IHI Connectors Field Modification Guide

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How to Use This Guide

Many IHI Connectors brand lugs allow UL and CSA supported field modification of mounting holes to increase hole diameter, move location of mounting holes, or put in custom holes. This guide has been provided by the manufacturer to help identify customization options and instruct the customer in modifying their own connectors under UL and CSA guidelines.

Lugs that allow one or more of these modifications or customizations will be identified on the online product page with the icon in **Figure 1** and one of the following phrases:

DIY Mounting Holes™

DIY Drill Your Own™ Mounting Holes



Figure 1.

Before using this guide, you must know the Category Number (Cat No.) and Style Number (Style No.) of the lug you would like to modify. These numbers can be found on the product information page at your site of purchase as well as on the product's mechanical print, unique to each part. If you have ordered your connectors online, the Cat. No and Style No. can also be found in your order confirmation email.

Refer to UL ILL-1 / CSA rated guide chart fig. 32 for max and min bolt hole dia, number of bolt holes, if oval slots permitted and any voltage tap holes and additional location holes permitted. Must conform to keep ratings based on catalog number.

Understanding the UL ILL-1 / CSA rated guide chart fig. 32

E129884 VOLUME 2 ZMVV LISTED CONNECTORS WITH MOUNTING HOLE SIZE RANGES									
TABLE OF PERMITTED MOUNTING BOLT HOLE SIZE RANGE AND QUANTITY OF BOLT AND LOCATION HOLES									
				INCHES		OPTION	OPTION	OPTION	OPTION LOCATION
SEC No.	Ill. No.	CAT No. 1.	STYLE No. 2.	MTG. HOLE RANGE 3.	QTY 4.	THREADED 5.	NON-ROUND 6.	REPEAT / POLE 7.	or VOLT TAP HOLE(S) 8.

Figure 2. "UL ILL-1 Heading"

MC200116 REPORT 1243943 LIST OF MOUNTING HOLE SIZE RANGES									
TABLE OF PERMITTED MOUNTING BOLT HOLE SIZE RANGE AND QUANTITY OF BOLT AND LOCATION HOLES									
				INCHES		OPTION	OPTION	OPTION	OPTION LOCATION
Report No.	Fig. No.	CAT No. 1.	STYLE No. 2.	MTG. HOLE RANGE 3.	QTY 4.	THREADED 5.	NON-ROUND 6.	REPEAT / POLE 7.	or VOLT TAP HOLE(S) 8.

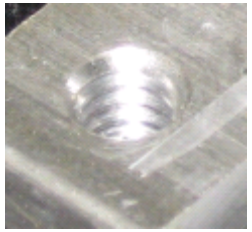
Figure 3. "CSA rated guide chart fig. 32 Heading"

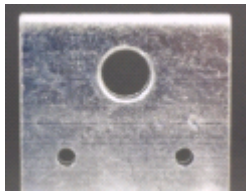
1. **CAT No.** The Category Number of the part you would like to modify.
2. **STYLE No.** The Style Number of the part you would like to modify.
3. **MTG. HOLE RANGE** The UL/CSA accepted mounting hole size range for each Category and Style No.
4. **QTY** The number of accepted mounting holes for each Category and Style No.
5. **THREADED** A "Y" indicates that threaded mounting holes are permitted; a blank indicates that threaded mounting holes are not permitted
6. **NON-ROUNDED** A "Y" indicates an out of round, oval or elongated hole is permitted; a blank indicates that only round holes are permitted
7. **REPEAT/POLE** A "Y" indicates that in the case of multi-hole lugs with repeated poles or pole sets, the mounting hole may be repeated also; a blank indicates no repetition patterns are permitted
8. or **VOLT TAP HOLE(S)** A "Y" indicates that a small hole or tapped hole may machined into a place where extra material allows to accommodate a screw for connecting a voltage tap signal wire or thermocouple wire; a blank indicates that no such holes have been permitted.

SHEET METAL POINT DRILL RECOMMENDED FOR DRILLING MOUNTING HOLES . USE MASKING TAPE TO KEEP TIN PLATED SURFACE FROM BEING SCRATCHED



EXAMPLE OF THREADED MTG. HOLE. WHERE PERMITTED. CLASS 2B THREAD REQUIRED. USER SHALL TEST THAT STRENGTH MEETS GRADE 2 BOLT TORQUES http://www.ihiconnectors.com/Bolting-Listed-Lugs.htm





