



TT Series Spare Part Kit

# SCR COOLING MANIFOLD

100309-11 & 100309-12



**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.**

|  |   |   |   |
|--|---|---|---|
| <p>Consult the appropriate Danfoss LLC Service Manual on <a href="http://www.turbocoroem.com">www.turbocoroem.com</a> for detailed service instructions.</p> | <p><b>Never power compressor without covers in place and secured.</b></p> <p><b>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.</b></p> <p><b>Before removing top cover, wait at least 20 minutes after isolating AC power to allow the high voltage capacitors to discharge.</b></p> | <p>Always wear appropriately rated safety equipment when working around equipment and/or components energized with high voltage.</p> <p><b>This equipment contains hazardous voltages that can cause serious injury or death.</b></p> | <p><b>Recover all refrigerant from compressor in accordance with local codes and ensure pressure is fully vented before the removal of refrigerant containing components.</b></p> |
|--|---|---|---|

## 1 - Introduction:

SCR COOLING MANIFOLD replacement.

This kit contains the SCR Cooling Manifold and the associated hardware. These instructions contain the basic steps regarding the replacement of the SCR Cooling Manifold and only address the major steps (they do not address any removal and installation of wiring harnesses). It is highly recommended to also reference the instructions in our Service Manual when replacing the SCR Cooling Manifold. The Service Manual will include all of the details, including when to remove wire harnesses and the torque specifications for the replacement fasteners.

We have made the **TT Series Service Manual** available to anyone. To access the manual, you may scan the applicable QR code below or you may go to our website at [www.turbocoroem.com](http://www.turbocoroem.com). At the bottom of the page there is a Section named "Categories" that includes various menus including one for Manuals.

Refer to the applicable QR code below to download the TTS/TGS/TTH/TGH Service Manual.

**English****Chinese**

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**2 - Electrical Isolation**

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Before servicing the Compressor, isolate the compressor power by completing the following steps:

**... DANGER! ...**

- This equipment contains hazardous voltages that can cause serious injury or death. Only qualified and trained personnel should work on Danfoss LLC equipment.
- Always wear appropriately-rated safety equipment when working around equipment and/or components energized with high voltage.
- Removing the Mains Input Cover will expose the technician to a high voltage hazard of up to 632 VAC. Ensure the Mains Input power is turned off and locked out before removing the Mains Input Cover.

1. Turn off the Mains Input power to the compressor.
2. Lock Out/Tag Out (LOTO) the mains disconnect to ensure no accidental or unauthorized reapplication of the Mains Input power can occur.

**NOTE**

The Mains Input fast-acting fuses are installed in the power panel for all compressor models except the TTS300/TGS230.

