	4"	60"	1
	PH6SL	3"	150"	1
22 1/2° Sweep	PH5CJ	2"	18"	1
	PH5CL	3"	18"	1
	PH5CN	4"	18"	1
	PH5DJ	2"	24"	1
	PH5DL	3"	24"	1
	PH5DP	5"	24"	1
	PH5FJ	2"	36"	1
	PH5FL	3"	36"	1
	PH5FN	4"	36"	1
	PH5FP	5"	36"	1
	PH5HL	3"	48"	1
	PH5HN	4"	48"	1
	PH5HP	5"	48"	1
	PH5HR	6"	48"	1
	PH5IJ	2"	60"	1
	PH5IL	3"	60"	1
	PH5IR	6"	60"	1
	PH5SN	4"	150"	1
	PH5SP	5"	150"	1
	PH5SR	6"	150"	1
	PH5VJ	2"	300"	1
	PH5VN	4"	300"	1

Segment	Part No.	Size	Radius (in.)	Std. Ctn. Qty.
11 1/4° Sweep	PH3CJ	2"	18"	1
	PH3CN	4"	18"	1
	PH3DJ	2"	24"	1
	PH3DN	4"	24"	1
	PH3DP	5"	24"	1
	PH3FJ	2"	36"	1
	PH3FL	3"	36"	1
	PH3FN	4"	36"	1
	PH3FP	5"	36"	1
	PH3FR	6"	36"	1
	PH3HN	4"	48"	1
	PH3IN	4"	60"	1
	PH3IP	5"	60"	1
	PH3IR	6"	60"	1
	PH3SJ	2"	150"	1
	PH3SL	3"	150"	1
	PH3SN	4"	150"	1
	PH3SP	5"	150"	1
	PH3SR	6"	150"	1
	PH3VR	6"	300"	1

Couplings

(Use same type fittings for Type EB and DB)

Sleeve Coupling (for repair work)



No internal stop

Part No.	Size	Std. Ctn. Qty.
E200J	2"	30
E200L	3"	25
E200M	3 1/2"	20
E200N	4"	15
E200P	5"	8
E200R	6"	5

Coupling



Part No.	Size	Std. Ctn. Qty.
E940H	1 1/2"	25
E940J	2"	30
E940K	2 1/2"	20
E240L	3"	30
E240N	4"	15
E240P	5"	20
E240RF	6"	5

*Sizes 1 1/2" - 2 1/2" order part numbers E940_

Long Line Coupling

*Consult factory for additional sizes



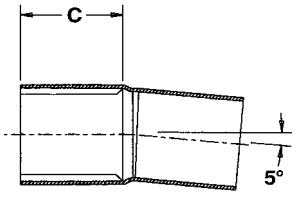
Part No.	Size	Std. Ctn. Qty.
E941H	1 1/2"	40
E941J	2"	25
E941K	2 1/2"	15
E241L	3"	15
E241N	4"	10

*Sizes 1 1/2" - 2 1/2" order part numbers E941_

5° Angle Coupling BxS (Bell x Spigot)



Part No.	Size	C	Std. Ctn. Qty.
E244J	2"	2.13	15
E244L	3"	3.25	5
E244NF	4"	3.50	15
E244NF5 (short)	4"	1.87	25
E244PF	5"	4.13	10
E244PF5 (short)	5"	2.00	20
E244RF	6"	5.13	5
E244RF5 (short)	6"	2.25	10



5° Angle Coupling BxB (Bell x Bell)



Part No.	Size	Std. Ctn. Qty.
E2440NF	4"	15
E2440PF	5"	10
E2440RF	6"	5

5° Angle Coupling BxB (Swedged)



Part No.	Size	Std. Ctn. Qty.
E245J	2"	20
E245N	4"	10
E245P	5"	10
E245R	6"	5

Plugs

Plug



Part No.	Size	Std. Ctn. Qty.
P258H	1 1/2"	50
P258K	2 1/2"	50

Plug with Pull Tab



Part No.	Size	Std. Ctn. Qty.
P258JT	2"	60
P258LT	3"	30
P258NT	4"	48
P258PT	5"	30
P258RT	6"	30

Swedge Coupling

Part No.	Size	Std. Ctn. Qty.
E242J	2"	48

5° Angle Coupling S x S

Part No.	Size	Std. Ctn. Qty.
E2440N5	4"	15
E2440P5	5"	20

Adapters

Male Adapter



Part No.	Size	Std. Ctn. Qty.
E943F	1"	50
E943H	1 1/2"	25
E943J	2"	50
E943L-CAR	3"	5
E943N-CAR	4"	5
E943P	5"	5
E943R	6"	10

Female Adapter



Part No.	Size	Std. Ctn. Qty.
E942F	1"	50
E942H	1 1/2"	25
E942J	2"	30
E942L-CAR	3"	3
E942N-CAR	4"	7
E942P	5"	8
E942R	6"	6

Reducers

Swedge Reducer (Male x Male)



Part No.	Size	Std. Ctn. Qty.
E252LJ	3" x 2"	50
E252NJS	4" x 2"	25
E252NL	4" x 3"	25
E252PN	5" x 4"	20
E252RNS	6" x 4"	6
E252RP	6" x 5"	10

Markers

Cable Marker



Part No.	Size	Std. Ctn. Qty.
E299JM	2" x 42"	1
E299JP	2" x 56"	1
E299JR	2" x 78"	1
E299LF	3" x 36"	1
E299LR	3" x 60"	1
E299NX7	4" x 84"	1

End Bells

End Bell



Part No.	Size	Std. Ctn. Qty.
E997F-CAR	1"	15
E997H-CAR	1 1/2"	10
E997J-CAR	2"	10
E997L-CAR	3"	10
E997N	4"	30
E997P	5"	15
E997R	6"	10

Molded End Bell

(For use with P&C Duct only)



Part No.	Size	Std. Ctn. Qty.
E297J	2"	40
E297L	3"	50
E297N	4"	30
E297P	5"	15

Fabricated End Bell

(For use with P&C Duct only)

*Consult factory for additional sizes



Part No.	Size	Std. Ctn. Qty.
E297JN	2" x 4"	25
E297LR	3" x 6"	20
E297NT	4" x 10"	15
E297PS	5" x 8"	10
E297PT	5" x 10"	10
E297RF	6" x 5"	10
E297RT	6" x 10"	6

Long Length End Bell P&C Duct



Part No.	Size	Std. Ctn. Qty.
E297RR	6"(6" long)	10

Note: for manhole terminations

Telephone Duct Type B

RUS Listed

Carlon® Telephone Duct Type B is designed for use in concrete encased installations. Type B duct meets the requirements of NEMA TC-10 and conforms to Bellcore CA08546.



Telephone Duct Type B

Nom. Size	Part Number	Std. Crate Qty.	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
4"	68315-020 (Grey)	1260	100	4.350	.090
4"	68315W-020 (White)	1260	100	4.350	.095

Telephone Duct Type B Heavy Wall

Nom. Size	Part Number	Std. Crate Qty.	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
4"	68415-020 (Grey)	1260	100	4.350	.100
4"	68415W-020 (White)	1260	100	4.350	.100

* Estimated min. wall to meet performance criteria (500,000 modulus compound

NOTE: One Belled End per 20' length (for concrete encasement only)

Telephone Duct Type C

RUS Listed

Carlon® Telephone Duct Type C is designed for direct burial or concrete encased applications. Type C duct complies with NEMA Standard TC-10 and Bellcore CA08546.



Telephone Duct Type C

One belled end per 20' length

Nom. Size	Part Number	Std. Crate Qty.	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
4"	68515-020 (Grey)	1260	151	4.350	.150
4"	68515W-020 (White)	1260	151	4.350	.150

* Estimated min. wall to meet performance criteria

Telephone Duct Type D

RUS Listed

White Only (Carlon® Telephone Duct Type D is designed to be used in exposed applications.)



Telephone Duct Type D

Nom. Size	Part Number	Std. Crate Qty.	Approx. Wt. per 100 ft.	O.D.	*Min. Wall
4"	68615-020 (White)	1260	150	4.350	.160

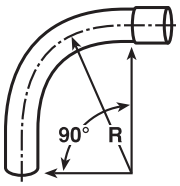
* Estimated min. wall to meet performance criteria

RUS Listed

Telephone Duct Sweeps Manufactured from Heavy Wall "C" Duct

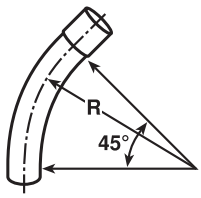
- Size: 4 inches.
- Each sweep is furnished with a belled end.
- Straight end length 3".

90° Sweep



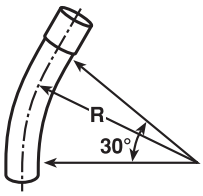
Part No. (Gray)	Bend Radius	Std. Ctn. Qty.
TP9CN	1'6"	1
TP9DN	2'	1
TP9FN	3'	1
TP9HN	4'	1
TP9IN	5'	1
TP9JN	6'	1
TP9MN	9'	1
TP9NN	10'	1
TP9SN	12'6"	1
TP9TN	15'	1
TP9UN	20'	1
(White):		
TW9DN	2'	1
TW9FN	3'	1
TW9HN	4'	1
TW9IN	5'	1
TW9JN	6'	1
TW9MN	9'	1
TW9NN	10'	1
TW9SN	12'6"	1
TW9TN	15'	1

45° Sweep



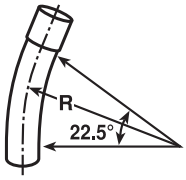
Part No. (Gray)	Bend Radius	Std. Ctn. Qty.
TP7DN	2'	1
TP7FN	3'	1
TP7HN	4'	1
TP7ON	4'6"	1
TP7IN	5'	1
TP7JN	6'	1
TP7MN	9'	1
TP7NN	10'	1
TP7RN	12'	1
TP7SN	12'6"	1
TP7TN	15'	1
TP7UN	20'	1
(White):		
TW7DN	2'	1
TW7FN	3'	1
TW7HN	4'	1
TW7ON	4'6"	1
TW7IN	5'	1
TW7JN	6'	1
TW7MN	9'	1
TW7NN	10'	1
TW7RN	12'	1
TW7SN	12'6"	1
TW7TN	15'	1

30° Sweep



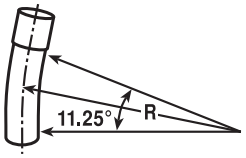
Part No. Gray	Bend Radius	Std. Ctn. Qty.
TP6FN	3'	1
TP6HN	4'	1
TP6JN	6'	1
TP6NN	10'	1
TP6RN	12'	1
TP6SN	12'6"	1
TP6TN	15'	1
(White):		
TW6FN	3'	1
TW6HN	4'	1
TW6JN	6'	1
TW6MN	9'	1
TW6NN	10'	1
TW6RN	12'	1
TW6SN	12'6"	1
TW6TN	15'	1

22½° Sweep



Part No. (Gray)	Bend Radius	Std. Ctn. Qty.
TP5DN	2'	1
TP5FN	3'	1
TP5HN	4'	1
TP5IN	5'	1
TP5JN	6'	1
TP5MN	9'	1
TP5RN	12'	1
TP5SN	12'6"	1
TP5TN	15'	1
TP5UN	20'	1
TP5VN	25'	1
(White):		
TW5DN	2'	1
TW5FN	3'	1
TW5HN	4'	1
TW5JN	6'	1
TW5MN	9'	1
TW5SN	12'6"	1

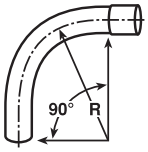
11¼° Sweep



Part No. (Gray)	Bend Radius	Std. Ctn. Qty.
TP3DN	2'	1
TP3FN	3'	1
TP3HN	4'	1
TP3IN	5'	1
TP3JN	6'	1
TP3SN	12'6"	1
(White):		
TW3DN	2'	1
TW3FN	3'	1
TW3HN	4'	1

E-Bends – Riser Ells

90° Sweep



Part No. (Gray Only)	Bend Radius	Std. Ctn. Qty.
TA9ENT (Belled End)	2' 6"	1
TA9FN (Plain End)	3'	1
TA9FNT (Belled End)	3'	1
TA9FNTL (Belled End-Long)	3'	1

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Couplings

Sleeve Coupling



No internal stop

Part No.	Size	Std. Ctn. Qty.
For Repair Work:		
E900N	4"x 6"	25
E900NU	4"x 12"	10
E900NW (White)	4"x 6"	25
Split Sleeve Couplings:		
E900NS	4"	25
E900NS8 (White)	4"x 8"	15
E900NSW (White)	4"	25
E900PS	5"	15
For Type D Duct Applications Only:		
E900DN (White)	4"	25

Molded Coupling



Internal Stop

Part No.	Size	Std. Ctn. Qty.
E908N	4"	25

5° Angle Coupling



Part No.	Size	Std. Ctn. Qty.
E914N	4"	15

Plugs

Plug with Pull Tab



Part No.	Size	Std. Ctn. Qty.
P258 NTB	4"	50

End Bells

Square to Round



Part No.	Size	Std. Ctn. Qty.
E903N	4" Sq.	4

Molded End Bell



Part No.	Size	Std. Ctn. Qty.
E917N	4"	10

Straight End Bell



Part No.	Size	Std. Ctn. Qty.
E907N	4" (5" long, 5.5" flare)	10
E907NY	4" (9" long, 5.75" flare)	1

(Designed for use with a coupling.)

Split End Bell (PVC)



Part No.	Size	Std. Ctn. Qty.
E9098NS	4"	1
E9098PS	5"	1

Adapters

Internal Adapter



Adapts Telephone Duct to Fiber Transite MCD

Part No.	Size	Std. Ctn. Qty.
E901N	4"	24
Split:		
E901NS	4"	24

Female Adapter



Adapts threaded metal pipe to Telephone Duct

Part No.	Size	Std. Ctn. Qty.
E902N	4"	10

Square Clay Tile Adapter



Part No.	Size	Std. Ctn. Qty.
Adapts Clay to Telephone Duct:		
E904M	3 1/4" to 4" x 18"	10
E904M12	3 1/4" to 4" x 12"	10
E904M8	3 1/4" to 4" x 8 1/2"	12
E904MM	3 1/2" to 3 1/2" x 18"	12
E904MX	3" to 4" x 18"	10
E904N	3 1/2" to 4" x 18"	10
E904N12	3 1/2" to 4" x 12"	12
E904N24	3 1/2" to 4" x 24"	10
E904N8	3 1/2" to 4" x 8"	10
Split Square Adapter:		
E904MS	3 1/4" x 4"	10
E904NS	3 1/2" to 4" x 18"	10

Cast Iron Adapter



Adapts Telephone Duct to Cast Iron Bends

Part No.	Size	Std. Ctn. Qty.
E906N	4"	1

Round Clay Tile Adapter



Part No.	Size	Std. Ctn. Qty.
E923NM	4" to 3 1/4"	10

P&C Duct® Adapter



Adapts Telephone Duct to P&C Duct (IPS)

Part No.	Size	Std. Ctn. Qty.
E913N	4"	15
E913NF	4"	15

Reducers

P&C Duct® Reducer



Adapts Telephone Duct to P&C Duct (IPS)

Part No.	Size	Std. Ctn. Qty.
E908NM	4" to 3 1/2"	15



Wye Branch



For starting lateral runs:

Part No.	Size	Std. Ctn. Qty.
E916N	4"	1
E916NW (White)	4"	1
Split:		
E916NS	4"	1
E916NSW (White)	4"	5

Expansion Joints

Expansion Joint - Type D



Part No.	Size	Std. Ctn. Qty.
E905N	4"	5
E905NL (Long)	4"	1

Physical Properties of P&C® Duct by ASTM Test Methods

Property	ASTM No.	Typical Values P&C® Duct	Telephone Duct
Tensile strength, psi	D638	4,800	4,800
Modulus of elasticity in tension, psi	D638	500,000	500,000
Flexural strength, psi	D790	11,000	11,000
Deflection temp under load at 265 psi deg. C	D648	72°C	72°C
Coefficient of thermal expansion in/in/°F	D696	3.30×10^{-5}	3.30×10^{-5}
Coefficient of static friction		.20	.20

Collapse Pressure of P&C Duct Materials (PSI)

2" EB-20	–	11.2	5" EB-20	–	5.9
2" EB-35	–	11.2	5" EB-35	–	10.3
2" DB-60	–	11.2	5" DB-60	–	18.9
2" DB-120	–	26.6	5" DB-120	–	38.2
3" EB-20	–	6.6			
3" EB-35	–	8.2	6" EB-20	–	6.1
3" DB-60	–	15.2	6" EB-35	–	11.2
3" DB-120	–	34.0	6" DB-60	–	19.6
4" EB-20	–	6.7	6" DB-120	–	38.0
4" EB-35	–	9.2			
4" DB-60	–	17.0			
4" DB-120	–	36.6			

Collapse Pressure of Telephone Duct Materials (PSI)

Type B Duct	–	9.2
Type C Duct	–	36.6
Type D Duct	–	36.6

Performance Properties of P&C Duct as Indicated per NEMA Standard TC-6 & 8 and ASTM F-512

Pipe Stiffness lb/in/in

Conduit Series	Minimum Pipe Stiffness (F/Δy), all sizes
EB-20	20
EB-35	35
DB-60	60
DB-100	100
DB-120	120

Minimum Impact Resistance at 0°C (32°F) ft • lbf

Nominal Size	Conduit Series EB-20	EB-35	DB-60	DB-100	DB-120
1	–	–	–	–	10
1 1/2	–	–	10	–	15
2	20	20	20	–	25
3	20	30	40	45	50
3 1/2	20	35	50	60	65
4	25	40	60	70	80
5	30	55	85	100	110
6	40	75	120	135	150

Performance Properties of Telephone Duct as Indicated per NEMA Standard TC-10

Pipe Stiffness F/Δy lb/in/in

Nominal Size	B-Duct	HWB	C-Duct	D-Duct
All	30	40	120	120

Minimum Impact Resistance at 32°C

B-Duct ft. lb.	C-Duct ft. lb.	D-Duct ft. lb.
25	50	50

Typical Installation Practices for P&C® Duct Type EB and Telephone Duct Type B

RUS Listed

Trenching:

Whenever possible the walls of the trench for P&C Duct should act as forms for concrete encasement. The trench should be made no wider than necessary to provide the nominal size concrete thickness.

Duct Spacing:

Duct spacing, both vertical and horizontal, is accomplished with the use of Carlon PVC Snap-Loc® Spacers. Recommended interval between spacer assemblies is 8 to 10 feet.

Terminating:

For smooth cable pulling and properly engineered terminations into manholes, Carlon P&C Duct end bells should be used.

Concrete:

The concrete used with P&C Duct should be 3/8" aggregate with a nominal compressive strength of 2,500 lbs. per square inch. The slump should be at the upper end of the range, preferably 7 to 8 inches. It should have just enough slump to flow to the bottom of the formation and yet not be so wet as to cause the ducts to float. In placing concrete around P&C Duct, adjust the delivery chute so the fall of the concrete into the trench is minimal. Use a splash board to divert the flow of concrete away from the trench sides and avoid dislodging soil and stones.



Pressure Grouting:

This technique is used for ducts in a casing or bored construction. Hydraulic pressure exceeding 25 psi is common and thus dictates the use of a P&C Duct Type DB-120 or a Schedule 40® product. (See collapse pressure chart). Hydraulic pressure from grouting is a function of the line pressure at the nozzle and back pressure created by pumping. If the exhaust nozzle isn't withdrawn properly, the back pressure will rapidly build and equal the line pressure. Depending on the type casing and pumping distance, line pressures will go up to 90 psi.

Hydraulic Pressure:

The primary consideration for duct selection is the height of the duct bank. Since concrete exerts a force of 1.03 psi per foot of height, to determine the correct duct selection, consider the following examples:

1. 16 way duct bank, 5" conduit, 4 x 4 configuration with 3" separation, and 3" concrete cover

Concrete Height – 4 x 5.563" + 4 x 3 =
22.5 + 12" = 34.2"

Hydraulic Pressure – (34.2"/12) x 1.03 = 2.9 psi

In this instance the maximum force on the bottom ducts would be 2.9 psi, therefore, 5" EB-20 would be a satisfactory choice.

2. 16 way duct bank, 5" conduit, 8 x 2 configuration with 3" separation, and 3" concrete cover.

Concrete Height – 8 x 5.563" + 8 x 3 =
44.5 + 24" = 68.5"

Hydraulic Pressure — (68.5"/12) x 1.03 = 5.9 psi

In this instance the hydraulic force is equal to the theoretical collapse pressure of 5" EB-20, therefore, the use of 5" EB-35 or DB-60 would be a satisfactory choice.

Another alternative would be to use a sequential pour technique. Pour approximately 1/2 the height, allow the concrete to set-up, and then pour the remaining distance. Using this method, 5" EB-20 would be satisfactory, since the hydraulic pressure has been reduced by 50%.

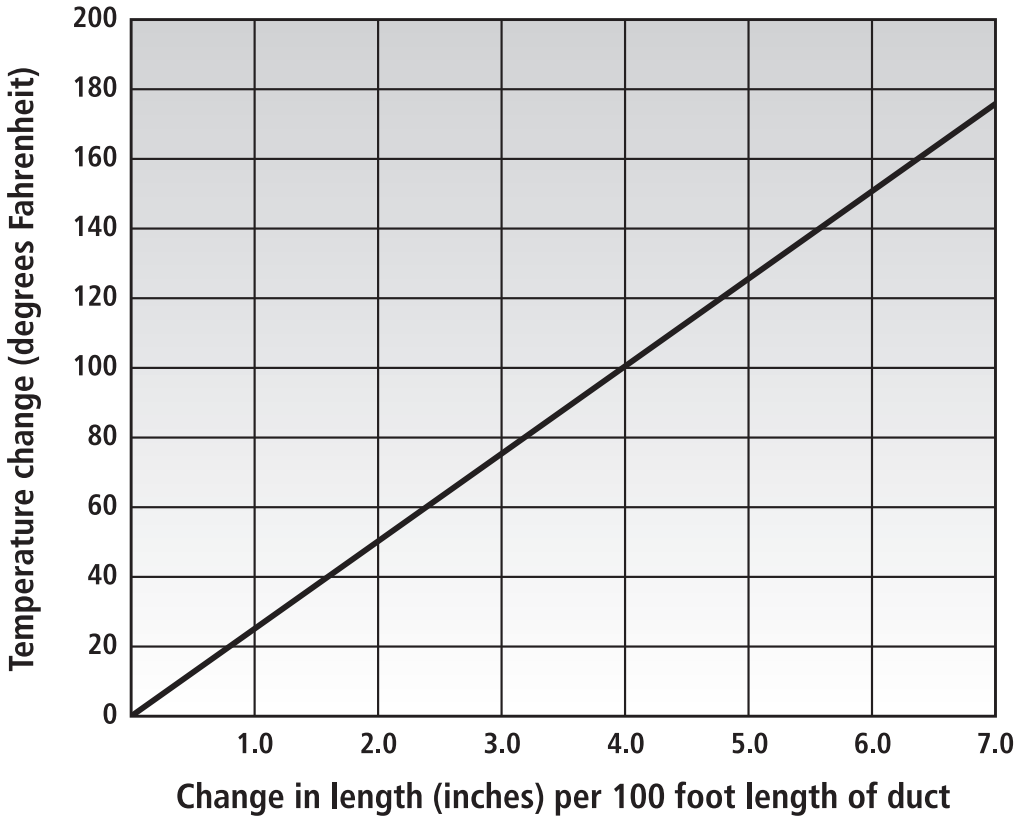
Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Expansion & Contraction

When duct temperature variations are anticipated during the installation of Carlon P&C® Duct and Telephone Duct, allow extra duct footage at each tie-in for contraction. Terminated duct runs should be covered with backfill from tie-in point toward the end of the duct run. If the trench must be left open, don't terminate the run. All plastic duct may expand or contract as concrete is poured and cured. When placing concrete encasement, always encase from one end of the duct section toward the other end of the section, to allow the free end to move. Never encase from each end of the section toward the center.

The coefficient of thermal expansion of Carlon P&C Duct and Telephone Duct is 3.30 x 10^{-5} in/in/°F. The following chart indicates what expansion or contraction can be expected at various temperature changes.

Expansion/Contraction Chart



Bridge Crossings and Exposed Applications

Type D Telephone Duct is designated specifically for use in bridge crossings and exposed applications. Using the expansion/contraction chart, calculate the number of expansion joints required. Expansion joints provide a 6" allowance for expansion/contraction. Utilize one expansion joint for each 100 feet of exposed length for most installations. The duct should be free to move during expansion/contraction; the barrel should be securely clamped and the piston should be aligned properly with the barrel for easy movement.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® P&C Flex® Corrugated Flexible Conduit

Non-UL Listed



Carlon P&C Flex nonmetallic corrugated flexible conduit is designed specifically for power and communications applications when protecting or replacing cable. Produced to IPS dimensions, Carlon P&C Flex is grey in color and formulated for sunlight resistance.

The corrugated design of P&C Flex provides maximum flexibility for easy handling and installation. It is perfect for a wide range of applications from underground residential communication raceway to under bridge or roadway conduit. P&C Flex provides adaptability in the field since it may be used with existing conduits, couplings, adapters, end bells and plugs in virtually any configuration.

- Storage: -4°F to 158°F
- Handling: -4°F to 104°F



Round Wooden Reel

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt./Reel (lbs.)	I.D.	O.D.
11810-250	1 1/2"	250 Ft.	78.5	1.570	1.900
11810T-250 (Tape)	1 1/2"	250 Ft.	110.0	1.570	1.900
11811-250	2"	250 Ft.	129.5	2.045	2.375
11811T-250 (Tape)	2"	250 Ft.	131.5	2.045	2.375

Edge Brace Reel

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt./Reel (lbs.)	I.D.	O.D.
11808-5200	1"	5200 Ft.	1144	1.000	1.315
11809-4500	1 1/4"	4500 Ft.	927	1.340	1.660
11810-4500	1 1/2"	4500 Ft.	1148	1.570	1.900
11810T-2300 (Tape)	1 1/2"	2300 Ft.	405	1.570	1.900
11811-700	2"	700 Ft.	280	2.045	2.375
11811-1100	2"	1100 Ft.	270.60	2.045	2.375
11811-2500	2"	2500 Ft.	1005	2.045	2.375
11812-250	2 1/2"	250 Ft.	172	2.469	2.875
11812AG-001	2 1/2"	1300 Ft.	658	2.469	2.875
11813-250	3"	250 Ft.	248	3.068	3.500
11813-500	3"	500 Ft.	193	3.068	3.500
11813-750	3"	750 Ft.	724	3.068	3.500
11813-1200	3"	1200 Ft.	1122	3.068	3.500
11815-250	4"	250 Ft.	323.5	4.026	4.500
11815-800	4"	800 Ft.	811	4.026	4.500

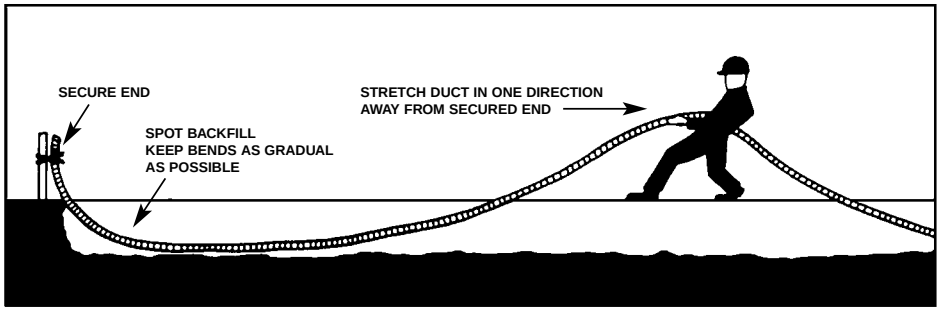
Detectable Tape

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt./Reel (lbs.)	I.D.	O.D.
11808D-2700	1"	2700 ft.	500	1.000	1.315
11808D-5200	1"	5200 ft.	1144	1.000	1.315
11809D-4500	1-1/4"	4500 ft.	927	1.340	1.660
11810D-4500	1-1/2"	4500 ft.	1148	1.570	1.900
11811D-2500	2"	2500 ft.	1005	2.045	2.875
11813D-1200	3"	1200 ft.	1122	3.068	3.500
11815D-800	4"	800 ft.	1007	4.026	4.500

Performance Properties

	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
Stiffness F/Δy at 5% deflection	500	200	200	200	130	130	90
Impact Strength (Ft./Lbs.) 72°	40	40	50	50	70	120	140
Impact Strength (Ft./Lbs.) 32°	8	8	15	25	35	60	60
Minimum Bending Radius (inches)	6	6	7	8	12	15	18
Conduit Tensile Strength	300	400	500	700	1000	1500	2000

P&C Flex® Corrugated Flexible Conduit Installation Techniques



1. Trenching

Trench should be graded true and free from stones or soft spots. Backfill should also be free of stones and be firmly tamped around the sides of the conduit, to develop maximum supporting strength. Tamping on top of the conduit is not recommended.

2. Backfill

In rocky soil where it is impossible to have an even trench bottom, a selected backfill should be put in before laying the conduit. Selected backfill (not tamped) at least 6" over the top of the conduit is recommended. After final backfill is placed, taming may be used to finish the grade.

3. Duct Placement

Duct may be unreeled directly into trench or along side trench and subsequently placed in trench. After placing in trench, secure one end and stretch it by hand to take up the slack. Spot backfill to hold in position. Do not use mechanical stretching equipment.

4. Changes in Direction

Avoid unnecessary turns, dips, or changes in direction. Keep bends as gradual as possible to assure ease of cable pull-in after duct installation.

5. Pneumatic Rodding

All commonly used vacuum or pressure can be used to rod P&C Flex. The line carrier (mouse, puck, rocket) should be soft, flexible material designed to fit snugly into duct without interference.

6. Mechanical Rodding

All commonly used mechanical rodding equipment can be used to rod P&C Flex. The tip should have a ball-type arrangement to keep rod from catching in the convolutions on the inside of duct.

P&C Flex® Conduit Fittings

Couplings



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E940H	1 1/2"	25	4
E940J	2"	30	5
E940K-CAR	2 1/2"	4	2
E940L-CAR	3"	5	3
E940M	3 1/2"	20	13
E940N-CAR	4"	5	4

Plugs



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
P258H	1 1/2"	50	2
P258JT	2"	60	3
P258K	2 1/2"	25	2
P258LT	3"	30	3
P258NT	4"	48	8

Bell Ends (Schedule 40)



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E997H-CAR	1 1/2"	10	.9
E997J-CAR	2"	10	1.2
E997K-CAR	2 1/2"	10	1.9
E997L-CAR	3"	10	2.1
E997M	3 1/2"	40	10.2
E997N	4"	30	10.7

Female Adapters



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E942H	1 1/2"	25	3
E942J	2"	30	6
E942K-CAR	2 1/2"	4	1.4
E942L-CAR	3"	3	1.5
E942M	3 1/2"	20	12
E942N-CAR	4"	7	5

Terminal Adapters



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E943H	1 1/2"	25	3
E943J	2"	5	7
E943K-CAR	2 1/2"	5	1.2
E943L-CAR	3"	5	2
E943M	3 1/2"	30	14
E943N-CAR	4"	5	3

RUS Listed

Carlon® PV-Mold® Nonmetallic Pole Riser System

Carlon PV-Mold is a nonmetallic pole riser system designed to protect communications power cable installed on poles.

Features:

- Meets or exceeds requirements outlined in the National Electric Safety Code (NESC).
- Designed in accordance with NEMA TC-19 specifications.
- Ultraviolet, cold temperature and corrosive atmosphere resistant.
- Schedule 40 wall meets Schedule 80 PVC conduit impact requirements per NEMA TC-19.
- No grounding required.
- Belled end fits over each added section or conduit.
- Flame retardant.
- Requires no maintenance.
- PV-Mold acts as an insulator against electrical shock.
- Interchangeable parts and accessories to match the needs of specific requirements.



Steel U-Guard requires grounding strapping and does not have belled ends.



PV-Mold has belled ends, flanged design and does not require grounding.

Standard Duty

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	Dimensions A	B	C	H	Actual Impact @ 0°C 20 Pound Tup
59208N	1"	294	1059	0.100"	1 5/8"	2 3/8"	1 5/8"	40 Ft.-Lbs.
59211N	2"	136	726	0.100"	2 3/8"	4 1/2"	2 3/8"	100 Ft.-Lbs.
59213N	3"	66	761	0.150"	3 1/2"	6"	3 1/2"	110 Ft.-Lbs.
59215N	4"	65	910	0.150"	4 1/2"	6 1/2"	4 1/2"	110 Ft.-Lbs.
59216N	5"	30	515	0.150"	5 1/2"	7 1/2"	5 1/2"	110 Ft.-Lbs.

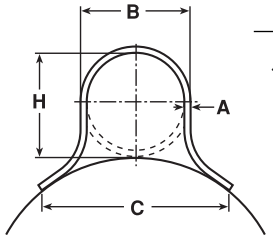
Heavy Duty Schedule 40

59010N	1 1/2"	200	1142	0.145"	1 29/32"	3 1/2"	1 29/32"	100 Ft.-Lbs.
59011N	2"	136	1214	0.154"	2 3/8"	4 1/2"	2 3/8"	150 Ft.-Lbs.
59013N	3"	66	937	0.216"	3 1/2"	6"	3 9/32"	150 Ft.-Lbs.
59015N	4"	65	1621	0.237"	4 1/2"	6 1/2"	4 1/2"	260 Ft.-Lbs.
59016N	5"	30	870	0.258"	5 1/2"	7 1/2"	5 1/2"	260 Ft.-Lbs.
59017N	6"	30	1160	0.280"	6 5/8"	8 3/4"	6 5/8"	260 Ft.-Lbs.

Extra Heavy Duty Schedule 80

59411N	2"	136	1549	0.218"	2 3/8"	4 1/2"	2 3/8"	300 Ft.-Lbs.
59413N	3"	66	1495	0.300"	3 1/2"	6"	3 1/2"	525 Ft.-Lbs.

Flanged Overall Length 10 Feet, Including Bell



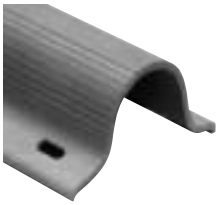
Size	Depth of Bell
1"	2 - 2 1/4"
1 1/2"	2 - 2 1/4"
2"	2 - 2 1/4"
3"	3 - 3 1/4"
4"	4 - 4 1/4"
5"	4 - 4 1/2"
6"	5 - 5 1/2"

Slots are 1/2" from side to side, and allow for expansion and contraction.

Slot Dimensions: for sizes 2" through 6" are 5/16" wide, 3/4" long.

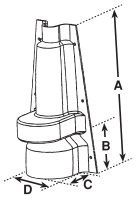
Slot Dimensions: for 1" and 1 1/2" are 3/16" wide, 3/4" long.

Slot Spacing: 18" from center, beginning 6" from end.



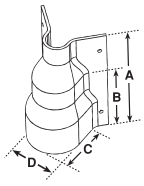
PV-Mold® System Accessories





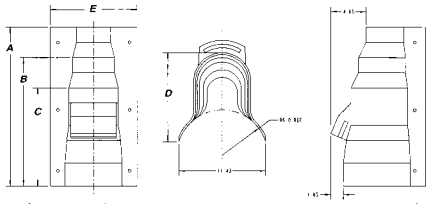
Polyethylene Vented Boots and Adapters





Vented Boots

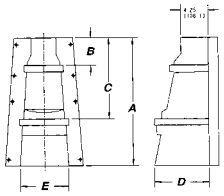
Part No.	Size	Dimensions A	B	C	D	Std.Ctn. Qty.	Std.Ctn. Wt. (lbs.)
E938JR	2" x 6"	20.50	5.38	6.14	6.88	4	13.58
E938NT	4" x 8"	21.00	15.00	11.31	9.76	4	16.67



Part No.	Size	Dimensions A	B	C	D	E	Std.Ctn. Qty.	Std.Ctn. Wt. (lbs.)
E938NRR	4" x 6"	20.87	16.57	12.87	11.68	11.43	1	7

Adapters

Part No.	Size	Dimensions A	B	C	D	Std.Ctn. Qty.	Std.Ctn. Wt. (lbs.)
E939JN	2" x 4"	11.00	6.75	5.88	5.07	8	10.57
E939NR	4" x 6"	11.00	6.75	7.08	7.13	6	8.00



Part No.	Size	Dimensions A	B	C	D	E	Std.Ctn. Qty.	Std.Ctn. Wt. (lbs.)
E939NRT	4" x 6"	19.75	4.25	12.50	8.50	7.40	1	5

Note:
1. A field cut may be needed to accommodate different boot or adapter to Carlon U-Mold size combinations.
2. Recommendation: 2 sets of mounting holes per boot/fitting. To add mounting holes, use a 3/8" drill bit and drill out where needed.
3. When 3" or smaller conduit is being used, it's recommended that the bottom (largest section) of the boot or adapter section be buried 2" to 3" below ground surface.

Couplings



Part No.	Size/Description	Std. Ctn. Qty.	Std. Ctn Wt. (lbs.)
E966JJ	2"x2" Sch. 80 Double Belled Coupling	10	9

Duct to Riser Fitting



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E939NL	4" x 3"	15	5.6
E939N	4" x 4"	15	5.3

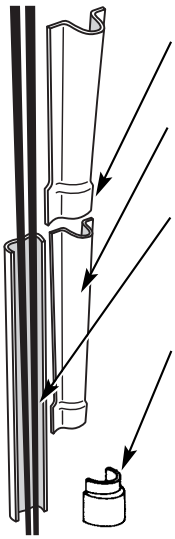
Backing Plate



Part No.	Size	Dimensions A	B	C	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
59111	2"	1/16"	13/16"	2 1/8"	1	1.2
59113	3"	1/16"	1 5/16"	3 1/8"	1	1.5
59115	4"	1/16"	1 5/16"	4 1/8"	1	3.0
59116	5"	1/16"	1 3/4"	5 1/4"	1	3.1
59117	6"	1/16"	1 5/8"	6 1/16"	1	4.2

Installation is easy with PV-Mold pole risers:

1. Install ventilator or duct to riser fittings at the base of the pole.
2. Nail backing plate sections to the surface of the pole. Three nail holes are provided in each section. Place the "U" sections over the cable and backing plate, with belled end at the bottom, and attach using 1/4" lag bolts.



Flanged

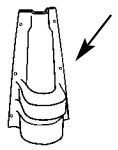
Exclusive Bell End
For easy and quick installation. (No additional coupler required.)

10' Lengths
Safe and light for easy handling during installation.

Backing Plate
Provides cable isolation from the pole.

Two Riser Fittings Available

Duct to riser fitting
Adapts duct to PV-Mold.

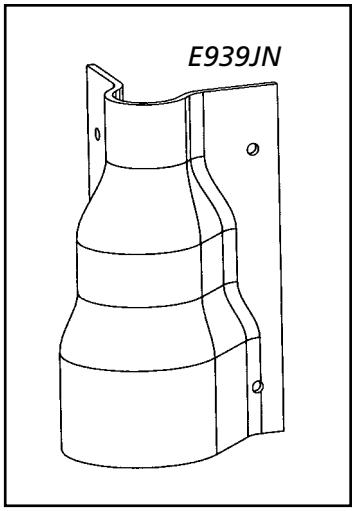


Ventilator Fitting
Used for a "chimney" effect to cool cable and increase ampacity.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Field Installation Instructions for Carlon PV-Mold Adapters

For Adapters (E939JN, E939NR, E939NRT)

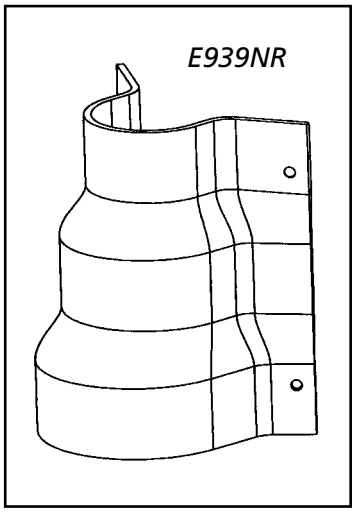


E939JN

To transition from 4" Conduit to 2" PV-Mold
Place Adapter over conduit, attach to pole using the top and bottom mounting holes, place PV-Mold over top section of Adapter and secure PV-Mold to pole.

To transition from 4" Conduit to 3" PV-Mold
Measure 6.3" up from bottom (large end) of adapter and cut.
Assemble to pole as described above.

To transition from 3" Conduit to 2" PV-Mold*
Measure 4.75" up from bottom (large end) of adapter and cut.
Assemble to pole as described above.



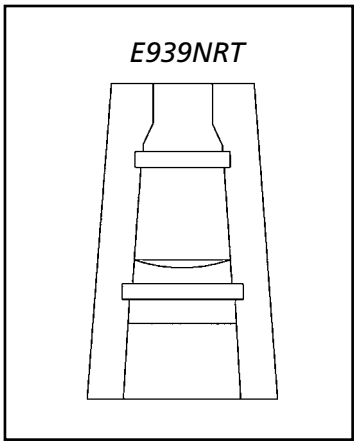
E939NR

To transition from 5" Conduit to 4" PV-Mold
Place Adapter over conduit, attach to pole using the top and bottom mounting holes, place PV-Mold over top section of Adapter and secure PV-Mold to pole.

To transition from 6" Conduit to 5" PV-Mold
Measure 7.25" up from bottom (large end) of adapter and cut.
Assemble to pole as described above.

To transition from 5" Conduit to 5" PV-Mold*
Measure 4.5" down from the top of adapter and cut.
Assemble to pole as described above.

**For these transitions it is not necessary to cut the Adapter if desired. If the Adapter is not modified, it is recommended that the bottom 3" of the Adapter be buried below grade.*



E939NRT

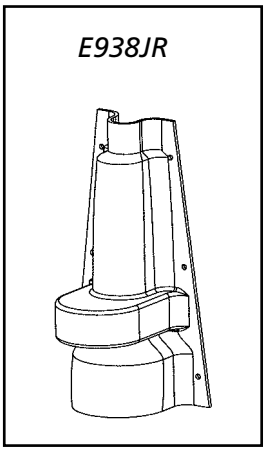
To transition from 6" Conduit to 4" PV Mold
Place Adapter over conduit and attach to pole using the top and bottom mounting holes. Place PV Mold over top section of Adapter and secure PV Mold to pole

To transition from 6" Conduit to 5" PV Mold
Measure 5.25" down from the top of the adapter and cut.
Assemble to pole as described above.

To transition from 6" Conduit to 6" PV Mold
Measure 9.5" up from the bottom of the adapter and cut.
Assemble to pole as described above.

Field Installation Instructions for Carlon PV-Mold Vented Boots

For Vented Boots (E938JR, E938NT, E938NRR)



E938JR

To transition from 6" or smaller Conduit to 2" PV-Mold

Place Vented Boot over conduit, attach to pole using the top and bottom mounting holes, place PV-Mold over top section of Vented Boot and secure PV-Mold to pole.

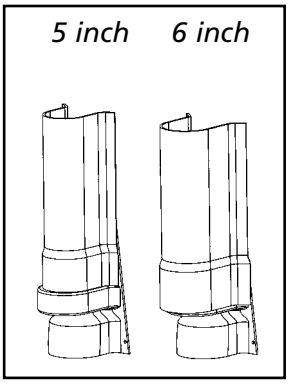
It is recommended that for conduit sizes smaller than 6" the bottom 3" of the Boot be buried below grade.

To transition from 6" or smaller Conduit to 3" and larger PV-Mold

For 3" PV-Mold: Measure 3.75" from the TOP of the Boot and cut. Place the Boot over the Conduit and attach to the pole. Place belled end of PV-Mold over the top end of the boot and secure.

For 4" and 5" PV-Mold: Measure 12" up from the BOTTOM of the Boot and cut. Place the Boot over the conduit and attach to the pole. Place the Belled end of the PV-Mold AGAINST the top edge of the vent protrusion and secure to the pole.

For 6" PV-Mold: Measure 12" up from the BOTTOM of the Boot and cut. Place the Boot over the conduit and attach to the pole. Place the Belled end of the PV-Mold OVER the vent protrusion and secure to the pole.



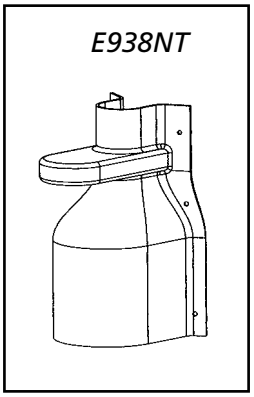
E938NT

To transition from 6" to 8" Conduit to 4" PV Mold

Place Boot over conduit and attach to the pole using the mounting holes. Place PV Mold over top section of Vented Boot and secure to the pole.

It is recommended that for conduit sizes smaller than 8", the bottom 3" of the boot be buried below grade.

The E938NT can also be used to transition multiple smaller conduits to PV Mold.



ADDITIONAL PV-MOLD COMPONENTS

To transition directly from conduit to PV-Mold use Duct to Riser Fittings

E939NL Transitions 4" Conduit to 3" PV-Mold

E939N Transitions 4" Conduit to 4" PV-Mold

When additional insulation is required between the pole and cables, use PV-Mold Backing Plates:

59111	2"	59115	4"	59117* 6"
59113	3"	59116	5"	

**Indicates non-stock factory Made-to-order items*

E938NRR

To transition from 6" or smaller conduit to 4" PV Mold

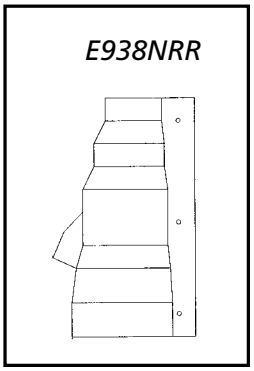
Place Vented Boot over conduit and attach to pole using the top and bottom mounting holes. Place PV Mold over top section of Vented Boot and secure PV Mold to pole

To transition from 6" or smaller conduit to 5" PV Mold

Measure 4.125" down from the top of the vented boot and cut.
Assemble to pole as described above.

To transition from 6" or smaller conduit to 6" PV Mold

Measure 8.25" down from the top of the vented boot and cut.
Assemble to pole as described above.



Slip Meter Risers

Carlon® Slip Meter Risers are designed for use in electrical service entrance applications. They provide solutions for applications requiring a non-rigid connection, with incoming service conduit diameters ranging from 2" to 4".

The Slip Meter Risers are fitted with a terminal adapter for easy installation at the service entrance location, and provide a low-cost method to comply with NEC 300.5(J), which requires protection for buried cables in areas subject to ground movement due to frost or trench settling.