EXAMPLE OF ADDITIONAL HOLE(S) FOR LOCATION OR TURN PREVENT WHERE PERMITTED (SEE UL/CSA OPTIONS CHART

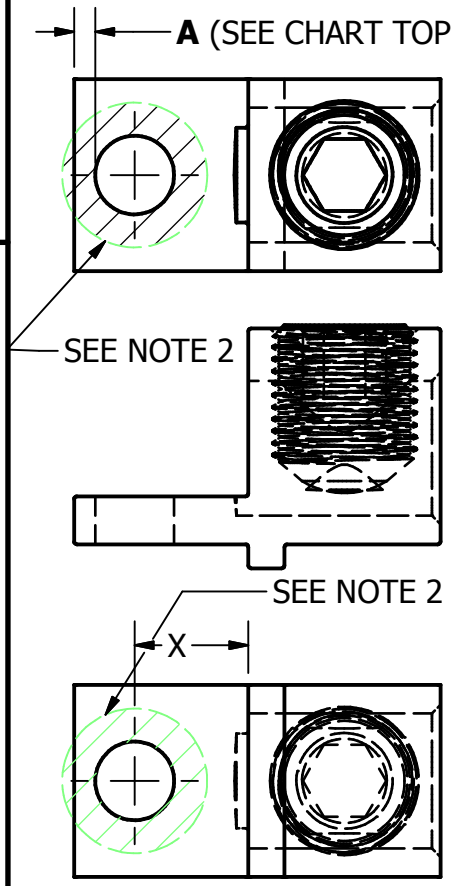


EXAMPLE OF DUAL MOUNTING HOLES FOR TURN PREVENT WHERE PERMITTED. SEE UL/CSA OPTIONS CHART



EXAMPLE OF ADDITIONAL THREADED VOLTAGE TAP MONITORING HOLE WHERE PERMITTED
PLACE IN THICK SECTIONS ONLY LIKE CORNERS OR PASSIVE SECTION LIKE MOUNTING TANG SEE UL/CSA OPTIONS CHART

Cat. No	A Min. Dimn. Inch	A Min. Dimn. mm
S6	0.090	2.29
S4	0.090	2.29
S6-3	0.070	1.78
S6-4	0.070	1.78
S4-3	0.080	2.03
S2	0.100	2.54
S1/0 2S1/0	0.100	2.54
S2/0 2S2/0	0.100	2.54
S250 2S250	0.110	2.79
S300	0.110	2.79
S350 2S350	0.110	2.79
S500	0.135	3.43
2S500	0.125	3.18
S600 2S600	0.157	3.99
S750	0.157	3.99
S800	0.157	3.99
2S750	0.157	3.99



IF TURN PREVENT RIB FEATURE IS USED, CONTROL DISTANCE 'X' FROM HOLE TO RIB TO MATCH THE MATING TAB

CUSTOMER GUIDE FOR FIELD DRILLING MOUNTING HOLE(S) IN IHI S &2S RANGE BLANK TANG LUGS A BLANK TANG LUG MAY BE DRILLED OR AN EXISTING FACTORY MTG. HOLE MAY BE MADE LARGER (SEE CAT.NO. FOR DETAILS)

1. PROTECT SCREW AND WIRE HOLE FROM CHIPS AND OIL DURING DRILLING PROCESS!
2. NEVER REM0VE ANY PLATING FROM THE CONTACT FACE(S) MARKED WITH HATCHING. PLATING IS CRITICAL FOR THE CONTACT ZONE WITH MATING BUS BAR WHICH IS PRIMARILY THE MATING AREA UNDER & AROUND THE BOLT HEAD ZONE! USE MASKING TAPE TO PROTECT TIN PLATING.
3. REFER TO UL ILL-1 / CSA RATED GUIDE CHART FIG. 32 FOR MAX AND MIN BOLT HOLE DIA, NUMBER OF BOLT HOLES, IF OVAL SLOTS PERMITTED AND ANY VOLTAGE TAP HOLES AND ADDITIONAL LOCATION HOLES PERMITTED. MUST CONFORM TO KEEP RATINGS BASED ON CATALOG NUMBER.
4. MIN END WALL DIMENSION 'A' SEE TABLE. ANY QUESTIONS CALL IHI BEFORE PROCEEDING.
5. UL/CSA Conditions of acceptability for field modifications: All catalog numbers may be shipped with blank tang (no mounting holes) or later field modification by user. Alternatively, existing mounting holes in the tang may be field modified by user (increase size). The manufacturer shall provide, in the unit container, the installation instructions specifying the maximum and minimum hole size ranges and quantity of holes, and locations, as listed in the current Certified catalog number file information. UL see ILL-1 and for CSA see Figure 32 for more details.

NOTES: 1. INSIDE OF BOLT HOLES, LOCATION HOLES, AND TEST HOLES NEED NOT BE PLATED

2. UN AND METRIC BOLT SIZE EQUIVALENTS (REFERENCE)

#6	#8	#10	1/4	5/16	3/8	7/16	1/2	9/16	5/8
M3,5	M4	M5	M6	M8	M10	M11	M12	M14	M16

3. CLEARANCE HOLES ON STANDARD BOLT SIZES ARE LARGER THAN THE NOMINAL BOLT DIAMETER

EXAMPLE OF OVAL OR SLOTTED HOLE(S) WIDTH OF SLOT MAY NOT EXCEED MAXIMUM HOLE DIA IN UL/CSA OPTIONS CHART



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GENERAL TOLERANCES ±.015 (±0,39)

IHI CONNECTORS INTERNATIONAL HYDRAULICS, INC.

TITLE: BLANK LUG DRILLING
DRILL or ENLARGE MOUNTING HOLE

MATERIAL:	SIZE:	DRAWN BY:	DWG NO.:	REV:
6061-T6 ALUM.	A	cridley	DRILL-GUIDE	0

FINISH:	DATE:	
TIN PLATED	1-3-2018	**Mfgrs. Instructions**

Common Wire Sizes for Voltage Taps (VT)

There isn't a single "standard" wire gauge used for voltage taps. The proper wire size depends on multiple factors and must follow electrical codes. The choice is based on the load requirements, wire length, overcurrent protection, and equipment ratings.

