

I-Line™ Plug-In Units

PTMx/PTPx (250–1200 A Circuit Breakers)



Unidades enchufables I-Line™

PTMx/PTPx (interruptores automáticos de 250 a 1 200 A)

Unités enfichables I-Line^{MC}

PTMx/PTPx (disjoncteurs de 250 à 1200 A)

Instruction Bulletin

Boletín de instrucciones

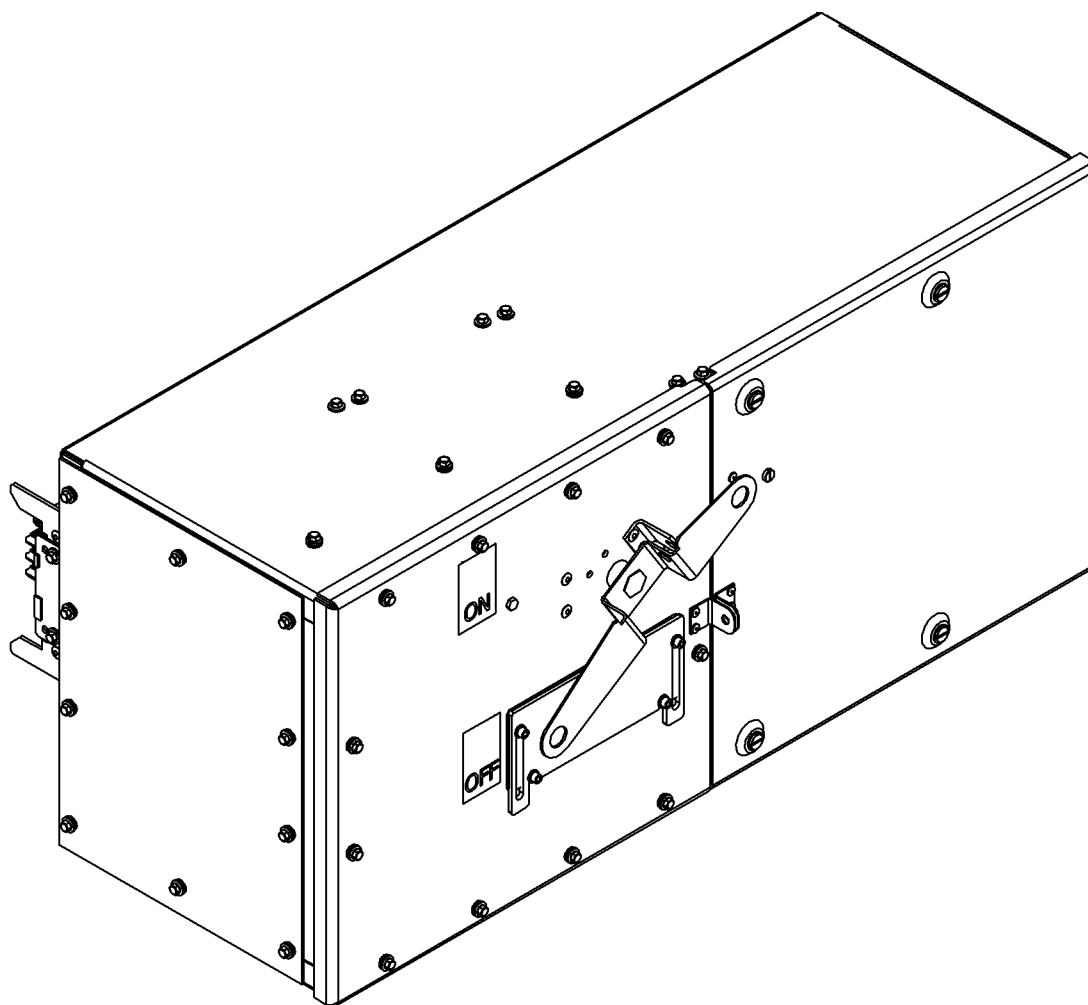
Directives d'utilisation

45225-094-01

Retain for Future Use. /

Conservar para uso futuro. /

À conserver pour usage ultérieur.



by Schneider Electric

I-Line™ Plug-In Units

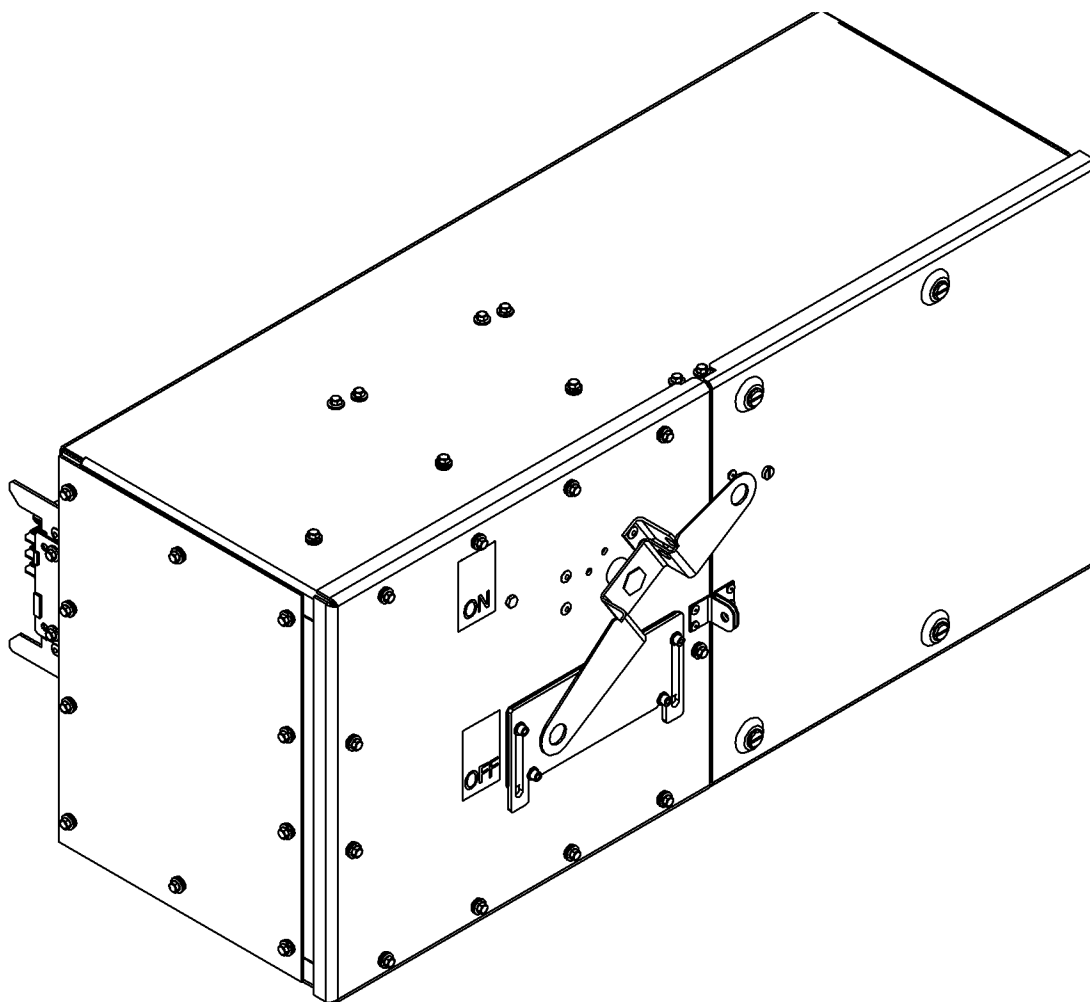
PTMx/PTPx (250–1200 A Circuit Breakers)

Class 5630

Instruction Bulletin

45225-094-01

Retain for future use.



by Schneider Electric

Hazard Categories and Special Symbols



Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

CAUTION

CAUTION, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result in** property damage.

NOTE: Provides additional information to clarify or simplify a procedure.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. This Class A digital apparatus complies with Canadian ICES-00.

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Section 1—Introduction

This bulletin contains instructions for handling, storing, installing, operating, and maintaining Square D™ brand I-Line™ Circuit Breaker Plug-In Units (rated from 250–1200 A) manufactured by Schneider Electric. The purchaser's engineering, installation, and operating staff supervisors should familiarize themselves with this bulletin and become acquainted with the appearance and characteristics of the equipment. Read and understand this bulletin completely before performing the installation, operation, and maintenance steps provided herein. For additional circuit breaker information, refer to the Schneider Electric bulletin supplied with the circuit breaker.

Section 2—Safety Precautions

Standard Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Follow the safety label instructions on the equipment and inside this bulletin.
- Turn off power to busway before installing or removing plug-in unit.
- Do not install plug-in unit onto I-Line II 800 A copper busway.
- Do not install plug-in unit without circuit breaker installed.
- Do not install, operate, or remove plug-in unit with cover open or removed.
- Install only 3-pole device on 3-pole busway. Install only 4-pole device on 4-pole busway. Only install a device onto busway with a "G" in suffix catalog number.
- Use a continuity tester or 500 Vdc maximum megohmmeter to ensure phase-to-phase, phase-to-neutral, and ground isolation.
- Turn off power to busway before working on line side of plug-in unit.
- Turn off plug-in unit before opening or working inside enclosure.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.
- Before closing the door or replacing the cover-mechanism, carefully inspect the switch area to ensure no tools or objects have been left on or inside the equipment.

Failure to follow these instructions will result in death or serious injury.

Reverse Feed Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Turning the plug-in unit or circuit breaker OFF (O) does not de-energize the cable terminals.
- Turn off power to all power sources supplying the line and load side connections to the plug-in unit before opening and working inside enclosure.
- Turn off plug-in unit.
- Do not install plug-in unit onto I-Line II 800 amp copper busway.
- Do not install plug-in unit without circuit breaker installed.
- Do not install, operate, or remove plug-in unit with cover open or removed.
- Install only 3-pole device on 3-pole busway. Install only 4-pole device on 4-pole busway. Only install a device onto busway with a “G” in suffix catalog number.
- Use a continuity tester or 500 Vdc maximum megohmmeter to ensure phase-to-phase, phase-to-neutral and ground isolation.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.

Failure to follow these instructions will result in death or serious injury.

NOTE: For reverse feed applications, the plug-in unit is used as the main breaker. This application is approved for use on PTMx or PTPx circuit breaker plug-in units.

If reverse feeding a PTMx or PTPx circuit breaker plug-in unit, order Reverse Feed Label Kit PTKITRFL from the busway manufacturer and apply the labels to the plug-in unit before installing the plug-in unit onto the busway. Refer to the section “Reverse Feed Label Placement” on page 47 for proper label placement instructions.

Section 3—Receiving, Handling, and Storage

Receiving

Upon receipt, check the packing list against the equipment received to ensure the order and shipments are complete. Claims for shortages or errors must be made in writing to Schneider Electric within 60 days of delivery. Failure to give such notice will constitute unqualified acceptance and a waiver of all such claims by the purchaser.

Immediately inspect the equipment for any damage that may have occurred during transit. If damage is found or suspected, file a claim with the carrier immediately and notify Schneider Electric. Delivery of equipment to a carrier at any of the Schneider Electric plants or other shipping points constitutes delivery to the purchaser regardless of freight payment and title. All risk of loss or damage passes to the purchaser at that time.

For details concerning claims for equipment shortages and other errors, refer to Schneider Electric's "Terms and Conditions of Sale."

Handling

WARNING

SPECIAL HANDLING REQUIREMENTS

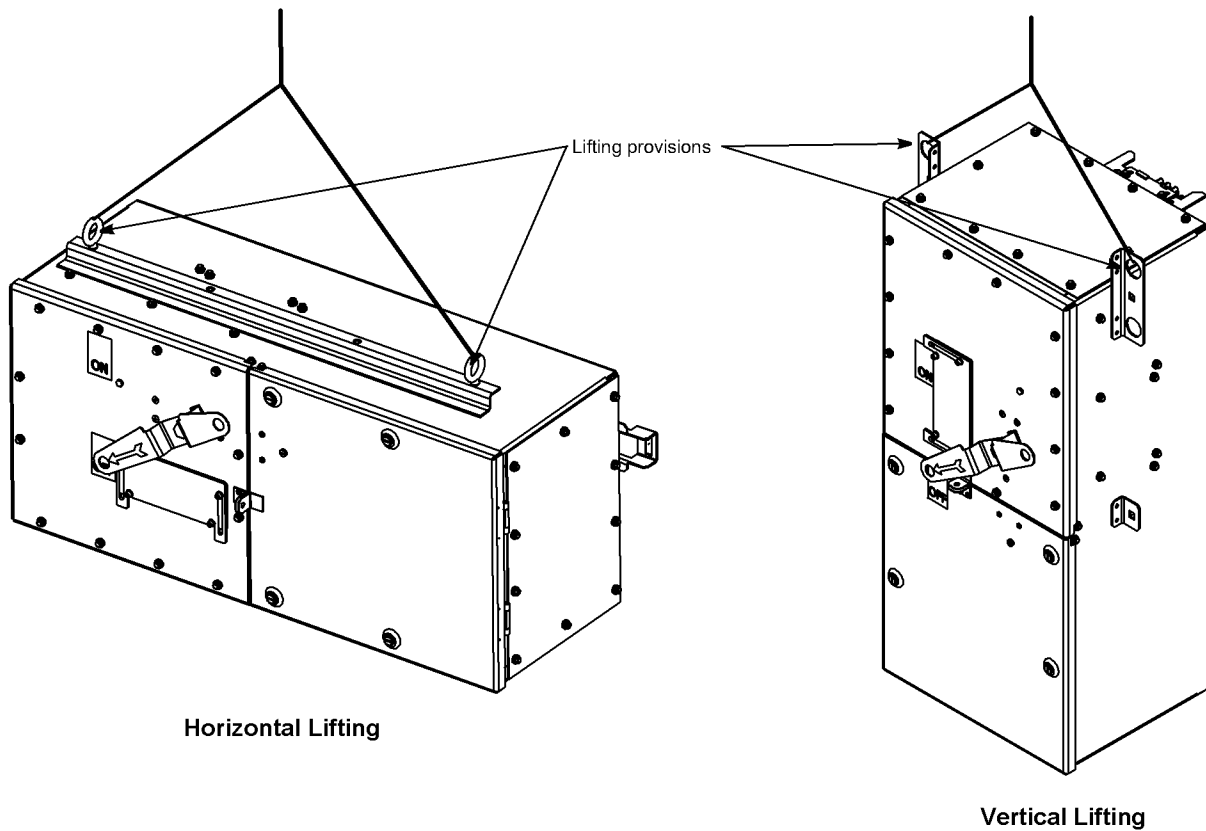
Always use lifting brackets to unpack, move, lift, and install the plug-in unit onto its hanger shelf.

