

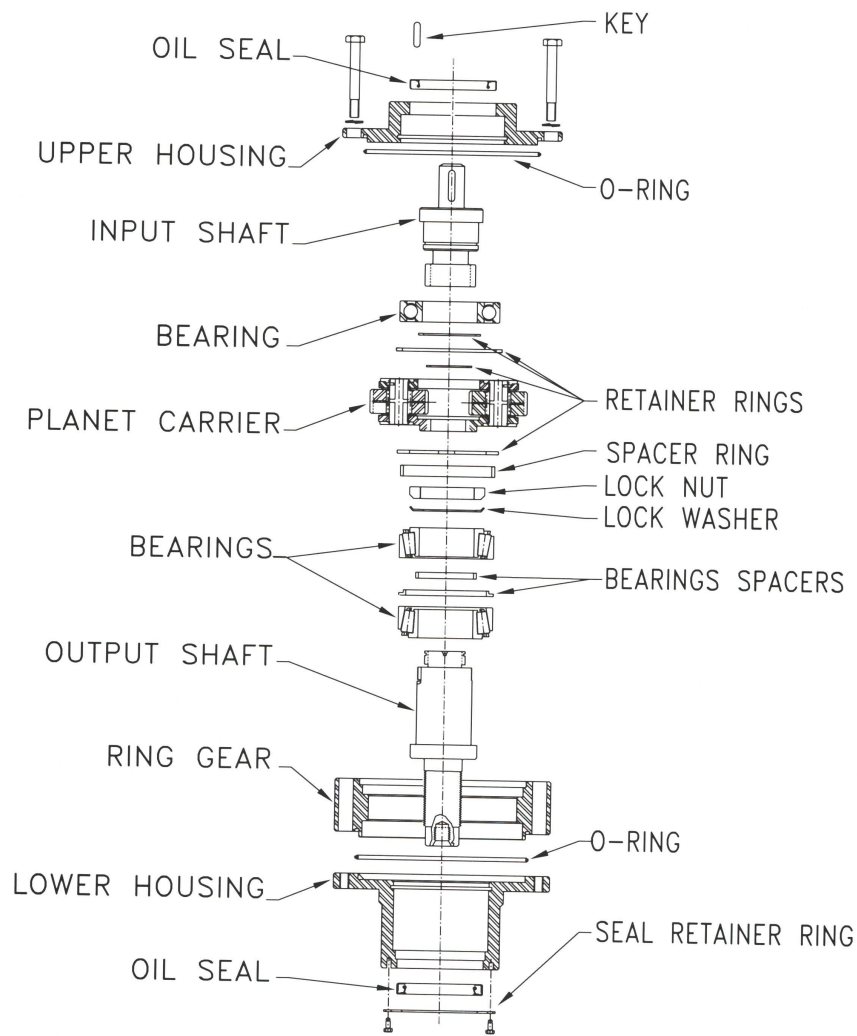
SEC. 9 GEARBOX

9.1 Assembled Planetary Gearbox



9.1 Assembly Gearbox Drawing

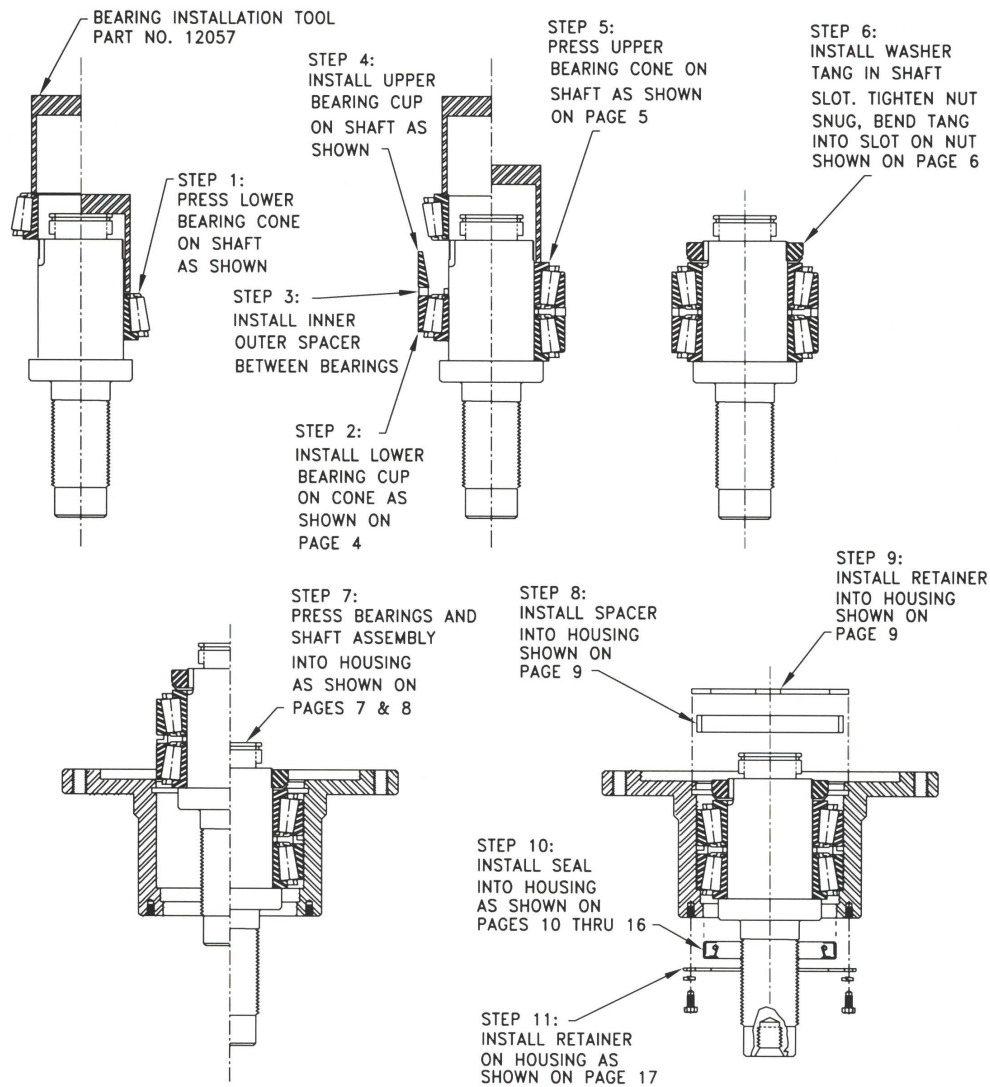
9.1.1. Drawing #11236 - Gearbox, Planetary



11236

9.2. Assembly Lower Output Shaft and Bearings

9.2.1. Drawing #12063 - Bearing Installation, Lower



9.2. Assembly Lower Output Shaft and Bearings

9.2.2. Assemble the lower roller bearing, part #10121.

Press taper bearing on the output shaft with the assembly tool, part #12057, as shown.

Install the bearing cup on the taper bearing.



9.2. Assembly Lower Output Shaft and Bearings

Completed upper and lower taper roller bearings pressed on the output shaft. Output shaft kit, part #10142.

IMPORTANT:

Make sure two (2) bearing spacers are installed between the upper and lower taper roller bearings.



9.2. Assembly Lower Output Shaft and Bearings

- 9.2.3.** Press the upper bearing on the output shaft.
SEE Drawing #12063 on Page 4

Install the lock washer, part #10126, and the lock nut, part #10127, to the bearings. Tighten the nut snugly. Bend the tab into the slot on the nut, as shown.



9.2. Assembly Lower Output Shaft and Bearings

- 9.2.4.** Assemble the lower bearings and the shaft with the lower bearing housing.

Press the lower bearing and the output shaft assembly into the lower bearing housing.



Housing, Lower, Part #10122

9.2. Assembly Lower Output Shaft and Bearings

9.2.5. Assembled lower bearing housing

Press bearings and the output shaft assembly into the lower bearing housing.



