KIT HERMETIC FEEDTHROUGH - HIGH POWER

100312, 100312-1.

Installation and servicing of Danfoss Turbocor® compressors by qualified and product trained personnel only. Follow these instructions and sound refrigeration/electrical/servicing practices relating to installation, commissioning, maintenance and service.

Consult the appropriate Danfoss Turbocor Compressors Inc. (DTC) Service Manual on turbocor.danfoss.com for detailed service instructions.	**Never power compressor without covers in place and secured.** **Removing the mains input cover will expose you to a voltage hazard of up to 575V. Ensure the mains input power is off and locked out before removing cover.** **Before removing top cover, wait at least 20 minutes after isolating AC power to allow the high voltage capacitors to discharge.**	Always wear appropriately rated safety equipment when working around equipment and/or components energized with high voltage. **This equipment contains hazardous voltages that can cause serious injury or death.**	**Recover all refrigerant from compressor in accordance with local codes and ensure pressure is fully vented before the removal of refrigerant containing components.**

1 - Introduction:

HERMETIC FEEDTHROUGH - HIGH POWER Removal and Installation Instructions.

2 - Removing Refrigerant from Compressor:

- Recover refrigerant from compressor in accordance with local codes and practices.

3 - Removal Instructions:

1. Isolate compressor power as described in Section "Electrical Isolation of the Compressor" of the Service Manual (M-SV-001).
2. Release the four (4) captive screws that secure the Mains Input Cover and remove the cover.
3. Using an appropriately rated volt meter, confirm that the AC voltage is isolated.
4. Wait at least 20 minutes for the DC bus capacitors to discharge.

   DANGER: Do NOT touch any components when removing the top cover. This is particularly true for compressors with CE covers because they are coated on the outside for the express purpose of being conductive

5. Release the nine (9) captive screws that secure the Top Cover and remove the cover, taking particular care not to touch ANY components underneath.
6. Using an appropriately rated volt meter, check the DC bus bars for voltage level. If the voltage is above 5VDC, wait five (5) minutes and recheck until 5VDC or below is achieved.
7. Disconnect 3 phase mains input wiring.

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8. For F Series and later compressors, remove the Soft Start Temperature Harness. Refer to Figure 1 (Soft Start J9 Connector).

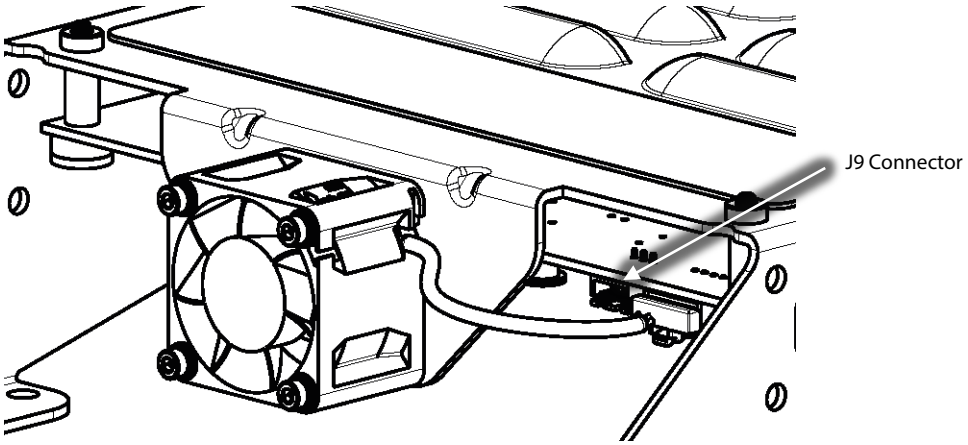

Figure 1 – Soft Start J9 Connector

9. Remove the M5x15 fasteners that secure the Soft Start mounting bracket to the compressor. Refer to Figure 2 (Soft Start Mounting Screws).

