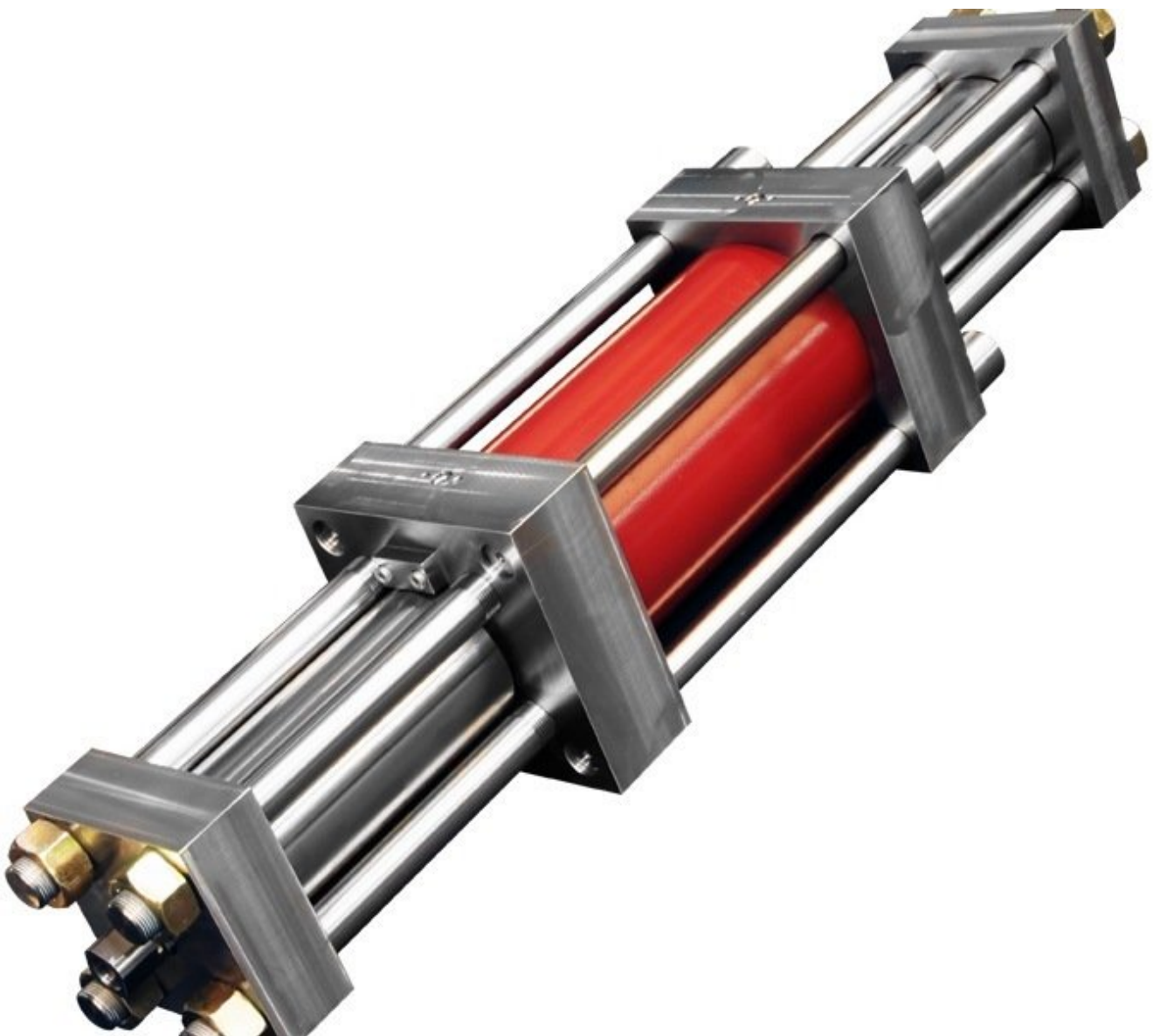




How to Repair a Timberwolf Hard Seal Using Kit #11451

This guide will explain how to repair a Timberwolf intensifier with hard seal AIT technology using kit #11451

Written By: Arion Vandergon





TOOLS:

