

**RSX096**

**Oil Cooled Option**

**Operation and Maintenance**

FOR INSTALLATION RECOMMENDATIONS PLEASE REFER TO RSX INSTALLATION, OPERATION AND MAINTENANCE MANUAL ([TOLOMATIC PUB. 2171-4007](#))

## ***INTRODUCTION***

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The oil cooled version of the RSX096 provides improved thermal capacity through oil used as a lubricant for the roller screw and as the cooling media that transfers internal heat generated by the nut roller to the body of the actuator.

The aluminum body more rapidly dissipates heat enabling improved performance. In addition, improved heat dissipation allows for higher continuous force output and higher duty cycles.

**This document provides important information on an RSX supplied with the oil filled option.**

Original instructions in English. Translations in community languages supplied as required.

Information furnished is believed to be accurate and reliable. However, Tolomatic assumes no responsibility for its use or for any errors that may appear in this document.

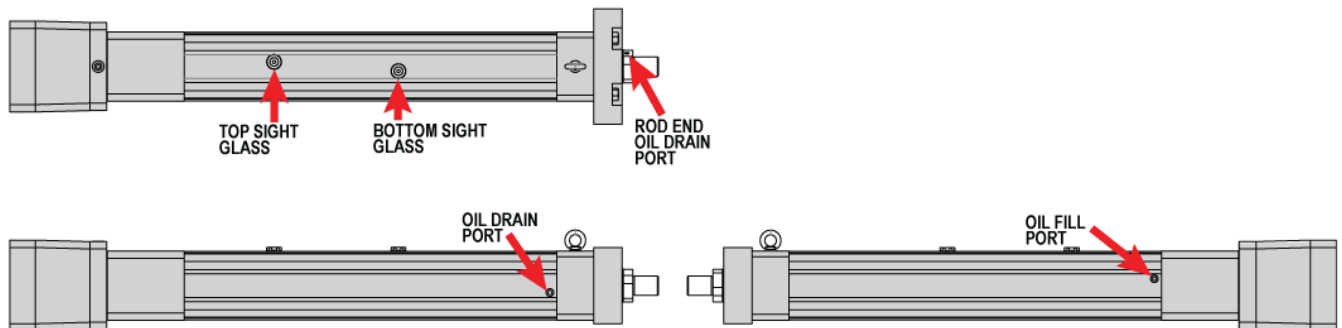
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## 1: OIL FILL

Review all figures and instructions prior to service to prevent damage to the assembly due to improper operation

- Units are filled and tested prior to shipment from the factory ;
- Prior to shipment, the units are drained;
- A light coat of oil remains on the roller screw and nut assembly to prevent corrosion during transportation and storage;
- Tolomatic recommends oil filled units are only used with the following oil brand and type: **Mobil SHC630**;



**Figure 1: Locations of Oil Drain Port, Top & Bottom Sight Glass and Oil Fill Port**

- When filling the actuator with oil, the thrust rod must be in the fully retracted position;
- Remove the 3/8-19 Rc plug from the oil fill port near the motor end of the actuator;
- Add 7.5 oz (0.22 L) of oil per each 25 mm of the actuator stroke;
- Apply pipe sealant (Loctite 561 or similar) to the plug's threads and reinstall it.
- When mounted horizontally or vertically with the motor end facing up, oil must cover the top sight glass completely ;
  - Contact Tolomatic for recommendation on orientations not listed in this document;

- In vertical installations where the motor end is pointed up, the oil level inside will drop as a result of some amount of oil migrating into the voids inside the assembly;
- When the oil level drops below the top sight glass, add an additional 1.2 oz (0.04 L) of oil per each 25 mm of the stroke;
- In vertical installations where the motor end is pointed up and when the working stroke of the actuator is less than 75mm, an additional 7.5 oz (0.22 L) of oil is necessary;
  - The amount can be determined by taking the difference between the actuator stroke length and the working stroke length;

