KIT INVERTER ASSEMBLY FOR TT300

100043-3, 6, 12, and 14

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 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

Inverter Assembly Removal and installation.

2 - Removing Refrigerant from Compressor:

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

3 - INVERTER ASSEMBLY Removal Instructions:

- NOTE: Refer to the current Service Manual for more details in removal and installation.

1. Isolate compressor power and lock out in accordance with local codes and practices. Remove topside covers.
2. Remove the cable tie securing the ground cable to the AC/DC cable.
3. Disconnect 3 phase mains input wiring.
4. Disconnect the Soft Start ground wire by removing the top nut and mains input ground wire from the ground post on the compressor housing at 3 phase connection point. See figure (1).

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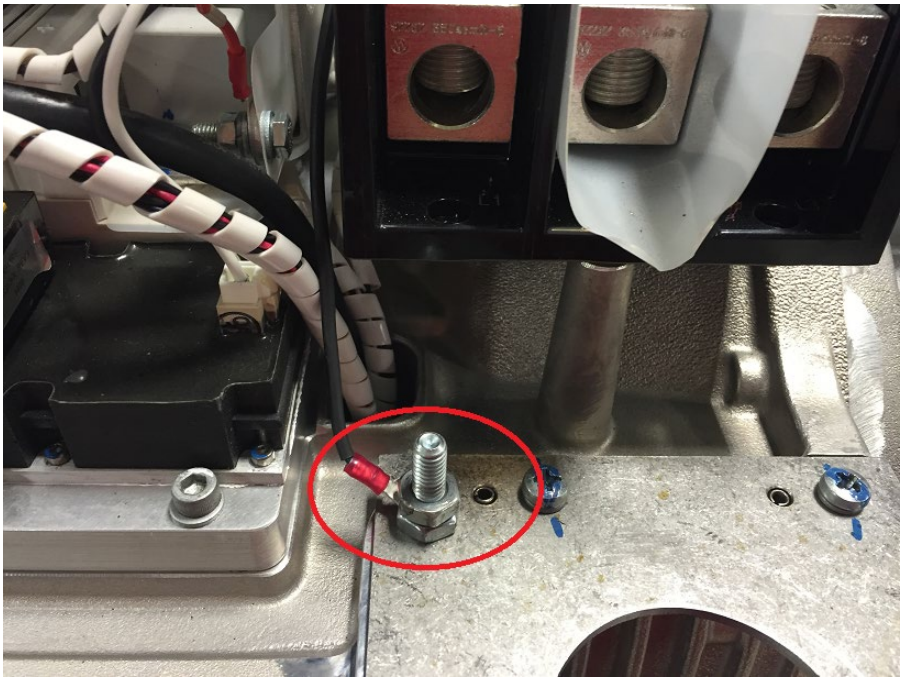

Figure 1

5. Remove the fasteners that secure the Soft Start mounting bracket to the compressor. See figure (2).

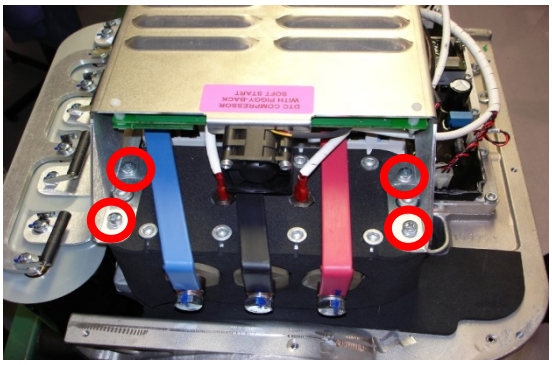

Figure 2

6. Lift the Soft Start and turn it over, placing it board-side up on the AC bus bars.
7. Unplug the cable connectors from the Soft Start board.
8. Unplug the SCR Gate cable harness from the SCR's noting its orientation.
9. Place the Soft Start board aside.
10. Remove the three fasteners that connect the Fast Acting Fuses to the SCR's and the 3-Phase input wires to the Soft Start AC/DC cable harness. See figure (3).
11. Remove the two fasteners from each of the three Mains Input blocks, remove the fuse block assemblies. See figure (3).
12. Remove the insulating Mylar from the middle terminal block. See figure (3).