3. Remove the Mains Input Cover only.
4. Using an appropriately-rated voltage meter, confirm the absence of AC voltage.

**... DANGER! ...**

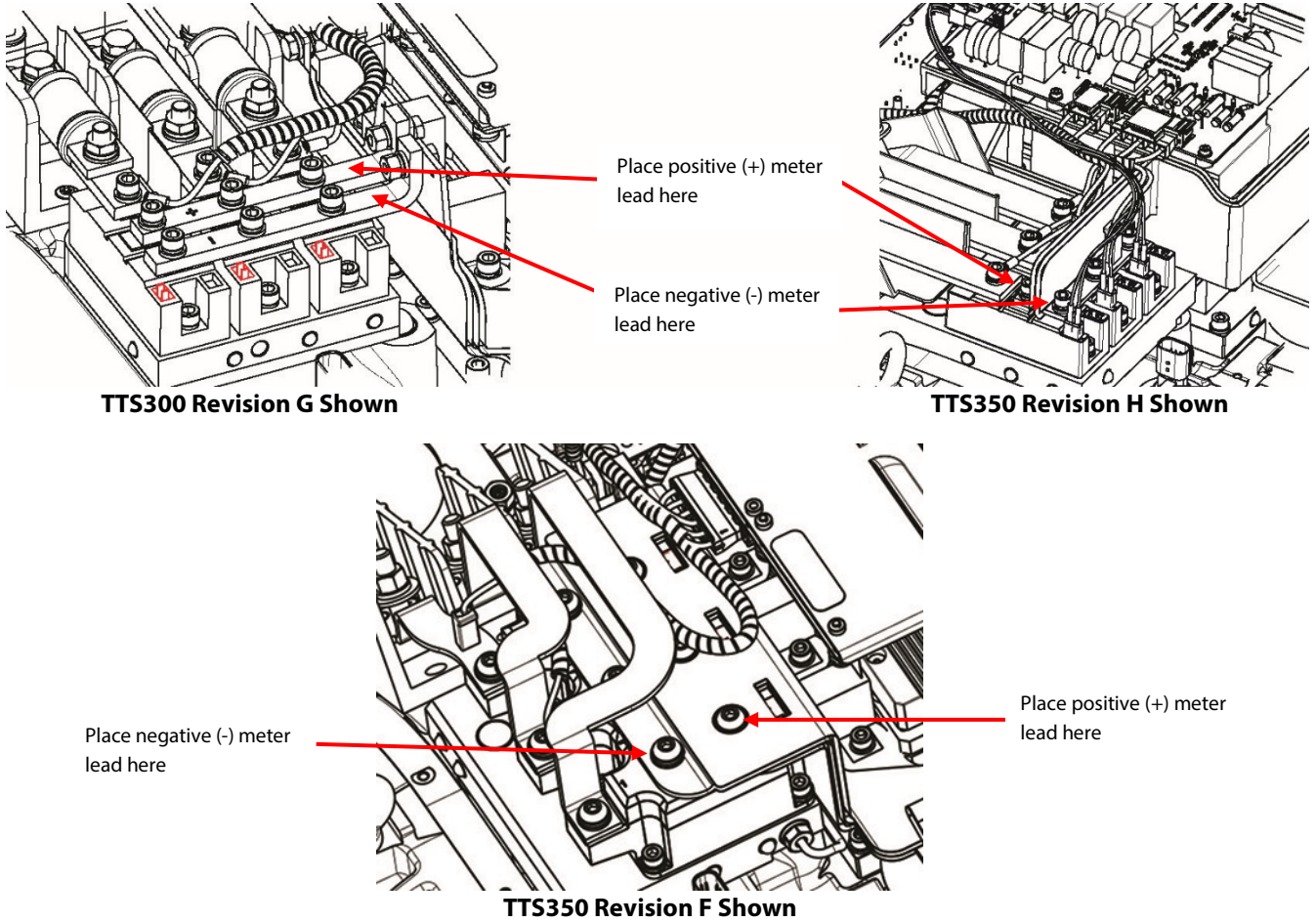
Do not touch any components when removing the Mains Input Cover.

5. If AC voltage is not present, reinstall the Mains Input cover and wait at least 20 minutes before removing either the Mains Input or Top Side Cover. If AC voltage still exists, go back to Step 2 to determine why the compressor voltage is not isolated.
6. Remove the Top Cover, taking particular care not to touch ANY components underneath. Refer to Section 1.1.2 Top Cover on page 1.
7. Using an appropriately-rated voltage meter, check the DC Bus Bars for DC voltage level. If the voltage is above 30 volts direct current (VDC), wait five (5) minutes and recheck until voltage is below 30 VDC. Refer to Figure 1 - DC Bus Voltage Test Points.

