

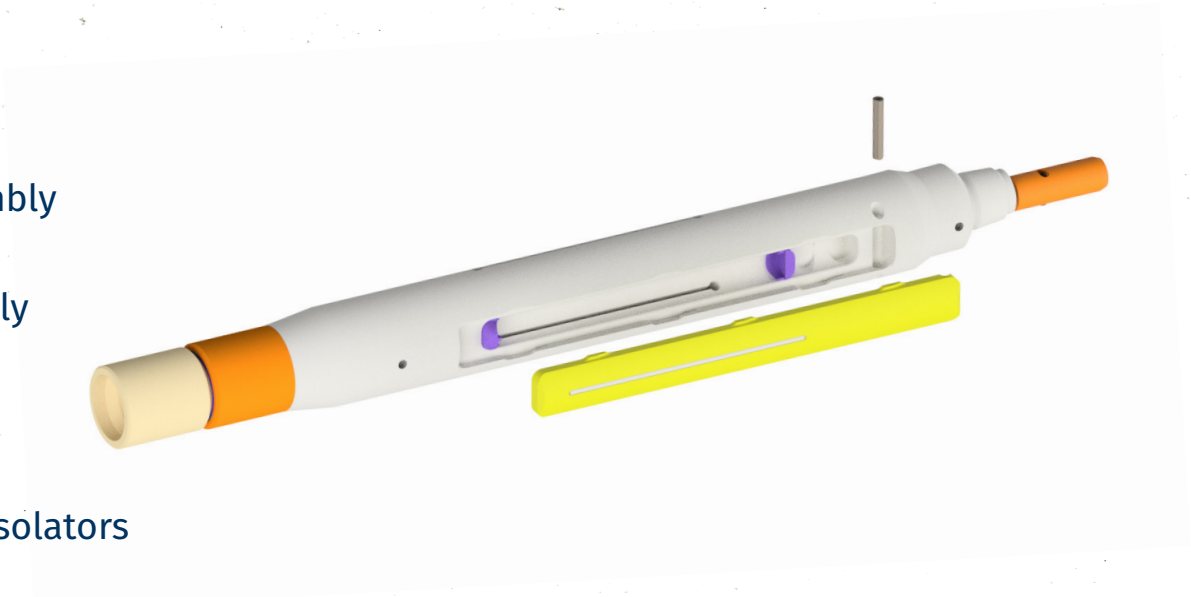
ROCKNIFE™ RK465

Product Manual



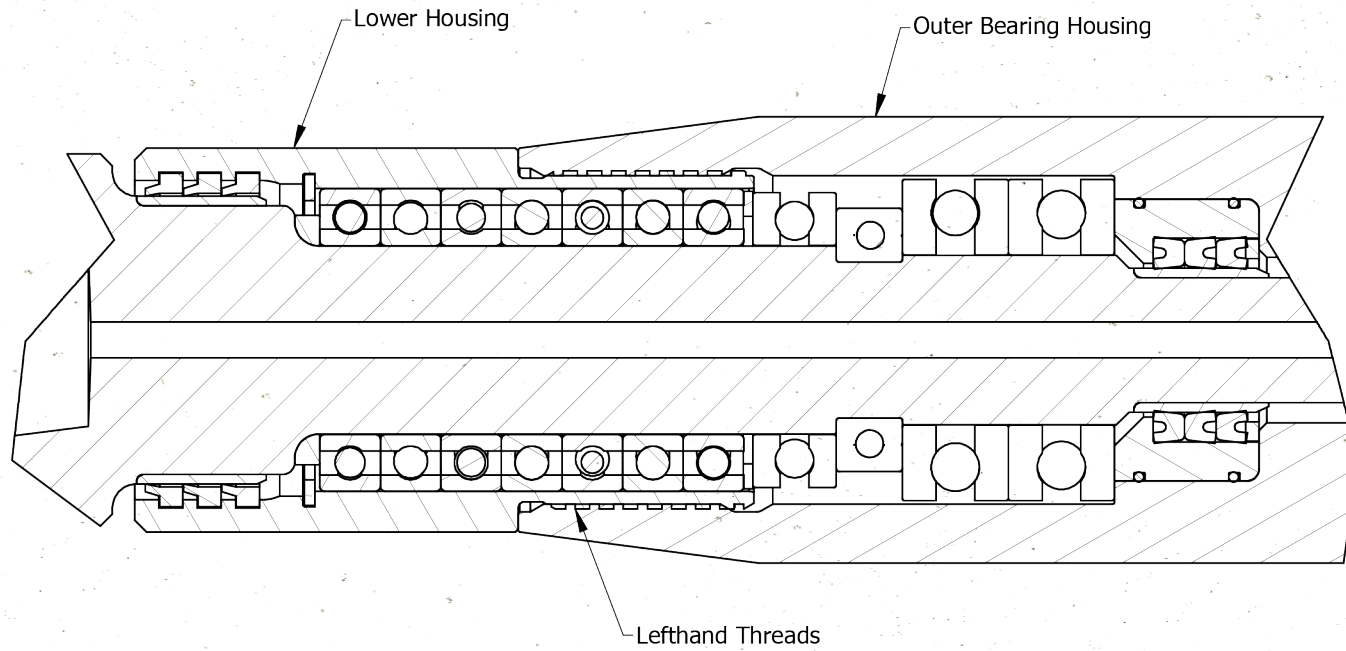
