

Maintenance Guide

Pneumatic Torque Wrench

Raptor Series

RP-3000

RP-6000

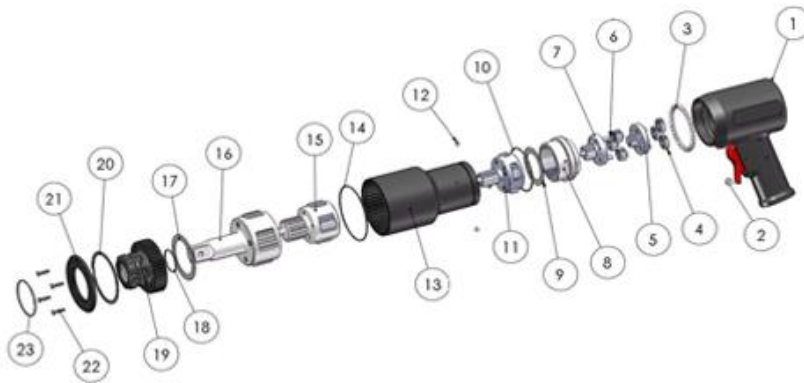


RAPTOR 3000 & 6000 Maintenance Guide



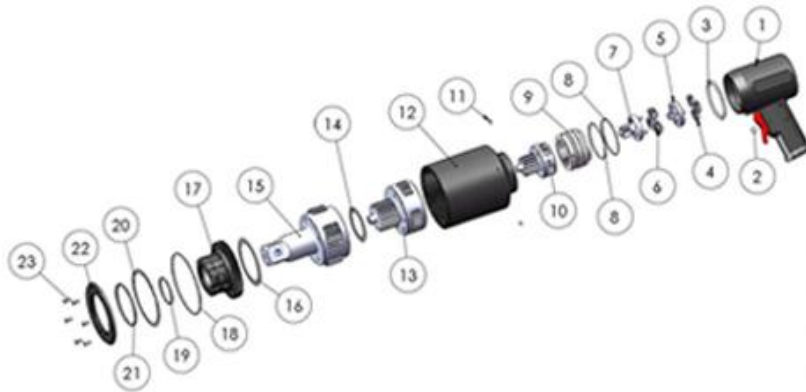
Gather the necessary items for disassembly and reassembly.

You will need: a flat head screw driver (1), 3/32" allen wrench (2), 3/16" allen wrench (3), RPA-Autoloader (4), your RP Series Pneumatic Wrench (5), a small box to collect the ball bearings (6), TorcUP recommended Marine Moly (7), a socket, vise or clamping device (8). We also recommend the use of protective gloves.



RAPTOR 3000 Parts Identification

ITEM	QTY.	PART #	DESCRIPTION
1	1	RP-AM19-ASSY	HANDLE AND MOTOR ASSEMBLY
2	1	RP-AM19-41	AIR MOTOR BALL RETAINER
3	35	RP-CM-BB	STEEL BALL
4	3	RP-30-ST1-G	1 ST STAGE SPUR GEAR ASSEMBLY
5	1	RP-30-ST1	1 ST STAGE GEAR CAGE ASSEMBLY
6	3	RP-30-ST2-G	2 ND STAGE SPUR GEAR ASSEMBLY
7	1	RP-30-ST2	2 ND STAGE GEAR CAGE ASSEMBLY
8	1	RP-30-HSA	HIGH SPEED ANNULUS
9	1	RP-30-TW-HSA	HIGH SPEED THRUST WASHER
10	1	RP-CM-ORING-MA	MAIN ANNULUS O-RING
11	1	RP-30-ST3A	3 RD STAGE GEAR CAGE ASSEMBLY
12	4	RP-CM-SS-DA	DRIVE ANNULUS SET SCREW
13	1	RP-30-DA	DRIVE ANNULUS
14	1	RP-30-OR-DA	DRIVE ANNULUS O-RING
15	1	RP-30-ST4A	4 TH STAGE GEAR CAGE ASSEMBLY
16	1	RP-30-DSTA	DRIVE STAGE ASSEMBLY
17	1	RP-30-TW-DS	DRIVE STAGE THRUST WASHER
18	1	RP-30-OR-AH	ANNULUS HEAD O-RING
19	1	RP-30-AH	ANNULUS HEAD
20	1	RP-30-RR	RETAINING RING
21	1	RP-30-AC	ANNULUS CAP
22	4	RP-30-AH-SCREW	ANNULUS HEAD SCREW
23	1	RP-30-OR-AC	ANNULUS CAP O-RING



