W1/W2 CHRA Swap

Replacement CHRA for W1/W2 drop in turbocharger

Written By: Jacob miller-self



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INTRODUCTION

In this installation guide we have provided step by step instructions to remove your old CHRA and replace it with a new 27WON CHRA

TOOLS:

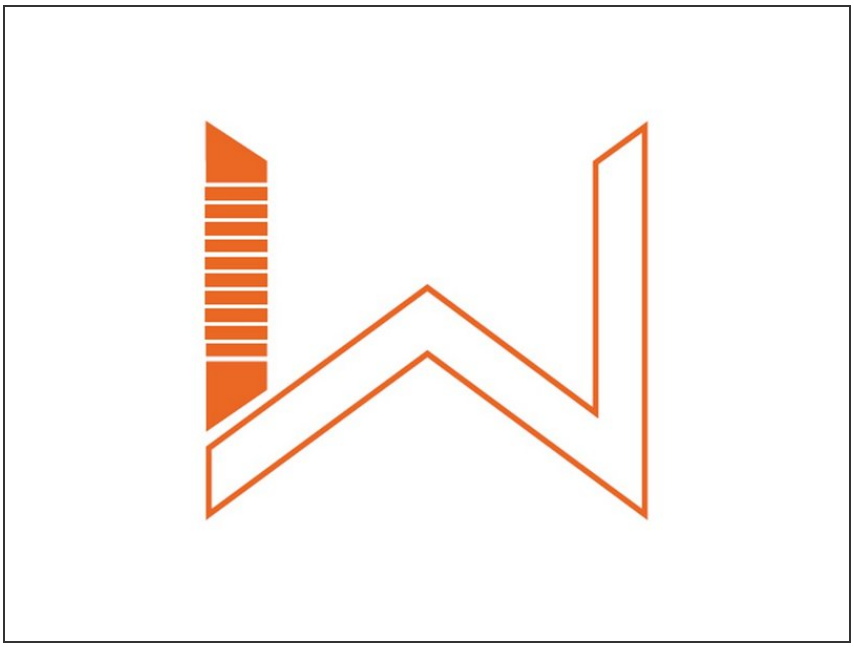
- 3/8" Ratchet (1)
- Torque Wrench (1)
- Snap Ring Pliers (1)
- Flathead Screwdriver (1)
- Rubber Mallet (1)
- Wrench, Impact (1)
- Fresh Engine Oil (1)
- 10mm Socket (1)

PARTS:

- Replacement CHRA (1)

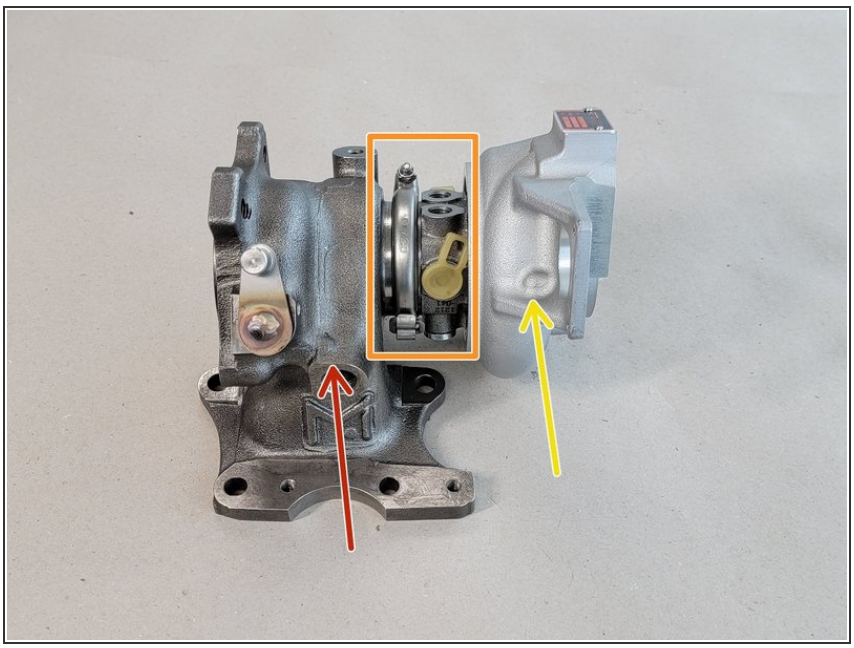
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Step 1 — Getting Started



