



TT Series Spare Part Kit

SCR COOLING MANIFOLD

199K0024, 100309-7, -8, -10, -13, -14, & -15



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 www.turbocoroem.com for detailed service instructions.</p>	<p>Never power compressor without covers in place and secured.</p> <p>Removing the mains input cover will expose you to a voltage hazard of up to 853VDC. Ensure the mains input power is off and locked out before removing cover.</p> <p>Before removing top cover, wait at least 20 minutes after isolating AC power to allow the high voltage capacitors to discharge.</p>	<p>Always wear appropriately rated safety equipment when working around equipment and/or components energized with high voltage.</p> <p>This equipment contains hazardous voltages that can cause serious injury or death.</p>	<p>Recover all refrigerant from compressor in accordance with local codes and ensure pressure is fully vented before the removal of refrigerant containing components.</p>
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1 - Introduction

Please refer to our service manual for the general removal and installation procedures. This instruction does include specific steps for certain SCR Cooling Manifolds.

If your particular kit is not listed in the sections below, please follow the complete steps in the service manual.

Please read this instruction completely prior to removing the SCR Cooling Manifold.

To access the manual, you may scan the applicable QR code below or you may go to our DTC website at 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 TT Series Service Manual.

English



Chinese



2 - General SCR Cooling Manifold Replacement Notes

NOTE 1: Some kits do not include the SCR Temperature Sensor as these are no longer required. For those kits, secure the remaining connector on the compressor with a cable tie after installation.

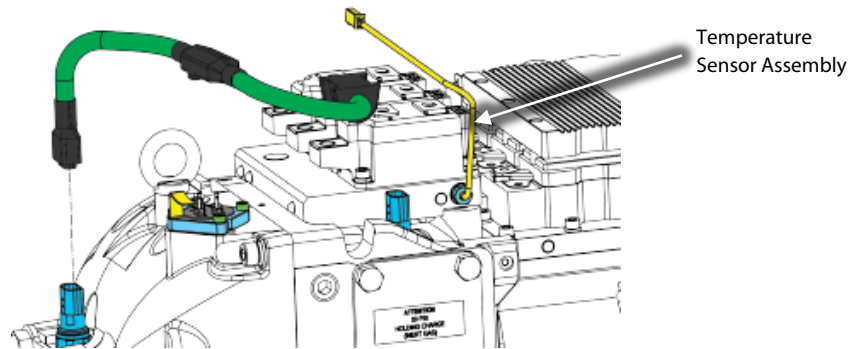


Figure 1 – Temperature Sensor

NOTE 2: If converting to High SST, continue to Section 4.

3 - High SST Option Notes – Kit 100309-8

This kit can be used to provide a high SST option for the following Revision H Turbocor compressors:

- TTS350 & TGS310
- TTS450 & TGS380
- TTS400 & TGS390
- TTS700 & TGS520
- TGS490
- TTH375 & TGH285

To convert to the High SST option, new snubber capacitors and a BMCC with software (4.3.0 or later) will need to be added (if not already equipped). These items are not included in this kit; therefore, they must be purchased separately.

In Table 1 - Snubber Capacitor Comparison below, the two different style snubber capacitors are shown for comparison.

If you are converting to High SST, refer to Section 4 below.

Table 1 - Snubber Capacitor Comparison

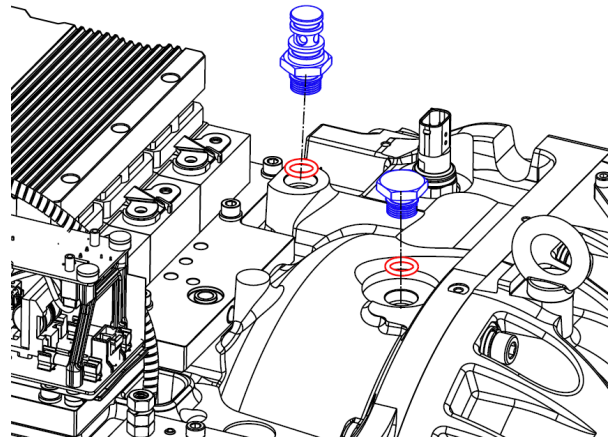
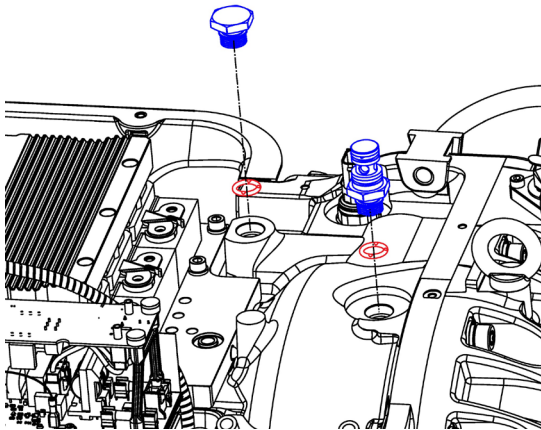
Required for High SST Upgrade	Not for Use on High SST Compressors
Kit 100417-2 – This style required for High SST Option	Snubber capacitors installed on standard temperature compressors.

