

TurboTotal

High Performance Tuning Parts

Turbocharger Installation Instructions

Caution:

- Failure to follow these instructions may result in premature Turbocharger failure and warranty denial
- Do not use silicon or other sealers on the Oil Supply or Oil Drain Gasket surfaces
- Use Anti-seize compound on Turbine (Exhaust) Housing Threads
- Torque values shown below apply to the Turbochargers external attachment threads only, they do not apply to any internal thread within the Turbocharger. Be aware attaching bolts, studs and fittings used by the customer may require much lower torque values due to their material composition. (reference ISO Standards)
- When installing a replacement Turbocharger the fitting of a new oil supply line (and inline Oil Filter where fitted) is recommended.
- Ball Bearing Turbochargers require a maximum of 40 to 45psi oil pressure, pressure in excess of 45psi may cause oil leaks
- Before installing a replacement Turbocharger verify root cause of damage to the original unit.

Thread Size	Maximum torque into Steel & Cast Iron Threads		Maximum torque into Aluminium Threads	
	ft*lb	N*M	ft*lb	N*M
M6	6	8	5	7
M8	16	21	12	16
M10	30	41	24	33
M12	55	75	43	58
M14	87	118	68	92
5/16"	27	37	15	20
3/8"	49	67	27	37
7/16"	78	106	43	58
7/16" UNS	Inverted Flare oil supply thread	35	n/a	n/a
1/2"	120	163	66	89
1/4" UNF (V-Band Bolt)	Coat Thread with Anti-seize compound. Initially tighten V Band Nut to 18Nm (to seat V Band) then loosen to 6Nm, Retighten to 13-15Nm final torque value.			

Pre Installation Checks

Clean all gasket surfaces

1. Check for any foreign material, damage or debris from previous Turbocharger in the Air Filter, Air Inlet/Intercooler Ducting, Exhaust Manifold, Exhaust Outlet, Oil Inlet and Oil Drain Systems (clean or replace as necessary)
2. Check Exhaust Manifold Flange for flatness
3. It is recommend a new Oil supply line be fitted when installing a replacement Turbocharger
4. Replace engine Oil and Oil Filter
5. Make sure the surrounding area is clean and free from dirt or foreign material that may fall into the Turbocharger or engine system during installation

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Installation of Turbocharger

1. Attach the Turbocharger to the Exhaust manifold
 - a. Check Oil Drain Is in correct position to attach Oil Drain and Oil supply pipes. If re-alignment is required loosen the Bolts or V-band securing the Turbine (Exhaust) Housing then rotate the Centre Housing Assembly to the required position (do not fit the oil pipes), re-torque Bolts or V-band
 - b. Check Compressor Housing outlet is In correct position to attach Air Inlet/Intercooler System (do not fit the inlet pipes), if re-alignment is required loosen the Bolts or V-Band securing the Compressor Housing and rotate the Compressor Housing to the required position, re-torque Bolts or V-band
 - c. Check both Compressor Housing and Turbine Housing are seated correctly, if they are not the Compressor Wheel and/or Turbine Wheel will make contact with their respective Housings causing damage

Note:

After re-aligning the Turbocharger Housings it may be necessary to remove the Turbocharger from the engine to torque bolts or V Band correctly

1. Turbochargers with Internal Wastegates fitted should have Housings re-aligned and Actuators re-calibrated on a test bench as necessary
2. With Turbocharger attached to the manifold, fit Exhaust Pipe, Oil Drain and Inlet/Intercooler System
3. Before fitting the Oil inlet Pipe prime the Turbocharger by pumping oil into the Oil inlet while turning the Compressor Wheel (engine off) with your finger, this will coat the Turbocharger Bearings with oil for initial start-up
4. Fit Oil Supply pipe
5. Fit Air Filter System

Start Engine after Turbocharger Installation

1. To prime system crank engine for 10 to 15 seconds to achieve oil pressure (do not start)
2. Start engine and allow to run on idle for 3 or 4 minutes to ensure oil pressure is achieved
3. Check for oil leaks
4. Re -check all hoses and fittings are secured correctly