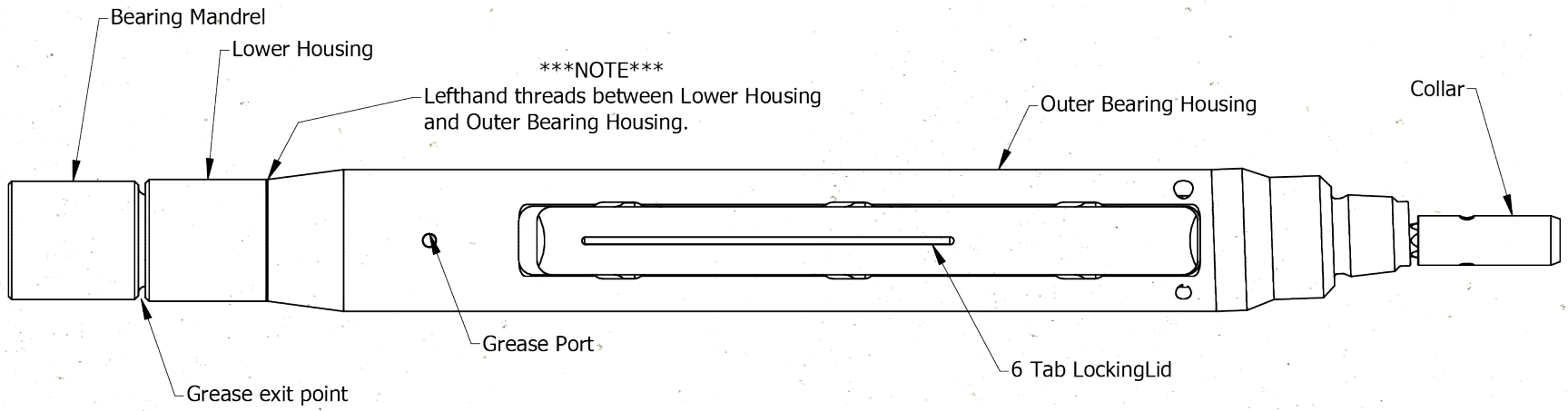
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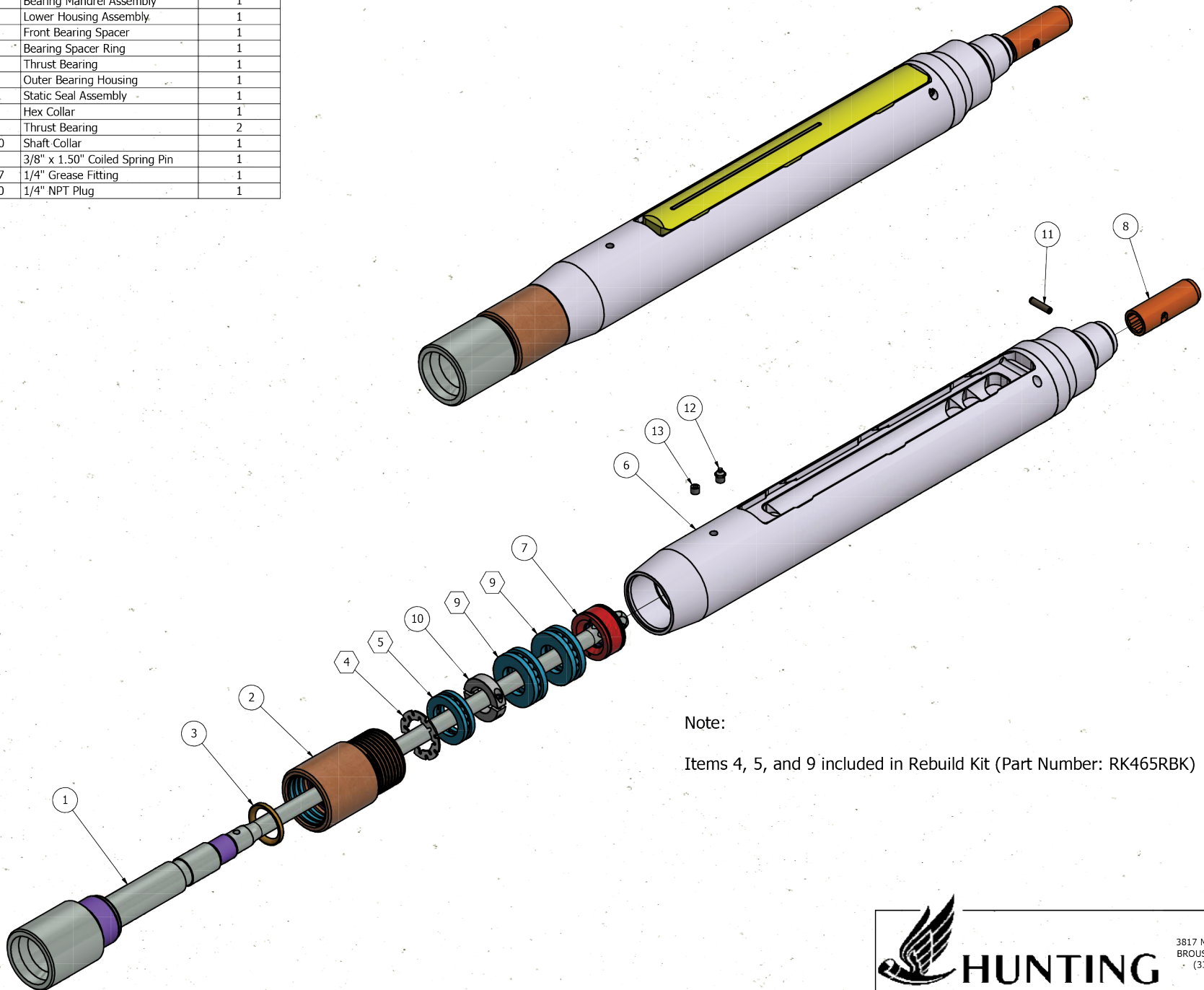