4 - High SST Upgrade – Kit 100309-8: (Upgrade to High SST Only)

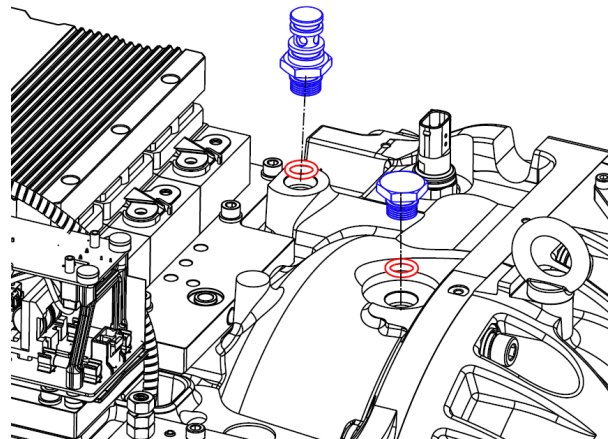
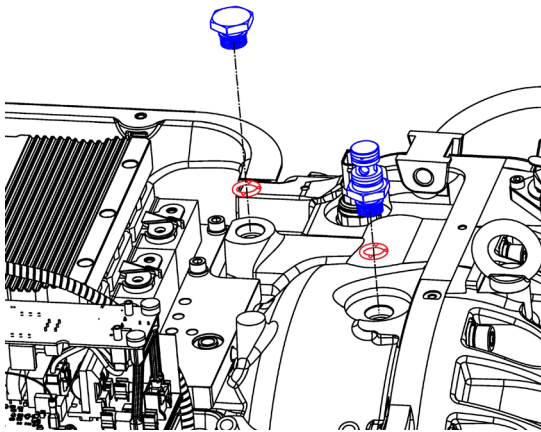
If you are converting the compressor to our High SST option, the locations of the SCR Manifold Return Brass Fitting and the Brass Plug must be swapped. Refer to the required steps below.

NOTE: This only applies to Major Revision H Compressors and later and cannot be applied to prior revisions.

1. Refer to the TTS/TGS Service Manual for the steps to remove the SCR Cooling Manifold.
2. Remove the SCR Manifold Return Brass Fitting. Refer to Figure 2 – Plug and SCR Manifold Return Brass Fitting Locations for this and the following three steps



3. Figure 2 – Plug and SCR Manifold Return Brass Fitting .
4. Remove the Brass Plug.
5. Remove and discard the lower O-ring from the SCR Manifold Return Brass Fitting.
6. Remove the O-ring from the Brass Plug.



