Allen-Bradley

# PowerFlex 750-Series Control Pod Remote Mounting Kit

PowerFlex 750-Series Control Pod Remote Mounting Kit is used to install the control pod in a cabinet that is separate from a Frame 8 or larger drive.

For additional general information, refer to:

| Title | Publication | Available Online at … |
|---|---|---|
| PowerFlex 750-Series AC Drives Installation Instructions | 750-IN001 | www.rockwellautomation.com/literature |
| PowerFlex 750-Series AC Drives (Frame 8) Hardware Service Manual | 750-TG001 | |
| Wiring and Grounding Guidelines for PWM AC Drives | DRIVES-IN001 | |
| Guarding Against Electrostatic Damage | 8000-4.5.2 | |

## Kit Contents

The Control Pod Remote Mounting Kit (20-750-RPD1-F8) contains the following materials.

| Item | Quantity | Description |
|---|---|---|
| 24V Power Wiring Harness | 1 | 23 m (75 ft) wire harness for internal 24V supply on converter at P14 on the fiber interface board. |
| Inverter Fiber-optic Cable | 2 | 23 m (75 ft) fiber-optic cable connects fiber interface board and the power layer board. |
| Fiber-optic Transceiver | 2 | Transceiver for fiber-optic cable connections to the converter gate board and the fiber interface board. (Needed when the drive is shipped with no POD from the factory.) |
| External Power Supply Connector | 1 | Three position connector for optional user-supplied 24V power connection at P13 on the fiber interface board. |
| Twist-Lock Cable Support | 3 | Supports 24V power wiring harness in the pod. |
| M4 x 12 mm Long Self-Tapping Screw | 4 | Used to mount the control pod to a panel. |
| M4 x 12 mm Long Machine Screw | 3 | Used to mount cable supports. |

## Additional Materials

When the factory installed control pod is being removed from the drive for remote mounting, the user must also obtain the Converter Right Cover (no POD) kit (SK-R1-CCVR2-F8). This kit contains the following materials.

| Item | Quantity | Description |
|---|---|---|
| Cover | 1 | Converter Right Cover for no POD. |
| Bracket | 2 | Brackets used to support left side of cover. |
| M5 x 14 mm Long Machine Screw | 6 | Used to secure the brackets and cover to the converter panel. |

# General Precautions

Read the following precautions before you begin working on the drive.

## Qualified Personnel

**ATTENTION:** Only qualified personnel familiar with adjustable frequency AC drives and associated machinery should plan or implement the installation, start-up and subsequent maintenance of the system. Failure to comply may result in personal injury and/or equipment damage.

## Personal Safety

**ATTENTION:** To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged completely before servicing. Measure the DC bus voltage at the -DC and +DC TESTPOINT sockets on the front of the power module (see Removing Power from the Drive on page 4 for location).

## Product Safety

**ATTENTION:** This drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference Guarding Against Electrostatic Damage, publication 8000-4.5.2 or any other applicable ESD protection handbook.

## Class 1 LED Product

**ATTENTION:** Hazard of permanent eye damage exists when using optical transmission equipment. This product emits intense light and invisible radiation. Do not look into module ports or fiber-optic cable connectors.

# Commonly Used Tools

## Service Tools

**IMPORTANT** Care must be taken to ensure that tools and/or hardware components do not fall into open drive assemblies. Do not energize the drive unless all loose tools and/or hardware components have been removed from the drive assemblies and enclosure.

This list covers the tools needed for kit installation.

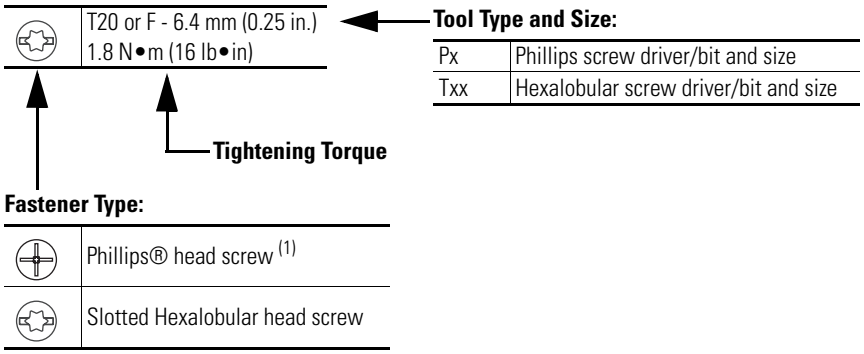
| Tool Description | Details |
|---|---|
| ESD-protected place of work | Working surface, Floor covering, seat and ground connections |
| ESD-protective clothing | Wrist wrap, shoes, overall clothing (coat) |
| Multi meter | Digital multi meter, capable of ac and dc voltage, continuity, resistance, capacitance measurements, and forward diode bias tests. Fluke model 87 III or equivalent. |
| Flat nose screw driver | 5 mm (0.19 in.), 6.4 mm (0.25 in.) |
| Hexalobular screw driver/bit | #20, #25 |
| Phillips® screw driver/bit(1) | #2 |
| Torque wrench | 1...12 N•m (8.8…106 lb•in) |

(1) Phillips® is a registered trademark of the Phillips Screw Company.

# Fastener/Tool/Torque Information

The disassembly illustrations in this publication identify the type of fastener, tool, and tightening torque used for disassembly/assembly of components in the drive:

**Fastener/Tool/Torque Information:**



# Removing Power from the Drive

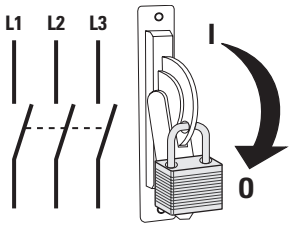
**ATTENTION:** To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged completely before servicing. Measure the DC bus voltage at the -DC and +DC TESTPOINT sockets on the front of the power module (see below for location).