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MATERIAL LIST			
FOR ITEMS	PART NUMBER	DESCRIPTION	TOTAL QTY
1		Bearing Mandrel Assembly	1
2		Lower Housing Assembly	1
3	400AT04	Front Bearing Spacer	1
4	400ATSP	Bearing Spacer Ring	1
5	51210	Thrust Bearing	1
6	400AT05	Outer Bearing Housing	1
7		Static Seal Assembly	1
8	400-234	Hex Collar	1
9	51309	Thrust Bearing	2
10	6436K240	Shaft Collar	1
11	41LZ94	3/8" x 1.50" Coiled Spring Pin	1
12	40141737	1/4" Grease Fitting	1
13	40173500	1/4" NPT Plug	1



Note:
 Items 4, 5, and 9 included in Rebuild Kit (Part Number: RK465RBK)

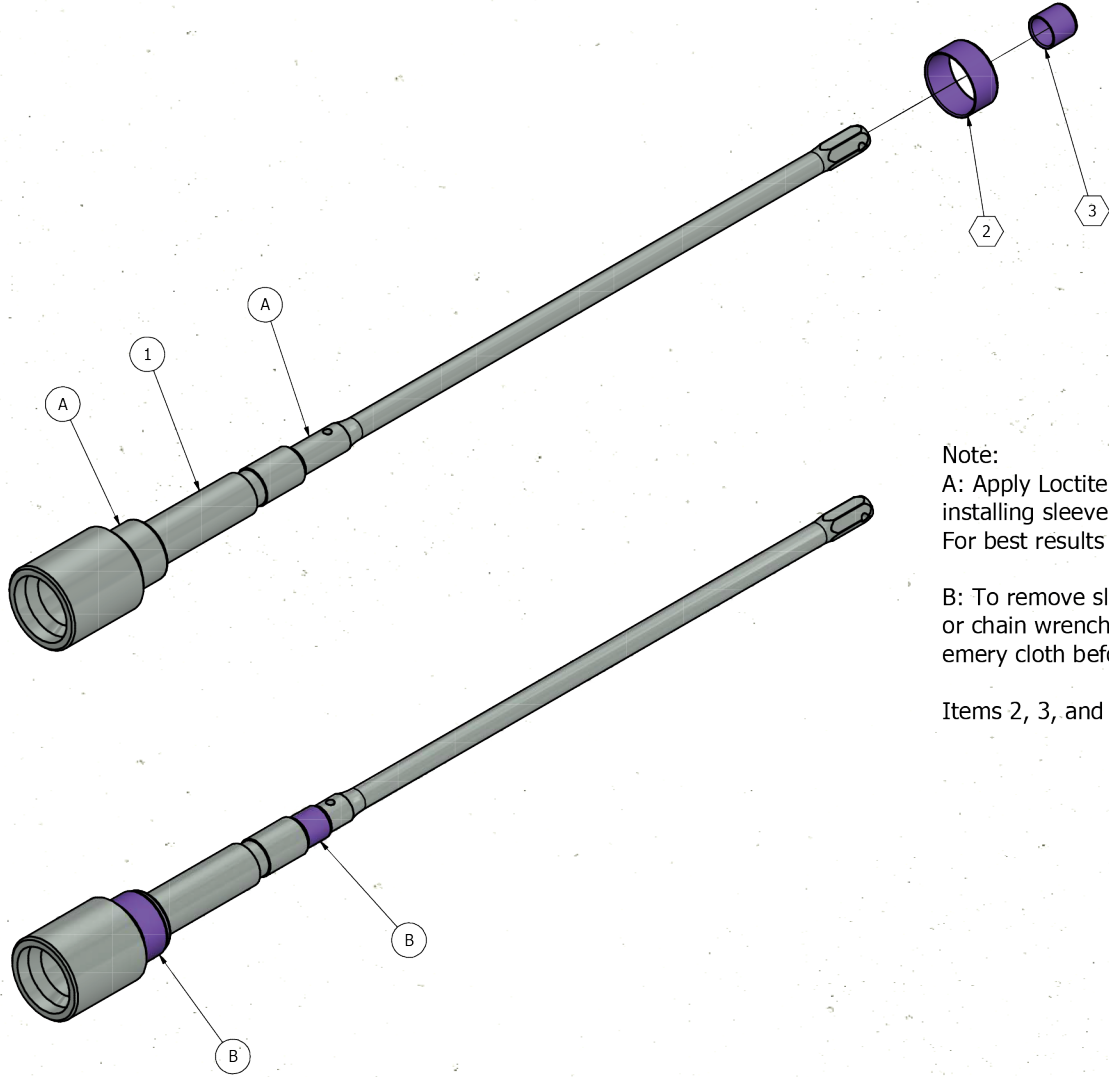


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TITLE
 Main Assembly

3

MATERIAL LIST			
FOR ITEMS	PART NUMBER	DESCRIPTION	TOTAL QTY
1	400AT01	Bearing Mandrel	1
2	400AT0101	Front Seal Sleeve	1
3	400AT0102	Rear Seal Sleeve	1
4	H0047	Loctite 638, 10ml	1