Failure to follow these instructions can result in personal injury or equipment damage.

Handle plug-in units with care to avoid damaging internal components and the enclosure or its finish. Avoid subjecting plug-in units to twisting, denting, dropping, or any other rough handling. Use nail-pullers when unpacking wooden crates. Ensure the equipment at the installation site is adequate to handle the plug-in unit. Verify the lifting capacity of the crane or other equipment available. Refer to the appropriate busway systems manual for weight specifications.

If hoisting the plug-in unit with a crane, use eyebolts (not provided) in the channel on top of horizontal plug-in units, or the lifting brackets of vertical plug-in units (see Figure 1 on page 10). If using a forklift, position the plug-in unit on the forks to distribute the weight properly. Take care not to damage the metal housing. Avoid using objects with sharp edges to lift the plug-in unit. Never drag the plug-in unit.

Figure 1: Hoisting Equipment with a Crane



Storage

CAUTION

POTENTIAL EQUIPMENT CONTAMINATION

- Store the equipment in a clean, dry location.
- Protect the equipment from contaminants such as water, salt, concrete, and other corrosive environments.

Failure to follow these instructions can result in equipment damage.

If the plug-in unit is not going to be installed and energized immediately, store it indoors in a clean, dry place with a uniform temperature. Protect the unit from contaminants such as water, salt, concrete, and other corrosive elements.

Section 4—Plug-In Unit Interrupting Rating

Rating Information

Table 1: PTMG/PTMJ Circuit Breaker Plug-In Unit Rating Information

Plug-In Unit Catalog Prefix	Circuit Breaker Catalog Prefix	Circuit Breaker Ampere Rating ‡	Interrupting Rating		Max. Rating	
			Amps (kA) RMS Symmetrical	Volts (AC)	Amps	Volts (AC)
PTMG	MG	300–800	65	240	800	600
			35	480		
			18	600		
PTMJ	MJ	300–800	100	240	800	600
			65	480		
			25	600		

‡ See nameplate on outside of device for ampere rating of unit.

Table 2: PTPG/PTPJ Circuit Breaker Plug-In Unit Rating Information

Plug-In Unit Catalog Prefix	Circuit Breaker Catalog Prefix	Circuit Breaker Ampere Rating ‡	Interrupting Rating		Max. Rating	
			Amps (kA) RMS Symmetrical	Volts (AC)	Amps	Volts (AC)
PTPG	PG	250–1200	65	240	1200	600
			35	480		
			18	600		
PTPJ	PJ	250–1200	100	240	1200	600
			65	480		
			25	600		

‡ See nameplate on outside of device for ampere rating of unit.

Section 5—Installing the Plug-In Unit onto the Busway

Standard Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Turn off power to busway before installing plug-in unit onto the busway.
- Turn off plug-in unit.
- Do not install plug-in unit onto I-Line II 800 amp copper busway.
- Do not install plug-in unit without circuit breaker installed.
- Do not install plug-in unit with cover open or removed.
- Install only 3-pole device on 3-pole busway. Install only 4-pole device on 4-pole busway. Only install a device onto busway with a "G" in suffix catalog number.
- Use a continuity tester or 500 Vdc maximum megohmmeter to ensure phase-to-phase, phase-to-neutral, and ground isolation.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.

Failure to follow these instructions will result in death or serious injury.

Reverse Feed Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Turning the plug-in unit or circuit breaker OFF (O) does not de-energize the cable terminals.
- Turn off power to all power sources supplying the line and load side connections to the plug-in unit before performing any work on or inside the plug-in unit.
- Turn off plug-in unit.
- Do not install plug-in unit onto I-Line II 800 amp copper busway.
- Do not install plug-in unit without circuit breaker installed.
- Do not install plug-in unit with cover open or removed.
- Install only 3-pole device on 3-pole busway. Install only 4-pole device on 4-pole busway. Only install a device onto busway with a “G” in suffix catalog number.
- Use a continuity tester or 500 Vdc maximum megohmmeter to ensure phase-to-phase, phase-to-neutral, and ground isolation.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.
- Apply Reverse Feed Label Kit PTKITRFL to the plug-in unit before installing it onto the busway.

Failure to follow these instructions will result in death or serious injury.

NOTE: For reverse feed applications, the plug-in unit is used as the main breaker. This application is approved for use on PTMx or PTPx circuit breaker plug-in units.

If reverse feeding a PTMx or PTPx circuit breaker plug-in unit, order Reverse Feed Label Kit PTKITRFL from the busway manufacturer and apply the labels to the plug-in unit before installing the plug-in unit onto the busway. Refer to “Reverse Feed Label Placement” on page 47 for proper label placement instructions.

Pre-Installation Testing

Refer to “Operating” on page 33 for instructions detailing operating this device.

1. Before installing the plug-in unit onto the busway, ensure the door of the plug-in unit is closed.
2. Turn the plug-in unit handle to the **ON (I)** position (Figures 2 and 3).
3. Use a continuity tester or 500 Vdc maximum megohmmeter to verify phase-to-phase, phase-to-neutral, and ground isolation.
4. Return the plug-in unit handles to the **OFF (O)** position (Figures 2 and 3).

Figure 2: Pre-Installation Testing, Horizontally Mounted Plug-In Units

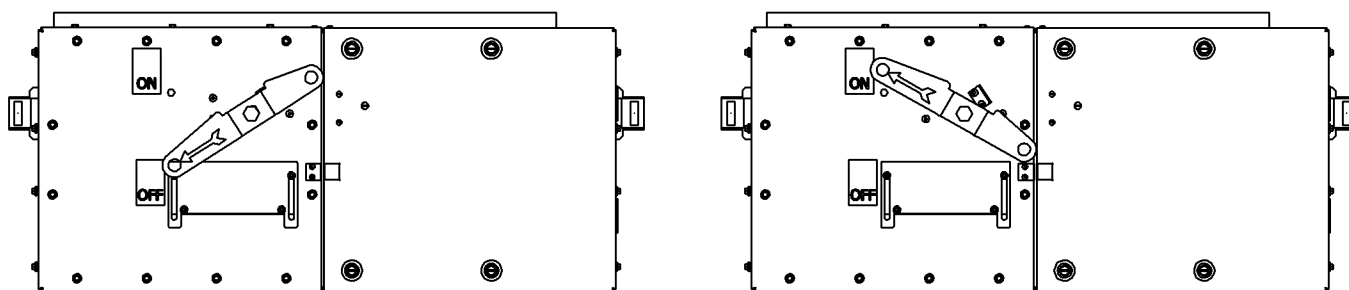
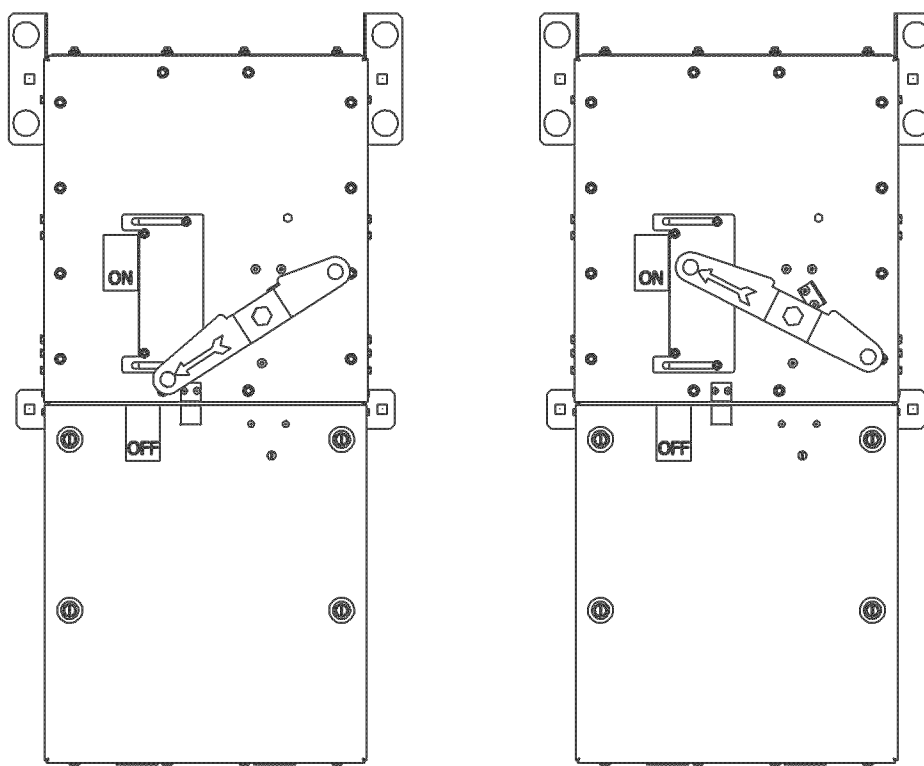


Figure 3: Pre-Installation Testing, Vertically Mounted Plug-In Units



Horizontal Mounting Instructions

NOTE: Refer to the safety statements at the beginning of “Standard Application Precautions” on page 13 and “Reverse Feed Application Precautions” on page 14 before installing the plug-in unit onto the busway.

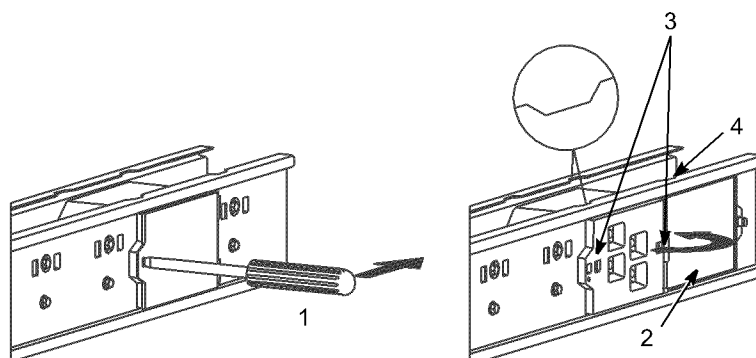
To ensure proper electrical connections to the busway, the plug-in jaws are coated with a special oxide-inhibiting joint compound. **DO NOT REMOVE THIS COMPOUND.** If the joint compound becomes contaminated, order replacement compound (part number PJC7201) from your local Schneider Electric distributor.

Preparing the Busway before Installing the Hanger and Plug-In Unit

Refer to Figure 4 and steps 1–9 to prepare the busway before installing the hanger and the plug-in unit.

1. Turn off the power to the busway.
2. Insert a flat blade screwdriver (1) into the slot in the door, and release the door's hook-latch fastener.
3. Swing the door (2) completely open.
4. Loosen and remove the two mounting screws (3) holding the base. Do not discard the hardware. Remove the base/door assembly.
5. To retain the hardware, place the two mounting screws in their mounting holes in the base and close the door.
6. Inside the plug-in unit are sections of hook and loop fastener. Remove the paper backing of the portion not attached to the enclosure and apply the fastener to the flat surface of the door of the base/door assembly removed in step 4.
7. To retain the base/door assembly for future use, press the entire assembly against the portion of hook and loop fastener attached to the enclosure.
8. Close plug-in unit door.
9. Locate the mounting notch (4) on the top of the busway rail, above the right side of the busway plug-in opening. This mounting notch allows the hanger to be positioned correctly onto the busway.

Figure 4: Preparing the Busway before Installing the Hanger and Plug-In Unit



Installing the Horizontal Hanger onto the Busway

Refer to Figure 5 and steps 1–7 to install the horizontal hanger onto the busway.