**... CAUTION ...**

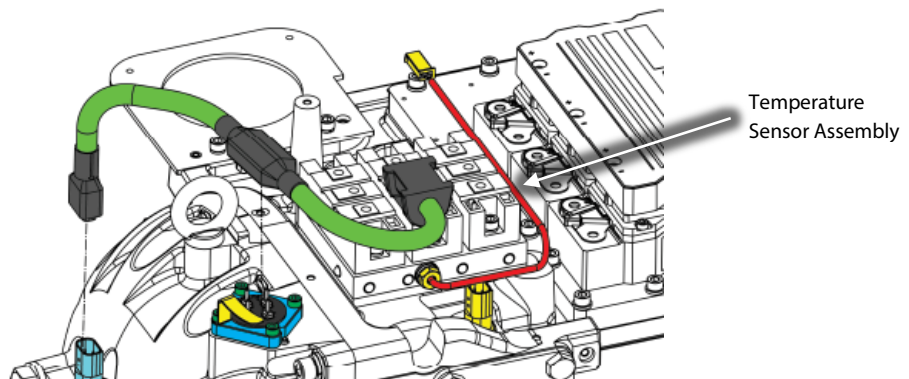
Even at low voltages, caution should be used around the capacitors to avoid quick discharge events, which can lead to reduced reliability.

**Figure 1 - DC Bus Voltage Test Points**



**3 - SCR Cooling Manifold Removal Instructions:**

**NOTE:** Kits 100309-11 and 100309-12 do not include the SCR Temperature Sensor as these sensors are no longer required. After installing the new SCR Cooling Manifold, secure the remaining connector on the compressor with a cable tie.



**Figure 2 - Temperature Sensor**

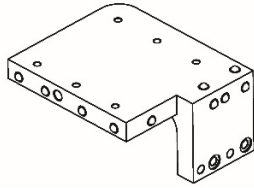




1. Isolate compressor power as described in the “Electrical Isolation” section above prior to performing any service procedures.
2. Isolate the compressor and recover the refrigerant according to industry standards.
3. Remove the Soft Start.
4. Remove the Mains Input Fuses.
5. Remove the SCR Bus Bars.
6. Remove the SCRs from the SCR Cooling Manifold.
7. Remove the Snubber Capacitors.
8. Remove the DC Capacitor Bus Bar assembly.
9. Remove the Motor Bus Bars.
10. Remove the Inverter.
11. Carefully remove the SCR Cooling Manifold from Inverter Heat Sink Plate.

4 - SCR Cooling Manifold Installation Instructions:





1. Install the SCR Cooling Manifold onto the Inverter Heat Sink Plate.
2. Install the Inverter.
3. Leak test and evacuate compressor in accordance with standard industry practices.
4. Install the Motor Bus Bars.
5. Install the SCRs to the SCR Cooling Manifold.
6. Install the DC Capacitor Bus Bar assembly.
7. Install the Snubber Capacitors.
8. Install the Mains Input Fuses.
9. Install the Soft Start.
10. Install the top covers.
11. Return the compressor to normal operation.

5 - Kit Contents:

**Note:** Any part numbers included in the kit contents are internal part numbers only. Please refer to our Spare Parts Manual for any kit part numbers.

| QTY | Part(s) Description                      | Picture(s)  |
|-----|--|---|
| 1   | HEATSINK - COOLING MANIFOLD SCR ASSEMBLY |  |
| 2   | SCREW, M6x20, SOCKET HEAD CAP - 902819   |  |
| 20  | SCREW, M6x30, SOCKET HEAD CAP - 902820   |  |
| 20  | WASHER, M6 FLAT - 902804                 |  |
| 1   | INSULATION KIT MANIFOLD                  |  |



|   |  |   |
|---|--|---|
| 2 | O-RING, SCR MANIFOLD TO INVERTER - 901859        |  |
| 1 | O-RING, MAIN INVERTER - 901865                   |  |
| 1 | O-RING, MAIN CASING & INVERTER HEATSINK - 902751 |  |
| 1 | LUBRICATION-SUPER-O-LUBE-2G                      |  |

6 - List of Changes

| Revision | Date     | Description of Change  |
|----------|----------|--|
| O        | 3/8/2023 | <p>The kit obsolete kit numbers (100309, 100309-6) were removed from the top of this instruction.</p> <p>The removal and replacement steps were completely revised.</p> <p>Added the flat washers to the Kit Contents.</p> |

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