Note:
 A: Apply Loctite 638 (green) to clean surface before installing sleeve. Once sleeve is installed let cure for minimum of 1 hour. For best results allow to cure overnight.

B: To remove sleeve, apply heat to sleeve area, use adjustable pliers or chain wrench to remove sleeve. Allow to cool, then clean area with emery cloth before installing new sleeve.

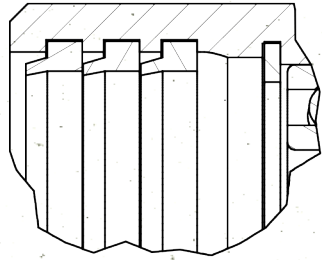
Items 2, 3, and 4 included in Rebuild Kit (Part Number: RK456RBK)



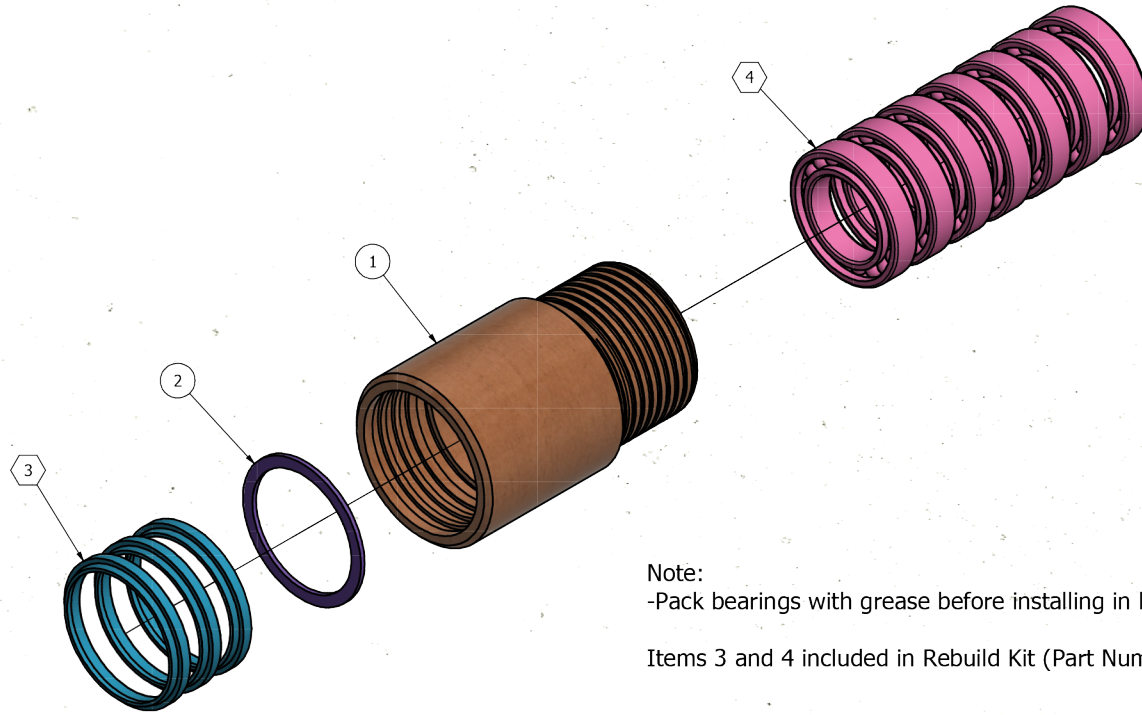
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TITLE
 Bearing Mandrel Assembly

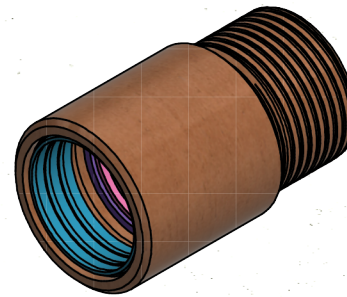
MATERIAL LIST			
FOR ITEMS	PART NUMBER	DESCRIPTION	TOTAL QTY
1	400AT02	Lower Housing	1
2	91985A346	Spiral Retaining Ring	1
3	SHD-3000	Wiper Ring	3
4	6010	Radial Bearing	7



Note seal (#3) direction, seal lip towards bit box.