9.2. Assembly Lower Output Shaft and Bearings

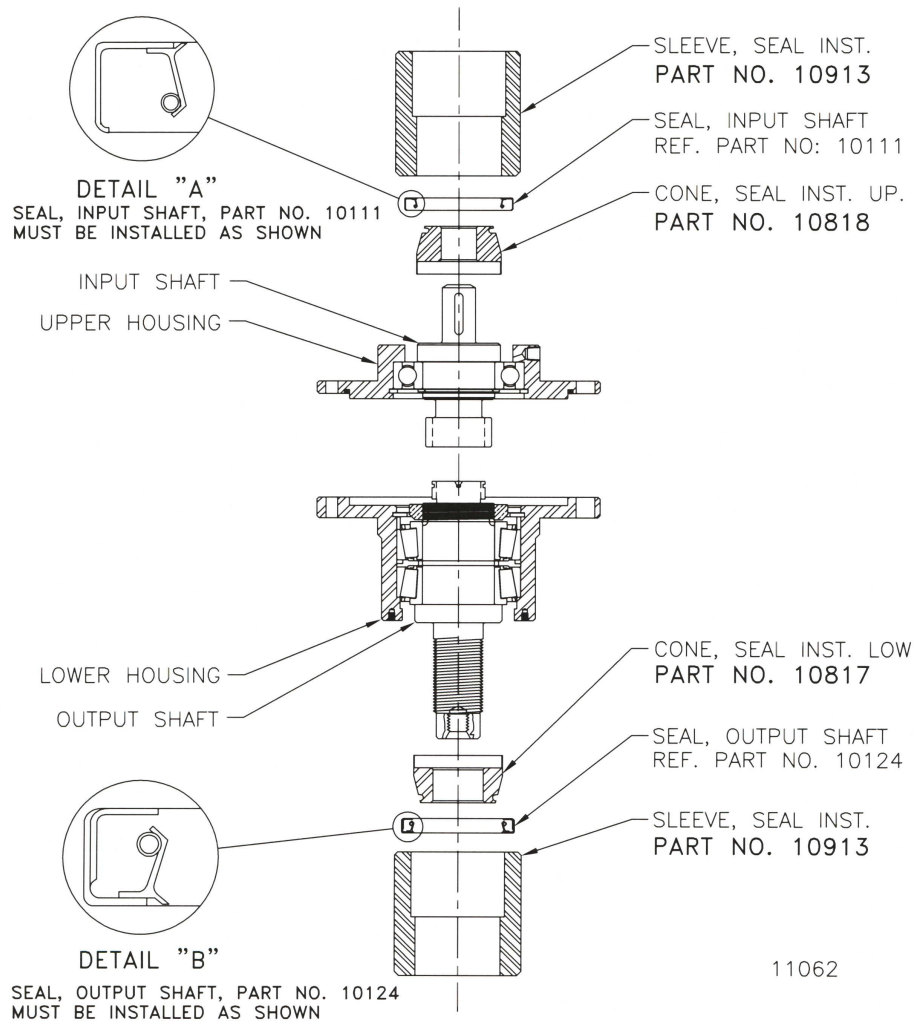
- 9.2.6.** Installation of the spacer, part #10128, and the retainer ring, part #10131, into the lower housing.

Install the spacer and retainer ring in the housing using retainer ring pliers, part #10176.