Remove power before making or breaking cable connections. When you remove or insert a cable connector with power applied, an electrical arc may occur. An electrical arc can cause personal injury or property damage by:

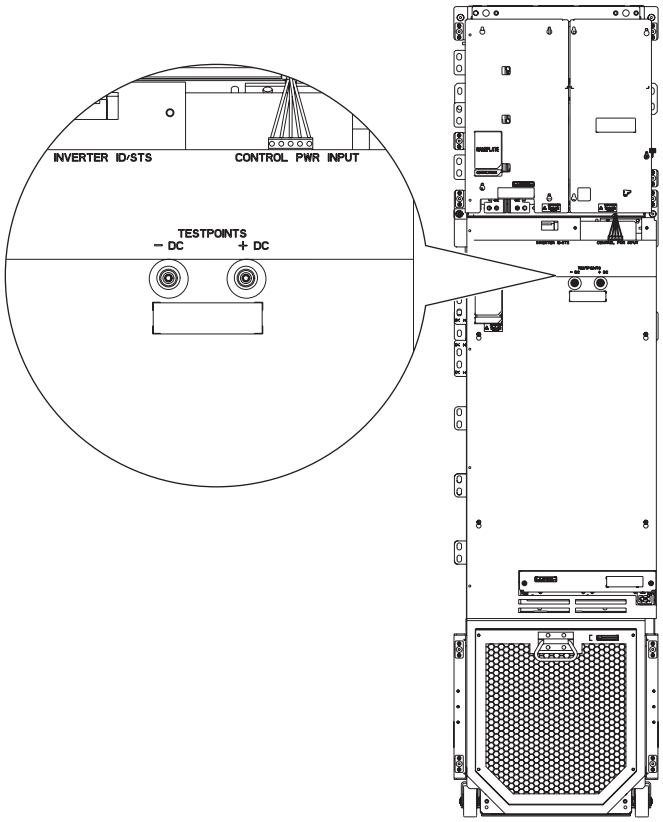
- sending an erroneous signal to your system's field devices, causing unintended machine motion
- causing an explosion in a hazardous environment

Electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance.

1. Turn off and lock out input power. Wait five minutes.



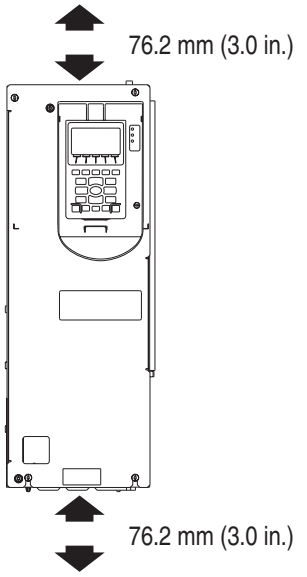

2. Verify that there is no voltage at the drive's input power terminals.
3. Measure the DC bus voltage at the -DC and +DC TESTPOINT sockets on the front of the power module.

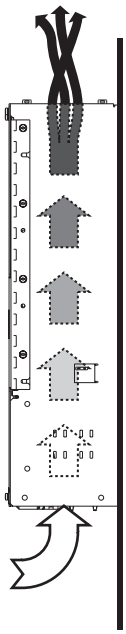


## Minimum Clearances

The control pod must be mounted in a vertical orientation as shown and must make full contact with the mounting surface.

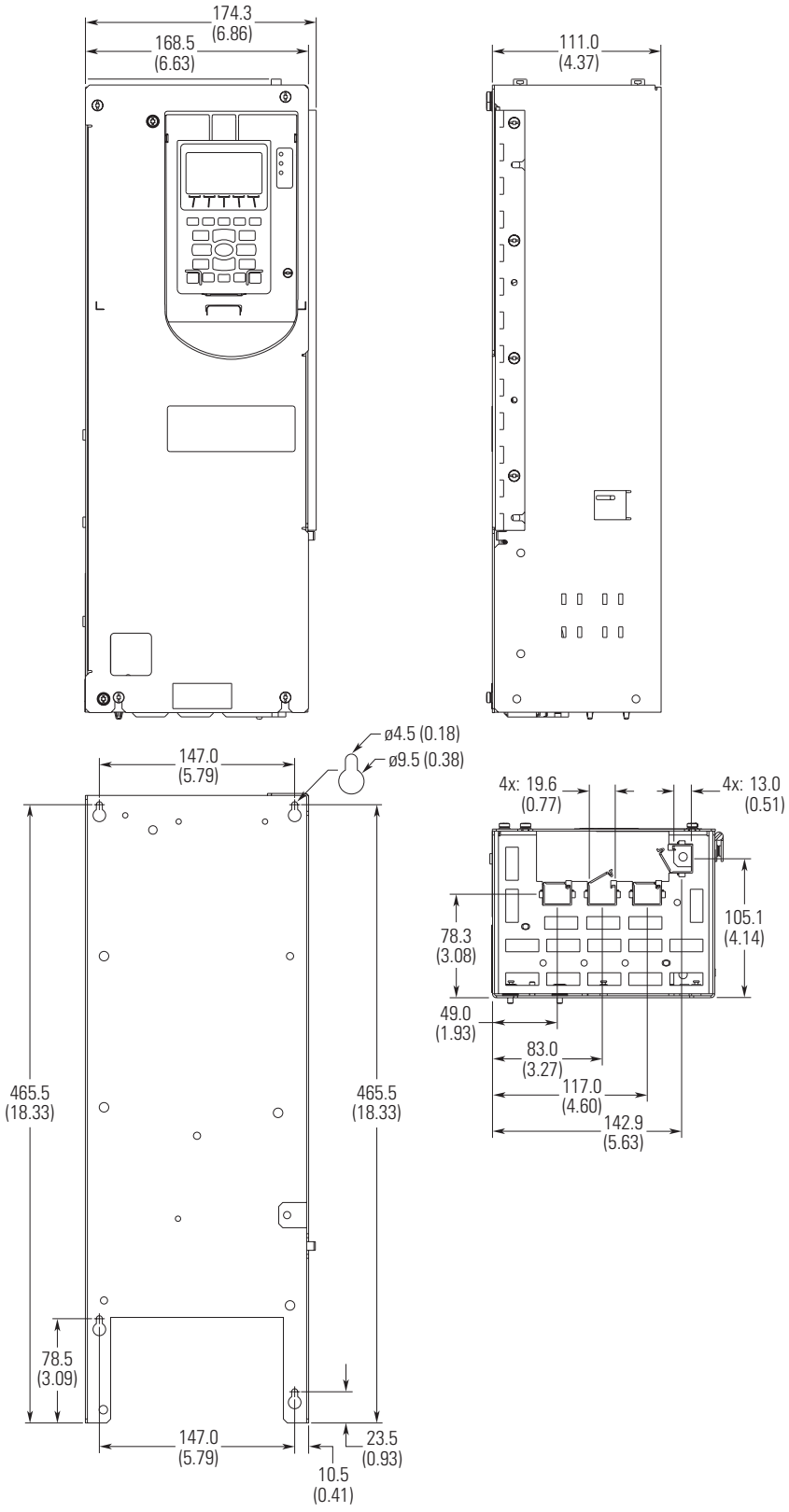
- Do not use standoffs or spacers.
- Inlet air temperature must not exceed 50 °C (122 °F).
- Enclosure is rated IP00, NEMA/UL Open Type.