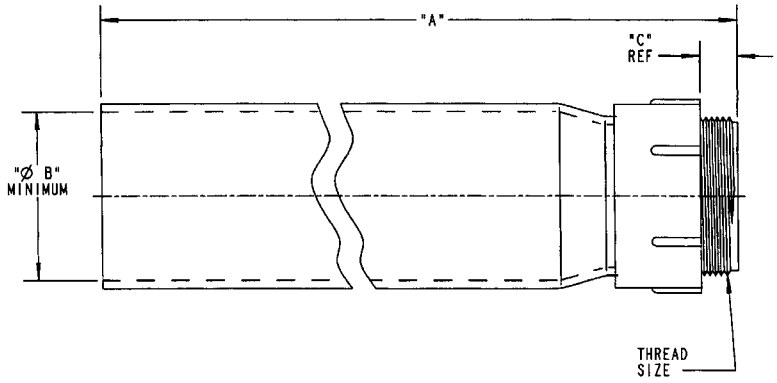
Features:

- Designed to provide faster and easier underground service entrance installations.
- Provides cable protection from ground movement.
- Accommodates incoming service conduit diameters ranging from 2" to 4".
- Fitted with Terminal Adapters for easy installing.
- Allows ground water in raceway system to drain.
- Complies with NEC 300.5(J)

Slip Meter Riser Specifications

Part Number	Size	A Length	B (Minimum)	C	Thread Size	Std. Carton Qty.	Std. Carton Wt. (lbs.)
E954JXX	2"	24.00	2.024	.825	2" NPT	20	46
E954JXS (split)	2"	24.00	2.024	.825	2" NPT	1	2.2
E954KXX	2 1/2"	24.00	2.418	.812	2 1/2" NPSC	10	28
E954LXX	3"	24.00	3.012	.798	3" NPSC	10	35
E954LXS (split)	3"	24.00	3.012	.798	3" NPSC	10	36
E954NXX	4"	24.00	5.060	.773	4" NPSC	5	23





Article 300 Wiring Methods

(J) Ground Movement. Where direct buried conductors, raceways, or cables are subject to movement by settlement or frost, direct buried conductors, raceways, or cables shall be arranged to prevent damage to the enclosed conductors or to equipment connected to the raceways.

(FPN): This section recognizes "S" loops in underground direct burial to raceway transitions, expansion joints in raceway risers to fixed equipment, and, generally, the provision of flexible connections to equipment subject to settlement or frost heaves.

Carlon® Split Duct

Carlon Split Duct is the fast and easy way to repair broken ductwork without the costly cutting and resplicing of your conductors.

Our unique tongue-and-groove design leads the industry in providing a strong, rigid solution for duct repair situations.

The interlocking design allows the split duct sections to be staggered and butted together. Joints may be sealed with tape and reinforced with plastic or metallic straps to produce a rigid, stable unit.

Manufactured from a compound designed specifically for power and telecommunications applications, Carlon Split Duct exhibits superior impact strength and ultraviolet resistance.

Available in 2" through 6" diameters, this product line also contains couplings and sweeps necessary to complete the system.



The fast and easy method of installing duct around existing cable for repair and temporary installations.

Recommended Installation Procedure

1. Place one 10-foot Split Duct section under cable.

2. In order to stagger joints, saw another section in half (about 5 feet long).

3. Place 5-foot sectIon over cable and snap the two sections together.

4. Place strap about one foot from the end and another strap about a foot from the joint where the ends of the top sections will butt.

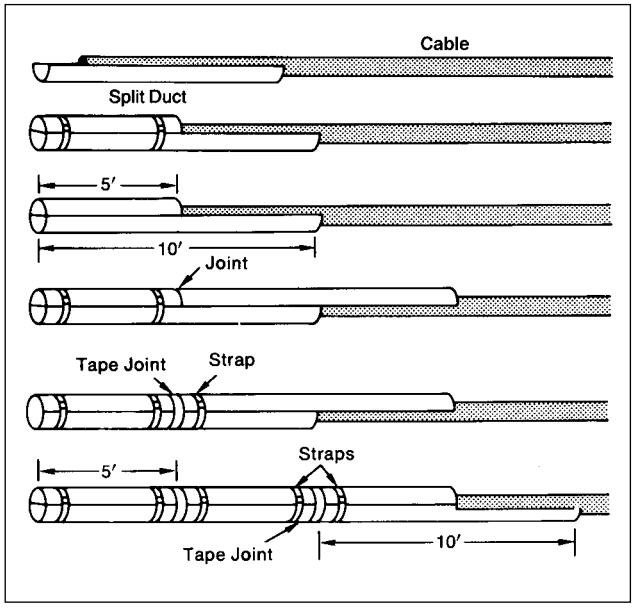
5. Place another 10-foot Split Duct section over the open half of the bottom section, butt the ends tightly together and snap the sections together.

6. Place a length of tape around both sections of the Split Duct to cover the butted joint.

7. Place a strap about one foot beyond the taped joint.

8. Lay another length of Split Duct underneath cable, butt together, tape the butted joint and strap one foot on each side of the joint.

9. Repeat procedure.





Split Duct



Split Sleeve Coupling
For joining Split Duct to existing duct.

Split Duct

Part Number	Description	Std. Ctn. Qty.	Std. Ctn. Wt.(lbs.)	O.D.
Schedule 40				
49011SD-010	2" Schedule 40 Split Duct	700	564	2.375
49012SD-010	2 1/2" Schedule 40 Split Duct	460	572	2.875
49013SD-010	3" Schedule 40 Split Duct	500	857	3.500
49014SD-010	3 1/2" Schedule 40 Split Duct	290	569	4.000
49015SD-010	4" Schedule 40 Split Duct	290	701	4.500
49016SD-010	5" Schedule 40 Split Duct	230	751	5.563
49017SD-010	6" Schedule 40 Split Duct	130	548	6.625
Schedule 80				
49411SD-010	2" Schedule 80 Split Duct	700	749	2.375
49415SD-010	4" Schedule 80 Split Duct	290	922	4.500
C Duct				
68515SD-010	4" C Duct Split Duct	320	614	4.350

Split Sleeve Coupling

Part Number	Size	Description	length	Split	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
Schedule 40 and 80						
E200JS6	2"	Split Coupling	6"	1	25	9
E200KS7	2 1/2"	Split Coupling	7"	1	25	21
E200LS7	3"	Split Coupling	7"	1	25	17
E200LSS	3"	Split Coupling	6.5"	2	25	10
E200MS8	3 1/2"	Split Coupling	8"	1	25	20
E200NS8	4"	Split Coupling	8"	1	15	16
E200NSS	4"	Split Coupling	6"	2	25	17
E200PS8	5"	Split Coupling	8"	1	15	25
E200PS9	5"	Split Coupling	9"	1	8	12
E200RS1	6"	Split Coupling	10"	1	6	17
C Duct						
E900NS8 (White)	4"	C Duct Split Coupling	8"	1	15	19
E900NSW (White)	4"	C Duct Split Coupling	6"	1	25	24



Split Duct Sweeps

Split Duct Sweeps

Segment	Part No.	Nom. Size	Radius (in.)	Std.Ctn. Qty.	Std. Ctn. Wt. (lbs.)
45° Sweep	UA7DJSD	2"	24"	1	1.4
	UA7FJSD	2"	36"	1	2.1
	UA7FLSD	3"	36"	1	4.7
	UA7HJSD	2"	48"	1	2.7
	UA7HLSD	3"	48"	1	6.1
	UA7IJSD	2"	60"	1	3.2
	UA7ILSD	3"	60"	1	7.2
	UA7INSD	4"	60"	1	10.2
22 1/2° Sweep	UA5INSD	4"	60"	1	6.1
11 1/4° Sweep	UA3IJSD	2"	60"	1	1
	UA3ILSD	3"	60"	1	3.6
	UA3INSD	4"	60"	1	5.1

Two 45° Elbows may be segmented for 90°.

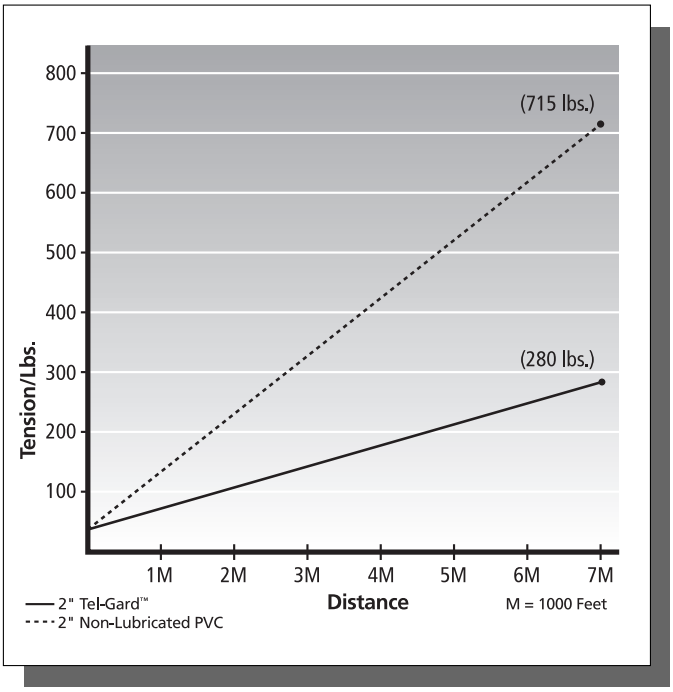
Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

RUS Listed

Carlon® Tel-Gard™ Pre-Lubricated Conduit

Carlon offers factory applied lubricant, field tested and proven. Increase the pulling distance – reduce the cost... and the mess. Designed specifically for copper, coax and fiber optic cabling.

Tel-Gard is pre-lubricated at the factory to ensure a consistent and even coating compared to field applied lubricant.



Calculated using MDPE F/O cable (Wgt.= .11 lbs./ft.)

Features:

- Entire duct run is thoroughly lubricated
- Applied lubricant exceeds Bellcore minimum co-efficient of friction requirements using TR-TSY-000356 test procedure using MDPE FO cable
  - ▲ Non-lubricated .31
  - ▲ Tel-Gard™ Pre-lubricated .068
- Reduce risk of pulling tension damage to cable
- Increase pulling distance between pull points
- Reduce expense of field applying lubricant
- Will not evaporate, enhancing repullability
- Will not stress crack cable
- Compatible with other field applied lubricants if mixed

Tel-Gard™ Prelubricated PVC Conduit

Part No	Description	Nom. Size	Min. I.D.	Max O.D.	Stiffness	Wgt. per 100	Length	Std. Crate Qty.
C-Duct Meets NEMA TC-10								
68515WL-020	Type C Direct Bury White	4"	4.020	4.350	120	145	20'	1260'
68515PL-020	Type C Direct Bury Grey	4"	4.020	4.350	120	145	20'	1260'
High Performance Exceeds NEMA TC-6 & 8								
59810L-020	Type High Performance DB Grey	1 1/2"	1.657	1.900	600	40	20'	3600'
59813L-020	Type High Performance DB Grey	3"	3.136	3.500	310	123	20'	2000'

Tel-Gard™ Prelubricated PVC Bends

Type C – White

Segment	Part No.	Nom. Size	Radius (in.)	Std. Ctn. Qty.
90° Sweep	TW9DNL	4"	24"	1
	TW9FNL	4"	36"	1
	TW9HNL	4"	48"	1
45° Sweep	TW7DNL	4"	24"	1
	TW7FNL	4"	36"	1
30° Sweep	TW6TNL	4"	180"	1
22 1/2° Sweep	TW5DNL	4"	24"	1

DB120 – Grey

Segment	Part No.	Nom. Size	Radius (in.)	Std. Ctn. Qty.
90° Sweep	PH9DJL	2"	24"	1
	PH9FJL	2"	36"	1
	PH9DLL	3"	24"	1
	PH9FNL	4"	36"	1

Carlon® Cement

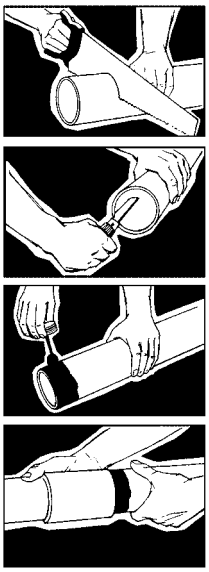
(MSDS sheets available at www.carlon.com)

		Recommended pipe application and sizes	Set-up time (Evaporation Rate)	Recommended installation temperature	Lap Shear @ 73˚F	Viscosity at 75˚ as manufactured
	**Medium Bodied Clear PVC Solvent Cement with dauber** Part No. / Size / Std. Ctn. Qty. VC9964 / 1/2 Pint / 10 VC9963 / Pint / 24 VC9962 / Quart / 12 VC9961P / Gallon / 6	Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus® Blue™ ENT (Electrical Nonmetallic Tubing.) Up through 6" diameter.	**10˚-30˚F** Not recommended **30˚-50˚F** 5-6 minutes **50˚-70˚F** 3-4 minutes **70˚-90˚F** 1-2 minutes	40˚ to 100˚F	**2 hrs.** 350 psi **16 hrs.** 800 psi **72 hrs.** 1,500 psi	500-900 cps
	**Medium Bodied Gray PVC Solvent Cement with dauber*** Part No. / Size / Std. Ctn. Qty. VC9924-24 / 1/2 Pint / 24 VC9923 / Pint / 24 VC9922 / Quart / 12 VC9941P / Gallon / 6	Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus® Blue™ ENT (Electrical Nonmetallic Tubing.) Up through 6" diameter.	**10˚-30˚F** Not recommended **30˚-50˚F** 5-6 minutes **50˚-70˚F** 3-4 minutes **70˚-90˚F** 1-2 minutes	40˚ to 100˚F	**2 hrs.** 350 psi **16 hrs.** 800 psi **72 hrs.** 1,500 psi	500-900 cps
	**All-Weather "Quick-Set" Clear Solvent Cement with dauber*** Part No. / Size / Std. Ctn. Qty. VC9984 / 1/2 Pint / 10 VC9983 / Pint / 24 VC9982 / Quart / 12 VC9981P / Gallon / 6	Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus® Blue™ ENT (Electrical Nonmetallic Tubing.) Up through 6" diameter.	**10˚-30˚F** 4-5 minutes **30˚-50˚F** 3-4 minutes **50˚-70˚F** 1-2 minutes **70˚-90˚F** 1/2-1 1/2 minutes	-5˚ to 100˚F	**2 hrs.** 350 psi **16 hrs.** 800 psi **72 hrs.** 1,500 psi	400-700 cps
	**All-Weather ENT Blue "Quick-Set" Solvent Cement with brush*** Part No. / Size / Std. Ctn. Qty. VC9992 / Quart / 12	Required for use with Flex-Plus® Blue™ ENT (Electrical Nonmetallic Tubing), Riser-Gard®, P&C Flex®, and Carlon PVC fittings. Up through 4" diameter.	**10˚-30˚F** 4-5 minutes **30˚-50˚F** 3-4 minutes **50˚-70˚F** 1-2 minutes **70˚-90˚F** 1/2-1 1/2 minutes	4˚ to 100˚F	**2 hrs.** 350 psi **16 hrs.** 800 psi **72 hrs.** 1,500 psi	400-700 cps
	**Low VOC Gray PVC Solvent Cement with dauber*** Part No. / Size / Std. Ctn. Qty. VC9LV4 / 1/2 Pint / 10 VC9LV3 / Pint / 24 VC9LV2 / Quart / 12	Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus® Blue™ ENT (Electrical Nonmetallic Tubing.) Up through 6" diameter. VOC emission of 490 grams/liter per the Bay and South Coast test method.	**10˚-30˚F** Not recommended **30˚-50˚F** 5-6 minutes **50˚-70˚F** 3-4 minutes **70˚-90˚F** 1-2 minutes	40˚ to 100˚F	**2 hrs.** 350 psi **16 hrs.** 800 psi **72 hrs.** 1,500 psi	500-900 cps
	**Clear Primer with dauber** Part No. / Size / Std. Ctn. Qty. VC9903 / Pint / 24 VC9902 / Quart / 12 **Purple:** VC9932 / Quart / 12	Recommended for use with Carlon cement and all types and sizes of Carlon WireSafe® wireway.	N/A	5˚ to 100˚F	N/A	N/A

*Meets ASTM D2564
*No daubers for gallon cans

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Cement Joints



Carlon nonmetallic products are joined by means of solvent cement joints. Sizes 1/2" through 1 1/2" should be cut square (using a fine tooth handsaw) and deburred. For sizes 2" through 6" a miter box or similar saw guide should be utilized to keep the material steady. After cutting and deburring, wipe ends clean of dust, dirt and shavings.

Joining process as follows: Be sure that conduit end is clean and dry. Apply coat of Carlon Solvent Cement (use dauber) to end of conduit, the length of the socket to be attached. Push conduit firmly into fitting while rotating conduit slightly about one-quarter turn to spread cement evenly. Allow joint to set approximately 10 minutes.

Carlon recommends the use of Carlon cement for proper solvent cement joints. Since this cement is prepared particularly for our product compounds and tolerances, we cannot guarantee joints assembled with cement materials supplied by other manufacturers. Regular grade grey solvent cement will accommodate most application situations being of a general purpose nature. In situations requiring an extremely fast-setting joint, (low temperature or difficult installation conditions) Carlon All Weather Quick-Set Cement is recommended. Standard grade clear cement is recommended for noncritical utility applications where gap filling and leak testing are not required.

Average number of joints per can

Pipe size	1/2 Pint	Pint	Quart	Gallon
1/2	140	275	550	2,200
3/4	90	180	360	1,440
1	70	140	280	1,120
1 1/4	50	100	200	800
1 1/2	37	75	150	600
2	20	40	80	320
2 1/2	17	35	70	280
3	15	30	60	240
3 1/2	13	27	54	216
4	12	25	50	200
5	9	19	38	150
6	6	12	24	95

Average shelf-life of all Carlon cement is 24 months (unopened cans stored below 80°F.)

All Carlon cements are specially formulated to be used with Carlon PVC products, and do not require primers when parts are clean of dirt and moisture.





Cementing PVC Conduit:

1. Make square saw cut with fine tooth saw.
2. Deburr and round inside edge of the cut end.
3. Clean socket ID and spigot OD of dirt and moisture.
4. Apply a uniform coat of cement to spigot end and push onto socket bottom, rotating 1/4 turn.
5. Allow time to set before disturbing. This will depend upon temperature.

Cementing PVC Conduit for Submerged Areas Requiring Air or Water Tightness:

1. Follow the procedure to the left for cementing conduit.
2. Test workmanship by conducting a low pressure air (3.0 - 5.0 psi) test after system is installed and cemented joints are set.
3. Plug and block ends to prevent movement prior to pressurization.
4. Check for leaks with soap solution.
5. Even low pressure air can cause high thrust loads and caution must be observed.

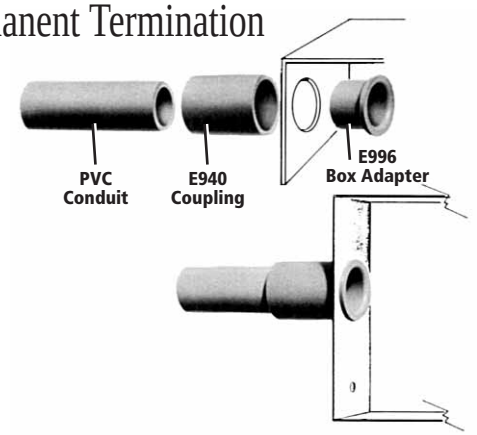
Cementing ENT for Concrete-Tight Applications:

1. Use Carlon Socket tight fittings or couplings.
2. ***Do not*** use chemical primer or cleaner.
3. Apply a light uniform coat of cement, labeled for use with ENT.
4. ***A brush*** shall be used to apply the cement.
5. Brush excess cement out of ENT grooves
6. Promptly insert ENT into fitting while cement is wet, until the fitting stop is reached, and give 1/4 turn.
7. Do not disturb until the joint is set.

Fittings and Adapters for Terminating Carlon Schedule 40 and Schedule 80 Rigid Conduit

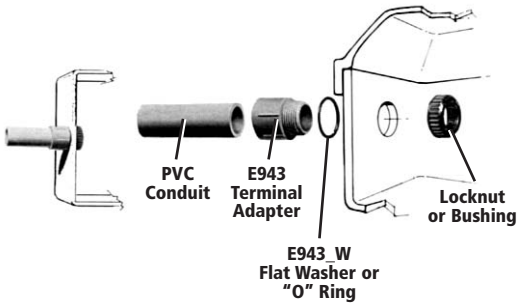
Terminating Carlon Schedule 40 and Schedule 80 rigid conduit is quick and easy utilizing either of the methods indicated below. Terminations may be made in any electrical box or enclosure using standard size knock-outs or drilled holes.

Method 1. Permanent Termination



Apply solvent cement to shoulder and shank of box adapter and insert through knock-out from inside the enclosure. Push coupling over the shank of the box adapter, tight against the enclosure wall. Rotate the coupling about one-half turn while installing, and hold in position for a few seconds to permit setting of solvent cement. The coupling is now ready for the conduit to be installed. Only the shoulder of the box adapter extends inside the enclosure.

Method 2. Separable Termination



If watertight construction is required, place flat washer over the threads of the terminal adapter, securely against the shoulder. Insert the adapter threads through knock-out and secure using either a standard locknut or threaded bushing. If watertight construction is not required, eliminate flat washer.

PVC Conduit Cutters

Small Cutter



For fast, smooth field cuts of 1/2" through 1" Schedule 40 and 80 rigid conduit, Flex-Plus® Blue™ ENT, and Carflex® liquidtight flexible nonmetallic conduit.

Part No.	Size	Std. Ctn. Qty.
CC120B	8"	10

Medium Cutter



Hand held cutter makes fast square, smooth field cuts on Schedule 40 and 80 conduit from 1/2" through 1 1/4". Produces burr-free cut with no shavings. Fits into pocket or pouch.

Part No.	Size	Std. Ctn. Qty.
CC125	9"	12

PVC Cutter



For clean cuts of conduit 1/2" through 2".

Part No.	Size	Std. Ctn. Qty.
CC122	17 1/2"	1



Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

EZ BEND™ Conduit Bending Equipment



For field bending of small and large diameter nonmetallic conduit, the easy answer is Carlon EZ BEND* conduit bending equipment.

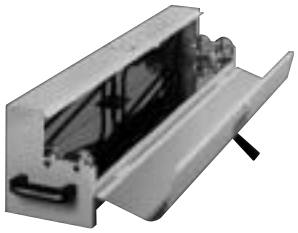
- Lightweight
- Fast, Simple and Safe
- Includes complete instructions and a convenient bending chart
- Portable
- Less expensive than factory bends

EZ BEND™ Conduit Bender, Jr.

A practical, convenient portable conduit bender for 1/2" through 2" diameter nonmetallic conduit allows bends up to 14" radius and to 90° elbows. The EZ BEND Conduit Bender, Jr. is a timesaving, easy-to-carry unit featuring a bracket to store the power cord, a carrying handle, and a clasped cover. The unit operates on a standard 20 amp, 120 V circuit.

Dimensions: 7 1/2" x 8 1/2" x 31"
Operating Temperature: 180° - 200°F

Part No.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
G280J	1	14



Carlon's EZ BEND Conduit Bending Equipment is designed with the electrical contractor in mind. The completely portable and fully encased EZ BEND benders and plug kits can be transported from job to job without damage or harm to the equipment. Additionally, the heavy duty construction and integrity of Carlon's EZ BEND Conduit Bending Equipment ensures that it will last for years to come.

**EZ BEND is a registered trademark of Bradshaw Manufacturing, Inc.*

Field Bending Rigid Nonmetallic Conduit

1. Heating

Conduit section to be bent must be heated evenly over the entire length of the curve. Carlon offers EZ BEND electric heaters designed specifically for the purpose, in sizes to accommodate all conduit diameters. These devices employ infra-red heat energy which is most quickly absorbed by the conduit. Small sizes are ready to bend after a few seconds, while larger diameters require two or three minutes, or more, depending on conditions. The use of torches or other flame-type devices is not recommended. PVC conduit exposed to excessively high temperatures may take on a brownish color. Sections showing evidence of such scorching should be discarded.

2. Forming The Bend

1/2" thru 1 1/2" Diameters – When properly heated the conduit is very flexible and can be shaped to almost any configuration. The conduit is then cooled by sponging with water, and the bend is ready to install.

2" and Larger Diameters – Larger sizes of conduits and ducts require internal support to prevent "crimping" or deforming during the bending process. Bending plugs are inserted in each end of the conduit section before heating. The plugs expand to provide an airtight seal. (Note: Carlon does not offer bending plugs.)



Minimum practice is required to master the three steps in bending nonmetallic conduits and ducts.

3. Cooling

As the conduit is heated, the retained air expands, and the increased internal pressure allows the conduit to be bent without deforming. The conduit must be cooled before the plugs are removed. For an immediate cool and set, sponge with cold water.

Special Bends

For "blind" bends or for compound turns in a conduit run, the heated conduit may be solvent cemented in place while still flexible.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

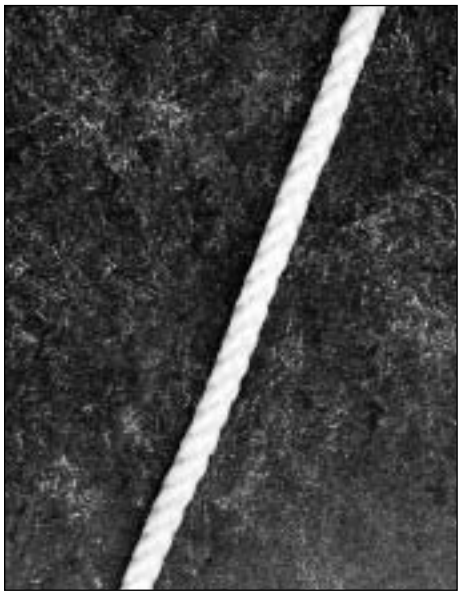
Rope

(Conduit Pulling Lines for Conductors or Fiber Optics)

White Diamond Braid Rope

This rope is constructed of polyethylene over polyester, designed specifically for fiber-optic pulling. The polyethylene jacket gives the "slippery" feel that gives less drag in pulling through conduit. Available in standard 5,000 foot and 10,000 foot reels.

Part No.	Reel Length	Diameter	Recommended Working Load (lbs.)	Approximate Avg. Tensile (lbs.)	Std. Ctn. Wt. (lbs.)
SB14105	5,000 ft.	1/4"	260	1700	100

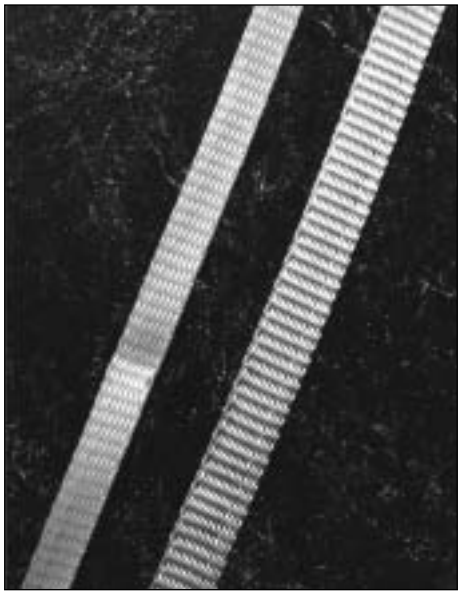


Tape

Prelubricated, woven polyester tape made from low friction, high abrasion resistant yarns providing a low coefficient of friction. Tape is printed with sequential footage markings for accurate measurements.

Part No.	Size	Tensile Strength	Reel Lengths
TL14505	1/2"	1250 lbs.	5,000 ft.
TL14510	1/2"	1250 lbs.	10,000 ft.
TL38203	5/8"	1800 lbs.	3,000 ft.
TL38265	5/8"	1800 lbs.	6,500 ft.
TL38210	5/8"	1800 lbs.	10,000 ft.

Other ropes and tapes are available. Consult your sales service location for additional information.



Carlon® Snap-Loc® Spacers

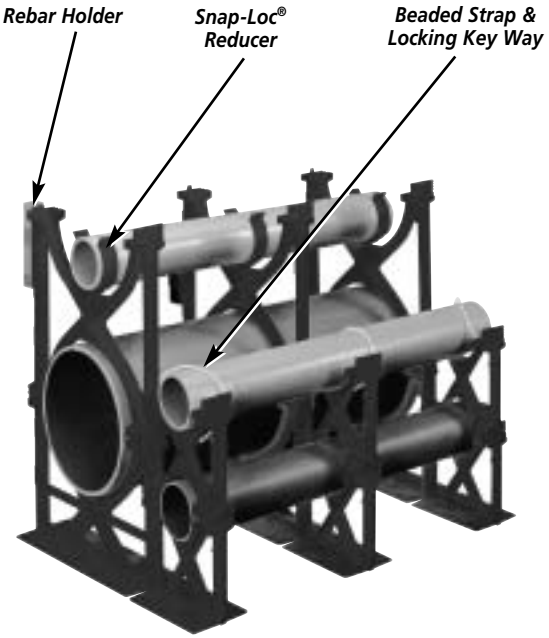
NEW! 8" Spacers

Carlon Snap-Loc duct spacers provide stability, consistent separation and relieve direct stress for duct materials encased in concrete, and direct bury applications.



Carlon Snap-Loc Spacers provide:

- A side dovetail rail and groove design allowing for side-by-side interchangeability of conduit spacer sizes while maintaining horizontal stability.
- Locking key ways incorporated into intermediate spacers eliminate the need for costly top spacers in each size. The locking key ways provide for the use of a beaded strap that secures the top section of conduit.
- 1" and 2" Snap-Loc Reducers allow fixturing of 1" or 2" conduit inside larger spacers.
- The Snap-Loc Rebar Holder provides stabilization on large banks of spacers.



Nonmetallic Snap-Loc Spacers are designed specifically for use with nonmetallic duct, with maximum O.D. dimensions as specified in NEMA TC-2, TC-6 & 8, TC-10 and ASTM F512. The innovative vertical and horizontal interlocking Snap-Loc design has tapered joining slots with maximum tolerances for easy job site assembly.

IMPORTANT:

1. The use of duct spacers for direct burial may result in excessive point deflections unless proper design engineering is applied, such as the proper compaction of the appropriate backfill material.
2. Carlon is NOT responsible for Snap-Loc Spacers used in direct bury applications... design engineers and contractors are responsible for the design of the installation.

Snap-Loc Spacers

Dimensions – Base Spacers

Part No.	Size*	A	C	D (Dia.)	Std. Ctn. Qty.
S288JHN	2x1 1/2	4.25	4.12	2.50	100
S288JJN	2x2	4.25	4.62	2.50	100
S288JLN	2x3	4.25	5.62	2.50	100
S288LHN	3x1 1/2	4.81	5.25	3.63	90
S288LJN	3x2	4.81	5.75	3.63	80
S288LLN	3x3	4.81	6.75	3.63	60
S288NFN	4x1	5.31	5.75	4.63	70
S288NHN	4x1 1/2	5.31	6.25	4.63	50
S288NJN	4x2	5.31	6.75	4.63	50
S288NLN	4x3	5.31	7.75	4.63	60
S288PHN	5x1 1/2	5.84	7.31	5.69	50
S288PJN	5x2	5.84	7.81	5.69	60
S288PLN	5x3	5.84	8.81	5.69	50
S288RHN	6x1 1/2	6.38	8.38	6.75	50
S288RJN	6x2	6.38	8.88	6.75	50
S288RLN	6x3	6.38	9.88	6.75	40
S288SHN	8x1 1/2	7.38	10.30	8.75	30
S288SJN	8x2	7.38	10.76	8.75	30

Dimensions – Intermediate Spacers

Part No.	Size*	B	C	D (Dia.)	Std. Ctn. Qty.
S289JHN	2x1 1/2	3.88	4.12	2.50	120
S289JJN	2x2	4.38	4.62	2.50	100
S289JLN	2x3	5.38	5.62	2.50	80
S289LHN	3x1 1/2	5.01	5.25	3.63	100
S289LJN	3x2	5.51	5.75	3.63	80
S289LLN	3x3	6.51	6.75	3.63	60
S289NFN	4x1	5.51	5.75	4.63	70
S289NHN	4x1 1/2	6.01	6.25	4.63	60
S289NJN	4x2	6.51	6.75	4.63	60
S289NLN	4x3	7.51	7.75	4.63	50
S289PHN	5x1 1/2	7.07	7.31	5.69	50
S289PJN	5x2	7.57	7.81	5.69	50
S289PLN	5x3	8.57	8.81	5.69	30
S289RHN	6x1 1/2	8.14	8.38	6.75	50
S289RJN	6x2	8.64	8.88	6.75	40
S289RLN	6x3	9.64	9.88	6.75	30
S289SHN	8x1 1/2	10.14	10.30	8.75	30
S289SJN	8x2	10.64	10.76	8.75	30

***First number indicates trade size of duct, second number indicates separation between conduits or ducts.**

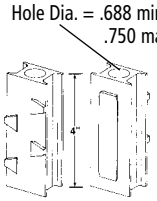
Accessories





Snap-Loc® Reducer

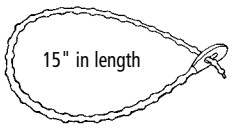
Part No.	Size	Std. Ctn. Qty.
S287F	1"	100
S287J	2"	100





Rebar Holder

Part No.	Std. Ctn. Qty.
S258RH	100

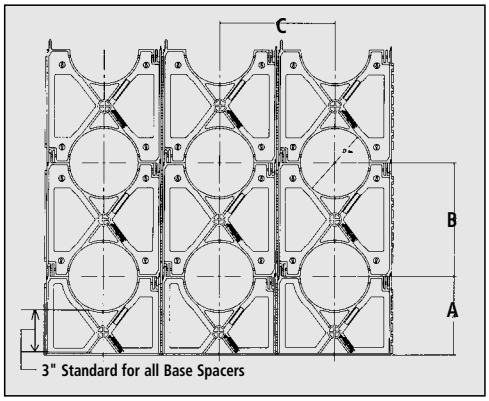




Beaded Strap

Part No.	Std. Ctn. Qty.
S28612	100

Specifications



Suggested Specification

(Duct) (Conduit) bank shall be encased in concrete with at least three inches of concrete at the top and bottom and two inches on each side. A horizontal and vertical separation between the ducts of ____* inches shall be maintained by installing Carlon high impact spacers with horizontal and vertical locking intervals of ____** feet.

*Standard Separations of 1", 1 1/2", 2", and 3" are available.

**Preferred interval between spacer assemblies is 8 to 10 feet.

Installation note

The Spacers and Rebar Holder are designed with a dovetail tongue and groove feature for easy installation.

If required to permanently fix the position of a group of Spacers and/or Rebar Holder, the following are recommended procedures:

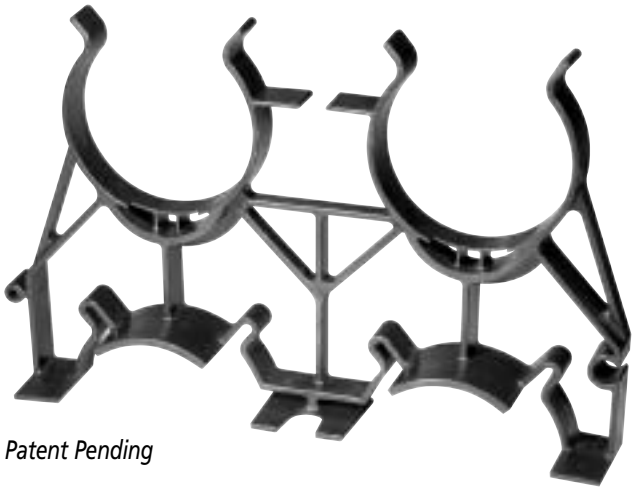
1. Use Carlon Quick-set Cement glue during assembly or spot glue after assembly to secure.
2. During assembly, deform the edge of the tongue or groove portion of the dovetail slide with a pair of pliers or similar tool. This deformation will create an interference, restricting movement.
3. An assembled system may be wired together for additional support.

IMPORTANT:

1. The use of duct spacers for direct burial may result in excessive point deflections unless proper design engineering is applied, such as the proper compaction of the appropriate backfill material.
2. Carlon is not responsible for Snap-Loc Spacers used in direct bury applications... design engineers and contractors are responsible for the design of the installation.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® Snap-N-Stac™ Combo Spacers



Patent Pending

Carlon® Snap-N-Stac™ Combo Underground Duct Spacers are specifically designed to replace the two-piece base and intermediate spacer system, by combining the conventional base and intermediate spacer into a single unit!

Manufactured out of highly engineered thermoplastic material, Snap-N-Stac Spacers are strong, durable and able to withstand the rigors of concrete construction. They feature an innovative horizontal and EXCLUSIVE Vertical locking system and can be used as either a base or intermediate spacer.

Carlon Snap-N-Stac Spacers are available in duct sizes 2", 4" and 6" and can be installed horizontally, vertically or turned up-right for unique duct bank configurations.

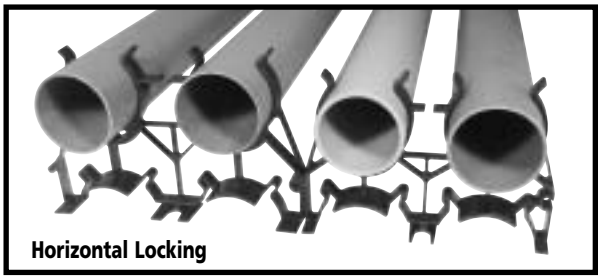
This NEW one-piece design makes underground duct bank installations faster and easier than the conventional two-piece system– saving material and labor costs.

Carlon® Snap-N-Stac Combo Spacers...The IDEAL Solution for Underground Duct Bank Installations.

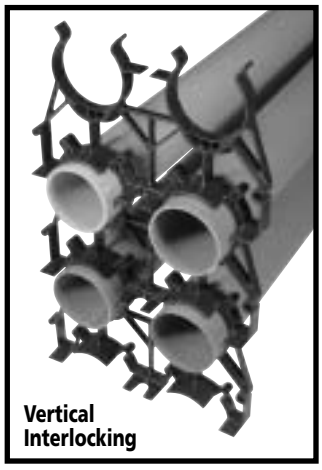
Features:

- Conventional Base and Intermediate Spacer in a Single Unit!
- EXCLUSIVE Vertical Locking System
- Horizontal Locking System
- Installs Horizontally or Turned Upright
- Molded-In Rebar Holder
- Available in 2", 4" or 6" Duct Sizes
- Reducer to Accommodate Smaller Duct Sizes
- Can Be Used as Either an Intermediate or Base Spacer
- Spacers Interlock Horizontally Regardless of Size
- Nonmetallic, Noncorrosive, Nonconductive
- Strong and Durable
- Easy to Handle
- Fast Installation

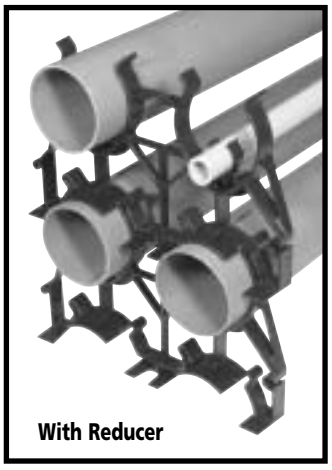
Installations



Horizontal Locking



Vertical Interlocking



With Reducer



Free Standing

Specifications

Part Number	Description	Std. Carton Qty.	Std. Carton Wt. (lbs.)
SP2W20-2	2" Two-Way Snap-N-Stac Spacer - 2" Separation	56	28.5
SP2W30-2	2" Two-Way Snap-N-Stac Spacer - 3" Separation	40	23.8
SP4W15-2	4" Two-Way Snap-N-Stac Spacer - 1-1/2" Separation	26	18.3
SP4W20-2	4" Two-Way Snap-N-Stac Spacer - 2" Separation	24	18.8
SP4W30-2	4" Two-Way Snap-N-Stac Spacer - 3" Separation	20	17.6
SP6W20-2	6" Two-Way Snap-N-Stac Spacer - 2" Separation	12	12.8
SP6W30-2	6" Two-Way Snap-N-Stac Spacer - 3" Separation	12	14.1
S287F	1" Snap-Loc Reducer	100	2.1
S287J	2" Snap-Loc Reducer	100	4.8
S28612	Beaded Strap	100	0.4

How to Interpret the Part Number

Position 1	Position 2	Position 3	Position 4
Product Type	Duct Size	Duct-To-Duct Spacing - Horizontal and Vertical	Horizontal Duct Positions
SP = Spacer	2W = 2" Width	15 = 1-1/2"	2 = Two
	4W = 4" Width	20 = 2"	
	6W = 6" Width	30 = 3"	

Technical Information

Part Number	Duct Size	Duct OD	Horizontal Duct Positions	Duct-To-Duct Spacing		Center-To-Center Spacing		Bottom of Trench to Bottom of Duct	Bottom of Trench to Center of Bottom Duct	Overall Length
				Vertical	Horizontal	Vertical	Horizontal			
SP2W20-2	2"	2.375	2	2	2	4.38	4.38	3.13	4.25	8.75
SP2W30-2	2"	2.375	2	3	3	5.38	5.38	4.13	5.25	10.75
SP4W15-2	4"	4.5	2	1.5	1.5	6	6	3.38	5.56	12
SP4W20-2	4"	4.5	2	2	2	6.5	6.5	3.88	6.06	13
SP4W30-2	4"	4.5	2	3	3	7.5	7.5	4.88	7.06	15
SP6W20-2	6"	6.625	2	2	2	8.62	8.62	4.13	7.38	17.25
SP6W30-2	6"	6.625	2	3	3	9.62	9.62	5.13	8.38	19.25

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

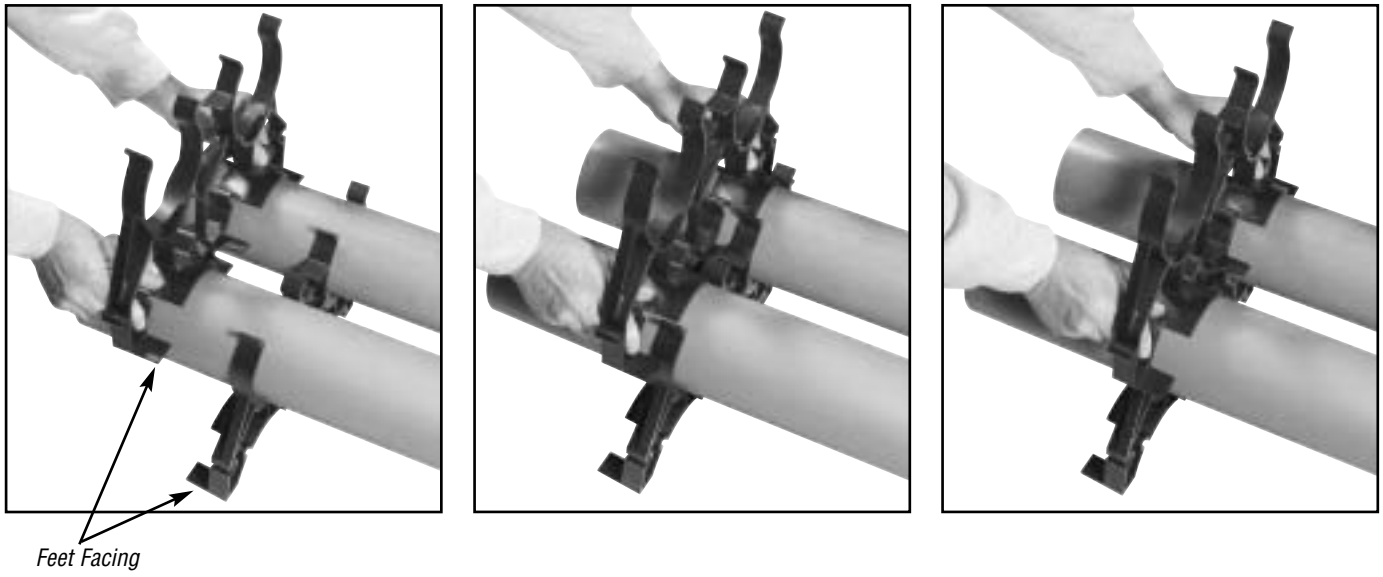
Installation Instructions

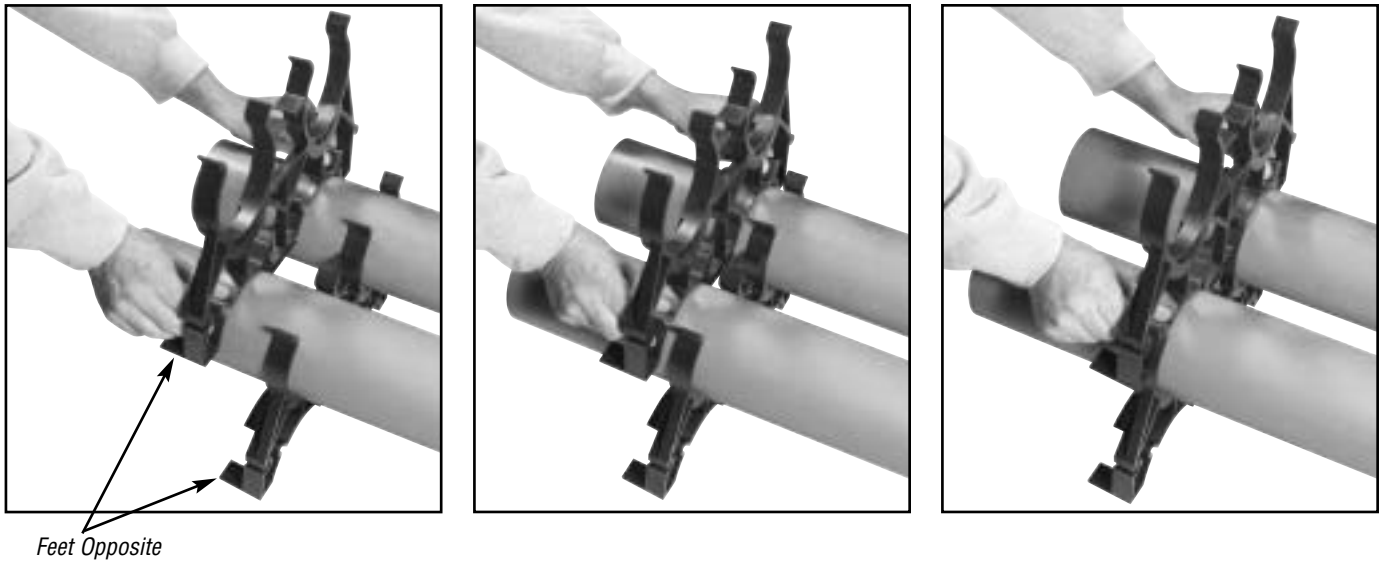
IMPORTANT:

1. Snap-N-Stac Spacers should be used in concrete encased applications only.
2. The use of duct spacers for direct burial may result in excessive point deflections unless proper design engineering is applied, such as the proper compaction of the appropriate backfill material.
3. Carlon is NOT responsible for Snap-N-Stac Spacers used in direct bury applications…design engineers and contractors are responsible for the design of the installation.