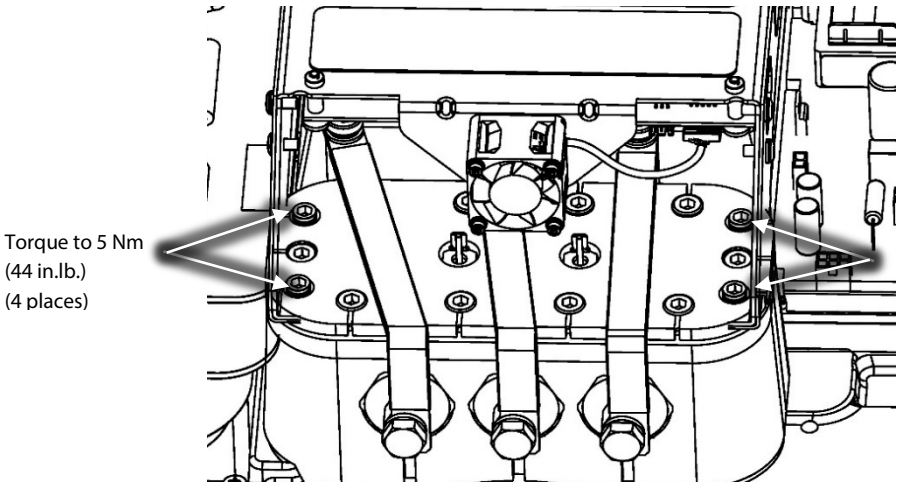

Figure 2 – Soft Start Mounting Screws

10. Lift the Soft Start and turn it over, placing it board-side up on the AC Bus Bars. Refer to Figure 3 (Soft Start Lift).

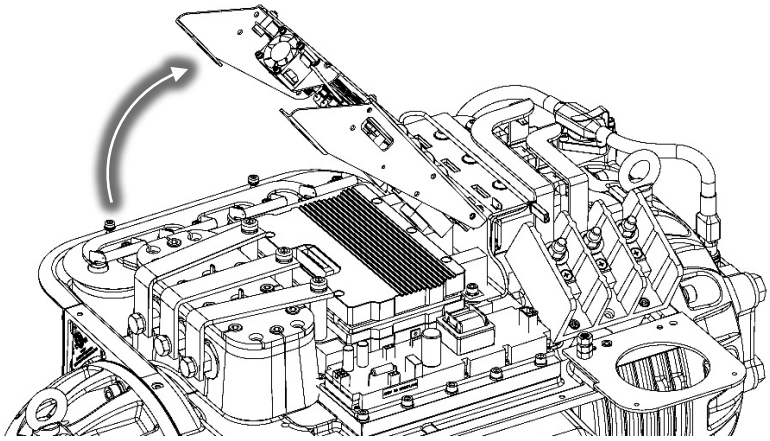

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Figure 3 – Soft Start Lift

11. Check the assembly order of the bolt(s), washer(s), lock-washer(s) and nut(s) before disassembly.
12. Remove the cable tie from the ground cable using cutters. Remove the ground connector using a 13mm wrench.
13. Remove the three (3) M10x16 screws and three (3) M8x70 screws to release the three (3) bus assembly connections between the IGBT assembly and the high-power feed through. Refer to Figure 4 (Motor Bus Bar Removal).
14. Use pliers to disconnect the two (2) connectors from thermistor sensor feedthrough. Refer to Figure 4 (Motor Bus Bar Removal).