Airflow through the control pod must not be impeded.

# Approximate Dimensions

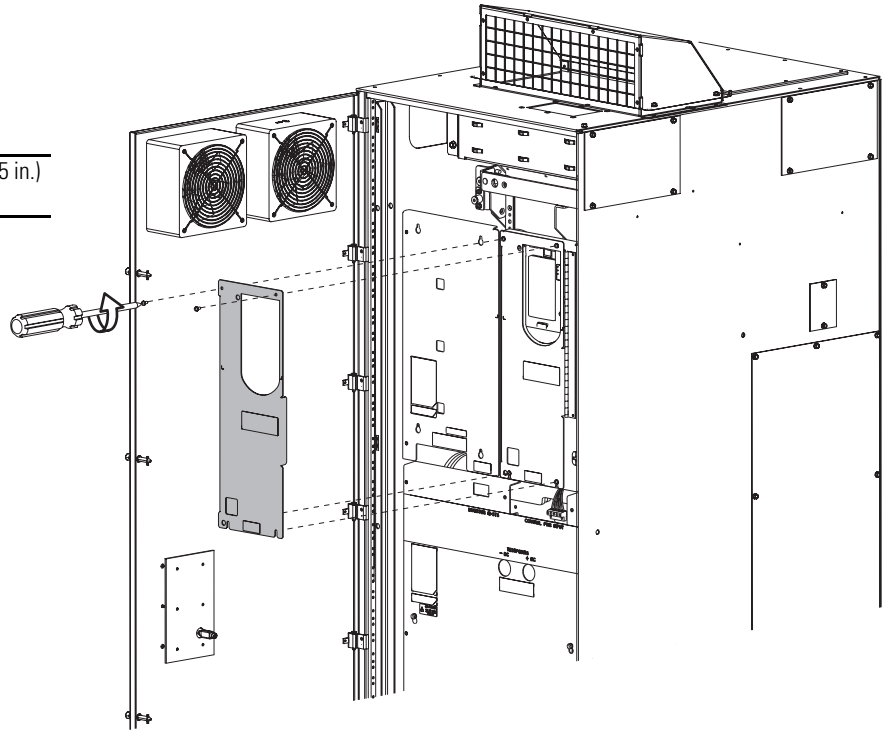



Dimensions are in millimeters and (inches).

