

Maintenance Guide

Pneumatic Torque Wrench

Raptor Series

RP-500



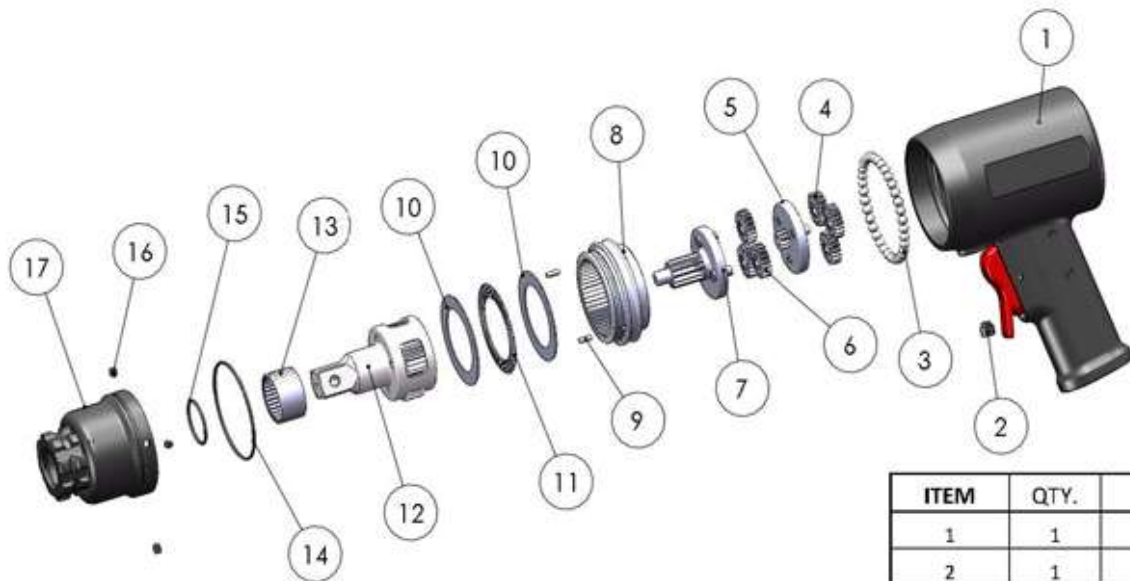
RAPTOR 500 Maintenance Guide



Gather the necessary items for disassembly and reassembly.

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

Image shown is RP-1000



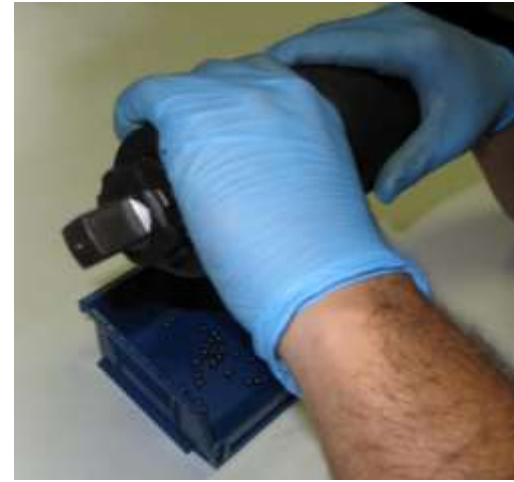
RAPTOR 500 Parts Identification

ITEM	QTY.	PART NUMBER	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-05-ST-G	SPUR GEAR ASSEMBLY(SAME FOR STAGE 1&2)
5	1	RP-05-ST1	1 ST STAGE ASSEMBLY
6	3	RP-05-ST-G	SPUR GEAR ASSEMBLY(SAME FOR STAGE 1&2)
7	1	RP-05-ST2	2 ND STAGE ASSEMBLY
8	1	RP-05-HSA	HIGH SPEED ANNULUS
9	2	RP-05-DOWEL	LONG HARDENED DOWEL
10	2	RP-05-TW	THRUST WASHER
11	1	RP-05-NRB	NEEDLE ROLLER BEARING
12	1	RP-05-DSTA	DRIVE STAGE ASSEMBLY
13	1	RP-05-MB	MAIN BEARING
14	1	RP-05-ORING-MA	MAIN ANNULUS O-RING
15	1	RP-05-ORING-DA	DRIVE ANNULUS O-RING
16	4	RP-CM-SS-DA	DRIVE ANNULUS SET SCREW
17	1	RP-05-DA	DRIVE ANNULUS



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-1000



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-1000



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

Images shown are RP-1000



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

Images shown are RP-1000

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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-1000



After screws are removed, place square drive flat against sturdy work surface and grab a hold of annulus and push down to expose the high speed annulus.