7. Figure 2 – Plug and SCR Manifold Return Brass Fitting

Standard Compressors

High SST Option

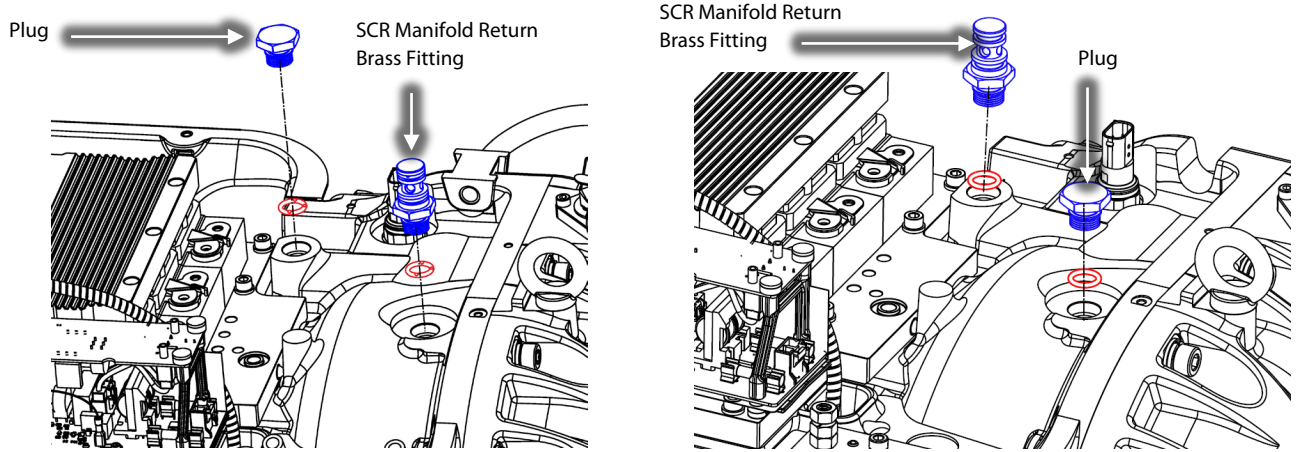


Figure 2 – Plug and SCR Manifold Return Brass Fitting Locations

8. Clean the lower O-ring grooves in the Plug and SCR Manifold Return Brass Fitting. Refer to Figure 3 – O-Ring Grooves.
9. Ensure the threads and surface area in the compressor housing are clean.

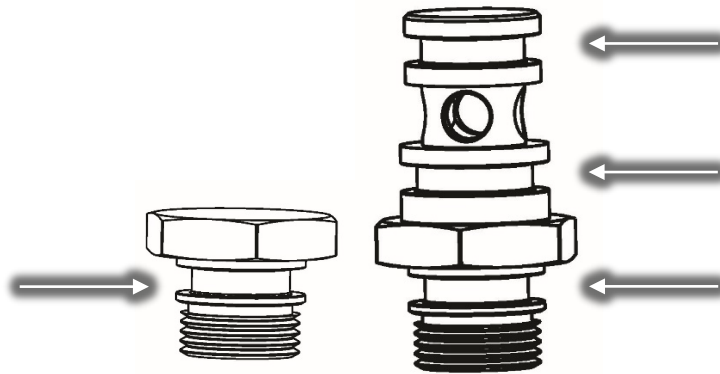
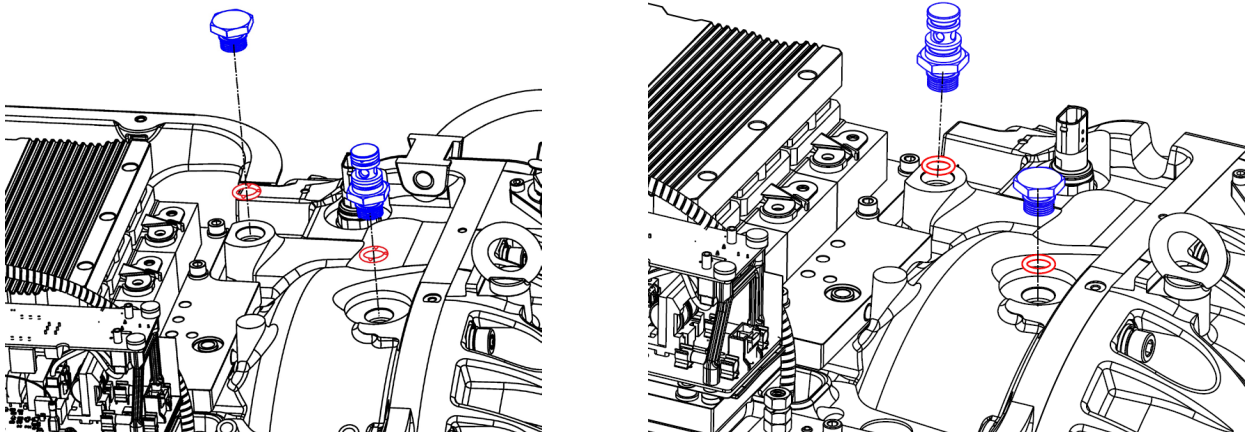


Figure 3 – O-Ring Grooves

10. Apply O-lube to the four new O-rings for the Plug and the SCR Manifold Return Brass Fitting and install them onto the fittings.

NOTE: The bottom two O-rings on the SCR Manifold Return Fitting are larger than the top O-ring.