- First and foremost; **THANK YOU** for becoming a part of the 27WON Family. We hope to **REDEFINE** your experience of the aftermarket with the highest level Parts, Customer Service, Packaging, & Support
- ⓘ These instructions are for both a W1 and W2 turbochargers. The photographs are mostly of a W1 turbocharger. Photos of a W2 are provided when necessary for clarity
- ⓘ These instructions do not cover removal and reinstallation of the turbocharger

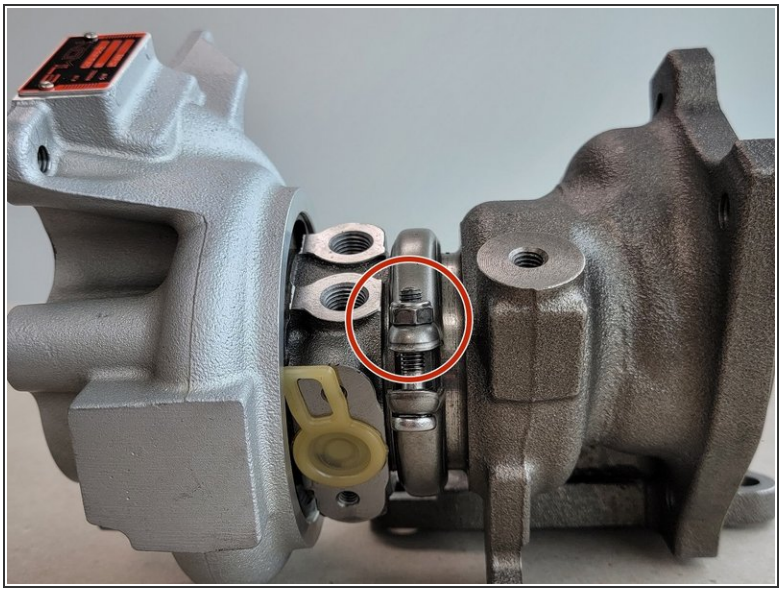
Step 2 — Prepare Workspace and Gather Tools

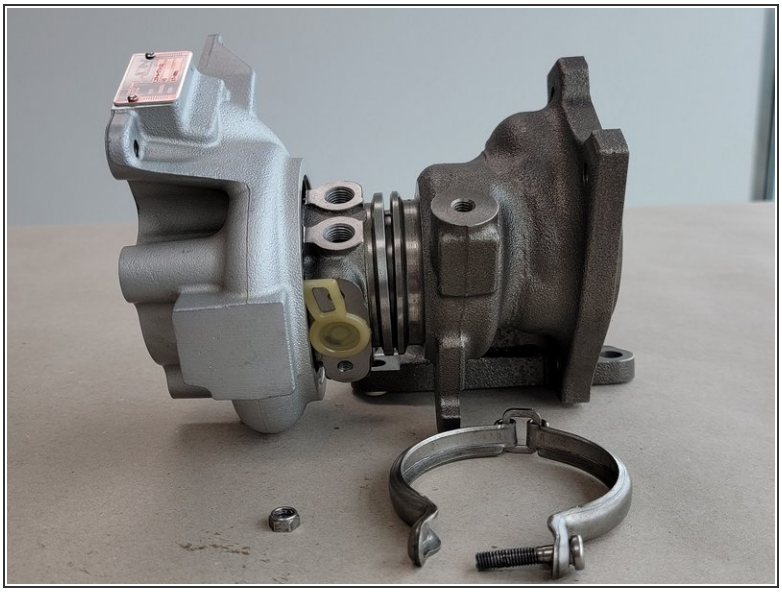


- Ensure you have a clean work surface or lay down a clean cover to ensure nothing can make its way into your turbocharger
- Set out your turbocharger on a workbench as shown
- Turbine Housing
- CHRA
- Compressor COver

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Step 3 — Remove V-band Clamp