Vertical Interlocking

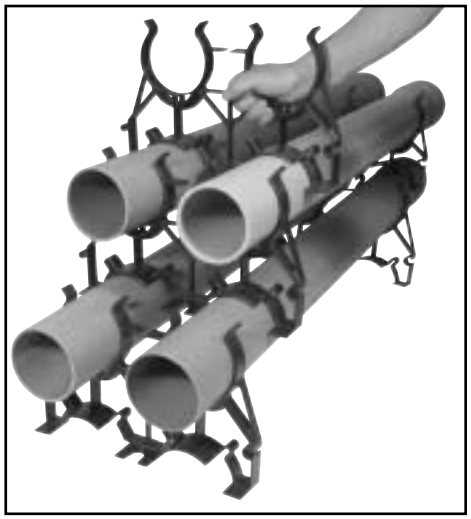
Slide spacers together "Feet Facing Feet."



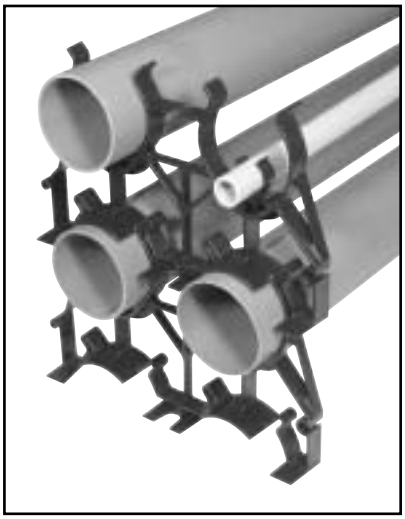


Installation Instructions

Vertical Free Standing
If spacers are installed using free standing method, it is recommended to install the spacer on the upper row mid-way between the two spacers on the bottom row.



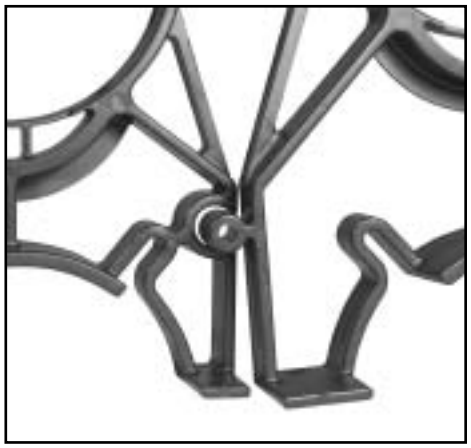
Reducer
1" & 2" Snap-Loc Reducers allow fixturing of 1" and 2" conduit inside of larger spacers.

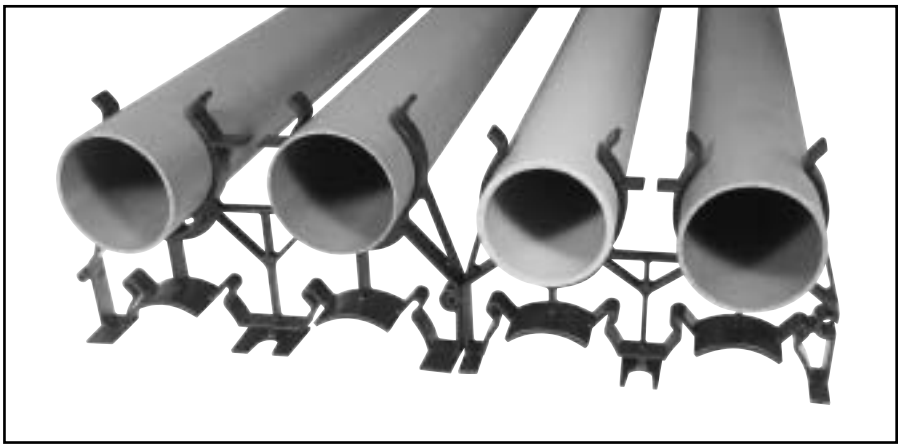


Modifications
Odd numbers of ducts are accommodated by staggering two-way spacers.



Transition To Various Duct Sizes
Install spacers side-by-side by inserting the male adapter into the female adapter.
Note: All Snap-N-Stac spacers are designed to interlock horizontally, regardless of size.





Carlon® Bore-Gard® and Boreable Multi-Gard® Raceway

Bore-Gard Schedule 40

Bore-Gard Schedule 80

Boreable Multi-Gard Type 40

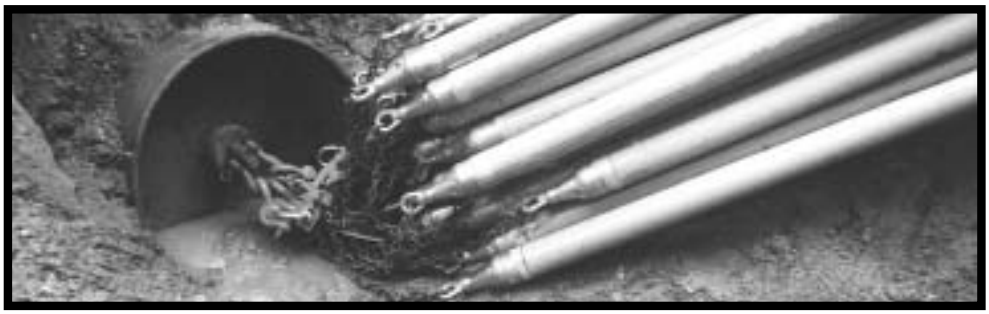












Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® Bore-Gard® Trenchless Raceway

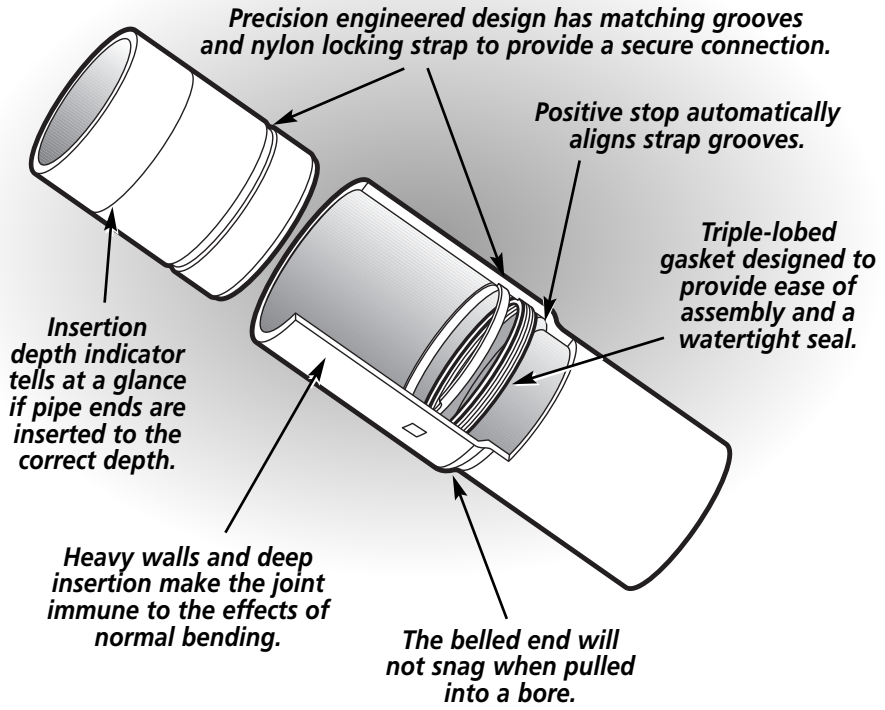
RUS Listed

UL LISTED

Carlon's PVC Bore-Gard conduit eliminates the costly problems of HDPE pipe on a reel such as reel handling, fusion welding, uncoiling and wasted pipe, safety hazards and additional job site labor.

Bore-Gard is designed and proven to meet the rigorous requirements of horizontal directional drilling for electrical and datacom applications and is available in Heavywall Schedule 40 or Extra Heavywall Schedule 80 conduit.

The unique design incorporates a water-tight seal and locking ring that enables fast, cement-free assembly, strong enough for 1000 foot bores. Short lengths of 10 and 20 feet fit into the tightest spaces and can be easily transported to the job site. Simplify trenchless installations and lower your costs with Bore-Gard.



Features:

- **Easy to handle 10 and 20 foot lengths**
- **For bores up to 1000 feet**
- **Fast easy assembly**
- **Strong water-tight joints without cement**
- **Fits standard rigid nonmetallic conduit fittings**
- **All nonmetallic construction**
- **Superior crush and stiffness over HDPE**
- **Eliminates the need for chains and backing plate installation**
- **Type: Schedule 40 - Heavywall Schedule 80 - Extra Heavywall**
- **Sizes: Schedule 40 - 3", 4", 5", & 6" Schedule 80 - 3" & 4"**



Locking ring enables fast, cement-free assembly.



Slide locking ring into the joint.



Fully assembled, the locking ring provides strong water-tight joints without cement.

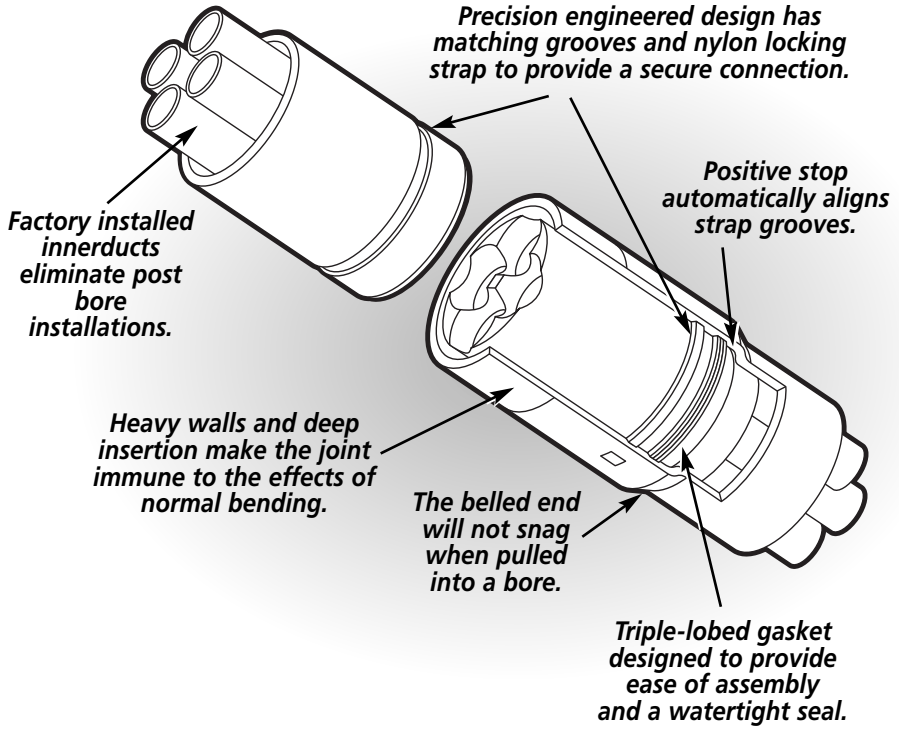
Carlon® Boreable Multi-Gard®

Carlon's PVC Boreable Multi-Gard conduit combines a strong boreable outerduct with the convenience of a Multi-Cell conduit.

Boreable Multi-Gard utilizes leading technology from Carlon's PVC Bore-Gard® Trenchless Raceway, offering a field-proven design.

Bores up to 500 feet can be achieved without labor-intensive operations. Lengths of 20 feet fit into tight spaces often encountered on underground boring job sites.

Experience the strength and convenience of Carlon Boreable Multi-Gard.



Features:

- Withstands pulling and bending forces of directional drilling
- Fast assembly
- Eliminates labor related to gluing and screwing joints together
- For bores up to 500 feet
- Innerducts: 3-way or 4-way
- Easy to handle 20 foot lengths
- Type: Type 40 PVC outerduct
- Size: 4"
- Prelubricated innerducts
- Strong water-tight joints without cement
- Fits standard Schedule 40 fittings
- Compatible with Multi-Gard Type 40 PVC products



Factory installed innerducts provide immediate post bore cable installation



Designed to meet all your cable needs.

Statue of Liberty







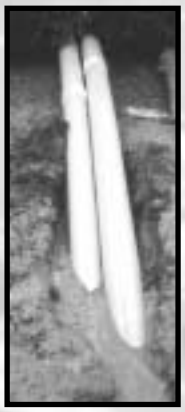
Carlon® Bore-Gard® was the product of choice when additional conduit was considered necessary for future utilities and cables on Liberty Island.





Horizontal Directional Drilling was the preferred method of installation because it minimized any disruption to the island's pristine environment.









Bore-Gard is a PVC trenchless raceway specifically designed for Horizontal Directional Drilling. Bore-Gard is seal rated for 75psi, keeping drilling fluid and underground water out. It has a strong, cement-free joint, making installations fast and easy. It comes in convenient 10 ft. and 20 ft. lengths and is strong enough for 1000 ft. bores.







Bore-Gard® Assembly



Trim spigot end before attaching pulling eye.



Tighten pulling eye so that it expands against interior of the conduit.



Attach the next piece of Bore-Gard.

1. Position Bore-Gard with the print line facing up.
2. Remove plastic locking strap and set it aside.
3. Remove end caps. On first stick only, trim spigot end of Bore-Gard at the groove before attaching the pulling eye/gripping attachment.
4. Insert pulling eye into spigot end of Bore-Gard.
5. Tighten pulling eye so that it expands against the interior of the conduit. Use of sleeve over O.D. of conduit is recommended.
6. The installer should use appropriate instrumentation to insure that maximum pull rating is not exceeded.
7. Take next piece of Bore-Gard (10' or 20') and insert spigot end into belled end of the first piece until the insertion line is no longer visible.
8. Slide the plastic locking strap into slot on the side of the bell. Push the strap in completely. It is not necessary to remove or cover the handle on the strap.
9. Repeat with remaining sections as space allows.
10. Bore-Gard is now ready for installation.

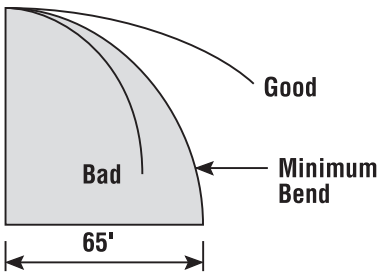
For additional information on the Bore-Gard® line of products, request Frequently Asked Questions about Bore-Gard, BGFAQ; Bore-Gard Technical Reference Guide, BGTRG; Ten Reasons to Buy Bore-Gard, BG10REA and the Bore-Gard six minute Video, BGVID. All of these materials are available direct from Carlon or from your local Carlon representative.

Boreable Multi-Gard® Assembly

1. Position Boreable Multi-Gard with the print line facing up.
2. Remove plastic locking strap and set it aside.
3. Seal off lead end to keep out drilling fluid.
4. Attach 4" Kellems Grip over lead end. Note: Internal pulling eye cannot be used due to innerduct interference.
5. The installer should use appropriate instrumentation to insure that the maximum pull rating is not exceeded.
6. Take next piece of Boreable Multi-Gard and insert spigot end into belled end of the first piece until the insertion line is no longer visible. *NOTE: Innerducts need to be aligned before insertion*
7. Slide the plastic locking strap into slot on the side of the bell. Push strap in completely. It is not necessary to remove or cover the handle on the strap.
8. Repeat with remaining sections as space allows.
9. Pull into bored hole. Terminate into man holes.
10. Boreable Multi-Gard is now ready for duct proofing and cable installation.

For more information on Carlon's Multi-Gard® System, request catalog number 2B21.

Bend Radius for Bore-Gard® & Boreable Multi-Gard®



Minimum Bend Radius: *Turns in a bore path should be made gradually. Bore-Gard and Boreable Multi-Gard have a minimum bend radius of 65'. Bending more than this recommended limit will stress the joint. The drawing below illustrates the 65' bend radius. To obtain a 90° turn you will require 65' of forward distance in any directional plane.*

Note: Successful directional drilling, reaming and pipe installation are influenced by numerous factors including the reamed diameter, pull rate, fluid chemistry, fluid flow rate, drill rod diameter, soil conditions, equipment performance and condition, and operator experience. All manufacturers' equipment recommendations and training should be followed for successful drilling results.



Bore-Gard is flexible enough to be pulled around a building.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Bore-Gard® Specifications

*U.S. Patent 6,789,629

LISTED
Except where noted by ▶

Except where noted by †

Schedule 40

• RUS Listed

Part No.	Description	Overall Length (ft.)	Lay Length	Dimensions O.D. (in.)	Dimensions I.D. (in.)	Pkg. Qty. (ft./bundle)	Bundles per Truckload	Feet per Truckload	Wt. per 100 ft. (lbs.)	Min. Bend Radius (ft.)	Insertion Force (lbs.)	Seal Pressure Rating (P.S.I.)	Joint Pull Rating (lbs.)	Typical Crush lbs. (@ 30% deflection)	UL Std. 651 & NEMA TC2 Min. Crush (lbs.)
BG340SP-010	3" Sch. 40 Bore-Gard	10	9'6"	3.50	3.0	350	56	19,600	164	65	20	75	7,000	1,225	1,000
BG340SP-020	3" Sch. 40 Bore-Gard	20	19'6"	3.50	3.0	700	28	19,600	164	65	20	75	7,000	1,225	1,000
BG440SP-010	4" Sch. 40 Bore-Gard	10	9'6"	4.50	4.0	260	56	14,560	234	65	40	75	8,700	1,075	900
BG440SP-020	4" Sch. 40 Bore-Gard	20	19'6"	4.50	4.0	520	28	14,560	234	65	40	75	8,700	1,075	900
BG540SP-010	5" Sch. 40 Bore-Gard	10	9'6"	5.56	5.0	230	40	9,200	317	65	60	75	11,300	950	850
BG540SP-020	5" Sch. 40 Bore-Gard	20	19'6"	5.56	5.0	460	20	9,200	317	65	60	75	11,300	950	850
BG640SP-010	6" Sch. 40 Bore-Gard	10	9'6"	6.625	6.0	200	40	8,000	418	65	80	75	14,000	950	850
BG640SP-020	6" Sch. 40 Bore-Gard	20	19'6"	6.625	6.0	400	20	8,000	418	65	80	75	14,000	950	850

Schedule 80

• RUS Listed

Part No.	Description	Overall Length (ft.)	Lay Length	Dimensions O.D. (in.)	Dimensions I.D. (in.)	Pkg. Qty. (ft./bundle)	Bundles per Truckload	Feet per Truckload	Wt. per 100 ft. (lbs.)	Min. Bend Radius (ft.)	Insertion Force (lbs.)	Seal Pressure Rating (P.S.I.)	Joint Pull Rating (lbs.)	Typical Crush lbs. (@ 30% deflection)	UL Std. 651 & NEMA TC2 Min. Crush (lbs.)
† BG480SP-010	4" Sch. 80 Bore-Gard	10	9'6"	4.50	3.8	260	56	14,560	308	65	40	75	12,000	2,000	2,000
† BG480SP-020	4" Sch. 80 Bore-Gard	20	19'6"	4.50	3.8	520	28	14,560	308	65	40	75	12,000	2,000	2,000
† BG380SP-010	3" Sch. 80 Bore-Gard	10	9'6"	3.50	2.8	350	56	19,600	210	65	20	75	10,000	2,000	2,000
† BG380SP-020	3" Sch. 80 Bore-Gard	20	19'6"	3.50	2.8	700	28	19,600	210	65	20	75	10,000	2,000	2,000

Accessories

Pulling Eyes

These high-quality pulling eyes have a permanent outer sleeve and a seal on pipe O.D.

Part No.	Description	Package Dimensions (in.)	Package Weight (lbs.)	Package Type
▶ BG3PE	3" Pulling Eye	10"x 4"x 4"	8	Carton
▶ BG4PE	4" Pulling Eye	17"x 6"x 6"	26	Carton
▶ BG5PE	5" Pulling Eye	16"x 7 3/4"x 7 3/4"	37	Crate
▶ BG6PE	6" Pulling Eye	19 1/2"x 8 1/4"x 8 1/4"	63	Crate

Locking Straps

Size	Part No.	Std. Ctn. Qty.
3"	▶ GSUP3	1
4"	▶ GSUP	1
5"	▶ GSUP5	1
6"	▶ GSUP6	1

Gaskets

Part No.	Std. Ctn. Qty.
▶ HBOR3	1
▶ HBOR	1
▶ HBOR5	1
▶ HBOR6	1

Boreable Multi-Gard® Specifications

Part No.	Description	Length (ft.)	Dimensions O.D. (in.)	Innerduct Dimensions I.D. (in.)	Pkg. Qty. (ft./bundle)	Bundles per Truckload	Feet per Truckload	Wt. per 100 ft. (lbs.)	Min. Bend Radius (ft.)	Seal Pressure Rating (P.S.I.)	Maximum Pull Rating (lbs.)
▶MFSS3B-020	3-way Boreable Multi-Gard	20	4.50	1.50	520	28	14,560	561	65	75	5000
▶MFSS4B-020	4-way Boreable Multi-Gard	20	4.50	1.19	520	28	14,560	565	65	75	5000

Steel Mesh Grip part no. MAG4 is recommended to be used as pulling attachment for Boreable Multi-Gard®.

Carlon® Multi-Gard® Multi-Cell Raceway

PVC

Fiberglass

Galvanized Steel

PVC-Coated Galvanized Steel

EMT – Electrical Metallic Tubing



Carlon® Multi-Gard PVC

RUS Listed

Multi-Gard PVC is a multi-cell raceway system specifically designed for use in direct bury and concrete encased applications. Multi-Gard PVC is available in Type C, Type 40 and Type 80 outer shells with 3-way or 4-way innerduct configurations. Multi-Gard PVC is manufactured in convenient 20ft. lengths for easy handling and transportation, and is ideal for jetting or pulling cable.



Applications:	**Outdoor Direct Bury and Concrete Encasement**
Wall Types:	**Type C, Schedule 40 and Schedule 80**
Innerducts:	**3-Way 1 1/2" or 4-Way 1 1/4"**
Installation Method:	**Trenching, Plowing, Concrete Encased** NOTE: Always install Bell End onto Spigot End

Features

- Pre-lubricated innerducts provide very low coefficient of friction for easy pulls, and PVC innerducts expand and contract at the same rate as outerduct.
- Anti-reversing gaskets on coupling body allow for easy joining. Eliminates need for cementing joints.
- Jettable using high speed air blowing systems.
- O-ring gasket at base of bell reduces risk of water entering system.
- Inward tapering holes on coupling body give quick and easy innerduct alignment.
- Print line on outer duct states "Install Print Line Up" to keep system straight during installation.
- Marked innerduct and marked hole on coupling body ensure proper innerduct alignment and allow crews to work from opposite directions.
- 6" deep bell provides strong joint for field bends.
- Internal spacers maintain straight innerduct path.
- End caps are provided on each 20 ft. section.
- Staging materials to job site is simplified.
- Patented flexible bends allow changes in direction.





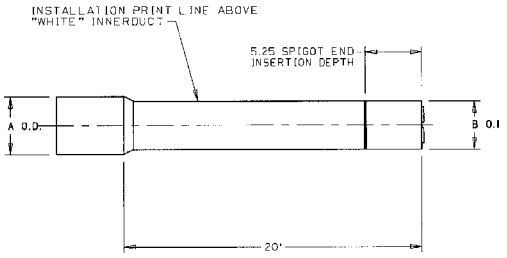
Technical Information

- Joint Tensile: Approx. 500 lbs. (for reference only)
- 3,500 ft. maximum for Jetting

LISTED
Except where noted by ▶

20' Lay Length PVC Multi-Cell With Bell

Part No.	Description	Bell (A)	Outerduct (B)	Innerduct O.D.	Innerduct I.D.	Pkg. Qty.	Wt. per 100 ft.
MXSS4S-020	4-Way Type C	4.67	4.35	1.31	1.19	1060'	245
MXSS3S-020	3-Way Type C	4.67	4.35	1.66	1.50	1060'	256
MFSS4S-020	4-Way Type 40	5.00	4.50	1.31	1.19	960'	338
MFSS3S-020	3-Way Type 40	5.00	4.50	1.66	1.50	960'	348
▶ MDSS4S-020	4-Way Type 80	5.50	4.75	1.31	1.19	760'	450
▶ MDSS3S-020	3-Way Type 80	5.50	4.75	1.66	1.50	760'	460



Standard Multi-Gard supplied with grey and one white tracer innerduct.

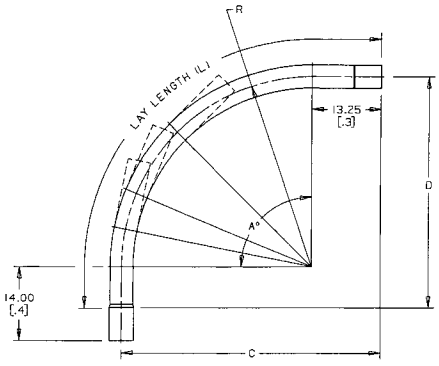
Custom Orders:
* Custom innerduct colors available upon request
* Minimum order quantity required
* Custom orders non-returnable, non-refundable and non-cancelable

PVC Multi-Cell Fixed Bends With Bell

Multi-Gard fixed bends use the same coupling design as straight sections. All bends are provided with engineered plastic innerducts to avoid rope burn-through. These fixed bends are jettable.

Part No.	Description	Innerduct I.D.	Pkg. Qty.
M___N4S	4-Way Fixed Bend	1.19	1
M___N3S	3-Way Fixed Bend	1.50	1

Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Degree(A)	Pos. 4 Radius(R)	Pos. 5 O.D.	Pos. 6 Innerducts	Pos. 7 Innerduct Wall Type
M = Multi-Cell	X = Type C F = Type 40 D = Type 80	3 = 11 1/4 5 = 22 1/2 7 = 45° 9 = 90°	F = 3ft. H = 4ft. J = 6ft. M = 9ft.	N = 4"	4 = 4-Way 3 = 3-Way	S = Smooth



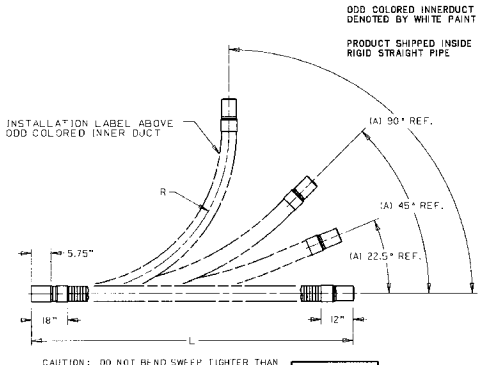
PART NUMBER	DIMENSIONS – INCHES (METERS) A	R	C	D	L
M_3FN_S	11.25°	36 (0.91)	3.28 (0.08)	27.90 (0.71)	2'4" (0.71)
M_5FN_S	22.5°		7.81 (0.20)	33.90 (0.86)	3'0" (0.91)
M_7FN_S	45°		19.91 (0.51)	42.70 (1.08)	4'2" (1.27)
M_9FN_S	90°		49.25 (1.25)	43.88 (1.11)	5'6" (1.58)
M_3HN_S	11.25°	48 (1.22)	3.51 (0.09)	30.24 (0.77)	2'7" (0.79)
M_5HN_S	22.5°		8.72 (0.22)	38.49 (0.98)	3'4" (1.02)
M_7HN_S	45°		23.43 (0.60)	51.19 (1.30)	4'11" (1.50)
M_9HN_S	90°		61.25 (1.56)	55.88 (1.42)	8'1" (2.46)
M_3JN_S	11.25°	72 (1.83)	3.97 (0.10)	34.92 (0.89)	3'0" (0.91)
M_5JN_S	22.5°		10.55 (0.27)	47.67 (1.21)	4'2" (1.27)
M_7JN_S	45°		30.46 (0.77)	68.16 (1.73)	6'6" (1.98)
M_9JN_S	90°		85.25 (2.17)	79.88 (2.03)	11'3" (3.43)
M_3MN_S	11.25°	108 (2.74)	4.66 (0.12)	41.94 (1.07)	3'7" (1.09)
M_5MN_S	22.5°		13.29 (0.34)	61.45 (1.56)	5'4" (1.63)
M_7MN_S	45°		41.00 (1.04)	93.62 (2.38)	8'10" (2.69)
M_9MN_S	90°		121.25 (3.08)	115.88 (2.941)	15'11" (4.85)

PVC Multi-Cell Flexible Bends With Bell

Multi-Gard flexible bends use a patented design capable of a 4' minimum bend radius and use the same coupling design as straight sections and fixed bends. All bends are provided with an exclusive, patented engineered plastic innerducts to avoid rope burn-through. NOTE: After positioning the bend in its application, it is necessary to cut off the excess innerduct material flush to pipe and deburr both the I.D. and O.D. of the innerduct to remove snags.

Part No.	Description	Innerduct I.D.	Pkg. Qty.
M_F_4	4-Way Flexible Bend	1.19	1
M_F_3	3-Way Flexible Bend	1.50	1
M_F_4J	4-Way Flexible Bend	1.19	1
M_F_3J	3-Way Flexible Bend	1.50	1

Pos. 1 Product	Pos. 2 Outerduct Bell	Pos. 3 Description	Pos. 4 Degree and Radius	Pos. 5 Innerducts	Pos. 6
M = Multi-Cell	X = Type C F = Type 40 D = Type 80	F = Flexible	B = 126" (Length) 4' x 90° C = 192" (Length) 6' x 90°	4 = 4-Way 3 = 3-Way	J = Jettable



CAUTION: DO NOT BEND SWEEP TIGHTER THAN SPECIFIED IN CHART.

PART NUMBER	R	A	OVERALL LAY LENGTH (IN) L
M_FB_	4 FT	0-90°	126
	6 FT	0-70°	
	9 FT	0-55°	
M_FC	6 FT	0-90°	192
	9 FT	0-90°	

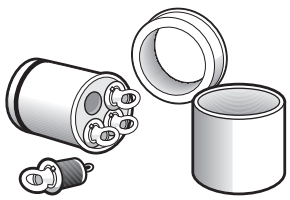
Terminators

Termination kits allow for sealing inner and outerducts. Each kit contains innerduct sealing plugs with rope tie. Standard terminators allow for end terminations, and pass-through (jet-through) terminators allow for bridging innerducts across a vault to allow for unassisted pulling (or jetting) of cable through the vault. Box terminators allow end terminations into above ground cabinets.

Part No.	Description	Pkg. Qty.
M_T__	Terminator	1

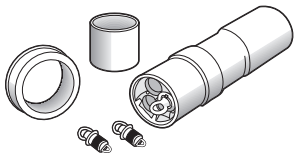
Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Description	Pos. 4 Type	Pos. 5 Innerducts
M = Multi-Cell	X = Type C F = Schedule 40 D = Schedule 80	T = Terminator	1 = Standard w/ plugs 2 = Pass-through w/ plugs 6 = Enclosure Termin. w/ plugs 9 = Jetting Termin. w/ plugs	3 = 3-Way 4 = 4-Way

Standard



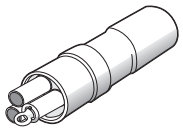
M_T14

Pass-through



M_T23

Jet-through



M_T93

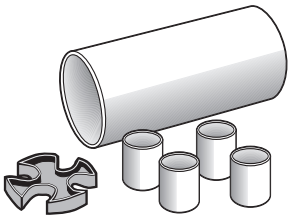
Couplings

Couplings are provided in standard sleeve for joining two uninstalled plain ends and slip couplings for male/male connections and repair of unoccupied Multi-Gard. PVC expansion couplings are listed on page 227.

Part No.	Description	Pkg. Qty.
M_CC_	Standard Sleeve Coupling	1

Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Description	Pos. 4 Type	Pos. 5 Innerducts
M = Multi-Cell	X = Type C F = Schedule 40 D = Schedule 80	C = Standard Coupling	C = Coupling	3 = 3-Way 4 = 4-Way

Standard



M_CC4

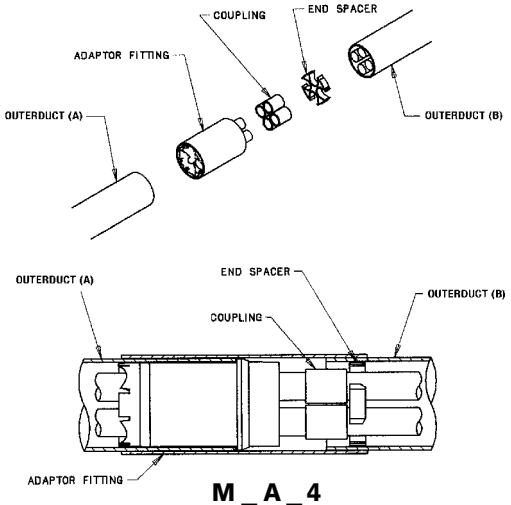
Transition Adapters

- Spigot to Spigot

Transition adaptors allow different outerducts to be coupled together while maintaining same innerduct.
Part numbers configured from smaller duct to larger duct.

Part No.	Description	Pkg. Qty.
M_A__	Transition Adapter	1

Pos. 1 Product	Pos. 2 Outerduct (A)	Pos. 3 Description	Pos. 4 Outerduct (B)	Pos. 5 Innerducts
M = Multi-Cell	X = Type C PVC F = Schedule 40 PVC D = Schedule 80 PVC	A = Adapter	E = EMT R = Galv. Steel B = F/G BR H = F/G HW S = F/G Std. F = Schedule 40 PVC D = Schedule 80 PVC X = Type C PVC P = PVC-Coated Steel	3 = 3-Way 4 = 4-Way



M_A_4

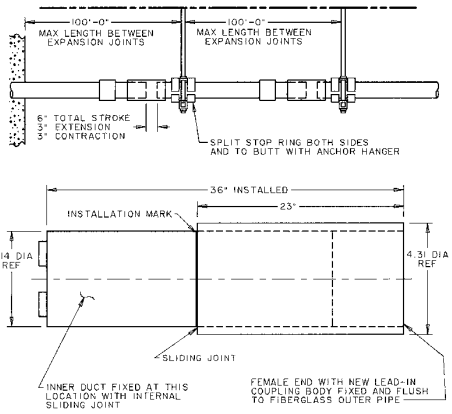
Expansion Joints

Expansion Joints allow for thermal expansion and contraction of outerduct. Fiberglass expansion joints are recommended every 150 feet on bridge crossing applications.

*** Must use Split Stop Rings with Expansion Joints**

Part No.	Description	Pkg. Qty.
M_EC_	Expansion Joint	1

Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Description	Pos. 4 Type	Pos. 5 Innerducts
M = Multi-Cell	X = Type C PVC F = Schedule 40 PVC D = Schedule 80 PVC	E = Expansion Joint	C = Coupling	4 = 4-Way 3 = 3-Way

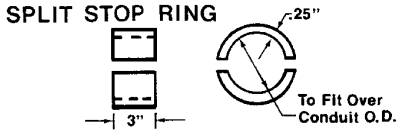


Split Stop Ring

Use split stop rings on either side of support anchors to keep Multi-Gard stationary.

*** Must use Split Stop Rings with Expansion Joints**

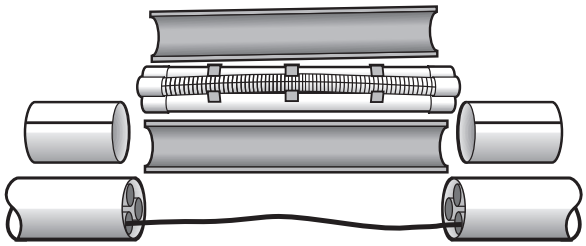
Part No.	Description	Pkg. Qty.	Wt. ea.
MFSSR	Schedule 40 Split Ring	1	.51
MDSSR	Schedule 80 Split Ring	1	.73



Repair Kits – 10 Ft.

Repair kits allow for Multi-Gard repair without disrupting a live cable.

Part No.	Description	Pkg. Qty.
M_R_4S	4-Way 10 ft. Repair - Cable installed	1
M_R_3S	3-Way 10 ft. Repair - Cable installed	1



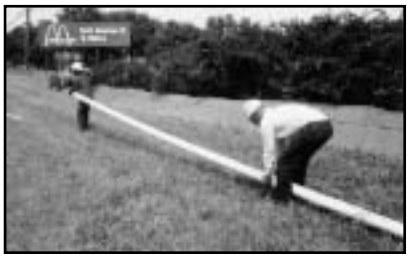
Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Description	Pos. 4 No. of Cables	Pos. 5 Innerducts	Pos. 6 Innerduct Wall Type
M = Multi-Cell	X = Type C F = Schedule 40	R = Repair	1 = 1 Cable 2 = 2 Cables 3 = 3 Cables 4 = 4 Cables	4 = 4-Way 3 = 3-Way	S = Smoothwall

Spare Spacers

Part No.	Description	Std. Ctn. Qty.	Std. Ctn. Wt.
MAES4	4-way end spacers	1 ea. = 5 spacers	3.5
MAES3	3-way end spacers	1 ea. = 5 spacers	.6



Assembly



1. Distribute Multi-gard sections along the sides of the trench with male ends pointing towards starting vault entrance.



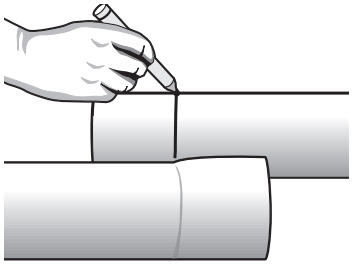
2. Remove protective cap and install Multi-Gard terminator on male end. Install first section into vault opening or enclosure making sure the print line is on the top stating " INSTALL PRINT LINE UP." (See next page for terminations.)



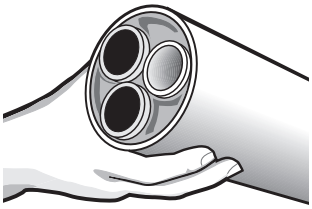
3. Each consecutive 20' section can now be placed by inserting the male end into the gasketed belled end 1/2" to the gasket depth. Make sure the print line is upright. (If not, rotate the outer duct until it is.) Now push the sections together with a firm push until belled end seats against insertion line.

Field Cuts

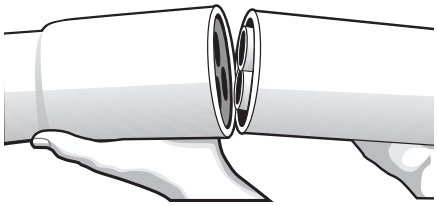
Joining Male and Female Ends



1. Lay the Multi-Gard sections side by side and mark the male end at the base of the bell on the female end. Make a straight cut using a standard carpenter saw.

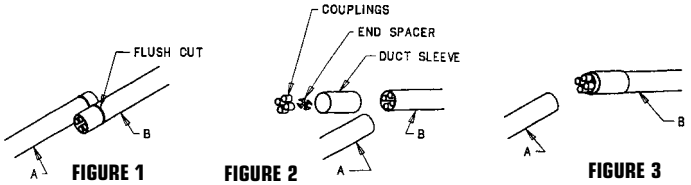


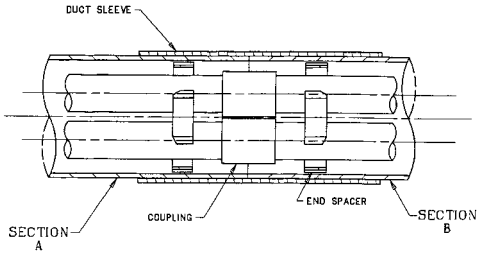
2. A spare spacer may be installed to align the innerducts if they seem loose.



3. Raise both ends and align the innerducts on the male end into the coupling body on the female end. Lower both ends and the innerducts will automatically return to their original position as the joints are forced together.

Joining Two Male Ends



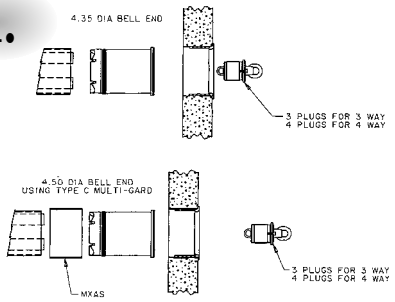


1. Flush cut Multi-Gard sections "A" + "B" as shown in figure 1. Slide outerduct sleeve over Multi-Gard section "B" as shown in figure #2. Insert end spacer into Multi-Gard plain end (chamfer side in) as shown in figure #2. Press couplings onto innerducts of Multi-Gard section "B" as shown in figure #3.

2. Align innerducts on Multi-Gard section "A" with couplings on section "B". Solvent cement each coupling for air tight seal and push until both ends are flush. Apply solvent cement to both ends of Multi-Gard and slide sleeve until it is centered on both sections.

Terminations

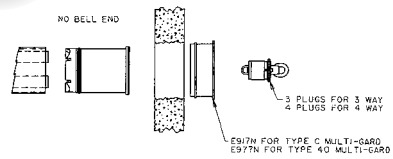
1.



Standard Terminators (Type 1) allow Multi-Gard to be terminated into a standard pre-cast termination.

1. Remove watertight plugs in order to assure total insertion of the Multi-Gard innerducts.
2. Install terminators into male end of Multi-Gard to full depth.
3. Replace watertight plugs into the terminator and tighten.
4. Insert prepared male end into the pre-cast terminator with print line facing upward. Solvent cement into place.
5. Use shim enclosed for terminator requiring a connection of Type C (4.35 O.D.) into a Type 40 (4.50 O.D.) termination.

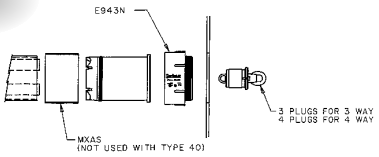
2.



Use a Type 1 Standard Terminator also at an entrance where a pre-cast terminator is not available or a knockout is used:

1. Insert the male end section of Multi-Gard 4 inches past the inside wall of the vault with print line facing upward.
2. Remove the protective cap from the male end of the Multi-Gard.
3. Remove the watertight plugs and insert the terminator to full depth.
4. Install bell fitting over the end of Multi-Gard using solvent cement, and replace plugs.
5. Slide Multi-Gard section until bell fitting is flush with inside, and then seal entrance as required by job specifications.

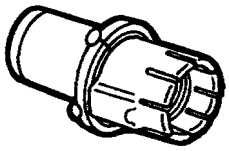
3.



Use a Type 6 Enclosure Terminator at entrances into metal or non-metallic enclosures above ground.

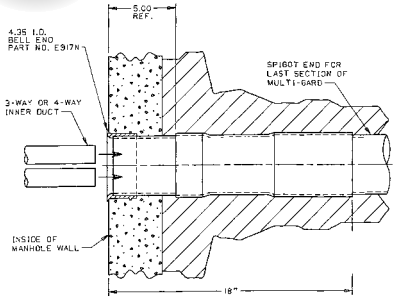
1. Remove watertight plugs in order to assure total insertion of the Multi-Gard innerducts.
2. Install terminators into male end of Multi-Gard to full depth.
3. Replace watertight plugs into the terminator and tighten.
4. Install threaded adapter over end of Multi-Gard using solvent cement. Insert adapter through enclosure hole and provide 4" locking ring.
5. Use shim enclosed for terminator requiring a connection of type C (4.35 O.D.) termination.

4.



Use split plugs for sealing Multi-Gard cells where cable has been installed.
(See page 274)

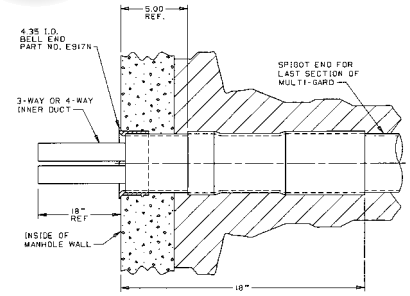
5.



The pass-through terminator is designed to allow for continuous ducts through the vault or hand hole for cable pulling.

1. Install terminator into vault following steps 1 through 5 for standard Type 1 terminator.
2. Cut innerduct of pass through kit 10" longer than the width of the manhole. Add spacers as needed.
3. Upon completion, remove the watertight plugs and install innerducts to traverse manhole/handhole by cutting to length inserting into one side of handhole and raising or bowing center of innerduct span to insert into the pass-through terminator on the opposite side. (See pass-through kits on page 276.)

6.



Use the jet terminator for jetting operations.

1. Remove watertight plugs in order to assure to total insertion.
2. Apply standard grade solvent cement (VC9962) to male end of Multi-Gard. Install jet terminator to insertion line.
3. Replace watertight plugs into terminator and tighten.
4. Apply standard grade solvent cement to terminator male end and insert into pre-cast bell end. (Install PVC bell fitting in kit if pre-cast bell end is not available).
5. Use shim enclosed for terminator requiring a connection of Type C (4.35" O.D.) into a Type 40 (4.50" O.D.) termination.
6. Measure between ends of terminators on opposite ends of vault, and cut innerduct to length.
7. Solvent cement each coupling into place or use mechanical coupling rated for use with high speed air blowing systems.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Trenching

All PVC Trenching installation allows Multi-Gard to be placed in the trench one section at a time or over the trencher for continuous feed.

Open trenching with Type C Multi-Gard is recommended for direct burial or concrete encased applications.





Features

- Install one section at a time.
- Multiple-cells are installed as soon as product is placed.
- Economical installation with installation speed as fast as the trencher.
- Easy installation with standard equipment.
- Gasketed coupling body prevents conduit pulling apart during installation.
- Industry standard outer duct in Type C is suitable for direct burial.
- Type 40 outershell and Type 80 outershell are available where extra protection is necessary.
- Spacers inside outershell allow PVC innerduct internal movement allowing for more flexibility.

Procedures

Paved Areas In paved areas, the surface should be carefully cut to prevent unnecessary excessive width at the top of the trench and help reduce the amount of surface to be repaved.

Trench Width For economical operation, particularly where paving is involved, the trench width should be no greater than is needed to provide adequate working space. Generally, this dimension is controlled by the types of excavating equipment used. As a minimum, the trench must be 5 inches wider than the width of the conduit structure where backfill will be used and 3 inches wider where concrete encasement will be used. Individual job specifications will dictate trench width.

Trench Bed Grade and level the trench bed. Where necessary, provide sand and/or other granular backfill as bedding material so the conduit will be evenly supported over the length of each section.

Assembly On Top Of The Trench After preparing the trench, the Multi-Gard can be assembled on top of the ground outside of the trench by following the directions described on page 5. Once joined together, the Multi-Gard can then be laid gently into the trench. Backfill according to the job specifications.

Trench Feeding Multi-Gard Using Rollers This procedure involves assembling the Multi-Gard above the ground. After the first four or five lengths are assembled, place on top of the trenching machine. The remainder of the duct can be attached to the first section and assembled ahead of the trencher on the ground directly above the intended place for the trench. As the trencher advances forward, the Multi-Gard will lay itself into the trench behind. Once placed in the trench, backfill according to the job specification.

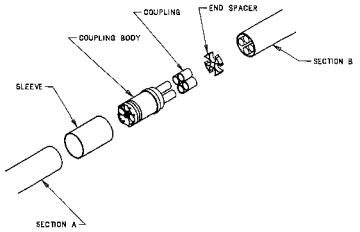
Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

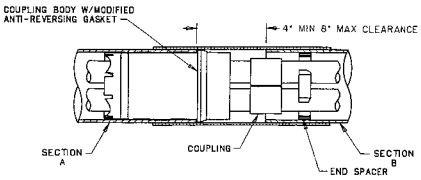
Repairing Vacant Multi-Gard

1. Cut out the damaged section and insert a belled short section (4" shorter than damaged section) of Multi-Gard onto either one of the ends (section A).