11. Install the SCR Manifold Return Brass Fitting into the compressor housing (where the Bass Plug was previously installed) and torque to 7 Nm (62 in.lb). Refer to Figure 2 – Plug and SCR Manifold Return Brass Fitting Locations



12. Figure 2 – Plug and SCR Manifold Return Brass Fitting for this and the following two steps.
13. Apply O-lube to the new O-ring for the Brass Plug and install it onto the fitting.
14. Install the Brass Plug (where the SCR Manifold Return Brass Fitting was previously installed) and torque to 7 Nm (62 in.lb).
15. Return to the TTS/TGS Service Manual for the remainder of the SCR Cooling Manifold installation steps.

NOTE: The High SST option will require new snubber capacitors and a BMCC with software (4.3.0 or later) if not already equipped. Please order those components as needed and follow the included installation instructions.

5 - Kit 199K0024

This updated kit applies to the following Revision H and later compressors:

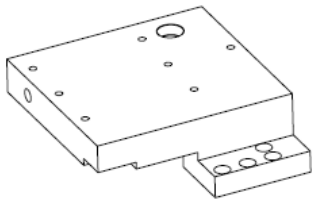
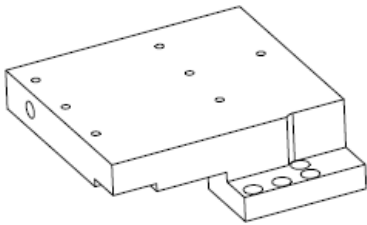
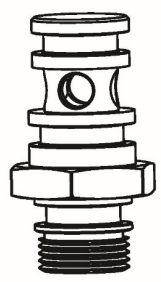

- TTS350/TTS400/TTS700
- TGS310/TGS390/TGS490/TGS520

Depending on your compressor configuration, you may need to change the SCR Manifold Return Brass Fitting. Refer to Table 2 - SCR Cooling Manifold Comparison below to identify the SCR Manifold installed on the compressor.

CAUTION

Kit 199K0024 only applies to Major Revision H Compressors and later and cannot be applied to prior revisions.

Table 2 - SCR Cooling Manifold Comparison

Previous design (option 1)	Standardized SCR Manifold for all Rev H Std Temp TTS/TGS models (option 2)
This SCR Cooling Manifold can be identified by the hole for the tall SCR Manifold Return Brass Fitting	This SCR Cooling Manifold has no hole in the top
	
Tall SCR Manifold Return Brass Fitting	Short SCR Manifold Return Brass Fitting
	

1. Refer to the TTS/TGS Service Manual for the steps to remove the SCR Cooling Manifold.
2. **IMPORTANT!** Determine the type of SCR Cooling Manifold installed on the compressor. If the Compressor contains the tall SCR Manifold Return Fitting, and the fitting is not changed, the SCR Cooling Manifold will not seat onto the Compressor housing.
 - a. Refer to Table 2 - SCR Cooling Manifold Comparison above to identify the correct manifold.

3. If the removed SCR Cooling Manifold matches Option 1, continue to Step 4. If the Manifold matches Option 2, the Compressor contains the short SCR Manifold Return Brass Fitting. Please continue to follow the procedures in the TTS/TGS Service Manual as there are no additional steps needed to replace the SCR Cooling Manifold.
4. Remove the SCR Manifold Return Brass Fitting. Refer to Figure 4 – Tall SCR Manifold Return Brass Fitting Removal for Option 1 for this and the following three steps.
5. Remove and discard the four O-rings shown.