RAPTOR 6000 Parts Identification

ITEM	QTY.	PART #	DESCRIPTION
1	1	RP-AM19-ASSY	HANDLE AND MOTOR ASSEMBLY
2	1	RP-AM19-41	AIR MOTOR BALL RETAINER
3	35	RP-CM-BB	STEEL BALL
4	3	RP-60-ST1-G	1 ST STAGE SPUR GEAR ASSEMBLY
5	1	RP-60-ST1	1 ST STAGE GEAR CAGE ASSEMBLY
6	3	RP-60-ST2-G	2 ND STAGE SPUR GEAR ASSEMBLY
7	1	RP-60-ST2	2 ND STAGE GEAR CAGE ASSEMBLY
8	2	RP-CM-ORING-MA	MAIN ANNULUS O-RING
9	1	RP-60-HSA	HIGH SPEED ANNULUS
10	1	RP-60-ST3A	3 RD STAGE GEAR CAGE ASSEMBLY
11	4	RP-CM-SS-DA	DRIVE ANNULUS SET SCREW
12	1	RP-60-DA	DRIVE ANNULUS
13	1	RP-60-ST4A	4 TH STAGE GEAR CAGE ASSEMBLY
14	1	RP-60-ST4A-TW	4 TH STAGE THRUST WASHER
15	1	RP-60-DSTA	DRIVE STAGE ASSEMBLY
16	1	RP-60-DSTA-TW	DRIVE STAGE THRUST WASHER
17	1	RP-60-AH	ANNULUS HEAD
18	1	RP-60-OR-DA	DRIVE ANNULUS O-RING
19	1	RP-60-OR-AH	ANNULUS HEAD O-RING
20	1	RP-60-RR	RETAINING RING
21	1	RP-60-OR-AC	ANNULUS CAP O-RING
22	1	RP-60-AC	ANNULUS CAP
23	6	RP-60-AH-SCREW	ANNULUS HEAD SCREW



Use the 3/16" allen wrench to remove/loosen the ball retainer (PN RP-AM19-41)
which connects the air motor to the complete gear box assembly.

Image shown is RP-6000

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Remove the ball bearings by rotating the gear box back and forth while still connected to the air motor. Hold the tool above the small box until all 35 ball bearings have been released.

Images shown are RP-6000



Separate the gear box assembly from the air motor handle assembly
by twisting the gearbox clockwise .

Images shown are RP-6000

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Invert the gear box, allowing stages 1 and 2 to drop onto your work surface.

Images shown are RP-6000

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Use a 3/32" allen wrench to remove the **4** set screws from the annulus.

Note: Use a vice or socket to stabilize the gear box.

Images shown are RP-6000



Place the square drive on your work surface and lift up the high speed annulus. Set the high speed annulus aside.

Images shown are RP-6000

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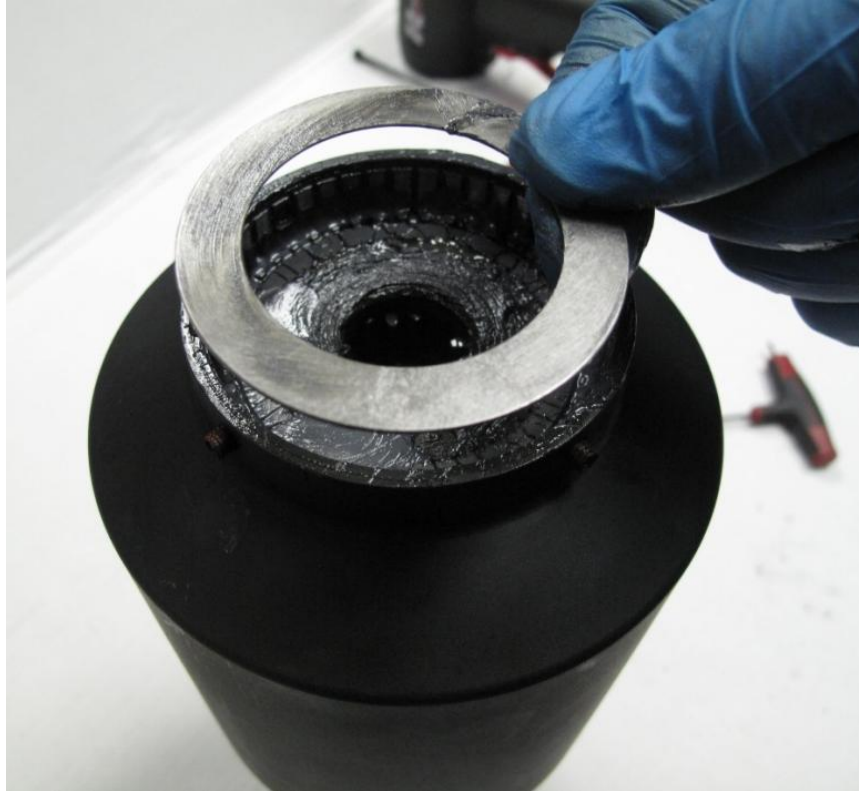