2. Apply 2" of cement on ends of spigots of coupling body, press couplings onto spigots.

3. Slide innerduct sleeve over Multi-Gard plain end (section A). Insert end spacer into Multi-Gard plain end (section B).



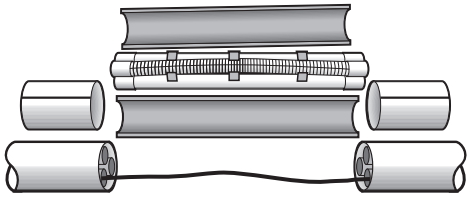


M_SC4 Slip Coupling

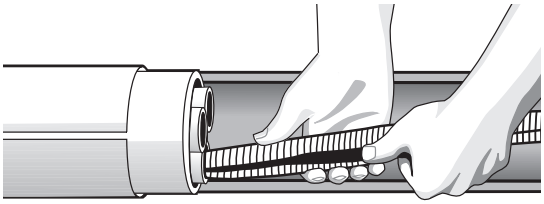
4. Insert female end of slip coupling into Multi-Gard plain end (section A). Align sections A and B. Apply cement to couplings. Slide slip coupling back onto innerducts in Multi-Gard (section B) until seated.

5. Apply cement to both plain ends of Multi-Gard and slide sleeve until centered on both sections.

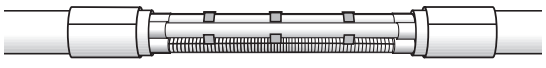
Repairing Multi-Gard Containing Cable(s)



1. Carefully cut out damaged section up to 10 feet. Larger sections can be accommodated using multiple repair kits.



2. Install the 4" split sleeve couplings over the existing Multi-Gard. Slide the smaller split couplings onto the individual innerduct, fitting the cable into the split coupling. Repeat this process on opposite side. Carefully insert the cable(s) into the split corrugated innerduct.

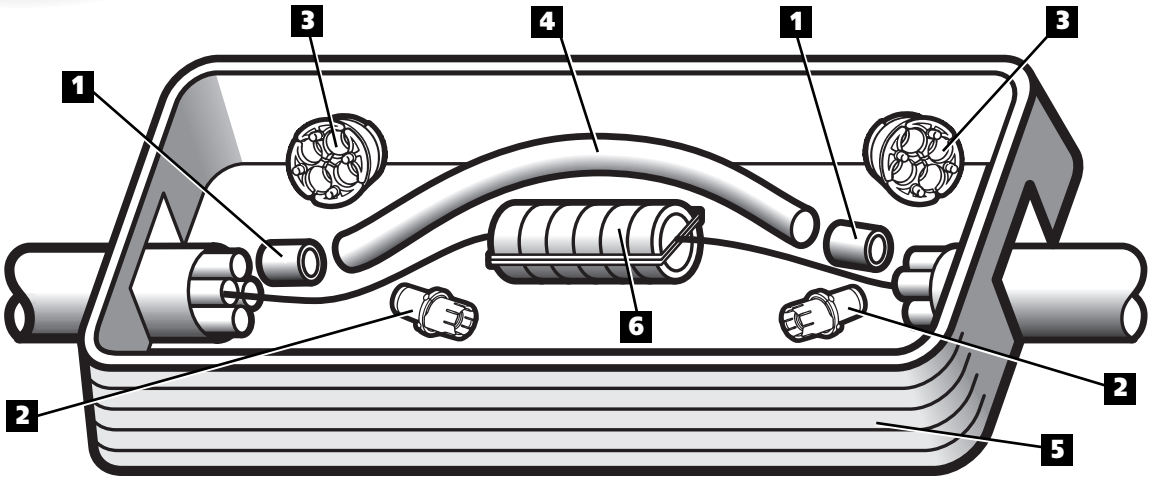


3. Install corrugated innerduct and remaining smooth innerduct into couplings by raising in the center and guiding them into their respective openings. Install the spacers to evenly support the innerduct.



4. Lay one piece of split duct under the repaired section. Install the other piece of split duct onto the first piece and strap or tape in place. Apply cement onto each end and slide the slip sleeves until centered on both sections. Backfill according to job specifications.

Repair Kits



Repairing Multi-Gard with Damaged Cables

1 E940F PVC Coupling
Couples PVC innerduct with solvent cement for empty cells (standard grade qt. cement #VC9962).

2 MAFPG7 Fiber Optic Simplex Plug
(cable O.D. range .57 - .65) Seals innerduct with cable installed.

3 MAQPG2 Quadplex Plug (4 holes each)
Seals outershell and innerduct

4 48808DK PVC Pass-through Kit
(4 x 20' lengths) 20 foot lengths can be cut to length for continuous empty innerduct.

5 Underground Vault & Lid needed
Choose size & construction based on dimensions of splice cases and weight requirements. (Allow 12" on either side of splice for bending innerduct)

6 Splice Case

Repair Kit Instructions:

1. Dig around break area enough to allow vault to drop over the repair area and rest level when the mouseholes have been cut away for the duct.
2. Cut away and remove outer shell and any damaged inner-ducts, being careful to protect any exposed cables.
3. Cut back the outer duct to allow approximately 6" of inner-duct exposed.
4. Install the splice case per manufacturer's or customer's specifications, allowing enough cable slack so no tension is felt.
5. Install the quad plugs (Item #3) and single plugs (Item #2) in duct containing cable.
6. Install pass-through ducts (Item #4) with coupling (Item #1) sealing with solvent cement.
7. Set the enclosure base over the entire package and place cover on enclosure.
8. Refill hole as required.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® Multi-Gard® Fiberglass



Multi-Gard is a multi-cell raceway manufactured in 20 ft. lengths with pre-installed, pre-lubricated innerducts. The pre-installed innerduct design feature eliminates the need of pulling innerducts through existing pipe, which saves valuable time and money.

Applications: **Outdoor (UV Resistant) Bridge Crossings, Areas Subject to Physical Damage**

Wall Types: **Standard, Heavy or Bullet Resistant**

Innerducts: **PVC 3-Way 1 1/2" or 4-Way 1 1/4"**





Features

- Pre-lubricated PVC innerducts reduce coefficient of friction for easy cable pulling.
- Anti-reversing gaskets on coupling body allow easy push in – hard to pull out sealing system.
- O-ring gasket at base of bell reduces risk of water entering system.
- Inward tapering holes on coupling body give quick and easy innerduct alignment.
- Marked innerduct and marked hole on coupling body ensure proper innerduct alignment.
- Deep bell provides strong joint.
- Internal spacers keep innerducts straight.
- Staging materials to job site is simplified.
- Standard Wall .070" provides basic mechanical and UV protection.
- Heavy Wall .090" provides enhanced mechanical protection where physical abuse might be experienced.
- Bullet Resistant .250" provides heavy duty protection.
- Lightweight construction for easy handling.

Technical Information

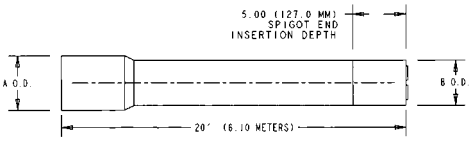
- Joint Tensile: Approx. 500 lbs. (for reference only)
- 3,500 ft. Maximum for Jetting
- 20' overall stick length

Assembly Instructions

1. Place plain end of one 20' section into gasketed coupling body 1/2" to the gasket depth of another 20' section.
2. Check for alignment and apply epoxy to outside of plain end.
3. Push sections together with a firm push by hand until plain end seats fully into belled end.

20' Overall Length Fiberglass Multi-Cell With Bell

Part No.	Description	Wall Thick-ness	Bell (A) Dim.	Outerduct (B) Dim.	Innerduct Dim. O.D.	Innerduct Dim. I.D.	Pkg. Qty.	Wt. per 100 ft. (lbs.)
MSSS4S-020	4-Way Standard	.070	4.31	4.14	1.31	1.19	1140'	240
MSSS3S-020	3-Way Standard	.070	4.31	4.14	1.66	1.50	1140'	253
MHSS4S-020	4-Way Heavy Wall	.090	4.39	4.18	1.31	1.19	1140'	338
MHSS3S-020	3-Way Heavy Wall	.090	4.39	4.18	1.66	1.50	1140'	340
MBSS4S-020	4-Way Bullet Res.	.250	5.00	4.25	1.31	1.19	1140'	450
MBSS3S-020	3-Way Bullet Res.	.250	5.00	4.25	1.66	1.50	1140'	450



Standard Multi-Gard supplied with grey and one white tracer innerduct.

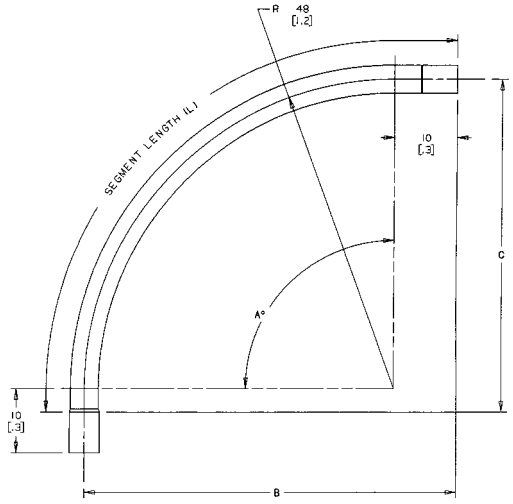
Custom Orders:
* Custom innerduct colors available upon request
* Minimum order quantity required
* Custom orders non-returnable, non-refundable and non-cancelable

Fiberglass Multi-Cell Fixed Bends with Bell

Multi-Gard fixed bends use the same coupling design as straight sections. All bends are provided with engineered plastic innerducts to avoid rope cut-through into adjacent innerducts.

Part No.	Description	Innerduct I.D.	Pkg. Qty.
M__HN4S	4-Way Fixed Bend	1.19 I.D.	1
M__HN3S	3-Way Fixed Bend	1.50 I.D.	1

Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Degree (A)	Pos. 4 Radius	Pos. 5 O.D.	Pos. 6 Innerducts	Pos. 7 Innerduct Wall Type
M = Multi-Cell	S = Standard H = Heavy wall B = Bullet Res.	3 = 11 1/4° 5 = 22 1/2° 7 = 45° 9 = 90°	H = 4 ft.	N = 4"	4 = 4-Way 3 = 3-Way	S = Smoothwall



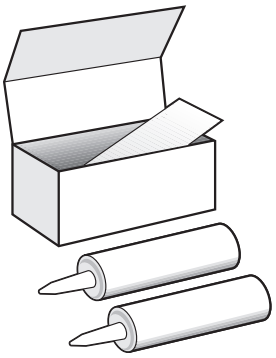
PART NUMBER	ANGLE (A)	SEGMENT LENGTH (L) (INCHES / METERS)	B (IN/M)	C (IN/M)
M__3HN__S	11 1/4	29.4 (.75)	1 (0)	13 (.3)
M__5HN__S	22 1/2	38.8 (.99)	4 (.1)	22 (.6)
M__7HN__S	45	57.7 (1.47)	14 (.4)	38 (1)
M__9HN__S	90	95.4 (2.42)	58 (1.5)	52 (1.3)

Epoxy Kits

Apply epoxy to plain end and bell before insertion for a water tight joint and to avoid joint pull-out.

Part No.	Description	Pkg. Qty.	Wt. ea.
MA30EK	30 oz. w/mixing tip	1	2.50

Pipe Size	# Joints per 30 oz. Kit
2"	30
3"	24
4"	18
5"	12
6"	10



Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

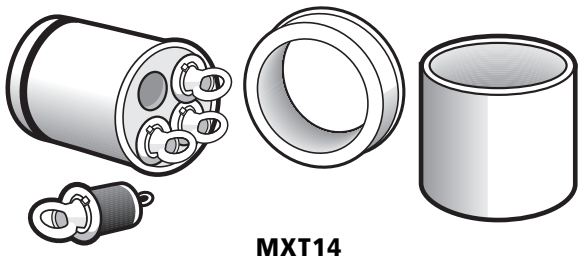
Terminators

Termination kits allow for sealing inner and outerducts. Each kit contains innerduct sealing plugs with tie rope. Standard terminators allow for end terminations.

Part No.	Description	Pkg. Qty.	Wt. Ea
MXT1_	Terminator	1	1.5

Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Description	Pos. 4 Type	Pos. 5 Innerducts
M = Multi-Cell	X = Standard	T = Terminator	1 = Standard w/ plugs	3 = 3-Way 4 = 4-Way

Standard



MXT14

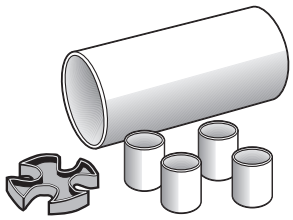
Couplings

Couplings are provided in standard sleeve for joining two uninstalled plain ends and slip couplings for repair of unoccupied Multi-Gard.

Part No.	Description	Pkg. Qty.
M_CC_	Standard Sleeve Coupling	1

Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Description	Pos. 4 Type	Pos. 5 Innerducts
M = Multi-Cell	S = Std. wall .070 H = Hvy. wall .090 B = B. res. .250	C = Standard	C = Coupling	3 = 3-Way 4 = 4-Way

Standard



M_CC4

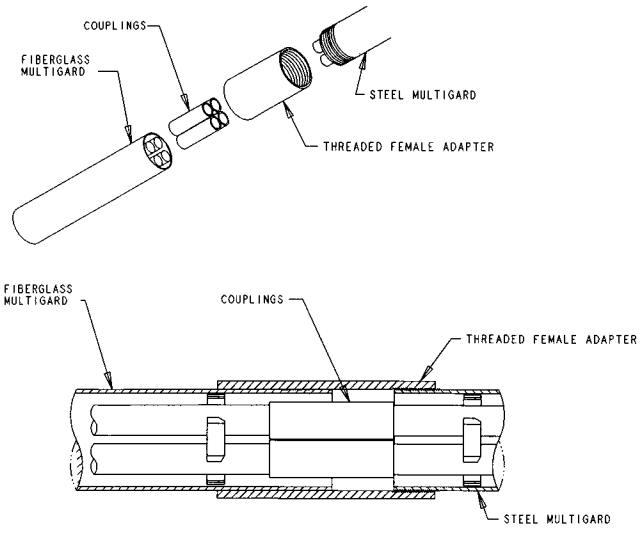
Transition Adapters

• Spigot to Spigot

Transition adapters allow different outerducts to be coupled together while maintaining same innerduct.
(See PVC section for transitioning to PVC Multi-Gard.)

Part No.	Description	Pkg. Qty.
M_A__	Transition Adapters	1

Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Description	Pos. 4 Outerduct	Pos. 5 Innerducts
M = Multi-Cell	X = Type C PVC F = Schedule 40 PVC D = Schedule 80 PVC	A = Adapter	E = EMT R = Galv. Steel B = F/G BR H = F/G HW S = F/G Std. F = Sch. 40 PVC D = Sch. 80 PVC X = Type C PVC P = PVC Coated Steel	3 = 3-Way 4 = 4-Way



M_AR4

Spare Spacers

Part No.	Description	Std. Ctn. Qty.	Std. Ctn. Wt.
MAES4	4-way end spacers	1 ea. = 5 spacers	3.5
MAES3	3-way end spacers	1 ea. = 5 spacers	.6



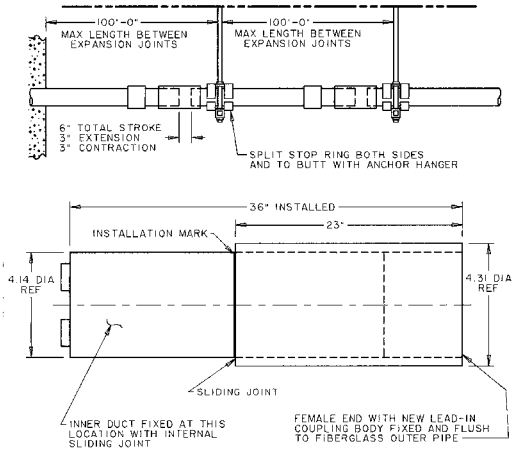
Expansion Joints

Expansion Joints allow for thermal expansion and contraction of outerduct. Fiberglass expansion joints are recommended every 150 feet on bridge crossing applications.

*** Must use Split Stop Rings with Expansion Joints**

Part No.	Description	Pkg. Qty.
M_EC_	Expansion Joints	1

Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Description	Pos. 4 Type	Pos. 5 Innerducts
M = Multi-Cell	S = Standard	E = Expansion	C = Coupling	4 = 4-Way
	H = Heavy Wall			3 = 3-Way
	B = Bullet Res.			

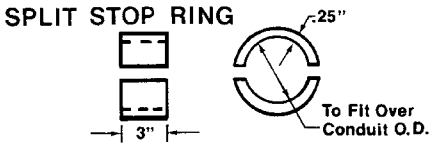


Split Stop Ring

Use split stop rings on either side of support anchors to keep Multi-Gard stationary.

*** Must use Split Stop Rings with Expansion Joints**

Part No.	Description	Pkg. Qty.	Wt. Ea
MSSR	Standard Wall Split Ring	1	.50
MSSRH	Heavy Wall Split Ring	1	.50
MBSSR	Bullet Resistant Split Ring	1	1.75



Carlon® Multi-Gard® Galvanized Steel/PVC-Coated

Steel Multi-Gard is a multi-celled raceway system designed for bridge applications and other areas requiring heavy duty protection. Steel Multi-Gard is manufactured in 10 ft. lengths with pre-installed, pre-lubricated, smoothwall PVC innerducts.

Applications: **Areas subject to physical damage – vandalism & crush. Bridge crossings**

Innerducts: **PVC 3-Way 1 1/2" or 4-Way 1 1/4"**







Features

- Pre-lubricated PVC innerducts for very low co-efficient of friction and lay straight for long pulls.
- Pre-installed reverse spin coupling allows coupling Multi-Gard together without turning pipe.
- 3 set screws keep coupling from backing off, before and after installation.
- Standard sweeps and terminators.
- Patented flexible bend.
- Conforms to NEC Article 300.22 and NFPA 90A for installation of communication cables inside buildings.
- All bends have "cut-through" resistant innerducts in bends to avoid rope cutting into adjacent occupied innerduct.
- Accessories such as pull line and line blowing kits available.
- Gasketed coupling body and PVC innerducts are designed to handle jetting equipment or line blowing.

Technical Information

- Joint Tensile: Approx. 500 lbs. (for reference only)
- 3,500 ft. Maximum for Jetting
- 10 ft. lay lengths standard

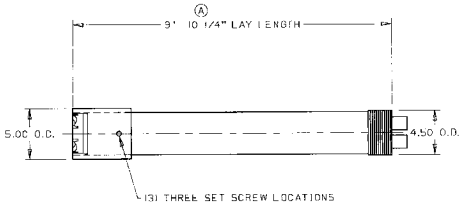
Assembly Instructions

1. Remove cap and loosen set screws on coupling. Spin back to allow for insertion.
2. Insert male into female end and spin coupling forward to bottom out.
3. Check for alignment of marked innerduct and marked hole.
4. Tighten set screws.

10' Lay Length – Steel Multi-Celled with Spin Coupling

Part No.	Description	Coupling O.D.	Outerduct Dim.	Innerduct Dim. O.D.	Innerduct Dim. I.D.	Pkg. Qty.	Wt. per 100 ft.
MRSS4S-010	4-Way Galvanized Steel	5.00	4.50	1.315	1.19	170	1130
MRSS3S-010	3-Way Galvanized Steel	5.00	4.50	1.660	1.50	170	1130
MPSS4S-010	4-Way PVC Coated Steel	5.00	4.50	1.315	1.19	170	1200
MPSS3S-010	3-Way PVC Coated Steel	5.00	4.50	1.660	1.50	170	1200

Standard Multi-Gard supplied with grey and one white tracer innerduct.



Galvanized Steel Multi-Cell Fixed Bends With Spin Coupling

Multi-Gard fixed bends use the same coupling design as straight sections. All bends are provided with engineered plastic innerducts to avoid rope cut-through into adjacent innerducts.

Part No.	Description	Innerduct I.D.	Pkg. Qty.
MR_HN4S	4-Way Fixed Bends	1.19	1
MR_HN3S	3-Way Fixed Bends	1.50	1

Pos. 1 Product
M = Multi-Cell

Pos. 2 Outerduct
R = Galvanized Steel
P = PVC Coated Steel

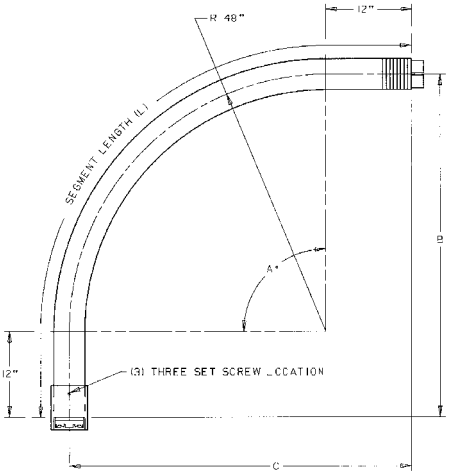
Pos. 3 Degree(A)
3 = 11 1/4°
5 = 22 1/2°
7 = 45°
9 = 90°

Pos. 4 Radius(R)
H = 4 ft.
F = 3 ft.

Pos. 5 O.D.
N = 4"

Pos. 6 Innerducts
4 = 4-Way
3 = 3-Way

Pos. 7 Innerduct Wall Type
S = Smooth



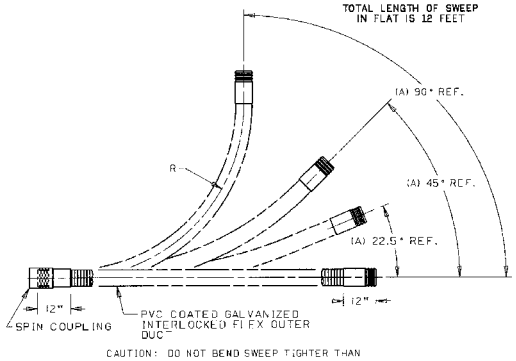
PART NUMBER	DIMENSIONS A	B	C	L
MR3HN__S	11.25°	60	60	2' 9"
MR5HN__S	22.5°	60	60	3'-7"
MR7HN__S	45°	60	60	5'-2"
MR9HN__S	90°	60	60	8'-3"

PRODUCT SHIPPED WITH CLOSED END THREAD PROTECTORS

PVC Coated Flexible Steel Bends With Spin Coupling

Multi-Gard flexible bends use a patented design capable of a 4' minimum bend radius and use the same coupling design as straight sections and fixed bends. All bends are provided with engineered plastic innerducts to avoid rope cut-through into adjacent innerducts. NOTE: After positioning the bend in its application, it is necessary to cut off the excess innerduct material flush to pipe and deburr both the I.D. and O.D. of the innerduct to remove snags.

Part No.	Description	Innerduct I.D.
MRFB4	4-Way Flexible Bend	1
MRFB3	3-Way Flexible Bend	1

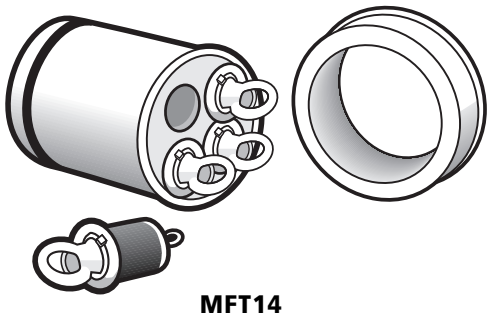


PART NUMBER	DIMENSIONS R	A
MRFB __	4 FT	0-90°
	6 FT	0-70°
	9 FT	0-55°

Terminators Galvanized Steel

Termination kits allow for sealing inner and outerducts. Each kit contains innerduct sealing plugs with rope tie. Standard terminators allow for end terminations.

Part No.	Description	Pkg. Qty.	Wt. Ea.
MFT14	4-Way Standard Terminator GS	1	1.5
MFT13	3-Way Standard Terminator GS	1	1.5



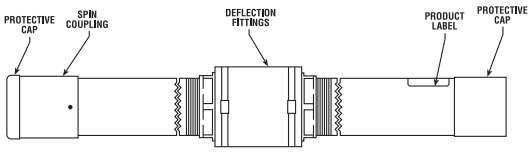
MFT14

Deflection Joint

Couplings are provided in standard sleeve for joining two uninstalled plain ends and slip couplings for repair of unoccupied Multi-Gard.

Part No.	Description	Pkg. Qty.	Wt. Ea.
MROS_	Deflection Joint	1	25 lbs.

Pos. 1 Product	Pos. 2 Outerduct	Pos. 3 Description	Pos. 4 Outerduct	Pos. 5 Innerduct
M = Multi-Cell	R = Galv. Steel	O = Offset/ Deflection	S = Standard	4 = 4-Way 3 = 3-Way

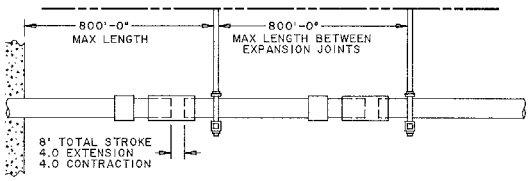


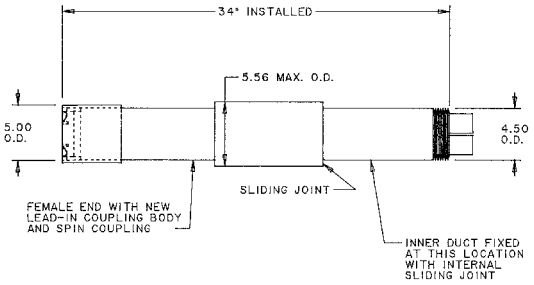
NOTE: PRODUCT DESIGNED FOR OUTDOOR WET LOCATIONS. PRODUCT SHIPPED WITH CLOSED-END THREAD PROTECTORS.

Expansion Joints

Expansion Joints allow for thermal expansion and contraction of outerduct. Steel expansion joints are recommended every 150 feet on bridge crossing applications.

Part No.	Description	Pkg. Qty.	Wt. Ea.
MREC4	4-Way 8" Stroke	1	42
MREC3	3-Way 8" Stroke	1	42





Spare Spacers

Part No.	Description	Std. Ctn. Qty.	Std. Ctn. Wt.
MAES4	4-way end spacers	1 ea. = 5 spacers	3.5
MAES3	3-way end spacers	1 ea. = 5 spacers	.6



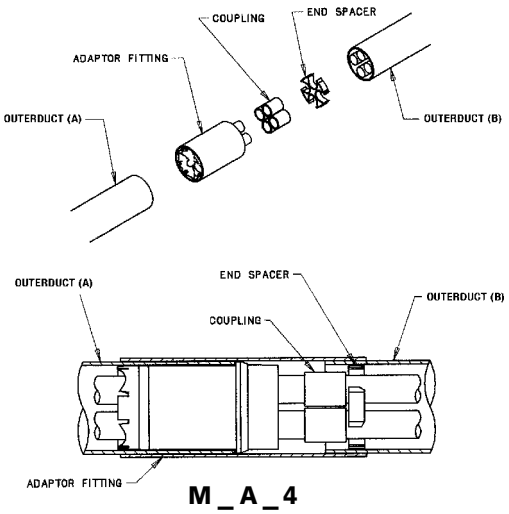
Transition Adapters

• Spigot to Spigot

Transition adaptors allow different outerducts to be coupled together while maintaining same innerduct.
Part numbers configured from smaller duct to larger duct.

Part No.	Description	Pkg. Qty.
M_A__	Transition Adapter	1

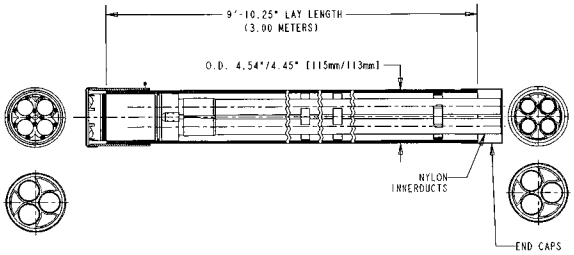
Pos. 1 Product	Pos. 2 Outerduct (A)	Pos. 3 Description	Pos. 4 Outerduct (B)	Pos. 5 Innerducts
M = Multi-Cell	X = Type C PVC F = Schedule 40 PVC D = Schedule 80 PVC	A = Adapter	E = EMT R = Galv. Steel B = F/G BR H = F/G HW S = F/G Std. F = Schedule 40 PVC D = Schedule 80 PVC X = Type C PVC P = PVC Coated Steel	3 = 3-Way 4 = 4-Way



M _ A _ 4

Field Bendable Sweeps

Part No.	Description	Pkg. Qty.
MRSS4SFB-010	4-Way Field Bendable Sweep - 10 ft.	1
MRSS3SFB-010	3-Way Field Bendable Sweep - 10 ft.	1



Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® Multi-Gard® EMT

Multi-Gard EMT is a multi-cell conduit system for use inside buildings. It has pre-installed PVC innerducts, comes in 10 ft. lengths, and has a gasketed coupling body.

Applications: **Indoor – Inside Buildings**
Innerducts: **3-Way 1 1/2" or 4-Way 1 1/4"**



Features

- 10' lengths with set screw couplings.
- Standard sweeps and terminators
- Transition adapters available such as EMT to Type C Multi-Gard.
- PVC innerducts lay straight for longer pulls.
- PVC innerducts are pre-lubricated for longer pulls.
- All metallic components are UL Listed and conform to meet NEC Article 300.22 and NFPA 90A for installation of communication cables inside buildings.
- All bends have "cut through" resistant innerducts to avoid rope cutting into adjacent occupied innerduct.
- Accessories such as line blowing kits and pull line available.



Technical Information

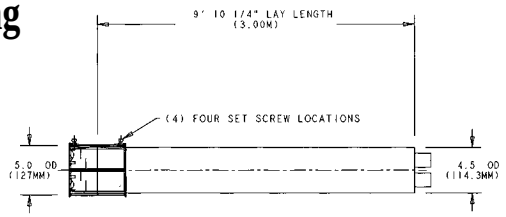
- Joint Tensile: Approx. 500 lbs. (for reference only)
- 3,500 ft. Maximum for Jetting
- 10 ft. lay lengths standard

Assembly Instructions

1. Remove cap and loosen set screws on open end of coupling.
2. Insert male end of conduit into female coupling, checking for alignment of marked innerduct into marked hole.
3. Tighten set screws.

10' Lay Length EMT Multi-Cell with Set Screw Coupling

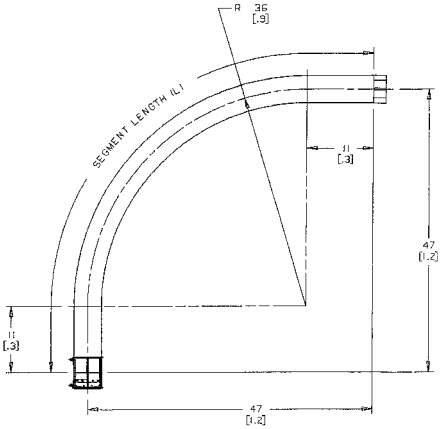
Part No.	Description	Outerduct Dim. O.D.	Outerduct Dim. I.D.	Innerduct Dim. O.D.	Innerduct Dim. I.D.	Pkg. Qty.	Wt. per 100 ft.
MESS4S-010	4-Way	4.50	4.33	1.32	1.19	170'	555
MESS3S-010	3-Way	4.50	4.33	1.66	1.50	170'	555



Fixed Bends EMT Multi-Cell with Set Screw Coupling

Multi-Gard fixed bends use the same coupling design as straight sections. All bends are provided with engineered plastic innerducts to avoid rope cut-through into adjacent innerducts.

Part No.	Description	Pkg. Qty.	Wt. Ea. (lbs.)
ME9FN4S	4-Way 90˚x36" Radius	1	39
ME7FN4S	4-Way 45˚x36" Radius	1	20
ME9FN3S	3-Way 90˚x36" Radius	1	39
ME7FN3S	3-Way 45˚x36" Radius	1	20

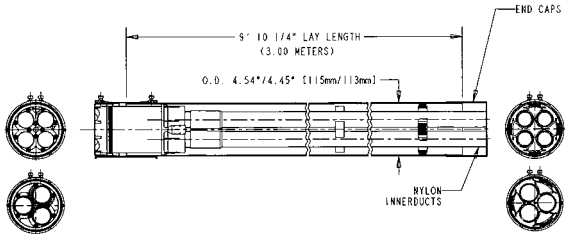


PART NUMBER	SEGMENT LENGTH (L) (INCHES / METERS)
ME7FN__S	50.30 (1.28)
ME9FN__S	78.50 (1.99)

Field Bendable Sweeps

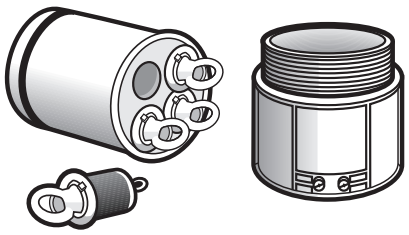
Multi-Gard flexible bends use a patented design capable of a 4' minimum bend radius and use the same coupling design as straight sections and fixed bends. All bends are provided with engineered plastic innerducts to avoid rope cut-through into adjacent innerducts. NOTE: After positioning the bend in its application, it is necessary to cut off the excess innerduct material flush to pipe and deburr both the I.D. and O.D. of the innerduct to remove snags.

Part No.	Description	Pkg. Qty.
MESS4SFB-010	4-Way EMT Field Bendable Sweep - 10 ft.	1
MESS3SFB-010	3-Way EMT Field Bendable Sweep - 10 ft.	1



Terminators for EMT Multi-Gard

Part No.	Description	Pkg. Qty.	Wt. Ea. (lbs.)
MET64	4-Way Standard Enclosure Terminator	1	2.5
MET63	3-Way Standard Enclosure Terminator	1	2.5



Spare Spacers

Part No.	Description	Std. Ctn. Qty.	Std. Ctn. Wt.
MAES4	4-way end spacers	1 ea. = 5 spacers	3.5
MAES3	3-way end spacers	1 ea. = 5 spacers	.6



Part 1 General

1.01 SCOPE: Multiple Celled raceway systems, such as Multi-Gard manufactured by Carlon Telecom Systems (1-800-3-CARLON), utilizing prelubricated PVC innerducts for installation of voice, data, video, and other low voltage cabling. Different outershells are provided for routing cabling through direct bury, concrete encased, normal above ground, and heavy duty above ground applications.

1.02 SYSTEM DESCRIPTION: Industry standard communication outerducts and innerducts meeting the performance requirements of this specification. Fixed and flexible bends allow for changes in direction. A gasketed coupling mechanism shall be provided with self-aligning tapered holes in straight sections, bends, and terminators for field assembly without lubricant.

Part 2 Product

2.01 MATERIALS

A. Outerducts

1. PVC outerduct shall have print line stating "INSTALL PRINTLINE UP" and be available in the following:
   - **a.** Type C U.L. listed for direct burial and concrete encasement.
   - **b.** Type 40 U.L. listed for direct burial and concrete encasement.
   - **c.** Type 80 for heavy traffic direct burial and physical abuse above ground.
2. Fiberglass reinforced epoxy shall be available in the following:
   - **a.** .070 Standard Wall for basic mechanical and UV protection above ground.
   - **b.** .090 Heavy Wall provides enhanced mechanical protection where physical abuse might be experienced.
   - **c.** .250 Bullet Resistant provides heavy duty protection.
3. Galvanized steel shall be available in the following:
   - **a.** Type 40 Hot dipped inside and out for above ground applications such as bridge abutment walls. Threads shall be on both ends. Spin Coupling shall have 3 set screws set 120˚ apart to stabilize coupling. Threads shall be coated with Zinc Oxide metalizing.
   - **b.** U.L. listed EMT outershell and couplings for inside building applications including Plenums, Risers, and General Purpose areas.

B. Outerduct Performance Requirements

	PVC			Fiberglass			Steel	
	Type C	Type 40	Type 80	SW	HW	BR	EMT	GRC
Min. stiffness lb/in/in at 72˚ F	100	370	Crush 2000	40	90	N/A	N/A	N/A
Min. O.D.	4.35"	4.50"	4.75"	4.14"	4.18"	4.50"	4.50"	4.50"
Impact values ft/lbs. at 72˚ F	100	220	525	50	80	N/A	N/A	N/A
Max. joint insertion force	80 lbs.	80 lbs.	80 lbs.	80 lbs.	80 lbs.	80 lbs.	80 lbs.	80 lbs.
Max. joint separation force	200 lbs.	200 lbs.	200 lbs.	200 lbs.	200 lbs.	200 lbs.	Mechanical	Mechanical
Min. joint water infiltration	11 PSI	11 PSI	11 PSI	N/A	N/A	N/A	N/A	N/A
Min. lay length	20'	20'	20'	20'	20'	20'	10'	10'
Flexible bend min. radius	4'	4'	4'	4'	4'	4'	4'	4'

C. Innerducts

1. Innerducts in straight lengths shall be Prelubricated PVC. One white innerduct shall be under the print line with other innerducts being gray. Multi-Cell can be assembled from different directions without "mirror" effect. Multi-colored innerducts may also be provided (3-cell white/gray/orange) (4-cell white/gray/orange/green).
2. Innerducts in all bends shall not cut through when subjected to a 1/4" polyprolene rope pulled at 100 ft/min at 450 lb. tension for 100 minutes tested in accordance with Bellcore TR-TSY-000356 procedures.
3. A non-cemented spacer system shall hold the 4-cell innerducts in a square configuration and 3-cell innerducts in a triangular configuration.

D. Innerduct Performance Requirements

	4-way	3-way
Min. stiffness lb/in/in at 122˚ F	170	140
Air burst pressure rating	200 PSI	200 PSI
COF requirements TSY-356	Pass .06 - .09	Pass .06 - .09
Cut-through testing TSY-356 (in bends)	Pass 100 min.	Pass 100 min.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

2.03 BENDS AND ACCESSORIES

A. Bends

	PVC			Fiberglass			Steel	
	Type C	Type 40	Type 80	SW	HW	BR	GRC	EMT
Fixed bend radius available	3', 4', 6', 9'	3', 4', 6', 9'	3', 4', 6', 9'	4'	4'	4'	4'	3'
Flexible bend 10' 1/2" length	4' x 90˚	4' x 90˚	4' x 90˚	Use GRC	Use GRC	Use GRC	4' x 90˚ (12')	Use GRC
Flexible bend 16' length	9' x 90˚	9' x 90˚	9' x 90˚	Use GRC	Use GRC	Use GRC	4' x 90˚ (12')	Use GRC

B. Accessories

1. Slip couplings to allow male/male connections.
2. Termination kits for vaults, handholes, enclosures, pass-through and jet-through applications.
3. Repair kits for future repair of empty or occupied duct.
4. Drop kits for future dropping of empty or occupied duct.
5. Line blowing kits with missiles.
6. 1700 lb. Slick braid rope, 1130 lb. poly rope, twisted blow line, and 1250 lb. polyester woven tape.

Part 3 General

3.01 DELIVERY, STORAGE, HANDLING

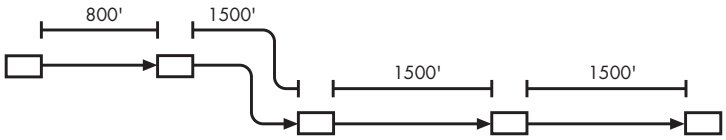
A. All materials shall be furnished by same manufacturer.
B. Local personal field support shall be available.
C. Product application assistance shall be provided by manufacturer as needed.
D. All flexible bends must be shipped in protective shipping containers.
E. Manufacturer shall supply installation instructions.

Feature	Multi-Gard
Pre-lubricated PVC Innerducts	Yes
Assembles without lubricant	Yes
Type C, Type 40, Type 80	Yes
Fiberglass in .070, .090, .250	Yes
EMT for Inside Building	Yes
Galvanized Steel with Reverse Spin Coupling/PVC Coated Galvanized	Yes
Flexible Sweeps capable of 4' bend radius	Yes
Engineering Assistance	Yes
Local Training and Assistance	Yes
20 Foot Lay Lengths	Yes
Local Stock	Yes
U.L. Listed	Yes
Recommended for Boring	Yes
Watertight	Yes
Holds 120 PSI for Jetting	Yes
No Solvent Cement Required (Except in Boring and Jetting Applications)	Yes
Pulling Planner for Pull Point location	Yes
Drawings on Disk	Yes

Multi-Gard® Gards Your Networks!

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

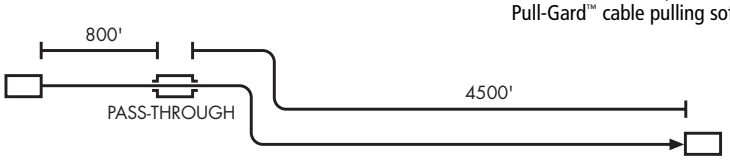
Multi-Gard Saves You Money! Multi-Gard® vs. Conduit and Pulled Innerduct Cost Comparison



Cost of Raceway and Pulling 3 x 1.25" Innerducts

Material	Qty.		Cost		Total	Labor	Cost		Total	
4" Conduit Type C	5,300'	_____	.75 per ft.	_____	3975	same for both				
90˚ x 48"	2	_____	15.00 each	_____	30	same for both				
Pull Boxes	5	_____	300.00 each	_____	1500	50.00 /ea.		_____	250	
Terminators	8	_____	25.00 each	_____	200	same for both				
Plugs	24	_____	2.00 each	_____	48	same for both				
Pulling Eyes	3	_____	60.00 each	_____	180	10.00 ea.		_____	30	
Pulling Harness	1	_____	60.00 each	_____	60	10.00 ea.		_____	10	
Innerduct	16,000	_____	.30 per ft.	_____	4800	16,000' x	.25 /ft.	_____	4000	
Lubricant	16,000	_____	.02 per ft.	_____	320	2.00 per 100 ft.		_____	320	
Cement	10 qt.	_____	4.00 qt.	_____	40	5,300 ÷20' = 265 x	.25 /ea.	_____	66	
Reel Disposal	3	_____	25.00 each	_____	75		10.00 /ea.	_____	30	
Mid. Assist. Equip.	2 x 8 hrs.	_____	100.00 hr.	_____	800	5,300 x _____	.10 /ft.	_____	530	
				_____	12028			_____	5236	**17264**

* Carlon can also help determine handhole/manhole placement with Pull-Gard™ cable pulling software. Call 1-800-322-7566.



Cost of Multi-Gard with 3 x 1.5" Innerducts or 4 x 1.19" Innerducts Pre-installed

Material	Qty.		Cost		Total	Labor	Cost		Total	
Multi-Gard® Type C	5,300	_____	2.50 per ft.	_____	13250	same				
90 x 48"	2	_____	75.00 each	_____	150					
Pull Boxes	3	_____	300.00 each	_____	900		50 /ea.	_____	150	
Term. w/ Plugs	2	_____	35.00 each	_____	70	same				
Term. Pass Thru	4	_____	60.00 each	_____	240	same				
Pre-Lubricant			Included		N/C		-0-	_____	-0-	
Mid. Assist. Equip.			Not Required		N/C	5300 x _____	.10 /ft.	_____	530	
				_____	14610			_____	680	**15290**

Additional Benefits of Using Multi-Gard:

1. Eliminates the need to place innerducts into an empty conduit. Multi-Gard contains factory installed innerducts.
2. Multi-Gard factory pre-installed PVC innerducts provide a straight path for the placement of cable.
3. Reduced installation cost. The cost of installing innerducts is eliminated and innerduct waste is eliminated.
4. Multi-Gard prelubrication formula provides the lowest coefficient of friction available.
5. The Multi-Gard gasketed coupler system eliminates cementing sections except when boring or jetting.
6. Multi-Gard patented fixed bends and flexible bends incorporate "cut-through" resistant innerducts. Pre-installed engineered plastic innerducts prevent pull lines from cutting into the innerduct sidewall when pulling around bends. Bends containing HDPE or PVC innerducts do not have the same resistance to cut-through.
7. Open the trench just once. Multi-Gard allows customers additional cells to upgrade their Telecom Network System.
8. Multi-Gard factory installed innerducts allow more innerducts to be placed inside the 4" conduit (4 x 1.19" and 3 x 1.50"). When placing innerducts you are limited to (3 x 1.25" or 2 x 1.5") on many systems.
9. Multi-Gard factory installed innerducts avoid the risk of "neckdown". Neck-down occurs when innerducts are pulled past their tensile strength, causing the plastic to stretch out.
10. All material arrives on the job site at the same time! Crews can begin assembly without waiting for additional material to deliver. After installing Multi-Gard there are no empty reels to return or dispose.

Multi-Gard® Multi-Cell Conduit System

A major telephone company sponsored a competition to compare and evaluate the two leading multi-cell conduit systems currently available in the communications industry.

Under the supervision of the telephone company, an independent contractor was hired to install the two multi-cell conduit systems meeting standard installation requirements. Additionally, a consultant was retained by the telephone company to monitor the test pulls and prepare a product evaluation for each multi-cell conduit system.

The following information was compiled from the consultant's report. Values stated were derived from actual field measurements or calculated from field measurements.

Carlon's multi-cell conduit system, Multi-Gard®, offered smooth wall PVC innerducts with factory applied silicone lining. The competitor's multi-cell conduit system offered a longitudinal ribbed polyethylene, silicone lined innerduct product.

The installation layout selected for the trial consisted of a 4,900-foot section that included numerous horizontal and vertical directional changes, eight manholes, and a road bore. Additionally, record-breaking rainfall made the competition even more intense.

The cable selected for the trial consisted of a six pair, copper cable with a low density polyethylene jacket. This particular cable was selected because it is approximately the same weight and diameter as many fiber-optic cables. The low density polyethylene jacket placed the evaluation under the worst possible coefficient of friction conditions.

Carlon's Multi-Gard system successfully completed the trial pull with the test cable. The competitor's system could not.



A 1/4" composite rope (braided polyethylene over braided polyester) was blown into the innerduct of Carlon's Multi-Gard. The force required to pull the rope through the 4,900 feet was 27 pounds. This force was measured after the rope rested in the flooded innerduct for more than 10 hours.

The test cable required a maximum pull force of 440 pounds to complete the 4,900 feet trial. At 4,173 feet into the pull, the cable jacket yielded and the pull came to a stop. The basket grip was re-installed on the cable and only 267 pounds of force was required to start the cable moving.

Using the values measured and the tension forecasting software provided by the consultant, the coefficient of friction was calculated as follows:

Pull Rope	**.09**
Test Cable	**.18**
Cable B	**.13**

Just One More Example Of How You Can't Beat The System!