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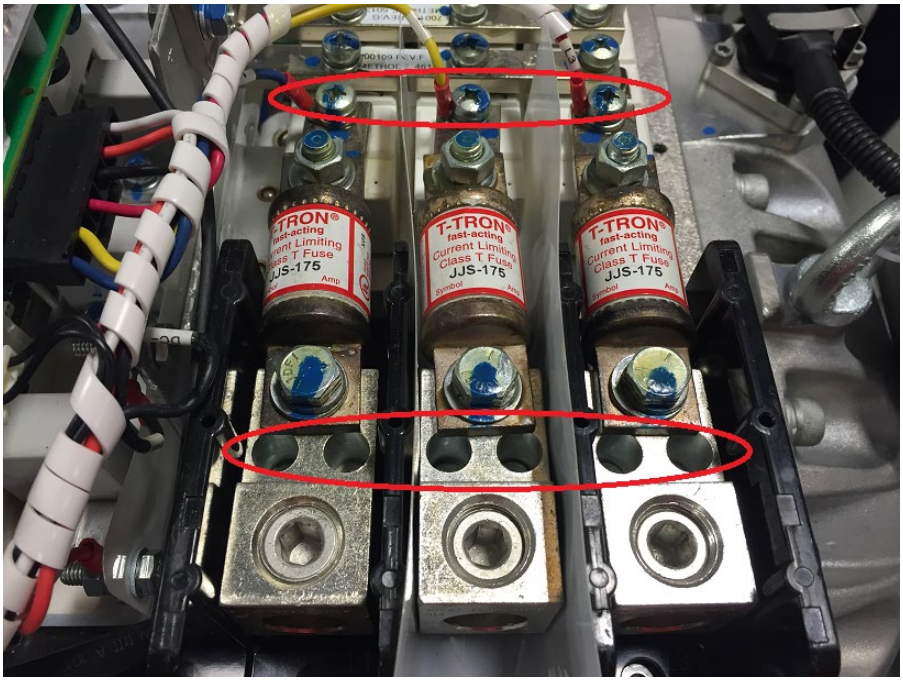

Figure 3

13. Remove the DC bus bars from the SCR's.
14. Disconnect the snubber capacitors from the inverter noting the leg orientation as one leg is longer than the other.
15. Remove the nylon nuts at the base of the DC capacitor assembly, under the main compressor housing.
16. Disconnect the DC+ and DC- of the Soft Start harness from the DC bus assembly noting the orientation. See figure (4).