Image shown with washer for RP- 3000 only, not RP-6000

Remove the washer and set aside.

Image shown is RP-6000

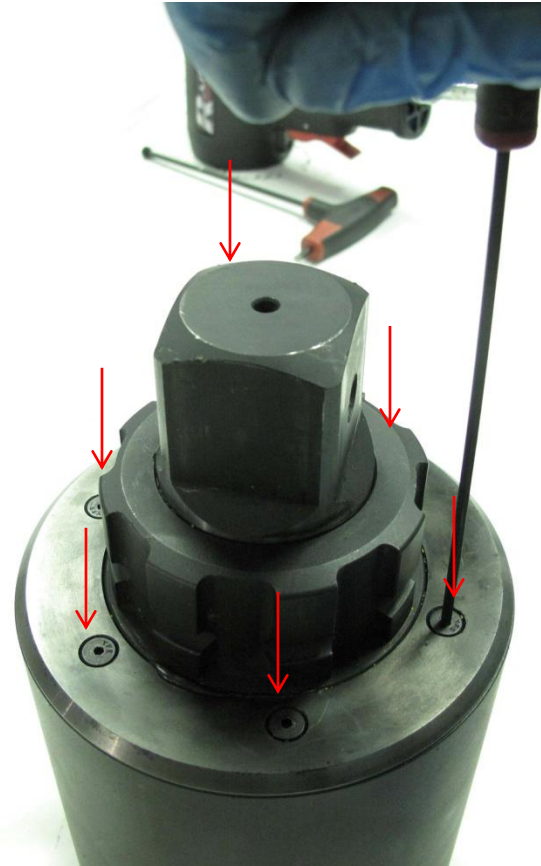


Lift the gear box and invert to dislodge the 3rd stage.

Images shown are RP-6000

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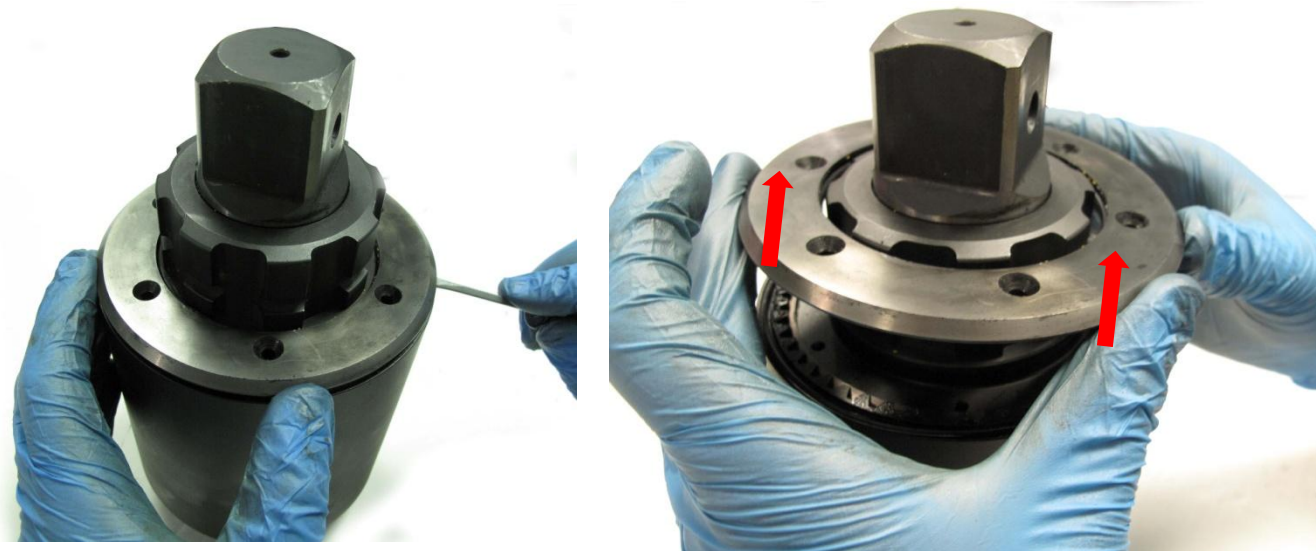
Set gear box with square drive up.