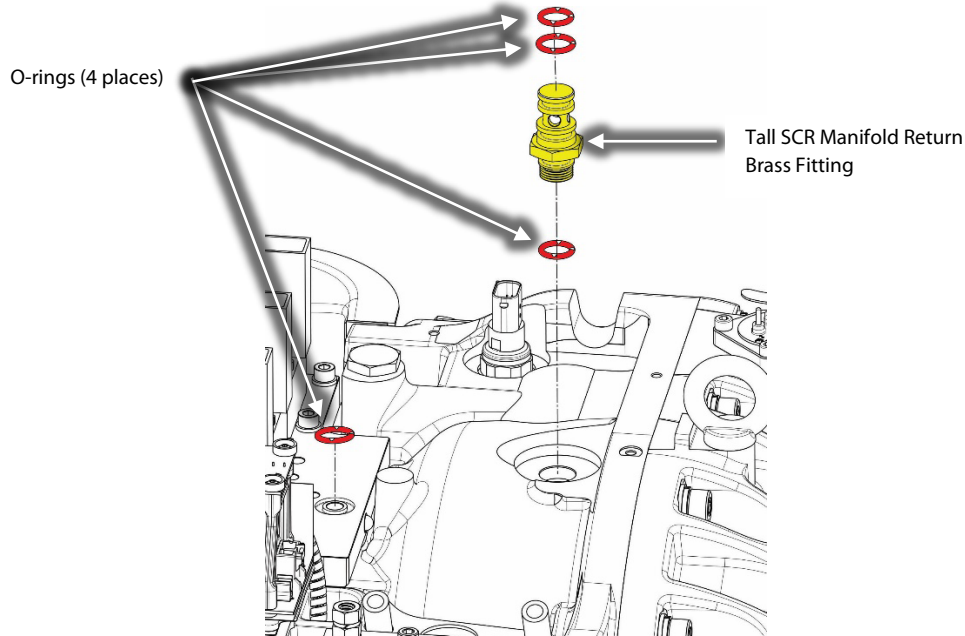


Figure 4 – Tall SCR Manifold Return Brass Fitting Removal for Option 1

6. Clean the lower O-ring grooves in the Compressor housing and ensure the threads are clean.
7. Apply O-lube to all O-rings.
8. Install new O-rings onto the SCR Manifold Return Brass Fitting and Inverter Heat Sink Plate. Refer to Figure 5 – Short Manifold Return Brass Fitting Installation for Option 1 for this and the following two steps.

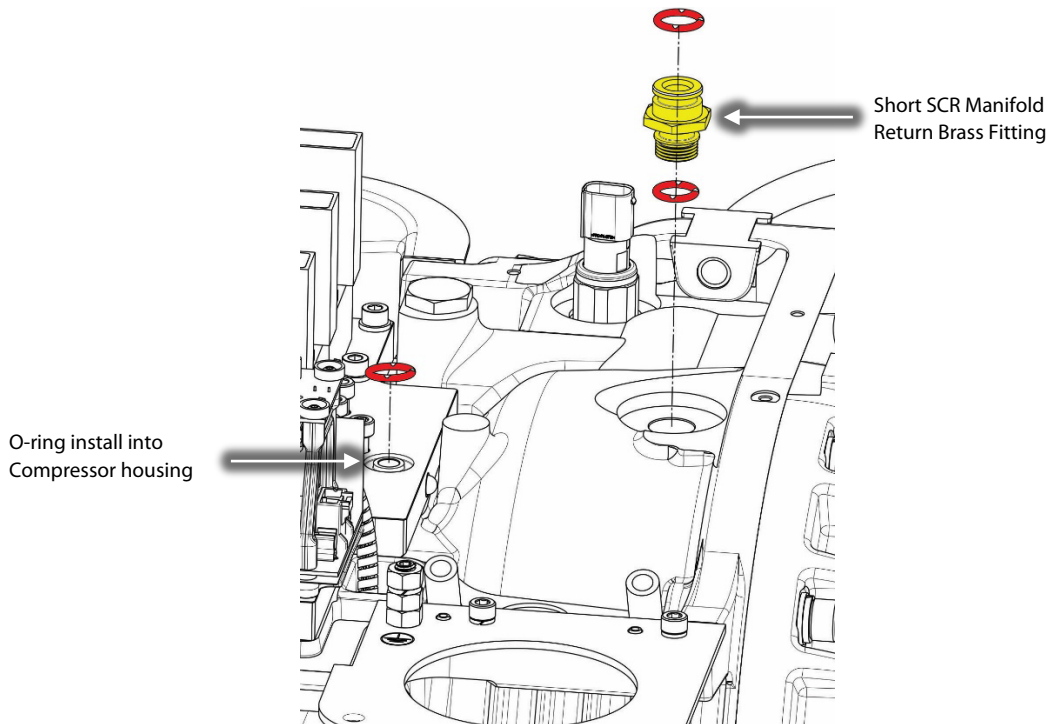


Figure 5 – Short Manifold Return Brass Fitting Installation for Option 1

9. Install the two O-rings onto the short SCR Manifold Return Brass Fitting.

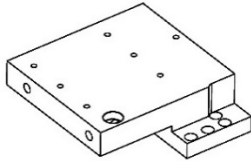


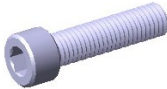

NOTE: The bottom O-ring on the SCR Manifold Return Fitting is smaller than the top O-ring.