9.3. Seal Installation Tool Kit

9.3.1. Drawing #11062 - Tool Kit, Seal Installation, Gearbox



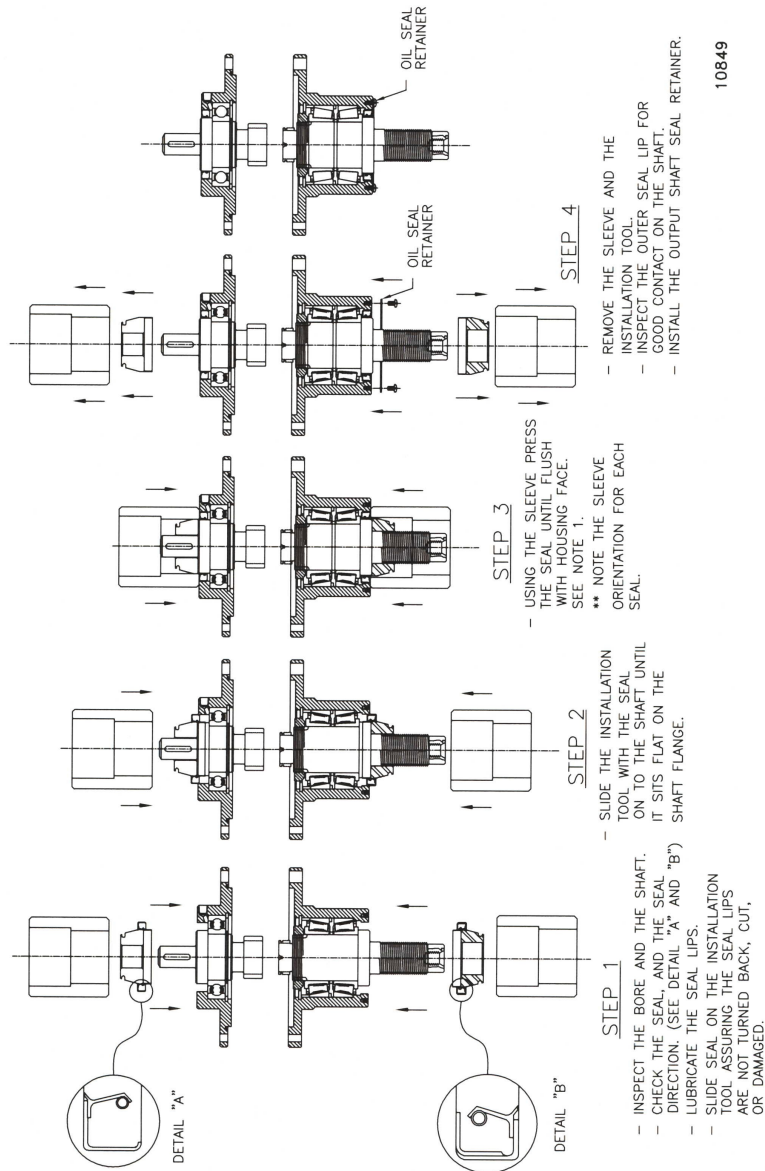
9.3. Seal Installation Tool Kit

9.3.2. Tool Kit, Seal Installation, Gearbox, part #11062



9.3. Seal Installation Tool Kit

9.3.3. Drawing #10849 - Upper and Lower Oil Seal Installation Procedures



9.3. Seal Installation Tool Kit

- 9.3.4.** Lightly grease the lower seal installation tool, part #10817.



9.3. Seal Installation Tool Kit

- 9.3.5.** Install the cone seal installation tool over the output shaft and slide the output shaft seal over the tool with the seal lip facing the housing.



9.3. Seal Installation Tool Kit

- 9.3.6.** Use seal installation sleeve, part #10913, to press or tap the seal into place.



9.3. Seal Installation Tool Kit

9.3.7. Remove the lower seal installation tool.

IMPORTANT:

Do not damage thin upper cone.



9.3. Seal Installation Tool Kit

9.3.8. Install the lower seal retainer, part #10794.



9.4. Installation Planetary Gear Assembly

Install the planetary gear assembly, part #11420, on to the output shaft spline.