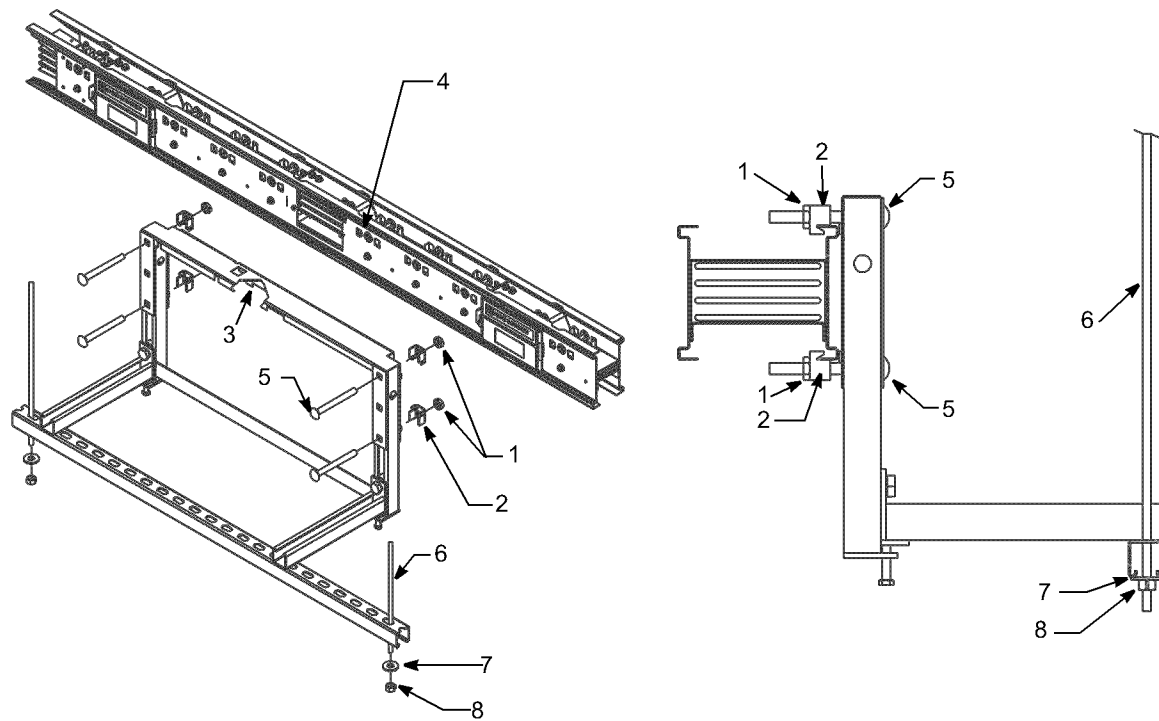
1. Unfasten the nuts (1).
2. Remove the U-clamps (2).
3. Position the tab of the hanger (3) into the mounting notch of the busway (4) that has been located in step 9 on page 16.
4. Place the U-clamps (2) onto the bolts (5). Ensure that the notch in each U-clamp goes into the flange of the busway.
5. Thread the nuts (1) onto the bolts (5). Tighten the nuts to 125–150 lb-in (14–17 N•m).
6. Position the two threaded rods (6) into the outside slots of the hanger. Fasten both threaded rods to the building structure.

NOTE: The threaded rods are not included.

7. Place the washers (7) and thread the nuts (8) onto the threaded rod. Ensure the hanger shelf is level and perpendicular to the face of the busway.

NOTE: The washers and nuts are not provided.

Figure 5: Installing the Horizontal Hanger onto the Busway

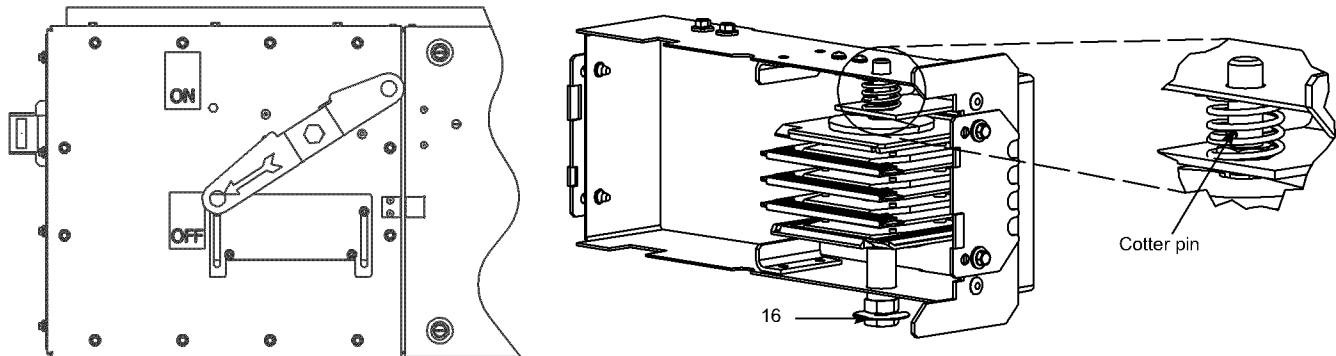


Installing the Plug-In Unit onto the Busway and Horizontal Hanger

Refer to Figure 6 and steps 1–2 to prepare the plug-in unit for installation onto the busway and the horizontal hanger.

1. Turn off the power to the plug-in unit by pointing the arrow on the handle to **OFF (O)**.
2. Ensure that the connector bolt (16) is as loose as the cotter pin will allow, then tighten the bolt one full turn.

Figure 6: Preparing the Plug-In Unit for Horizontal Installation

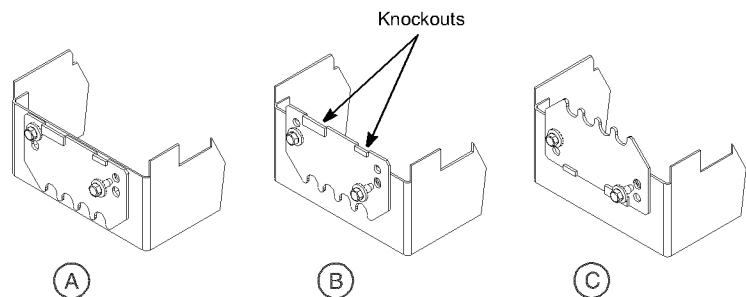


3. Depending on the busway type and plug-in opening used, the scalloped barrier position may need to be adjusted. Refer to Figure 7 for proper adjustment, if necessary.
 - a. If the plug-in unit will be installed in a plug-in opening next to a joint, relocate the scalloped barrier nearest the busway joint using the round holes (A).
 - b. If the plug-in unit will be installed at any plug-in opening other than next to a joint, leave the scalloped barriers as shipped from the factory (B).

NOTE: The flat edge of the scalloped barrier has been provided with removable knockouts should the scalloped barrier interfere with the head of a screw.

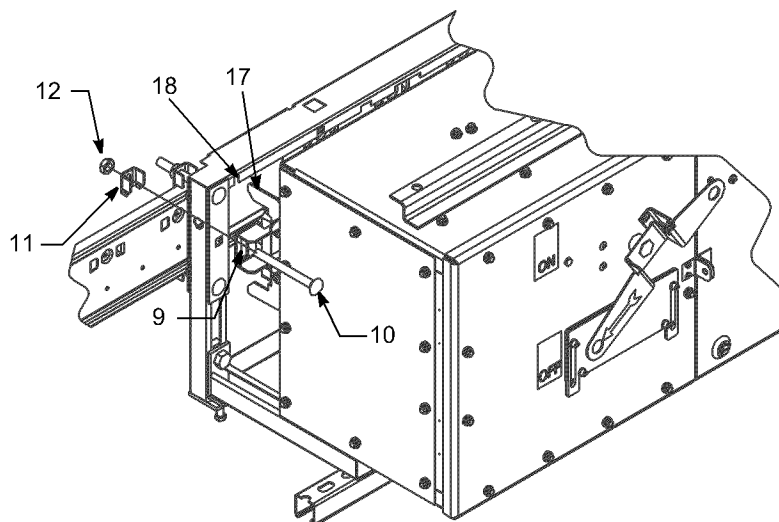
- c. If the plug-in unit will be installed at any plug-in opening other than next to a joint and it will be installed on I-Line corrugated-housing busway, install both barriers with the scalloped side towards the busway, using the oblong holes (C).

Figure 7: Scalloped Barrier Positions



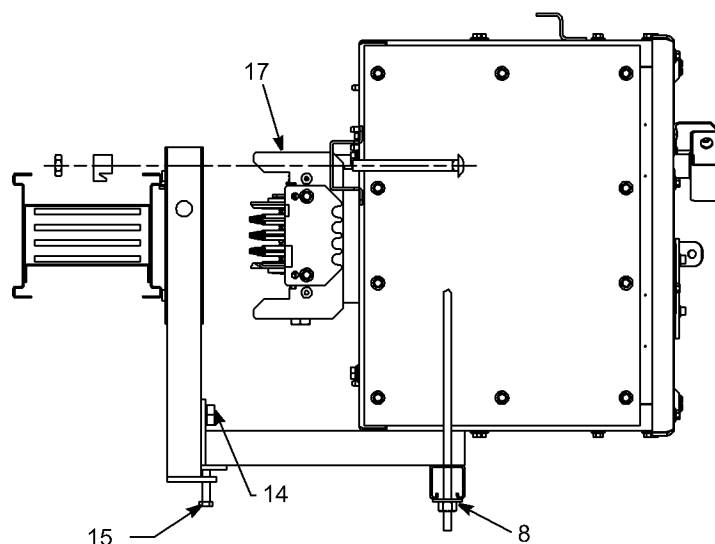
4. Remove the nuts (12) and the U-clamps (11) from the carriage bolts (10). Place the unit onto the hanger. Ensure the alignment bracket (17) aligns with the slots in the hanger (18) (Figure 8).

Figure 8: Alignment Bracket Location



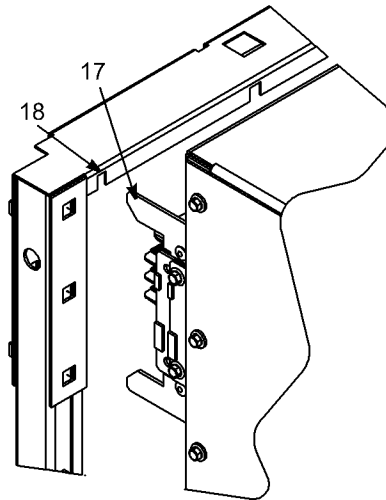
5. Place the U-clamps (11) onto the busway and on each side of the plug-in unit. Thread the bolts (10) through the slots in the plug-in unit bracket (9) and through the holes in the U-clamps (11) (Figure 8).
6. Thread the nuts (12) onto the bolts (10), and hand-tighten them (Figure 8). Ensure that the notch in each U-clamp goes into the flange of the busway.
7. Vertically center the alignment bracket (17) on the busway (Figure 9).
8. To adjust the unit up or down, unscrew the bolts (14) one turn. Adjust the unit with the bolts (15) and nuts (8), and then retighten the bolts (14) (Figure 9).

Figure 9: Plug-In Unit Vertical Adjustment



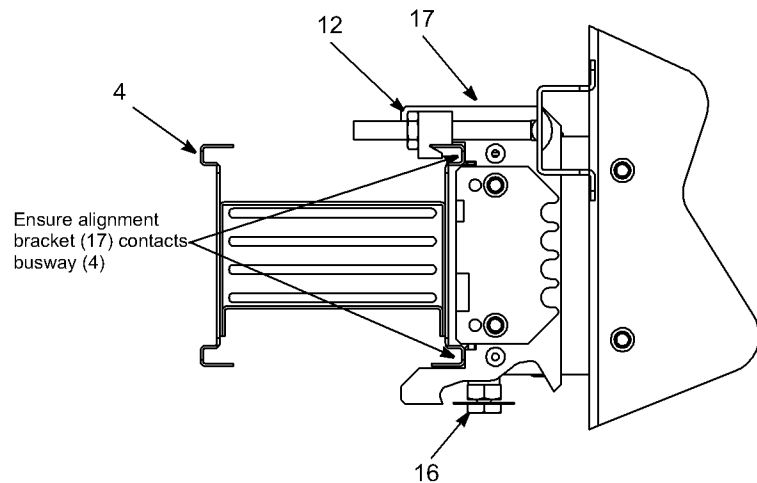
9. While facing the unit, align it horizontally by positioning the unit so that the alignment bracket (17) is aligned with the slot (18) in the hanger (Figure 10).