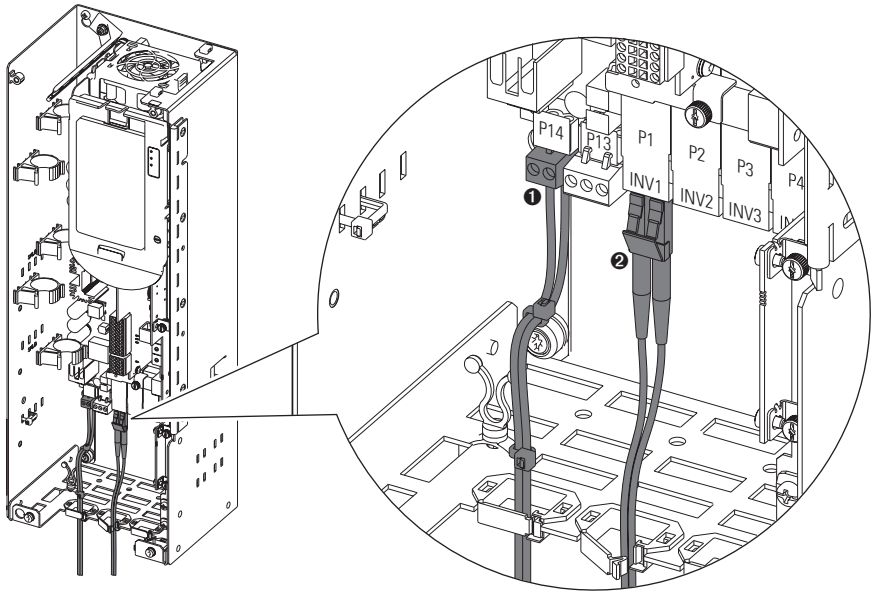
## Remove Pod Assembly From Enclosure

1. Access the drive enclosure.
2. Remove the control pod cover.

| | |
|---|---|
| | T20 or F - 6.4 mm (0.25 in.)<br>1.8 N•m (16 lb•in) |

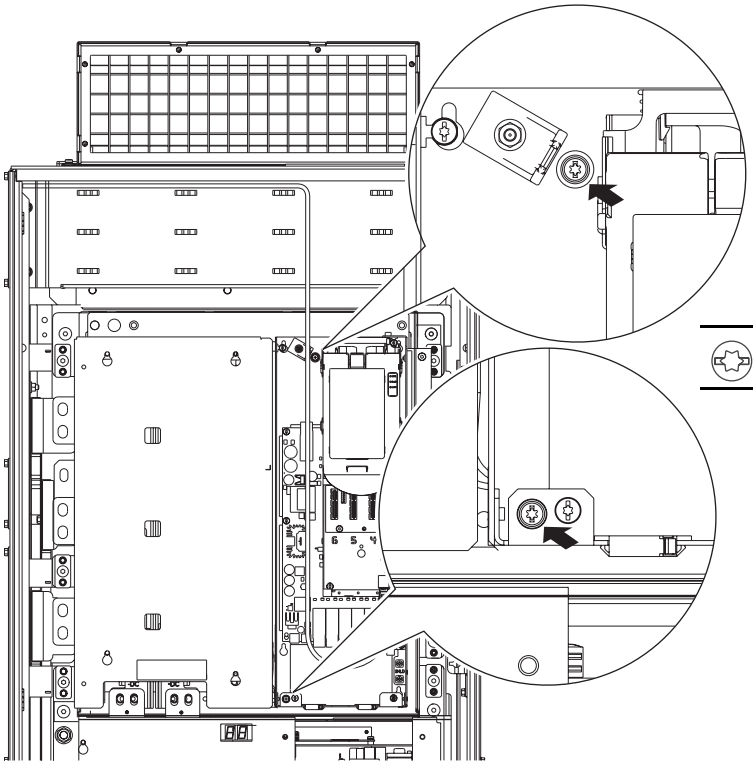


3. Disconnect the factory installed internal 24V power supply cable from P14 located on the fiber interface board.
4. Disconnect the factory installed inverter fiber-optic cable from the P1 (INV1) fiber-optic transceiver located on the fiber interface board.



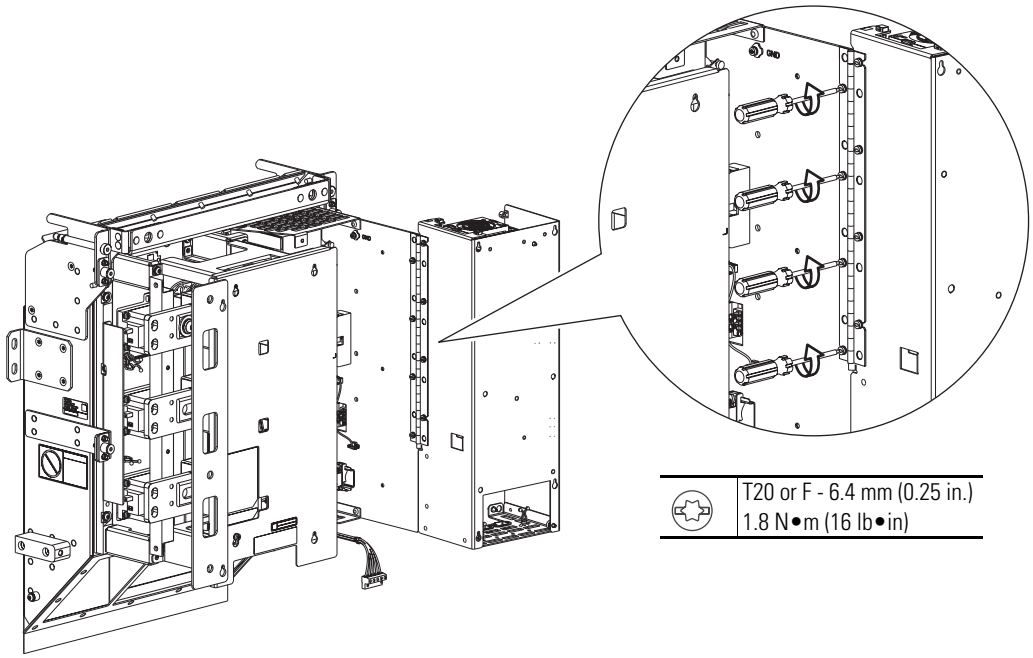

| No. | Name | Description |
|---|---|---|
| ❶ | Internal 24V Power Connection | Two point connector to P14. |
| ❷ | Inverter Fiber-optic Connection | Fiber-optic cable to P1 fiber-optic transceiver INV1. |

5. Loosen the captive screws on the back panel of the control pod until they release from the converter control panel.



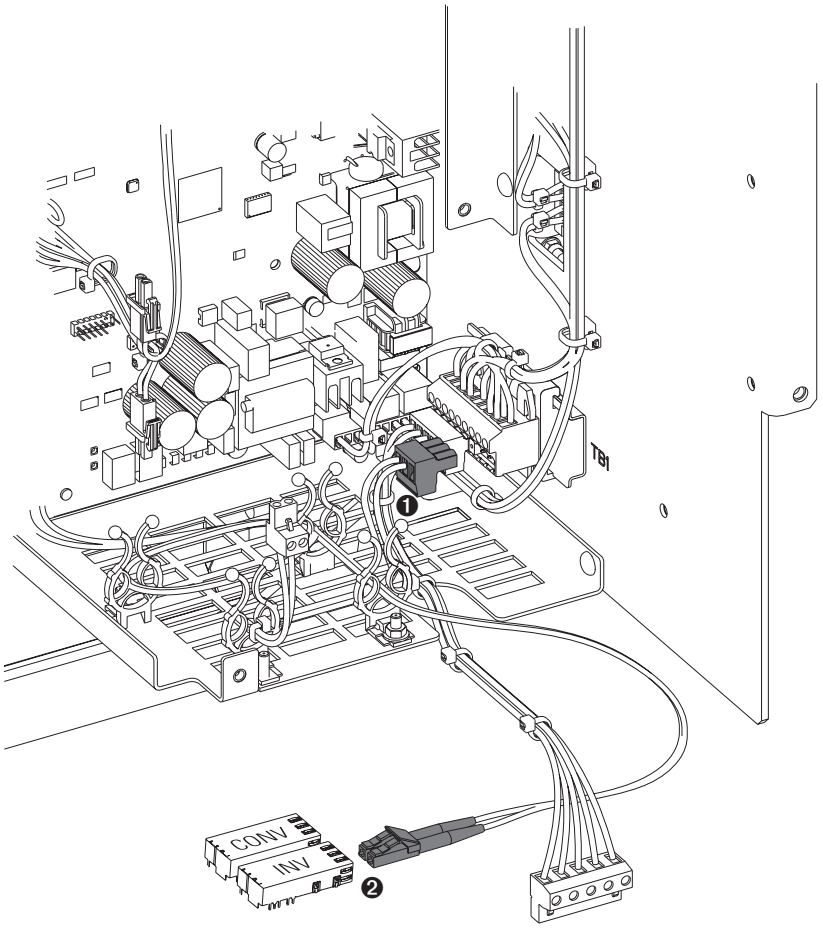
| | |
|---|---|
| | T20 or F - 6.4 mm (0.25 in.)<br>1.8 N•m (16 lb•in) |