Remove the high speed annulus by picking it up with your hand.

Note: Make sure 2 dowel pins (Part# RP-05-DOWEL) are removed from main annulus.

Pins may not be attached to high speed annulus.



Remove the two thrust washers (part #RP-05-TW) and one needle roller Bearing (part #RP-05-NRB). Lift the gear box and invert to dislodge the remaining drive stage.



All gear stages are shown exposed.



Remove 2nd stage from the 1st stage for Raptor 500.

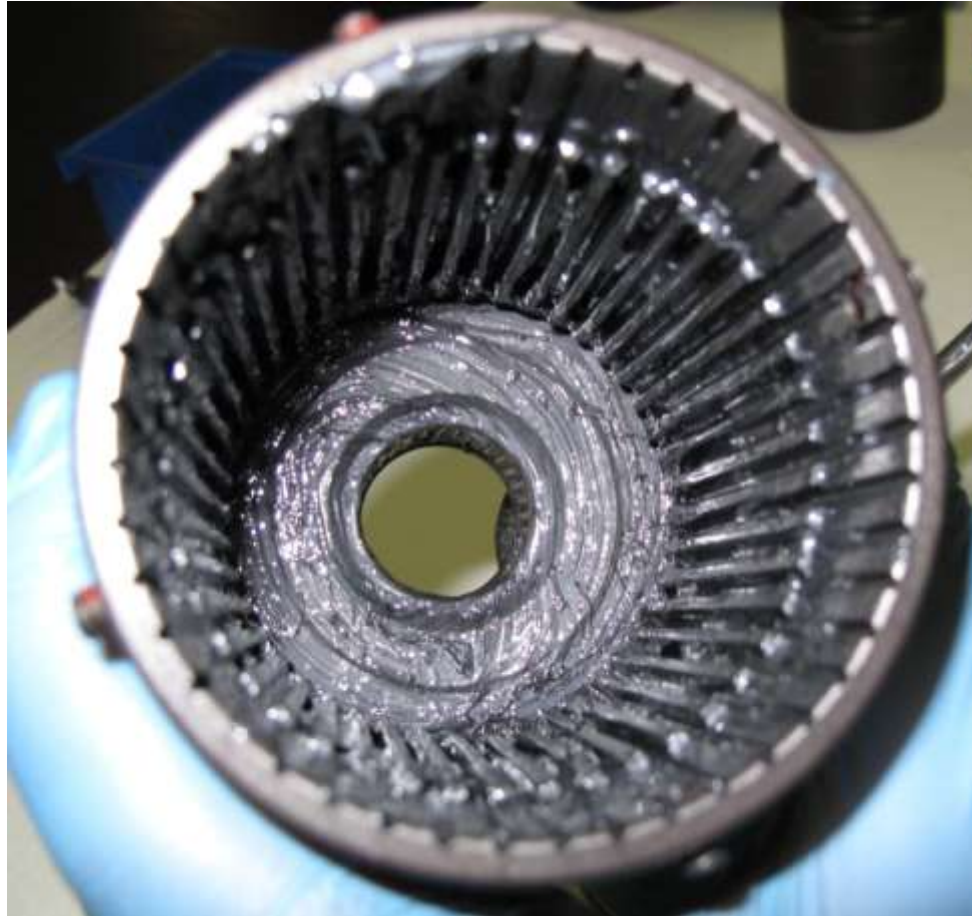


With all stages separated, wash all parts, using the cleaning method and cleansers recommended by local health codes and/or your supervisor.