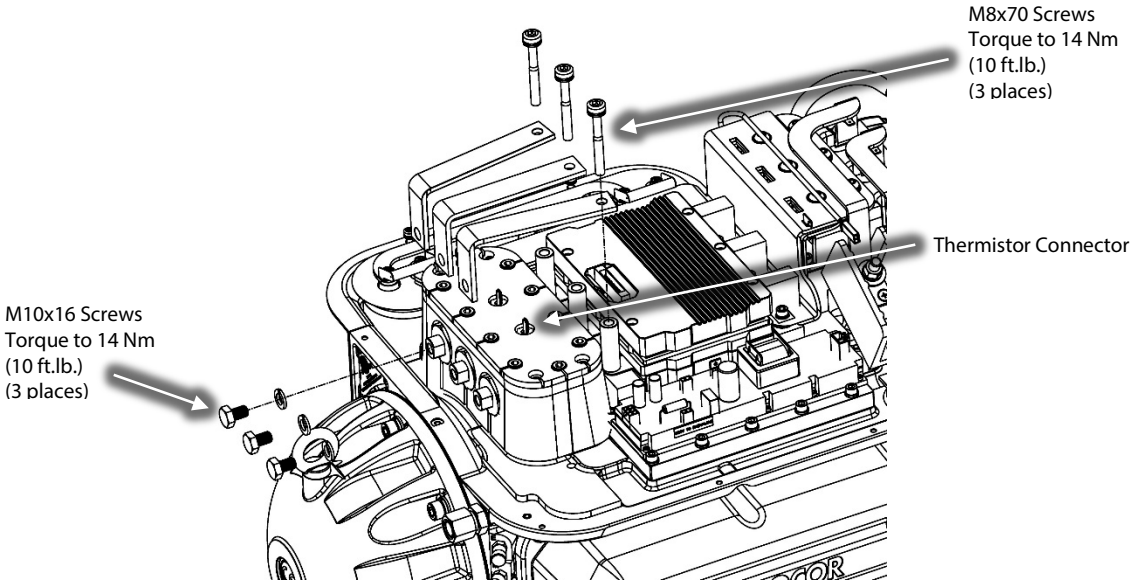

Figure 4 – Motor Bus Bar Removal

15. Remove the insulation from the Cover Plate. Refer to Figure 5 (Insulation Removal).

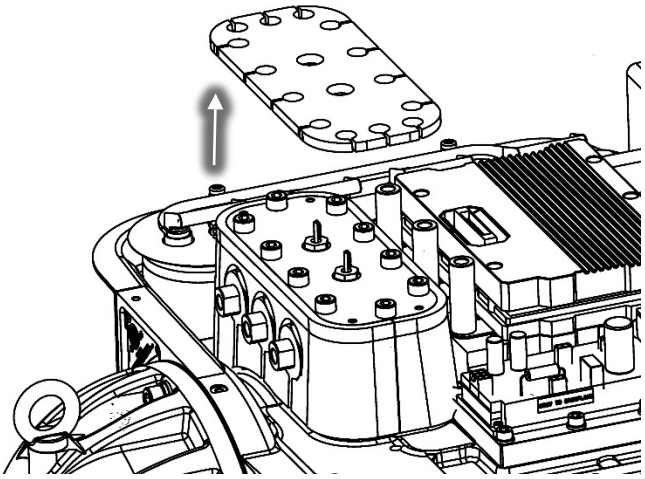

Figure 5 – Insulation Removal

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16. Remove the 10 screws which secure the Cover Plate to the Main housing. Refer to Figure 6 (Cover Plate Removal).

