GARRETT VNT GT22 Turbocharger
Rebuild Kit Instructions

Note: This kit is for Garrett VNT GT15 to GT25 turbo models. Because it is specified for several models, some of the parts will not be used for the Sprinter GT22 Turbocharger.

It is recommended that you use a digital camera to take pictures during various stages of this process to aid in the reassembly process.

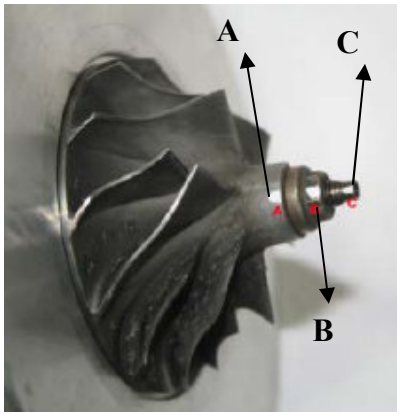


Fig.1 Mark a line
Draw a line across the compressor wheel (A), nut (B), and the end of the shaft (C) before you begin***. If you do not reassemble with all of these lined up, your turbo most likely be out of balance, and will quickly self destruct***.**

Fig. 2 Removing end nuts
Put an end wrench on the end nut of the turbine wheel, and a ratchet on the nut on the compressor end of the shaft. Loosen and remove the nut carefully. The turbine wheel blades are very sharp and should be wrapped in towels to protect your hands.

Fig.3 Alternate method
An alternative method is to place the turbine end nut in a vise, and use a T-handle ratchet socket to remove the compressor blade nut. When using the ratchet, make sure the ratchet is only twisting the nut and not placing any side load on the center shaft. ***It is easy to bend the center shaft if you place too much of a side load on it when removing the nut.***

Fig.4 Disassemble the shaft

Remove compressor wheel (intake side), turbine wheel, the shaft (exhaust side) and the heat shield.

Fig.5 Remove the bearing housing

Remove the 4 screws to reveal the seal plate with flinger set.

Fig.6 Flinger Set

Pictured is a flinger set with piston ring. This turbo rebuild kit comes with 3 different types of thrust flingers to accommodate multiple turbocharger variations. Since the Sprinter utilizes a GT22 turbo, you will not be using all of the parts as some are for other GT variations. ***Do not be concerned about parts being left over after completion.***

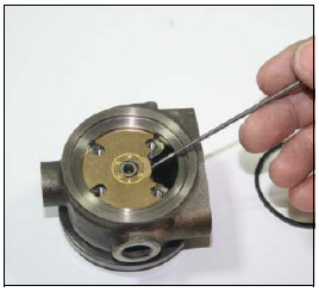
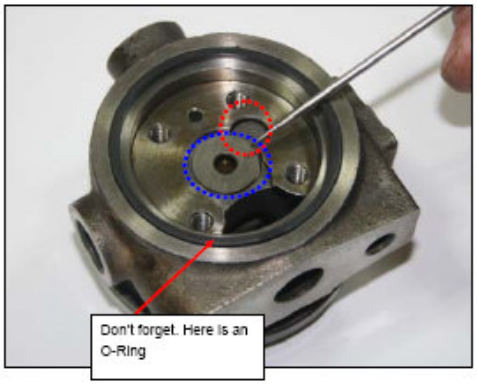




Fig.7 Dissemble the housing
Prepare the bearing housing by removing the O-Ring, thrust bearing, lock nut, and journal bearing


Fig. 8 Prepare the housing
Before you install any new repair parts, you must remove the coked carbon and varnish which have accumulated in the unit.


Fig.9 Reassemble- Step 1
Install new journal bearing and small lock nut.



