

Turbocharger Overhaul Instruction

Garrett T25

Before you read this instruction, I have to say sorry my English is not that good to describe well about how to rebuild turbocharger. If there is anything wrong or any better words or suggestion for this instruction, just email me to Kansai_sport@hotmail.com

The T25 rebuild kit you purchased from Kansai-sport is new version with carbon seal, it can rebuild kit all Garrett T2 version turbocharger including old version T25 turbo with dynamic seal. The turbo below I rebuilt is Typical Garrett T2 / T25 Turbo with dynamic seal , you can see how to install new rebuild kit with carbon seal on dynamic version.

Eiji Takada in Osaka, Japan.

2007/03/25

Now let's see how to take apart of Garrett T25 turbo and change rebuild kit.



Please remove the bolt and clamp plate between bearing housing and turbine housing.



Sometimes it is hard to swap bearing housing and turbine housing after you remove bolt and clamp plate. I will use [acetylene](#) to heat it and then we can swap it easily.

If you can take apart it easily, of course, you can save this step.



Now we take apart the bearing system and turbine housing



Remove the snap ring, and then you can see the CHRA and compressor housing



Be care! When you remove compressor housing, don't harm the same point of edge, it may damage the compressor wheel. Please remove the housing by harming different edge of compressor housing.



Before you take apart of CHRA, please make sure to scribe a line across the compressor wheel, nut, and the end of the shaft at this time. If you do not bolt it back together with ALL of the lines lined up, your turbo may end up being out of balance, and it can quickly destroy itself.



Place the turbine blade "nut" in a vice, and either use a T-handle socket to remove the compressor blade nut, or when using the ratchet, make sure to hold the socket so that the ratchet is only twisting the nut, not placing any side load on the center shaft. Evidently it is easy to bend the center shaft if you place too much of a side load on it when removing the nut. When I removed the one in the picture, I was very careful to grab the ratchet at the rotating end and put all the twisting force directly through the socket, without putting any side load on the shaft.

Be VERY careful of the wheels, the blades can really tear your hands up. It is safest to wrap them in towels, because if the nut breaks free and your hands hit either wheel, you could be seeing a *lot* of blood.

The compressor nut and threading is backwards threading. e.g. Clockwise is loosen and counterclockwise is tighten.



Remove the turbine wheel and then you can take off the journal bearing and heat shield



Please remove piston ring (Seal Ring) on turbine shaft and clean the carbon on shaft groove and shaft. Remove the used piston ring and Polish up the shaft using **1200 grit** sand paper to remove surface varnish then polish it with some kind of metal polish. For best operation the turbo shaft should shine with no scoring marks or dull spots. Rinse the shaft and exhaust wheel assembly under petroleum ether to get rid of all the polish



Remove the snap ring and seal plate





Place 2 flatblade screwdrivers 180 degrees apart under this lip, and carefully pry the end cap up and out of the center section. You might need to move the screwdrivers around the lip and gradually pry it out, depending on how tight it is in there





Remove the bolt and then you get the thrust bearing and collar



Thrust bearing kit



Remove the journal bearing





Now we take apart of all the kit inside bearing system. Please remove the carbon you see you the bearing housing and clean the inside using petroleum ether. Be care! Don't sandblast **inside** of bearing housing.

Piston ring for dynamic seal on compressor side: If you wanna use carbon seal system to replace your dynamic system, you don't need this seal.



Install snap ring



New journal bearing



Oil deflector



Another ring to fix the oil deflector and journal bearing





Done !