Using the 3/32" allen wrench, remove the screws as show.

The RP-3000 has four screws (part #RP-30-AH-SCREW).

The RP-6000 has six screws (part #RP-60-AH-SCREW).

Images shown are RP-6000



Use a prying tool (flat screw driver) to gently lift the annulus cap (part #RP-30-AC or part #RP-60-AC) and set it aside.

Images shown are RP-6000



Look for opening in retaining ring (Part# RP-60-RR)

Image shown is RP-6000

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Insert the edge of the prying tool in the opening of the ring and run it around the tool until it is removed.
Remove o-ring (part #RP-30-OR-DA or part #RP-60-OR-DA) and set aside.

Images shown are RP-6000

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Grasp the annulus head and lift (part #RP-30-AH or part #RP-60-AH)

Images shown are RP-6000



Remove the drive stage thrust washer (part #RP-30-DSTA-TW or part #RP-60-DSTA-TW).
Invert the gear box onto clamping device.

Images shown are RP-6000

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Grasp the main annulus and pull up, exposing the drive stage and 4th stage.

Images shown are RP-6000

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Remove 4th stage thrust washer. Only on RP-6000

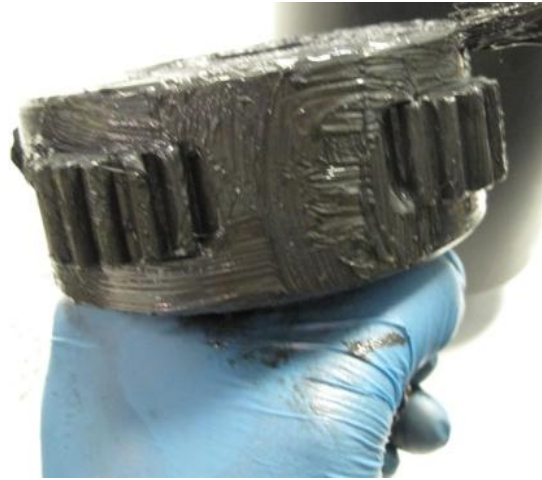
Separate 4th stage from drive stage.

Images shown are RP-6000



With all stages separated, wash all parts, using the cleaning method and cleansers recommended by local health codes and/or your supervisor.

Image shown is RP-6000



Once all parts have been cleaned, use the brush to apply a light coating Marine Moly to the entire interior surface of the annulus and the 4th stage.

Images shown are RP-6000



Install 4th stage assembly into main annulus.
Rotate the assembly to seat properly, then push down.

Images shown are RP-6000

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Install 4th stage thrust washer.
Use brush to grease drive stage.

Images shown are RP-6000

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Lift up drive stage and turn upside down and install into main annulus.
Grease stage. Install drive stage thrust washer. Install annulus head and twist holding
splines on annulus head. NOTE: If not seated properly retaining ring will not install properly.

Images shown are RP-6000

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Install the drive annulus o-ring.
Install the retaining ring.

Images shown are RP-6000



Install the annulus head and align the annulus cap holes.

RP-6000 has 6 screws Part # RP-60-AH-SCREW

RP-3000 has 4 screws Part# RP-30-AH-SCREW

Images shown are RP-6000



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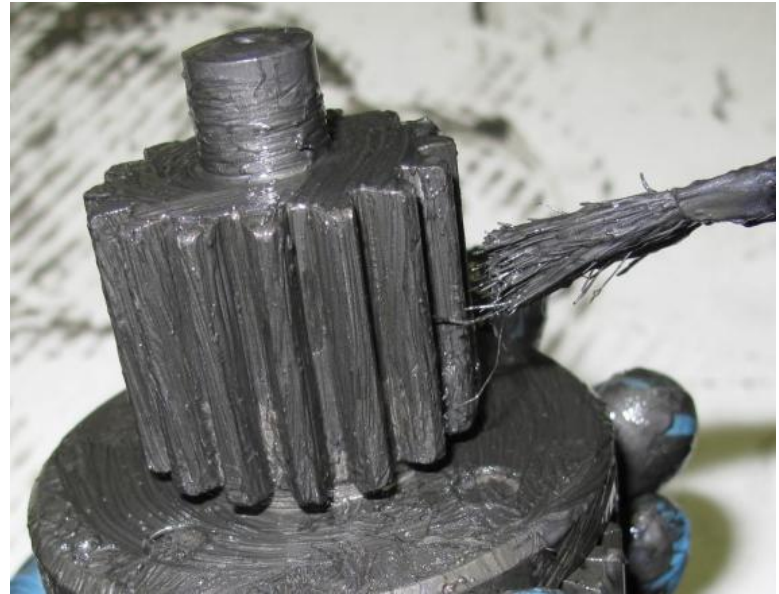