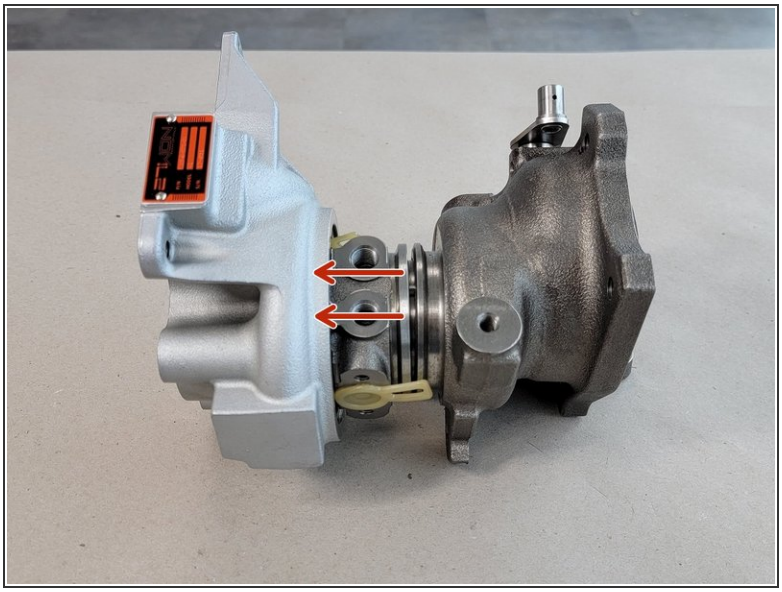


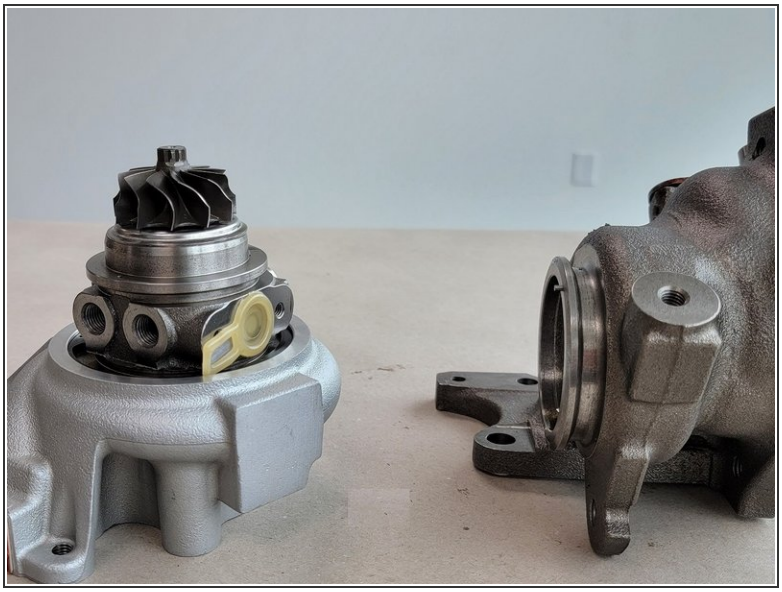


- Using a 10mm socket remove the nut (red circle) holding the V-band clamp
- Remove the clamp
  - ⓘ The clamp should easily come off of the turbo once the nut is removed

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Step 4 — Remove Turbine Housing





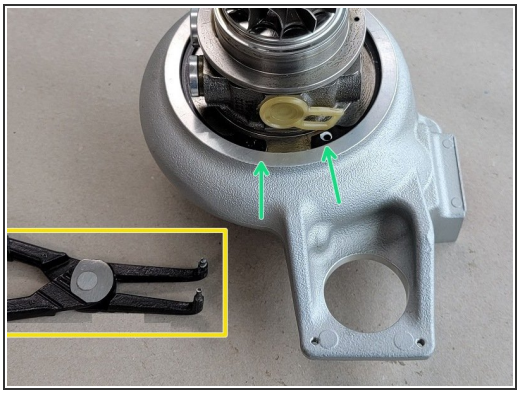
- Carefully pull the CHRA straight out of the turbine housing

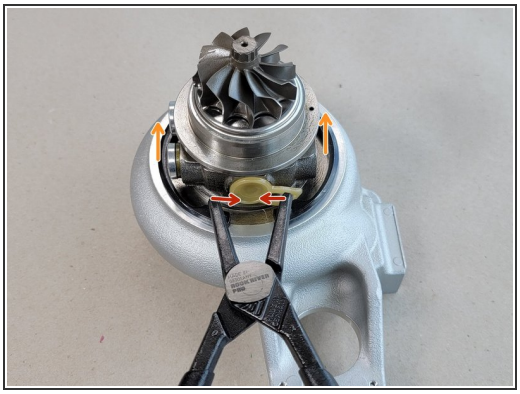
ⓘ There is a locating pin between the CHRA and turbine housing

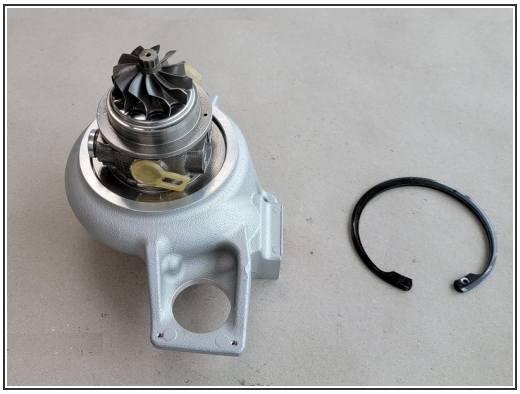
ⓘ The turbocharger may be stuck to the turbine housing. In this case you can tap the turbine housing lightly with a rubber mallet to break it loose