Once all parts have been cleaned, use the brush to apply a light coating Marine Moly to the entire interior surface of the annulus. See subsequent pages for appropriate greasing amounts.

Images shown are RP-1000

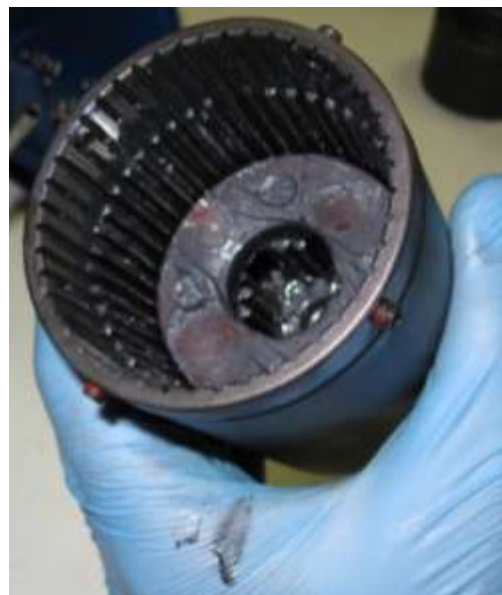


Proper grease coating on interior of the annulus.

Image shown is RP-1000



Apply Marine Moly to the drive stage as shown.



Insert drive stage into the annulus. Rotate the stage to align the teeth into the main annulus.

Images shown are RP-1000



Place the drive stage/annulus in the socket or vise clamp to hold in place while applying Marine Moly to the inside of the gear box. Rotate the gearing while applying the Marine Moly.

Images shown are RP-1000

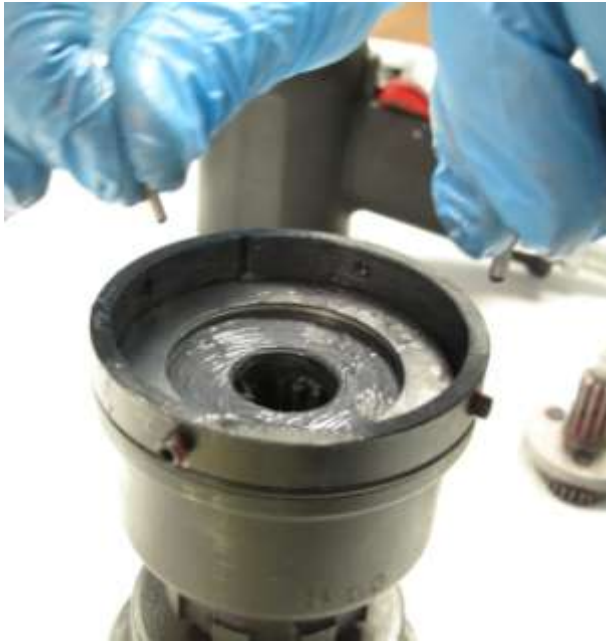


As you rotate the annulus, you should see the proper amount of grease rise up.
This will show the correct flow of grease under operation.

Image shown is RP-1000



Lightly grease the two thrust washers and the needle roller bearing. Place the needle roller bearing between the two thrust washers and install on top of the drive stage.



Install dowel pins into slots with allen wrench and tighten. Image showing dowel pins in slots.



Install high speed annulus and make sure pins are aligned with the two slots.

Use 3/32 inch allen wrenches and **tighten 4 set screws.**



Lightly grease stage gear.

Image shown is RP-1000



Lightly grease stage gears.
Install 3 spur gears.



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

Images shown are RP-1000



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-1000

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

Images shown are RP-1000



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

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Shown properly seated (down)
Apply grease generously – reference right photo

Images shown are RP-1000

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Reference photo of proper amount of grease to apply.

Image shown is RP-1000



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

Images shown are RP-1000



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

Images shown are RP-1000

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Install auto loader. (optional accessory part # RPA-Autoloader)
Pour ball bearings into auto loader.

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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-1000



Maintenance Complete.
Any questions, please contact us today!

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