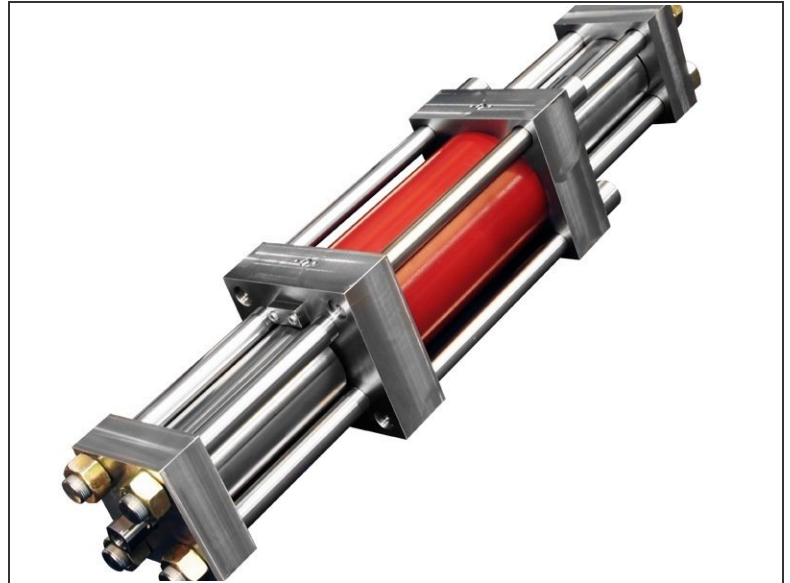
- [Dead Blow Hammer](#) (1)
- [Seal Installation Spacer Tool #15078](#) (1)
- [Mounting Cradle #15009](#) (1)
- [Locator Tool #11558](#) (1)
- [Sleeve #11811](#) (1)
- [Push Tool #11812](#) (1)
- [300 ft-lb Torque Wrench, 3/4" Drive](#) (1)
- [1-1/2" Hex X 3/4" Square Drive Socket](#) (1)



PARTS:

- [High-Pressure Seal Kit #11451](#) (1)
- [High-Pressure Seal with O-ring #11024 \(included in kit\)](#) (1)
- [Hoop #11018 \(included in kit\)](#) (1)
- [High-Vacuum Grease #11447 \(included in kit\)](#) (1)
- [HP Cylinder #14766](#) (1)
- [Spacer Tube #11521](#) (1)
- [Low-Pressure Poppet Basket #11520](#) (1)
- [AS Low-Pressure Poppet #11526](#) (1)
- [Check Valve #14767](#) (1)
- [-031 O-ring #11679-031](#) (1)
- [-035 O-ring #11679-035](#) (1)
- [AS HP Endcap #11529](#) (1)
- [1"-14 Grade 8 Nut #11672](#) (1)
- [Blue Goop #11111](#) (1)
- [O-ring Lube #13969](#) (1)

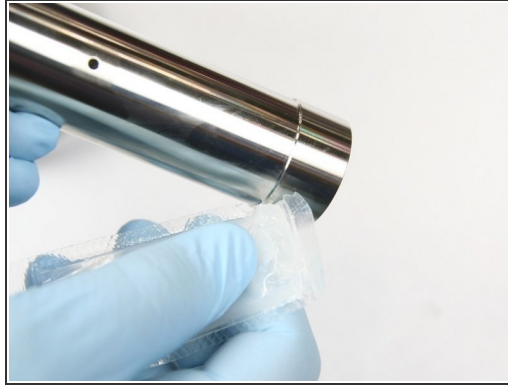
Step 1 — How to Repair a Timberwolf Hard Seal Using Kit #11451



⚠ Always make sure all high-pressure water has been removed from pump by following machine manufacturers' safety instructions. Failure to do so can cause severe injury or death.

- Remove HP cylinders and check valves from intensifier. Clean cylinders and check valves thoroughly, following standard procedures.
- ① Scotch-Brite, or similar abrasive pad, can be used on sealing faces of cylinder and check valve to clean marking and/or galling.