Carlon® Intra-Gard® Multi-Cell Raceway

4-Way Intra-Gard®
6-Way Intra-Gard®
Hybrid Intra-Gard®
Accessories



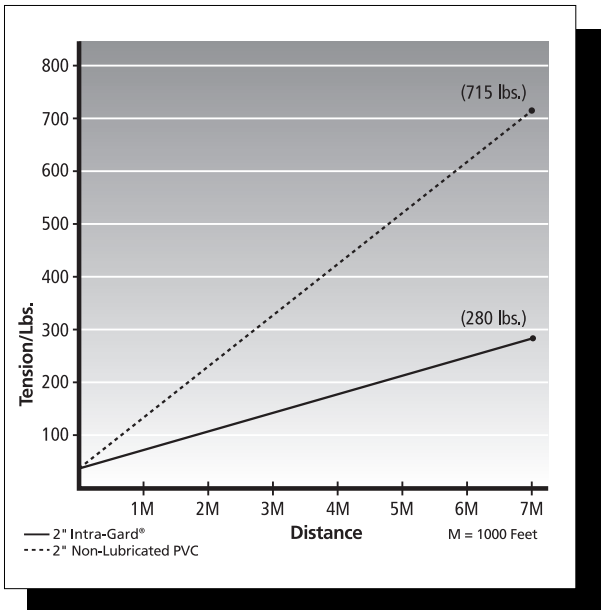
4-Way, 6-Way & Hybrid Intra-Gard®

Carlon® Intra-Gard® is a multi-cell raceway system used in direct bury and concrete encased applications. Intra-Gard ducts are pre-lubricated, eliminating the need for field applied lubricants and reducing the coefficient of friction, thus allowing for longer cable pulls.

Intra-Gard is available in Type C and Schedule 40 wall types and is manufactured with extended length bell ends to facilitate assembly and ensure joint integrity. Factory installed spacers provide proper spacing and alignment throughout the system. And for precise 20' lay lengths, Intra-Gard is supplied in 20'3" sticks.

Features:

- Pre-lubricated ducts – reduces coefficient of friction, thus allowing longer cable pulls
- Meets Bellcore GR356-CORE coefficient of friction requirements
- Schedule 40 and Type C wall types
- Factory installed spacers
- Multiple color configurations available for easy duct identification
- Extended length bell ends available on request
- Standard colors – white and grey



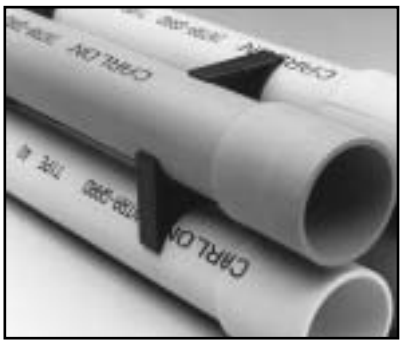
Calculated using MDPE F/O cable (Wgt.= .11 lbs./ft.)

Applications

Schedule 40
- Direct bury
- Concrete encased

Type C
- Concrete encased
- Direct bury

4-Way Intra-Gard



Standard - Two Color

	Wall type	Part Number	Color	Maximum O.D.	Minimum I.D.	Wall Thickness Min.	Wall Thickness Max.
1 1/4"	Schedule 40	I4SFG-020	1 White, 3 Grey	1.67	1.34	.13	.15
	Schedule 40	I4SFGG-020	1 White, 3 Green	1.67	1.34	.13	.15
	Type C	I4SXG-020	1 White, 3 Grey	1.67	1.46	.08	.10
1 1/2"	Schedule 40	I41540-020	1 White, 3 Grey	1.91	1.57	.15	.17
	Type C	I415C-020	1 White, 3 Grey	1.90	1.66	.10	.12
2"	Schedule 40	I42240-020	1 White, 3 Grey	2.38	2.02	.15	.17
	Type C	I422C-020	1 White, 3 Grey	2.38	2.16	.08	.11

Multi-Color Options

	Wall type	Part Number	Color	Max. O.D.	Min. I.D.	Wall Thickness Min.	Wall Thickness Max.
1 1/4"	Schedule 40	I4SFGB-020	Grey, White, Red & Orange	1.67	1.34	.13	.15
	Schedule 40	I4SFGA-020	Orange, Green, Blue & Yellow	1.67	1.34	.13	.15
	Schedule 40	I4SFG6-020	Green, Yellow, Red & Black	1.67	1.34	.13	.15
	Schedule 40	I4SFG4-020	Grey, White, Green & Orange	1.67	1.34	.13	.15
	Schedule 40	I4SFG5-020	Grey, White, Blue & Orange	1.67	1.34	.13	.15
1 1/2"	Schedule 40	I41540MC-020	Grey, White, Blue & Orange	1.91	1.57	.15	.17
	Type C	I415CMC-020	Grey, White, Blue & Orange	1.90	1.66	.10	.12
2"	Schedule 40	I42240MC-020	Grey, White, Blue & Orange	2.38	2.02	.15	.17
	Type C	I422CMC-020	Grey, White, Blue & Orange	2.38	2.16	.08	.11

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

6-Way Intra-Gard



Standard - Two Color

	Wall type	Part Number	Color	Maximum O.D.	Minimum I.D.	Wall Thickness Min.	Wall Thickness Max.
1 1/4"	Schedule 40	I6SFG-020	1 White, 5 Grey	1.67	1.34	.13	.15
	Type C	I6SXG-020	1 White, 5 Grey	1.67	1.46	.08	.10
2"	Schedule 40	I62240-020	1 White, 5 Grey	2.38	2.02	.15	.17
	Type C	I622C-020	1 White, 5 Grey	2.38	2.16	.08	.11

4-Way Hybrid 2" & 1 1/4"



Standard - Two Color

Wall type	Part Number	Color
Schedule 40	I41240-020	1 White, 3 Grey
Type C	I412C-020	1 White, 3 Grey

Multi-Color Options

Wall type	Part Number	Color
Schedule 40	I41240MC-020	Grey, White, Blue & Orange
Type C	I412CMC-020	Grey, White, Blue & Orange

Specifications

	Wall Type	Max. O.D.	Min. I.D.	Wall Thickness Min.	Wall Thickness Max.
1 1/4"	Schedule 40	1.67	1.34	.13	.15
	Type C	1.67	1.46	.08	.10
2"	Schedule 40	2.38	2.02	.15	.17
	Type C	2.38	2.16	.08	.11

Shipping Quantities

All products within the Intra-Gard® system are supplied with protective dust caps, ensuring system reliability for current and future cable installations.

Type	Pallet Qty.	Truck Load
4-way 1 1/4"	1,200 ft.	14,400 ft.
4-way 1 1/2"	1,200 ft.	14,400 ft.
4-way 2"	1,200 ft.	14,400 ft.
6-way 1 1/4"	720 ft.	8640 ft.
6-way 2"	720 ft.	8640 ft.
4-way Hybrid 2" x 1 1/4"	1,200 ft.	14,400 ft.

Unloading

When unloading Intra-Gard from the delivery truck, mechanical equipment should be used. If possible, distribute the Intra-Gard along the route of the trench site as it is unloaded.



Fixed Elbows

Intra-Gard® elbows are available in 3' and 4' radii and 11 1/4°, 22 1/2°, 45° and 90° angles of curvature. They are manufactured with system compatible bell and spigot ends, are pre-lubricated, grey in color, and shipped with dust caps.



4-Way - 1 1/4"

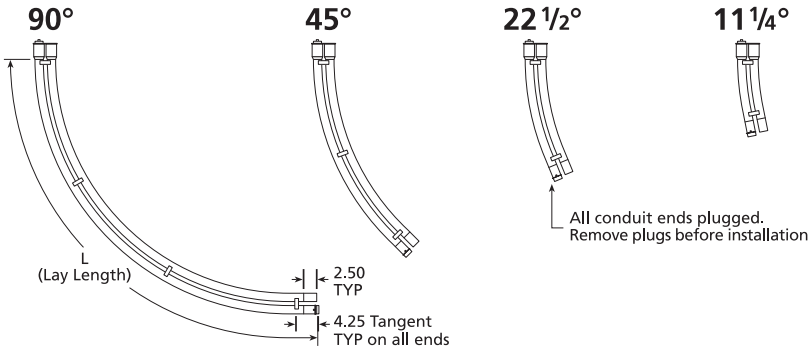
Wall Type	Part No.	Angle	Radius	Length
Schedule 40	IF9HG4	90°	48"	81"
Schedule 40	IF9FG4	90°	36"	81"
Schedule 40	IF7HG4	45°	48"	43"
Schedule 40	IF7FG4	45°	36"	43"
Schedule 40	IF5HG4	22 1/2°	48"	26"
Schedule 40	IF5FG4	22 1/2°	36"	26"
Schedule 40	IF3HG4	11 1/4°	48"	15"
Schedule 40	IF3FG4	11 1/4°	36"	15"
Type C	IX9HG4	90°	48"	81"
Type C	IX9FG4	90°	36"	81"
Type C	IX7HG4	45°	48"	43"
Type C	IX7FG4	45°	36"	43"
Type C	IX5HG4	22 1/2°	48"	26"
Type C	IX5FG4	22 1/2°	36"	26"
Type C	IX3HG4	11 1/4°	48"	15"
Type C	IX3FG4	11 1/4°	36"	15"

6-Way - 1 1/4"

Wall Type	Part No.	Angle	Radius	Length
Schedule 40	IF9HG6	90°	48"	81"
Schedule 40	IF9FG6	90°	36"	81"
Schedule 40	IF7HG6	45°	48"	43"
Schedule 40	IF7FG6	45°	36"	43"
Schedule 40	IF5HG6	22 1/2°	48"	26"
Schedule 40	IF5FG6	22 1/2°	36"	26"
Schedule 40	IF3HG6	11 1/4°	48"	15"
Schedule 40	IF3FG6	11 1/4°	36"	15"
Type C	IX9HG6	90°	48"	81"
Type C	IX9FG6	90°	36"	81"
Type C	IX7HG6	45°	48"	43"
Type C	IX7FG6	45°	36"	43"
Type C	IX5HG6	22 1/2°	48"	26"
Type C	IX5FG6	22 1/2°	36"	26"
Type C	IX3HG6	11 1/4°	48"	15"
Type C	IX3FG6	11 1/4°	36"	15"

Hybrid – 2" & 1 1/4"

Wall Type	Part No.	Angle	Radius	Length
Schedule 40	I4129040	90°	36"	39"
Schedule 40	I4124540	45°	36"	67"

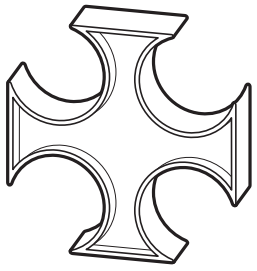


4-Way

Nom. Size	Part No.
1 1/4"	I4ISG
1 1/2"	I4ISG15
2"	I4ISH

Hybrid

Nom. Size	Part No.
2" & 1 1/4"	I4HISG



End Bell Terminator Ring

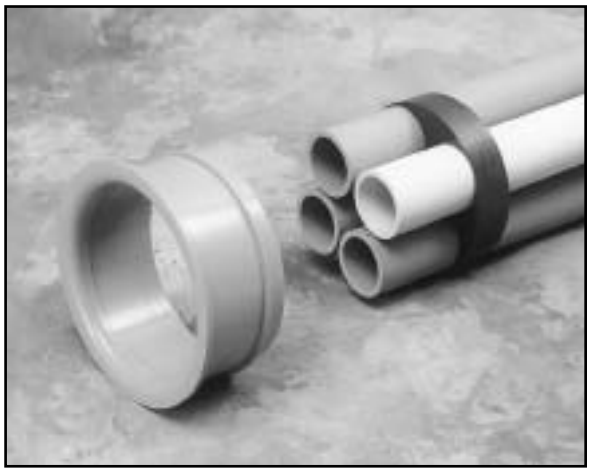
Manhole Terminator or Handhole Entrance

At the manhole or handhole entrance, the ideal termination procedure is to use commercially available industry standard Type C duct end bell (4.35") precast into the manhole or handhole wall. To properly seal the Intra-Gard® at its termination points, Intra-Gard manhole terminator rings are available as a 1" thick disk designed to properly space the innerducts and fit into a 4.35" O.D. (Part #IRS4 .)

1. Start by removing the protective caps from the male ends of the pipes and then align the ducts with the Intra-Gard terminator spacer ring and insert spigot ends through holes provided.
2. Insert prepared male end into the precast terminator. The terminator should be solvent cemented into the precast terminator or sealed around outside of the entrance as required by the job specifications.
3. Duct plugs should be used (MAEPG3) after installation on empty ducts to avoid water and dust infiltration.

Other Type Entrances

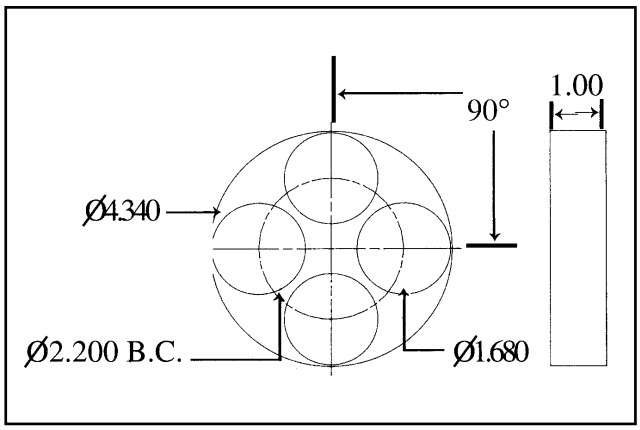
1. Where a knockout is used, the procedure starts with inserting the male end of the section of pipe four inches past the inside wall of the manhole or handhole. Remove the protective caps from the ends of the pipe, insert terminator and align the ducts with Intra-Gard terminator ring. Seal around entrance as required by the job specifications.
2. A pass through terminator may be secured into wall of manhole or handhole either directly into precast terminator or grout in place if knockout is used.



Terminator Ring

Part No.	Description
IRS4	4-Way 1 1/4" Terminator Ring

** Manhole terminator sold separately*



Upon completion of conduit placement, install ducts to traverse manhole/handhole by cutting to length, inserting into one side of handhole, and raising or bowing center of duct span to insert in the pass through terminator on the other side.

3. Pass through application may be accomplished by installing a long line coupling (E600G) onto each duct entering the vault. Couplings should then be solvent cemented onto each remaining duct of Intra-Gard.

Installation Instructions

When handling Intra-Gard®, care must be taken to avoid striking the ends against hard surfaces. This can cause damage from impact or crushing of the end of the conduit.

Assembly In Trench

1. In the trench, set the first layer of ducts by inserting the male ends into the female ends on the sections previously placed. Remove the protective caps as the sections of pipe are about to be joined together, and make sure the matching colors are aligned.



2. A thin coating of Carlon Quick Set Cement should be applied to the inside surface of the sockets lightly enough to prevent the formation of a bead of cement at the interior shoulder of the sockets. Then, apply in the same manner to the spigot ends of the conduits to the depth of the socket.
3. Immediately after applying the coat of cement to the conduit, insert the spigot ends into the sockets.



Duct Proofing

Use appropriate seal-off kit (Reference pg. 9 for Line Blowing Kits). For maximum line blowing potential, use air compressor at 175 CFM (125 PSI Max.)

1. Slide pull line through opening in threaded nozzle end of seal-off. Attach blowing missile to pull line.
2. Insert blowing missile into individual duct and insert threaded end of seal-off into duct to assure minimal air loss.
3. Attach seal-off to air compressor with air release lever in off position. Hold seal off firmly in hands.
4. Open lever quickly making sure slight tension is on to prevent pull line from packing. CAUTION SHOULD BE EXERCISED AT THE EXIT POINT FOR MISSILE TO AVOID INJURY. Blow pull line in all ducts to ensure no blockages are present.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Field Cuts

Joining a Male/Female Connection

1. The pipes should be laid side by side and the male end marked at the base of the bell on the female end.
2. Make a straight through cut on the male end using a standard carpenter's saw. Deburr the ends of the cut pipe.
3. Apply Carlon Quick Set Cement in a thin uniform coating to the inside surface of the sockets and raise both ends and align the ducts on the male ends to the bells on the female end.
4. Once the ducts are aligned with their sockets, lower both of the pipes. The ducts will be automatically returned to their original position as the joints are forced together.



Joining Two Male Ends

1. The pipes should be laid side by side, marked and flush cut to butt up against each other. Deburr the ends of the cut pipe and install a spare spacer if needed, and use standard couplings.
2. Place each individual coupling onto ducts using Carlon Quick Set Cement.
3. Lift sections to align each coupling with other ducts.
4. Lower both sections to a level position.

Repairing Intra-Gard® Once Installed

Repair sections may use a standard 20' length of Intra-Gard with sockets and cut to length.

Repairing Damaged Intra-Gard That Is Vacant

1. Cut out damaged section making a flush cut on both sides and deburr all pipes.
2. Measure damaged section and new section wIth a socket and measure from base of socket and cut flush. Intra-Gard couplings are installed onto the individual ducts of the section in the ground.
3. Install new section in trench by first applying Carlon Quick Set Cement and pushing sockets onto either spigot ends.
4. Line up ducts with couplings and raise or bow center of duct span, apply cement and slip ducts into couplings.

Repairing Intra-Gard Housing a Cable

1. Carefully cut out the damaged section of the Intra-Gard.
2. Where cable is installed, slide the split couplings onto each individual duct, fitting the cable into the grooved coupling passage. Repeat the process on the other side.
3. Carefully insert the cable into the split duct. Push the split duct into the split coupling at both ends. Wrap all slit areas with sealing tape or shrink wrap, etc. as recommended by specifier to seal out water.
4. Install stop coupling onto other vacant ducts with Carlon Quick Set Cement and install the ducts into the other openings of the couplings with cement.
5. Ensure the duct system is straight and even before encasing in soil.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® Intra-Gard® Quote Request

Date: _____ Needed By: _____ Destination: _____

Customer: _____ Account Number: _____

Rep Agency: _____ Market: _____ Power _____ Telecommunication

Total Quantity Feet: _____ Target Price: _____

Competitors Price: _____

Quoted Price: _____

Quoted Terms: _____ Freight Terms: _____

Valid Until: _____ Quoted By: _____

4-Way Intra-Gard

Standard - Two Color

	Wall type	Part No.	Qty.
1 1/4"	Schedule 40	I4SFG-020	
	Schedule 40	I4SFGG-020	
	Type C	I4SXG-020	
1 1/2"	Schedule 40	I41540-020	
	Type C	I415C-020	
2"	Schedule 40	I42240-020	
	Type C	I422C-020	

Multi-Color Options

	Wall type	Part No.	Qty.
1 1/4"	Schedule 40	I4SFGB-020	
	Schedule 40	I4SFGA-020	
	Schedule 40	I4SFG6-020	
	Schedule 40	I4SFG4-020	
	Schedule 40	I4SFG5-020	
1 1/2"	Schedule 40	I41540MC-020	
	Type C	I415CMC-020	
2"	Schedule 40	I42240MC-020	
	Type C	I422CMC-020	

Fixed Elbows - 4 Way 1 1/4"

Schedule 40

Part No.	Angle	Radius	Qty.
IF9HG4	90°	48"	
IF9FG4	90°	36"	
IF7HG4	45°	48"	
IF7FG4	45°	36"	
IF5HG4	22 1/2°	48"	
IF5FG4	22 1/2°	36"	
IF3HG4	11 1/4°	48"	
IF3FG4	11 1/4°	36"	

Type C

Part No.	Angle	Radius	Qty.
IX9HG4	90°	48"	
IX9FG4	90°	36"	
IX7HG4	45°	48"	
IX7FG4	45°	36"	
IX5HG4	22 1/2°	48"	
IX5FG4	22 1/2°	36"	
IX3HG4	11 1/4°	48"	
IX3FG4	11 1/4°	36"	

6-Way Intra-Gard

Standard - Two Color

	Wall type	Part No.	Qty.
1 1/4"	Schedule 40	I6SFG-020	
	Type C	I6SXG-020	
2"	Schedule 40	I62240-020	
	Type C	I622C-020	

Fixed Elbows - 6 Way 1 1/4"

Schedule 40

Part No.	Angle	Radius	Qty.
IF9HG6	90°	48"	
IF9FG6	90°	36"	
IF7HG6	45°	48"	
IF7FG6	45°	36"	
IF5HG6	22 1/2°	48"	
IF5FG6	22 1/2°	36"	
IF3HG6	11 1/4°	48"	
IF3FG6	11 1/4°	36"	

Type C

Part No.	Angle	Radius	Qty.
IX9HG6	90°	48"	
IX9FG6	90°	36"	
IX7HG6	45°	48"	
IX7FG6	45°	36"	
IX5HG6	22 1/2°	48"	
IX5FG6	22 1/2°	36"	
IX3HG6	11 1/4°	48"	
IX3FG6	11 1/4°	36"	

4-Way Hybrid 2" & 1 1/4" Intra-Gard

Standard - Two Color

Wall type	Part No.	Qty.
Schedule 40	I41240-020	
Type C	I412C-020	

Multi-Color Options

Wall type	Part No.	Qty.
Schedule 40	I41240MC-020	
Type C	I412CMC-020	

Fixed Elbows - Hybrid 2" & 1 1/4"

Wall type	Part No.	Angle	Radius	Qty.
Schedule 40	I4129040	90°	36"	
Schedule 40	I4124540	45°	36"	

Accessories

Pull Line

Part No.	Qty.

Plugs

Part No.	Qty.

Line Blowing Accessories

Part No.	Qty.

Spacers

Part No.	Qty.

Warning Tape

Part No.	Qty.

Cutters

Part No.	Qty.

NOTE: Please fill in desired part number and quantities.

Fax completed Quote Request to your Local Carlon Representative. Visit www.carlon.com to locate a Carlon Representative.

Carlon® High Density Polyethylene (HDPE) Conduit

Telecommunication, Electrical, and Power Utility Solutions:

Smooth Wall

Ribbed Wall

UL Listed

Micro-Gard™ Mini-Duct

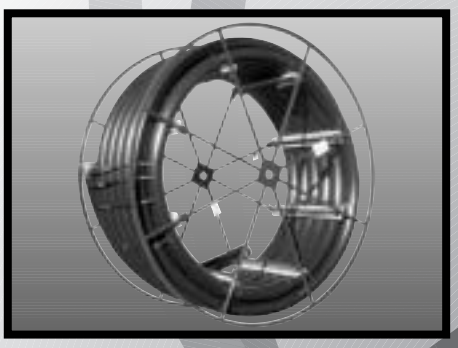
Aerial

Aerial Figure 8

Corrugated

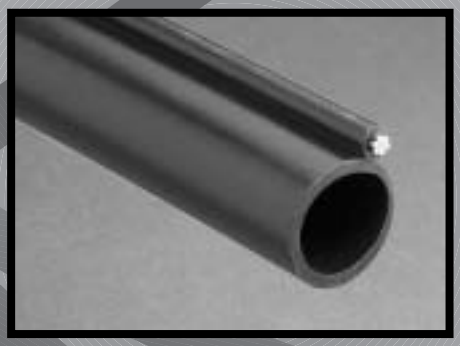
Toneable

Accessories













MEMBER
Plastics Pipe Institute (PPI)
www.plasticpipe.org

Smoothwall HDPE Conduit



Applications: Underground (direct bury), or placed inside existing duct (innerduct)

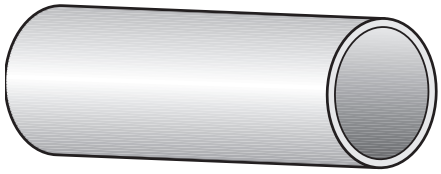
Installation methods: Plowing, open/continuous trench, directional boring or pulled through existing conduits.

Smoothwall HDPE is a nonmetallic flexible raceway manufactured from High Density Polyethylene (HDPE) for use in underground and innerduct applications.

Smoothwall offers superior protection, increases pathways of existing duct systems, allows extra channels for future cabling needs, and is ideal for jetting cable. Available in a wide range of sizes, colors, and options, Carlon HDPE is the only cable management system you need.

Smooth Interior Wall

Smoothwall is ideal for jetting cable



Smoothwall Options

- Sizes 1/2" - 16"
- Multiple colors and stripes
- Factory installed pull lines
- Sequentially marked footage
- Up to four colors of equal lengths paralleled or segmented on one reel
- Pre-lubricated option
- Toneable Duct – copper conductor within the wall of duct. Used to locate buried conduit. (see page 274)



Directional Boring



Open Trench

Reference Plastics Pipe Institute PE Pipe Handbook for installation and engineering recommendations. (www.plasticpipe.org)

Custom Orders

* Custom Orders are not returnable
* Custom lengths are available in minimum order quantities specified on page 294

How to Build a Part Number:

Product	Size	Type	Wall	Options	Splits	Color	Stripes	Tape	Length
A = HDPE	2 = 1/2"	C = Smooth/Smooth	4 = SCH 40	N = None	1 = 1 Way Single	A = Black	NN = None	A = Empty	1500
	3 = 3/4"		5 = SCH 80	D = Lube Duct	2 = 2 Way Segmented	B = Blue	3A = Black Stripes	B = 1130 lbs. Polyester Tape	(Equals 1500 Feet)
	5 = 1"		6 = SDR 11		3 = 3 Way Segmented	C = Brown	3B = Blue Stripes	C = 1250 lbs. Polyester Tape	
	6 = 1-1/4"		9 = SDR 13.5		4 = 4 Way Segmented	D = Buff	3C = Brown Stripes	D = 1500 lbs. Polyester Tape	
	9 = 1-1/2"		13 = SDR 15.5		5 = 2 Way Parallel	E = Grey	3D = Buff Stripes	E = 1800 lbs. Polyester Tape	
	13 = 2"		14 = SDR 17		6 = 3 Way Parallel	F = Green	3E = Grey Stripes	G = 200 lbs. Polyester Tape	
	14 = 2-1/2"		16 = SDR 21		7 = 4 Way Parallel	G = Lilac	3F = Green Stripes	J = 2500 lbs. Polyester Tape	
	15 = 3"		22 = SDR 7		12 = 2 Way Compart	H = Lt. Green	3G = Lilac Stripes	K = 400 lbs. Detect. Polyester Tape	
	16 = 4"		24 = SDR 9		13 = 3 Way Compart	J = Orange	3H = Lt. Green Stripes	T = 1250 lbs. Poly Metric Tape	
	17 = 4.75"		26 = SIDR 11.5		14 = 4 Way Compart	K = Red	3J = Orange Stripes	V = 1250 lbs. Detectable 22G Poly Tape	
	18 = 5"		27 = SIDR 11.5 True			L = Terra Cotta	3K = Red Stripes		
	22 = 6"		29 = SIDR 15			M = White	3L = Terra Cotta Stripes		
	23 = 7"		34 = SIDR 7			N = Yellow	3M = White Stripes		
	24 = 8"		36 = SIDR 9				3N = Yellow Stripes		
	25 = 10"		37 = SIDR 9 True						
	26 = 12"		42 = TC-7A						
	27 = 14"		45 = True 11						
	28 = 16"		46 = True 9						

Standard Length – Reels and Coils

	Color	Part No.	Type	Wall	Pull Tape Polyester Woven	Reel Size	Reel Length (ft.)	Wt./Ea. (lbs.)
1"	Orange	A5C6N1JNNA7000	S/S	SDR 11	Empty	72x45x24	7000	1517
	Orange	A5C6N1JNNB7000	S/S	SDR 11	1130 lb.	72x45x24	7000	1576
	Orange	A5C9N1JNNB250	S/S	SDR 13.5	1130 lb.	Coil	250	42
	Orange	A5C9N1JNNB500	S/S	SDR 13.5	1130 lb.	Coil	500	84
	Orange	A5C9N1JNNB1800	S/S	SDR 13.5	1130 lb.	48x30x24	1800	382
	Orange	A5C9N1JNNA7000	S/S	SDR 13.5	Empty	72x45x24	7000	1278
	Orange	A5C9N1JNNB7000	S/S	SDR 13.5	1130 lb.	72x45x24	7000	1337
1 1/4"	Orange	A6C6N1JNNA5000	S/S	SDR 11	Empty	82x45x30	5000	1742
	Orange	A6C6N1JNNB5000	S/S	SDR 11	1130 lb.	82x45x30	5000	1784
	Orange	A6C9N1JNNB250	S/S	SDR 13.5	1130 lb.	Coil	250	66
	Orange	A6C9N1JNNB500	S/S	SDR 13.5	1130 lb.	Coil	500	132
	Orange	A6C9N1JNNC2500	S/S	SDR 13.5	1250 lb.	66x45x30	2500	793
	Orange	A6C9N1JNNA5000	S/S	SDR 13.5	Empty	82x45x30	5000	1481
	Orange	A6C9N1JNNB5000	S/S	SDR 13.5	1130 lb.	82x45x30	5000	1523
	Orange	A6C9N1JNNA8000	S/S	SDR 13.5	Empty	96x45x32	8000	2271
	Orange	A6C9N1JNNB8000	S/S	SDR 13.5	1130 lb.	96x45x32	8000	2338
1 1/2"	Orange	A9C6N1JNNA5000	S/S	SDR 11	Empty	96x45x32	5000	2246
	Orange	A9C9N1JNNA5000	S/S	SDR 13.5	Empty	96x45x32	5000	1904
	Orange	A9C9N1JNNB5000	S/S	SDR 13.5	1130 lb.	96x45x32	5000	1946

Standard Length – Reels and Coils

	Color	Part No.	Type	Wall	Pull Tape Polyester Woven	Reel Size	Reel Length (ft.)	Wt./Ea. (lbs.)
2"	Orange	A13C4N1JNNC2500	S/S	Sch 40	1250 lb.	82x45x40	2500	1410
	Grey	A13C6N1ENNA4000	S/S	SDR 11	Empty	96x45x32	4000	2747
	Black	A13C6N1ANNA4000	S/S	SDR 11	Empty	96x45x32	4000	2747
	Orange	A13C6N1JNNA4000	S/S	SDR 11	Empty	96x45x32	4000	2747
	Black 3 RD	A13C9N1A3KA4000	S/S	SDR 13.5	Empty	96x45x32	4000	2319
	Black	A13C9N1ANNA4000	S/S	SDR 13.5	Empty	96x45x32	4000	2319
	Orange	A13C9N1JNNA4000	S/S	SDR 13.5	Empty	96x45x32	4000	2319
3"	Black	A15C9N1ANNA1000	S/S	SDR 13.5	Empty	96x45x68	1000	1364
	Orange	A15C9N1JNNA1000	S/S	SDR 13.5	Empty	96x45x68	1000	1364
4"	Black	A16C6N1ANNA766	S/S	SDR 11	Empty	102x45x68	766	2022
	Orange	A16C6N1JNNA766	S/S	SDR 11	Empty	102x45x68	766	2022
	Black	A16C9N1ANNA766	S/S	SDR 13.5	Empty	102x45x68	766	1727
	Orange	A16C9N1JNNA766	S/S	SDR 13.5	Empty	102x45x68	766	1727
	Orange	A16C26N1JNNC700	S/S	SIDR 11.5	1250 lb.	102x45x68	700	1746
4 3/4"	Grey	A17C9N1ENNA700	S/S	SDR 13.5	Empty	102x45x68	700	2171
	Orange	A17C9N1JNNA700	S/S	SDR 13.5	Empty	102x45x68	700	2171
5"	Grey	A18C9N1ENNA480	S/S	SDR 13.5	Empty	114x45x85	480	1842
	Black	A18C9N1ANNA480	S/S	SDR 13.5	Empty	114x45x85	480	1842
6"	Grey	A22C9N1ENNA450	S/S	SDR 13.5	Empty	120x45x85	450	2296
	Black	A22C6N1ANNA450	S/S	SDR 11	Empty	120x45x85	450	2669
	Black	A22C9N1ANNA450	S/S	SDR 13.5	Empty	120x45x85	450	2296

ID Ribbed Wall HDPE Conduit



ID Ribbed Wall HDPE is a non-metallic flexible raceway manufactured from High Density Polyethylene (HDPE) for use in underground and innerduct applications.

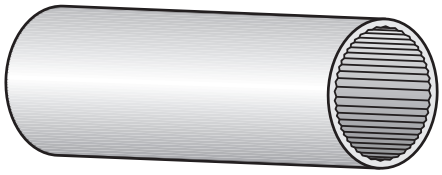
Ribbed Wall offers superior protection, increases pathways of existing duct systems, allowing extra channels for future cabling needs. Available in a wide range of sizes, colors, and options, Carlon HDPE is the only cable management system you need.

Applications: Underground (direct bury), or placed inside existing duct (innerduct)

Installation methods: Plowing, open/continuous trench, directional boring or pulled through existing conduits.

ID Ribbed Interior Wall

Ribbed Wall is ideal for pulling or jetting cable. Interior ribs reduce surface contact with cable during installation.



Ribbed Wall Options

- Sizes 1/2" - 6"
- Multiple colors and stripes
- Factory installed pull lines
- Sequentially marked footage
- Up to four colors of equal lengths paralleled or segmented on one reel
- Pre-lubricated
- Toneable Duct – copper conductor within the wall of duct. Used to locate buried conduit.
(see page 274)



Directional Boring



Open Trench

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

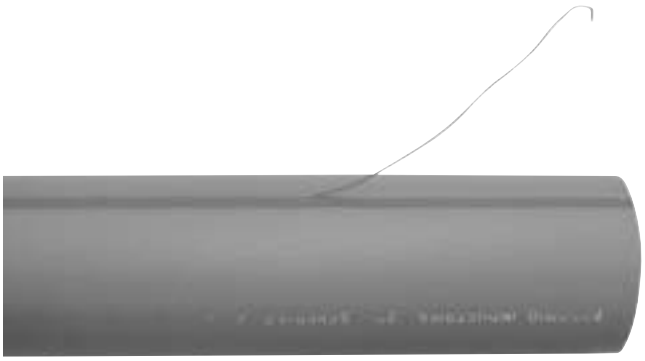
Custom Orders

* Custom Orders are not returnable
* Custom lengths are available in minimum order quantities specified on page 294

How to Build a Part Number:

Product	Size	Type	Wall	Options	Splits	Color	Stripes	Tape	Length
A = HDPE	2 = 1/2"	B = Smooth Out/Ribbed In	4 = SCH 40	N = None	1 = 1 Way Single	A = Black	NN = None	A = Empty	1500
	3 = 3/4"		5 = SCH 80	D = Lube Duct	2 = 2 Way Segmented	B = Blue	3A = Black Stripes	B = 1130 lbs. Polyester Tape	(Equals 1500 Feet)
	5 = 1"		6 = SDR 11		3 = 3 Way Segmented	C = Brown	3B = Blue Stripes	C = 1250 lbs. Polyester Tape	
	6 = 1-1/4"		9 = SDR 13.5		4 = 4 Way Segmented	D = Buff	3C = Brown Stripes	D = 1500 lbs. Polyester Tape	
	9 = 1-1/2"		13 = SDR 15.5		5 = 2 Way Parallel	E = Grey	3D = Buff Stripes	E = 1800 lbs. Polyester Tape	
	13 = 2"		14 = SDR 17		6 = 3 Way Parallel	F = Green	3E = Grey Stripes	G = 200 lbs. Polyester Tape	
	14 = 2-1/2"		16 = SDR 21		7 = 4 Way Parallel	G = Lilac	3F = Green Stripes	J = 2500 lbs. Polyester Tape	
	15 = 3"		22 = SDR 7		12 = 2 Way Compart	H = Lt. Green	3G = Lilac Stripes	K = 400 lbs. Detect Polyester Tape	
	16 = 4"		24 = SDR 9		13 = 3 Way Compart	J = Orange	3H = Lt. Green Stripes	T = 1250 lbs. Poly Metric Tape	
	17 = 4.75"		26 = SIDR 11.5		14 = 4 Way Compart	K = Red	3J = Orange Stripes	V = 1250 lbs. Detectable 22G Poly Tape	
	18 = 5"		27 = SIDR 11.5 True			L = Terra Cotta	3K = Red Stripes		
	22 = 6"		29 = SIDR 15			M = White	3L = Terra Cotta Stripes		
			34 = SIDR 7			N = Yellow	3M = White Stripes		
			36 = SIDR 9				3N = Yellow Stripes		
			37 = SIDR 9 True						
			42 = TC-7A						
			45 = True 11						
			46 = True 9						

Toneable HDPE Conduit



*Patent Pending

Application: Underground (direct bury)

Installation methods: Plowing, directional boring, or open/continuous trench.

Toneable HDPE Duct incorporates a patented design using bare solid copper conductor wire within the duct wall underneath a LDPE or HDPE stripe providing easy access to the conductor wire for grounding and coupling applications.

Allows detectability and toning isolation of empty duct structures as well as ducts with dielectric fiber installations using conventional transmission, receiving, and locating equipment.

Standard metal and nonmetallic coupling methods allow conduit detectability and non-metallic toneable pressure couplings allow detection/toning isolation of conduit.

Complete system of conduit and couplings provides the solution to finding buried occupied or non-occupied conduits.

Toneable Options

- Industry standard conduit sizes 1/2" – 4"
- Solid bare copper tone wire
- Use Conventional locating devices
- Tone wire easily accessible for coupling and grounding
- Standard/compression couplings available (page 292)
- Allows isolation tone and/or detection
- Suitable for direct bury, bore, trench applications
- Single color stripe option



Directional Boring



Open Trench

Reference Plastics Pipe Institute PE Pipe Handbook for installation and engineering recommendations. (www.plasticpipe.org)

Specifications

Conductor Data

AWG	# 18 Solid Bare Copper	#22 Solid Bare Copper
Resistivity	6.39 OHMS per 1,000 ft.	16.2 OHMS per 1,000 ft.
Elongation	10% min.	32% min.
Minimum Wall Thickness	.12 inches	.14 inches

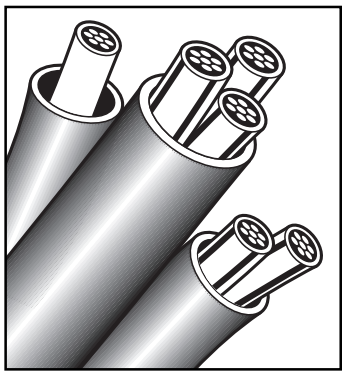
Custom Orders

* Custom Orders are not returnable
* Custom reel lengths are available in minimum order quantities of 25,000 ft. or min. set up charge

How to Build a Part Number:

Product	Size	Type	Wall	Options	Splits	Color	Stripe (one)	Tape	Length
A = HDPE	2 = 1/2"	B = Smooth Out/ Ribbed In	4 = SCH 40	J = Toneable/18G	1 = 1 Way Single	A = Black	NN = None	A = Empty	1500
	3 = 3/4"	C = Smooth/ Smooth	5 = SCH 80	G = Toneable/22G	2 = 2 Way Segmented	B = Blue	1A = Black Stripe	B = 1130 lbs. Polyester Tape	(Equals 1500 Feet)
	5 = 1"		6 = SDR 11		3 = 3 Way Segmented	C = Brown	1B = Blue Stripe	C = 1250 lbs. Polyester Tape	
	6 = 1-1/4"		9 = SDR 13.5		4 = 4 Way Segmented	D = Buff	1C = Brown Stripe	D = 1500 lbs. Polyester Tape	
	9 = 1-1/2"				5 = 2 Way Parallel	E = Grey	1D = Buff Stripe	E = 1800 lbs. Polyester Tape	
	13 = 2"				6 = 3 Way Parallel	F = Green	1E = Grey Stripe	G = 200 lbs. Polyester Tape	
	14 = 2-1/2"				7 = 4 Way Parallel	G = Lilac	1F = Green Stripe	J = 2500 lbs. Polyester Tape	
	15 = 3"				12 = 2 Way Compart	H = Lt. Green	1G = Lilac Stripe	T = 1250 lbs. Poly Metric Tape	
	16 = 4"				13 = 3 Way Compart	J = Orange	1H = Lt. Green Stripe		
					14 = 4 Way Compart	K = Red	1J = Orange Stripe		
						L = Terra Cotta	1K = Red Stripe		
						M = White	1L = Terra Cotta Stripe		
						N = Yellow	1M = White Stripe		
							1N = Yellow Stripe		

Cable In Duct HDPE Conduit



LISTED
Assembly
Upon Request

Features

- Cables preinstalled in HDPE - eliminating the need to pull cables.
- Standard wall thicknesses of TC7 Type A, TC7 Type B (SDR 13.5), Schedule 40 and Schedule 80
- UL Listed duct assembly (upon request)
- Manufactured in accordance to NEC Articles 352 and 354.
- Conduit sequentially marked
- Prelubricated during assembly process
- Conforms to electrical industry specifications

Specifications

1.0 General

Carlon HDPE Power Cable In Duct is manufactured to the following various industry standards and specifications for dimensional requirements.

ASTM F 2160 Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD).

ASTM D 3485 Standard specification for Smoothwall Coilable Polyethylene (PE) Conduit (duct) for preassembled wire and cable.

ASTM D 3035 Polyethylene (PE) Plastic Pipe (SDR) Based on Controlled Outside Diameter.

NEMA TC-7 Smooth Wall Coilable Polyethylene Electrical Plastic Conduit.

UL 651B Continuous length HDPE

2.0 Material

Carlon duct is manufactured from a suitable thermoplastic polymer conforming to the minimum standard of PE334470E/C as defined in ASTM D3350. (see table 1)

Carlon® High Density Polyethylene duct is manufactured in the following configuration:

Smoothwall – Smooth Interior and Smooth Exterior wall.

3.0 Product Description

Polyethylene duct extruded as coilable tubing for use as a single or multiple raceway assembly.

The conduit assembly may be direct buried, encased in concrete and used as innerducts.

Table 1 – Resin Properties The resin properties shall meet or exceed the values listed below for HDPE.

ASTM Test	Description	Values HDPE
D-1505	Density g/CM^3	.941 - .955
D-1238	Melt Index, g/10 min Condition E	.05 - .50
D-790	Flexural Modulus, MPa (PSI)	80,000 min.
D-638	Tensile strength at yield (psi)	3000 min.
D-1693	Environmental Stress Crack Resistance Condition B,F_{10}	96 hrs. min.
D-746	Brittleness Temperature	-75˚C

TC7 Type A

Nom. Size	Nom. OD	Nom. ID	Min. Wall	Conduit Wt/ 100 Ft.	Max Cable Diameter* 1	2	3	4
1"	1.315	1.165	.075	12.64	0.842	0.456	0.422	0.366
1-1/4"	1.660	1.460	.100	21.19	1.057	0.572	0.530	0.459
1-1/2"	1.900	1.670	.115	27.89	1.210	0.654	0.607	0.526
2"	2.375	2.085	.145	43.93	1.512	0.818	0.758	0.657
2-1/2"	2.875	2.469	.203	73.69	1.792	0.969	0.899	0.778
3"	3.500	3.068	.216	96.37	2.228	1.205	1.117	0.968

Schedule 40

Nom. Size	Nom. OD	Nom. ID	Min. Wall	Conduit Wt/ 100 Ft.	Max Cable Diameter* 1	2	3	4
1"	1.315	1.049	.133	21.68	0.749	0.405	0.376	0.325
1-1/4"	1.660	1.380	.140	29.31	0.990	0.535	0.497	0.430
1-1/2"	1.900	1.610	.145	35.00	1.158	0.626	0.581	0.503
2"	2.375	2.067	.154	46.92	1.490	0.806	0.747	0.647
2-1/2"	2.875	2.469	.203	74.00	1.783	0.964	0.894	0.774
3"	3.500	3.040	.216	97.31	2.213	1.197	1.110	0.961

TC7 SDR 13.5 Type B

Nom. Size	Nom. OD	Nom. ID	Min. Wall	Conduit Wt/ 100 Ft.	Max Cable Diameter* 1	2	3	4
1"	1.315	1.121	.097	16.05	0.810	0.438	0.406	0.352
1-1/4"	1.660	1.414	.123	25.68	1.024	0.554	0.513	0.445
1-1/2"	1.900	1.618	.141	33.70	1.172	0.634	0.588	0.509
2"	2.375	2.023	.176	52.58	1.467	0.793	0.736	0.637
2-1/2"	2.875	2.449	.213	76.41	1.755	0.949	0.880	0.762
3"	3.500	2.982	.259	114.04	2.158	1.167	1.082	0.937

Schedule 80

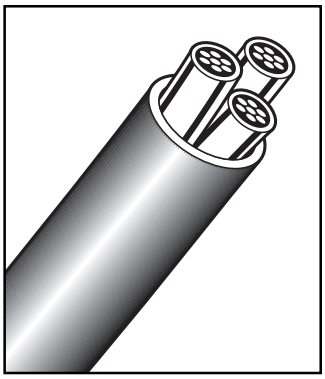
Nom. Size	Nom. OD	Nom. ID	Min. Wall	Conduit Wt/ 100 Ft.	Max Cable Diameter* 1	2	3	4
1"	1.315	.957	.179	27.66	0.682	0.369	0.342	0.296
1-1/4"	1.660	1.278	.191	38.11	0.914	0.494	0.459	0.397
1-1/2"	1.900	1.500	.200	46.30	1.075	0.581	0.539	0.467
2"	2.375	1.939	.218	64.08	1.393	0.753	0.699	0.605
2-1/2"	2.875	2.323	.276	97.59	1.668	0.902	0.837	0.724
3"	3.500	2.900	.300	130.92	2.085	1.128	1.046	0.906

The number of conductors and cables shall not exceed that permitted by the percentage fill specified in Table 1, Chapter 9 of the National Electrical Code.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

RUS Listed

Micro-Gard™ mini-ducts are designed to be jetted or pulled into conduit and used in micro-cable installation.



