

Industrial Devices Corporation

Lubrication Option (-GL, -GR) Maintenance Instructions

Packing List

This Lubrication Option includes the following items:

- Modified Carriage Linear Bearing with flush-type lubrication fittings
- Leadscrew Thrust Bearings with flush-type lubrication fitting (when applicable)
- Grease Gun Fitting Adapter, 1/8 NPT to flush-type port (also avail. separately as IDC P/N 300-013)
- Lubricant(s) for Linear Bearing Rail / Leadscrew Bearing (various part numbers listed below)
- Lubrication Option Maintenance Instructions

You will also need these tools (see table below):

- Screwdriver to remove Access Plug
- Grease Gun with 1/8 Male NPT threads on end

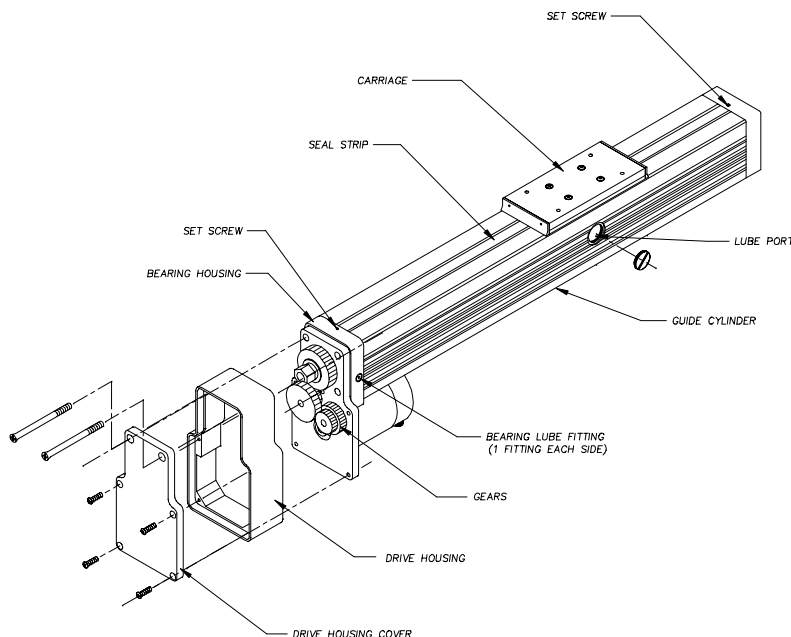
Lubrication Interval

IDC recommends that bearing blocks and seal strip be re-lubricated every 100 km [3.9 million inches] of travel, or every 6 months, whichever occurs first. Where applicable, the drive gears and leadscrew thrust bearings should also be inspected and re-lubricated at the same interval to ensure long life.

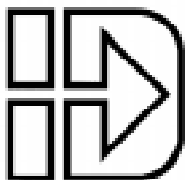
Component Location

The components which require lubrication maintenance on the R3 and R4 Series actuators are 1) carriage bearing blocks, 2) carriage seal strip, 3) drive gears (where applicable), and 4) thrust bearings (where applicable). The seal strip is located across the top of the actuator and is comprised of a rubber seal bonded to the underside of a stainless steel strip. The two bearing blocks are located inside the guide cylinder and are not visible from the outside of the actuator. The drive gears are located inside the drive housing at the motor-end of the actuator. Thrust bearings (leadscrew models) are located within a bearing housing at the motor-end of the actuator.

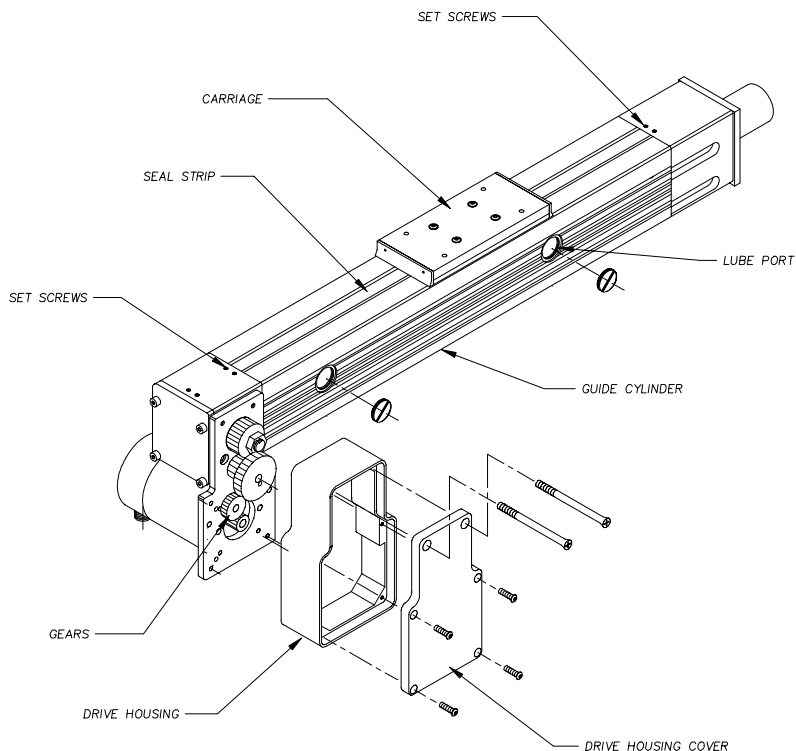
Leadscrew Models: Component Location



Note: Number and position of lube access ports may vary by actuator model.