Figure 10: Plug-In Unit Horizontal Adjustment



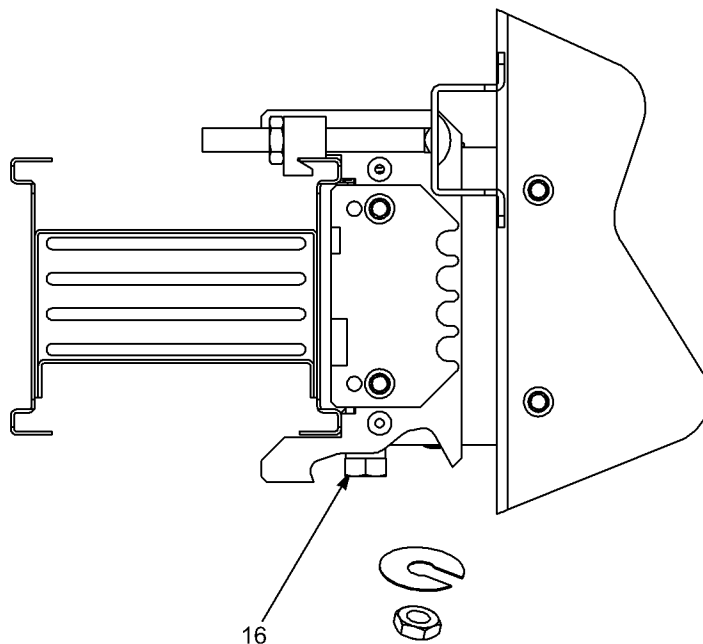
10. Tighten each nut (12) alternately 1/2 in. (13 mm) until the alignment bracket (17) touches the busway (4) (Figure 11).

Figure 11: Attaching Plug-In Unit to the Busway



11. If the unit is being installed for the first time, tighten the connector bolt (16) until the outer head breaks off. If the unit is being relocated, tighten the connector bolt to 60–80 lb-ft (81–108 N•m) (Figure 12).

Figure 12: Clamping the Electrical Connection

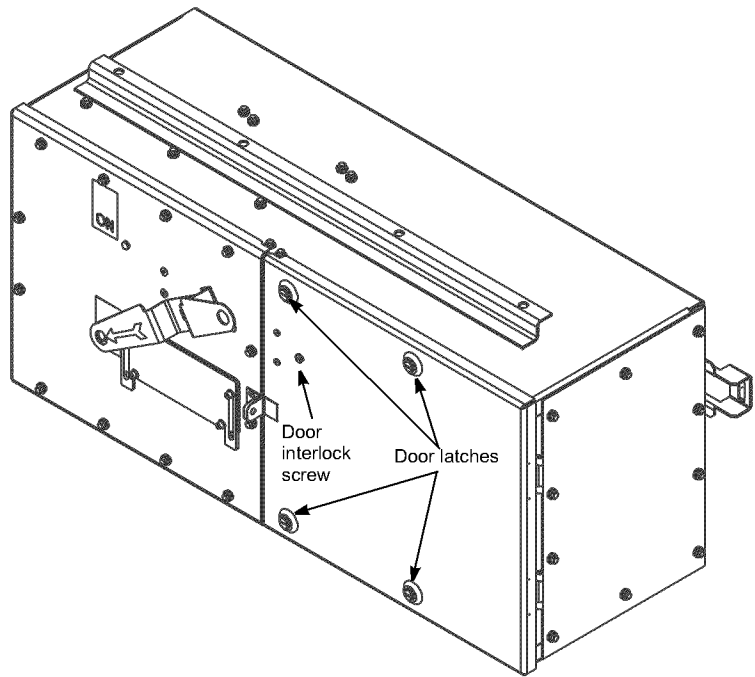


Continuity Testing before Energizing the Busway

Refer to Figure 13 and steps 1–4 to perform a continuity test before energizing the busway.

1. Conduct a continuity test on the plug-in unit before energizing the busway and installing the load side connections.
 - a. Turn the handle to the **ON (I)** position.
 - b. Unscrew the four door latches, allowing the door to open until the interlock catches. Do not allow the door to open fully.
 - c. Turn the door interlock screw counter-clockwise to allow the door to open fully.

Figure 13: Turning Door Screws and Door Interlock Screw



- d. Open an unused plug-in opening door of the busway (see Figure 4 on page 16).
 - e. Use a continuity tester or 500 Vdc maximum megohmmeter to verify phase-to-phase, phase-to-neutral, and ground isolation.
2. Turn the plug-in unit handle to the **OFF (O)** position.
3. Close the doors of the plug-in unit and busway when the test is complete, and fasten the four door latches.
4. Wire the plug-in unit. Refer to “Wiring Diagrams” on page 31.

Vertical Mounting Instructions

Install the plug-in unit so the lugs inside the box are facing down.

NOTE: Refer to the safety statements at the beginning of “Standard Application Precautions” on page 13 and “Reverse Feed Application Precautions” on page 14 before installing the plug-in unit onto the busway.

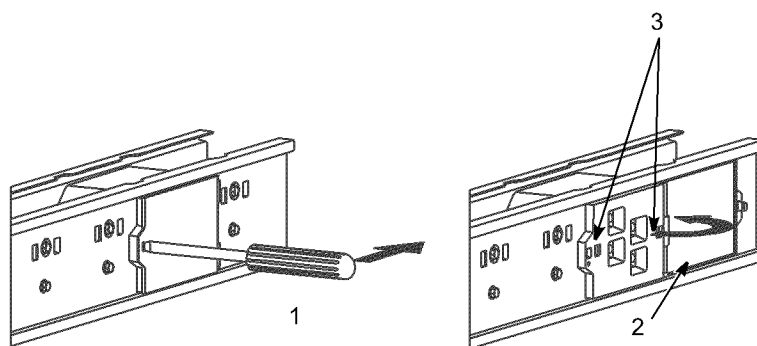
To ensure proper electrical connections to the busway, the plug-in jaws are coated with a special oxide-inhibiting joint compound. **DO NOT REMOVE THIS COMPOUND.** If the joint compound becomes contaminated, order replacement compound (part number PJC7201) from your local Schneider Electric distributor.

Preparing the Busway before Installing the Hanger and Plug-In Unit

Refer to Figure 14 and steps 1–8 to prepare the busway before installing the hanger and plug-in unit.

1. Turn off the power to the busway.
2. Insert a flat blade screwdriver (1) into the slot in the door and release the door's hook-latch fastener.
3. Swing the door (2) completely open.
4. Loosen and remove the two mounting screws (3) holding the base. Do not discard the hardware. Remove the base/door assembly.
5. To retain the hardware, place the two mounting screws in their mounting holes in the base and close the door.
6. Inside the plug-in unit are sections of hook and loop fastener. Remove the paper backing of the portion not attached to the enclosure, and apply the fastener to the flat surface of the door of the base/door assembly removed in step 4.
7. To retain the base/door assembly for future use, press the entire assembly against the portion of hook and loop fastener attached to the enclosure.
8. Close the plug-in unit door.

Figure 14: Preparing the Busway before Installing the Hanger and Plug-In Unit



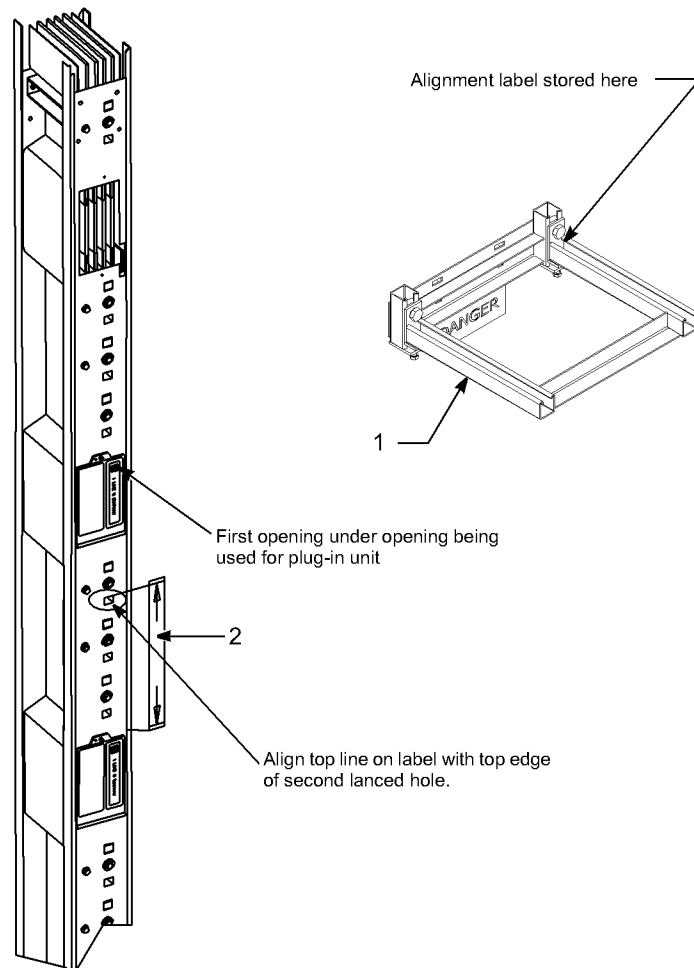
Installing the Vertical Hanger onto the Busway

NOTE: If the vertical hanger is being relocated, order a replacement label (part number 45123-897-07) for circuit breaker units from your local Schneider Electric distributor.

Refer to Figure 15 and steps 1–2 to install the locating label for placing the vertical hanger onto the busway.

1. Remove the bottom bracket (1) from the crate. Locate the alignment label (2) inside the leg of the bracket.
2. Peel the paper backing from the label (2), and attach the label to the busway.

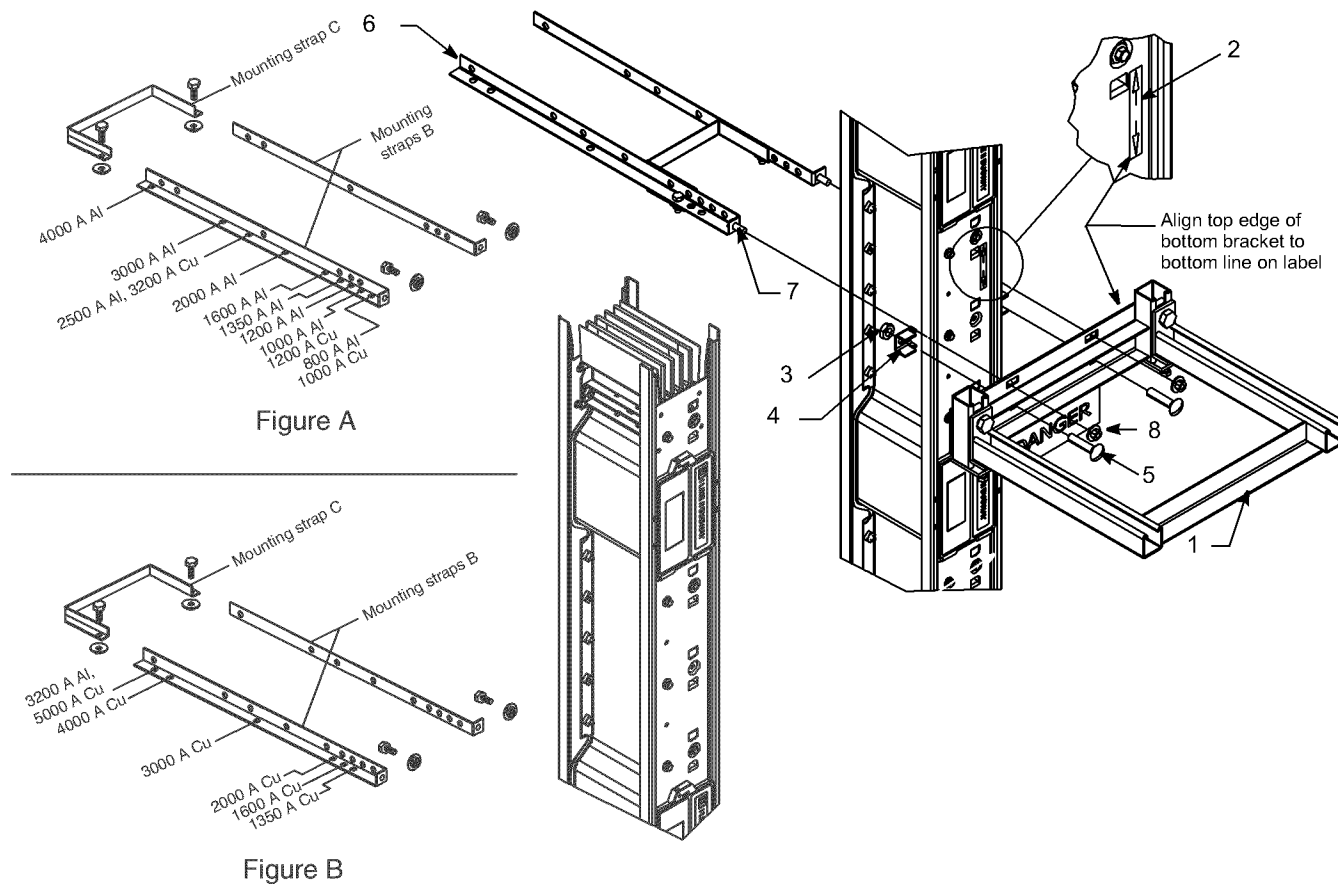
Figure 15: Placement of Vertical Hanger Locating Label



Refer to Figure 16 for steps 3–10.