Features & Benefits

- 10 mm, 12 mm, and 16 mm sizes
- Low coefficient of friction for easy jetting or pulling of cable
- High tensile strength material allows for longer pulling distances, reducing installation costs
- Variety of stripes for identification and paralleling available - makes product easier to install
- Sequential footage markings
- Pre-installed pull line optional (10 mm ID and larger)
- High burst pressure rated material for jetting installation
- UV-formulated material for outside storage conditions
- System includes: Duct, Couplings, Terminations, Pulling Eyes, Pulling Harness and Cutters

Specifications

Resin properties shall meet or exceed the values listed below for high density polyethylene (HDPE):

Description	ASTM Test method	Typical Values	
		HDPE English Units	SI Units
Density	D4883	–	0.944 g/cc
Melt Index	D1238	–	12.5 g/10 min.
Flexural Modulus	D790	120,000 psi	827 Mpa
Tensile Strength at yield (2 in/min)	D638	3300 psi	22.8 Mpa
Tensile Strength at break (2 in/min)	D638	4500 psi	31.0 Mpa
Environmental Stress Crack Resistance (Condition C)	D1693	>2000 hrs	>2000 hrs
Brittleness Temperature	D746	<-180° F	<-118° C

Mini-Duct Dimensions

Nominal Size O.D. x I.D.		Outside Diameter Tolerance		Wall Thickness & Tolerance		Inside Diameter Minimum		Standard Weight
mm	inch	+/- mm	+/- inch	mm	+/- inch	mm	inch	lbs./100 ft.
10 / 8	0.394 x 0.315	0.1	0.004	1 +0/-0.1	0.039 +0/-0.004	7.9	0.312	1.77
12 / 10	0.472 x 0.394	0.1	0.004	1 +0/-0.1	0.039 +0/-0.004	9.9	0.390	2.08
16 / 12	0.630 x 0.472	0.1	0.004	2 +0/-0.1	0.078 +0/-0.004	11.9	0.470	5.59

Mini-Duct Performance

Nominal Size O.D. x I.D.		Bend Radius Minimum		Safe Tensile Pull Maximum		Sustained Pressure Maximum		Burst Pressure Minimum		Crush Strength ≤ 4% O.D.		Sliding Coefficient of Friction
mm	inch	mm	inch	lbs	Newtons	psi	BAR	psi	BAR	lbs	kg	
10 / 8	0.394 x 0.315	200	7.88	128	569	316	22	700	48	200	90	≤ 0.10
12 / 10	0.472 x 0.394	240	9.45	195	867	388	27	900	62	300	136	
16 / 12	0.630 x 0.472	320	12.60	371	1650	450	31	1000	68.9	500	226	

Dimension and Performance Notes:
10 / 8 mm size recommended for jetting.
12 / 10 mm size recommended for jetting or pulling.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Maximum Number of Mini-Ducts per Conduit & Wall

RUS Listed

SDR 13.5

Conduit Size	16 mm	12 mm	10 mm
3/4"	0	1	2
1"	1	2	4
1 1/4"	2	4	6
1 1/2"	3	5	8
2"	5	9	13

SDR 11

Conduit Size	16 mm	12 mm	10 mm
3/4"	0	1	2
1"	1	2	3
1 1/4"	2	4	5
1 1/2"	3	5	7
2"	4	8	11

Schedule 40

Conduit Size	16 mm	12 mm	10 mm
3/4"	0	1	2
1"	1	2	3
1 1/4"	2	4	6
1 1/2"	3	5	8
2"	5	9	13

Schedule 80

Conduit Size	16 mm	12 mm	10 mm
3/4"	0	1	1
1"	1	1	2
1 1/4"	2	3	5
1 1/2"	2	4	7
2"	4	8	12

Micro-Gard™ Part Number Configuration:

Product	Size	Type	Wall	Options	*Splits	Color	**Stripes	Pull Line	Length
M = Micro-Gard	51 = 10/8 mm 54 = 12/10 mm 58 = 16/12 mm	C = Smooth / Smooth	3 = Standard	D = Pre-Lubricated	1 = 1 Duct 5 = 2 Ducts 6 = 3 Ducts 7 = 4 Ducts 8 = 5 Ducts	A = Black	NN = None 3B = Blue 3C = Buff 3E = Gray 3F = Green 3G = Lilac 3J = Orange 3K = Red 3M = White 3N = Yellow	A = Empty Z = ***600 lb. Polyester Woven Tape	5000 = 5000 ft.

* Paralleled
** Stripes on Black only
*** 10 mm ID and larger

Packaging Configuration

Single Duct: One size of mini-duct on a single reel

Parallel Duct: Same size mini-duct, in a mix of 2 to 5 duct configurations, on a single reel.
Note: To calculate parallel-duct footage, deduct 3% per duct from the single-duct footage.

Micro-Gard™ mini-ducts are shipped on disposable wooden reels:

Nominal Size (mm)	Reel Size: 35" Flange x 32" Outer Width				
	Part Number	Description	Single Duct (ft)	Single Duct (meter)	Total Weight (lbs)
10 / 8	M51C3D1A3J13000	10/8 MM MICRO PE S/S BLK 3 ORG PL	13,000	3,962	285
12 / 10	M54C3D1A3J9000	12/10 MM MICRO PE S/S BLK 3 ORG PL	9,000	2,743	242
16 / 12	M58C3D1A3J5000	16/12 MM MICRO PE S/S BLK 3 ORG PL	5000	1,524	335

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

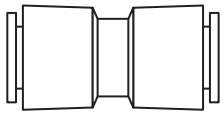
Couplings & End Caps

RUS Listed

Micro-Gard push-on couplings and end caps allow each end of Micro-Gard to be easily pushed into place. No tools required. Push-on couplings and end caps can be used multiple times while maintaining original performance.

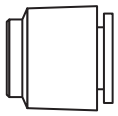
Couplings

Part No.	Description	Std. Pkg. Qty.	Wt. Ea. (lbs.)
MPCC10	10 mm O.D. Push-On Coupling	5	0.12
MPCC12	12 mm O.D. Push-On Coupling	5	0.15
MPCC16	16 mm O.D. Push-On Coupling	5	0.25



End Caps

Part No.	Description	Std. Pkg. Qty.	Wt. Ea. (lbs.)
MPEC10	10 mm O.D. Push-On End Cap	5	0.065
MPEC12	12 mm O.D. Push-On End Cap	5	0.090
MPEC16	16 mm O.D. Push-On End Cap	5	0.150



Plug Caps (Not for pressure seals)

Part No.	Description	Conduit Application	Std. Pkg. Qty.	Wt. Ea. (lbs.)
MPPC8	8 mm O.D. Plug Cap	Use with 10 mm O.D. Conduit	5	0.040
MPPC10	10 mm O.D. Plug Cap	Use with 12 mm O.D. Conduit	5	0.055
MPPC12	12 mm O.D. Plug Cap	Use with 16 mm O.D. Conduit	5	0.090



All Micro-Gard™ Couplings and End Caps meet or exceed the following performance specifications:

Conduit Size	Pull-Out		Sustained Pressure		Quick Burst	
	lb	kg	PSI	BAR	PSI	BAR
10 / 8	146	66	125	8.6	175	12
12 / 10	139	63	125	8.6	175	12
16 / 12	175	79	125	8.6	175	12

Cutters & Pulling Devices

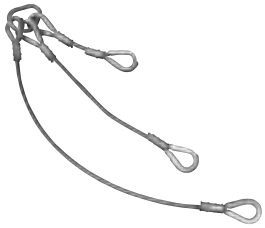
Duct Cutters

- Nylon handles and high grade steel blade allow single or multiple cuts with simple squeeze and rotate method for 10 - 16 mm sizes.
- All fittings are designed to reduce risk of restriction at coupling or termination point.



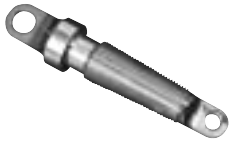
Part No.	Description	Std. Ctn. Qty.	Wt. Ea. (lbs.)
CC120B	Duct Cutter – 10mm to 16mm diameter	10	3.51

Multiple Micro-Gard Pulling Harness: Each 2-Duct segment is detachable.



Part No.	Description	Std. Ctn. Qty.	Wt. Ea. (lbs.)
MAPH6	2 to 6-way Adjustable Pulling Harness	1	0.27

Multiple Micro-Gard Pulling Eye



Part No.	Description	Std. Ctn. Qty.	Wt. Ea. (lbs.)
MAPE1012	Universal Pulling Eye	1	0.13

UL Listed HDPE Conduit



LISTED
E191470

UL Listed HDPE is a nonmetallic flexible raceway manufactured from High Density Polyethylene (HDPE), offering a protective pathway for cables and wires, and is used in underground or innerduct applications.

UL Listed HDPE conduit is compliant with the 2005 NEC Articles 300 and 353 (2002 NEC Articles 300 and 352), and is listed to UL 651B. Its high tensile strength-to-weight ratio, superior crush resistance, and low coefficient of friction when installing cable makes it ideal for directional boring.

*Refer to UL 651B standards/specifications for dimensional requirements.

Applications: Applications: Underground (direct bury), or placed inside existing duct (innerduct). Ideal for use in parking lots, traffic lights, etc.

Installation methods: Plowing, open/continuous trench, directional boring or pulled through existing conduit.

UL Listed Options

- Wall type/sizes:

Schedule 40	1" – 4"
Schedule 80	2" – 6"
EPEC-B (SDR 13.5)	2" – 6"

- Multiple colors and stripes
- Sequentially marked footage
- Available in smoothwall only
- Available with pre-installed conductors as nonmetallic underground conduit with conductors (NUCC) per Article 354 of the 2002 NEC, UL File 195593.
- Conforms to NEMA TC-7 Smoothwall Coilable PE Electrical Plastic Conduit



Directional Boring



Open Trench

Reference Plastics Pipe Institute PE Pipe Handbook for installation and engineering recommendations. (www.plasticpipe.org)

Custom Orders

* Custom Orders are not returnable
* Custom lengths are available in minimum order quantities specified on page 294

How to Build a Part Number:

Product	Size	Type	Wall	Options	Splits	Color	Stripes	Tape	Length
U = UL Listed	5 = 1" 6 = 1-1/4" 9 = 1-1/2" 13 = 2" 15 = 3" 16 = 4" 18 = 5" 22 = 6"	C = Smooth/Smooth	4 = SCH 40 1" – 4" 5 = SCH 80 2" – 6" 9 = SDR 13.5 2" – 6"	N = None D = Lube Duct	1 = 1 Way Single 2 = 2 Way Segmented 3 = 3 Way Segmented 4 = 4 Way Segmented 5 = 2 Way Parallel 6 = 3 Way Parallel 7 = 4 Way Parallel 12 = 2 Way Compart 13 = 3 Way Compart 14 = 4 Way Compart	A = Black B = Blue C = Brown D = Buff E = Grey F = Green G = Lilac H = Lt. Green J = Orange K = Red L = Terra Cotta M = White N = Yellow	NN = None 3A = Black Stripes 3B = Blue Stripes 3C = Brown Stripes 3D = Buff Stripes 3E = Grey Stripes 3F = Green Stripes 3G = Lilac Stripes 3H = Lt. Green Stripes 3J = Orange Stripes 3K = Red Stripes 3L = Terra Cotta Stripes 3M = White Stripes 3N = Yellow Stripes	A = EMPTY B = 1130 lbs. Polyester Tape C = 1250 lbs. Polyester Tape D = 1500 lbs. Polyester Tape E = 1800 lbs. Polyester Tape G = 200 lbs. Polyester Tape J = 2500 lbs. Polyester Tape K = 400 lbs. Detect Polyester Tape T = 1250 lbs. Poly Metric Tape V = 1250 lbs. Detectable 22G Poly Tape	1500 (Equals 1500 Feet)

Standard Length – Reels and Coils

	Color	Part No.	Type	Wall	Pull Tape Polyester Woven	Reel Size	Reel/Coil Length (ft.)	Wt./Ea (lbs.)
1"	Grey	U5C4N1ENNB250	S/S	Sch 40	1130 lb.	Coil	250	53
	Grey	U5C4N1ENNB500	S/S	Sch 40	1130 lb.	Coil	500	106
	Grey	U5C4N1ENNB1800	S/S	Sch 40	1130 lb.	48 x 30 x 24	1800	461
	Grey	U5C4N1ENNB7000	S/S	Sch 40	1130 lb.	72 x 45 x 24	7000	1647
1 1/4"	Grey	U6C4N1ENNB250	S/S	Sch 40	1130 lb.	Coil	250	72
	Grey	U6C4N1ENNB500	S/S	Sch 40	1130 lb.	Coil	500	143
	Grey	U6C4N1ENNB1400	S/S	Sch 40	1130 lb.	48 x 45 x 30	1400	401
	Grey	U6C4N1ENNB5000	S/S	Sch 40	1130 lb.	82 x 45 x 30	5000	1641
1 1/2"	Grey	U9C4N1ENNB5000	S/S	Sch 40	1130 lb.	96 x 45 x 30	5000	1948
2"	Grey	U13C6N1ENNA4000	S/S	SDR 13.5	Empty	96 x 45 x 32	4000	2319
3"	Grey	U15C9N1ENNA1000	S/S	SDR 13.5	Empty	96 x 45 x 68	1000	1364
4"	Grey	U16C9N1ENNA766	S/S	SDR 13.5	Empty	102 x 45 x 68	766	1727
	Grey	U16C9N1ENNA1000	S/S	SDR 13.5	Empty	114 x 45 x 68	1000	2193
5"	Grey	U18C9N1ENNA480	S/S	SDR 13.5	Empty	114 x 45 x 68	480	1842
6"	Grey	U22C9N1ENNA450	S/S	SDR 13.5	Empty	120 x 45 x 85	450	2296

Aerial HDPE Conduit



Aerial HDPE is a nonmetallic flexible raceway manufactured from High Density Polyethylene (HDPE) with a carbon black additive to provide U.V. protection in aerial environments.

Aerial duct offers superior cable protection against damage caused by rodents, projectile objects such as rocks and gun pellets, and harsh weather conditions. And because of its strength and durability, it can withstand the expansion and contraction caused by seasonal weather changes.

- HDPE: ASTM 1248 Type III
  Grade P34
  Category 5 Class C
- Ultraviolet: Minimum 2% carbon black

Applications: Aerial environments. Used when rocky terrain makes buried duct difficult, or in plant/campus environments expecting frequent changes.

Installation method: Designed to be lashed to existing support strands.

Aerial Options

- Sizes 1" – 2"
- Wall Type: SDR 13.5, SDR 11, and corrugated
- Factory installed tape
- Solidwall or corrugated
- Pre-lubricated option
- Sequentially marked footage



Aerial Lashing: *Aerial Duct is lashed to existing cable support wire using cable lashing equipment.*

Custom Orders

* Custom Orders are not returnable
* Custom lengths are available in minimum order quantities specified on page 294

How to Build a Part Number:

Product	Size	Type	Wall	Options	Splits	Color	Stripes	Tape	Length
E = Aerial	5 = 1" 6 = 1-1/4" 9 = 1-1/2" 13 = 2"	B = Smooth Out/Ribbed In C = Smooth/Smooth D = Corrugated	2 = None - Corr 6 = SDR 11 9 = SDR 13.5	N = None D = Lube Duct	1 = 1 Way Single 2 = 2 Way Partitioned 3 = 3 Way Partitioned 4 = 4 Way Partitioned 5 = 2 Way Parallel 6 = 3 Way Parallel 7 = 4 Way Parallel	A = Black	NN = None	A = Empty B = 1130 lbs. Polyester Tape C = 1250 lbs. Polyester Tape D = 1500 lbs. Polyester Tape E = 1800 lbs. Polyester Tape J = 2500 lbs. Polyester Tape T = 1250 lbs. Poly Metric Tape	1500 (Equals 1500 Feet)



Strand

6.6M 1/4" Extra high strength strand
Class A galvanized with flooding compound

10.0M 3/8" Extra high strength strand
Class A galvanized with flooding compound

Applications: Aerial environments. Used when rocky terrain makes buried duct difficult, or in plant/campus environments expecting frequent changes.

Installation method: Attaches directly to pole using a 3-bolt mounting clamp.

Aerial Figure-8 Options

- Size 1 1/4"
- Wall Type: SIDR 9 True
- 6.6M or 10.0M strands
- Factory installed tape
- Pre-installed Cable-In-Conduit
- Ribbed or smooth interior walls
- Pre-lubricated option
- Sequentially marked footage

HDPE Aerial Figure-8 is a nonmetallic flexible raceway with a Class A galvanized support strand. It's manufactured from High Density Polyethylene (HDPE), which contains a carbon black additive to provide U.V. protection in aerial environments.

Figure-8 duct offers superior cable protection against damage caused by rodents, projectile objects such as rocks and gun pellets, and harsh weather conditions with a one-step installation process. And because of its strength and durability, it can withstand the expansion and contraction caused by seasonal weather changes.

- HDPE: ASTM 1248 Type III
  Grade P34
  Category 5 Class C
- Ultraviolet: Minimum 2% carbon black
- Product Weight:
  6.6M Figure 8 .429 lbs/ft
  10.0M Figure 8 .507 lbs/ft
- Spans/Tensile Strength:
  6.6M: 225 ft. 6740 lbs.
  10M: 500 ft. 15,400 lbs.



Aerial Hanging:
Figure-8 Duct has a choice of two integrated mounting strands that attach directly to poles using 3-bolt mounting clamps, and Carlon stripping/cutting tools.

Custom Orders

* Custom Orders are not returnable
* Custom lengths are available in minimum order quantities of 1000 ft. or min. set up charge

How to Build a Part Number:

Product	Size	Type	Wall	Options	Splits	Color	Stripes	Tape	Length
S = Figure 8 - 6.6mm T = Figure 8 - 10mm	6 = 1-1/4"	B = Smooth Out/Ribbed In C = Smooth/Smooth	37 = SIDR 9 True	N = None D = Lube Duct	1 = 1 Way Single	A = Black	NN = None	A = Empty B = 1130 lbs. Polyester Tape C = 1250 lbs. Polyester Tape D = 1500 lbs. Polyester Tape E = 1800 lbs. Polyester Tape J = 2500 lbs. Polyester Tape T = 1250 lbs. Poly Metric Tape	2500 (Equals 2500 Feet)

NOTE: Standard Lengths 2500 ft. and 5000 ft.

Corrugated HDPE Conduit



Applications: Placed inside existing ducts (innerduct).

Installation method: Pulled through existing conduit.

Specifications

Installation temperature range: -20°F to 122°F

Handling: -20°F to 104°F

Nom. Size	Nom. ID	Nom. OD	Min. Wall	Wt/ 100 Ft.	Stiffness (5%) lb/in/in	Min Bend Radius	Pull Tensile
1"	1.049	1.340	.035	10.6	65	14"	261 lbs.
1-1/4"	1.250	1.565	.035	11.2	108	5"	319 lbs.
1-1/2"	1.500	1.825	.035	18.0	83	6"	384 lbs.
2"	2.000	2.425	.035	20.8	70	5-1/2"	493 lbs.

Corrugated HDPE is manufactured from High Density Polyethylene (HDPE) and is intended for innerduct applications. It's ideal for pulls under 1000 ft. and is designed to reduce surface contact when pulling cable. And because this product is lightweight and offers maximum flexibility, installation in small or restricted locations is made easier.

HDPE corrugated duct is available in sizes 1" through 2" and is offered in a variety of colors. Custom options are also available to satisfy the requirements of most installations.

PE Corrugated Options

- Sizes 1" through 2"
- Sequentially marked footage
- Multiple colors and stripes
- Factory installed pull tape



Pulled through existing conduits

Standard Length – Reels

	Color	Part No.	Nom. I.D.	Nom. O.D.	Pull Tape	Reel Size	Reel Length (ft.)	Wt. per 100 ft. (lbs.)
1"	Orange	A5D2S1JNNB1000	1.049	1.340	1130 lb.	48-30-24	1000	12.5
	Orange	A5D2S1JNNB1800	1.049	1.340	1130 lb.	48-30-24	1800	12.5
	Orange	A5D2S1JNNB2000	1.049	1.340	1130 lb.	48-41-24	2000	12.5
	Orange	A5D2S1JNNB2700	1.049	1.340	1130 lb.	48-41-24	2700	12.5
	Orange	A5D2S1JNNB5000	1.049	1.340	1130 lb.	66-41-24	5000	12.5
	Orange	A5D2S1JNNB6500	1.049	1.340	1130 lb.	72-41-24	6500	12.5
	Orange	A5D2S1JNNB7000	1.049	1.340	1130 lb.	72-45-24	7000	12.5
	Orange	A5D2S1JNNB8000	1.049	1.340	1130 lb.	82-41-24	8000	12.5
1 1/4"	Orange	A6D2S1JNNB1000	1.250	1.565	1130 lb.	48-30-24	1000	14.4
	Orange	A6D2S1JNNB1600	1.250	1.565	1130 lb.	48-41-24	1600	14.4
	Orange	A6D2S1JNNB2500	1.250	1.565	1130 lb.	66-41-24	2500	14.4
	Orange	A6D2S1JNNB4000	1.250	1.565	1130 lb.	66-41-24	4000	14.4
	Orange	A6D2S1JNNB5000	1.250	1.565	1130 lb.	72-41-24	5000	14.4
	Orange	A6D2S1JNNB6000	1.250	1.565	1130 lb.	82-41-24	6000	14.4
	Orange	A6D2S1JNNB7000	1.250	1.565	1130 lb.	84-45-24	7000	14.4
1 1/2"	Orange	A9D2S1JNNB1000	1.500	1.825	1130 lb.	66-41-24	1000	17.8
	Orange	A9D2S1JNNB2200	1.500	1.825	1130 lb.	66-41-24	2200	17.8
	Orange	A9D2S1JNNB2900	1.500	1.825	1130 lb.	72-41-24	2900	17.8
	Orange	A9D2S1JNNB4000	1.500	1.825	1130 lb.	82-41-24	4000	17.8
2"	Orange	A13D2S1JNNB500	2.000	2.425	1130 lb.	48-30-24	500	25.0
	Orange	A13D2S1JNNB750	2.000	2.425	1130 lb.	48-41-24	750	25.0
	Orange	A13D2S1JNNB1000	2.000	2.425	1130 lb.	66-41-24	1000	25.0
	Orange	A13D2S1JNNB1500	2.000	2.425	1130 lb.	66-41-24	1500	25.0
	Orange	A13D2S1JNNB1800	2.000	2.425	1130 lb.	72-41-24	1800	25.0
	Orange	A13D2S1JNNB2000	2.000	2.425	1130 lb.	82-41-24	2000	25.0

Standard Length – Coils

	Color	Part No.	Nom. I.D.	Nom. O.D.	Pull Tape	Box Size	Reel Length (ft.)	Wt. per 100 ft. (lbs.)
1"	Orange	A5D2E1JNNA250	1.049	1.340	Empty	COIL	250/Split	12.5
	Orange	A5D2E1JNNA250B	1.049	1.340	Empty	34-14-34	250/Split	12.5
	Orange	A5D2S1JNNB250	1.049	1.340	1130 lb.	COIL	250	12.5
	Orange	A5D2S1JNNB250B	1.049	1.340	1130 lb.	34-14-34	250	12.5
	Orange	A5D2S1JNNB500	1.049	1.340	1130 lb.	COIL	500	12.5
	Orange	A5D2S1JNNB500B	1.049	1.340	1130 lb.	39-15-39	500	12.5
1 1/4"	Orange	A6D2E1JNNA250	1.250	1.565	Empty	COIL	250/Split	14.4
	Orange	A6D2E1JNNA250B	1.250	1.565	Empty	39-15-39	250/Split	14.4
	Orange	A6D2S1JNNB250	1.250	1.565	1130 lb.	COIL	250	14.4
	Orange	A6D2S1JNNB250B	1.250	1.565	1130 lb.	39-15-39	250	14.4
	Orange	A6D2S1JNNB500	1.250	1.565	1130 lb.	COIL	500	14.4
	Orange	A6D2S1JNNB500B	1.250	1.565	1130 lb.	44-18-44	500	14.4
1 1/2"	Orange	A9D2S1JNNB250	1.500	1.825	1130 lb.	COIL	250	17.8
	Orange	A9D2S1JNNB250B	1.500	1.825	1130 lb.	44-18-44	250	17.8
	Orange	A9D2S1JNNB500	1.500	1.825	1130 lb.	COIL	500	17.8
2"	Orange	A13D2S1JNNB250	2.000	2.425	1130 lb.	COIL	250	25.0

Custom Orders

* Custom Orders are not returnable
* Custom lengths are available in minimum order quantities of 1000 ft. or min. set up charge

How to Build a Part Number:

Product	Size	Type	Wall	Options	Splits	Color	Stripes	Tape	Length
A = HDPE	5 = 1" 6 = 1-1/4" 9 = 1-1/2" 13 = 2"	D = Corrugated	2 = None - Corr	N = None - Custom E = Slit S = Standard Length	1 = 1 Way Single 2 = 2 Way Segmented 3 = 3 Way Segmented 4 = 4 Way Segmented 5 = 2 Way Parallel 6 = 3 Way Parallel 7 = 4 Way Parallel 12 = 2 Way Compart 13 = 3 Way Compart 14 = 4 Way Compart	A = Black B = Blue C = Brown D = Buff E = Grey F = Green G = Lilac H = Lt. Green J = Orange K = Red L = Terra Cotta M = White N = Yellow	NN = None 1A = Black Stripe 1B = Blue Stripe 1C = Brown Stripe 1D = Buff Stripe 1E = Grey Stripe 1F = Green Stripe 1G = Lilac Stripe 1H = Lt. Green Stripe 1J = Orange Stripe 1K = Red Stripe 1L = Terra Cotta Stripe 1M = White Stripe 1N = Yellow Stripe	A = Empty B = 1130 lb. Polyester Tape C = 1250 lb. Polyester Tape D = 1500 Polyester lbs. E = 1800 lb. Polyester Tape G = 200 lbs. Polyester Tape J = 2500 lbs. Polyester Tape T = 1250 lbs. Poly Metric Tape	1500 (Equals 1500 Feet)

Specifications

1.0 General

1.1 Carlon HDPE duct is manufactured to the following various industry standards and specifications for dimensional requirements.

ASTM F 2160 Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD).

ASTM D 2239 Polyethylene (PE) Plastic Pipe (SIDR) Based on Controlled Inside Diameter.

ASTM D 3035 Polyethylene (PE) Plastic Pipe (SDR) Based on Controlled Outside Diameter.

NEMA TC-7 Smooth Wall Coilable Polyethylene Electrical Plastic Conduit.

UL 651B Continuous Length HDPE

2.0 Material

Carlon duct is manufactured from a suitable thermoplastic polymer conforming to the minimum standard of PE334470E/C as defined in ASTM D3350. (see table 1)

Carlon® High Density Polyethylene

duct is manufactured in the following configurations:

Smoothwall – Smooth Interior and Smooth Exterior wall.

Rib/Smooth – Ribbed Interior and Smooth Exterior wall.

3.0 Product Description

Polyethylene duct and innerduct is an extruded coilable tubing for use as a single or multiple raceway.

The conduit may be direct buried, encased in concrete and used as innerducts.

Innerducts are used primarily to provide multiple raceways within an existing conduit system.

4.0 Ovality

Conduit 3" or larger needs to be re-rounded

Table 1 – Resin Properties

The resin properties shall meet or exceed the values listed below for HDPE.

ASTM Test	Description	Values HDPE
D-1505	Density g/CM^3	.941 - .955
D-1238	Melt Index, g/10 min Condition E	.05 - .50
D-790	Flexural Modulus, MPa (PSI)	80,000 min.
D-638	Tensile strength at yield (psi)	3000 min.
D-1693	Environmental Stress Crack Resistance Condition B,F_{10}	96 hrs. min.
D-746	Brittleness Temperature	-75˚C

Requests for certifications must be requested at time of quote

Specifications

Nom. Size	Nom. ID	Nom. OD	Min. Wall	Wt/ 100 Ft.	Pull Tensile Safe lbs.
SDR 7 - ASTM D3035					
1"	0.939	1.315	0.188	28.552	743
1-1/4"	1.186	1.660	0.237	45.448	1183
1-1/2'	1.358	1.900	0.271	59.491	1549
2"	1.697	2.375	0.339	93.012	2421
3"	2.500	3.500	0.500	202.140	5262
4"	3.214	4.500	0.643	334.212	8700
5"	3.972	5.562	0.795	510.709	13295
6"	4.733	6.625	0.946	723.976	18847
8"	6.161	8.625	1.232	1227.418	31953
10	7.678	10.750	1.536	1907.218	49649
12	9.108	12.750	1.821	2681.954	69818
14	10.000	14.000	2.000	3234.240	84195
16	11.428	16.000	2.286	4224.753	109980
SDR 9 - ASTM D3035 / F2160					
1"	1.023	1.315	0.146	23.000	599
1-1/4"	1.292	1.660	0.184	36.599	953
1-1/2"	1.478	1.900	0.211	48.026	1250
2"	1.847	2.375	0.264	75.102	1955
3"	2.722	3.500	0.389	163.084	4245
4"	3.500	4.500	0.500	269.520	7016
5"	4.326	5.562	0.618	411.745	10719
6"	5.153	6.625	0.736	584.091	15205
8"	6.709	8.625	0.958	989.810	25767
10"	8.362	10.750	1.194	1537.593	40027
12"	9.916	12.750	1.417	2164.092	56336
14"	10.888	14.000	1.556	2609.340	67927
16"	12.444	16.000	1.778	3407.638	88709

Nom. Size	Nom. ID	Nom. OD	Min. Wall	Wt/ 100 Ft.	Pull Tensile Safe lbs.
SDR 11 - ASTM D3035 / F2160					
1/2"	0.688	0.840	0.076	7.825	204
3/4"	0.860	1.050	0.095	12.226	318
1"	1.075	1.315	0.120	19.325	503
1-1/4"	1.358	1.660	0.151	30.706	799
1-1/2"	1.554	1.900	0.173	40.262	1048
2"	1.943	2.375	0.216	62.845	1636
3"	2.864	3.500	0.318	136.360	3550
4"	3.682	4.500	0.409	225.483	5870
5"	4.550	5.562	0.506	344.761	8975
6"	5.421	6.625	0.602	488.619	12720
8"	7.057	8.625	0.784	828.416	21566
10"	8.796	10.750	0.977	1286.718	33496
12"	10.432	12.750	1.159	1810.362	47128
14"	11.454	14.000	1.273	2183.310	56837
16"	13.090	16.000	1.455	2851.923	74242
SDR 13.5 - ASTM D3035 / F2160 / NEMA TC-7 EPEC-B					
1/2"	0.716	0.84	0.062	6.500	169
3/4"	0.894	1.050	0.078	10.217	266
1"	1.121	1.315	0.097	15.921	414
1-1/4"	1.414	1.660	0.123	25.477	663
1-1/2"	1.618	1.900	0.141	33.423	870
2"	2.023	2.375	0.176	52.155	1358
2-1/2"	2.449	2.875	0.213	76.410	1989
3"	2.982	3.500	0.259	113.120	2945
4"	3.834	4.500	0.333	186.994	4868
4-3/4"	4.084	4.750	0.333	198.213	5160
5"	4.738	5.562	0.412	285.934	7444
6"	5.643	6.625	0.491	405.869	10566
8"	7.347	8.625	0.639	687.688	17902
10"	9.158	10.750	0.796	1067.755	27796
12"	10.862	12.750	0.944	1501.882	39098
14"	11.926	14.000	1.037	1811.529	47158
16"	13.630	16.000	1.185	2365.816	61588

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Specifications

Nom. Size	Nom. ID	Nom. OD OD	Min. Wall Wall	Wt/ 100 Ft.	Pull Tensile Safe lbs.
SDR 15.5 - ASTM D3035					
1"	1.147	1.315	0.084	13.935	363
1-1/4"	1.446	1.660	0.107	22.393	583
1-1/2"	1.654	1.900	0.123	29.455	767
2"	2.069	2.375	0.153	45.814	1193
3"	3.048	3.500	0.226	99.712	2596
4"	3.920	4.500	0.290	164.528	4283
5"	4.844	5.562	0.359	251.715	6553
6"	5.771	6.625	0.427	356.649	9284
8"	7.513	8.625	0.556	604.582	15739
10"	9.362	10.750	0.694	940.472	24483
12"	11.104	12.750	0.823	1322.794	34435
14"	12.194	14.000	0.903	1593.751	41489
16"	13.936	16.000	1.032	2081.634	54190
SDR 17 - ASTM D3035					
1"	1.161	1.315	0.077	12.846	334
1-1/4"	1.464	1.660	0.098	20.629	537
1-1/2"	1.676	1.900	0.112	26.986	703
2"	2.095	2.375	0.140	42.166	1098
2-1/2"	2.537	2.875	0.169	61.628	1604
3"	3.088	3.500	0.206	91.443	2380
4"	3.970	4.500	0.265	151.238	3937
5"	4.908	5.562	0.327	230.688	6005
6"	5.845	6.625	0.390	327.689	8531
8"	7.611	8.625	0.507	554.649	14439
10"	9.486	10.750	0.632	861.733	22433
12"	11.250	12.750	0.750	1212.840	31573
14"	12.352	14.000	0.824	1463.093	38088
16"	14.118	16.000	0.941	1909.619	49712
SDR 21 - ASTM D3035					
1"	1.189	1.315	0.063	10.629	277
1-1/4"	1.502	1.660	0.079	16.831	438
1-1/2'	1.720	1.900	0.090	21.952	571
2"	2.149	2.375	0.113	34.445	897
3"	3.166	3.500	0.167	75.009	1953
4"	4.072	4.500	0.214	123.602	3218
5"	5.032	5.562	0.265	189.163	4924
6"	5.995	6.625	0.315	267.856	6973
8"	7.803	8.625	0.411	454.944	11843
10	9.726	10.750	0.512	706.393	18389
12	11.536	12.750	0.607	993.289	25858
14	12.666	14.000	0.667	1198.436	31198
16	14.476	16.000	0.762	1564.746	40734
SIDR 7 - ASTM D2239					
1"	1.049	1.349	0.150	24.237	631
1-1/4'	1.380	1.774	0.197	41.866	1090
1-1/2"	1.610	2.070	0.230	57.030	1485
2"	2.067	2.658	0.295	94.002	2447
4"	4.026	5.176	0.575	356.617	9283
6"	6.065	7.798	0.866	809.388	21069
SIDR 9 - ASTM D2239					
1"	1.049	1.283	0.117	18.384	479
1-1/4"	1.380	1.686	0.153	31.608	823
1-1/2"	1.610	1.968	0.179	43.154	1123
2"	2.067	2.527	0.230	71.195	1853
4"	4.026	4.921	0.447	269.664	7021
6"	6.065	7.143	0.674	612.092	15932
SIDR 9 TRUE					
1"	1.020	1.242	0.111	16.918	440
1-1/4"	1.270	1.546	0.138	26.184	682
SIDR 11.5 - ASTM D2239					
1"	1.049	1.231	0.091	13.980	364
1-1/4"	1.380	1.620	0.120	24.257	631
1-1/2"	1.610	1.890	0.140	33.016	859
2"	2.067	2.427	0.180	54.505	1419
4"	4.026	4.726	0.350	206.398	5373
6"	6.065	7.119	0.527	468.154	12187

Nom. Size	Nom. ID	Nom. OD OD	Min. Wall Wall	Wt/ 100 Ft.	Pull Tensile Safe lbs.
SIDR 11.5 TRUE					
1"	1.020	1.194	0.087	12.979	338
1-1/4"	1.270	1.488	0.109	20.256	527
1-1/2"	1.520	1.780	0.130	28.906	752
2"	1.995	2.343	0.178	50.859	1352
4"	4.050	4.700	0.325	191.612	4988
6"	6.050	7.000	0.475	417.672	10873
SIDR 15 - ASTM D2239					
1"	1.049	1.189	0.070	10.556	275
1-1/4"	1.380	1.564	0.092	18.250	475
1-1/2"	1.610	1.824	0.107	24.758	645
2"	2.067	2.343	0.138	41.006	1067
4"	4.026	4.562	0.268	155.081	4037
6"	6.065	6.873	0.404	352.192	9168
TRUE 9 - ASTM F2160					
1"	1.024	1.259	0.111	18.075	447
1-1/4"	1.274	1.569	0.139	28.255	697
1-1/2"	1.529	1.883	0.167	40.692	1005
2"	2.039	2.510	0.222	72.183	1782
TRUE 11 - ASTM F2160					
1"	1.024	1.217	0.091	14.571	359
1-1/4"	1.274	1.516	0.114	22.747	561
1-1/2"	1.529	1.817	0.136	32.465	802
2"	2.039	2.425	0.182	58.051	1432
SCHEDULE 40 - ASTM D2447 / F2160 / NEMA TC-7 EPEC-40					
1/2"	0.622	0.84	0.109	10.738	280
3/4"	0.824	1.05	0.113	14.269	371
1"	1.049	1.315	0.133	21.185	551
1-1/4"	1.380	1.660	0.140	28.677	747
1-1/2"	1.610	1.900	0.145	34.293	893
2"	2.067	2.375	0.154	46.093	1200
2-1/2"	2.469	2.875	0.203	73.096	1903
3"	3.068	3.500	0.216	95.591	2488
4"	4.026	4.500	0.237	136.152	3544
5"	5.046	5.562	0.258	184.410	4801
6"	6.065	6.625	0.280	239.415	6233
8"	7.981	8.625	0.322	360.290	9379
10"	10.020	10.750	0.365	510.811	13298
12"	11.938	12.750	0.406	675.372	17582
SCHEDULE 80 - ASTM D2447 / F2160 / NEMA TC-7 EPEC-80					
1/2"	0.546	0.84	0.147	13.728	357
3/4"	0.742	1.05	0.154	18.595	484
1"	0.957	1.315	0.179	27.403	713
1-1/4"	1.278	1.660	0.191	37.811	984
1-1/2"	1.500	1.900	0.200	45.818	1193
2"	1.939	2.375	0.218	63.368	1650
2-1/2"	2.323	2.875	0.276	96.667	2516
3"	2.900	3.500	0.300	129.370	3368
4"	3.826	4.500	0.337	189.059	4922
5"	4.812	5.562	0.375	262.125	6824
6"	5.761	6.625	0.432	360.534	9386
NEMA TC-7 EPEC A					
1/2"	0.546	0.84	0.06	6.307	164
3/4"	0.93	1.05	0.06	8.005	208
1"	1.165	1.315	0.075	12.533	326
1-1/4"	1.460	1.660	0.100	21.023	547
1-1/2"	1.670	1.900	0.115	27.663	720
2	2.085	2.375	0.145	43.575	1134
2-1/2"	2.469	2.875	0.203	73.096	1903
3"	3.068	3.500	0.216	95.591	2488
4"	4.026	4.500	0.237	136.152	3544
5"	5.046	5.562	0.258	184.410	4801
6"	6.065	6.625	0.280	239.415	6233

Internal Rib – Add .04 to Nom. ID (1/2" through 6") Not available in all wall types - consult factory.

Pull Tensile Safe = Based on Plastic Pipe Institute tensile calculations and maximum tensile stress recommendations of 1/3 yield tensile for pulls of 30 to 60 minutes or less in directional drilling applications and pulling as innerduct into conduit.

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

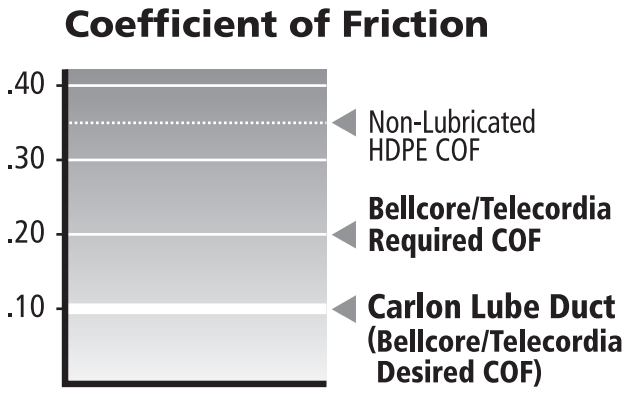
Carlon®/Pyramid Industries™ LubeDuct Pre-Lubricated HDPE Conduit

LubeDuct pre-lubricated HDPE conduit utilizes a Carlon/Pyramid pre-lubrication coating process to provide a permanent low friction surface. The low coefficient-of-friction reduces cable damage, lowers pulling tensions, and allows multiple long distance cable pulls or jetting of cable.

Benefits:

- Low coefficient of friction
- Lower pulling tensions
- Less cable damage
- Longer cable pulls over multiple bends
- Long life, will not evaporate

Coefficient of Friction



Coefficient rating based on Bellcore/Telecordia GR-356-CORE for optical cable innerducts.

LubeDuct COF: 0.10

Bellcore Test Procedure:

- 420 Degree Bend
- 36" Radius
- Medium Jacket Cable with 15 lb. Applied Weight
- 65 Ft/Min for a minimum travel distance of 10 Ft.
- Evaporation rate 0.5% at 500 Degrees F

Cut-Through Rating:

Cut-Through resistance based on Bellcore/Telecordia GR-356-CORE for optical cable innerducts

Carlon/Pyramid Cut-Through Rating:

No Cut-Through at 3000 ft.

- No signs of cut through or degradation of core for 30 minute duration
- 1800 lb. Pull Tape
- 450 lbs. Tensile @ 100 Ft/Minute

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Packaging Options

Reels

*Carlon does not recommend putting Sch. 40 HDPE on reels



Segmented
(3/4" – 2")

Physically segmenting different colors into one, two, three or four separate segments allowing independent pulling of ducts.



Paralleled
(3/4" through 2")
1" – 1 1/4" diameter recommended

Extruding each color onto a single reel and then simultaneously pulling onto one reel. Ideal for using all ducts at one time.



Compartmentalized
(3/4" through 2")
1 1/2" – 2" diameter recommended

Physically compartmentalizing different colors into one, two, three or four separate segments allowing independent pulling of ducts. Full rings help align duct during pull.

Coils



Standard length and custom coils available 1" - 6". Call for quantity and dimensions available.

NOTE: 4" through 6" Schedule 40 HDPE is available in straight lengths only.

Truckload Quantities

Reels

Flatbed (48 ft.)

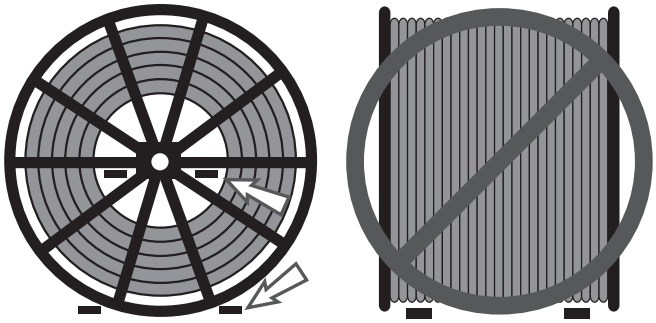
Reel Size	Number of Reels per Truckload
48"	24
66"	18
72"	16
82"	14
84"	14
96"	12
102"	12

Step Deck Flatbed

Reel Size	Number of Reels per Truckload
114"	8
120"	8

NOTE: Two additional reels, 96" or smaller, can fit on the upper deck.

Loading Reels



Reels must be lifted from the side with lift truck forks inserted through the spokes of the reel, or at the bottom with entry from the side of the reel. Reels should NEVER be lifted from the front of the reel or contact innerduct.

Bundles 40 ft / 50 ft Lengths

Size	# of Lengths per Bundle	Ft. per Bundle 40 ft. Lengths	Ft. per Bundle 50 ft. Lengths	Bundles per Truck	Total Feet per Truck 40 ft. Lengths	Total Feet per Truck 50 ft. Lengths
4"	57	2280	2850	8	18240	22800
6"	26	1040	1300	8	8320	10400
8"	14	560	700	8	4480	5600
10"	4	160	200	18	2880	3600
12"	4	160	200	14	2240	2800
14"	3	120	150	14	1680	2100
16"	3	120	150	12	1440	1800



Couplings

*Standard "E-Loc"®



Designed for use with smoothwall OD controlled innerduct (ASTM 3035), Sch. 40 and Sch. 80 innerduct, and is pressure tight to internal pressures above 200 psi when restrained or buried. Ideal for joining PE to PVC or threaded steel conduit.

Part No.	Size	Nom. O.D. (of Duct)	Std. Ctn. Qty.	Std. Ctn. Wt.
EL.084	1/2"	.084"	1	.40
EL1.050	3/4"	1.050"	1	1.00
EL1.315	1"	1.315"	1	1.00
EL1.660	1 1/4"	1.660"	1	0.68
EL1.900	1 1/2"	1.900"	1	1.12
EL2.375	2"	2.375"	1	1.63
EL2.875	2 1/2"	2.875"	1	1.80
EL3.500	3"	3.500"	1	1.92
EL4.500	4"	4.500"	1	2.68
EL5.563	5"	5.563"	1	3.31
EL600	6"	6.625"	1	3.58

*Double "E-Loc"®



Designed to join both smoothwall and ribbed OD wall innerduct and are used when air and water-tight integrity is imperative. Internal pressures above 200 psi are maintained when the conduit is unrestrained.

Part No.	Size	Nom. O.D. (of Duct)	Std. Ctn. Qty.	Std. Ctn. Wt.
DEL131	1"	1.315"	50	63
DEL150	1 1/4" True	1.500"	50	58
DEL154	1 1/4"	1.540"	50	58
DEL166	1 1/4"	1.660"	50	53
DEL190	1 1/2"	1.900"	24	43
DEL237	2"	2.375"	25	57

Transition Couplings

Part No.	Size	Nom. O.D. (of Duct)	Std. Ctn. Qty.	Std. Ctn. Wt.
DEL150-154	1 1/4"	1.500" - 1.540"	50	58
DEL150-166	1 1/4"	1.500" - 1.660"	50	58
DEL154-166	1 1/4"	1.540" - 1.660"	50	58

Universal Aluminum Couplings



Self-threading, which draws each end of the conduit into the center of the coupler.

Part No.	Size	Nom. O.D. (Duct Range)	Std. Ctn. Qty.	Std. Ctn. Wt.
P75	3/4"	.91 – 1.08	10	12
P100	1"	1.21 – 1.41	100	25
P125	1 1/4"	1.44 – 1.68	100	28
P150CPLR	1 1/2"	1.80 – 2.02	100	35
P200	2"	2.31 – 2.48	50	19
P300	3"	3.495 – 3.505	12	10
P400	4"	4.41 – 4.65	12	12

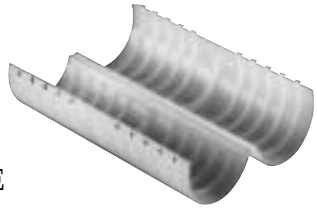
Barbed Couplings Press-On/Screw-On



Aluminum

Part No.	Size	Nom. O.D. (of Duct)	Std. Ctn. Qty.	Std. Ctn. Wt.
BS1.315	1" SDR	1.315"	100	16
BS1.194	1" True 11	1.194"	100	16
BS1.488	1 1/4" True 11	1.488"	100	16
BS1.660	1 1/4" SDR	1.660"	100	16
BS1.900	1 1/2" SDR	1.900"	100	24
BS2.375	2" SDR	2.375"	100	34

Nonmetallic Clamshell Couplings



For use with Corrugated HDPE

Part No.	Size	Nom. O.D. (of Duct)	Std. Ctn. Qty.	Std. Ctn. Wt.
E144F	1"	1.34"	30	1.7
E144GT	1 1/4"	1.565"	25	2

**"E-Loc" is a registered trademark of ETCO Specialty Products, Inc.*

Couplings

Electrofusion Coupling



Provides an airtight duct system and is used to join HDPE to PVC or threaded steel conduit. Ideal for directional bore applications.

Part No.	Nom. O.D. (of Duct)	Std. Ctn. Qty.	Std. Ctn. Wt.
575-4075	1.488"	40	12.96
575-4049	1.526"	40	12.44
575-0640	1.660"	40	12
575-0641	1.900"	140	55.3
575-0642	2.375"	30	17.46
575-0643	3.500"	36	45.47
575-0644	4.500"	10	18.77

Toneable Pressure Coupling



Designed to join Carlon® Toneable Duct System

150 PSI at 73°F

Part No.	Nom. O.D. of Duct	Nom. O.D.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
TDC100	1"	1.315	60	34
TDC125	1 1/4"	1.66	36	28
TDC150	1 1/2"	1.90	30	31
TDC200	2"	2.375	12	18

Threaded Plugs



For use with Toneable Coupling

Part No.	Nom. O.D. of Duct	Nom. O.D.	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
TPLG100	1"	1.315	50	4
TPLG125	1 1/4"	1.66	25	3
TPLG150	1 1/2"	1.90	25	3.5
TPLG200	2"	2.375	10	2.7

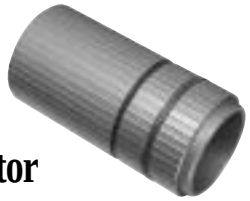
Nonmetallic Internal Couplings



Nonmetallic, self-threading and are recommended for use with corrugated duct.