6. Rotate the control pod to expose the hinge.
7. Remove the four M4 x 12 mm screws that secure the control pod to the converter control panel right side wall and remove the control pod. If desired, the hinge can be removed from the control pod.



| | |
|---|---|
| | T20 or F - 6.4 mm (0.25 in.)<br>1.8 N•m (16 lb•in) |

8. Disconnect the factory installed internal 24V power supply cable from converter terminal block TB1 mounted on the converter control panel right side wall.
9. Disconnect the factory installed inverter fiber-optic cable from the INV transceiver located on the power layer interface board.

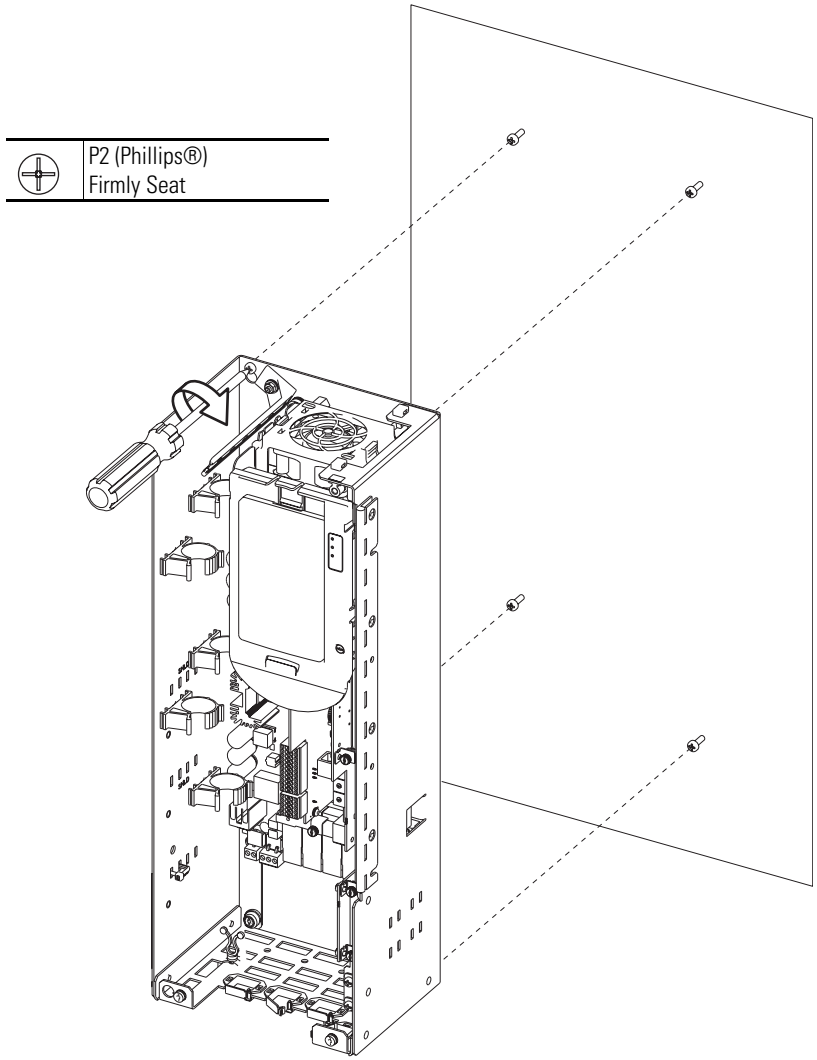



| No. | Name | Description |
|---|---|---|
| ❶ | Internal 24V Power Connection | Three point connector disconnects from TB1 mounted on converter control panel right side wall. |
| ❷ | Inverter Fiber-optic Connection | Fiber-optic cable disconnects from INV fiber-optic transceiver on power layer interface board in card cage. |