Step 2



- Place HP cylinder on seal installation spacer tool, taper side down
- Apply light coat of high vacuum grease to both shoulders of spacer tube
- Insert spacer tube into cylinder with LP poppet end down

Step 3



- Place locator tool on cylinder
- Place sleeve in locator tool with taper end up
- Apply light coat of high vacuum grease to red o-ring

Step 4



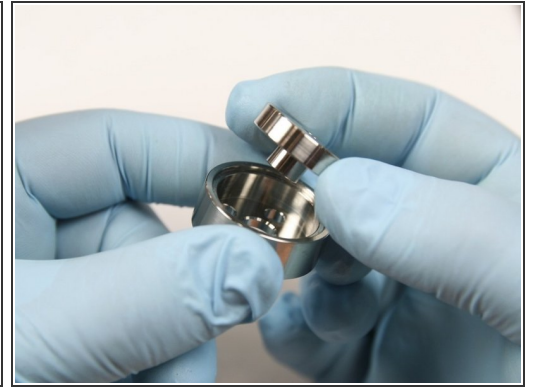
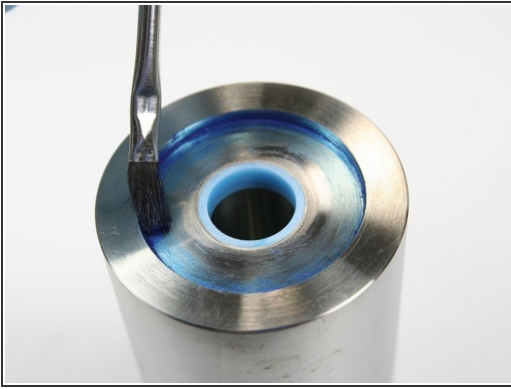
- Roll red o-ring into groove on HP seal
- Insert assembled HP seal into sleeve with red o-ring down towards cylinder
- Press HP seal into cylinder using non-stepped end of push tool
- ☑ Hold down sleeve while inserting HP seal to ensure seal doesn't catch on edge of HP cylinder

Step 5



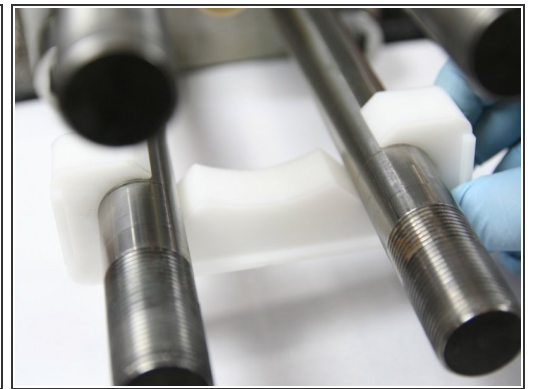
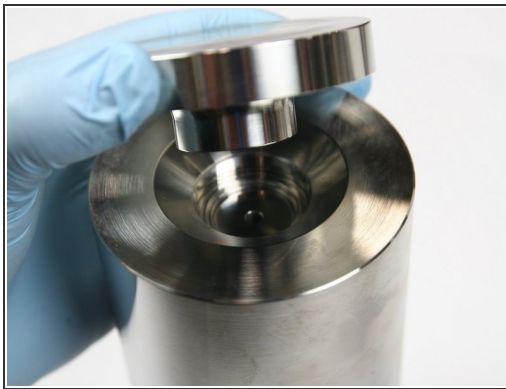
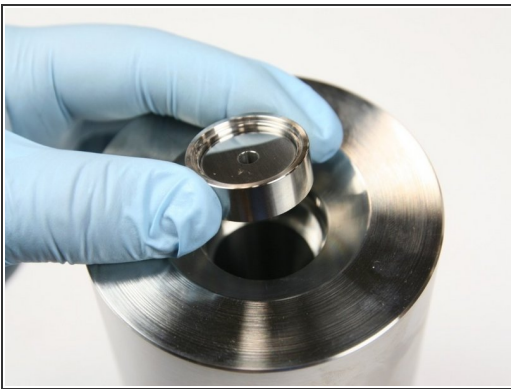
- Place hoop in sleeve with sharp edge of hoop down towards HP cylinder
- Seat hoop in HP cylinder using non-stepped end of push tool and dead blow hammer
- ☑ Hold down sleeve while seating hoop to ensure hoop doesn't catch on edge of HP cylinder
- Remove locator tool, sleeve, and push tool