## 2: OIL DRAIN

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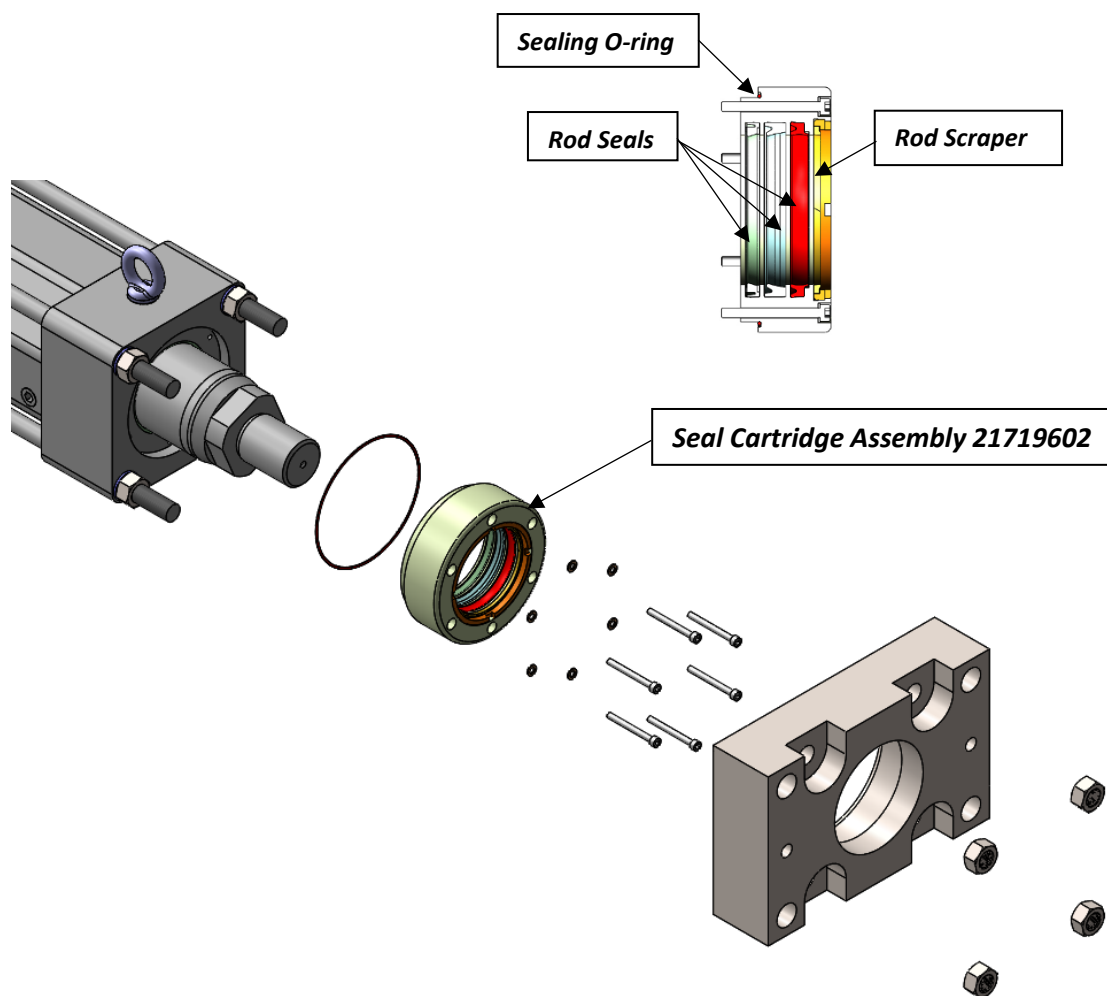
### NOTE

Prior to draining the oil, the area around and under the actuator should be protected from oil spills;

- There are two drain ports at the front of the actuator (See figure 1);
  - One is located on the assembly body near the rod end;
  - The other is located on the thrust rod;
- Slowly remove the 3/8-19 Rc plug fitting from the assembly body nearest the thrust rod;
  - Care needs to be taken when removing the plug as oil gets slightly pressurized during operation and may splash out.**
  - Oil may be drained through gravity or with use of an oil extractor pump;
- When nearly all of the oil has been removed, proceed with removing the 1/8-28 Rc on the rod end, remove the remaining oil from inside the thrust rod;
  - Oil extractor pump can be used to remove minor amounts of oil still remaining inside the thrust rod;
- Reinstall all drain plugs (apply pipe sealant to the plugs' threads prior to every installation) and refill per section 1;
- Oil should be changed annually.

### 3: SEAL CARTRIDGE REPLACEMENT

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**Figure 3.1: Exploded view of rod end of RSX actuator showing seal cartridge (with optional front flange mount)**

- Seal cartridge 21719002 is recommended to be replaced at the time of oil change;
- Remove power and safely secure the actuator with the thrust rod in its fully retracted state;
- Remove any tooling from the rod end;
- Remove front flange by removing four M16x1.5 jam nuts from the tie rods;
  
- Clean any debris/contamination from around the seal cartridge;
- Remove the six M5 socket head cap screws with sealing washers ;
- Slide the old seal cartridge off the thrust rod;
- Clean the surface of the thrust rod and apply a light film of oil prior to installing the new seal cartridge;
- Verify that the sealing O-ring is properly installed on the back surface of the new cartridge;
- Install the cartridge onto the thrust rod;
- Apply Loctite® 242 or equivalent to the fasteners and install them with sealing washers in place;
  - Tighten to 6.0 Nm (4.4 lbf-ft);
- Reinstall the front flange. Apply Loctite® 271 or equivalent to the four M16x1.5 jam nuts;
  - Tighten to 120 Nm (90 lbf-ft) in a criss-cross pattern.