Note:
 -Pack bearings with grease before installing in lower housing.
 Items 3 and 4 included in Rebuild Kit (Part Number: RK465RBK)



5



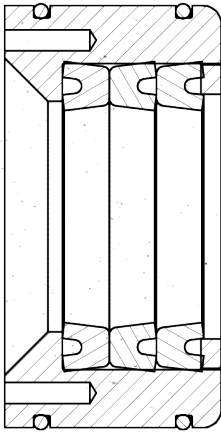
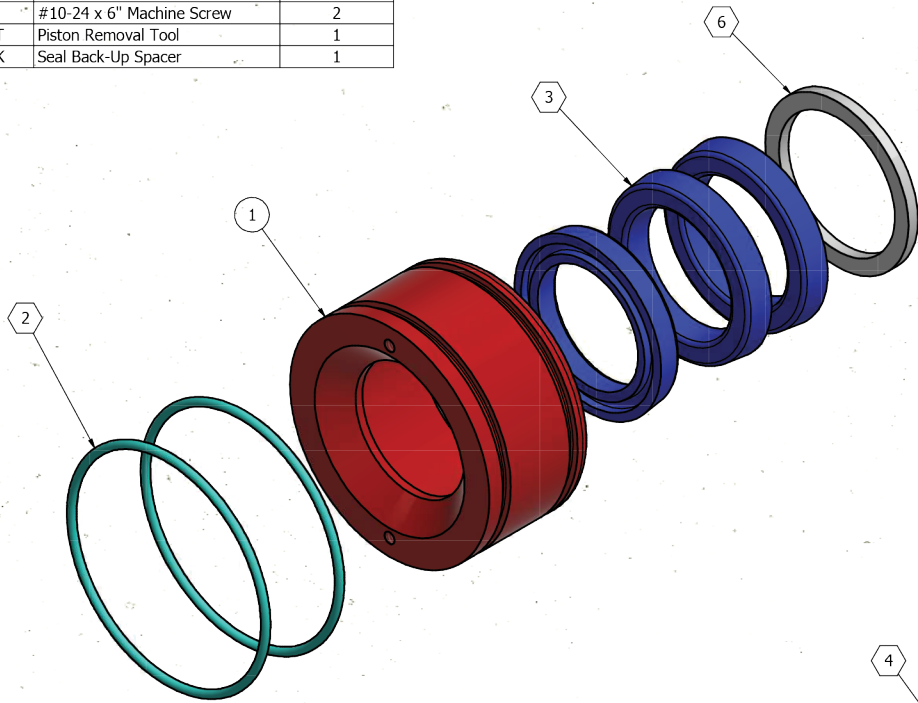
HUNTING

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TITLE

Lower Housing Assembly

MATERIAL LIST			
FOR ITEMS	PART NUMBER	DESCRIPTION	TOTAL QTY
1	400AT031	Static Piston	1
2	9452K155	O-Ring -148	2
3	9691K63	U-Cup Seal	3
4	146962	#10-24 x 6" Machine Screw	2
5	400ATPT	Piston Removal Tool	1
6	400ATBK	Seal Back-Up Spacer	1



Note, orientation of U-Cup Seals.
 1st seal faces toward front of housing
 2nd and 3rd seals face toward back of housing
 followed by back-up spacer

Items 2 - 6 included in Rebuild Kit (Part Number: RK465RBK)

Use #4 machine screws to assist install of static piston
 Use #4 and #5 to assist in removal of static piston



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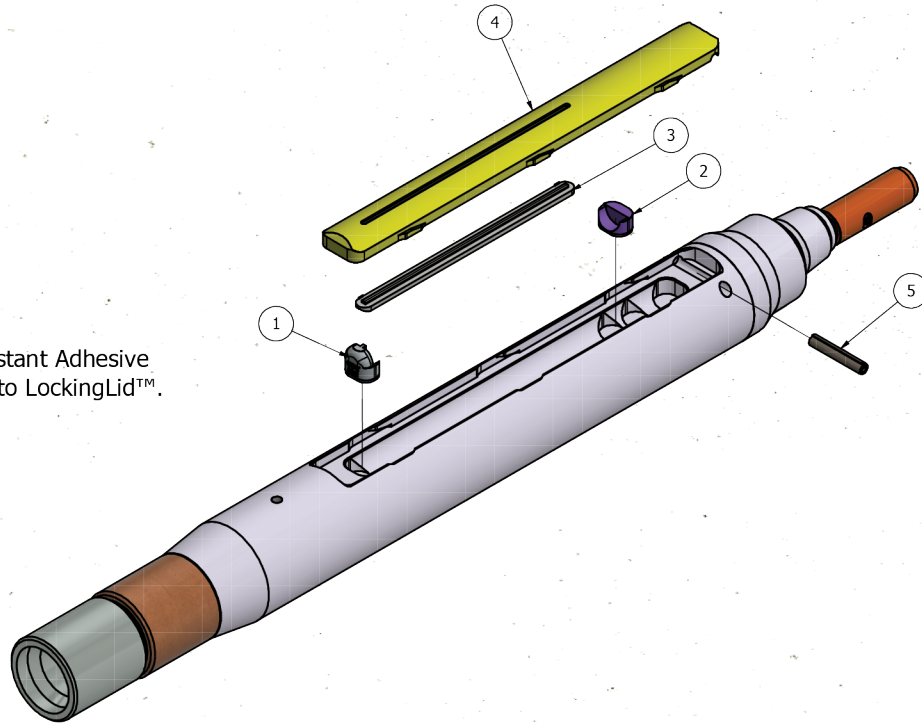
TITLE
 Static Piston Assembly