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Step 5 — Remove Snap Ring from Compressor Cover







- Snap Ring
- Snap Ring Pliers
- Use snap ring pliers to compress and lift the snap ring out of the groove in the compressor cover
- Once the snap ring is free lift it straight up and remove it from the CHRA
  - ⓘ You may need to rotate the snap ring around the CHRA to remove it more easily

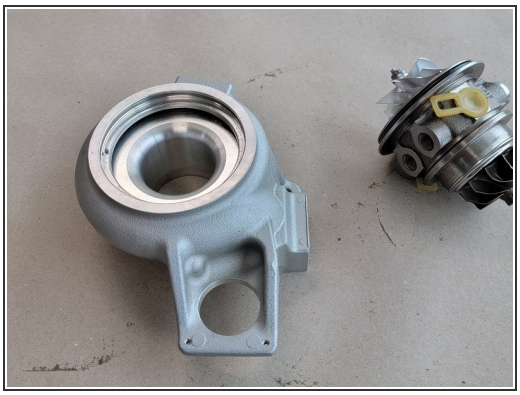
ⓘ If you do not have snap ring pliers, needle nose pliers will work but they are not recommended

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Step 6 — Remove CHRA From Compressor Cover



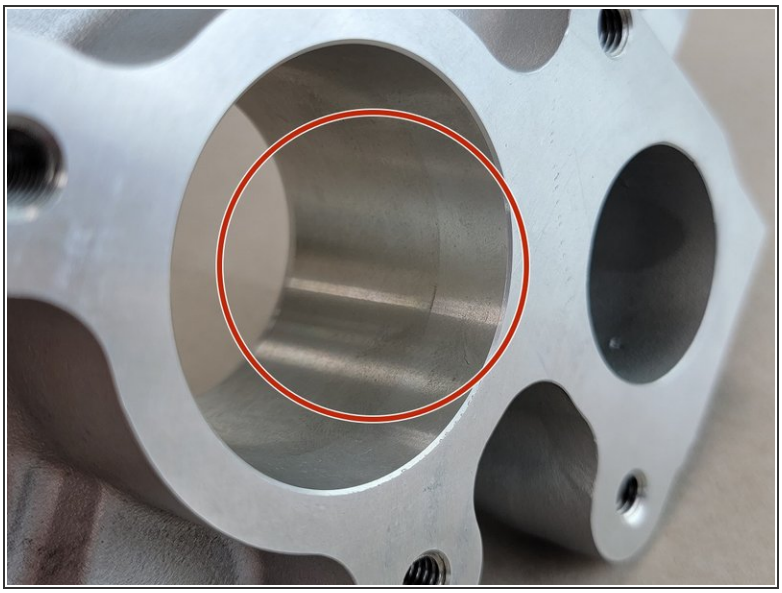


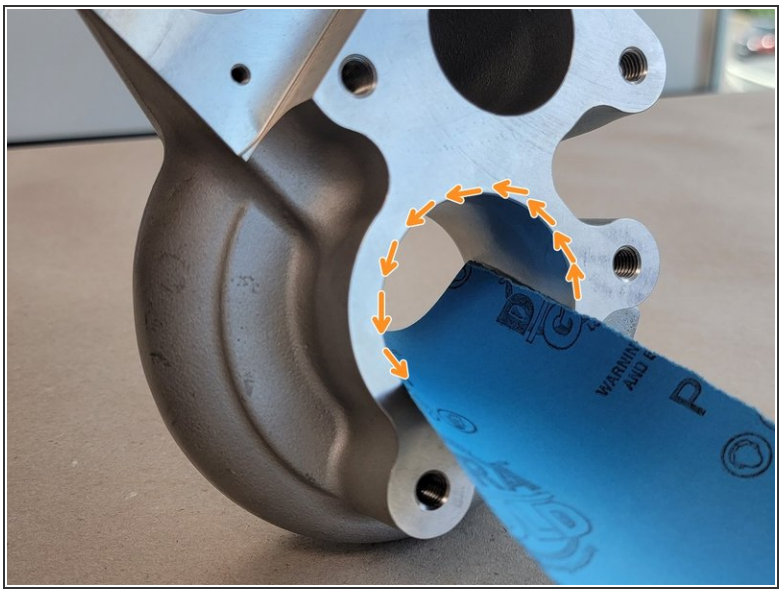


- Remove CHRA
  - ⓘ The CHRA should now easily come straight out of the compressor cover
- Sometimes the O-ring around the CHRA will stick a little. In this case wiggle the CHRA side to side while holding the compressor cover down being careful to not hit the inside of the cover with the compressor blades