Invert the gear box and place in the clamping device.

Images shown are RP-6000

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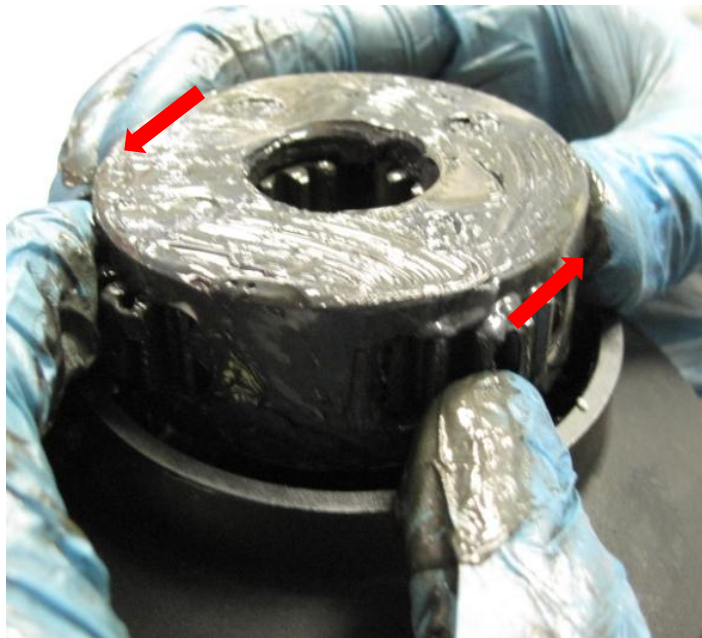


Install 3rd stage and brush on amount of grease as shown. Turn upside down and grease same.

Images shown are RP-6000

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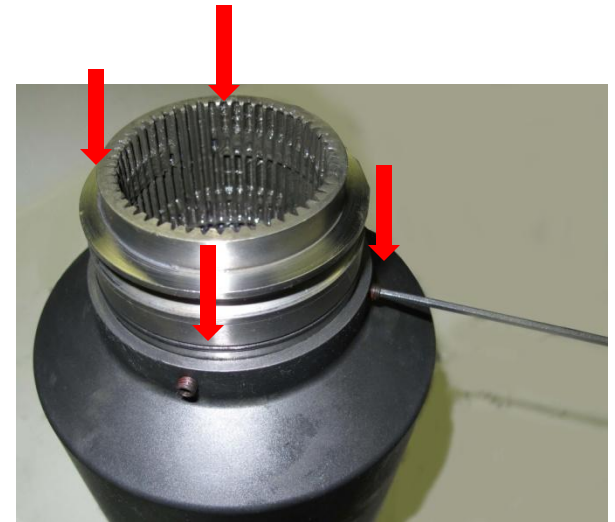


Install 3rd stage to main annulus. Rotate to allow for proper seating.
Picture shown (right) displays stage properly seated and greased.