3. Unfasten the nuts (3), and remove the U-clamps (4) from the bolts (5) on the bottom bracket (1).
4. Place the top edge of the bottom bracket (1) to the bottom line on the label (2). Ensure that the flange on the bracket aligns with the bottom line on the label as shown. Ensure that the flange on the bracket is perpendicular to the busway.
5. Place the U-clamps (4) onto the bolts (5). Ensure that the notch in each U-clamp goes into the flange of the busway.
6. Thread the nuts (3) onto the bolts (5) and tighten to 32–40 lb-ft (43–54 N•m).
7. Unpack mounting straps B and mounting strap C from box 45200-910-50 in the crate.
8. Orient mounting straps B as shown in either Figure 16 A or Figure 16 B according to the ampere rating and type of busway. Align the slot in the U-shaped mounting strap C with the hole in the side of strap B. Bolt together as shown in Figure 16 A or Figure 16 B. Tighten to 17–21 lb-ft (23–28 N•m).
9. Place the strap assembly (6) around the busway. Feed the bolts (7) through the holes in the strap assembly and the slots in the bottom bracket (1).
10. Thread the nuts (8) onto the bolts (7) and tighten to 17–21 lb-ft (23–28 N•m). The bolts and nuts are packed inside box 45200-910-50.

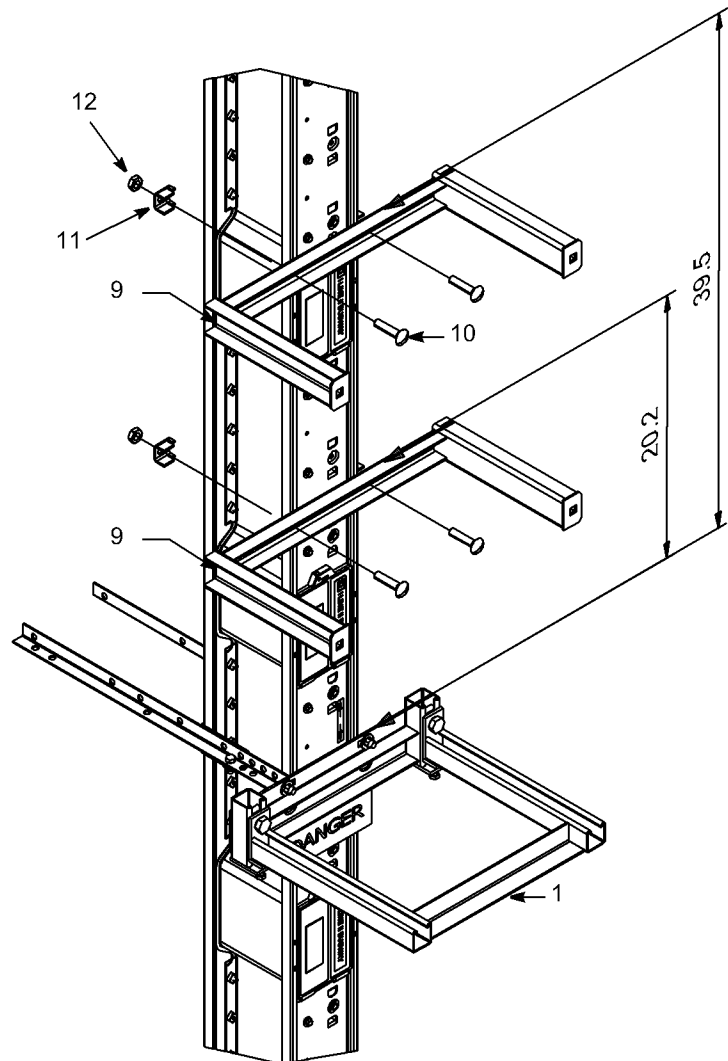
Figure 16: Vertical Hanger Bottom Bracket Assembly



Refer to Figure 17 for steps 11–15.

11. Unpack the support brackets (9) from the crate. Unfasten the nuts (12) and the U-clamps (11) from the bolts (10).
12. Place the top edge of the upper support bracket (9) at 39.5 in. (1003 mm) above the top edge of the bottom bracket (1).
13. Place the bolts (10) through the bracket (9). Place the U-clamps (11) on the bolts. Ensure that the notch in each U-clamp goes into the flange of the busway. Thread and tighten the nut (12) onto the bolt (10). Tighten to 32–40 lb-ft (43–54 N•m).
14. Place the top edge of the middle support bracket (9) 20.2 in. (513 mm) above the top edge of the bottom bracket (1).
15. Place the bolts (10) through the bracket (9). Place the U-clamps (11) on the bolts. Ensure that the notch in each U-clamp goes into flange of the busway. Thread and tighten the nut (12) onto the bolt (10). Tighten to 32–40 lb-ft (43–54 N•m).

Figure 17: Vertical Hanger Top and Middle Bracket Assembly

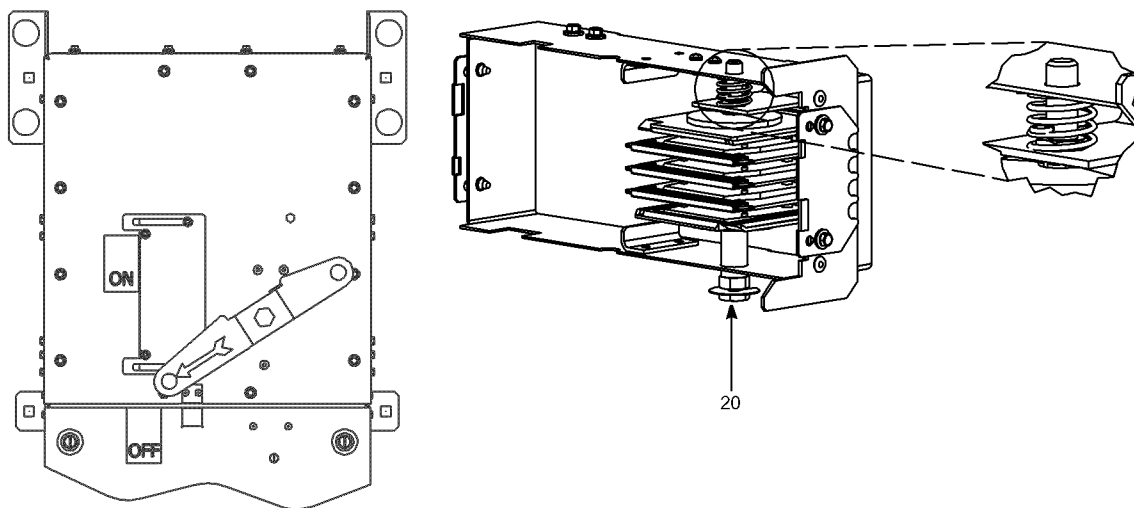


Installing the Plug-In Unit onto the Busway and Vertical Hanger

Refer to Figure 18 and steps 1–2 to prepare the plug-in unit for installation onto the busway and the vertical hanger.

1. Turn off the power to the plug-in unit by pointing the arrow on the handle to **OFF (O)**.
2. Ensure that the connector bolt (20) is as loose as the cotter pin will allow, then tighten the bolt one full turn.

Figure 18: Preparing the Plug-In Unit for Vertical Installation

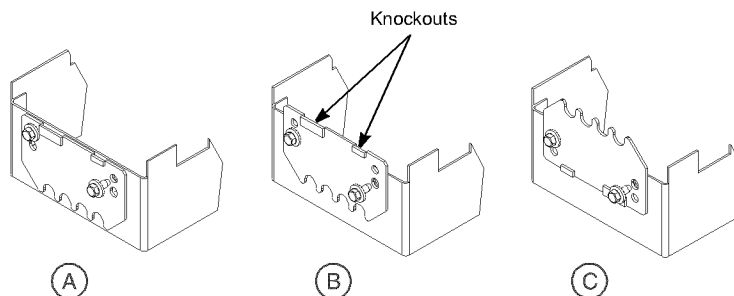


3. Depending on the busway type and plug-in openings used, the scalloped barrier position may need to be adjusted. Refer to Figure 19 for proper adjustment, if necessary.
 - a. If the plug-in unit will be installed in a plug-in opening next to a joint, relocate the scalloped barrier nearest the busway joint using the round holes (a).
 - b. If the plug-in unit will be installed at any plug-in opening other than next to a joint, leave the scalloped barriers as shipped from the factory (b).

NOTE: The flat edge of the scalloped barrier has been provided with removable knockouts should the scalloped barrier interfere with the head of a screw.

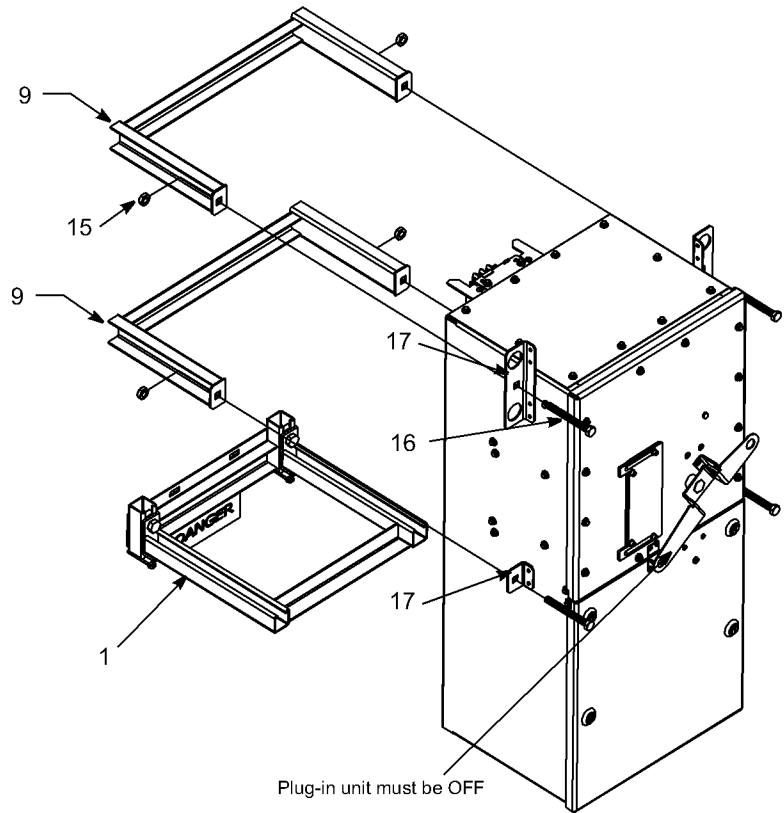
- c. If the plug-in unit will be installed at any plug-in opening other than next to a joint and it will be installed on I-Line corrugated-housing busway, install both barriers with the scalloped side towards the busway, using the oblong holes (c).

Figure 19: Scalloped Barrier Positions



4. Remove the nuts (15) from the hex head bolts (16). Place the unit on the bottom bracket (1) of the hanger. Thread the bolts (16) through the slot in the brackets (17) and through the holes in the upper and middle support brackets (9) (Figure 20 and Figure 22 on page 29).
5. Thread the nuts (15) onto the bolts (16), and tighten them one full turn (Figure 20 on page 29).

Figure 20: Mounting the Vertical Plug-In Unit



6. Horizontally center the alignment bracket (21) on the busway. The alignment bracket should straddle each side of the busway (Figure 21).
7. Vertically center the throat to the plug-in opening in the busway. To adjust the plug-in unit up or down, unthread the locking bolts (18) one turn. Adjust the unit with the bolts (19), and then retighten the locking bolts (18) (Figure 22).
8. Tighten each nut (15) alternately 1/2 in. (13 mm) until the alignment bracket touches the busway (Figure 22).