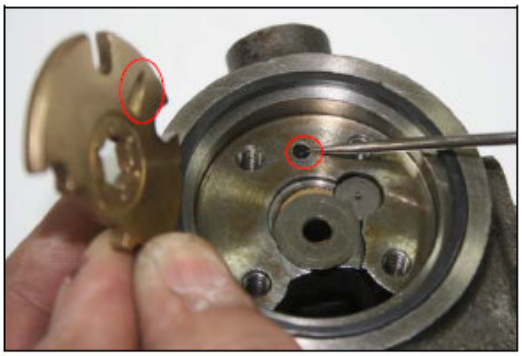


Fig.10 Reassemble- Step 2
Install new O-ring and thrust ring. Line the thrust bearing properly.

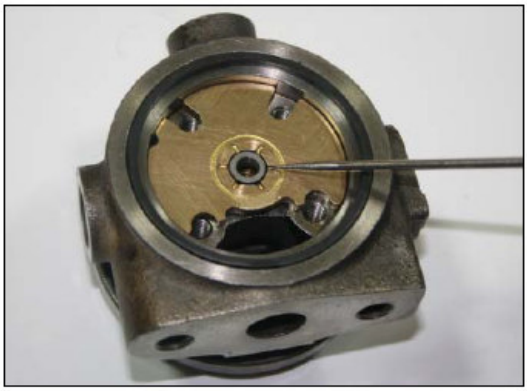
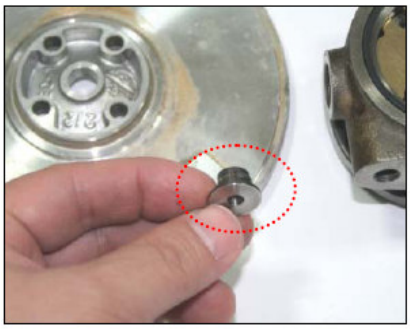


Fig.11 Reassemble- Step 3
Insert the set ring and the bearing housing reassembly is complete.



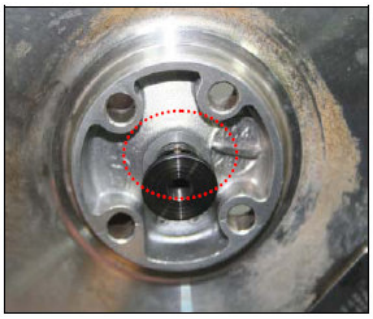


Fig.12 Reassemble- Step 4
Press the piston/seal ring (compressor side) into flinger. This is a little tricky, use a tool with sharp head to compress piston/seal ring and gently press the entire flinger set into seal plate

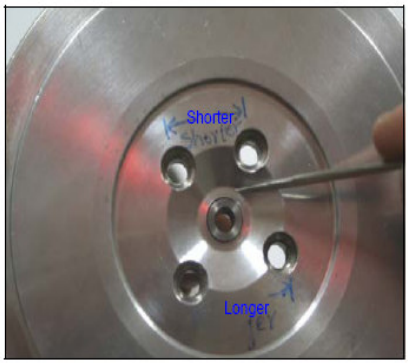


Fig. 13 Reassemble- Step 5

Make sure the flinger spins smoothly after this stage. Please observe, there are 4 holes for screws to hold the seal plate and bearing housing together, but the holes do not form a perfect square between the four holes.