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Step 7 — Inspect Compressor Cover





- When failure occurs in a turbocharger there is a chance the blades will make contact with the inside of the compressor cover
- Small scratches or dings are fairly normal on used OEM and aftermarket housings and are not a point of concern
- Visually inspect and feel the inside of the compressor cover to ensure there is no metal sticking up that could make contact with your new blades
- If you feel any burrs these can be knocked down with a lighter grit sandpaper such as 500 or 600 grit
- Be sure to clean your compressor cover, especially after sanding
- ⚠ Do not need to remove much material, just enough to knock down any burrs

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Step 8 — Inspect Turbine Housing

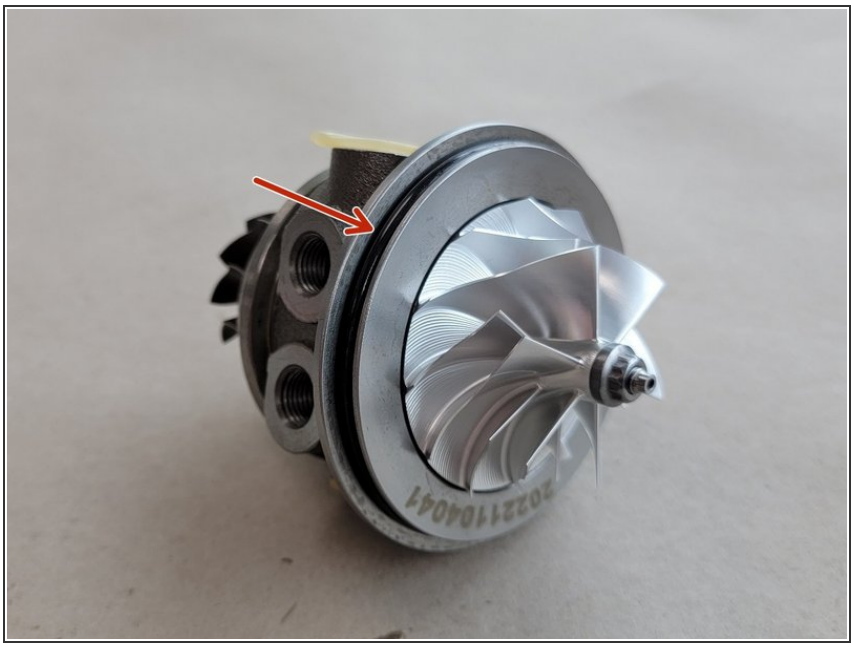




- Visually inspect the inside of the Turbine housing
- ⓘ Some small cracks in the turbine housing are not uncommon on OE and aftermarket turbos. Normally, this is not a performance issue
- This is a good example of a small crack that wouldn't cause concern
- If you notice anything concerning with your turbine housing then give us a call at 571-271-0271
- ⓘ The Turbine housing is far less likely to have suffered damage as it is made of steel rather than aluminum. This makes it much more laborious to repair

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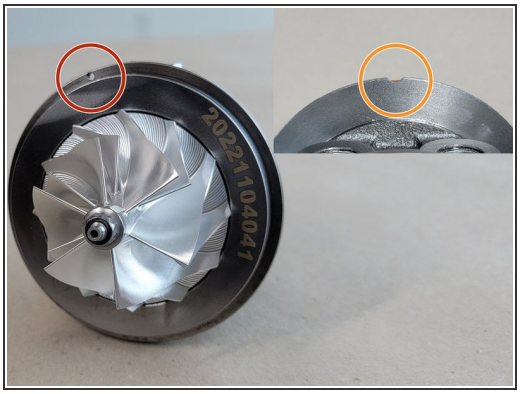
Step 9 — Prep New CHRA Seal With Oil