For **UL 508A industrial control panels**, internal control circuits are often wired with **18 AWG**, while power circuits typically require **14 AWG minimum**. However, tapping control circuits from main lugs involves more specific rules.

Key Factors in Choosing Wire Gauge

- **Tap Rules (NEC):** The National Electrical Code defines conditions for feeder taps. For example, the *10-foot rule* permits a smaller conductor to be tapped from a feeder if it ends in an overcurrent protective device (OCPD) within 10 feet.
- **Overcurrent Protection:** Tap conductors must be sized so they are protected by the upstream fuse/breaker. A 200A main breaker may require a tap conductor as large as 6 AWG, even if the connected load is much smaller.
- **Lug Ratings:** Main lugs are listed for specific conductor sizes. Adding smaller volt tap wire to a lug's existing wire holes (double-tapping) is prohibited unless the lug is rated for that use. If not, a listed tap block or dedicated breaker must be installed. You can avoid this if the lug has a VT Voltage Tap hole (or UL allowance for one to be added) and a ring lug with VT wire can be installed.

Typical Applications and Wire Gauges

- **PLC & Low-Current Controls:** Small control wiring inside panels often uses **18 AWG**.
- **Medium-Current Circuits: 16 AWG or 14 AWG** are common for moderate loads.
- **High-Current Loads:** Larger conductors like **12 AWG or 10 AWG** are needed for motors or heaters.
- **Special Lug Taps:** Some devices (e.g., Schneider Powerpact L-frame breakers) have built-in tapped holes for control wiring, with manufacturer-specified screw and wire sizes.

Safety and Compliance

Because of the many variables, wire size must always be calculated case-by-case. Taps from main panel lugs must comply with **NEC** and **UL 508A**, and should only be done by qualified electricians.

UL 508A requires that control circuit taps from main lugs be protected by an OCPD. Without protection, small-gauge wires (like 18 AWG) could be exposed to the fault current of a much larger circuit, creating a fire risk.

Tap Rules in Practice

10-Foot Tap Rule:

- Tap conductor ampacity ≥ 10% of the upstream OCPD.
- Must terminate in an OCPD sized for the tap conductor.
- Wires must be protected from physical damage.

25-Foot Tap Rule:

- Tap conductor ampacity ≥ 33% of the upstream OCPD.
- Must terminate in a properly rated OCPD.
- Conductors must be in a raceway or otherwise protected.

Using a Local OCPD (Preferred Method):

Installing a breaker or fuse directly at the tap point allows the downstream wiring to be sized for that device. This eliminates the 10- and 25-foot restrictions and is the safest, most common approach.

Example – Tapping from a 100A Feeder

- **Unsafe:** Connecting 18 AWG control wires directly to 100A lugs without protection.
- **Code-Compliant (Tap Rule):** Use 10 AWG (≈30A capacity) for a 10-foot tap, then protect it with a 30A breaker, which can feed 18 AWG wiring.
- **Best Practice:** Use a **control power transformer (CPT)** with secondary fuses or breakers sized for the control load. The downstream 18 AWG wiring is then protected by that device.

⚠ **Final Note:** Wire sizing for voltage taps is never one-size-fits-all. Always consult the **NEC, UL 508A, and local code requirements**, and have the work done by a licensed electrician.

Informative only - always consult a qualified electrician and other Authorities Having Jurisdiction

Voltage Tap Wire Sizing – Quick Reference

There is no single standard wire size for voltage taps. Correct sizing depends on load, overcurrent protection, length of tap, and NEC/UL 508A rules. Always consult code and use a qualified electrician.

Common Wire Sizes by Application

Application / Load Type	Typical Wire Gauge	Notes
PLC inputs, sensors, low-current control	18 AWG	Standard for panel ducts
Medium control loads (relays, lamps)	16 AWG – 14 AWG	Depends on current draw
Power circuits (general)	14 AWG minimum	UL 508A requirement
Motors, heaters, higher current devices	12 AWG – 10 AWG	Sized to FLC of device
Special lug taps (e.g., Schneider)	Manufacturer spec	Often 8-32 screw w/ specific gauge