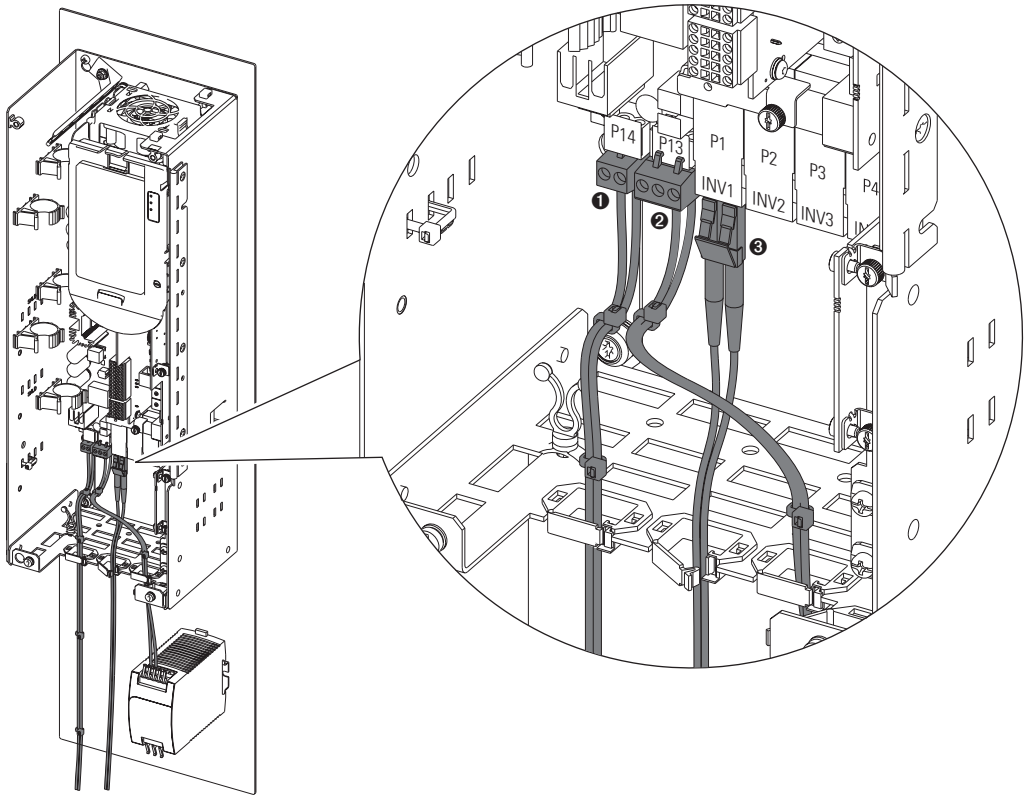
## Mount and Wire the Control Pod

When selecting a remote location for the control pod, note that the total length of each wiring harness provided is 23 m (75 ft).

1. Drill 3.2 mm (0.13 in.) pilot holes in the control pod mounting surface.
2. Mount the control pod using the four M4 x 12 mm self-tapping screws provided.



3. Connect the 23 m (75 ft) internal 24V power wire harness to P14 on the fiber interface board.
4. Connect the 23 m (75 ft) inverter fiber-optic cable to P1 (INV1) on the fiber interface board.




**Fiber Interface Board Connections**

| No. | Name | Description |
|---|---|---|
| ❶ | Internal 24V Power Connection | Two point connector to P14. |
| ❷ | External 24V Power Connection | Optional user-supplied power supply(1) connection to P13. (Three point connector supplied in kit.) |
| ❸ | Inverter Fiber-optic Connection | Fiber-optic cable connection to P1 fiber-optic cage INV1 on fiber interface board. |

(1) Refer to Optional External Power Supply on page 13, for power supply requirements and connection details.

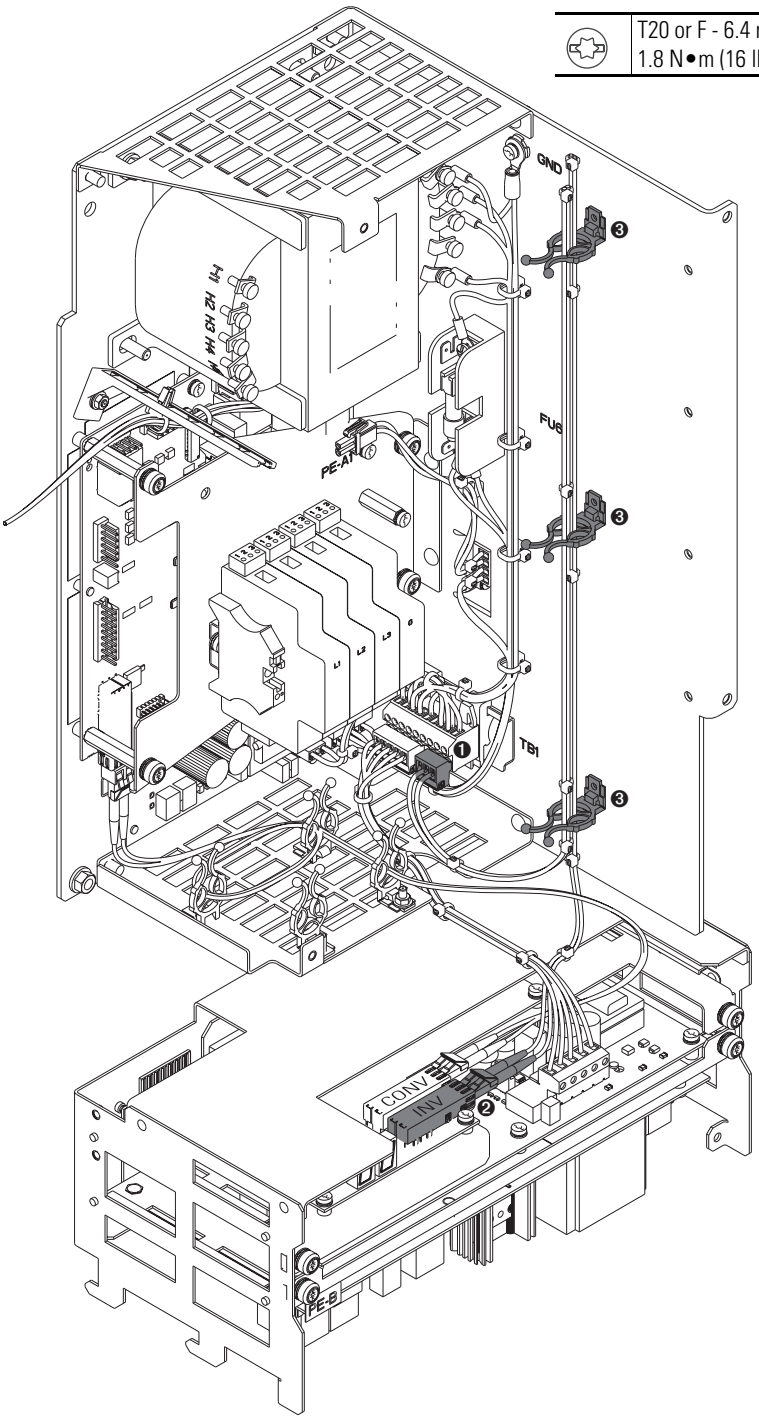
5. Route the 23 m (75 ft) internal 24V power wire harness and inverter fiber-optic cable back to the drive enclosure.

**IMPORTANT** Minimum inside bend radius for fiber-optic cable is 25.4 mm (1 in.). Any bends with a shorter inside radius can permanently damage the fiber-optic cable. Signal attenuation increases with decreased inside bend radii.