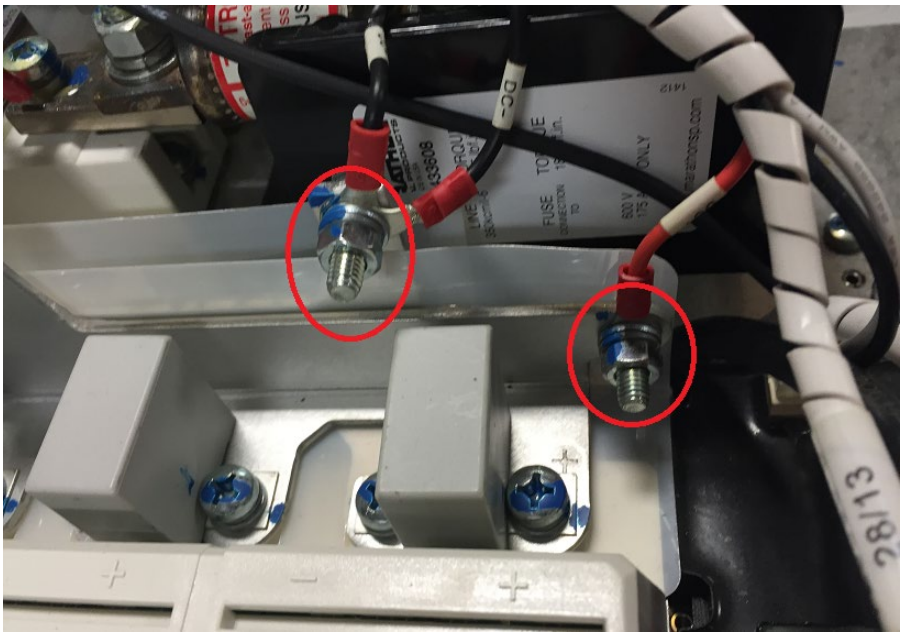

Figure 4

17. Lift the DC bus bars and capacitors out as an assembly.
18. Remove the insulating Mylar from the Inverter.
19. Remove the motor bus bars from the Inverter and the high power feed throughs of the motor.
20. Remove the Inverter cable harness from the top of the Inverter.
21. Disconnect all wiring connections from the HV DC-DC.

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22. Remove the HV DC-DC from the Inverter cooling manifold if it is to be reused.
23. Disconnect the SCR temperature sensor, discharge P/T sensor, IGV motor connection, and the suction P/T sensor.
24. Remove the fasteners that secure the Inverter to the compressor main housing.
25. Carefully, remove the Inverter and discard the O-ring underneath. (Note that the SCR cooling manifold will be attached to the Inverter cooling plate and will come with the Inverter assembly.)
26. Carefully remove the SCR cooling manifold from the Inverter cooling manifold by removing the fasteners located under the foam insulation. See figure (5). Retain for use with the new Inverter assembly.

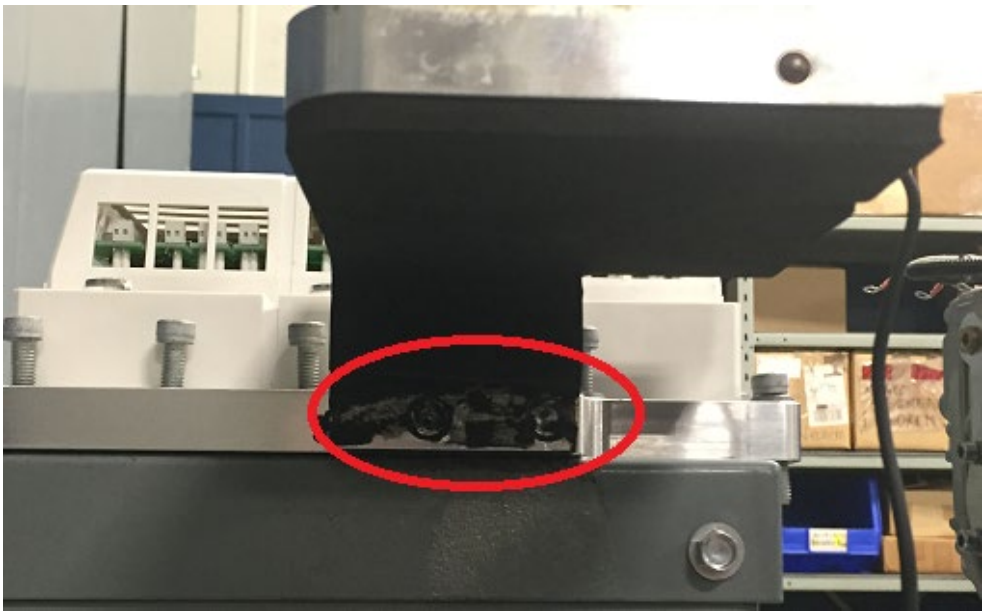

Figure 5

4 - INVERTER ASSEMBLY Installation Instruction:

1. Clean the O-ring groove in the compressor housing.
2. Apply O-Lube to the Inverter O-ring provided and place the O-ring in the compressor housing groove.
3. Apply O-Lube to the O-rings provided and install them into the SCR cooling manifold. See figure (6).