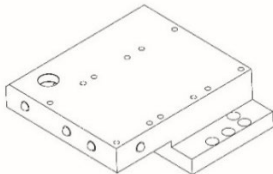


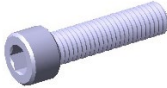

10. Install the short SCR Manifold Return Brass Fitting into the Compressor housing and torque to 7 Nm (62 in.lb).

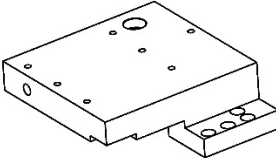


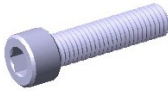

11. Return to the TTS/TGS Service Manual for the remainder of the SCR Cooling Manifold installation steps.

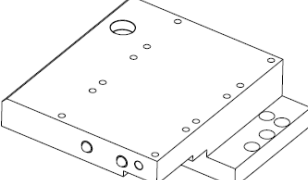


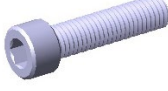

6 - Kit Contents

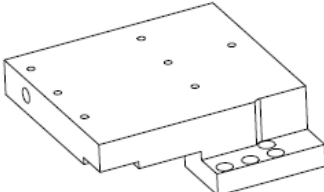

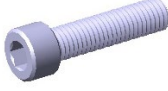

Note: Any part numbers included in the kit contents are internal part numbers only. Please refer to our Spare Parts Manuals for any kit part numbers.

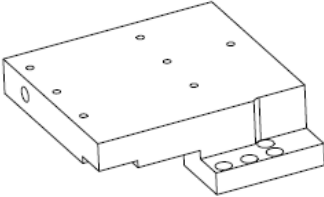



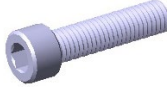

KIT	100309-8	
QTY	Part(s) Description	Picture(s)
1	SCR HEATSINK ASSEMBLY	
3	O-RING, SCR COOLING ADAPTER - 901862	
2	O-RING, SCR COOLING ADAPTER - 901850	
4	SCREW M6X35, SOCKET HEAD CAP - 902821	
1	LUBRICATION-SUPER-O-LUBE-2G	

KIT	100309-7	
QTY	Part(s) Description	Picture(s)
1	SCR HEATSINK ASSEMBLY	
1	O-RING, SCR COOLING ADAPTER - 901862	
2	O-RING, SCR COOLING ADAPTER - 901850	
4	SCREW M6X35, SOCKET HEAD CAP - 902821	
1	LUBRICATION-SUPER-O-LUBE-2G	

KIT	100309-10	
QTY	Part(s) Description	Picture(s)
1	SCR HEATSINK ASSEMBLY	
1	O-RING, SCR COOLING ADAPTER - 901862	
2	O-RING, SCR COOLING ADAPTER - 901850	
4	SCREW, M6X35, SOCKET HEAD CAP - 902821	
1	LUBRICATION-SUPER-O-LUBE-2G	

KIT	100309-13, 14	
QTY	Part(s) Description	Picture(s)
1	SCR HEATSINK ASSEMBLY	
1	O-RING, SCR COOLING ADAPTER - 901862	
2	O-RING, SCR COOLING ADAPTER - 901850	
4	SCREW, M6X35, SOCKET HEAD CAP - 902821	
1	LUBRICATION-SUPER-O-LUBE-2G	

KIT	100309-15	
QTY	Part(s) Description	Picture(s)
1	SCR HEATSINK ASSEMBLY	
2	O-RING, SCR COOLING ADAPTER - 901850	
4	SCREW, M6X35, SOCKET HEAD CAP - 902821	
1	LUBRICATION-SUPER-O-LUBE-2G	

KIT	199K0024	
QTY	Part(s) Description	Picture(s)
1	SCR HEATSINK ASSEMBLY	
1	ADAPTOR-SCR BYPASS COOLING	
2	O-RING, SCR COOLING ADAPTER - 901850	
1	O-RING, SCR COOLING ADAPTER - 901862	
4	SCREW, M6X35, SOCKET HEAD CAP - 902821	
1	LUBRICATION-SUPER-O-LUBE-2G	

7 - List of Changes

Revision	Date	Description of Change
S	4/11/2023	The kit obsolete kit numbers (100309-1, 100309-5) were removed from the top of this instruction and in the BOM list above. The removal and replacement steps were completely revised.
T	5/15/2023	Added kit 100309-15.
U	6/6/2024	Obsoleted kit 100309-9 Added kit 199K0024 Complete update to the instructions