NEC Tap Rules

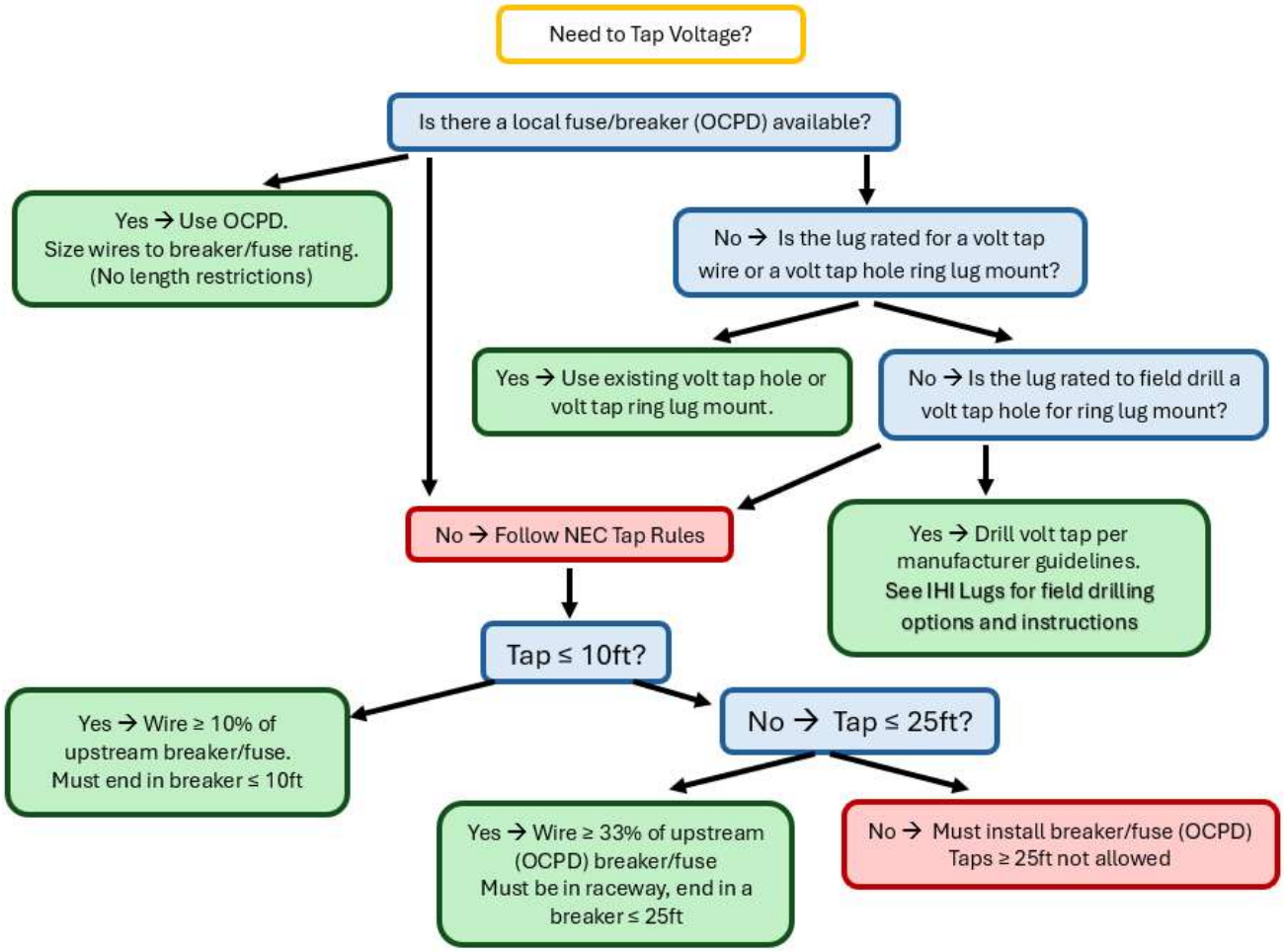
10-Foot Tap Rule: Wire ampacity ≥ 10% of upstream fuse/breaker; Must terminate in fuse/breaker within 10 ft; Wires must be protected from damage
25-Foot Tap Rule: Wire ampacity ≥ 33% of upstream fuse/breaker; Must terminate in fuse/breaker within 25 ft; Must be in raceway or protected
Preferred Method:

- Install a **local breaker/fuse** at the tap → downstream wires sized to that breaker/fuse, no length restriction

Example – Tapping from 100A Feeder

❌ Wrong: Directly land 18 AWG on 100A lugs
✔️ Code Option: Use 10 AWG for ≤10 ft, terminate in 30A breaker, then run 18 AWG
⭐ Best Option: Use CPT w/ fused secondary feeding 18 AWG controls

Informative only - always consult a qualified electrician and other Authorities Having Jurisdiction



Instructions for M3 screw and ring lug #14 / 2,5mm^2 wire tap for qualified electricians only.



Scope
IHI S series and 2S series lugs
See suggested locations by part number

Single Barrel Lugs
S250 0.906” wide and wider parts

Double and multiple barrel lugs
2S1/0 and wider parts

1. Mark the hole location carefully observing the minimum wall distances
2. Use a center punch indentation to ensure drill does not wander





3. Use 2.75mm diameter HSS twist drill to create a vertical hole at the desired location 8.0 mm deep
No lubricant is needed
4. Blow off chips







5. Use the M3 x 8mm Trilobe self forming screw to tap the thread to full depth of the screw
(Screw: M3 thread, pitch 0.5, X 8mm long zinc chromate plated steel trilobe self-thread forming machine screw with 5mm A/F hexagon head)
6. Remove the M3 screw.

7. Take the Panduit crimp ring lug PM2-3R-C and crimp the wire using the Panduit crimp tool CT-1570 per manufacturer instructions.





8. Affix the ring lug securely to the IHI lug using the M3 x 8mm screw and 10-12 in lbs seating torque.
The IHI wire binding screw may be fully seated or removed to facilitate the clearances needed.









9. Where the screw to wall distance is appropriate the ring lug may be inverted to use the edge wall of the IHI lug as a turn prevent wall against the front end of the crimp tube - see picture left
10. Check the crimp lug for secureness and alignment and if any changes to the pole to pole or pole to ground creepage spacing is needed

11. Ensure that the voltage tap wire is properly strain relieved and also its total length and routing comply with all relevant standards including high voltage creepage, voltage isolation, fusing and all other safety compliance from your AHJ's.

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Subject: **Procedure And/Or Report Material**

The following material resulting from the investigation under the above numbers is enclosed.