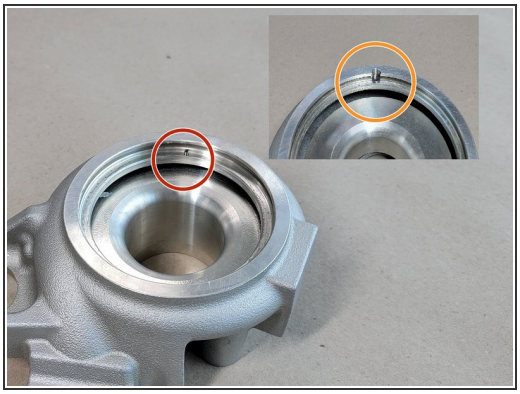
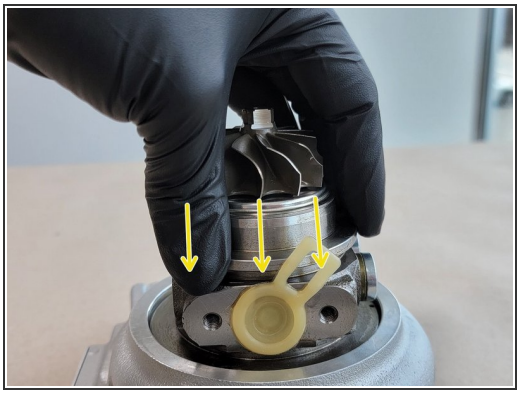


- Prime the o-ring on the CHRA by dipping your finger in fresh engine oil and spreading a thin layer around the outide of the o-ring

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Step 10 — Seat CHRA Into Compressor Cover



- Set the CHRA into the compressor cover ensuring the pin on the cover and the hole on the CHRA align
- This is the only diference between a W1 and W2 CHRA installation, note the larger pin on the cover, and the divot on the CHRA
- Using both hands press the CHRA into the cover. Ensure this goes in straight

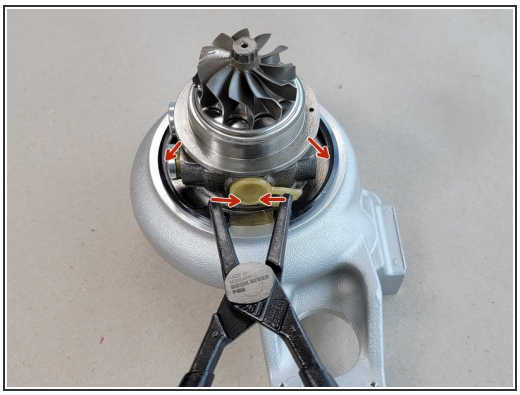
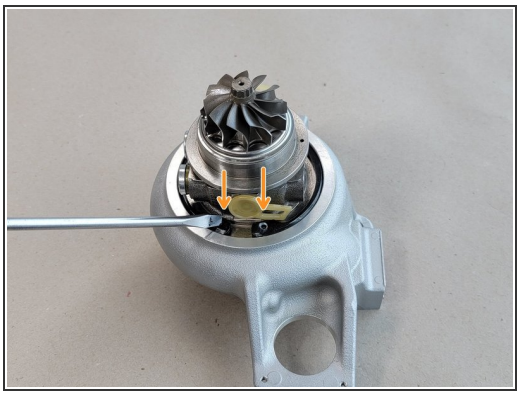
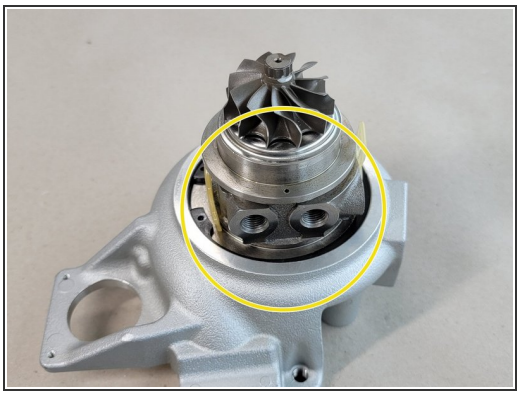
You should be able to feel the CHRA seat into the Compressor cover

⚠ **DO NOT** press down on the turbine wheel itself, hold the CHRA by the body as shown

⚠ Make sure the compressor wheel goes in straight to ensure no contact is made with the Compressor cover