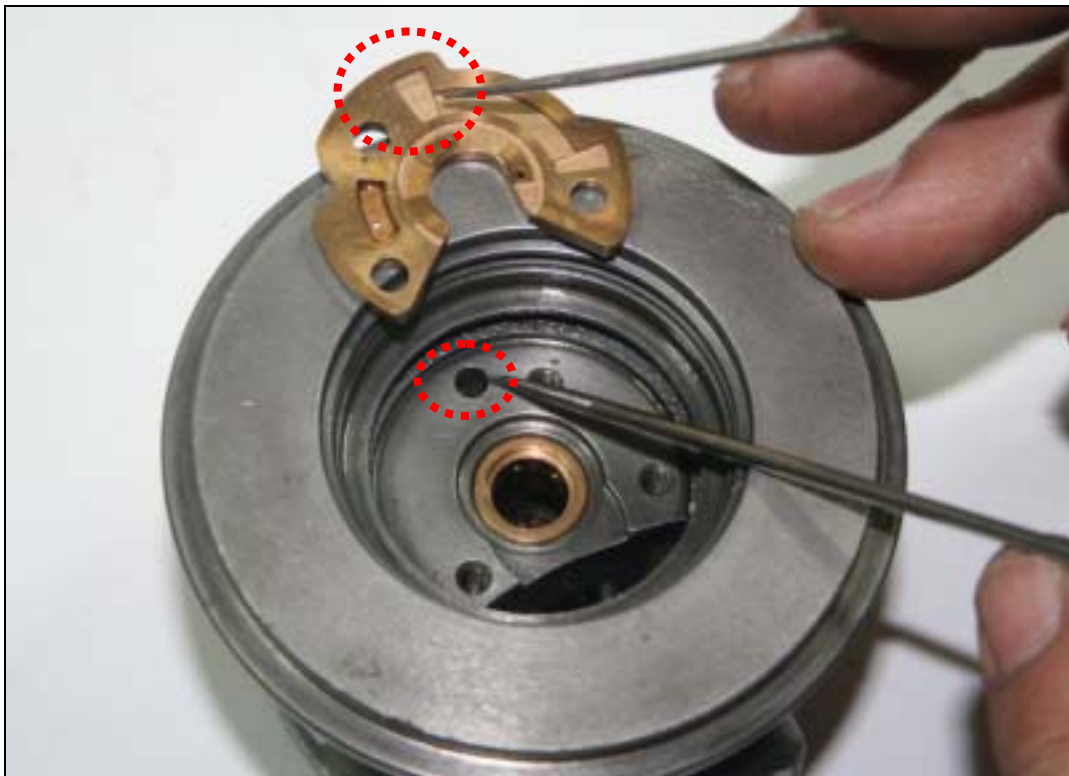
Let see another side



another snap ring

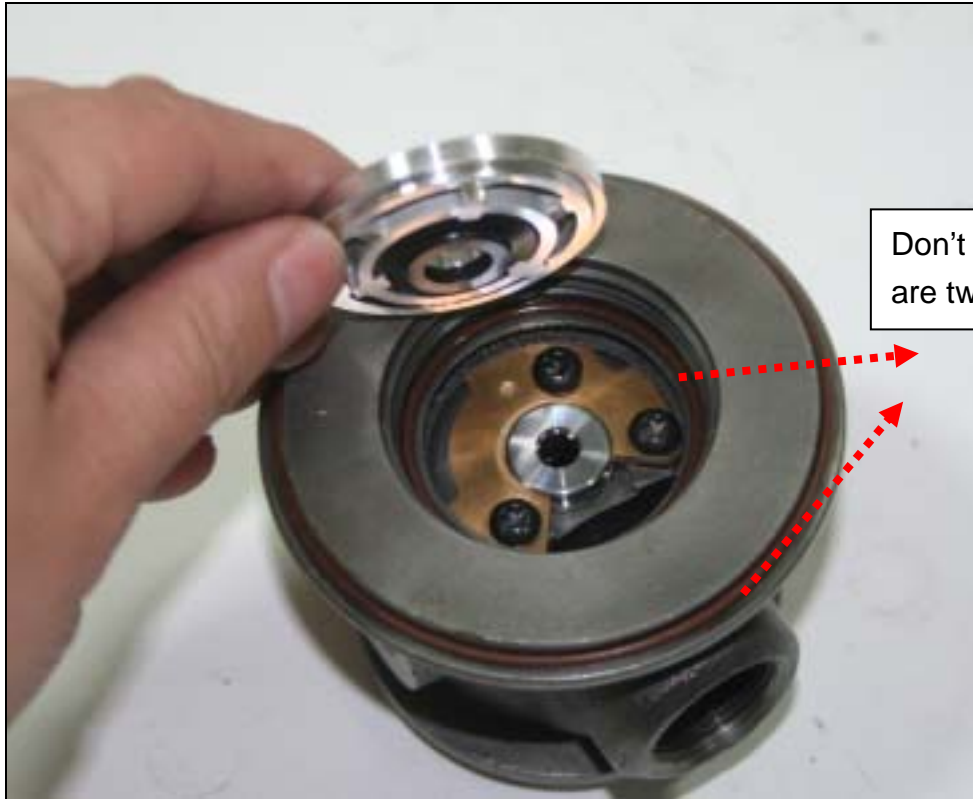


journal bearing



Both holes are for oil to lubricate bearing system





carbon seal



Push the carbon seal plate to the bottom



Thrust spacer

T25 Dynamic Turbo Rebuild kit

IF you get dynamic seal version with 360 degree thrust bearing