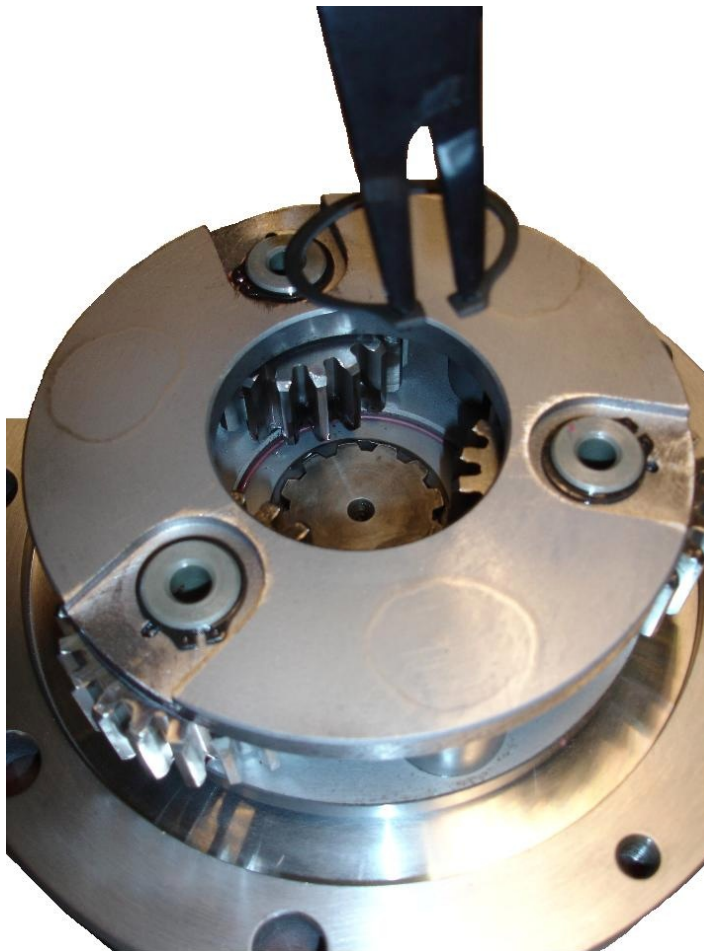


9.4. Installation Planetary Gear Assembly

9.4.1. Installation of the planetary retainer ring

Install the planetary gear assembly retainer ring, part #10131, with the retainer ring pliers, part #10177.

The retainer ring must engage the groove in the output shaft spline.



9.5. Ring Gear Installation

- 9.5.1. Install the O-ring, part #10811, in the groove on the ring gear.

NOTE:

Lightly grease the O-ring to hold it in place.



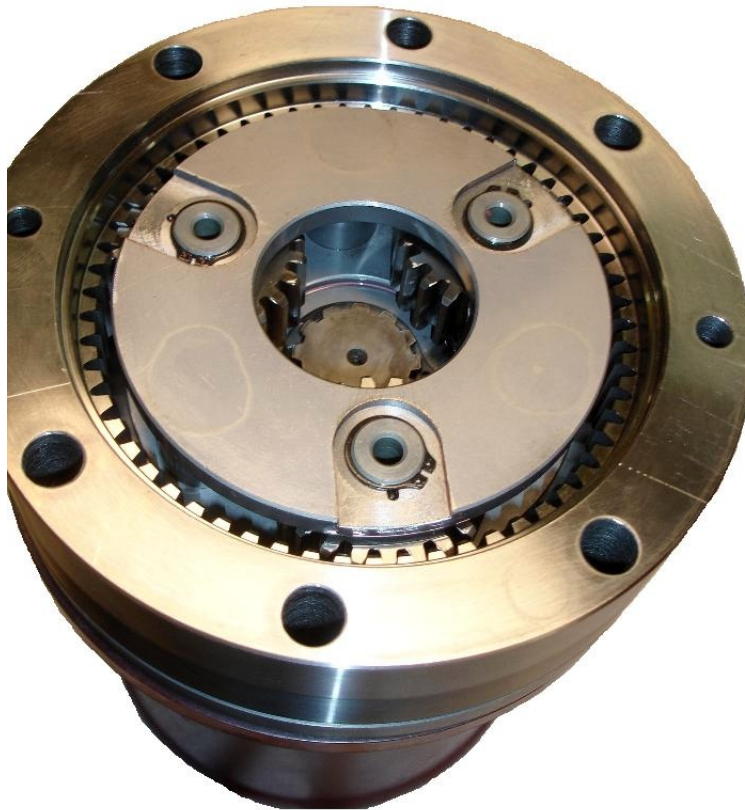
9.5. Ring Gear Installation

9.5.2. Ring Gear Assembly

Slide the ring gear over the planetary gears. Be sure the O-ring seal stays in the groove on the lower side of the ring gear.

NOTE:

Lightly grease the O-ring to hold it in place.