MATERIAL LIST			
FOR ITEMS	PART NUMBER	DESCRIPTION	TOTAL QTY
1	400ATF5FS	F5 Front Support	Sold as Set
1	400AT86BFS	86B Front Support	Sold as Set
2	400ATF5RS	F5 Rear Support	Sold as Set
2	400AT86BRS	86B Rear Support	Sold as Set
3	400AT2103	Cover Insert - F5	1
3	400AT2102	LockingLid™ Insert - 86B	1
4	400AT21	Cover F5 / 86B	1
5	41LY05	1/2" x 3" Spring Pin	1

86B Isolators sold as set:
 PN: 400AT86B_Set
 Includes 400AT86BFS and 400AT86BRS

F5 Isolators sold as set:
 PN: 400ATF5_Set
 Includes 400ATF5FS and 400ATF5RS

Secure #3 LockingLid™ Insert with Loctite® 401 Instant Adhesive
 or equivalent retaining compound when installing into LockingLid™.



ROCKNIFE™ RK465

Rebuild Procedures



Stabilize housing by placing Lower Housing in chain vice.

Drive out 3/8" coiled spring pin from Collar on rear of Housing.
Remove Collar.

Remove Outer Bearing Housing (OBH) using large pipe wrench.
NOTE: Lower Housing and OBH are threaded together with **LEFT-HAND threads**.

Once broken free, it takes 11-12 revolutions to separate the two pieces. Set OBH aside.
NOTE: OBH weighs 115 lbs. Use caution when removing.



Use 1/4" hex drive to remove two screws from Split Ring. Remove Split Ring, clean, and set aside.



Using punch or screwdriver, remove and discard 7 Radial Bearings from Lower Housing.



Remove Bearing Mandrel from Lower Housing. Use chain wrench to pull Mandrel forward (can also tap on end of shaft).



Remove and discard 3 Wiper Seals from Lower Housing. Leave Spiral Retaining Ring in Lower Housing. Do not remove. Thoroughly clean and remove all grease from Lower Housing, including external threads. Set Housing aside.



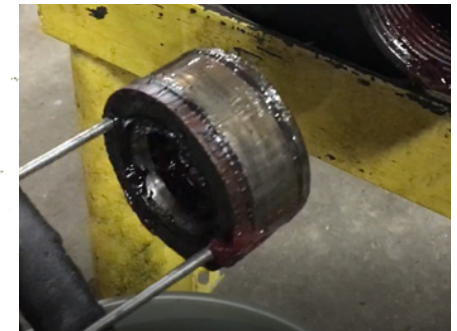
Remove Front Bearing Spacer, clean, and set aside.



Remove Thrust Bearings (2x) from Outer Bearing Housing until Static Piston is exposed.

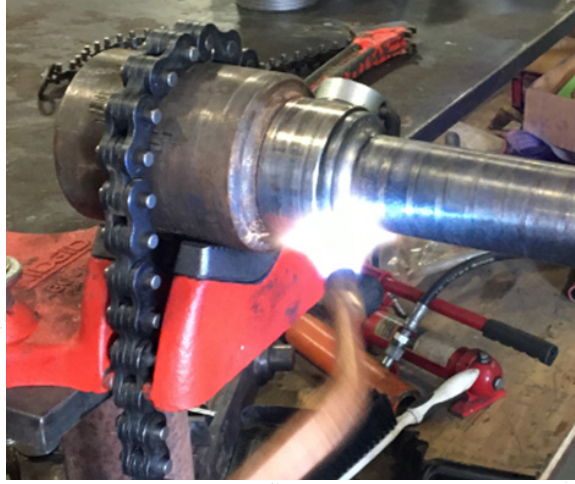
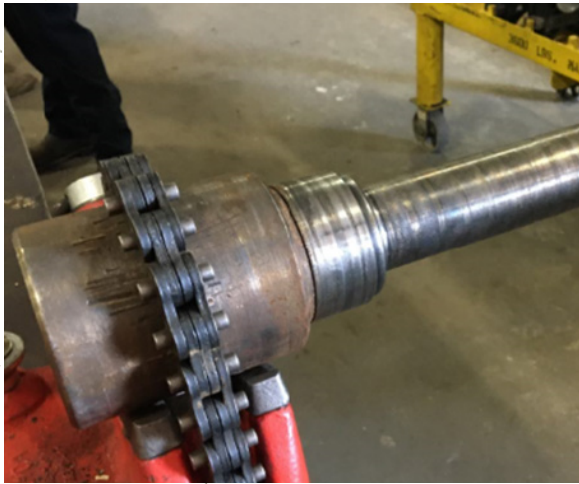


Once Static Piston is exposed, install two 6-inch machine screws (included in Rebuild Kit) to assist in removal of Piston. Position Removal Tool as shown (included in Rebuild Kit) and pull to remove piston.