from Kansai_sport, here shows how to install 360 degree thrust bearing kit.



Kansai_Sport T25 dynamic rebuild kit with 360 degree thrust bearing kit.



360 degree thrust bearing kit



The difference between upgrade 360 degree and stock 270 degree thrust bearing kit

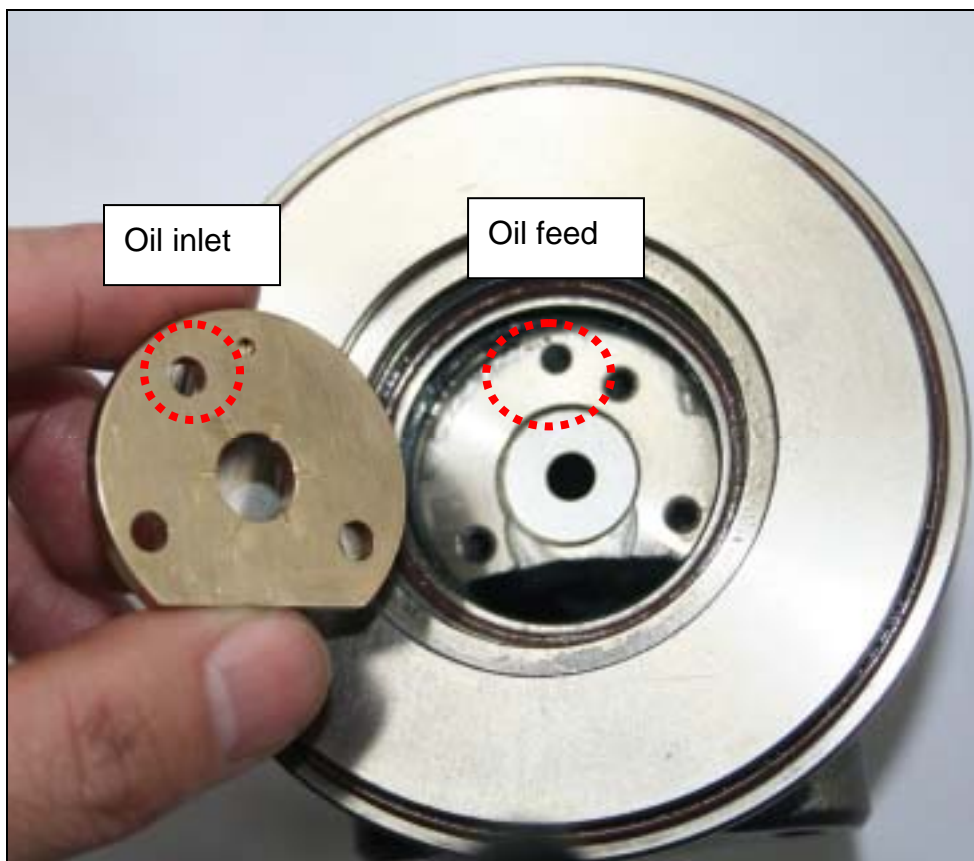


How Upgrade 360 degree thrust bearing kit works.