Issue Date	Vol	Sec	Pages	Revised Date
	2		Revised Section General Page(s) 3	2018/09/20
	2		Revised Section Gen Illustrations 1	2018/09/20
1999/09/13	2	2	Cert of Compliance	
1999/09/13	2	2	Revised Description Page(s) 1,2	2018/09/20
1999/09/13	2	2	New Illustration(s) 4A,4B	2018/09/20
1999/09/13	2	2	New Test Record 16	2018/09/20

Inspections at your plant will be conducted under the supervision of THOMAS MALAGISI, AREA MANAGER, UL INSPECTION CENTER ADIRONDACK-POCONO, UL LLC, PO BOX 506, MANLIUS, NY, United States, 13104., PHONE: 315-751-3026, FAX: 315-513-7533, EMAIL: THOMAS.MALAGISI@UL.COM

Please file revised pages and illustrations in place of material of like identity. New material should be filed in its proper numerical order.

NOTE: Follow-Up Service Procedure revisions DO NOT include Cover Pages, Test Records and Conclusion Pages. Report revisions DO NOT include Authorization Pages, Indices, Section General Pages and Appendixes.

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NBK File

5. All catalog numbers may be shipped with blank mounting hole locations (no mounting holes) for later field modification by user. Alternatively, existing mounting holes may be field modified by user (increase size).

The manufacturer shall provide, in the unit container, the installation instructions specifying the maximum and minimum hole size ranges and quantity of holes, and locations, as listed in the current catalog number file information. See ILL. 1 for more details.

*

E129884 VOLUME 2 ZMVV LISTED CONNECTORS WITH MOUNTING HOLE SIZE RANGES									
TABLE OF PERMITTED MOUNTING BOLT HOLE SIZE RANGE AND QUANTITY OF BOLT AND LOCATION HOLES									
				INCHES		OPTION	OPTION	OPTION	OPTION LOCATION
SEC No.	Ill. No.	CAT No.	STYLE No.	MTG. HOLE RANGE	QTY	THREADED	NON-ROUND	REPEAT / POLE	or VOLT TAP HOLE(S)
1	1	S6	ALL	0.13 - 5/16 BOLT	1-2	Y	Y		
1	1A	S6-3	ALL	#10 - 1/2 BOLT	1-4	Y	Y		Y
1	1B	S6-4	1	.133 - 3/8 BOLT	1-2 OR 1 PER 8 WIRE HOLES	Y	Y	Y	Y
1	1B	S6-4	2	.133 - 5/16	1-2 OR 1 PER 8 WIRE HOLES	Y	Y	Y	Y
1	1B	S6-4	3	.133 - 3/8 BOLT	1-2 OR 1 PER 8 WIRE HOLES	Y	Y	Y	Y
1	11	S4	ALL	3/16 - 9/32	1	Y	Y		
1	13	S4A1	ALL	1/4 - 5/16 BOLT	1				
1	11A	S4-3	ALL	#10 - 1/2 BOLT	1 - 4	Y	Y		Y
1	12	S4A2	ALL	1/4 - 5/16 BOLT	1				
1	2	S2	ALL	9/64 -5/16 BOLT	1 - 2	Y	Y	Y	Y
1	3	S1/0	1 -3	1/4 - 13/32	1		Y		Y
1	3	S1/0	4 -5	13/64 -13/32	2		Y		Y
1	3	S1/0	6	13/64 -13/32	1-2		Y		Y
1	3	S1/0	7	11/64 - 5/16 BOLT	2-3		Y		Y
1	4	S2/0	ALL	#10- 17/32	1 - 2	Y	Y		
4	1	S2/0-3	ALL	1/4 - 29/64	1				Y
4	1	S2/0-3	ALL	AND #10	1	Y			Y
1	5	S250	1 -2	13/64 -17/32	1	Y	Y		Y
1	5	S250	3	13/64 - 17/32	1 - 2	Y	Y		Y
1	5	S250	4 -5	13/64 - 17/32	0 - 2	Y	Y		Y
1	5	S250	6	11/64 - 13/64 &/OR	2 - 4	Y	Y		Y
1	5	S250	6	1/4 - 3/8	1 - 2	Y	Y		Y
1	5A	S250N	1 -2	13/64 -17/32	1	Y	Y		Y
1	5A	S250N	3	13/64 - 17/32	1 - 2	Y	Y		Y
1	5A	S250N	4 -5	13/64 - 17/32	0 - 2	Y	Y		Y
1	5A	S250N	6	11/64 - 13/64 &/OR	2 - 4	Y	Y		Y
1	5A	S250N	6	1/4 - 3/8 BOLT	1 - 2	Y	Y		Y
4	2	S250-3	ALL	13/64 - 17/32	1		Y		Y
4	2	S250-3	ALL	AND OPT. 3/16 MAX	0 - 5		Y		Y
4	3	S250-4	ALL	13/64 - 17/32	1		Y		
4	3	S250-4	ALL	AND OPT. 3/16 MAX	0 - 2		Y		
1	6	S300	ALL	1/4 - 17/32	1 - 2	Y	Y		Y
1	6A	S300N	ALL	1/4 - 17/32	1 - 2	Y	Y		Y