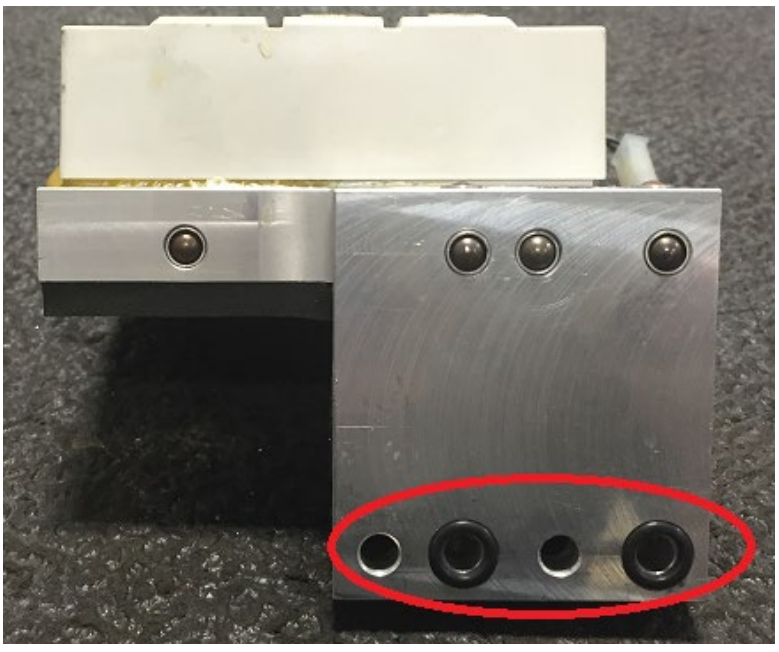

Figure 6

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4. Reinstall the SCR cooling manifold to the Inverter cooling manifold reusing the two fasteners. Torque to 7 Nm (62 in.lb.).
5. Remove the backing material from the cooling manifold of the new Inverter. Prevent damage to sealing surface.
6. Carefully, install the Inverter on the compressor housing with the SCR temperature sensor cable run underneath the SCR cooling manifold.
7. Install the provided Inverter fasteners in a diagonal pattern torqueing to 3 Nm (27 in.lb.) on the first pass then to 8 Nm (71 in.lb.) on the second pass. See figure (7).