How genuine thrust bearing kit works (270 degree)





Press small piston ring into thrust collar



Piston Ring on thrust collar



Bolt the thrust bearing before you install thrust collar

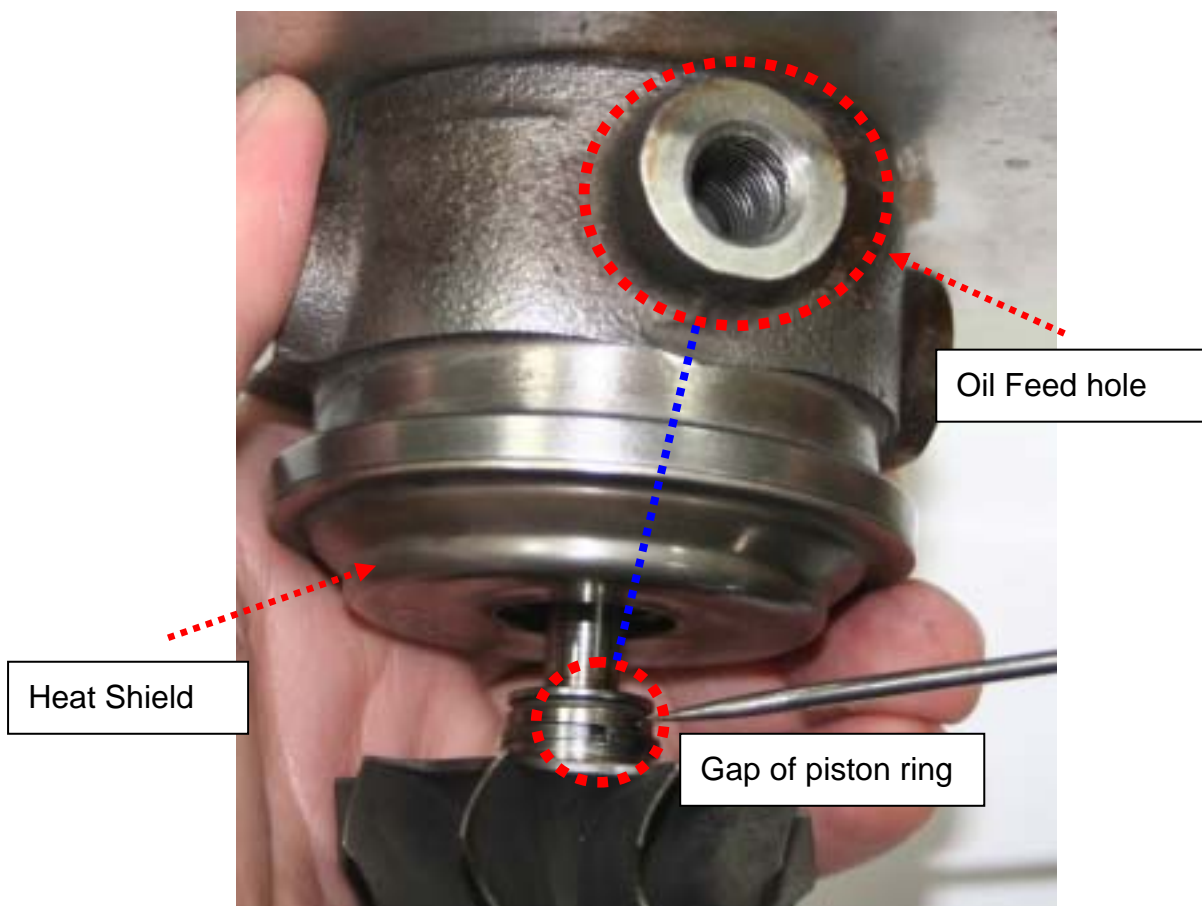




The next step is same as all T25 turbo



It is the turbine wheel / shaft with new piston ring



After you install heat shield, you will install turbine wheel into bearing system, Try to make gap of piston ring and oil feeding hole at the same direction to reduce possibility of oil leaking



Make sure the 3 point back the original position before you take apart your turbo.
Now you finish the rebuild job.