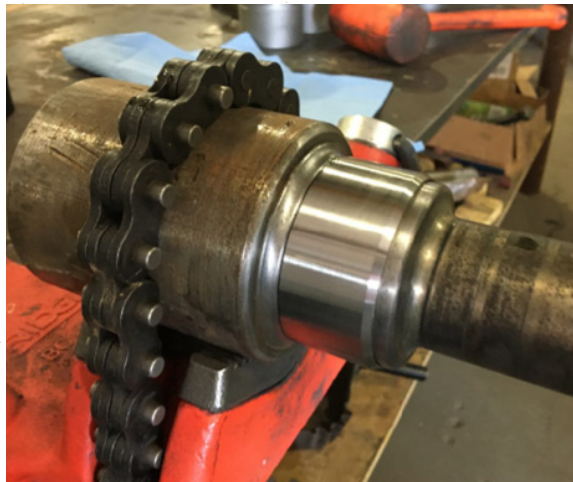


Once Static Piston is free, remove machine screws (set aside and save for later), remove and discard internal seals, and remove and discard external o-rings. Thoroughly clean Static Piston and set aside.

Clean Bearing Mandrel of all grease. Heat, front and rear radial sleeves to break down adhesive under them. Using jaw-type pliers or chain wrench, break radial sleeves loose and remove from Mandrel. Set sleeves aside to cool and retain sleeves for later. (The old sleeves can be used as an installation aid for new components). **Allow Mandrel to cool.**

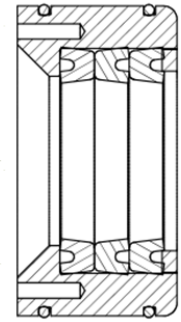


Bearing Mandrel: Once Mandrel is cool, use emery cloth to clean front and rear seal sleeve areas. Test fit new sleeves on each area and repeat with emery cloth until sleeves slide on and shoulder up easily. Remove both sleeves, clean all parts with degreaser, and allow to dry. Apply 683 Loctite® (included in Rebuild Kit) to Mandrel and install sleeves. Remove any excess Loctite® with a clean dry cloth. Allow Loctite® to cure for minimum of 1 hour. For best results allow to cure overnight. (See Bearing Mandrel Assembly page 4).
NOTE: Once Loctite® is applied, if you have issues with the sleeve fully shouldering up, you can use old sleeve as a driver (see video).

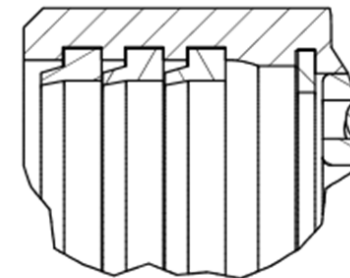


Static Piston: Install two external o-rings on Piston. Install three U-Cup seals in Piston. Install first seal with u-cup facing front of Piston. Install second and third seal with u-cup facing back of piston. Install seal back-up spacer, Use grease to help keep it in place. (Refer to Static Piston Assembly page 6).

Assemble Static Piston Assembly into Outer Bearing Housing. To assist in assembly, thread each of the 6-inch machine screws into front of Piston. Spread thin layer of grease on outside of Piston around o-rings, as well as generous amount of grease on the inside diameter of u-cup seals. Use machine screws to help hold piston, and install in back of housing. You will need to apply pressure to face of Piston when installing. Once Piston is securely in back of Housing, remove two machine screws and discard.



Lower Housing: Assemble Lower Housing Assembly. Refer to Assembly page 5. Install three Wiper Rings in Lower Housing with seal facing toward front of housing. (Refer to graphic on Assembly page 5). Install seven (7), pre-packed with grease, radial bearings inside housing.



Note seal (#3) direction, seal lip towards bit box.

Mount Bearing Mandrel Assembly in chain vise.



Install Front Bearing Spacer. Internal radius on spacer should face front of Mandrel and fit snugly just behind Front Seal Sleeve. Apply grease to each sleeve on Bearing Mandrel.



Slide Lower Housing Assembly onto Mandrel. You will need to apply a little pressure when Wiper Seals ride over Front Sleeve.



Install Bearing Spacer Ring. It will fit snugly up against last Radial Bearing.