Part No.	Size	Nom. I.D. Range	Std. Ctn. Qty.	Std. Ctn. Wt.
PIC100	1"	1.05	100	24
PIC125	1 1/4"	1.25	100	26

Terminating Connector



Part No.	Size	Nom. O.D. Range	Std. Ctn. Qty.	Std. Ctn. Wt.
TC100	1"	.91 – 1.08	12	50
TC125	1 1/4"	1.495 – 1.70	12	52
TC150	1 1/2"	1.80 – 2.00	12	56
TC200	2"	2.31 – 2.52	12	58

Tuff-Link Couplers



Part No.	Size	Nom. O.D.	Std. Ctn. Qty.	Std. Ctn. Wt.
TFL100	1"	1.299"	1	.2
TFL125	1 1/4"	1.660"	1	.2
TFL150	1 1/2"	1.900"	1	.2
TFL200	2"	2.375"	1	.6

Expansion Sleeve

Part No.	Size	Nom. O.D. of Duct	Std. Ctn. Qty.	Std. Ctn. Wt.
EXP125	1 1/4" 9T	1.524	1	1

The Carlon Reel Return Policy

The Carlon Reel Return Policy offers our customers the opportunity to recycle empty steel reels used to ship Carlon High Density Polyethylene. A credit will be issued for each reel returned to Lamson & Sessions HDPE plants in good condition. Reels may also be picked up in truckload quantities when consolidated into one location. Details outlining the program are listed below:

Reel Shipment: Reels may be returned broken down into flanges and staves or fully assembled. Steel tubular spoked reels supplied by Carlon or of similar type meeting the Reel Design and Quality Requirements section below will be accepted. All broken down reel flanges and staves should be banded for forklift off loading and safe transport.

Freight: Reels may either be shipped back to plants by customer or arranged for pick-up by Lamson & Sessions. Reels returned for credit with customer choosing a carrier and paying all freight charges for return of Reels (Class 55 freight is recommended) when returning reels. Reels must be shipped "Prepaid". Reels shipped collect will be refused. A 24-hour notice to receiving plant is needed before the truck arrives. It is Lamson & Sessions policy to honor appointments and unload in an efficient manner. Lamson & Sessions will not pay any detention incurred by carriers. Reel pick-up can be arranged by contacting Sipping Manager at any of the following Carlon HDPE locations:

Lamson & Sessions 1422 Irwin Drive Erie, PA 16505 Ph: 814-455-7587	Lamson & Sessions 1776 E. Beamer Woodland, CA 95685 Ph: 530-669-0160	Lamson & Sessions 237 Forest View Dr. Seymour, MO 65746 Ph: 417-926-1846	Lamson & Sessions 9000 Joiner Rd. Tennille, GA 31089 Ph: 478-553-0024

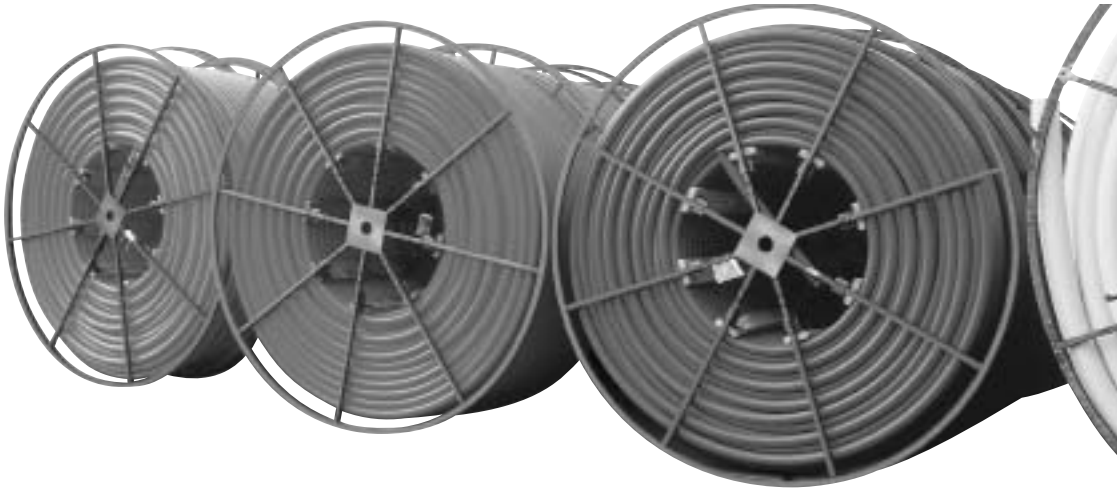
Pick-up Reels: Reels will be picked by carriers chosen by Lamson & Sessions as arranged between customer and Lamson & Sessions Shipping Manager. Reels are requested to be broken down with all components on sizes 102" and smaller, but will be pick-up assembled or unassembled. Quantities of Truckload or more will be picked within 30 days of request, while smaller quantities may take up to 90 days or more to gather depending on transportation in the area.

Reel Quality and Deign Requirements: Reel designs include steel tubular spoked reels using a minimum 14 gauge (.075" Nom) steel and means of disassembly including clevis pins or bolts. Reels must be undamaged, in full working condition, and include all flanges and staves for full credit. This includes but is not limited to warping, flattening, or any structural damage to the reel or its components. Reel acceptability will be determined by receiving plant using quality inspection criteria.

Credit: A credit for each reel meeting the above requirements will be issued to the customer's account. If the reel does not meet the quality requirements, a credit will not be issued and a $20 disposal fee for each non-usable reel will be deducted from total credit.

Reel Sizes: The following reel sizes and staves are the only acceptable sizes as they are most common standard size reels for Lamson & Sessions and most HDPE manufacturers.

Flanges			***Staves***	***Spindle***
48"	*82"*	*102"*	*45"*	*2 3/4" Minimum*
66"	*84"*	*114"*	*41"*	
72"	*96"*	*120"*	*33"*	



Carlon® HDPE Quote Request

Date: _____ **Needed By:** _____ **Destination:** _____

Customer: _____ **Account Number:** _____ **Application:** _____

Rep Agency: _____ **Market:** ____ Power ____ Telecommunication ____ Electrical ____ CATV

1. PRODUCT TYPE
- ☐ A HDPE
- ☐ E Aerial HDPE
- ☐ S Aerial Figure 8 - 6.6M
- ☐ T Aerial Figure 8 - 10M
- ☐ U UL Listed HDPE
- ☐ Certification Required _____ Specification
- ☐ Custom Printline _____

2. SIZE
- ☐ 2 1/2"
- ☐ 3 3/4"
- ☐ 5 1"
- ☐ 6 1-1/4"
- ☐ 9 1-1/2"
- ☐ 13 2"
- ☐ 14 2-1/2"
- ☐ 15 3"
- ☐ 16 4"
- ☐ 17 4.75"
- ☐ 18 5"
- ☐ 22 6"
- ☐ 23 7"
- ☐ 24 8"
- ☐ 25 10"
- ☐ 26 12"
- ☐ 27 14"
- ☐ 28 16"

3. CONFIGURATION
- ☐ B Smooth Out/Ribbed In
- ☐ C Smooth Out/Smooth In
- ☐ D Corrugated

4. WALL TYPE
- ☐ 2 Corrugated
- ☐ 4 SCH 40
- ☐ 5 SCH 80
- ☐ 6 SDR 11
- ☐ 9 SDR 13.5
- ☐ 13 SDR 15.5
- ☐ 14 SDR 17
- ☐ 16 SDR 21
- ☐ 22 SDR 7
- ☐ 24 SDR 9
- ☐ 26 SIDR 11.5
- ☐ 27 SIDR 11.5 True
- ☐ 29 SIDR 15
- ☐ 34 SIDR 7
- ☐ 36 SIDR 9
- ☐ 37 SIDR 9 True
- ☐ 42 TC-7-A
- ☐ 45 True 11
- ☐ 46 True 9

5. OPTIONS
- ☐ N Standard/No Options
- ☐ B Supplied Cable
- ☐ D Lube Duct
- ☐ E Slit - Corr
- ☐ F Toneable/18G (Min. Wall .14)
- ☐ G Toneable/22G (Min. Wall .12)

6. REEL SPLITS
- ☐ 1 1- Way Single
- ☐ 2 2- Part Segmented
- ☐ 3 3- Part Segmented
- ☐ 4 4- Part Segmented
- ☐ 5 2- Way Parallel
- ☐ 6 3- Way Parallel
- ☐ 7 4- Way Parallel
- ☐ 12 2- Way Compart
- ☐ 13 3- Way Compart
- ☐ 14 4- Way Compart

7. COLOR
- ☐ A Black
- ☐ B Blue
- ☐ C Brown
- ☐ D Buff
- ☐ E Grey
- ☐ F Green
- ☐ G Lilac
- ☐ H Lt. Green
- ☐ J Orange
- ☐ K Red
- ☐ L Terra Cotta
- ☐ M White
- ☐ N Yellow

(Sizes 8" - 16" available in Black or Black with Stripes only.)

8. STRIPE
- ☐ NN NONE
- ☐ 3A 3 Black Stripes
- ☐ 3B 3 Blue Stripes
- ☐ 3C 3 Brown Stripes
- ☐ 3D 3 Buff Stripes
- ☐ 3E 3 Grey Stripes
- ☐ 3F 3 Green Stripes
- ☐ 3G 3 Lilac Stripes
- ☐ 3H 3 Lt. Green
- ☐ 3J 3 Orange Stripes
- ☐ 3K 3 Red Stripes
- ☐ 3L 3 Terra Cotta Stripes
- ☐ 3M 3 White Stripes
- ☐ 3N 3 Yellow Stripes

(Single Stripe only on Toneable)

9. PULL LINE
- ☐ A Empty
- ☐ B 1130 lbs. Polyester Tape
- ☐ C 1250 lbs. Polyester Tape
- ☐ D 1500 lbs. Polyester Tape
- ☐ E 1800 lbs. Polyester Tape
- ☐ G 200 lbs. Polyester Tape
- ☐ J 2500 lbs. Polyester Tape
- ☐ K 400 lbs. Detectable Poly Tape 22 Ga
- ☐ T 1250 lbs. Poly Metric Tape
- ☐ V 1250 lbs. Detectable Poly Tape 22 Ga

10. Quantity
Total Length Feet

Max Reel Size

4" - 6" Sch. 40 HDPE available in straight lengths only.

Target Price _____

Project Stage Bid/Buy _____

Competitors _____

Carlon Quote # _____

Pricing Specialist _____

Minimum Custom Run Quantities:

1/2" - 1"	5000 Ft.
1 1/4" - 2"	2500 Ft.
2 1/2" - 16"	1000 Ft.

Fax completed Quote Request to your Local Carlon Representative
Visit www.carlon.com to locate a Carlon Representative

- Freight quoted F.O.B., origin (freight additional) from plant specified.
- Custom product non-cancelable 24 hours after order acknowledgement or production has started.

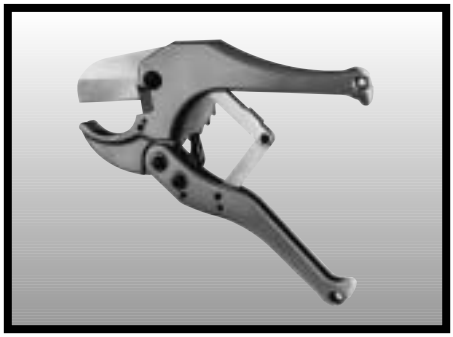
Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Carlon® Cable and Installation Accessories

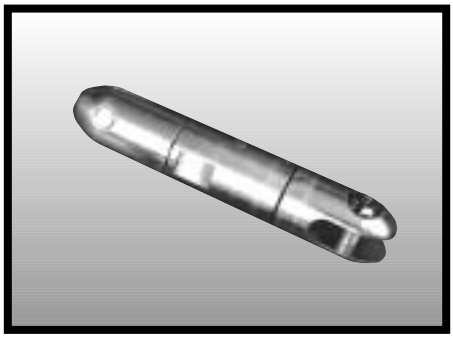
Duct Plugs
Split Plugs
Pulling Harness
Pulling Eyes
Swivels
Line Missiles
Warning Tape
Rope & Tape

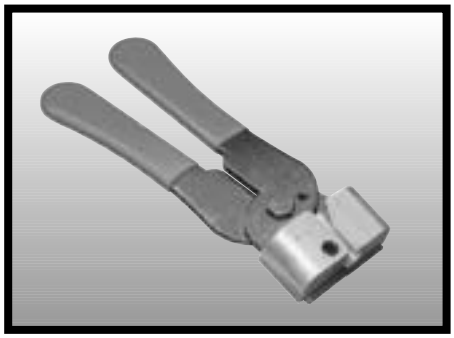












Duct Plugs



Blank

Part No.	Size	Duct I.D. Range	Std. Ctn. Qty.	Std. Ctn. Wt.
MAEPG2	1"	.96" - 1.16"	50	4.5
MAEPG4	1 1/4"	1.14" - 1.48"	50	5.5
MAEPG3	1 1/2"	1.49" - 1.83"	50	7.5
MAEPG5	2"	1.83" - 2.36"	50	12.5
MAEPG55	3"	2.99" - 3.46"	50	19.5
MAEPG6	3 1/2"	3.42" - 4.00"	25	13
MAEPG7	4"	3.94" - 4.33"	50	32.5
MAEPG8	5"	5.00" - 5.35"	25	24.5



Multi-Access

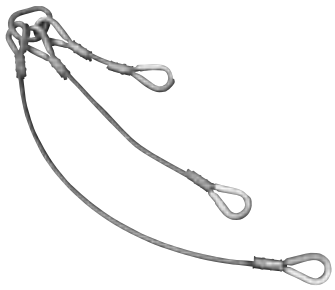
Part No.	Type	Duct I.D. Range	Innerduct O.D. Range	Std. Ctn. Qty.	Std. Ctn. Wt.
MATPG2	3-Hole	3.92" - 4.21"	1.31" - 1.42"	24	27
MATPG3	3-Hole	3.92" - 4.21"	1.53" - 1.67"	24	24
MAQPG2	4-Hole	3.92" - 4.21"	1.19" - 1.36"	24	23
MAQPG4	4-Hole	4.16" - 4.34"	1.19" - 1.36"	24	34

Split Plugs for Sealing Innerduct and Cable



Part No.	Size	Duct I.D. Range	Cable O.D. Range	Std. Ctn. Qty.	Std. Ctn. Wt.
MAFPG2	1"	1.00" - 1.10"	0.35" - 0.57"	50	8
MAFPG21	1"	1.00" - 1.10"	0.43" - 0.57"	50	8
MAFPG22	1"	1.00" - 1.10"	0.57" - 0.70"	50	8
MAFPG3	1 1/4"	1.22" - 1.36"	0.35" - 0.57"	50	10
MAFPG4	1 1/4"	1.22" - 1.36"	0.57" - 0.70"	50	10
MAFPG41	1 1/4"	1.22" - 1.34"	0.70" - 0.90"	50	10
MAFPG5	1 1/2"	1.50" - 1.65"	0.35" - 0.57"	50	15
MAFPG6	1 1/2"	1.50" - 1.65"	0.50" - 0.70"	50	15
MAFPG9	2"	1.98" - 2.15"	0.35" - 0.57"	50	22

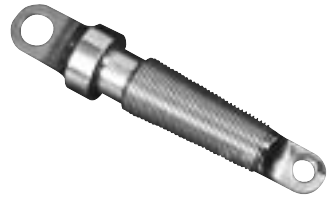
Multiple Innerduct Pulling Harness



For use with Pulling Innerducts into a 4" Conduit

Part No.	Description	Working Load Per Leg (lbs.)	Working Load Combined (lbs.)	Std. Ctn. Qty.	Wt./Ea. (lbs.)
MAPH3	3-Way 1/4" Cable	1400	2900	1	14
MAPH4	4-Way 1/4" Cable	1400	4200	1	15

Innerduct Pulling Eyes



Part No.	Size	Range	Std. Ctn. Qty.	Wt./Ea. (lbs.)
MAPE3	1 - 1 1/8"	.93 - 1.06	1	1.0
MAPE4	7/8"	.71 - .87	1	1.5
MAPE5	1 - 1 1/8"	1.06 - 1.43	1	1.0
MAPE6	1 1/4"	1.06 - 1.43	1	2.0
MAPE7	1 7/16."	1.343 - 1.50	1	4.5
MAPE8	1 1/2"	1.50 - 1.625	1	5.0
MAPE9	2"	1.97 - 2.09	1	6.0

Swivels - Ball Bearing



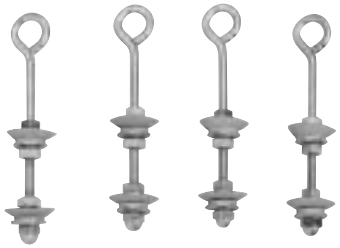
Part No.	Description	Work/Break Load (lbs.)	Dimensions	Wt./Ea. (lbs.)
MASV4	Non-Breakaway	1800	7/8"x 4 1/2"	.53
MASV5	Non-Breakaway	600	5/8"x 4"	1.00

Swivels - Breakaway and Replacement Pins



Part No.	Description	Work/Break Load (lbs.)	Dimensions	Std. Ctn. Qty.	Wt./Ea. (lbs.)	Pin Part No.	Description
MASV6	Breakaway	600	7/8"x 4 1/2"	1	.55	MASVP6	7/8" Replacement Pin for MASV6
MASV7	Breakaway	600	5/8"x 3 1/2"	1	.19	MASVP7	5/8" Replacement Pin for MASV7
MASV8	Breakaway	450	5/8"x 3 1/2"	1	.19	MASVP8	5/8" Replacement Pin for MASV8

Line Missiles



Part No.	Description	Std. Ctn. Qty.	Std. Ctn. Wt.
MAPRO3	3-Way for 1 1/4" Duct	25	25
MAPRO4	4-Way for 1" Duct	25	18

Underground Warning Tape – Orange

CAUTION TELEPHONE CABLE BURIED BELOW

Part No.	Type	Width	Ft. per Spool	Wt. ea. lbs.
MAT3T21	Standard	3"	1000'	7
MAT3T61	Detectable	3"	1000'	8

CAUTION FIBER OPTIC CABLE BURIED BELOW

Part No.	Type	Width	Ft. per Spool	Wt. ea. lbs.
MAT3O21	Standard	3"	1000'	7
MAT6O21	Standard	6"	1000'	13
MAT3O51	Extra Stretch	3"	1000'	7
MAT3O61	Detectable	3"	1000'	8
MAT6O61	Detectable	6"	1000'	16



End Caps

Part No.	Size	Nom. O.D.	Std. Ctn. Qty.
EC1.315	1"	1.315"	1
EC1.488	1 1/4"	1.488"	1
EC1.660	1 1/4"	1.660"	1
EC1.900	1 1/2"	1.900"	1
EC2.375	2"	2.375"	1
EC4.500	4"	4.500"	1



Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Rope (Conduit Pulling Lines for Conductors or Fiber Optics)

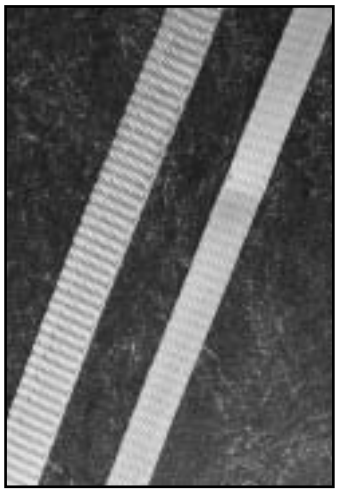
White Diamond Braid Rope

This rope is constructed of polyethylene over polyester, designed specifically for fiber-optic pulling. The polyethylene jacket gives the "slippery" feel that gives less drag in pulling through conduit.



Part No.	Reel Lengths	Diameter	Recommended Working Load (lbs.)	Approximate Avg. Tensile (lbs.)	Std. Ctn. Wt. (lbs.)
SB14105	5,000 ft.	1/4"	260	1700	1000

Tape



Prelubricated, woven polyester tape made from low friction, high abrasion resistant yarns providing a low coefficient of friction. Tape is printed with sequential footage markings for accurate measurements.

Part No.	Size	Tensile Strength (lbs.)	Reel Lengths
TL14203	1/2"	1130	3,000 ft.
TL14205	1/2"	1130	5,000 ft.
TL14505	1/2"	1250	5,000 ft.
TL14510	1/2"	1250	10,000 ft.
TL38203	5/8"	1800	3,000 ft.
TL38265	5/8"	1800	6,500 ft.
TL38210	5/8"	1800	10,000 ft.

Conduit Cutters

Kwikcut Cutter



For fast, smooth field cuts of 1/2" through 1" Innerduct.

Part No.	Size	Std. Ctn. Qty.
CC120B	8"	10

Medium Cutter



Hand held cutter makes fast square, smooth field cuts on Innerduct sizes 1/2" through 1 1/4".

Part No.	Size	Std. Ctn. Qty.
CC125	9"	1

Large Cutter



For clean cuts of Innerduct sizes 1/2" through 2".

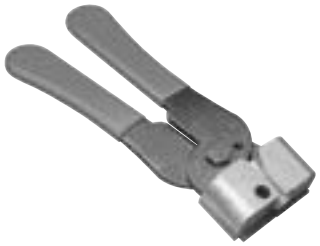
Part No.	Size	Std.. Ctn. Qty.
CC122	17 1/2"	1

Figure-8 Web Slitter



Part No.	Size	Std. Ctn. Qty.
3056MW	6.6M	1
30510MW	10M	1

Figure-8 Jacket Slitter



Part No.	Size	Std. Ctn. Qty.
3056MJ	6.6M	1
30510MJ	10M	1

Product	Page
Boreable Multi-Gard® Trenchless Raceway	233
Bore-Gard® Trenchless Raceway	232
Carflex® Liquidtight Fittings	6
Carflex® Liquidtight Flexible Nonmetallic Tubing	4
Carflex® Omni Connectors	9
Carflex® Pre-Wired Liquidtight Whips	11
Carflex® X-Flex™ Flexible Nonmetallic Tubing	5
Cement	220
Chimes	15
Circuit Safe® JIC Enclosures	122
Circuit Safe® NEMA Enclosures	112
Cord Grips	12
Curved Lid J-Box	48
ENT Boxes and Fittings	21
Flex-Plus® Blue™ ENT	20
Floor Box Systems	33
FS/FD Boxes	181
General Purpose Raceway	93
Hal-Free Riser-Gard®	92
High Density Polyethylene (HDPE)	269
Himeline® Enclosures	137
Intra-Gard® Multi-Cell Raceway	261
In-Use Weatherproof Covers	52
Junction Boxes	180
LubeDuct Pre-Lubricated HDPE Conduit	288
Multi-Gard® Multi-Cell Raceway	237
P&C® Duct - Types EB and DB	192
P&C® Duct Fittings and Sweeps	196
P&C Flex® Corrugated Flexible Conduit	209
Plenum-Gard® Flexible Raceway	88
PV-Mold® Pole Riser System	211
Resi-Gard® Flexible Raceway	106
Riser-Gard® Flexible Raceway	90
Schedule 40 & 80 Conduit	168
Schedule 40 & 80 Fittings	174
Schedule 40 & 80 Special/Standard Elbows	170
Slack and Splice Enclosures	156
Slip Meter Risers	215
Spacers - Snap-Loc®	225
Spacers - Snap-N-Stac™	227
Split Duct	217
Structured Cable Management Systems	103
Telephone Duct - Types B, C, and D	202
Telephone Duct Fittings and Sweeps	203
Utility Conduit, Fittings and Elbows	190
Weatherproof Covers and Lighting Systems	51
Wire Handling Products	57
Wire-Safe® Wireway and Wiring Trough	61
Zip Box® Blue™ Switch/Outlet Boxes	69

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Part Number Index

Part No.	Page
17011	64
17013	64
17015	64
17017	64
18011	64
18013	64
18015	64
18017	64
18111	64
18113	64
18115	64
18117	64
18211	64
18213	64
18215	64
18217	64
18311	64
18313	64
18315	64
18317	64
18411	64
18413	64
18415	64
18417	64
18511	64
18513	64
18515	64
18517	64
18611	64
18613	64
18615	64
18617	64
59111	212
59113	212
59115	212
59116	212
59117	212
11808-5200	209
11808D-2700	209
11808D-5200	209
11809-4500	209
11809D-4500	209
11810-250	209
11810-4500	209
11810D-4500	209
11810T-2300	209
11810T-250	209
11811-1100	209
11811-250	209
11811-2500	209
11811-700	209

Part No.	Page
11811D-2500	209
11811T-250	209
11812-250	209
11812AG-001	209
11813-1200	209
11813-250	209
11813-500	209
11813-750	209
11813D-1200	209
11815-250	209
11815-800	209
11815D-800	209
12005-200	20
12005AK-001	20
12005R-200	20
12005-UPC	20
12005Y-200	20
12007-100	20
12007AA-001	20
12007R-100	20
12007-UPC	20
12007Y-100	20
12008-010	20
12008-100	20
12008-750	20
12008R-100	20
12008R-750	20
12008Y-100	20
12008Y-750	20
12009-750	20
12010-750	20
12011-500	20
12011R-500	20
12011Y-500	20
1205AKR-001	20
1205AKY-001	20
1207AAR-001	20
1207AAY-001	20
15004-001	4
15004-100	4
15005-001	4
15005-050	4
15005-100	4
15005BK-001	4
15005BK-100	4
15007-001	4
15007-100	4
15008-100	4
15008-500	4
15009-100	4
15009-200	4

Part No.	Page
15010-050	4
15010-100	4
15010-150	4
15011-050	4
15011-100	4
15104-100	5
15105-100	5
15107-100	5
15108-100	5
15109-100	5
15110-100	5
15111-050	5
30510MJ	300
30510MW	300
3056MJ	300
3056MW	300
48711-020	193
48713-020	193
48715-010	193
48715-020	193
48716-010	193
48716-020	193
48717-010	193
48717-020	193
48808-020	194
48810-020	194
48811-020	194
48813-020	194
48814-020	194
48815-020	194
48816-020	194
48817-020	194
49005-010	168
49007-010	168
49007-020	168
49008-010	168
49008-020	168
49009-010	168
49009-020	168
49010-010	168
49010-020	168
49011-010	168
49011-020	168
49011SD-010	218
49012-010	168
49012-020	168
49012SD-010	218
49013-010	168
49013-020	168
49013SD-010	218
49014-010	168

Part No.	Page
49014-020	168
49014SD-010	218
49015-010	168
49015-020	168
49015SD-010	218
49016-010	168
49016-020	168
49016SD-010	218
49017-010	168
49017-020	168
49017SD-010	218
49405-010	169
49405-020	169
49407-010	169
49407-020	169
49408-010	169
49408-020	169
49409-010	169
49409-020	169
49410-010	169
49410-020	169
49411-010	169
49411-020	169
49411SD-010	218
49412-010	169
49412-020	169
49413-010	169
49413-020	169
49415-010	169
49415-020	169
49415SD-010	218
49416-010	169
49417-010	169
49417-020	169
575-0640	292
575-0641	292
575-0642	292
575-0643	292
575-0644	292
575-4049	292
575-4075	292
59010N	211
59011N	211
59013N	211
59015N	211
59016N	211
59017N	211
59208N	211
59211N	211
59213N	211
59215N	211

Part No.	Page
59216N	211
59411N	211
59413N	211
59610-010	190
59610-020	190
59611-010	190
59611-020	190
59612-010	190
59612-020	190
59613-010	190
59613-020	190
59615-010	190
59615-020	190
59616-010	190
59616-020	190
59617-010	190
59617-020	190
59618-010	190
59618-020	190
59810L-020	219
59813L-020	219
68315-020	202
68315W-020	202
68415-020	202
68415W-020	202
68515-020	202
68515PL-020	219
68515SD-010	218
68515W-020	202
68515WL-020	219
68615-020	202
68711-020	193
68713-020	193
68715-020	193
68716-010	193
68716-020	193
68717-020	193
68811-020	194
68813-020	194
68815-020	194
68816-020	194
68817-010	194
68817-020	194
68913D-020	195
68915-020	195
68915D-020	195
68916-020	195
68916D-020	195
68917-020	195
A122	25
A13C4N1JNNC2500	271
A13C6N1ANNA4000	271
A13C6N1ENNA4000	271
A13C6N1JNNA4000	271
A13C9N1A3KA4000	271
A13C9N1ANNA4000	271
A13C9N1JNNA4000	271
A13D2S1JNNB1000	285
A13D2S1JNNB1500	285
A13D2S1JNNB1800	285
A13D2S1JNNB2000	285
A13D2S1JNNB250	285
A13D2S1JNNB500	285
A13D2S1JNNB750	285
A15C9N1ANNA1000	271
A15C9N1JNNA1000	271
A16C26N1JNNC700	271
A16C6N1ANNA766	271
A16C6N1JNNA766	271
A16C9N1ANNA766	271
A16C9N1JNNA766	271
A17C9N1ENNA700	271
A17C9N1JNNA700	271
A18C9N1ANNA480	271
A18C9N1ENNA480	271
A200D	21
A200E	21
A200F	21
A210D	21
A210E	21
A210F	21
A220D	21
A220E	21
A220F	21
A22C6N1ANNA450	271
A22C9N1ANNA450	271
A22C9N1ENNA450	271
A230D	21
A230E	21
A230F	21
A238	25
A238DIV	25
A240D	26
A240E	26
A240F	26
A243D	26
A243E	26
A243F	26
A245D	24
A245E	24
A245F	24
A253D	26
A253E	26
A253F	26
A263D	24
A263E	24
A263F	24
A273DE	24
A273EF	24
A293DEF	23
A340F	94
A343F	94
A353F	94
A400	28
A410	28
A411	28
A412	28
A413	28
A414	28
A420	28
A421	28
A422	28
A470D	28
A471	28
A472	28
A52151D	27
A52151E	27
A52171D	27
A52171E	27
A5217DE	27
A521DE	27
A5329DE	27
A540DS	27
A58381D	27
A58381E	27
A5C6N1JNNA7000	271
A5C6N1JNNB7000	271
A5C9N1JNNA7000	271
A5C9N1JNNB1800	271
A5C9N1JNNB250	271
A5C9N1JNNB500	271
A5C9N1JNNB7000	271
A5D2E1JNNA250	285
A5D2E1JNNA250B	285
A5D2S1JNNB1000	285
A5D2S1JNNB1800	285
A5D2S1JNNB2000	285
A5D2S1JNNB250	285
A5D2S1JNNB250B	285
A5D2S1JNNB2700	285
A5D2S1JNNB500	285
A5D2S1JNNB5000	285
A5D2S1JNNB500B	285
A5D2S1JNNB6500	285
A5D2S1JNNB7000	285
A5D2S1JNNB8000	285
A615D	29
A615DE	29
A615DH	29
A615DJ	29
A615DL	29
A615E	29
A6C6N1JNNA5000	271
A6C6N1JNNB5000	271
A6C9N1JNNA8000	271
A6C9N1JNNB250	271
A6C9N1JNNB500	271
A6C9N1JNNB5000	271
A6C9N1JNNB8000	271
A6C9N1JNNC2500	271
A6C9N1JNNC5000	271
A6D2E1JNNA250	285
A6D2E1JNNA250B	285
A6D2S1JNNB1000	285
A6D2S1JNNB1600	285
A6D2S1JNNB250	285
A6D2S1JNNB2500	285
A6D2S1JNNB250B	285
A6D2S1JNNB4000	285
A6D2S1JNNB500	285
A6D2S1JNNB5000	285
A6D2S1JNNB500B	285
A6D2S1JNNB6000	285
A6D2S1JNNB7000	285
A861	27
A862D	27
A862E	27
A863-4SQ	22
A863BC	22
A863CF	22
A863CFG	22
A863D	22
A863DG	22
A863MB	23
A863S	22
A863SG	22
A864D	27
A864E	27
A864F	27
A9C6N1JNNA5000	271
A9C9N1JNNA5000	271
A9C9N1JNNB5000	271
A9D2S1JNNB1000	285
A9D2S1JNNB2200	285

Part Number Index

Part No.	Page
A9D2S1JNNB250	285
A9D2S1JNNB250B	285
A9D2S1JNNB2900	285
A9D2S1JNNB4000	285
A9D2S1JNNB500	285
B108B-UPC	73
B108R-UPC	75
B112HB	72
B114RR-UPC	75
B114R-UPC	75
B118A	73
B118B-UPC	73
B120A-UPC	73
B120R	75
B121ADJ	71
B121BFBB	42
B121BFBR	42
B121BFBRW	42
B122A-UPC	73
B1EXTB	76
B225R-UPC	75
B232A-UPC	74
B232B-UPC	74
B234ADJ	71
B234ADJC	71
B234BFBB	43
B344AB	74
B355R	75
B418A-UPC	74
B432AR-UPC	74
B432A-UPC	74
B455AH	74
B455A-UPC	74
B468R	75
B518A-UPC	77
B518P-UPC	77
B520A-UPC	77
B520P-UPC	77
B618RP-UPC	75
B618R-UPC	75
B620DC	78
B620HG-UPC	78
B620H-UPC	78
B620K	78
B620KG-UPC	78
B620L-UPC	77
B708-SHK	77
B720-SHK	77
BF4X1B-8000	93
BG340SP-010	236
BG340SP-020	236
BG380SP-010	236
BG380SP-020	236
BG3PE	236
BG440SP-010	236
BG440SP-020	236
BG480SP-010	236
BG480SP-020	236
BG4PE	236
BG4X1B-5600	93
BG540SP-010	236
BG540SP-020	236
BG5PE	236
BG640SP-010	236
BG640SP-020	236
BG6PE	236
BH118R	80
BH122A	79
BH122S	79
BH234R	80
BH235A	79
BH235S	79
BH353A	80
BH353S	80
BH464A	80
BH464S	80
BH4X1B-4500	93
BH525A	82
BH525H	82
BH525HP	82
BH525L	82
BH525LP	82
BH525P	82
BH525S	82
BH525SP	82
BH614R	81
BH614RP	81
BJ4X1B-2000	93
BS1.194	291
BS1.315	291
BS1.488	291
BS1.660	291
BS1.900	291
BS2.375	291
C2016A4	125
C2016B4	125
C2016C4	125
C2420A4	125
C2420B4	125
C2420C4	125
C3024A4	125
C3024B4	125
C3024C4	125
CA861G	27
CC1085	123
CC120B	222
CC12106	123
CC122	222
CC125	222
CC14126	123
CC16147	123
CC665	123
CC863	123
CE4X1-1000	88
CE4X1-1000S	88
CE4X1-350	89
CF4X1-250	89
CF4X1-250S	89
CF4X1C-100	89
CF4X1C-1000	88
CF4X1C-1500	88
CF4X1C-250	89
CF4X1C-500	88
CF4X1C-5200	88
CF4X1C-6500	88
CF4X1C-8000	88
CG4X1-900S	88
CG4X1C-1600	88
CG4X1C-200	89
CG4X1C-3200	88
CG4X1C-500	88
CG4X1C-6500	88
CG4X1C-900	88
CH100R	133
CH208	133
CH4X1C-1200	88
CH4X1C-150	89
CH4X1C-350	88
CH4X1C-4000	88
CJ1085	123
CJ12106	123
CJ14126	123
CJ16147	123
CJ4X1C-100	89
CJ4X1C-2000	88
CJ4X1C-225	88
CJ4X1C-2800	88
CJ4X1C-700	88
CJ665	123
CJ863	123
CJB159	133
CJTL	133
CK221RP	16
CK225	16
CP100N	128
CP100NB	129
CP200N	128
CP200NB	12
CP300N	128
CP300NB	129
CP900	130
CPC4WH	83
CS1085	124
CS12106	124
CS14126	124
CS16147	124
CS665	124
CS863	124
CV1085	124
CV12106	124
CV14126	124
CV16147	124
CV665	124
CV863	124
DE4X1-1000	90
DE4X1-350	91
DEL131	291
DEL150	291
DEL150-154	291
DEL150-166	291
DEL154	291
DEL154-166	291
DEL166	291
DEL190	291
DEL237	291
DF4X1-250S	91
DF4X1C-1000	90
DF4X1C-1500	90
DF4X1C-250	91
DF4X1C-2700	90
DF4X1C-500	91
DF4X1C-500R	90
DF4X1C-5200	90
DF4X1C-6500	90
DF4X1C-7000	90
DF4X1C-9400	90
DG4X1-200	91
DG4X1-200S	91
DG4X1C-1500	90
DG4X1C-1600	90
DG4X1C-200	91
DG4X1C-3200	90
DG4X1C-4500	90
DG4X1C-500	91

Part No.	Page
DG4X1C-500R	90
DG4X1C-5600	90
DG4X1C-6500	90
DG4X1C-900	90
DH4X1C-1200	90
DH4X1C-150	91
DH4X1C-4000	90
DH4X1C-4500	90
DJ4X1C-100	91
DJ4X1C-2000	90
DJ4X1C-2800	90
DJ4X1C-700	90
E1212C24	50
E1212DIV	50
E1212L24	50
E144F	291
E144GT	291
E147E	95
E147F	95
E200J	200
E200JS6	218
E200KS7	218
E200L	200
E200LS7	218
E200LSS	218
E200M	200
E200MS8	218
E200N	200
E200NS8	218
E200NSS	218
E200P	200
E200PS8	218
E200PS9	218
E200R	200
E200RS1	218
E240L	200
E240N	200
E240P	200
E240RF	200
E241L	200
E241N	200
E241PF	200
E242J	200
E2440N5	200
E2440NF	200
E2440P5	200
E2440PF	200
E2440RF	200
E244J	200
E244L	200
E244NF	200
E244NF5	200
E244PF	200
E244PF5	200
E244RF	200
E244RF5	200
E245J	200
E245N	200
E245P	200
E245R	200
E252LJ	201
E252NJS	201
E252NL	201
E252PN	201
E252RNS	201
E252RP	201
E297J	201
E297JN	201
E297L	201
E297LR	201
E297N	201
E297NT	201
E297P	201
E297PS	201
E297PT	201
E297RF	201
E297RR	201
E297RT	201
E299JM	201
E299JP	201
E299JR	201
E299LF	201
E299LR	201
E299NX7	201
E365D-CAR	56
E365DW-CAR	56
E381D-CAR	56
E381DW-CAR	56
E382DE	56
E382DEW	56
E442K	175
E442R	175
E442T	175
E460R-CAR	28
E88C24	50
E88DIV	50
E88L24	50
E900N	204
E900NS	204
E900NS8	204
E900NSW	204
E900NU	204
E900NW	204
E900PS	204
E901N	205
E901NS	205
E902N	205
E903N	204
E904M	205
E904M12	205
E904M8	205
E904MM	205
E904MS	205
E904MX	205
E904N	205
E904N12	205
E904N24	205
E904N8	205
E904NS	205
E905N	205
E905NL	205
E906N	205
E907N	204
E907NY	204
E908N	204
E908NM	205
E9098NS	204
E9098PS	204
E913N	205
E913NF	205
E914N	204
E916N	205
E916NS	205
E916NSW	205
E916NW	205
E917N	204
E923NM	205
E92CSH	178
E92CSJ	178
E92CSL	178
E92CSN	178
E92CSP	178
E92CSR	178
E935J	177
E935L	177
E935N	177
E935P	177
E935R	177
E938JR	212
E938NRR	212
E938NT	212
E939JN	212
E939N	212
E939NL	212
E939NR	212
E939NRT	212
E940D	174
E940E	174
E940F	174
E940G	174
E940H	174
E940J	174
E940K	174
E940K-CAR	174
E940L	174
E940L-CAR	174
E940M	174
E940N	174
E940N-CAR	174
E940P	174
E940R	174
E941H	174
E941J	174
E941K	174
E941L	174
E941N	174
E941PF	174
E941RF	174
E942D	175
E942E	175
E942F	175
E942G	175
E942H	175
E942J	175
E942K	175
E942K-CAR	175
E942L	175
E942L-CAR	175
E942M	175
E942N	175
E942N-CAR	175
E942NX9	175
E942P	175
E942R	175
E942RX	175
E943D	175
E943DW	178
E943E	175
E943EW	178
E943F	175
E943FW	178
E943G	175
E943GW	178
E943H	175

Part No.	Page
E943HW	178
E943J	175
E943JW	178
E943K	175
E943K-CAR	175
E943L	175
E943L-CAR	175
E943M	175
E943N	175
E943N-CAR	175
E943P	175
E943R	175
E945D	174
E945DX	174
E945E	174
E945EX	174
E945F	174
E945FX	174
E945G	174
E945GX	174
E945H	174
E945HX	174
E945J	174
E945JX	174
E945K	174
E945KX	174
E945KXL	174
E945L	174
E945LX	174
E945M	174
E945MX	174
E945N	174
E945NX	174
E945P	174
E945PX	174
E945R	174
E945RX	174
E948H	175
E948J	175
E948JR	175
E948JS	175
E948K	175
E948L	175
E948L12	175
E948L6	175
E948LS	175
E948N	175
E948N12	175
E948N7	175
E948NS	175
E948P	175

Part No.	Page
E948PS	175
E948R	175
E948R10	175
E948R12	175
E948RS	175
E949J5	177
E949J6	177
E949JN	177
E949JX	177
E949LR	177
E949N5	177
E949NR	177
E949R5	177
E949RX	177
E950ED	176
E950FD-CAR	176
E950FE	176
E950GE-CAR	176
E950GF	176
E950HF-CAR	176
E950HG-CAR	176
E950JG-CAR	176
E950JH-CAR	176
E950KJ-CAR	176
E950LJ-CAR	176
E950LK	176
E950NL	176
E952KJ	176
E952LJ	176
E952LK	176
E952NL	176
E952NM	176
E952PN	176
E952RP	176
E954HX	175
E954J	175
E954JX	175
E954JXS	216
E954JXX	216
E954K	175
E954KX	175
E954KXX	216
E954L	175
E954LX	175
E954LXS	216
E954LXX	216
E954NXX	216
E955D	174
E955E	174
E955F	174
E955G	174

Part No.	Page
E955H	174
E955J	174
E958D	177
E958E	177
E958F	177
E958G	177
E958H	177
E958J	177
E958K	177
E958L	177
E958N	177
E958P	177
E958R	177
E960GFL	56
E960GLB	56
E960PGL	56
E962E	56
E966JJ	212
E970CD	178
E970CE	178
E971C	176
E971D	176
E971FB	39
E971FBDI	45
E971FBDIB	45
E972Y	39
E973K	39
E9761B	36
E9761BR	37
E9761C	36
E9761S	36
E9762B	36
E9762BR	37
E9762C	36
E9762S	36
E9763B	36
E9763BR	37
E9763C	36
E9763S	36
E976AK2	35
E976RFB	35
E977DC	185
E977EC	185
E977FC	185
E977GC	185
E977HC	185
E977JC	185
E977KC-CAR	185
E977LC-CAR	185
E977NC-CAR	185
E978DC-CAR	184

Part No.	Page
E978EC-CAR	184
E978FC-CAR	184
E978GC-CAR	184
E978HC-CAR	184
E978JC-CAR	184
E979DFN-CAR	181
E979EFN-CAR	181
E979FFN	181
E97ABR2	40
E97BR	41
E97BR2	41
E97BR2D	41
E97BRG	41
E97CCR	40
E97DSB	40
E97DSC	40
E97DSI	40
E97DSS	40
E97DST	40
E97SSRB	40
E97SSRC	40
E97SSRS	40
E9801	182
E9801DN	182
E9801EN	182
E9801FN	182
E9802	183
E9802CN-CAR	183
E9802D	183
E9802E	183
E9802F	183
E980CM-CAR	183
E980CN-CAR	183
E980DFN	181
E980EFN	181
E980FFN	181
E980FFN-CAR	181
E9811DN	182
E9811EN	182
E9811FN	182
E9812D	183
E9812E	183
E9812F	183
E981DFN	181
E981EFN	181
E981FFN	181
E981FFN-CAR	181
E982DFN	181
E982EFN	181
E982FFN-CTN	181
E983D-CAR	179

Part No.	Page
E983E-CAR	179
E983F	179
E983G	179
E983H-CAR	179
E983J	179
E9842D	176
E9842E	176
E984D-CAR	179
E984E-CAR	179
E984F-CAR	179
E984G-CAR	179
E984H-CAR	179
E984J	179
E984J-CAR	179
E985D-CAR	179
E985E-CAR	179
E985F-CAR	179
E985G-CAR	179
E985H-CAR	179
E985J	179
E986D-CAR	179
E986E-CAR	179
E986F-CAR	179
E986G-CAR	179
E986H-CAR	179
E986J	179
E986K	179
E986L	179
E986M	179
E986N	179
E987D-CAR	179
E987E-CAR	179
E987F-CAR	179
E987G-CAR	179
E987H-CAR	179
E987J	179
E987N-CAR	180
E987R-CAR	180
E988D-CAR	179
E988E	179
E988F-CAR	179
E988G-CAR	179
E988H-CAR	179
E988J	179
E989N-CAR	180
E989NNJ-CAR	180
E989NNR-CAR	180
E989PPJ-CAR	180
E989RRR-UPC	180
E989R-UPC	180
E989SSX-UPC	180
E989UUN	180
E98DHGN-CAR	53
E98G20N	52
E98G30N-CAR	52
E98G5FN-CAR	52
E98GCBN	53
E98GDRN-CAR	52
E98GFCN-CAR	52
E98GHGN-CAR	53
E98SRCN-CAR	52
E98SSCN-CAR	53
E98TSCN-CAR	53
E990D	178
E990DR-CAR	178
E990E	178
E990ER-CAR	178
E994DR-CTN	177
E994ER-CTN	177
E994F	177
E995G	177
E995G-CTN	177
E995J	177
E996D	176
E996E	176
E996F	176
E996G	176
E996H	176
E996J	176
E996K-CAR	176
E996L	176
E996L-CAR	176
E996N	176
E997F	177
E997F-CAR	177
E997G	177
E997G-CAR	177
E997H	177
E997H-CAR	177
E997J	177
E997J-CAR	177
E997K	177
E997K-CAR	177
E997L	177
E997L-CAR	177
E997M	177
E997N	177
E997P	177
E997R	177
E997T	177
E998D	177
E998E	177
E998E-CAR	177
E998F	177
E998F-CAR	177
E998G-CAR	177
E998H-CAR	177
E998J-CAR	177
E998K-UPC	177
E998L	177
E998N	177
E9G2DDN-CAR	53
E9G2DSN-CAR	53
E9G2GTN-CAR	53
E9G2SSN	53
E9U2CRN	54
E9U2GRN	54
E9U2WRN	54
E9UDVCRN	54
E9UDVGRN	54
E9UDVWRN	54
E9UHCRN	54
E9UHGRN	54
E9UHWRN	54
E9UVCRN	54
E9UVGRN	54
E9UVWRN	54
EC1.315	298
EC1.488	298
EC1.660	298
EC1.900	298
EC2.375	298
EC4.500	298
EGCEJ	65
EGCEL	65
EGCEN	65
EGCER	65
EGCIJ	65
EGCIL	65
EGCIN	65
EGFCJ	65
EGFCL	65
EGFCN	65
EGFCR	65
EGFJ	65
EGFL	65
EGFN	65
EGFR	65
EGLEJ	65
EGLEL	65
EGLEN	65
EGLER	65
EGLFJ	65
EGLFL	65
EGLFN	65
EGLFR	65
EGLIJ	65
EGLIL	65
EGLIN	65
EGLIR	65
EGPR	65
EGSBJ	65
EGSBL	65
EGSBN	65
EGSBR	65
EGSEJ	65
EGSEL	65
EGSEN	65
EGSER	65
EGTEJ	65
EGTEL	65
EGTEN	65
EGTER	65
EGTFJ	65
EGTFL	65
EGTFN	65
EGTFR	65
EL.084	291
EL1.050	291
EL1.315	291
EL1.660	291
EL1.900	291
EL2.375	291
EL2.875	291
EL3.500	291
EL4.500	291
EL5.563	291
EL600	291
EMP1194	139
EMP1210	139
EMP1411	139
EMP743	139
EMP974	139
EXP125	292
G280J	223
GSUP	236
GSUP3	236
GSUP5	236
GSUP6	236
HB1BL	72
HB1DP	72
HB1GF	72
HB1SW	72
HC1612B	145