6. Install the three Twist-Lock cable supports in the positions shown on page 12 using the M4 x 12 mm long machine screws supplied.

7. Connect the internal 24V power connection to the converter terminal block TB1 mounted on the converter control panel right side wall.
8. Connect the inverter fiber-optic cable to the INV fiber-optic transceiver on the inverter power layer interface board.

| | |
|---|---|
| | T20 or F - 6.4 mm (0.25 in.)<br>1.8 N•m (16 lb•in) |

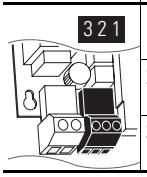



| No. | Name | Description |
|---|---|---|
| ❶ | Internal 24V Power Connection | Three point connector to converter terminal block TB1 power supply connection. |
| ❷ | Inverter Fiber-optic Connection | Fiber-optic cable connector to INV fiber-optic cage on power layer interface board in card cage. |
| ❸ | Cable Supports | Twist-Lock cable supports supplied. |

## Optional External Power Supply

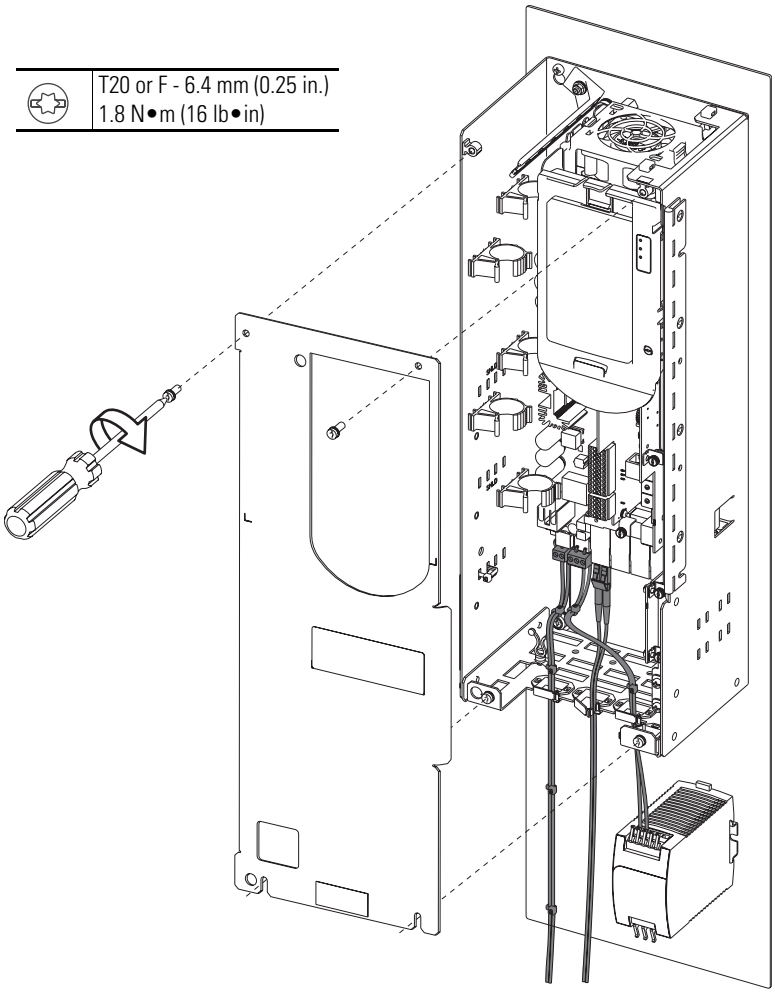
Connect an optional external 24V power supply to P13 using the three position connector supplied.

**External Power Supply Connections**

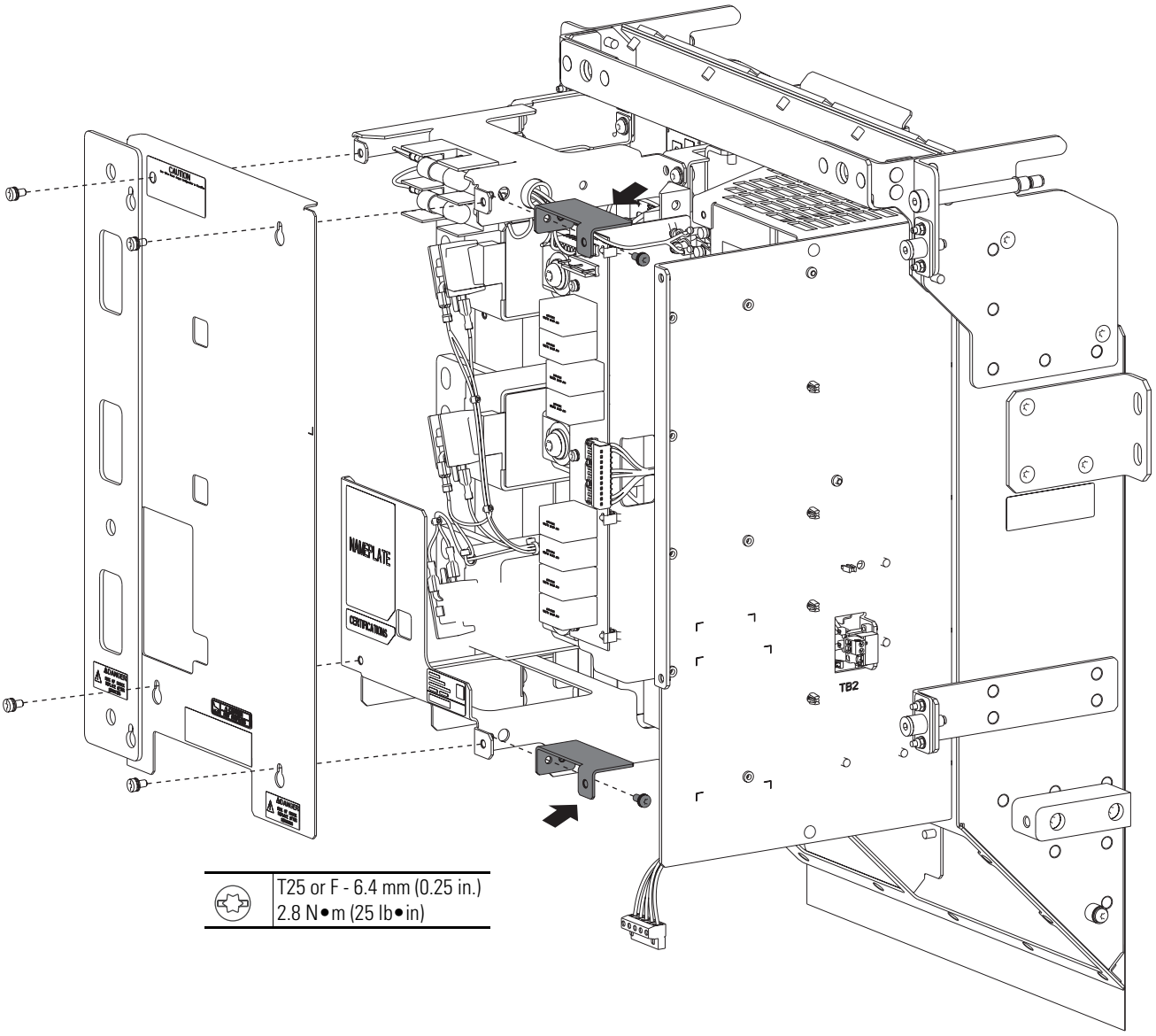
| Power Block | Terminal | Name | Description |
|---|---|---|---|
|  | 1 | +24 Volt Auxiliary Power | Connections for customer supplied power supply: 24V DC ±10%, 5 A, PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) |
| | 2 | Auxiliary Power Common | |
| | 3 | Shield | Terminating point for wire shields. |