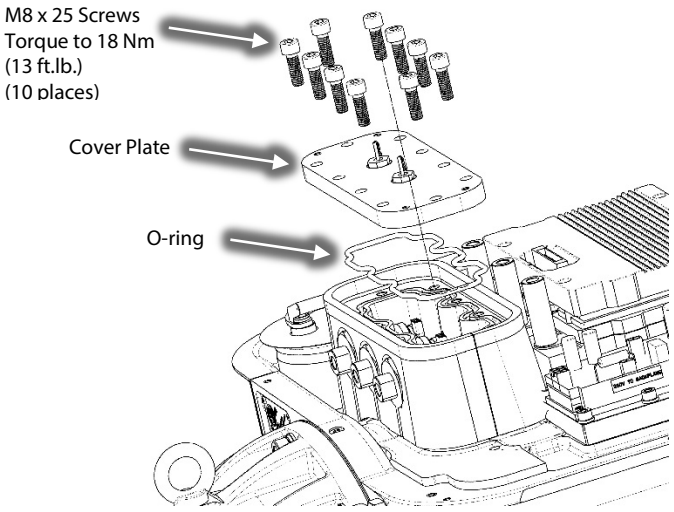

Figure 6 – Cover Plate Removal

17. Lift the Cover Plate and gently unplug the lower thermistor connectors. Refer to Figure 7 (Thermistor Wire Removal).

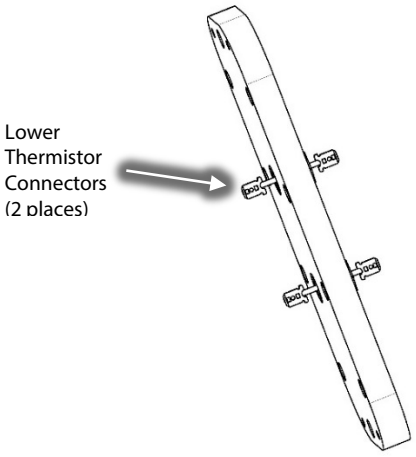

Figure 7 – Thermistor Wire Removal

18. Remove and discard the O-ring.

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19. Remove the three (3) M10x16 screws and ring terminal connections from the feedthrough in order to be able to release feedthrough assembly. Refer to Figure 8 (High-Power Feedthrough Removal).
20. Remove the three (3) high-power feedthroughs using a 36mm wrench. Refer to Figure 8 (High-Power Feedthrough Removal).
21. Remove the three (3) high-power feedthrough O-rings from the Main housing if they did not come out with the old feedthroughs. Refer to Figure 8 (High-Power Feedthrough Removal).