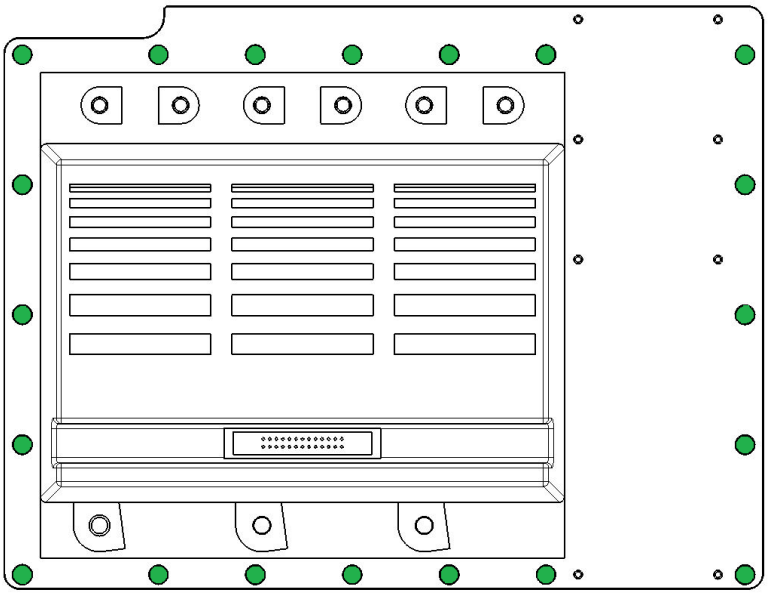

Figure 7

8. Leak test the compressor in accordance with industry standards.
9. Reconnect the SCR temperature sensor, discharge P/T sensor, IGV motor connection, and the suction P/T sensor.
10. Install the motor bus bars between the motor high power feed throughs and the Inverter. Torque the Bus bars to the motor 13 Nm (10 ft.lb.). Torque the Bus bars to the Inverter 14 Nm (10 ft.lb.).
11. Reinstall the HV DC-DC converter to the Inverter cooling manifold.
12. Reconnect all electrical connections to the HV DC-DC converter.
13. Install the DC bus insulation Mylar on the Inverter.
14. Reinstall the DC bus bar and capacitor assembly.
15. Reconnect the snubber capacitors to the inverter noting the leg orientation. Torque to 7 Nm (62 in.lb.).
16. Reinstall the nylon nuts to the base of the DC capacitor assembly, under the main compressor housing. Torque to 7 Nm (62 in.lb.).
17. Reconnect the DC+ and DC- of the Soft Start harness from the DC bus assembly noting the orientation. Torque to 10 Nm (7 ft.lb.). See figure (4).
18. Reconnect the DC bus bars to the SCR's. Bars to SCR torque 5 Nm (44 in.lb.). Bars to DC bus 10 Nm (7 ft.lb.).
19. Reinstall the three Mains Input blocks, Mylar, and fuse assembly. Torque Mains Input blocks to plastic terminal block to 7 Nm (62 in.lb.). See figure (3).
20. Place 3-Phase input wires in correct sequence on the fasteners to the fuse input to the SCRs. Torque fuses to SCRs and 3-Phase input wires to 7 Nm (62 in.lb.).
21. Connect the SCR Gate cable harness to the SCR's noting its orientation.
22. Reconnect all wiring harnesses to the Soft Start.
23. Place the Soft Start into mounting position and secure to the compressor. See figure (2).
24. Reroute and connect the Soft Start ground wire to the ground post on the compressor housing at 3 phase connection point. See figure (1). Torque the top nut to 10 Nm (7 ft.lb.) and 7 Nm (62 in.lb) for the second nut.
25. Reconnect the 3 phase mains input wiring including ground.
26. Install top-side covers.

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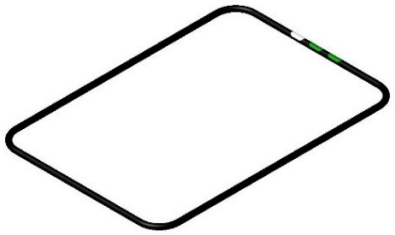
27. Charge the compressor with refrigerant.

Component	Torque Value
SCR cooling manifold to Inverter cooling manifold	7 Nm (62 in.lb.)
Inverter to compressor housing	8 Nm (71 in.lb.)
Motor bus bar to motor	13 Nm (9.5 ft.lb.)
Motor bus bar to Inverter	14 Nm (10 ft.lb.)
Soft Start DC+ & DC- to DC bus	10 Nm (7 ft.lb.)
Snubber capacitors to Inverter	7 Nm (62 in.lb.)
Nylon Nuts	7 Nm (62 in.lb.)
DC bus bar to DC bus	10 Nm (7 ft.lb.)
DC bus bars to SCR	5 Nm (3.6 ft.lb.)
Mains input to terminal block	7 Nm (62 in.lb.)
Fuse to SCR	7 Nm (62 in.lb.)
Ground post top nut	10 Nm (7 ft.lb.)
Ground post second nut	7 Nm (62 in.lb.)
Cover Screws	1.5 Nm (13 in.lb.)

5 - Kit Contents

QTY	Part(s) Description	Picture(s)
1	IGBT ASSEMBLY	
2	O-RING #2-011	
1	O-RING #2-109	
1	O-RING #2-377	
1	LUBRICATION-SUPER-O-LUBE-2G	
20	WASHER M6 FLAT	
20	SCREW M6X30 S/HD CAP	

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