Step 6



- Apply a light coat of blue goop to outer face of inset on end of HP cylinder
- Flip cylinder over and remove seal installation spacer tool
- Insert LP poppet in LP poppet basket so stem of poppet goes through center hole in basket
- ☑ Make sure LP poppet can freely move in LP poppet basket

Step 7



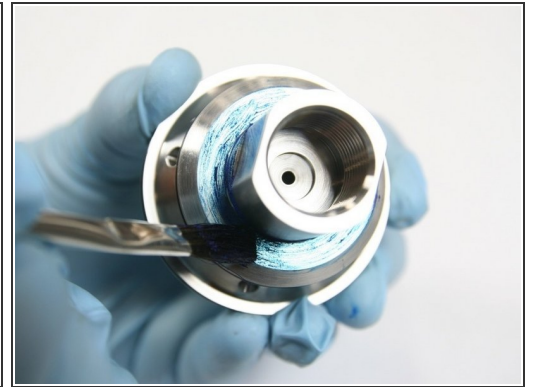
- Insert LP poppet and LP poppet basket into spacer tube in HP cylinder
- Place seal installation spacer tool on end of HP cylinder with step side down
- Place mounting cradle on bottom studs of intensifier with tabs toward outside of intensifier

Step 8



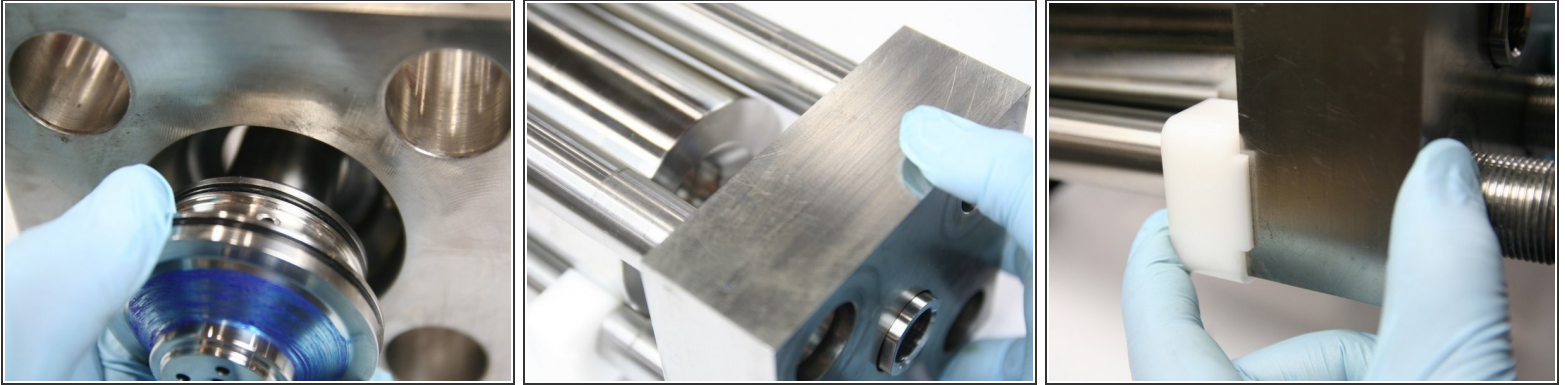
- Push HP cylinder onto plunger using mounting cradle as a guide and seal installation spacer tool as a push tool
- Remove seal installation spacer tool, taking care to that LP poppet stays in LP poppet basket
- Apply light coat of o-ring lube to -035 and -031 o-rings for check valve

