

SERVICE INFORMATION LETTER

APPLICATION: All Magnetic Seal Corp. Seals, MagSeal®

ORIGINATOR: Paul R. Ryan, Director of Engineering

APPROVAL: Roger w. Sanderson, VP Business Development

SUBJECT: Recommended O-ring Lubricants

1. **Introduction:** Lubrication of the O-rings and the interfacing hardware surfaces that come in contact with them during the installation of the MagSeal®, such as, shaft diameter, housing/retainer bore diameter and their lead chamfers, is important for the proper operation of the MagSeal®. In order to provide the proper seating of the magnet ring (stator) against the housing/retainer bore shoulder, as well as, preventing roll or twist of the seal case (rotor) O-ring that causes an extra preload on the carbon seal face, MSC had approved only one (1) O-ring lubricant for all aerospace fluids (synthetic and mineral based lubricating oils, hydraulic oils and fuels) with the exception being phosphate ester fluids.
2. **Background:** Since 1976 MSC has approved and recommended Ultrachem® Assembly Fluid #1 for lubricating all of the O-rings and their interfacing services with a thin film for all MagSeals® that are used with aerospace fluids, which is compatible with all of the elastomers except for Ethylene Propylene. MSC has provided a 0.5 gram tube, MSC PN L-001, of this lubricant with each seal for field replacement. Customers have requested approval for either an alternate lubricant or approval to dilute this lubricant with a 50/50 mixture with the aerospace fluid because of the difficulty when applying the approved lubricant due to its tackiness (viscosity). MSC has evaluated, and validated two alternate (2) lubricants that provide the same installation results as the original lubricant that minimizes pre-load of the seal case (rotor) O-ring.
3. **Recommendations:** All customers can use the following O-ring lubricants that are interchangeable:
 - a. Aerospace fluids (synthetic and mineral based lubricating oils, hydraulic oils and fuels)
 - i. Ultrachem® Inc. Assembly Fluid #1, NSN 9150-00-159-5012 (4 ounce tube).
 1. MSC PN L-001 (0.5 gram tube).



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- ii. Aviation Fluid Service Turbo 10 Turbine Assembly Lube, NSN 9150-00-159-5012 (5.4 ounce bottle) and NSN 9150-00-340-1590 (1 gallon can).
 - 1. MSC PN L-003 (0.5 gram tube).
 - iii. Anderol® Inc. ROYCO® HF-825 Acryloid Synthetic Assembly Fluid and O-ring Lubricant, NSN 9150-00-340-1590 (1 gallon can).
 - b. Aerospace phosphate ester fluids
 - i. Solutia MSC®-352B Assembly Lubricant.
- 4. **Discussion:** No other O-ring lubricants are presently recommended for use with MagSeals® that are used in aerospace applications. MagSeals® that are provided with the O-rings pre-lubricated with Ultrachem® Assembly Fluid #1, the customer can use any of the recommend O-ring lubricants for the interfacing surfaces. Due to its ease of application to the O-rings and their interfacing surfaces, it is recommended that the Aviation Fluid Service Turbo 10 Turbine Assembly Lube be the preferred lubricant. MSC can replace the supplied tube of lubricant, MSC PN L-001, with the preferred tube of lubricant, MSC PN L-003. Please contact Magnetic Seal Corp. engineering department for further information at engineering@magseal.com. This information will be included in future installation instruction document changes.