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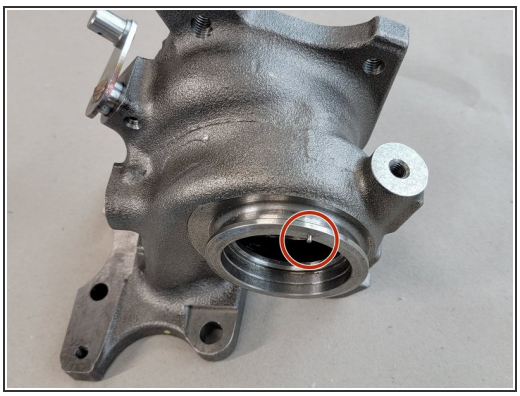
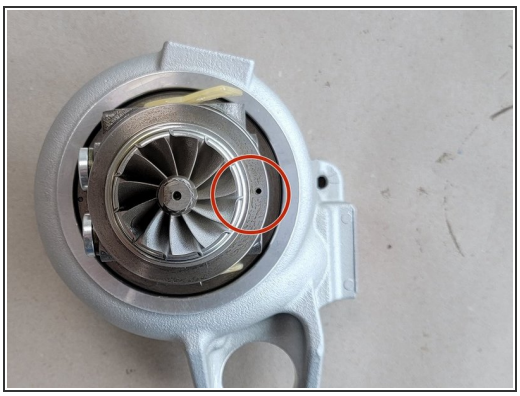
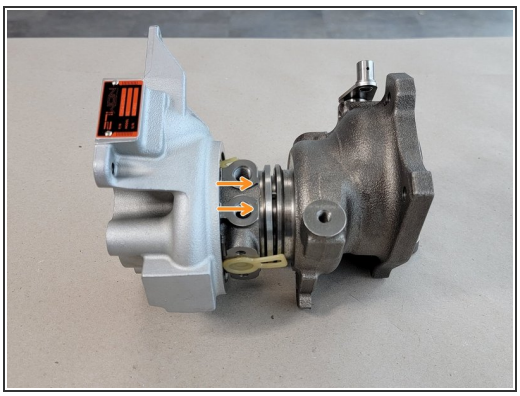
Step 11 — Install Snap Ring In Compressor Cover

- While holding the CHRA in the seated position compress the snap ring and set it into the groove in the compressor cover
- Press the two end tabs into the groove with a flathead screw driver
- Check the snap ring all the way around the CHRA to be sure it is seated correctly as shown

ⓘ If you are unsure if the snap ring is seated correctly use your flat head screwdriver to press the snap ring down around the entire CHRA

Step 12 — Install Turbine Housing

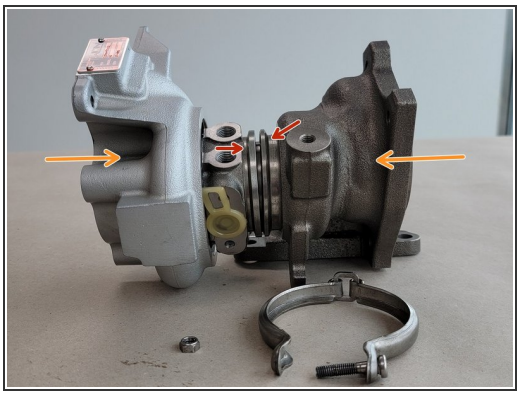
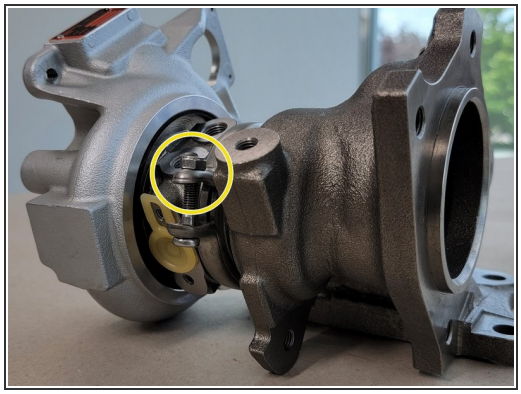
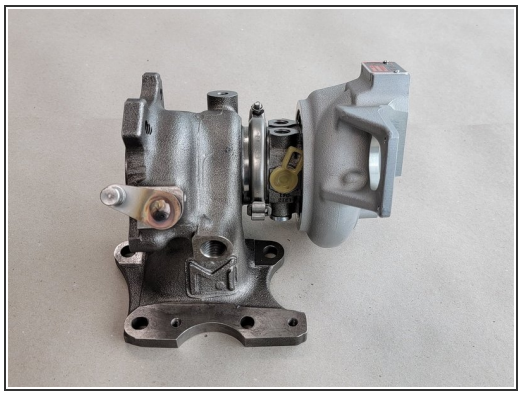




- Ensure the pin on the turbine housing and the hole on the CHRA align when you press them together
- Insert the CHRA into the turbine housing

⚠ Be sure the turbine blades go into the housing straight and do not make contact with the housing