Images shown are RP-6000

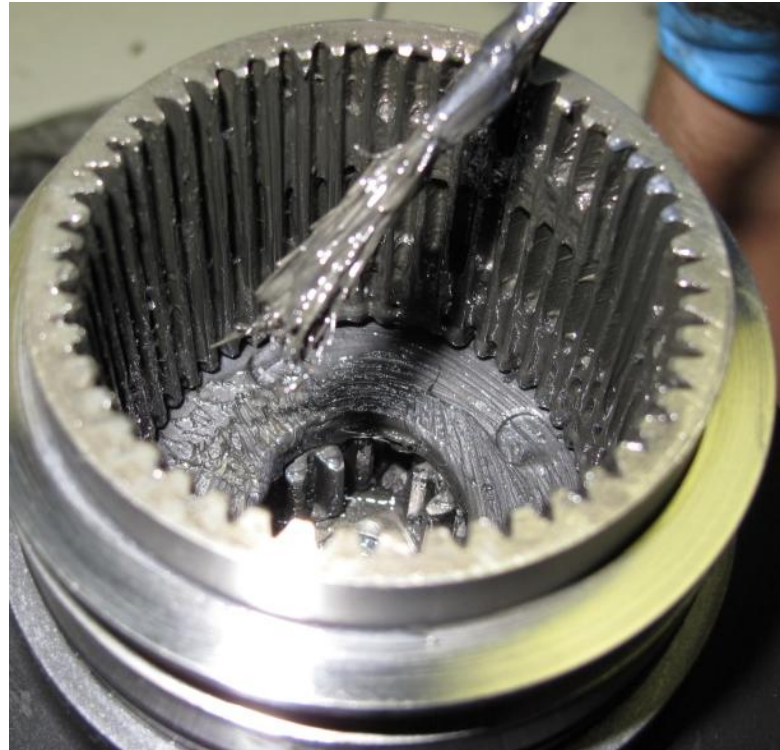


Install 3rd high speed thrust washer
(Only for RP-3000 – Part # RP-30-HSA-TW)



Install 3rd high speed thrust washer (Only for RP-3000 – Part # RP-30-HSA-TW)
Install high speed annulus and make sure holes are aligned with all four set screws.
Use the 3/32" allen wrench to tighten.

Images shown are RP-6000



Separate 2nd stage from 1st stage .
Grease inside of high speed annulus.

Images shown are RP-6000

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Lightly grease the 2nd stage gears and install the planet gears.

Images shown are RP-6000



Install 2nd stage assembly into high speed annulus.
Rotate the assembly to seat properly, then push down.

Images shown are RP-6000

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Apply grease again while rotating the annulus.

The proper amount of grease has been applied when you see the same amount of grease in the picture shown above while rotating the annulus.

Images shown are RP-6000



Lightly grease the 1st stage carrier.
Install 3 spur gears.

Images shown are RP-6000



Install 1st stage assembly into high speed annulus.
Rotate the assembly to seat properly, then push down.

Images shown are RP-6000

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Shown properly seated.
Apply grease generously.

Images shown are RP-6000

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Reference photo of proper amount of grease to apply.

Image shown is RP-6000



Lightly grease the raised surface plate that surrounds the rotator.
Attach gear box to the air motor assembly.

Images shown are RP-6000



Invert the tool. Drop one ball bearing into the hole to ensure proper alignment, then spin the annulus.

Images shown are RP-6000

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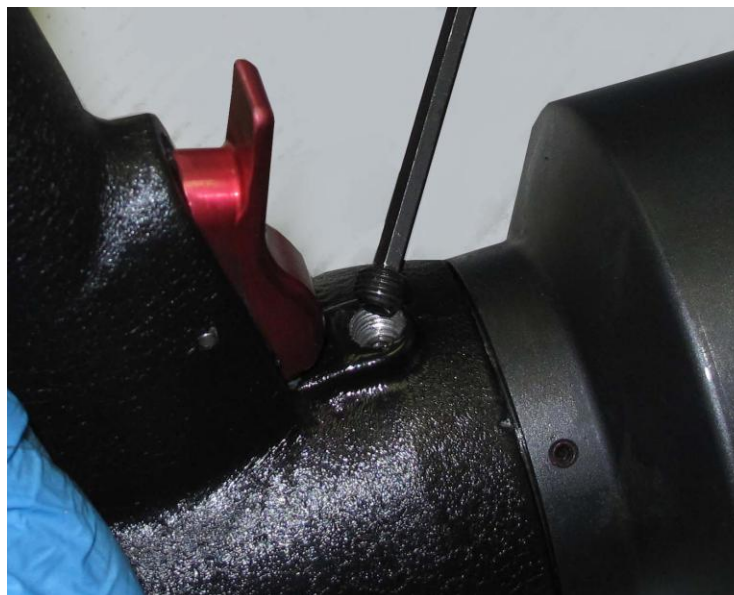


Install auto loader. Install auto Loader (Optional Accessory part # RPA-Autoloader)
Pour ball bearings into auto loader.

Images shown are RP-6000

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With all remaining ball bearings poured into the autoloader, rotate the gear box until all the ball bearings are dropped into the raceway. Once all 35 ball bearings are loaded, remove the autoloader and install the ball retainer using the 3/16" allen wrench.

Images shown are RP-6000



Maintenance Complete.
Any questions, please contact us today!

Image shown is RP-6000

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