Figure 21: Plug-In Unit Horizontal Adjustment

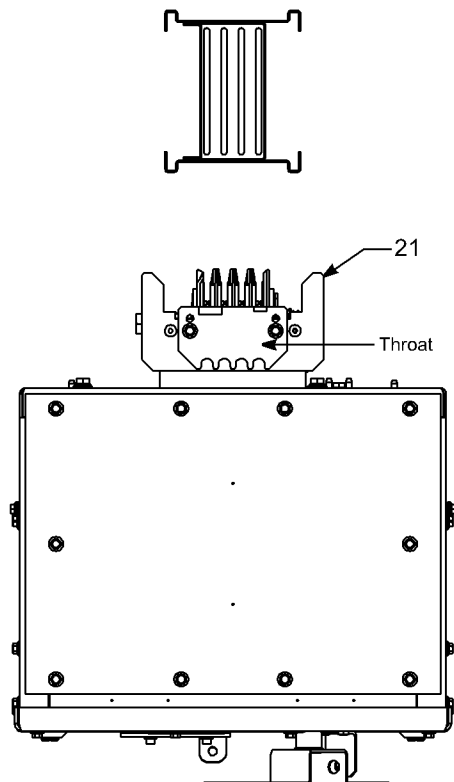
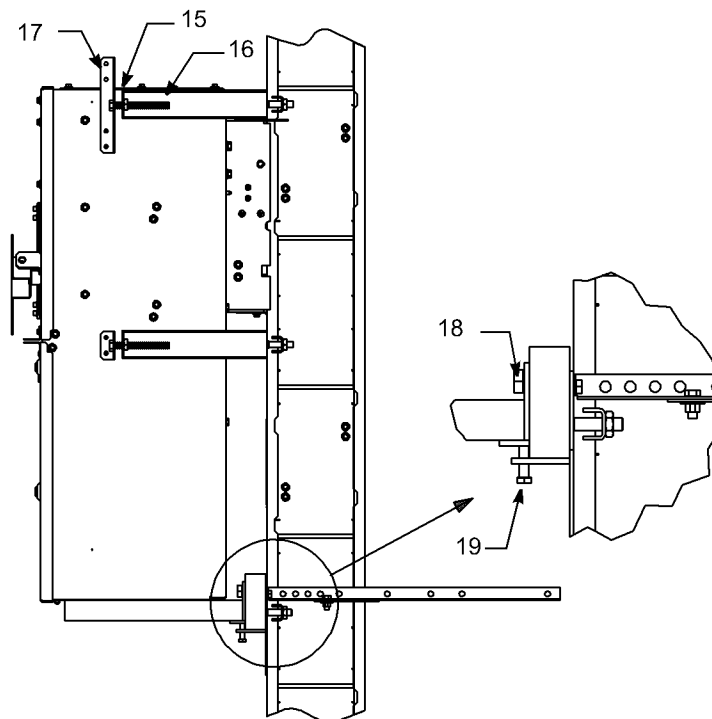
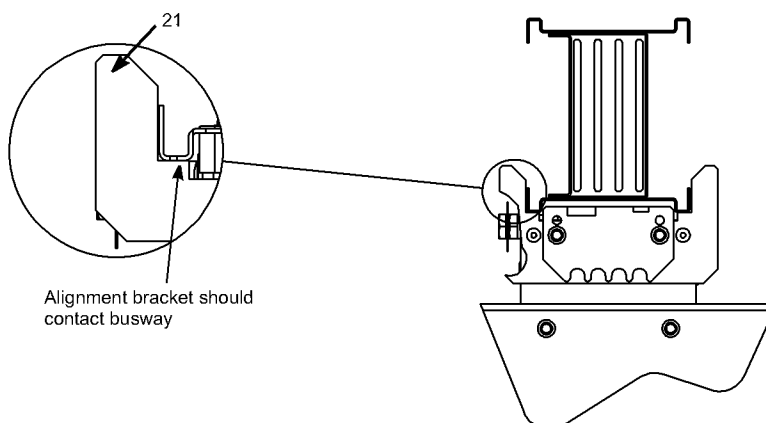


Figure 22: Plug-In Unit Vertical Adjustment



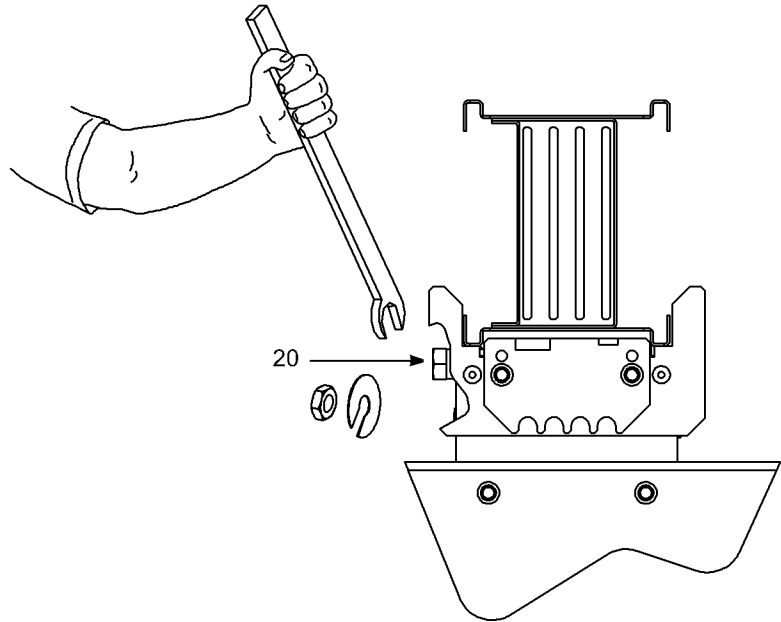
9. The alignment bracket (21) should straddle each side of the busway (Figure 23).

Figure 23: Plug-In Unit Insertion



10. If the unit is being installed for the first time, tighten the connector bolt (20) until the outer head breaks off. If the unit is being relocated, tighten the connector bolt to 60–80 lb-ft (81–108 N•m) (Figure 24).

Figure 24: Clamping the Electrical Connection

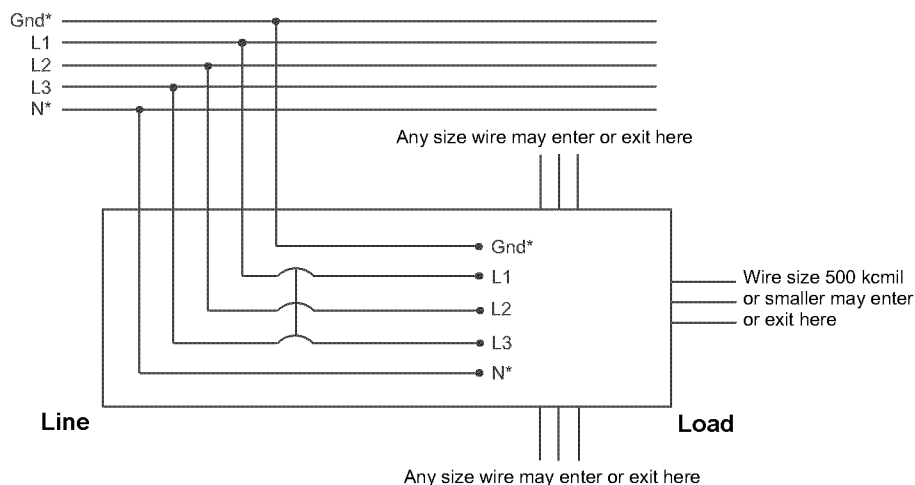


Continuity Testing before Energizing the Busway

1. Conduct a continuity test on the plug-in unit before energizing the busway and installing the load side connections. Refer to “Continuity Testing before Energizing the Busway” on page 22.
2. Wire the plug-in unit. Refer to “Wiring Diagrams” on page 31.

Wiring Diagrams

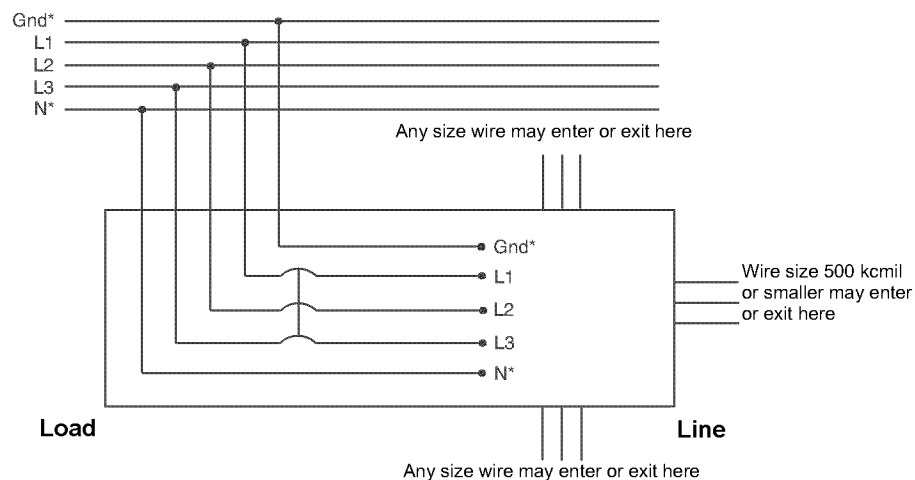
Figure 25: Standard Application Wiring Diagram



* Where applicable

- Refer to Table 3 on page 32 or the lugs' markings for accepted wire sizes.
- Use copper or aluminum wire.
- Torque the wire binding screws of the phases and neutral lugs to 37 lb-ft (50 N•m).
- Torque the wire binding screws of the ground lugs to 22 lb-ft (30 N•m).

Figure 26: Reverse Feed Application Wiring Diagram



* Where applicable

- Refer to Table 3 on page 32 or the lugs' markings for accepted wire sizes.
- Use copper or aluminum wire.
- Torque the wire binding screws of the phases and neutral lugs to 37 lb-ft (50 N•m).
- Torque the wire binding screws of the ground lugs to 22 lb-ft (30 N•m).

Lug and Wire Size Information

Lugs are suitable for 75/90 °C copper and aluminum conductors.

For the PTPG/PTPJ unit equipped with a 1000 A breaker—100% rated (catalog # PTPx36100GxxCxx), use only 90 °C insulated conductors based on an ampacity of 75 °C conductors.

For additional lug options, consult the circuit breaker instruction bulletin or contact your local Schneider Electric representative.

Field modifications of the enclosure (other than the cable entrance holes) are not allowed, as they may adversely affect product performances.

Cables have to be supported/used in accordance with the following codes (depending on the country location):

- the National Electrical Code (NEC), NFPA 70,
- the Canadian Electrical Code, Part 1 (CE Code, Part 1), or
- the Mexican Standard for Electrical Installations (Utility), NOM-001-SEDE.

Table 3: Lug and Wire Size Information

Type of Unit	Ampere Rating	Phase and Neutral			Ground		
		Number of Wires	Lug Wire Range	Wire Bending Screw Torque	Number of Wires	Lug Wire Range	Wire Bending Screw Torque
PTMG/PTMJ	300–800	3	3/0–500 kcmil	37 lb-ft (50 N•m)	4	6–300 kcmil	27 lb-ft (36 N•m)
PTPG/PTPJ	250–800	3	3/0–500 kcmil	37 lb-ft (50 N•m)	4	6–300 kcmil	27 lb-ft (36 N•m)
PTPG/PTPJ	1000–1200	4	3/0–500 kcmil	37 lb-ft (50 N•m)	4	6–300 kcmil	27 lb-ft (36 N•m)

Section 6—Operating

⚠ CAUTION

HAZARD OF PERSONAL INJURY AND EQUIPMENT DAMAGE

- Never insert fingers through any slot of the mechanism housing.
- When turning the mechanism handles, make sure there are no obstructions, such as body parts, in the handle's path.
- Always follow the guidelines in the breaker instruction bulletin supplied with the unit to adjust and maintain the breaker.

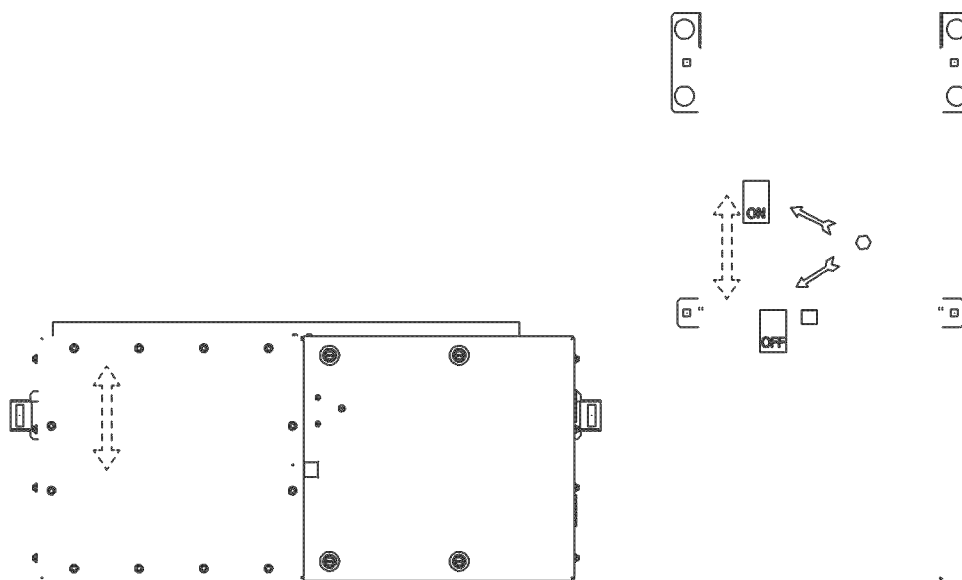
Failure to follow these instructions can result in personal injury and equipment damage.

Turning the Plug-In Unit Switch to the ON (I) and OFF (O) Positions

Operate the plug-in unit handle with a quick, steady motion (Figure 27).

NOTE: When the plug-in unit is out of reach from ground level, operate the handle with a hook stick. Refer to the section “Accessories and Replacement Parts” on page 47.

Figure 27: Turning the Plug-In Unit Switch to the ON (I) and OFF (O) Positions



Adjusting Settings for Micrologic™ Trip Units

Refer to the Micrologic™ Trip Unit instruction bulletin supplied with the unit for details regarding operation and appropriate settings for PTPG/PTPJ circuit breaker units.