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				INCHES		OPTION	OPTION	OPTION	OPTION LOCATION
SEC No.	Ill. No.	CAT No.	STYLE No.	MTG. HOLE RANGE	QTY	THREADED	NON-ROUND	REPEAT / POLE	or VOLT TAP HOLE(S)
1	7	S350	1	17/64 - 9/16 BOLT	1	Y	Y		Y
1	7	S350	2	17/64 - 9/16 BOLT OR	1	Y	Y		Y
1	7	S350	2	3/16 - 3/8 BOLT	2	Y	Y		Y
1	7	S350	3 - 4	1/4 - 9/16 BOLT	1 - 2	Y	Y		Y
1	8	S500	1 -4	3/8 - 5/8 BOLT	1	Y	Y		Y
1	8	S500	1-4	OR 1/4 BOLT	2	Y	Y		Y
1	8	S500	5 - 6	3/8 - 5/8 BOLT	1 - 2	Y	Y		Y
1	8	S500	5 -6	OR 1/4 BOLT	2	Y	Y		Y
1	8B	S500N	1 -4	3/8 - 5/8 BOLT	1	Y	Y		Y
1	8B	S500N	1-4	OR 1/4 BOLT	2	Y	Y		Y
1	8B	S500N	5 - 6	3/8 - 5/8 BOLT	1 - 2	Y	Y		Y
1	8B	S500N	5 -6	OR 1/4 BOLT	2	Y	Y		Y
1	9	S600	1 -2	3/8 - 5/8 BOLT OR	1	Y	Y		Y
1	9	S600	1 -2	1/4 BOLTS	2	Y	Y		Y
1	9	S600	3	3/8 - 5/8 BOLT &	1 -2	Y	Y		Y
1	9	S600	3	1/4 BOLTS	0-2	Y	Y		Y
1	9	S600	4	5/16 - 5/8 BOLT &	1-2	Y	Y		Y
1	9	S600	4	1/4 BOLTS	0-2	Y	Y		Y
1	9B	S600N	1 -2	3/8 - 5/8 BOLT OR	1	Y	Y		Y
1	9B	S600N	1 -2	1/4 BOLTS	2	Y	Y		Y
1	9B	S600N	3	3/8 - 5/8 BOLT &	1 -2	Y	Y		Y
1	9B	S600N	3	1/4 BOLTS	0-2	Y	Y		Y
1	9B	S600N	4	5/16 - 5/8 BOLT &	1-2	Y	Y		Y
1	9B	S600N	4	1/4 BOLTS	0-2	Y	Y		Y
1	14	S750	ALL	3/8 - 5/8 BOLT	1		Y		
1	10	S800	1 -2	9/16 - 21/32	1	Y	Y		Y
1	10	S800	3	9/16 - 21/32	1 - 2	Y	Y		Y
1	10	S800	4	9/16 - 21/32	1 - 4	Y	Y		Y
2	1	2S1/0	ALL	1/4 - 7/16 BOLT	1	Y	Y		Y
2	2	2S2/0	1	1/4 - 7/16 0R	1	Y	Y	Y	Y
2	2	2S2/0	1	1/4 - 5/16 BOLT	1 - 2	Y	Y	Y	Y
2	2	2S2/0	2 - 6	1/4- 7/16 BOLT	1 – 2	Y	Y	Y	Y

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				INCHES		OPTION	OPTION	OPTION	OPTION LOCATION
SEC No.	Ill. No.	CAT No.	STYLE No.	MTG. HOLE RANGE	QTY	THREADED	NON-ROUND	REPEAT / POLE	or VOLT TAP HOLE(S)
2	3	2S250	1	3/8 - 11/16 BOLT OR 2 1/4 BOLTS	1	Y	Y	Y	Y
2	3	2S250	2 - 3	3/8 - 11/16 BOLT	1 - 2	Y	Y	Y	Y
2	3	2S250	2 - 3	3/8 - 11/16 BOLT & (0-2) 1/4 BOLTS	1 - 2	Y	Y	Y	Y
2	3	2S250	4	3/8 - 11/16 BOLTS & OPT 3/8 - 7/16 BOLTS & (0-2) 1/4 BOLTS	1 - 2	Y	Y	Y	Y
2	4	2S350	ALL	3/8 - 5/8 BOLT	1 - 2	Y	Y	Y	Y
2	4	2S350	ALL	11/64 - 3/8 BOLT	1 - 4	Y	Y	Y	Y
2	**4A**	**2SL350**	**ALL**	**3/8-5/8 11/64-1/2 BOLT**	**1-2 3-4**	**Y**	**Y**	**Y**	**Y**
2	**4B**	**2SL500**	**ALL**	**3/8-5/8 11/64-1/2 BOLT**	**1-2 3-4**	**Y**	**Y**	**Y**	**Y**
2	7	2S500	ALL	1/2 BOLT AND	1 - 2	Y	Y		
				OPT. #10 BOLT	0 - 2	Y	Y		
2	5	2S600	1 - 3	3/8 - 5/8 BOLT OR	1	Y	Y	Y	Y
2	5	2S600	1 - 3	1/4 - 9/16 BOLT	2	Y	Y	Y	Y
2	5	2S600	4	3/8 - 5/8 BOLT	1 - 4	Y	Y	Y	Y
2	5	2S600	5	3/8 - 5/8 BOLT OR	1 -2	Y	Y	Y	Y
2	5	2S600	5	11/64 - 1/2 BOLT	2 -4	Y	Y	Y	Y
2	6	2S750	ALL	5/16 - 5/8 BOLT	1 - 4	Y	Y	Y	Y
NOTES: 1. INSIDE OF BOLT HOLES, LOCATION HOLES, AND TEST HOLES NEED NOT BE PLATED									
2. UN AND METRIC BOLT SIZE EQUIVALENTS (REFERENCE)									
#6	#8	#10	1/4	5/16	3/8	7/16	1/2	9/16	5/8
M3,5	M4	M5	M6	M8	M10	M11	M12	M14	M16
3. CLEARANCE HOLES ON STANDARD BOLT SIZES ARE LARGER THAN THE NOMINAL BOLT DIAMETER									