Belt-Drive Models: Component Location



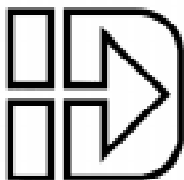
Note: Number and position of lube access ports may vary by actuator model.

Recommended Lubricants

Seal Strip Rubber:	Non-hardening, Pure Silicone Grease <ul style="list-style-type: none"> *IDC P/N 600-041 (1 oz. Jar) <i>Caution: Do not use hydrocarbon-based grease. This may result in softening or swelling of the rubber seal strip.</i>
Bearing Blocks [†] , Gears, Leadscrew Bearings:	Lithium complex soap-based grease, NGLI No. 2 Grade <ul style="list-style-type: none"> *IDC P/N 600-035 (12.5 oz grease gun tube) Alvania-EP No. 2 (Shell Oil) Daphne Eponex or Coronex No. 2 (Idemitsu Kosan) Diamond Multipurpose No. 2 (Mitsubishi Oil) Jet-Plex-EP (Jet Lube Inc.) Maltemp No. 2 (Kyodo Yushi Co.) Mobilith SHC 220 (Mobil Oil)
Leadscrew (ballscrew or acme)	<u>Ballscrew:</u> [†] <ul style="list-style-type: none"> *IDC P/N 600-025 - Isoflex Topaz L32 <u>Acme Screw:</u> <ul style="list-style-type: none"> *IDC P/N 600-022 - Calcium grease, NGLI No. 2

* Recommended Lubricant

[†] **Caution:** Do not use graphite, teflon, or molybdenum disulphide-based grease. This may adversely affect operation of the ballnut and/or linear bearings, resulting in ball skidding.



Lubrication Procedure

All components requiring lubrication are pre-greased at the factory. At the lubrication interval described above, IDC recommends the following:

1. Carriage Bearing Blocks

- a) Remove the lube port plug(s) (located in the side of the guide cylinder).
- b) Position the carriage such that the lube fitting is visible through the access port.
- c) Apply grease into the lube fitting using the conical-shaped grease gun fitting supplied with the actuator. *Apply the equivalent of two strokes of a standard industrial manual grease gun (which normally fit 14 oz cartridges).*
- d) Next move the carriage to expose the lube fitting for the second bearing block. (Note: On R3-screw-driven models, there is only one lube port.)
- e) Apply grease in the same manner as for the first bearing block.
- f) Move the carriage back and forth over 3-4 inches to ensure all portions of the bearing block have been lubricated.
- g) Replace the lube port plug when finished.

Caution: *Exercise care to not over-lubricate the bearing blocks. Excessive lubrication of the bearing blocks can result in overheating of the bearing and skidding of the bearing balls thus reducing life of the actuator.*

2. Carriage Seal Strip (See also leadscrew procedure, below.)

- a) Loosen the set screws at either bearing housing of the actuator.
- b) Lift the seal strip and remove all dirt and particles from the rubber segment by wiping with a clean cloth. Wetting the cloth with alcohol will help remove old grease and dirt.
Note: It will be necessary to re-position the carriage or slide the seal partially through the carriage to access the entire rubber seal. Apply grease to the rubber over the entire length of the seal strip. *The 1oz container should lubricate a 108" stroke actuator.*
- c) Gently push the seal strip back into the guide cylinder and tighten the set screws in the bearing housing to secure the seal.
- d) Wipe off excess grease with a cloth towel.

3. Leadscrew - Ballscrew or Acme (Does not apply to Belt-Drive models.) *This procedure best performed while seal is lifted in Carriage Seal Strip procedure above.*

- a) Position the carriage to one end of the actuator and loosen the two set screws at the opposite end which hold the seal in place.
- b) Lift the seal out of its slot, providing access to the leadscrew. A thin screwdriver may be used to pick up the stainless steel backing to get started.
- c) Using a narrow stiff brush, apply lubricant to leadscrew through the seal slot. *Use approx. one lubricant pack per 36" stroke.*
- d) Move the carriage backward or forward approximately 10 inches to access section of leadscrew where carriage was initially positioned. Apply lubricant to this area.
- e) Gently push the seal strip back into the guide cylinder and tighten the set screws to secure the seal.

4. Drive Gears (For units with drive gears)

- a) Remove the drive housing screw to access the drive gears.
- b) Inspect gears for wear.
- c) Ensure that all gear teeth are covered with grease.

5. Leadscrew - Thrust Bearings (For units with Acme or Ballscrews)

- a) Apply grease to thrust bearings via one of the two flush-type fittings located on either side of the bearing housing. *Apply the equivalent of two strokes of a standard industrial manual grease gun (which normally fit 14 oz cartridges).* Note: Although two fittings are provided for access to the bearing cavity, only one needs to be filled.