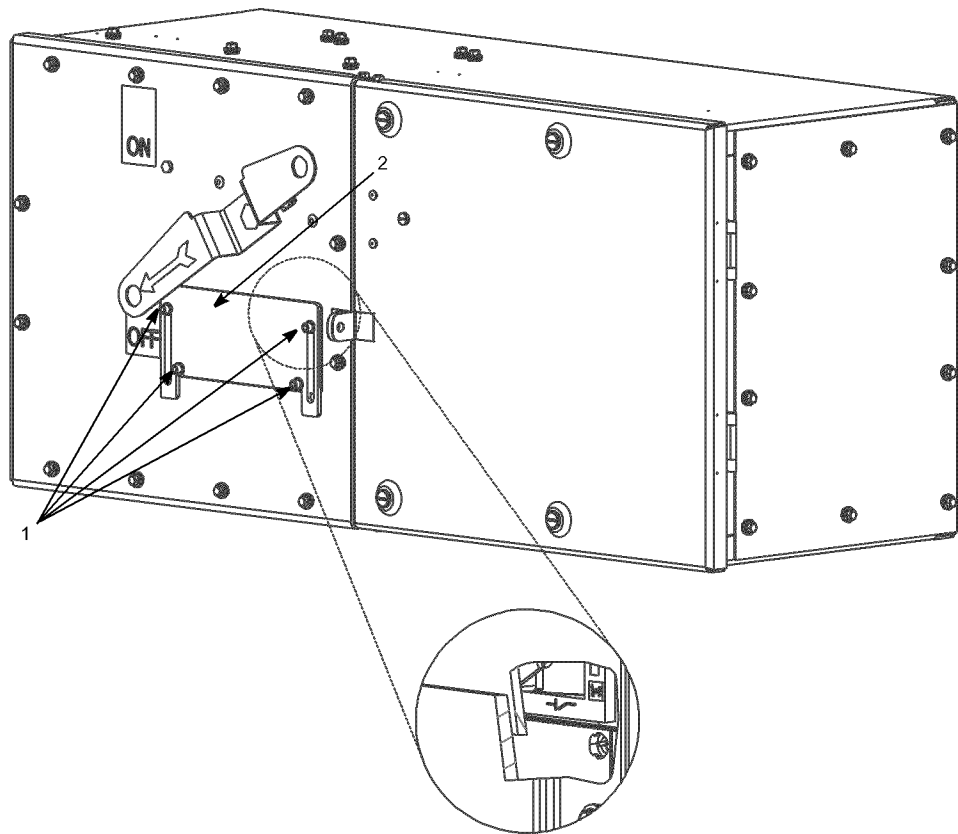
Manually Tripping the Circuit Breaker—PTPG/PTPJ Only

To manually trip the circuit breaker, the trip button can be accessed inside the enclosure through the trip unit access panel.

1. Loosen the four screws (1) and slide the access panel (2) upward.
2. Visually locate the red trip button inside the enclosure.
3. Then, with the breaker in the **ON (I)** position, use a cross recess screwdriver or a similar tool to press the red trip button until the breaker trips (Figure 28).
4. Return the access panel (2) downward to the closed position and tighten the four screws (1).

Refer to the circuit breaker instruction bulletin for more information.

Figure 28: Locating the Trip Button Opening on the Mechanism Housing and Trip Adjusting Dials



To reset the breaker once it has been tripped, set the handle to the **OFF (O)** position and then back to the **ON (I)** position.

Padlocking the Plug-In Unit Handle/Door

Standard Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Turn off power to busway before installing plug-in unit onto the busway.
- Padlock the plug-in unit handle in the OFF (O) position.
- Follow all required lock-off and tag-out procedures.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.

Failure to follow these instructions will result in death or serious injury.

Reverse Feed Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Turn off power to busway before installing plug-in unit onto the busway.
- Padlock the plug-in unit handle in the OFF (O) position.
- Padlocking the plug-in unit in the OFF (O) position does not de-energize the cable terminals.
- Follow all required lock-off and tag-out procedures.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.

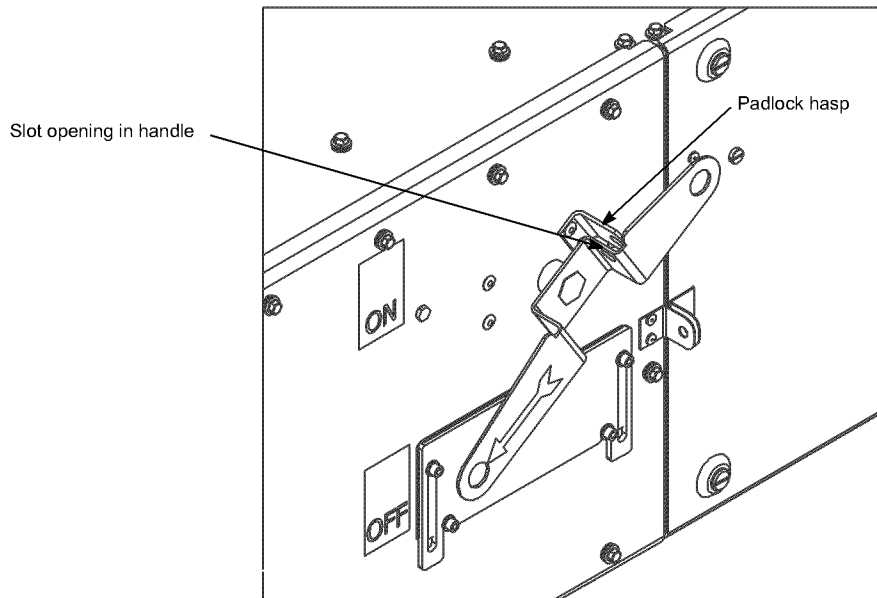
Failure to follow these instructions will result in death or serious injury.

Padlocking the Plug-in Unit Handle

Refer to Figure 29 and steps 1–2 to padlock the plug-in unit handle.

1. Turn the plug-in unit handle to the **OFF (O)** position.
2. To padlock the handle mechanism in the **OFF (O)** position, insert a lockout hasp or a single padlock with a maximum 3/8 in. (9 mm) diameter shackle through the slot opening in the handle and the padlock hasp.

Figure 29: Padlocking the Plug-In Unit Handle in the OFF (O) Position

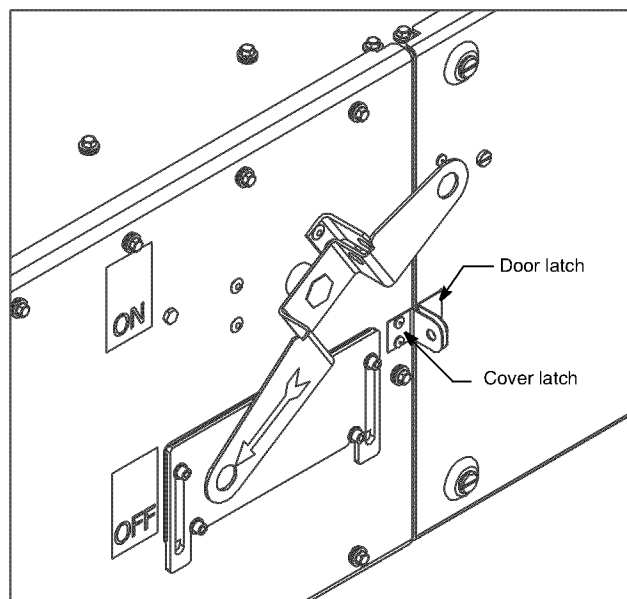


Padlocking the Plug-In Unit Door

Refer to Figure 30 and steps 1–2 to padlock the plug-in unit door.

1. The plug-in unit door can be padlocked closed to prevent unauthorized access to the device. Use a padlock with a maximum 3/8 in. (9 mm) diameter shackle.
2. Fit the padlock through the holes of the door and cover latches.

Figure 30: Padlocking the Plug-In Unit Door



Section 7—Removing the Plug-In Unit from the Busway

Standard Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be removed and serviced only by qualified electrical personnel.
- Turn off power to busway before removing the plug-in unit.
- Turn off the plug-in unit.
- Do not remove the plug-in unit with the cover open or removed.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.

Failure to follow these instructions will result in death or serious injury.

1. Turn off all power sources supplying the line and load side connections of the plug-in unit.
2. Turn the plug-in unit to the **OFF (O)** position.
3. Open the unit's door, and detach the base/door assembly from the portion of hook and loop fastener (previously installed) attached to the inside of the plug-in unit.
4. Disconnect the cables from the plug-in unit.
5. Remove the conduit and any conduit fittings.
6. Close the unit's door, and fasten it with the four door latches.
7. Remove the plug-in unit from the frame, and the frame from the busway.
8. Install the base/door assembly (detached in step 3) to the plug-in opening on the busway.

Reverse Feed Application Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be removed and serviced only by qualified electrical personnel.
- Turning the plug-in unit or circuit breaker OFF (O) does not de-energize the cable terminals.
- Turn off power to all power sources supplying the line and load side connections to the plug-in unit before removing the plug-in unit from the busway.
- Turn off the plug-in unit.
- Do not remove the plug-in unit with the cover open or removed.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.

Failure to follow these instructions will result in death or serious injury.

NOTE: For reverse feed applications, the plug-in unit is used as the main breaker.

1. Turn off all power sources supplying the line and load side connections of the plug-in unit.
2. Turn the plug-in unit to the **OFF (O)** position.
3. Open the unit's door, and detach the base/door assembly from the portion of hook and loop fastener (previously installed) attached to the inside of the plug-in unit.
4. Disconnect the cables from the plug-in unit.
5. Remove the conduit and any conduit fittings.
6. Close the unit's door, and fasten it with the four door latches.
7. Remove the plug-in unit from the frame, and the frame from the busway.
8. Install the base/door assembly (detached in step 3) to the plug-in opening on the busway.

Section 8—General Maintenance

Refer to NEMA bulletin BU1.1 for maintenance instructions. Inspect the unit once each year and look for any appreciable accumulation of dust or liquids.

When relocating the plug-in unit, inspect the joint compound on the bolt-on connections for contamination. Replace the joint compound (part number PJC7201) if necessary.

To order accessories and replacement parts, refer to “Accessories and Replacement Parts” on page 47, or contact your local Schneider Electric representative.

The circuit breaker in this device is not field-replaceable. Contact your local Schneider Electric representative if replacement of a circuit breaker is needed. The replacement shall be of the same manufacturer, type designation, short-circuit rating, and ampere rating.

Section 9—Removing and Replacing the Plug-In Unit Cover-Mechanism

All Applications Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be serviced only by qualified electrical personnel.
- Turn off power to all power sources supplying the line and load side connections to the plug-in unit before performing any work on or inside the plug-in unit.
- Do not remove or tamper with any of the interior moving parts or fasteners of the mechanism.
- Do not operate the circuit breaker handle with the cover-mechanism removed.
- Do not operate the plug-in unit handle without having all cover-mechanism screws installed.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.

Failure to follow these instructions will result in death or serious injury.

CAUTION

HANDLE MECHANISM DAMAGE

- Remove only the indicated cover-mechanism screws.
- Handle the cover-mechanism with care.

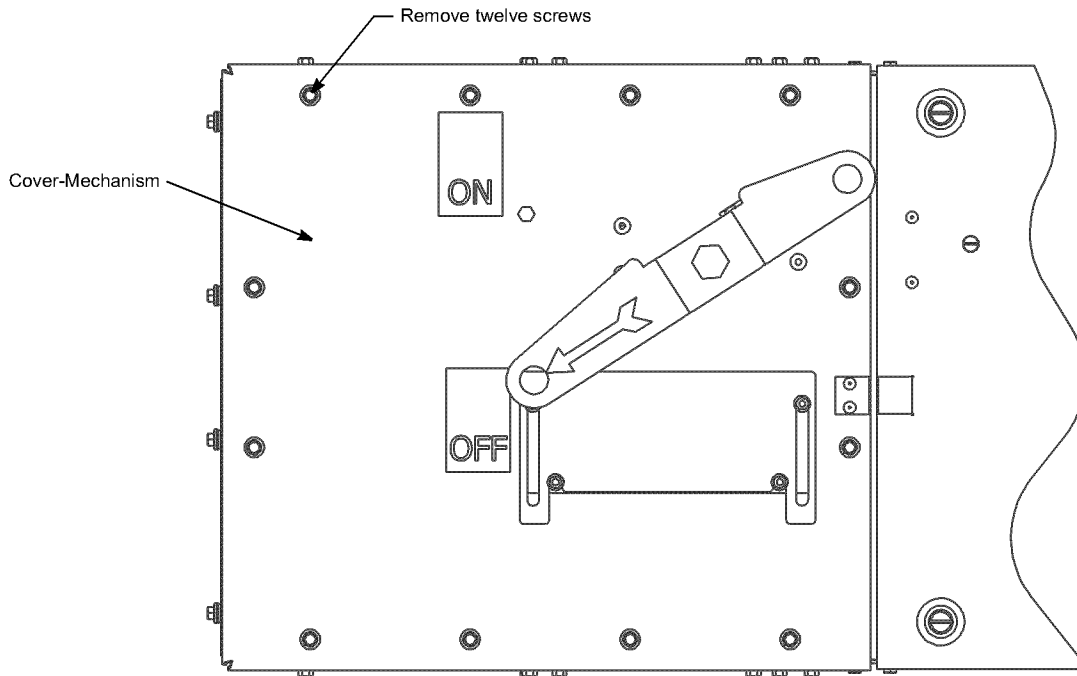
Failure to follow these instructions can result in equipment damage.