C182121058

Conditions of Acceptability

1. All catalog numbers may be shipped with blank tang (no mounting holes) for later field modification by user. Alternatively, existing mounting holes on the tang may be field modified by user (increase size). The manufacturer shall provide, in the unit container, the installation instructions specifying the maximum and minimum hole size ranges and quantity of holes, and locations, as listed in the current Certified catalog number file information. See Figure 32 for more details.

MC200116 REPORT 1243943 LIST OF MOUNTING HOLE SIZE RANGES									
TABLE OF PERMITTED MOUNTING BOLT HOLE SIZE RANGE AND QUANTITY OF BOLT AND LOCATION HOLES									
				INCHES		OPTION	OPTION	OPTION	OPTION LOCATION
Report No.	Fig. No.	CAT No.	STYLE No.	MTG. HOLE RANGE	QTY	THREADED	NON-ROUND	REPEAT / POLE	or VOLT TAP HOLE(S)
1243943	1	S6	ALL	0.13 - 5/16 BOLT	1-2	Y	Y		
1243943	2	S6-3	ALL	#10 - 1/2 BOLT	1-4	Y	Y		Y
1243943	27	S6-4	1	.133 - 3/8 BOLT	1-2 OR 1 PER 8 WIRE HOLES	Y	Y	Y	Y
1243943	27	S6-4	2	.133 - 5/16	1-2 OR 1 PER 8 WIRE HOLES	Y	Y	Y	Y
1243943	27	S6-4	3	.133 - 3/8 BOLT	1-2 OR 1 PER 8 WIRE HOLES	Y	Y	Y	Y
1243943	23	S4	ALL	3/16 - 9/32	1	Y	Y		
1243943	24	S4A1	ALL	1/4 - 5/16 BOLT	1				
1243943	26	S4-3	ALL	#10 - 1/2 BOLT	1 - 4	Y	Y		Y
1243943	25	S4A2	ALL	1/4 - 5/16 BOLT	1				
1243943	3	S2	ALL	9/64 -5/16 BOLT	1 - 2	Y	Y	Y	Y
1243943	4	S1/0	1 -3	1/4 - 13/32	1		Y		Y
1243943	4	S1/0	4 -5	13/64 -13/32	2		Y		Y
1243943	4	S1/0	6	13/64 -13/32	1-2		Y		Y
1243943	4	S1/0	7	11/64 - 5/16 BOLT	2-3		Y		Y
1243943	5	S2/0	ALL	#10- 17/32	1 - 2	Y	Y		
1243943	6	S2/0-3	ALL	1/4 - 29/64	1				Y
1243943	6	S2/0-3	ALL	AND #10	1	Y			Y
1243943	7	S250	1 -2	13/64 -17/32	1	Y	Y		Y
1243943	7	S250	3	13/64 - 17/32	1 - 2	Y	Y		Y
1243943	7	S250	4 -5	13/64 - 17/32	0 - 2	Y	Y		Y
1243943	7	S250	6	11/64 - 13/64 &/OR	2 - 4	Y	Y		Y
1243943	7	S250	6	1/4 - 3/8	1 - 2	Y	Y		Y
1233943	28	S250N	1 -2	13/64 -17/32	1	Y	Y		Y
1243943	28	S250N	3	13/64 - 17/32	1 - 2	Y	Y		Y
1243943	28	S250N	4 -5	13/64 - 17/32	0 - 2	Y	Y		Y
1243943	28	S250N	6	11/64 - 13/64 &/OR	2 - 4	Y	Y		Y
1243943	28	S250N	6	1/4 - 3/8 BOLT	1 - 2	Y	Y		Y
1243943	8	S250-3	ALL	13/64 - 17/32	1		Y		Y
1243943	8	S250-3	ALL	AND OPT. 3/16 MAX	0 - 5		Y		Y
1243943	9	S250-4	ALL	13/64 - 17/32	1		Y		
1243943	9	S250-4	ALL	AND OPT. 3/16 MAX	0 - 2		Y		
1243943	10	S300	ALL	1/4 - 17/32	1 - 2	Y	Y		Y
12433943	29	S300N	ALL	1/4 - 17/32	1 - 2	Y	Y		Y