## Install Covers

1. Replace the control pod cover.

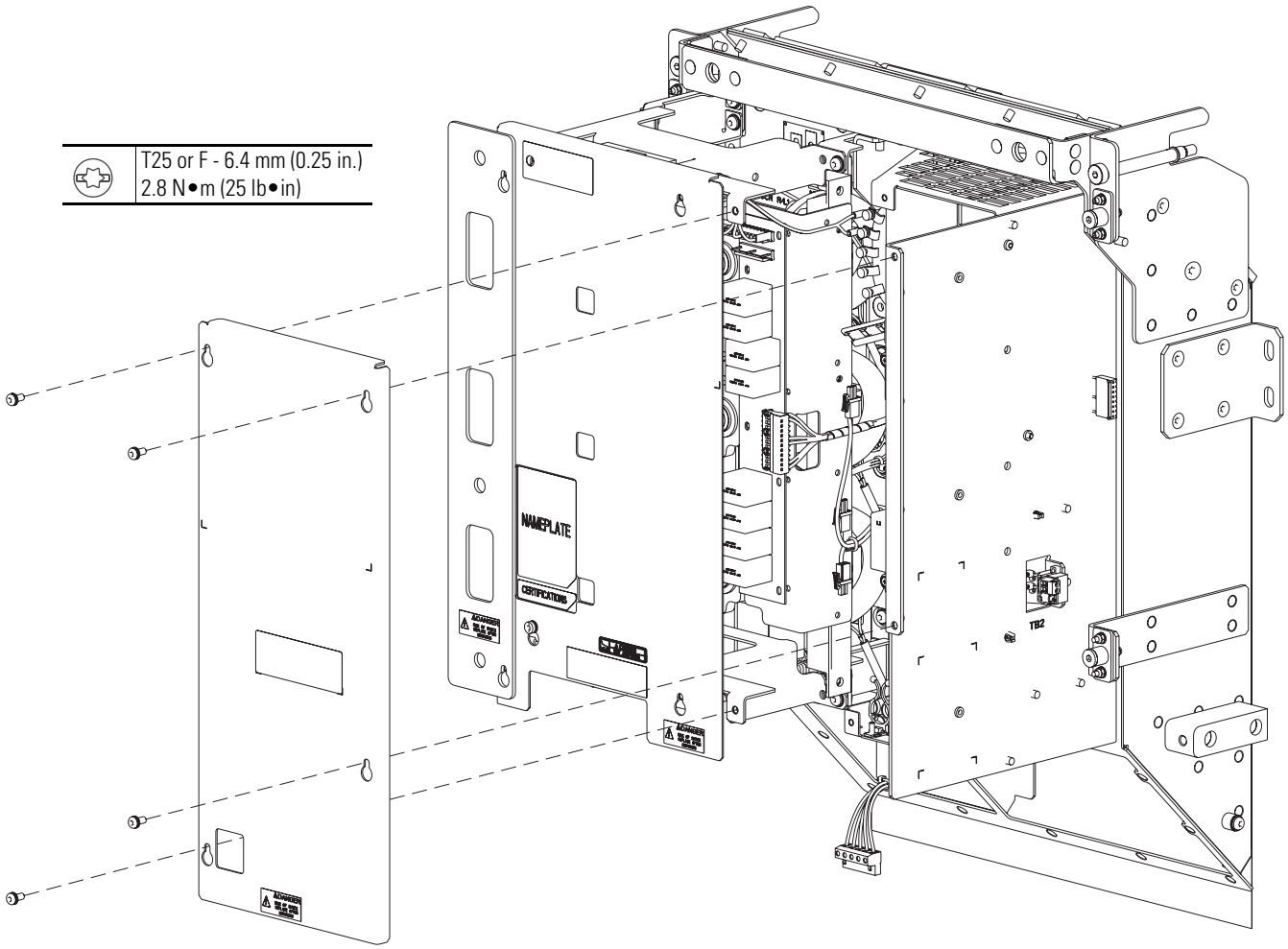


2. If the factory installed control pod was removed from the drive, install the support brackets provided in Converter Right Cover (no POD) kit (SK-R1-CCVR2-F8).




3. Install the Converter Left Cover if removed.

4. Install the Converter Right Cover (No POD) using the M5 x 14 mm long machine screws supplied.



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