Step 9



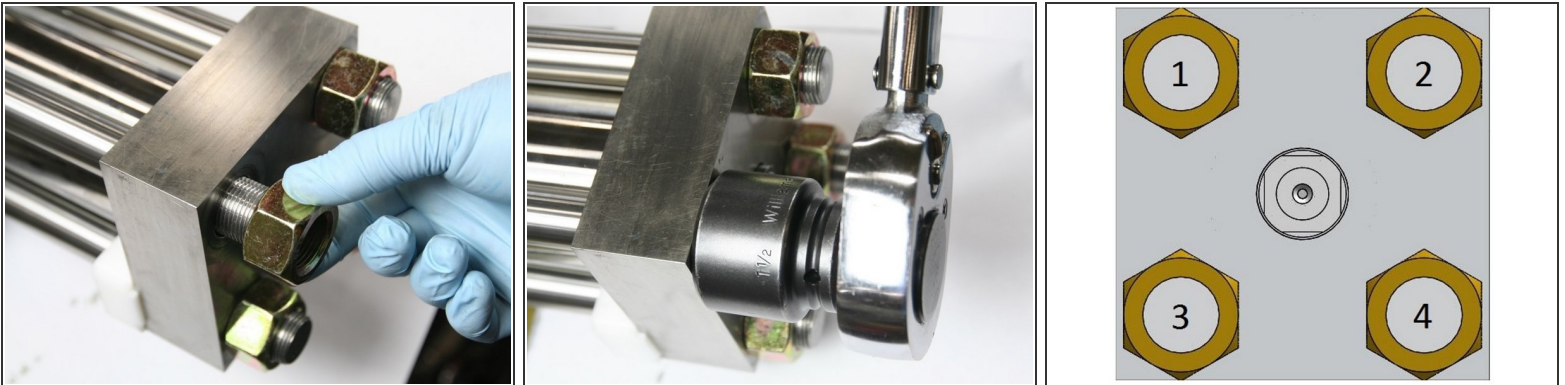
- Place -031 and -035 o-rings into grooves on check valve
- Apply light coat of blue goop to tapered (sealing) face of check valve
- Apply light coat of blue goop to bottom step of check valve

Step 10



- Insert check valve into HP endcap
- Slide HP endcap with check valve onto intensifier studs
- Push HP endcap against HP cylinder and align tabs of mounting cradle so cradle supports HP endcap
- ❗ The mounting cradle is used to ensure proper alignment between HP cylinder and HP endcap during torquing

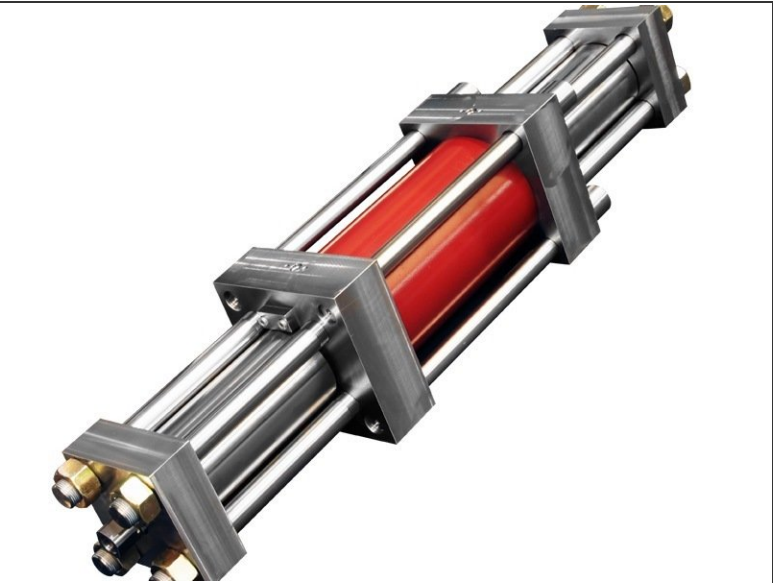
Step 11



- Thread and hand-tighten nuts onto studs using a cross pattern
- Torque nuts using a cross pattern according to the following directions
- Use numbers in picture as a guide for location number found in included table for torquing procedure

Step 12

Torque Value (Ft-Lbs)	Torque Order by Location Number			
	First	Second	Third	Fourth
25	1	4	3	2
50	2	3	1	4
75	4	1	2	3
100	3	2	4	1
125	1	4	3	2
150	2	3	1	4
175	4	1	2	3
200	3	2	4	1
225	1	4	3	2
250	2	3	1	4
275	4	1	2	3



- Torque each nut in torque order found in table to each torque value prior to stepping to next value
- Continue with HP poppet installation and standard start-up procedures