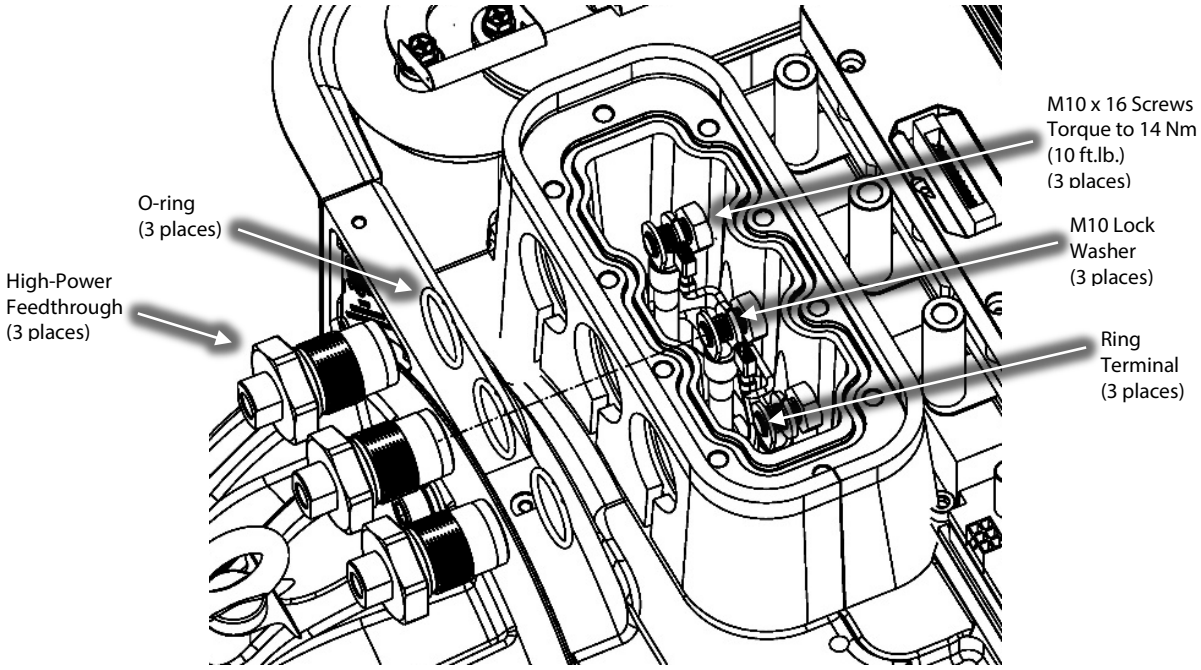

Figure 8 – High-Power Feedthrough Removal

22. Inspect the sealing area for any residue or debris and clean the threads with a lint-free cloth if needed.

4 - O-ring Installation Information:

It is important to replace any used/removed O-rings with new ones. It is far more desirable to carefully inspect the new O-rings prior to installation and to take care of them during the installation rather than needing to repeatedly overhaul components with faulty seals.

- Remove each O-ring to be installed from its package and inspect for defects such as blemishes, abrasions, cuts, or punctures
- Slight stretching of the O-ring when it is rolled inside out will help to reveal some defects not otherwise visible
- After inspection and prior to installation, lubricate the O-ring with a light coat of Super-O-Lube
- Avoid rolling or twisting the O-ring when maneuvering it into place
- Keep the position of the O-ring mold line constant
- Pre-shaped O-Rings which are coated by white powder should be cleaned up using O-lube and a soft rag

5 - Installation Instructions:

1. Clean the feedthrough mating surface with a lint-free cloth. Inspect the sealing area for any damage.
2. Verify that the old high-power feedthrough O-rings have been removed.
3. Lubricate and install the new O-rings onto the new high-power feedthroughs.
4. Finger-tighten the new High-power feedthroughs into the Main housing and then torque to specification.
5. Secure the ring terminals to the high-power feedthroughs using the M10 X 16 screws from the inside.

6. Once the screws are finger tight, torque them to specification.

   NOTE: Hold the high-power feedthrough using a 36mm wrench while applying torque to the M10 screws to prevent loosening or over torqueing the feedthrough assembly.

7. Clean the Main housing mating surface with a lint-free cloth. Inspect the sealing area for any damage.
8. Lubricate and install the preformed O-ring into the groove located in the Main housing.
9. Reinstall the wires on the lower thermistor terminals while holding the Cover Plate.

   WARNING: Care must be taken while plugging in the thermistor sensor connectors. Ensure that the Cover Plate and/or pliers do not damage the mounted O-ring in the housing. The O-ring must be replaced if any damage occurs.

10. Lower the Cover Plate onto the Main housing.
11. Using the 10 M8x25 screws, install the Cover Plate. Finger-tighten and then, according to Figure 9 (Cover Plate Torque Sequence), tighten in a crisscross pattern in two (2) stages.
    - Stage 1: Tighten to 10 Nm (7 ft.lb.)
    - Stage 2: Tighten to a final torque of 18 Nm (13 ft.lb.)