Part Number Index

Part No.	Page
HC2016B	145
HC2416C	145
HC3020D	145
HC3325D	145
HE1194	139
HE12105	139
HE1210C	139
HE14114	139
HE1411C	139
HE432	139
HE432C	139
HE443	139
HE443C	139
HE533	139
HE533C	139
HE743	139
HE743C	139
HE974	139
HE974C	139
HEWMB	139
HF4X4C-5000	92
HG4X4C-4000	92
HH11A7	141
HH11A7C	141
HH11A9	141
HH11A9C	141
HH11B7	141
HH11B7C	141
HH11B9	141
HH11B9C	141
HH11C7	141
HH11C7C	141
HH11C9	141
HH11C9C	141
HH15C7	141
HH15C7C	141
HH15C9	141
HH15C9C	141
HH15D9	141
HH15D9C	141
HH21C7	141
HH21C7C	141
HH21C9	141
HH21C9C	141
HH21D9	141
HH21D9C	141
HH4X4C-2000	92
HH7A7	141
HH7A7C	141
HJ4X4C-2000	92
HLA2020	151

Part No.	Page
HLA2030	151
HLA3020	151
HLA3030	151
HLA30402	151
HLA4020	151
HLA4030	151
HLA40402	151
HLA40502	151
HLA5020	151
HLA5030	151
HLA50402	151
HLABPA4	153
HLAHAN	153
HLAMFSS	153
HLAPAD	153
HLATD	153
HLATEL	153
HLP3318	155
HLP3318G	155
HLP3323	155
HLP3323G	155
HLP3331	155
HLP3331G	155
HLP33442	155
HLP33442L	155
HLP3344G	155
HLPED3318	155
HLPED3323	155
HLPED3331	155
HLPED33442	155
HLS2020	151
HLS2030	151
HLS3020	151
HLS3030	151
HLS30402	151
HLS4020	151
HLS4030	151
HLS40402	151
HLS40502	151
HLS5020	151
HLS5030	151
HLS50402	151
HP1612B	145
HP2016B	145
HP2416C	145
HP3020D	145
HP3325D	145
HPBNGB	147
HPBNGC	147
HPBU	149
HPCO300	147

Part No.	Page
HPCO400	147
HPCO500	147
HPFA4	148
HPFA5	148
HPFA6	148
HPLM200	148
HPLM250	148
HPLM300	148
HPPF300	147
HPPF400	147
HPPF500	147
HPPF600	147
HPPLH	149
HPRFK	147
HPRLA	149
HPRSH	149
HPSFS1	148
HPTPLM	149
HPVEA9	135
HPVM25	135
HPVM35	135
HPWMF	147
HS11A7	141
HS11A7C	141
HS11A9	141
HS11A9C	141
HS11ABP	142
HS11B7	141
HS11B7C	141
HS11B9	141
HS11B9C	141
HS11BBP	142
HS11C7	141
HS11C7C	141
HS11C9	141
HS11C9C	141
HS11CBP	142
HS15C7	141
HS15C7C	141
HS15C9	141
HS15C9C	141
HS15CBP	142
HS15D9	141
HS15D9C	141
HS15DBP	142
HS21C7	141
HS21C7C	141
HS21C9	141
HS21C9C	141
HS21CBP	142
HS21D9	141

Part No.	Page
HS21D9C	141
HS21DBP	142
HS7A7	141
HS7A7C	141
HS7ABP	142
HSCH	142
HSMFSS	142
HSMFZ	142
HSTS4	142
HSTS6	142
HVM27	135
I41240-020	263
I41240MC-020	263
I4124540	264
I4129040	264
I412C-020	263
I412CMC-020	263
I41540-020	262
I41540MC-020	262
I415C-020	262
I415CMC-020	262
I42240-020	262
I42240MC-020	262
I422C-020	262
I422CMC-020	262
I4HISG	264
I4ISG	264
I4ISG15	264
I4ISH	264
I4SFG-020	262
I4SFG4-020	262
I4SFG5-020	262
I4SFG6-020	262
I4SFGA-020	262
I4SFGB-020	262
I4SFGG-020	262
I4SXG-020	262
I62240-020	263
I622C-020	263
I6SFG-020	263
I6SXG-020	263
IF3FG4	264
IF3FG6	264
IF3HG4	264
IF3HG6	264
IF5FG4	264
IF5FG6	264
IF5HG4	264
IF5HG6	264
IF7FG4	264
IF7FG6	264

Part No.	Page
IF7HG4	264
IF7HG6	264
IF9FG4	264
IF9FG6	264
IF9HG4	264
IF9HG6	264
IRS4	265
IX3FG4	264
IX3FG6	264
IX3HG4	264
IX3HG6	264
IX5FG4	264
IX5FG6	264
IX5HG4	264
IX5HG6	264
IX7FG4	264
IX7FG6	264
IX7HG4	264
IX7HG6	264
IX9FG4	264
IX9FG6	264
IX9HG4	264
IX9HG6	264
J1085P	130
J1085W	126
J12106P	130
J12106W	126
J14126P	130
J14126W	126
J16147P	130
J16147W	126
J665P	130
J665W	126
J863P	130
J863W	126
JP1010	134
JP1010P	134
JP108	134
JP108P	134
JP1210	134
JP1210P	134
JP1212	134
JP1212P	134
JP1412	134
JP1412P	134
JP1614	134
JP1614P	134
JP64	134
JP64P	134
JP66	134
JP66P	134

Part No.	Page
JP86	134
JP86P	134
JP88	134
JP88P	134
LA1412BP	155
LA1816BP	155
LA1916BP	155
LA2020BP	152
LA2725BP	155
LA3020BP	152
LA3030BP	152
LA30402BP	152
LA4020BP	152
LA4030BP	152
LA40402BP	152
LA40502BP	152
LA5020BP	152
LA5030BP	152
LA50402BP	152
LH07	12
LH09	12
LH100	13
LH100G	13
LH11	12
LH13	12
LH16	12
LH21	12
LH38	13
LH38G	13
LH50	13
LH50G	13
LH75	13
LH75G	13
LN20DA	8
LN20EA	8
LN20FA	8
LN20FA-CAR	8
LN43DA	8
LN43EA	8
LN43FA	8
LN43FA-CAR	8
LP2020BP	152
LP3020BP	152
LP3030BP	152
LP30402BP	152
LP4020BP	152
LP4030BP	152
LP40402BP	152
LP40502BP	152
LP5020BP	152
LP5030BP	152

Part No.	Page
LP50402BP	152
LT100	9
LT100G	9
LT20C	7
LT20C-CAR	7
LT20D-NEW	7
LT20E-NEW	7
LT20F	7
LT20G	7
LT20H	7
LT20J	7
LT38	9
LT38G	9
LT43C	6
LT43C-CAR	6
LT43D-NEW	6
LT43E-NEW	6
LT43F	6
LT43G	6
LT43H	6
LT43J	6
LT50	9
LT50G	9
LT75	9
LT75G	9
LT9100	9
LT9100G	9
LT938	9
LT938G	9
LT950	9
LT950G	9
LT975	9
LT975G	9
LT9LD	178
LT9LE	178
LT9LF	178
MA30EK	248
MAEPG2	296
MAEPG3	296
MAEPG4	296
MAEPG5	296
MAEPG55	296
MAEPG6	296
MAEPG7	296
MAEPG8	296
MAES3	241
MAES4	241
MAFPG2	296
MAFPG21	296
MAFPG22	296
MAFPG3	296

Part No.	Page
MAFPG4	296
MAFPG41	296
MAFPG5	296
MAFPG6	296
MAFPG9	296
MAPE1012	279
MAPE3	297
MAPE4	297
MAPE5	297
MAPE6	297
MAPE7	297
MAPE8	297
MAPE9	297
MAPH3	296
MAPH4	296
MAPH6	279
MAPRO3	297
MAPRO4	297
MAQPG2	296
MAQPG4	296
MASV4	297
MASV5	297
MASV6	297
MASV7	297
MASV8	297
MASVP6	297
MASVP7	297
MASVP8	297
MAT3021	298
MAT3051	298
MAT3061	298
MAT3T21	298
MAT3T61	298
MAT6021	298
MAT6061	298
MATPG2	296
MATPG3	296
MB3HN3S	248
MB5HN3S	248
MB5HN4S	248
MB7HN3S	248
MB7HN4S	248
MB9HN3S	248
MB9HN4S	248
MBCC3	249
MBCC4	249
MBEC3	250
MBEC4	250
MBSS3S-020	248
MBSS4S-020	248
MD3FN3S	239

Part Number Index

Part No.	Page
MD3FN4S	239
MD3HN3S	239
MD3HN4S	239
MD3JN3S	239
MD3JN4S	239
MD3MN3S	239
MD3MN4S	239
MD5FN3S	239
MD5FN4S	239
MD5HN3S	239
MD5HN4S	239
MD5JN3S	239
MD5JN4S	239
MD5MN3S	239
MD5MN4S	239
MD7FN3S	239
MD7FN4S	239
MD7HN3S	239
MD7HN4S	239
MD7JN3S	239
MD7JN4S	239
MD7MN3S	239
MD7MN4S	239
MD9FN3S	239
MD9FN4S	239
MD9HN3S	239
MD9HN4S	239
MD9JN3S	239
MD9JN4S	239
MD9MN3S	239
MD9MN4S	239
MDAB3	240
MDAB4	240
MDAE3	240
MDAE4	240
MDAH3	240
MDAH4	240
MDAR3	240
MDAR4	240
MDAS3	240
MDAS4	240
MDCC3	240
MDCC4	240
MDEC3	241
MDEC4	241
MDFB3	239
MDFB3J	239
MDFB4	239
MDFB4J	239
MDFC3	239
MDFC3J	239

Part No.	Page
MDFC4	239
MDFC4J	239
MDSS3S-020	239
MDSS4S-020	239
MDSSR	241
MDT13	240
MDT14	240
MDT23	240
MDT24	240
MDT63	240
MDT64	240
MDT93	240
ME7FN3S	256
ME7FN4S	256
ME9FN3S	256
ME9FN4S	256
MESS3S-010	256
MESS3SFB-010	256
MESS4S-010	256
MESS4SFB-010	256
MET63	256
MET64	256
MF3FN3S	239
MF3FN4S	239
MF3HN4S	239
MF3JN3S	239
MF3MN3S	239
MF5FN3S	239
MF5FN4S	239
MF5HN3S	239
MF5HN4S	239
MF5JN3S	239
MF5JN4S	239
MF5MN3S	239
MF5MN4S	239
MF7FN3S	239
MF7FN4S	239
MF7HN3S	239
MF7HN4S	239
MF7JN3S	239
MF7JN4S	239
MF7MN3S	239
MF7MN4S	239
MF9FN3S	239
MF9FN4S	239
MF9HN3S	239
MF9HN4S	239
MF9JN3S	239
MF9JN4S	239
MF9MN3S	239
MF9MN4S	239

Part No.	Page
MFAB3	240
MFAB4	240
MFAD3	240
MFAD4	240
MFAE3	240
MFAE4	240
MFAH3	240
MFAH4	240
MFAR3	240
MFAR4	240
MFAS3	240
MFAS4	240
MFCC3	240
MFCC4	240
MFEC3	241
MFEC4	241
MFFB3	239
MFFB3J	239
MFFB4	239
MFFB4J	239
MFFC3	239
MFFC3J	239
MFFC4	239
MFFC4J	239
MFR13S	241
MFR14S	241
MFR33S	241
MFR44S	241
MFSS3B-020	236
MFSS3S-020	239
MFSS4B-020	236
MFSS4S-020	239
MFSSR	241
MFT13	240
MFT14	240
MFT23	240
MFT24	240
MFT63	240
MFT64	240
MFT93	240
MFT94	240
MH3HN3S	248
MH3HN4S	248
MH5HN3S	248
MH5HN4S	248
MH7HN3S	248
MH7HN4S	248
MH9HN3S	248
MH9HN4S	248
MHCC3	249
MHCC4	249

Part No.	Page
MHEC3	250
MHEC4	250
MHSS3S-020	248
MHSS4S-020	248
MP3FN3S	252
MP3FN4S	252
MP5FN3S	252
MP5FN4S	252
MP7FN3S	252
MP7FN4S	252
MP7HN3S	252
MP7HN4S	252
MP9FN3S	252
MP9FN4S	252
MP9HN3S	252
MP9HN4S	252
MPCC10	279
MPCC12	279
MPCC16	279
MPEC10	279
MPEC12	279
MPEC16	279
MPPC10	279
MPPC12	279
MPPC8	279
MPSS3S-010	252
MPSS4S-010	252
MR3HN4S	252
MR5HN4S	252
MR7FN4S	252
MR7HN3S	252
MR7HN4S	252
MR9FN3S	252
MR9FN4S	252
MR9HN3S	252
MR9HN4S	252
MREC3	253
MREC4	253
MRFB3	252
MRFB4	252
MROS3	253
MROS4	253
MRSS3S-010	252
MRSS3SFB-010	254
MRSS4S-010	252
MRSS4SFB-010	254
MS3HN3S	248
MS3HN4S	248
MS5HN4S	248
MS7HN3S	248
MS7HN4S	248

Part No.	Page
MS9HN3S	248
MS9HN4S	248
MSCC3	249
MSCC4	249
MSEC3	250
MSEC4	250
MSSS3S-020	248
MSSS4S-020	248
MX3FN3S	239
MX3FN4S	239
MX3HN3S	239
MX3HN4S	239
MX3JN3S	239
MX3JN4S	239
MX3MN3S	239
MX3MN4S	239
MX5FN3S	239
MX5FN4S	239
MX5HN3S	239
MX5HN4S	239
MX5JN3S	239
MX5JN4S	239
MX5MN3S	239
MX5MN4S	239
MX7FN3S	239
MX7FN4S	239
MX7HN3S	239
MX7HN4S	239
MX7JN3S	239
MX7JN4S	239
MX7MN3S	239
MX7MN4S	239
MX9FN3S	239
MX9FN4S	239
MX9HN3S	239
MX9HN4S	239
MX9JN3S	239
MX9JN4S	239
MX9MN3S	239
MX9MN4S	239
MXAB3	240
MXAB4	240
MXAD3	240
MXAD4	240
MXAE3	240
MXAE4	240
MXAF3	240
MXAF4	240
MXAH3	240
MXAH4	240
MXAR3	240

Part No.	Page
MXAR4	240
MXCC3	240
MXCC4	240
MXEC3	241
MXEC4	241
MXFB3	239
MXFB3J	239
MXFB4	239
MXFB4J	239
MXFC3	239
MXFC3J	239
MXFC4	239
MXFC4J	239
MXR13S	241
MXR14S	241
MXR24S	241
MXR33S	241
MXSS3S-020	239
MXSS4S-020	239
MXT13	240
MXT14	240
MXT23	240
MXT24	240
MXT63	240
MXT64	240
MXT93	240
MXT94	240
NBPADJ2	131
NBPSWG	131
NBPSWG2	131
NBPTSK	131
NC10106	118
NC1010L	118
NC1084	118
NC1086	118
NC108L	118
NC12106	118
NC1210L	118
NC12126	118
NC1212L	118
NC14126	118
NC1412L	118
NC16146	118
NC1614L	118
NC644	118
NC64L	118
NC664	118
NC66L	118
NC864	118
NC86L	118
NC884	118

Part No.	Page
NC88L	118
NH10106	116
NH1010C	116
NH1010L	116
NH1084	116
NH1086	116
NH108C	116
NH108L	116
NH12106	116
NH1210C	116
NH1210L	116
NH12126	116
NH1212C	116
NH1212L	116
NH14126	116
NH1412C	116
NH1412L	116
NH16146	116
NH1614C	116
NH1614L	116
NH644	116
NH64C	116
NH64L	116
NH664	116
NH66C	116
NH66L	116
NH864	116
NH86C	116
NH86L	116
NH884	116
NH88C	116
NH88L	116
NI10106	116
NI1010L	116
NI1010W	136
NI1084	116
NI1086	116
NI108L	116
NI108W	136
NI12106	116
NI1210L	116
NI1210W	136
NI12126	116
NI1212L	116
NI1212W	136
NI14126	116
NI1412L	116
NI1412W	136
NI16146	116
NI1614L	116
NI1614W	136

Part No.	Page
NI644	116
NI64L	116
NI64W	136
NI664	116
NI66L	116
NI66W	136
NI864	116
NI86L	116
NI86W	136
NI884	116
NI88L	116
NI88W	136
NJ10106	118
NJ1010L	118
NJ1084	118
NJ1086	118
NJ108L	118
NJ12106	118
NJ1210L	118
NJ12126	118
NJ1212L	118
NJ14126	118
NJ1412L	118
NJ16146	118
NJ1614L	118
NJ644	118
NJ64L	118
NJ664	118
NJ66L	118
NJ864	118
NJ86L	118
NJ884	118
NJ88L	118
NL1010B	118
NL1084B	118
NL1086B	118
NL1210B	118
NL1212B	118
NL1412B	118
NL1614B	118
NL644B	118
NL664B	118
NL864B	118
NL884B	118
NMK10V	131
NMK12V	131
NMK14V	131
NMK4V	131
NMK6V	131
NMK8V	131
NP1010B	114

Part Number Index

Part No.	Page
NP1084B	114
NP1086B	114
NP1210B	114
NP1212B	114
NP1412B	114
NP1614B	114
NP2016	134
NP2016P	134
NP2420	134
NP2420P	134
NP3024	134
NP3024P	134
NP644B	114
NP664B	114
NP864B	114
NP884B	114
NPL1L	132
NPL1S	132
NS10106	114
NS1010L	114
NS1084	114
NS1086	114
NS108L	114
NS12106	114
NS1210L	114
NS12126	114
NS1212L	114
NS14126	114
NS1412L	114
NS16146	114
NS1614L	114
NS644	114
NS64L	114
NS664	114
NS66L	114
NS864	114
NS86L	114
NS884	114
NS88L	114
NV10106	114
NV1010L	114
NV1084	114
NV1086	114
NV108L	114
NV12106	114
NV1210L	114
NV12126	114
NV1212L	114
NV14126	114
NV1412L	114
NV16146	114

Part No.	Page
NV1614L	114
NV644	114
NV64L	114
NV664	114
NV66L	114
NV864	114
NV86L	114
NV884	114
NV88L	114
P100	291
P125	291
P150CPLR	291
P200	291
P258H	176
P258JT	176
P258K	176
P258LT	176
P258NT	176
P258NTB	204
P258PT	176
P258RT	176
P300	291
P400	291
P75	291
P7701W-CAR	55
P7801W-CAR	55
P7901W-CAR	55
P8001W-CAR	55
P8005W-CAR	55
P8010W-CAR	55
P8060W-CAR	55
PE3SNS	195
PE3SP	195
PE3SPS	195
PE3SRS	195
PE7SP	195
PE9HN	195
PE9HP	195
PF3CJ	197
PF3CL	197
PF3DF	197
PF3DH	197
PF3DP	197
PF3FJ	197
PF3FL	197
PF3FN	197
PF3FP	197
PF3FR	197
PF3HL	197
PF3HN	197
PF3HP	197

Part No.	Page
PF3HR	197
PF3IJ	197
PF3IR	197
PF3SJ	197
PF3SN	197
PF3SP	197
PF3SR	197
PF3VJ	197
PF3VL	197
PF3VN	197
PF3VP	197
PF5DL	197
PF5DN	197
PF5DP	197
PF5FF	197
PF5FL	197
PF5FN	197
PF5FP	197
PF5FR	197
PF5HL	197
PF5HN	197
PF5HR	197
PF5IJ	197
PF5IL	197
PF5IP	197
PF5IR	197
PF5SL	197
PF5SN	197
PF5SP	197
PF5SR	197
PF5UP	197
PF5VN	197
PF5VP	197
PF5VR	197
PF6CH	197
PF6CJ	197
PF6CL	197
PF6DL	197
PF6DN	197
PF6DP	197
PF6FJ	197
PF6FL	197
PF6FN	197
PF6FR	197
PF6HJ	197
PF6HN	197
PF6HP	197
PF6HR	197
PF6IN	197
PF6IP	197
PF6SJ	197

Part No.	Page
PF6SN	197
PF6SP	197
PF6VJ	197
PF6VN	197
PF6VR	197
PF7CF	196
PF7CH	196
PF7CJ	196
PF7CL	196
PF7DF	196
PF7DH	196
PF7DJ	196
PF7DL	196
PF7DN	196
PF7FF	196
PF7FH	196
PF7FJ	196
PF7FL	196
PF7FN	196
PF7FP	196
PF7FR	196
PF7HJ	196
PF7HL	196
PF7HN	196
PF7HP	196
PF7HR	196
PF7IL	196
PF7IP	196
PF7NN	196
PF7SH	196
PF7SJ	196
PF7SL	196
PF7SN	196
PF7SP	196
PF7SR	196
PF7VN	196
PF7VP	196
PF7VR	196
PF9CH	196
PF9CJ	196
PF9CL	196
PF9CN	196
PF9DF	196
PF9DH	196
PF9DJ	196
PF9DL	196
PF9DN	196
PF9DP	196
PF9FF	196
PF9FJ	196
PF9FL	196

Part No.	Page
PF9FN	196
PF9FP	196
PF9FR	196
PF9HL	196
PF9HN	196
PF9HP	196
PF9HR	196
PF9IL	196
PF9IN	196
PF9IP	196
PF9IR	196
PF9SH	196
PF9SJ	196
PF9SL	196
PF9SR	196
PF9VL	196
PF9VN	196
PF9VP	196
PH3CJ	199
PH3CN	199
PH3DJ	199
PH3DN	199
PH3DP	199
PH3FJ	199
PH3FL	199
PH3FN	199
PH3FP	199
PH3FR	199
PH3HN	199
PH3IN	199
PH3IP	199
PH3IR	199
PH3SJ	199
PH3SL	199
PH3SN	199
PH3SP	199
PH3SR	199
PH3VR	199
PH5CJ	199
PH5CL	199
PH5CN	199
PH5DJ	199
PH5DL	199
PH5DP	199
PH5FJ	199
PH5FL	199
PH5FN	199
PH5FP	199
PH5HL	199
PH5HN	199
PH5HP	199

Part No.	Page
PH5HR	199
PH5IJ	199
PH5IL	199
PH5IR	199
PH5SN	199
PH5SP	199
PH5SR	199
PH5VJ	199
PH5VN	199
PH6CJ	199
PH6CL	199
PH6CN	199
PH6DJ	199
PH6DN	199
PH6DP	199
PH6FJ	199
PH6FL	199
PH6FN	199
PH6FP	199
PH6FR	199
PH6HN	199
PH6HR	199
PH6IN	199
PH6SL	199
PH7CJ	198
PH7CL	198
PH7CN	198
PH7DJ	198
PH7DL	198
PH7DN	198
PH7DP	198
PH7FJ	198
PH7FL	198
PH7FN	198
PH7FP	198
PH7FR	198
PH7HJ	198
PH7HL	198
PH7HN	198
PH7HP	198
PH7HR	198
PH7IJ	198
PH7IL	198
PH7IP	198
PH7IR	198
PH7SJ	198
PH7SN	198
PH7SP	198
PH7SR	198
PH9CJ	198
PH9CL	198

Part No.	Page
PH9CN	198
PH9DJ	198
PH9DJL	219
PH9DL	198
PH9DLL	219
PH9DN	198
PH9DP	198
PH9FJ	198
PH9FJL	219
PH9FL	198
PH9FN	198
PH9FNL	219
PH9FP	198
PH9FR	198
PH9HJ	198
PH9HL	198
PH9HN	198
PH9HP	198
PH9HR	198
PH9IJ	198
PH9IL	198
PH9IN	198
PH9IR	198
PH9OJ	198
PH9SJ	198
PH9SL	198
PH9SN	198
PH9SP	198
PH9SR	198
PH9VN	198
PH9VP	198
PH9VR	198
PIC100	292
PIC125	292
PID1612	145
PID2016	145
PID2416	145
PID3020	145
PID3325	145
PMB1612	146
PMB2016	146
PMB2416	146
PMB3020	146
PMB3325	146
PMM1612	146
PMM2016	146
PMM2416	146
PMM3020	146
PMM3325	146
PMR1612	146
PMR2016	146

Part No.	Page
PMR2416	146
PMR3020	146
PMR3325	146
RC3200	17
RC3250	16
RC3252	16
RC3253	16
RC3260	17
RC3301	18
RC3311	18
RC3395	18
S258RH	226
S28612	226
S287F	226
S287J	226
S288JHN	226
S288JJN	226
S288JLN	226
S288LHN	226
S288LJN	226
S288LLN	226
S288NFN	226
S288NHN	226
S288NJN	226
S288NLN	226
S288PHN	226
S288PJN	226
S288PLN	226
S288RHN	226
S288RJN	226
S288RLN	226
S288SHN	226
S288SJN	226
S289JHN	226
S289JJN	226
S289JLN	226
S289LHN	226
S289LJN	226
S289LLN	226
S289NFN	226
S289NHN	226
S289NJN	226
S289NLN	226
S289PHN	226
S289PJN	226
S289PLN	226
S289RHN	226
S289RJN	226
S289RLN	226
S289SHN	226
S289SJN	226

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com

Part Number Index

Part No.	Page
SB14105	224
SC100A	108
SC100ADJC	107
SC100FBBC	110
SC100FBVC	110
SC100FBWC	110
SC100RR	108
SC100SC	107
SC12CC	109
SC14CC	109
SC200A	108
SC200ADJC	107
SC200DV	107
SC200RR	108
SC34CC	109
SCA240E	106
SCA240F	106
SCA243E	106
SCA243F	106
SCA253E	106
SCA253F	106
SCA410	108
SCDIV	108
SCE4X1-100	106
SCE4X1-1000	106
SCE940G	106
SCE940H	106
SCE940J	106
SCE943G	106
SCE943H	106
SCE943J	106
SCE977EC	109
SCE977FC	109
SCE977GC	109
SCE977HC	109
SCE977JC	109
SCF4X1C-100	106
SCF4X1C-1500	106
SCG4X1C-100	106
SCH4X1C-50	106
SCJ4X1C-50	106
SCJ4X1C-500	106
SLK11	157
SLK12	157
SLK21	157
SLK22	157
SLK31	157
SLK32	157
SP2W20-2	228
SP2W30-2	228
SP4W15-2	228
SP4W20-2	228
SP4W30-2	228
SP6W20-2	228
SP6W30-2	228
SPL111	157
SPL122	157
SPL211	157
SPL222	157
SSLL	132
SSLS	132
TA9ENT	203
TA9FN	203
TA9FNT	203
TA9FNTL	203
TC100	292
TC125	292
TC150	292
TC200	292
TDC100	292
TDC125	292
TDC150	292
TDC200	292
TFL100	292
TFL125	292
TFL150	292
TFL200	292
TL14203	299
TL14205	299
TL14505	224
TL14510	224
TL38203	224
TL38210	224
TL38210	299
TL38265	224
TP3DN	203
TP3FN	203
TP3HN	203
TP3IN	203
TP3JN	203
TP3SN	203
TP5DN	203
TP5FN	203
TP5HN	203
TP5IN	203
TP5JN	203
TP5MN	203
TP5RN	203
TP5SN	203
TP5TN	203
TP5UN	203
TP5VN	203
TP6FN	203
TP6HN	203
TP6JN	203
TP6NN	203
TP6RN	203
TP6SN	203
TP6TN	203
TP7DN	203
TP7FN	203
TP7HN	203
TP7IN	203
TP7JN	203
TP7MN	203
TP7NN	203
TP7ON	203
TP7RN	203
TP7SN	203
TP7TN	203
TP7UN	203
TP9CN	203
TP9DN	203
TP9FN	203
TP9HN	203
TP9IN	203
TP9JN	203
TP9MN	203
TP9NN	203
TP9SN	203
TP9TN	203
TP9UN	203
TPLG100	292
TPLG125	292
TPLG150	292
TPLG200	292
TW3DN	203
TW3FN	203
TW3HN	203
TW5DN	203
TW5DNL	219
TW5FN	203
TW5HN	203
TW5JN	203
TW5MN	203
TW5SN	203
TW6FN	203
TW6HN	203
TW6JN	203
TW6MN	203
TW6NN	203
TW6RN	203
TW6SN	203
TW6TN	203
TW6TNL	219
TW7DN	203
TW7DNL	219
TW7FN	203
TW7FNL	219
TW7HN	203
TW7IN	203
TW7JN	203
TW7MN	203
TW7NN	203
TW7ON	203
TW7RN	203
TW7SN	203
TW7TN	203
TW9DN	203
TW9DNL	219
TW9FN	203
TW9FNL	219
TW9HN	203
TW9HNL	219
TW9IN	203
TW9JN	203
TW9MN	203
TW9NN	203
TW9SN	203
TW9TN	203
U13C6N1ENNA4000	281
U15C9N1ENNA1000	281
U16C9N1ENNA1000	281
U16C9N1ENNA766	281
U18C9N1ENNA480	281
U22C9N1ENNA450	281
U5C4N1ENNB1800	281
U5C4N1ENNB250	281
U5C4N1ENNB500	281
U5C4N1ENNB7000	281
U6C4N1ENNB1400	281
U6C4N1ENNB250	281
U6C4N1ENNB500	281
U6C4N1ENNB5000	281
U9C4N1ENNA5000	281
UA3AD	170
UA3AE	170
UA3AF	170
UA3AG	170
UA3AH	170
UA3AJ	170
UA3AK	170
UA3AL	170
UA3AM	170

Part No.	Page
UA3AN	170
UA3ANB	170
UA3AP	170
UA3AR	170
UA3DJ	172
UA3DJB	172
UA3DL	172
UA3DLB	172
UA3DM	172
UA3DN	172
UA3DNB	172
UA3FJ	172
UA3FJB	172
UA3FL	172
UA3FLB	172
UA3FN	172
UA3FNB	172
UA3FP	172
UA3FPB	172
UA3FR	172
UA3FRB	172
UA3FT	172
UA3HJ	172
UA3HK	172
UA3HL	172
UA3HM	172
UA3HN	172
UA3HNB	172
UA3HP	172
UA3HR	172
UA3IJSD	218
UA3ILSD	218
UA3INSD	218
UA3SNB	172
UA3UPB	172
UA5AD	170
UA5AE	170
UA5AF	170
UA5AG	170
UA5AH	170
UA5AJ	170
UA5AJB	170
UA5AK	170
UA5AL	170
UA5ALB	170
UA5AM	170
UA5AN	170
UA5ANB	170
UA5AP	170
UA5APB	170
UA5AR	170

Part No.	Page
UA5ARB	170
UA5CJ	172
UA5CJB	172
UA5CK	172
UA5CLB	172
UA5DJ	172
UA5DJB	172
UA5DK	172
UA5DL	172
UA5DLB	172
UA5DM	172
UA5DN	172
UA5DNB	172
UA5DPB	172
UA5EJ	172
UA5EJB	172
UA5EK	172
UA5EL	172
UA5ELB	172
UA5EM	172
UA5EN	172
UA5ENB	172
UA5EP	172
UA5EPB	172
UA5FF	172
UA5FG	172
UA5FH	172
UA5FHB	172
UA5FJ	172
UA5FJB	172
UA5FK	172
UA5FL	172
UA5FLB	172
UA5FM	172
UA5FN	172
UA5FNB	172
UA5FP	172
UA5FPB	172
UA5FR	172
UA5FRB	172
UA5FT	172
UA5HJ	172
UA5HK	172
UA5HL	172
UA5HM	172
UA5HN	172
UA5HNB	172
UA5HP	172
UA5HPB	172
UA5HR	172
UA5HRB	172

Part No.	Page
UA5HT	172
UA5IN	172
UA5INSD	218
UA5IP	172
UA5IR	172
UA5JN	172
UA5RR	172
UA5SN	172
UA5SNB	172
UA5SP	172
UA5SR	172
UA5UNB	172
UA5UPB	172
UA5VJ	172
UA5VL	172
UA5VNB	172
UA5VPB	172
UA5VR	172
UA6AD	170
UA6ADB	170
UA6AE	170
UA6AEB	170
UA6AF	170
UA6AFB	170
UA6AG	170
UA6AGB	170
UA6AH	170
UA6AHB	170
UA6AJ	170
UA6AJB	170
UA6AK	170
UA6AKB	170
UA6AL	170
UA6ALB	170
UA6AM	170
UA6AMB	170
UA6AN	170
UA6ANB	170
UA6AP	170
UA6APB	170
UA6AR	170
UA6ARB	170
UA6CJ	172
UA6CK	172
UA6CL	172
UA6DJ	172
UA6DJB	172
UA6DK	172
UA6DL	172
UA6DLB	172
UA6DM	172

Part No.	Page
UA6DN	172
UA6FJ	172
UA6FJB	172
UA6FL	172
UA6FLB	172
UA6FM	172
UA6FN	172
UA6FNB	172
UA6FP	172
UA6FPB	172
UA6FR	172
UA6FRB	172
UA6HJ	172
UA6HJB	172
UA6HL	172
UA6HLB	172
UA6HM	172
UA6HN	172
UA6HNB	172
UA6HP	172
UA6HPB	172
UA6HR	172
UA6HRB	172
UA7AD	170
UA7ADB	170
UA7AE	170
UA7AEB	170
UA7AER-CAR	170
UA7AF	170
UA7AFB	170
UA7AF-CAR	170
UA7AG	170
UA7AGB	170
UA7AH	170
UA7AHB	170
UA7AJ	170
UA7AJB	170
UA7AJB-CAR	170
UA7AJ-CAR	170
UA7AK	170
UA7AKB	170
UA7AKB-CAR	170
UA7AK-CAR	170
UA7ALB	170
UA7ALB-CAR	170
UA7AL-CAR	170
UA7AM	170
UA7AMB	170
UA7AN	170
UA7ANB	170
UA7AP	170

Part Number Index

Part No.	Page
UA7APB	170
UA7AR	170
UA7ARB	170
UA7BJB	171
UA7CF	171
UA7CG	171
UA7CH	171
UA7CJ	171
UA7CJB	171
UA7CK	171
UA7CL	171
UA7CLB	171
UA7DF	171
UA7DG	171
UA7DH	171
UA7DJ	171
UA7DJB	171
UA7DJSD	218
UA7DK	171
UA7DKB	171
UA7DL	171
UA7DLB	171
UA7DM	171
UA7DN	171
UA7DNB	171
UA7EF	171
UA7EG	171
UA7EH	171
UA7EJ	171
UA7EJB	171
UA7EK	171
UA7EL	171
UA7ELB	171
UA7EM	171
UA7EN	171
UA7ENB	171
UA7EP	171
UA7EPB	171
UA7FF	171
UA7FG	171
UA7FH	171
UA7FHB	171
UA7FJ	171
UA7FJB	171
UA7FJSD	218
UA7FK	171
UA7FKB	171
UA7FL	171
UA7FLB	171
UA7FLSD	218
UA7FM	171
UA7FN	171
UA7FNB	171
UA7FP	171
UA7FPB	171
UA7FR	171

Part No.	Page
UA7FRB	171
UA7FT	171
UA7HF	171
UA7HG	171
UA7HH	171
UA7HJ	171
UA7HJB	171
UA7HJSD	218
UA7HK	171
UA7HLB	171
UA7HLSD	218
UA7HN	171
UA7HNB	171
UA7HP	171
UA7HPB	171
UA7HR	171
UA7HRB	171
UA7HT	171
UA7IJSD	218
UA7ILSD	218
UA7INSD	218
UA7IPB	171
UA7NNB	171
UA7NPB	171
UA7SJ	171
UA7SN	171
UA7SNB	171
UA7SPB	171
UA9AD	170
UA9ADB	170
UA9ADR-CAR	170
UA9AE	170
UA9AEB	170
UA9AFB-CTN	170
UA9AFR-CTN	170
UA9AG	170
UA9AGB	170
UA9AH	170
UA9AHB	170
UA9AJ	170
UA9AJB	170
UA9AJ-CAR	170
UA9AKB-CAR	170
UA9AK-CAR	170
UA9AL	170
UA9ALB-CAR	170
UA9AM	170
UA9AMB	170
UA9AN	170
UA9ANB	170
UA9AP	170
UA9APB	170
UA9AR	170
UA9ARB	170
UA9CF	171
UA9CFB	171

Part No.	Page
UA9CG	171
UA9CGB	171
UA9CH	171
UA9CHB	171
UA9CJ	171
UA9CJB	171
UA9CK	171
UA9CKB	171
UA9CL	171
UA9CLB	171
UA9CNB	171
UA9DF	171
UA9DFB	171
UA9DG	171
UA9DGB	171
UA9DH	171
UA9DHB	171
UA9DJ	171
UA9DJB-UPC	171
UA9DK	171
UA9DKB-UPC	171
UA9DL	171
UA9DLB-UPC	171
UA9DM	171
UA9DMB	171
UA9DN	171
UA9DNB	171
UA9EF	171
UA9EFB	171
UA9EG	171
UA9EGB	171
UA9EH	171
UA9EHB	171
UA9EJ	171
UA9EJB	171
UA9EK	171
UA9EKB	171
UA9EL	171
UA9ELB	171
UA9EM	171
UA9EMB	171
UA9EN	171
UA9ENB	171
UA9EP	171
UA9EPB	171
UA9FF	171
UA9FG	171
UA9FGB	171
UA9FH	171
UA9FHB	171
UA9FJB	171
UA9FJ-UPC	171
UA9FKB	171
UA9FK-UPC	171
UA9FL	171
UA9FLB	171

Part No.	Page
UA9FM	171
UA9FMB	171
UA9FN	171
UA9FNB	171
UA9FP	171
UA9FPB	171
UA9FR	171
UA9FRB	171
UA9HF	171
UA9HG	171
UA9HH	171
UA9HJ	171
UA9HJB	171
UA9HK	171
UA9HKB	171
UA9HL	171
UA9HLB	171
UA9HM	171
UA9HMB	171
UA9HN	171
UA9HNB	171
UA9HP	171
UA9HPB	171
UA9HR	171
UA9HRB	171
UA9HT	171
UA9IL	171
UA9IN	171
UA9INB	171
UA9IP	171
UA9IPB	171
UA9IR	171
UA9IRB	171
UA9JJ	171
UA9JN	171
UA9TRB	171
UAFAD	173
UAFAE	173
UAFAF	173
UB3AL	173
UB3AR	173
UB3FP	173
UB5AL	173
UB5AN	173
UB5AP	173
UB5APB	173
UB5DHB	173
UB5DJB	173
UB5DKB	173
UB5DL	173
UB5DLB	173
UB5DN	173
UB5DNB	173
UB5FJB	173
UB5FLB	173
UB5FNB	173

Part No.	Page
UB5FP	173
UB6AD	173
UB6AE	173
UB6AF	173
UB6AG	173
UB6AH	173
UB6AJ	173
UB6AK	173
UB6AL	173
UB6AN	173
UB6AP	173
UB6AR	173
UB6FN	173
UB6FR	173
UB7AD	173
UB7AE-UPC	173
UB7AF-UPC	173
UB7AG-CAR	173
UB7AH	173
UB7AH-CAR	173
UB7AJ-UPC	173
UB7AK	173
UB7AL	173
UB7AN	173
UB7AP	173
UB7APB	173
UB7AR	173
UB7CF	173
UB7CH	173
UB7CJ	173
UB7CL	173
UB7DF	173
UB7DG	173
UB7DH	173
UB7DHB	173
UB7DJ	173
UB7DJB	173
UB7DK	173
UB7DKB	173
UB7DL	173
UB7DLB	173
UB7DN	173
UB7DNB	173
UB7FF	173
UB7FG	173
UB7FH	173
UB7FJ	173
UB7FJB	173
UB7FK	173
UB7FL	173
UB7FLB	173
UB7FN	173
UB7FNB	173
UB7FP	173
UB7FR	173
UB7HF	173
UB7HG	173
UB7HH	173
UB7HJ	173
UB7HK	173
UB7HL	173
UB7HN	173
UB7HP	173
UB7HR	173
UB7IR	173
UB9AD	173
UB9AD-CAR	173
UB9AE	173
UB9AE-CAR	173
UB9AF	173
UB9AF-CAR	173
UB9AG	173
UB9AG-CAR	173
UB9AH	173
UB9AH-CAR	173
UB9AJ	173
UB9AJ-CAR	173
UB9AK	173
UB9AK-CAR	173
UB9AL-CAR	173
UB9AN	173
UB9AP	173
UB9APB	173
UB9AR	173
UB9CF	173
UB9CG	173
UB9CH	173
UB9CJ	173
UB9CK	173
UB9CL	173
UB9DF	173
UB9DG	173
UB9DHB	173
UB9DH-UPC	173
UB9DJB	173
UB9DJ-UPC	173
UB9DKB	173
UB9DK-UPC	173
UB9DL	173
UB9DLB	173
UB9DN	173
UB9DNB	173
UB9FF	173
UB9FG	173
UB9FH	173
UB9FJ	173
UB9FJB	173
UB9FK	173
UB9FKB	173
UB9FL	173
UB9FLB	173
UB9FN	173
UB9FNB	173
UB9FP	173
UB9FR	173
UB9HF	173
UB9HG	173
UB9HH	173
UB9HJ	173
UB9HK	173
UB9HL	173
UB9HN	173
UB9HNB	173
UB9HP	173
UB9HR	173
UB9IP	173
UB9IR	173
UB9NN	173
UC5CKB	190
UC5FKB	190
UC5FNB	190
UC5FRB	190
UC5FRBLB	191
UC5HNB	190
UC7CJBLB	191
UC7CKB	190
UC7DJBLB	191
UC7DLBLB	191
UC7DNBLB	191
UC7DPBLB	191
UC7FHB	190
UC7FJB	190
UC7FJBLB	191
UC7FKB	190
UC7FLB	190
UC7FLBLB	191
UC7FNB	190
UC7FNBLB	191
UC7FPBLB	191
UC7FRBLB	191
UC7HJBLB	191
UC7HLBLB	191
UC7HNB	190
UC7HNBLB	191
UC7HPBLB	191
UC7HRB	190
UC7HRBLB	191
UC7ITB	190
UC9BHB	190
UC9CJBLB	191
UC9DHB	190
UC9DJB	190
UC9DJBLB	191
UC9DKB	190
UC9DLB	190
UC9DLBLB	191
UC9DNB	190
UC9DNBLB	191
UC9DPBLB	191
UC9FHB	190
UC9FJB	190
UC9FJBLB	191
UC9FKB	190
UC9FLB	190
UC9FLBLB	191
UC9FNB	190
UC9FNBLB	191
UC9FPBLB	191
UC9FRB	190
UC9FRBLB	191
UC9HJB	190
UC9HJBLB	191
UC9HLBLB	191
UC9HNB	190
UC9HNBLB	191
UC9HPBLB	191
UC9HRB	190
UC9HRBLB	191
VC9902	220
VC9903	220
VC9922	220
VC9923	220
VC9924-24	220
VC9925	220
VC9932	220
VC9941P	220
VC9961P	220
VC9962	220
VC9963	220
VC9963SC	109
VC9964	220
VC9981P	220
VC9982	220
VC9983	220
VC9984	220
VC9992	30
VC9LV2	220
VC9LV3	220
VC9LV5	220
WCD3104	11
WCD3106	11
WCD3124	11
WCD3126	11
WCD4	11
WCD6	11
WCE3084	11
WCE3086	11
WCE4	11
WCE6	11
WK7001	58
WK7101	58
WK7103	58
WK7201	59
WK7202	59
WK7203	59

LIMITED WARRANTY/DEFECTIVE PRODUCTS/SHORT COUNTS

Carlon warrants to its distributors that its products conform to all product specifications contained in the contract of sale and, using Carlon product specifications as a standard, are free from defects in material and manufacture as of the date they are shipped by Carlon. This warranty covers Carlon distributors only.

IF A DISTRIBUTOR BELIEVES THAT IT HAS DISCOVERED A DEFECT IN MATERIAL OR MANUFACTURE IN ANY PRODUCT COVERED BY THIS WARRANTY OR IF THE DISTRIBUTOR DISCOVERS A SHORT COUNT IN ANY SHIPMENT, THE DISTRIBUTOR MUST NOTIFY CARLON, IN WRITING, WITHIN SIXTY (60) DAYS OF RECEIPT OF THE GOODS TO WHICH THE CLAIM RELATES, OR IN ANY EVENT WITHIN SEVENTY (70) DAYS OF THE DATE THAT THE GOODS WERE SHIPPED BY Carlon. Carlon will provide replacement goods to meet any short count for which it receives timely notice, but may require verification of any such claim. Defective goods should be shipped to Carlon, freight prepaid, and be in accordance with Carlon defective goods policy which requires prior approval by an authorized Carlon Manager. Carlon liability for breach of this warranty shall be limited to replacement of any goods that Carlon finds to be defective with an equivalent amount of goods, or at Carlon sole option, refund of the purchase price. Claims that are not made within the warranty period (i.e., within seventy (70) days of shipment) shall be deemed waived.

CARLON SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY BREACH OF THIS WARRANTY. THIS EXCLUSION APPLIES WHETHER SUCH DAMAGES ARE SOUGHT BASED ON BREACH OF WARRANTY BREACH OF CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR ANY OTHER LEGAL THEORY. THIS WARRANTY DOES NOT APPLY TO CLAIMS FOR PERSONAL INJURY BY A THIRD PARTY. THIS WARRANTY DOES NOT COVER DAMAGE IN SHIPMENT. CLAIMS FOR DAMAGE IN SHIPMENT SHOULD BE MADE TO THE CARRIER IN ACCORDANCE WITH THE TERMS OF THE SHIPPING AGREEMENTS.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR ORAL, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM A COURSE OF DEALING OR TRADE.

Carlon®
LAMSON & SESSIONS

CARLON 50M SP 2/05
© Lamson & Sessions 2005

Gross Automation (877) 268-3700 · www.carlonsales.com · sales@grossautomation.com