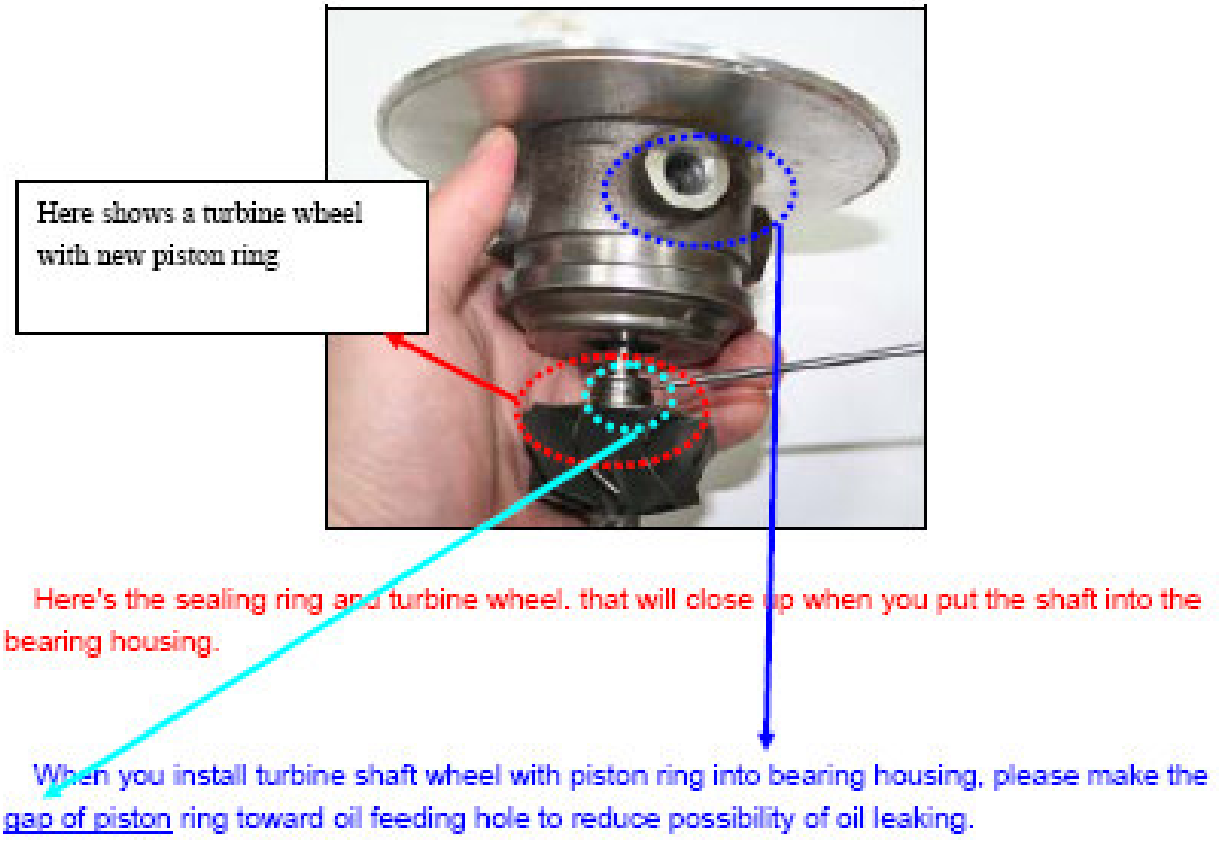
Fig.14 Prepare the shaft

Remove the shaft piston/seal ring and clean the shaft using 1200 grit sand paper to remove carbon and varnish and a metal polish for final cleanup. For best operation the turbo shaft should be bright, with no scoring marks or dull spots. Rinse the shaft and exhaust wheel assembly under water to remove any residue. Clean the assembly again with solvent and coat the shaft immediately (except the exhaust wheel) with engine oil to prevent surface oxidation which will form immediately after cleaning.

Fig.15 Prepare the shaft

On the left are examples of before and after cleaning, with the piston/seal ring in place. On the right, a clean shaft with a new piston/seal ring. Be very careful during seal ring installation, this seal ring is very brittle, and can easily break.

Fig.13 Reattach shaft



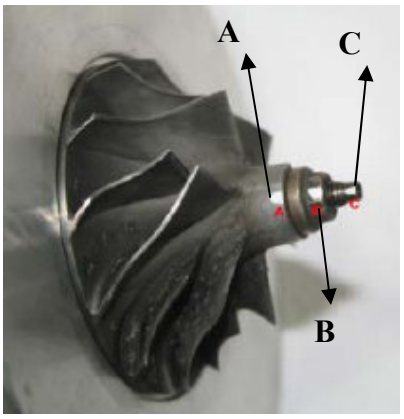


Fig 14 Secure nut and align

Make certain that A, B & C line up when completing the reassembly of the unit. See Fig.1