				INCHES		OPTION	OPTION	OPTION	OPTION LOCATION
Report No.	Fig. No.	CAT No.	STYLE No.	MTG. HOLE RANGE	QTY	THREADED	NON-ROUND	REPEAT / POLE	or VOLT TAP HOLE(S)
1243943	11	S350	1	17/64 - 9/16 BOLT	1	Y	Y		Y
1243943	11	S350	2	17/64 - 9/16 BOLT OR	1	Y	Y		Y
1243943	11	S350	2	3/16 - 3/8 BOLT	2	Y	Y		Y
1243943	11	S350	3 - 4	1/4 - 9/16 BOLT	1 - 2	Y	Y		Y
1243943	12	S500	1 -4	3/8 - 5/8 BOLT	1	Y	Y		Y
1243943	12	S500	1-4	OR 1/4 BOLT	2	Y	Y		Y
1243943	12, 13	S500	5 - 6	3/8 - 5/8 BOLT	1 - 2	Y	Y		Y
1243943	12, 13	S500	5 -6	OR 1/4 BOLT	2	Y	Y		Y
1243943	30	S500N	1 -4	3/8 - 5/8 BOLT	1	Y	Y		Y
1243943	30	S500N	1-4	OR 1/4 BOLT	2	Y	Y		Y
1243943	30	S500N	5 - 6	3/8 - 5/8 BOLT	1 - 2	Y	Y		Y
1243943	30	S500N	5 -6	OR 1/4 BOLT	2	Y	Y		Y
1243943	14	S600	1 -2	3/8 - 5/8 BOLT OR	1	Y	Y		Y
1243943	14	S600	1 -2	1/4 BOLTS	2	Y	Y		Y
1243943	14	S600	3	3/8 - 5/8 BOLT &	1 -2	Y	Y		Y
1243943	14	S600	3	1/4 BOLTS	0-2	Y	Y		Y
1243943	14	S600	4	5/16 - 5/8 BOLT &	1-2	Y	Y		Y
1243943	14	S600	4	1/4 BOLTS	0-2	Y	Y		Y
1243943	31	S600N	1 -2	3/8 - 5/8 BOLT OR	1	Y	Y		Y
1243943	31	S600N	1 -2	1/4 BOLTS	2	Y	Y		Y
1233943	31	S600N	3	3/8 - 5/8 BOLT &	1 -2	Y	Y		Y
1243943	31	S600N	3	1/4 BOLTS	0-2	Y	Y		Y
1243943	31	S600N	4	5/16 - 5/8 BOLT &	1-2	Y	Y		Y
1243943	31	S600N	4	1/4 BOLTS	0-2	Y	Y		Y
					1		Y		
1243943	16	S800	1 -2	9/16 - 21/32	1	Y	Y		Y
1243943	16	S800	3	9/16 - 21/32	1 - 2	Y	Y		Y
1243943	16	S800	4	9/16 - 21/32	1 - 4	Y	Y		Y
1233943	17	2S1/0	ALL	1/4 - 7/16 BOLT	1	Y	Y		Y
1243943	18	2S2/0	1	1/4 - 7/16 0R	1	Y	Y	Y	Y
1243943	18	2S2/0	1	1/4 - 5/16 BOLT	1 - 2	Y	Y	Y	Y
1243943	18	2S2/0	2 - 6	1/4- 7/16 BOLT	1 – 2	Y	Y	Y	Y

				INCHES		OPTION	OPTION	OPTION	OPTION LOCATION
Report No.	Fig.. No.	CAT No.	STYLE No.	MTG. HOLE RANGE	QTY	THREADED	NON-ROUND	REPEAT / POLE	or VOLT TAP HOLE(S)
1243943	19	2S250	1	3/8 - 11/16 BOLT OR 2 1/4 BOLTS	1	Y	Y	Y	Y
1243943	19	2S250	2 - 3	3/8 - 11/16 BOLT	1 - 2	Y	Y	Y	Y
1243943	19	2S250	2 - 3	3/8 - 11/16 BOLT & (0-2) 1/4 BOLTS	1 - 2	Y	Y	Y	Y
1243943	19	2S250	4	3/8 - 11/16 BOLTS & OPT 3/8 - 7/16 BOLTS & (0-2) 1/4 BOLTS	1 - 2	Y	Y	Y	Y
1243943	20	2S350	ALL	3/8 - 5/8 BOLT	1 - 2	Y	Y	Y	Y
1243943	20	2S350	ALL	11/64 - 3/8 BOLT	1 - 4	Y	Y	Y	Y
1243943	21	2S600	1 - 3	3/8 - 5/8 BOLT OR	1	Y	Y	Y	Y
1243943	21	2S600	1 - 3	1/4 - 9/16 BOLT	2	Y	Y	Y	Y
1243943	21	2S600	4	3/8 - 5/8 BOLT	1 - 4	Y	Y	Y	Y
1243943	21	2S600	5	3/8 - 5/8 BOLT OR	1 -2	Y	Y	Y	Y
1243943	21	2S600	5	11/64 - 1/2 BOLT	2 -4	Y	Y	Y	Y
1243943	22	2S750	ALL	5/16 - 5/8 BOLT	1 - 4	Y	Y	Y	Y
NOTES: 1. INSIDE OF BOLT HOLES, LOCATION HOLES, AND TEST HOLES NEED NOT BE PLATED									
2. UN AND METRIC BOLT SIZE EQUIVALENTS (REFERENCE)									
#6	#8	#10	1/4	5/16	3/8	7/16	1/2	9/16	5/8
M3,5	M4	M5	M6	M8	M10	M11	M12	M14	M16
3. CLEARANCE HOLES ON STANDARD BOLT SIZES ARE LARGER THAN THE NOMINAL BOLT DIAMETER									