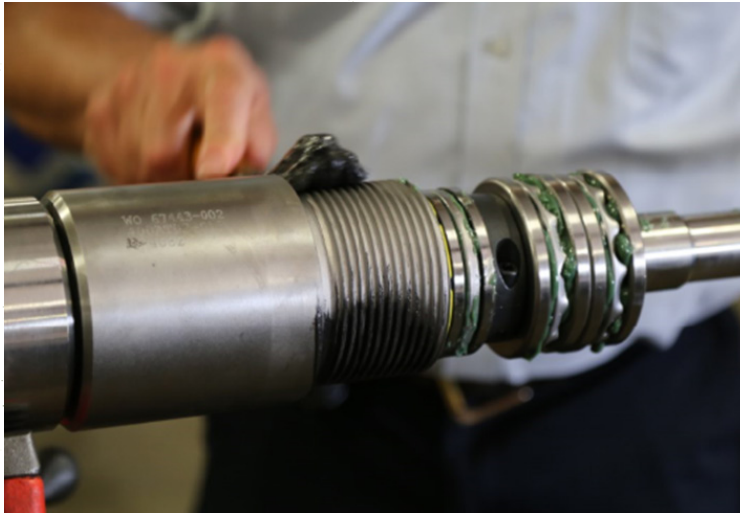
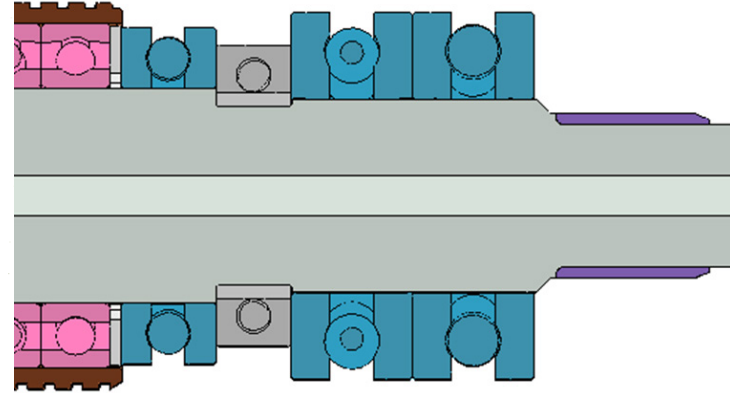
Install 51210 Thrust Bearing (race, bearing cage, race), applying grease between each piece of the bearing. Orientation of Bearing Cage does not matter.



Install Shaft Collar and torque bolts to 25 ft-lbs.



Install two 51309 Bearings. Apply grease between each piece (race, bearing cage, race, race, bearing cage, race). Orientation of Bearing Cage does not matter.



Apply light coat of copper thread compound to external threads of Lower Housing. Do NOT apply grease to box threads in Outer Bearing Housing.

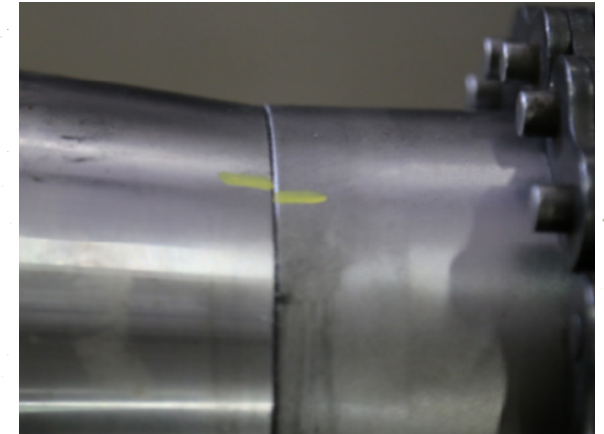
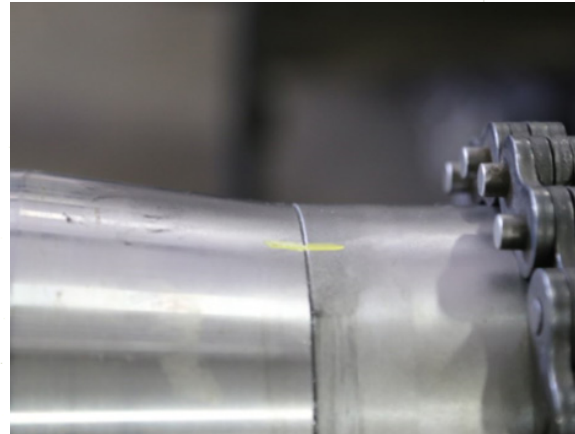
Carefully slide Outer Bearing Housing onto Bearing Mandrel. Use hoist to assist and to help keep threads in alignment.



Carefully reposition assembly in chain vise with vise around Lower Housing. Thread Lower Housing onto Outer Bearing Housing.
NOTE: **left-hand threads.**



Continue to thread Outer Bearing Housing until it shoulders up with Lower Housing. Remove any excess thread compound and mark shouldered connection with permanent marker. Tighten connection using 36" pipe wrench until there is 3/8" to 1/4" separation between mark.



Install Grease Fitting in fill port, pump grease into Fitting until grease comes out Exit point.



ROCKNIFE™ RK465

Rebuild Kit & Service Instructions

Rebuild Kit — Part #RK465RBK

QTY	PART NUMBER	DESCRIPTION
1	400ATSP	Bearing Spacer Ring
1	400ATBK	Seal Back-Up Spacer
1	400ATPT	Piston Removal Tool
1	H0047	Loctite® 638, 10ml Bottle
1	51210	Off Bottom Bearing
2	51309	On Bottom Bearing
7	6010	Radial Bearing
2	9452K155	O-Ring
3	9691K63	U-Cup Seal
3	SHD-3000	Wiper Ring
2	146962	#10-24 x 6" Machine Screw
2	41LY05	Coiled Spring Pin 1/2" x 3"
1	41LZ94	Coiled Spring Pin 3/8" x 1.5"
1	0132001CR	1 Tube Grease
1	400AT0101	Front Seal Sleeve
1	400AT0102	Rear Seal Sleeve

Daily: Grease motor bearings every 8-10 hours. For maximum life out of your bearings use Rocknife™ grease.

Rebuild motor every 80-100 hours.
(See Rebuild Procedures beginning on page 8.)