Removing the Cover-Mechanism

1. Turn the plug-in unit handle to the **OFF (O)** position.
2. Open the hinged door of the plug-in unit.
3. Use a properly rated voltage sensing device at line and load sides to confirm that the power is **OFF (O)**.

4. While holding the cover in place, remove the twelve screws that hold the cover-mechanism to the enclosure. See Figure 31. Do not discard the hardware.

Figure 31: Removing the Cover-Mechanism

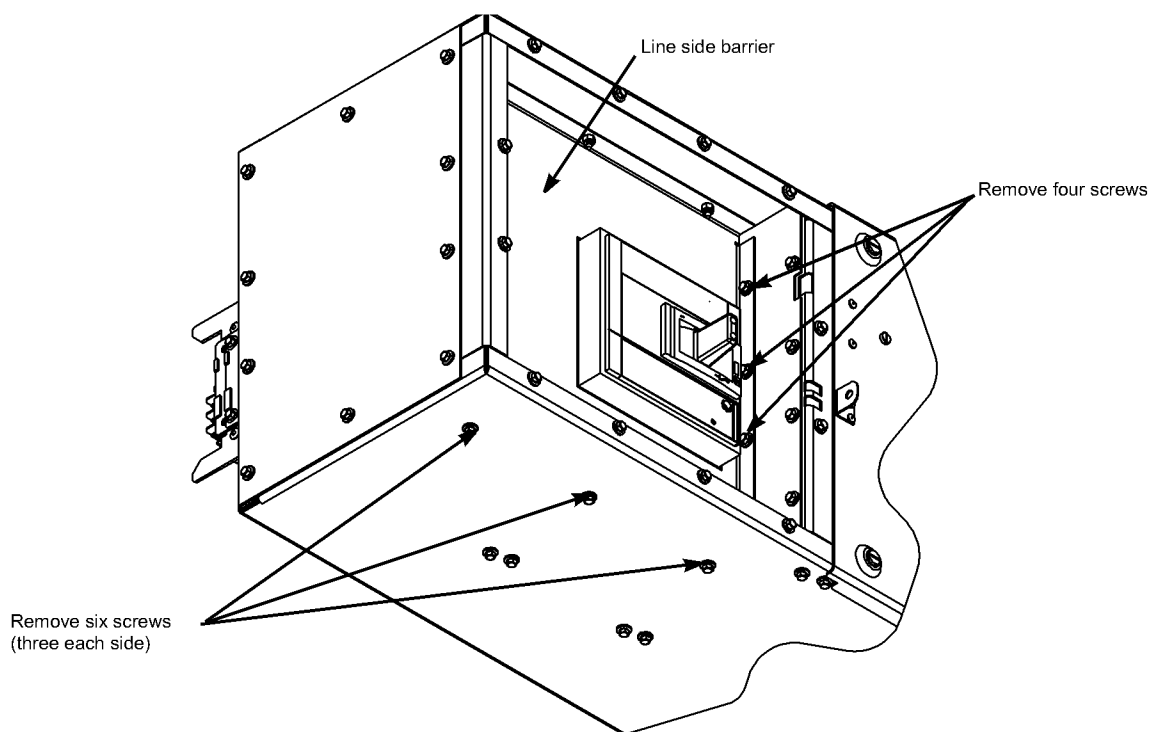


5. Carefully remove the cover-mechanism. The cover must be removed by moving it outward and to the left to disengage the interlock bar from the center bracket. See Figure 33 on page 44.

NOTE: The cover-mechanism weighs 18 lb (8 kg).

6. Remove the six screws that attach the line side transparent barrier to the enclosure. Remove the four screws that link the two transparent barriers together. Do not discard the hardware. See Figure 32 on page 42.

Figure 32: Removing the Line Side Transparent Barrier



Replacing or Adding Accessories to the Circuit Breaker

Follow the instructions described under “Install Accessories” in the circuit breaker instruction bulletin supplied with the plug-in unit.

The circuit breaker in this device is not field-replaceable. Contact your local Schneider Electric representative if replacement of a circuit breaker is needed. The replacement shall be of the same manufacturer, type designation, short-circuit rating, and ampere rating.

Replacing the Cover-Mechanism and Testing the Unit

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be serviced only by qualified electrical personnel.
- Visually inspect the inside of the plug-in unit to verify all components are installed and all tools have been removed from inside the unit.

Failure to follow these instructions will result in death or serious injury.

1. Position the transparent barrier into place. Replace the ten screws that were previously removed.

CAUTION

HANDLE MECHANISM DAMAGE

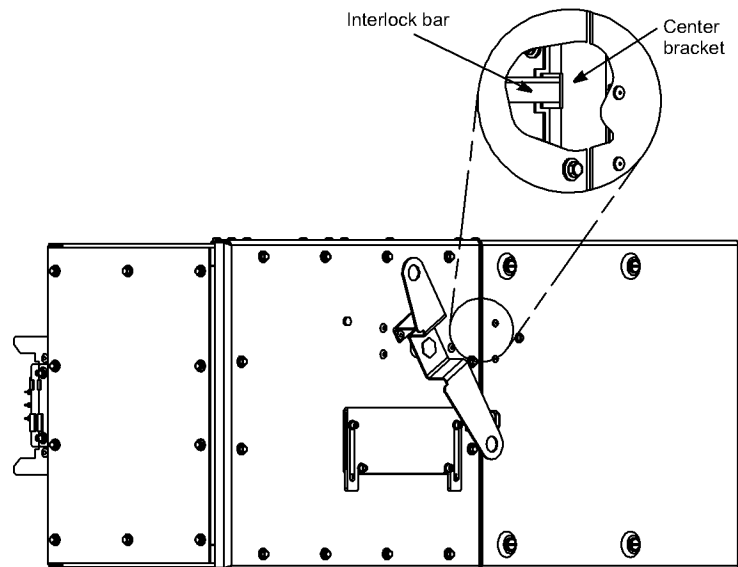
- Handle the cover-mechanism with care.
- Do not cross-thread or over-torque the screws.

Failure to follow these instructions can result in equipment damage.

2. Position the cover-mechanism into place. Be careful to engage the interlock bar into the center bracket. See Figure 33.

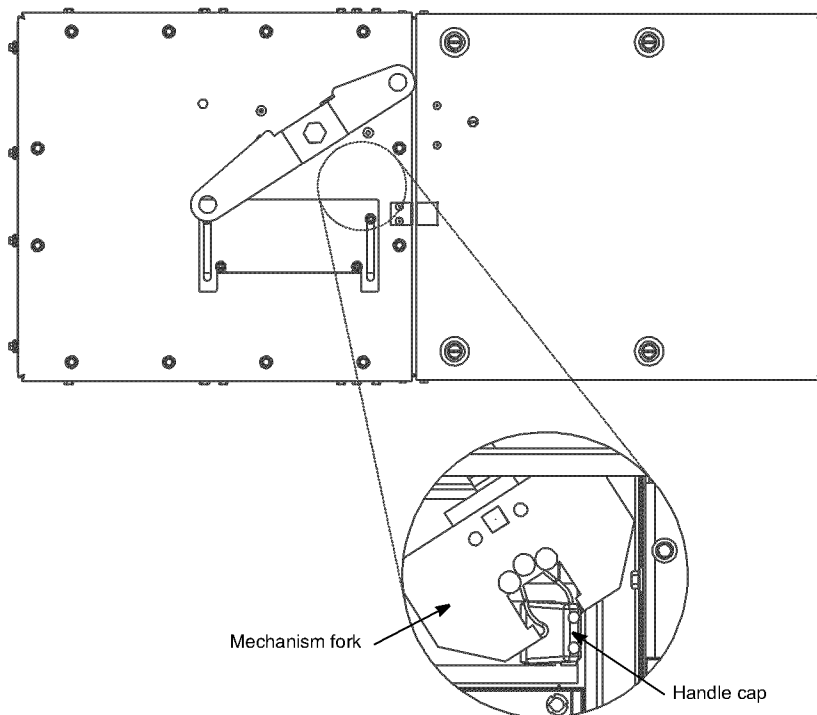
NOTE: The cover-mechanism weighs 18 lb (8 kg).

Figure 33: Replacing the Cover-Mechanism



3. When replacing the cover-mechanism, also ensure that the circuit breaker's handle cap goes in between the mechanism fork, as shown in Figure 34.

Figure 34: Ensuring the Handle Cap Is Between Slider Fingers



4. While holding the cover in place, replace and hand-tighten the twelve screws that were previously removed.
5. Tighten all screws to 55–60 lb-in (6.2–6.8 N•m).
6. Close the door of the plug-in unit.
7. Turn the handle to the **OFF (O)** position. Visually inspect and ensure that the leg with the arrow is pointing to the **OFF (O)** position. Ensure that the handle cannot be turned to another position with ease.
8. Turn the handle to the **ON (I)** position. Visually inspect and ensure that the leg with the arrow is pointing to the **ON (I)** position. Ensure that the handle cannot be turned to another position with ease.

For PTPG/PTPJ units only:

9. Manually trip the circuit breaker. Refer to "Manually Tripping the Circuit Breaker—PTPG/PTPJ Only" on page 34 of the "Operating" section.
10. Visually inspect and ensure that the handle is not pointing to either the **ON (I)** nor **OFF (O)** positions.
11. Use a properly rated voltage sensing device at all load side connections to confirm that the plug-in unit is **OFF (O)**.

Section 10—Accessories and Replacement Parts

Table 4: Accessories and Replacement Parts

Description	Catalog Number
Hook Stick 8 ft. (2.4 m)	515608
Hook Stick 14 ft. (4.3 m)	515614
Joint Compound	PJC7201
Reverse Feed Label Kit	PTKITRFL
Vertical Hanger Label (PTRL/PTRJ/PTRG)	45123-897-07

Section 11—Reverse Feed Label Placement

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

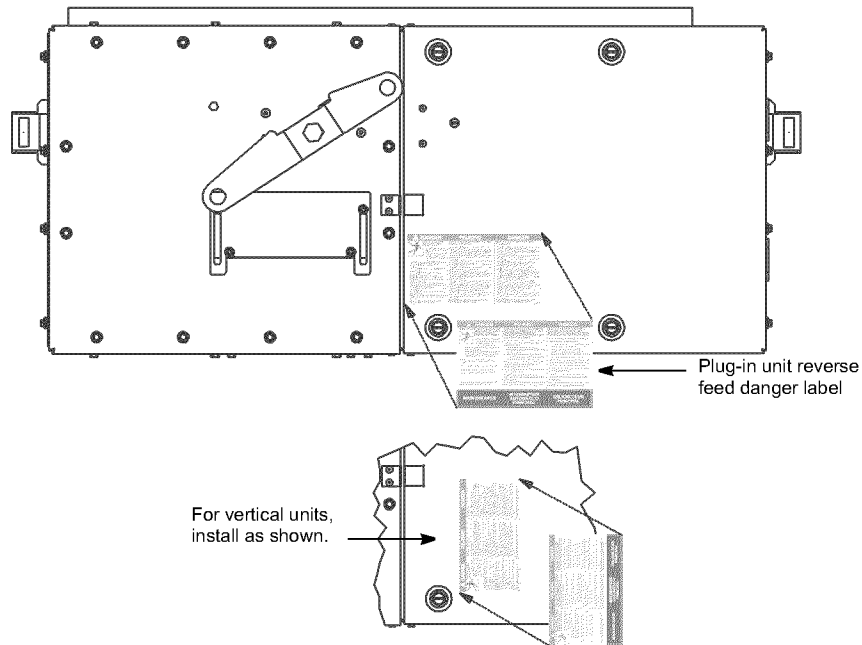
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This plug-in unit must be installed and serviced only by qualified electrical personnel.
- Turning the plug-in unit or circuit breaker OFF (O) does not de-energize the cable terminals.
- Turn off power to all power sources supplying the line and load side connections to the plug-in unit before performing any work on or inside the plug-in unit.
- Turn off the plug-in unit.
- Do not install, operate, or remove plug-in unit with cover open or removed.
- Always use a properly rated voltage sensing device at all line and load side connections to confirm that the power is off.
- Reverse feed label kit # PTKITRFL must be applied to the plug-in unit before installing it onto the busway.

Failure to follow these instructions will result in death or serious injury.

NOTE: For reverse feed applications, the plug-in unit is used as the main breaker.

1. Place the reverse feed safety label (# 45123-997-01) over the standard application safety label (Figure 35).

Figure 35: Reverse Feed Label Placement (Plug-In Unit Door)



2. Place the reverse feed circuit breaker safety label (# 45123-998-01) onto the unit cover as shown in Figure 36.

Figure 36: Reverse Feed Label Placement (Circuit Breaker)