9.6. Gearbox Assembly

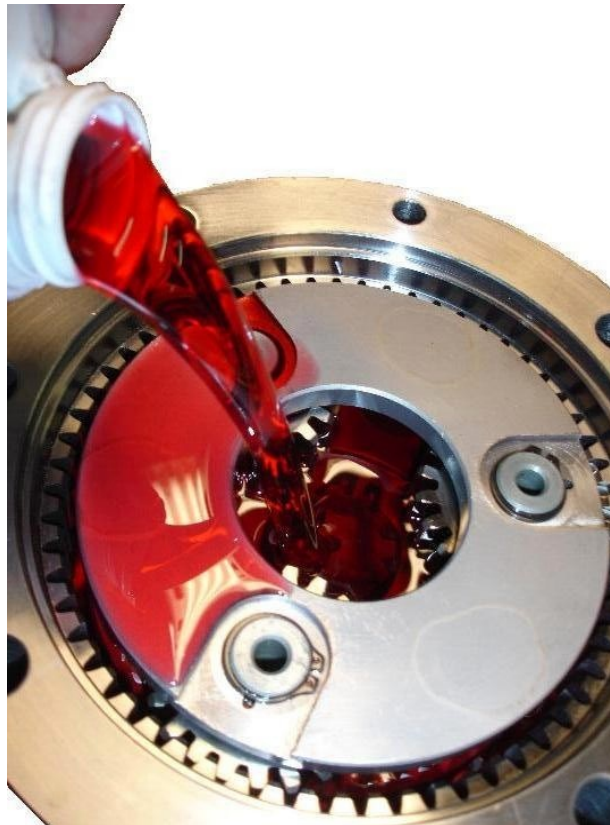
Fill the gearbox with lubricant (see lubricant schedule). This is important to assist in the initial priming of the gearbox automatic lubrication system.

IMPORTANT:

The lubrication hole in the side of the ring gear must be plugged with a 1/8 in. pipe plug to prevent the lubricant from draining out.

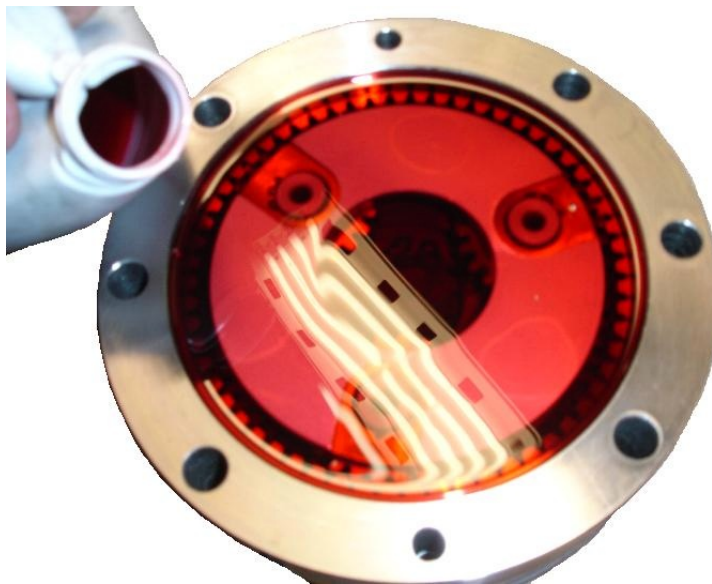
NOTE:

After the initial filling of the lubrication reservoir, allow thirty (30) minutes for the gearbox to totally fill before starting the degasser.



9.6. Gearbox Assembly

- 9.6.1.** View of the gearbox with lubricant, ready for assembly with the upper housing assembly.