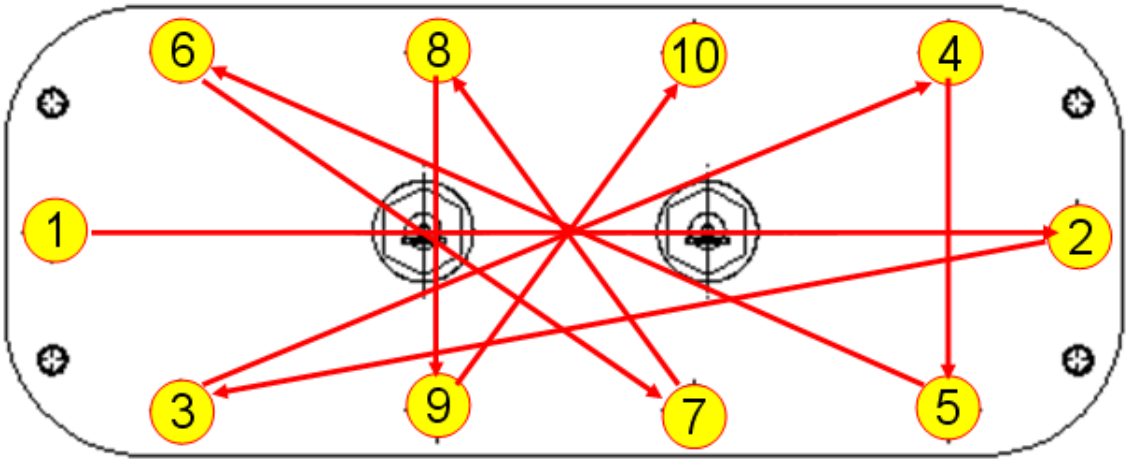

Figure 9 – Cover Plate Torque Sequence

12. Perform a leak test to ensure that the parts are assembled and sealed perfectly.
13. Reverse the remaining of the removal procedure and start the compressor.
14. Ensure that no residue remains on the contact surfaces of top cover and casting sides.
15. Place the top cover and secure it with the nine (9) M5x15 screws according to the following sequence. Follow the sequence twice. The first time, only fasten screws half way down to allow for adjustments. Torque to 13 in.lb. on the second pass. Refer to Figure 10 (Top Cover Torque Sequence).

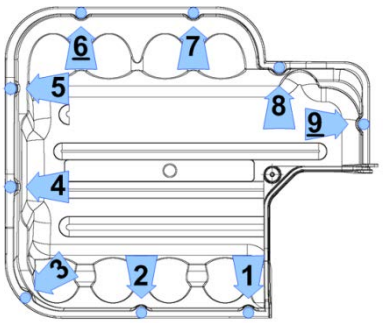

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Figure 10 – Top Cover Torque Sequence

16. Ensure that no residue remains on the contact surfaces of the mains input cover and casting sides.
17. Place the mains input cover and secure it with the four (4) M5x15 screws. Tighten according to Figure 11 (Mains Input Cover Torque Sequence).

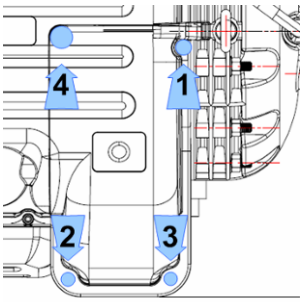
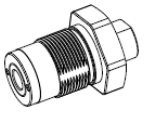
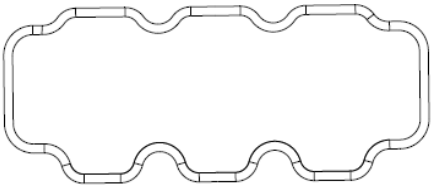


Figure 11 – Mains Input Cover Torque Sequence

18. Follow the sequence twice. The first time, only fasten screws to half way down to allow for adjustment. Torque to 13 in.lb. on the second pass. Fasten the # 4 screw only once and use caution as to not overtighten this screw.

Torque Values	
Component	**Torque Value**
Soft Start Mounting Screws (M5x15)	5 Nm (44 in.lb.)
Motor Bus Bar to Motor (M10x16)	14 Nm (10 ft.lb.)
Motor Bus Bar to Inverter (M8x70)	14 Nm (10 ft.lb.)
Cover Plate	18 Nm (13 ft.lb.)
Internal High-Power Feedthrough Screws (M10x16)	14 Nm (10 ft.lb.)
Top and Main Input Cover Screws (M5x15)	1.5 Nm (13 in.lb.)

6 - Kit Contents

QTY	Part(s) Description	Picture(s)
3	FEEDTHROUGH - HIGH POWER- ASSEMBLY	
1	O-RING (COVER PLATE)	
3	O-RING	
6	BOLT M10x16 HEX HEAD CAP	
6	WASHER, M10, SPLIT LOCK	

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