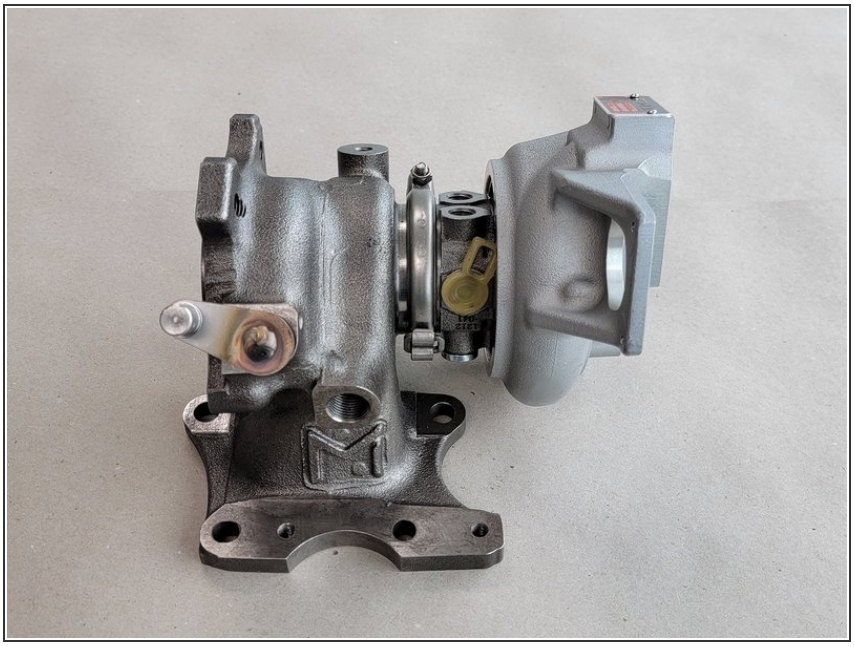
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Step 13 — Install V-band Clamp

- Wrap the V-band clamp around the CHRA and the turbine housing ensuring both flanges are caught by the clamp
- Push on both sides of the turbo to push the two flanges together
- Thread the 10mm nut onto the bolt then **torque to 6 FT/LBS or 62 IN/LBS**
- The reassembled turbo should appear as shown

Step 14 — Final Notes & Tips

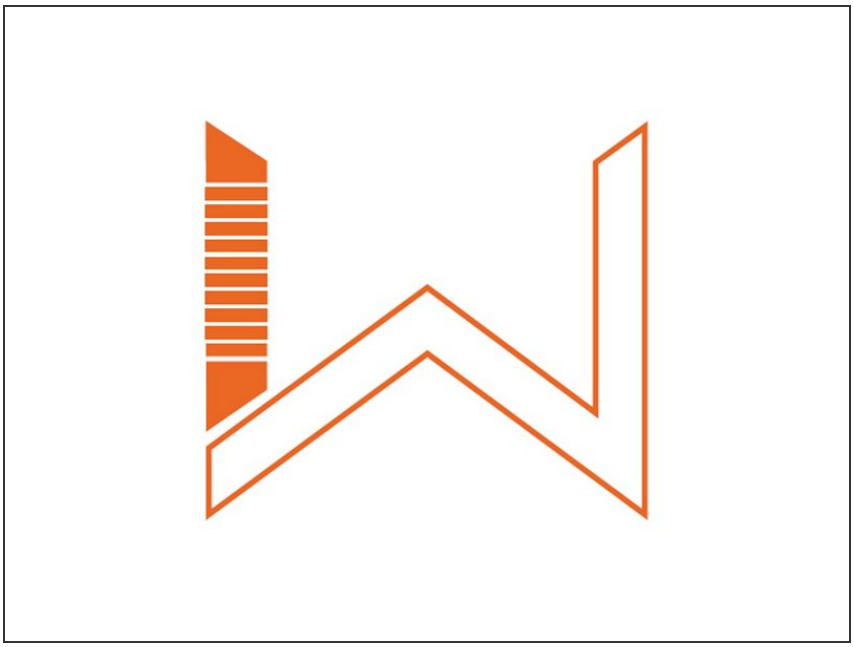


ⓘ We do recommend blowing your turbocharger out with compressed air after assembly to ensure there is no foreign objects in the housings that could cause trouble down the line

- W1 installation instructions
- W2 Installation instructions

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Step 15 — I Dare You to REDEFINE



- This completes the installation of your 27WON W1/W2 CHRA
- We hope you were impressed with your 27WON experience and love your new CHRA for years to come. Email us at sales@27won.com or call us at 571-271-0271 with any questions or concerns

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