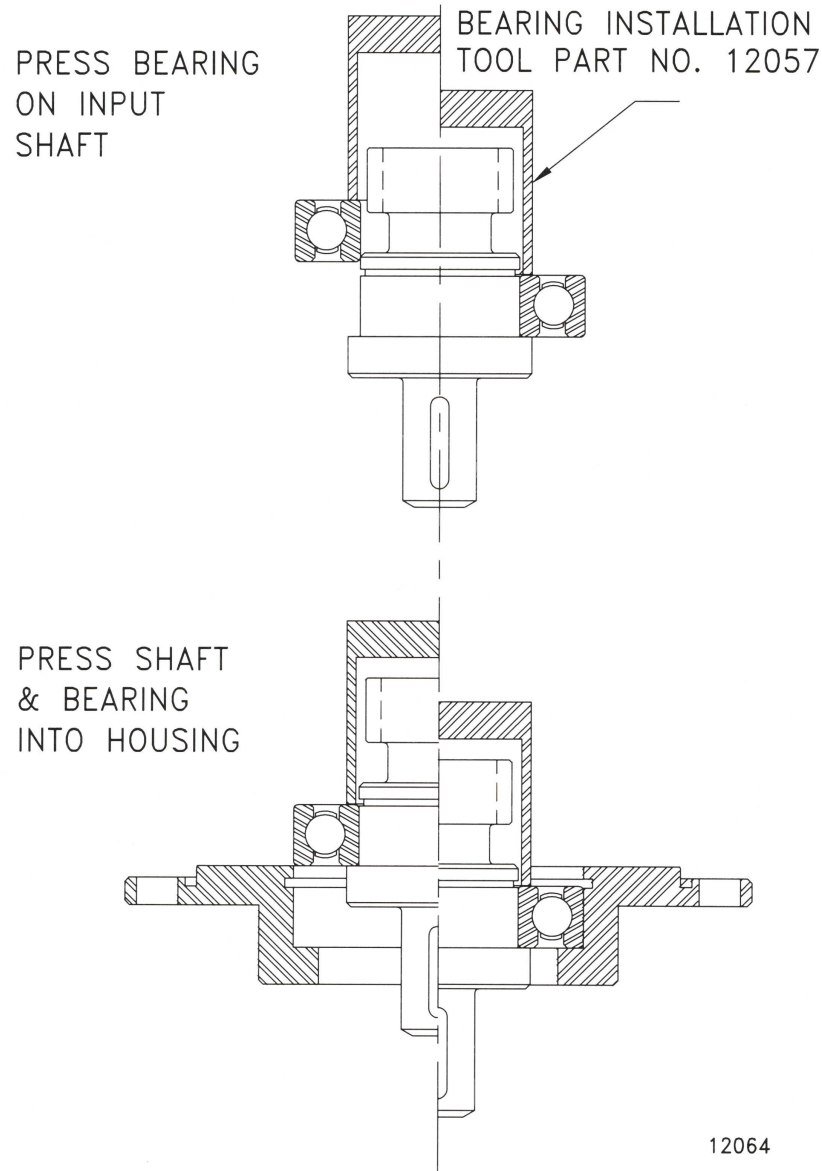
9.7. Assembly of Upper Housing

The upper input shaft, part #10138, upper bearing, part #10137, and retainer ring, part #10112.



9.7. Assembly of Upper Housing

9.7.1. Drawing #12064 - Bearing Installation, Upper



9.7. Assembly of Upper Housing

9.7.2. Pressing the upper bearing to the input shaft.

Place the input bearing on to the input shaft using assembly tool, part #12057.



9.7. Assembly of Upper Housing

9.7.3. Installation of the bearing retainer.

Install the input bearing retainer ring, part #10112, into the input shaft groove using the external retainer pliers, part #10177.



9.7. Assembly of Upper Housing

- 9.7.4.** Press the input shaft and the upper bearing into the upper housing.

Press the input shaft and the input bearing assembly into the upper housing, part #10136, using tool, part #12057.



9.7. Assembly of Upper Housing

9.7.5. Installation of the upper bearing retainer

Install the bearing retainer ring into the groove on the upper housing using the external retainer pliers, part #10176.



9.8. Installation of the Upper Seal (See drawing #11062 on Page 10)

- 9.8.1.** Grease the upper seal installation cone, part #10818, and install over the input shaft.

Slide the upper seal, part #10111, over the cone, with the seal lip facing the upper housing.

IMPORTANT:

Do not damage thin upper cone lip or it will not engage the top surface of the shaft seal area.



9.8. Installation of the Upper Seal (See drawing #11062 on Page 10)

- 9.8.2.** Using the seal installation tool, part #10913, press or tap the upper seal into the upper housing until flush.



9.8. Installation of the Upper Seal (See drawing #11062 on Page 10)

9.8.3. Installation of the upper housing O-ring seal

Install the O-ring seal, part #10811, into the groove on the upper housing.

NOTE:

Lightly grease the O-ring to hold it in the groove while assembling with the gearbox.



9.9. Oil Ports

Install upper housing assembly as shown with oil ports in alignment.

IMPORTANT:

The upper and lower pipe 1/8 NPT plug must be in place. This is to prevent lubricant spillage during the assembly with the degasser.



9.9. Oil Ports

- 9.9.1. Align the top housing fastener holes with the ring gear housing holes and the lower housing holes.

Install two (2) 3/8 in. retaining bolts.

IMPORTANT:

The upper and the lower pipe plugs must be in alignment. These pipe plugs are to be removed and replaced with lubricant pipes after the gearbox is assembled to the lid on the degasser vessel and lubricant lines attached to the reservoir.

