

Congratulations on your purchase of the AWE Tuning K04 Turbo Kit for your Mk5 2.0T.

Please note that a full turbo back performance exhaust is required for safe operation of this kit. We highly recommend 2.5" diameter exhaust systems for optimum power and boost pressure production. 3" diameter exhaust systems can negatively impact the turbo spool characteristics, resulting in slow boost production and also throttle and boost cut upon full boost production.

Installation of this turbo kit can be completed on jack stands or ramps. Never work under a vehicle only supported by a jack. If you do not feel comfortable installing this system yourself, contact a local professional for installation.

Parts list:

- 1 A.W.E. Tuning K04 turbo
- 1 A.W.E. Tuning turbo inlet coupler
- 1 A.W.E. Tuning noise pipe to diverter valve hose
- 1 A.W.E. Tuning diverter valve housing
- 1 A.W.E. compressor outlet hose
- 1 A.W.E. coolant feed line
- 1 Stock intake adapter coupler

Hardware:

- 4 Turbo to down pipe stud
- 4 Turbo to down pipe locking nut
- 5 Manifold upper locking nut
- 4 Manifold lower locking nut
- 1 M6x1 allen head bolt
- 1 M6 washer
- 1 Firewall gasket clip

Gaskets:

- 1 Manifold to head gasket
- 1 Turbo to down pipe gasket
- 1 Oil return line to turbo gasket
- 1 Oil return line to engine gasket
- 2 Oil feed line crush washer
- 1 Oil feed line to engine o-ring
- 4 Coolant line crush washer
- 1 Firewall gasket

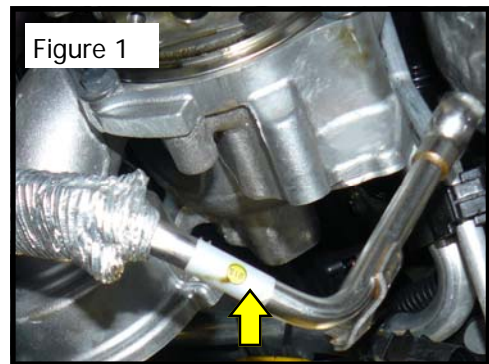
Hose Clamps:

- 1 2.50" T-bolt clamp
- 1 2.62" T-bolt clamp
- 1 70-90 hose clamp
- 1 50-70 hose clamp
- 1 32-50 hose clamp
- 2 25-40 hose clamp

Step 1:

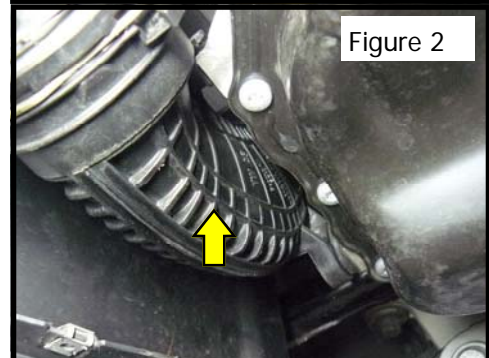
Consult the factory manual for stock turbo removal. Removal of passenger side axle greatly eases removal and installation of the K04 turbo.

Make sure to remove the stock coolant **feed** line, shown at the arrow in Figure 1, as this will be replaced with an A.W.E. Tuning line.



Step 2:

Remove the pancake pipe shown at the arrow in Figure 2.



Step 3:

Install the coolant **return** line onto the K04 turbo using two of the included crush washers. Also use the supplied support bracket and Allen head bolt shown at the arrow in Figure 3.

Install the K04 turbo using the enclosed new gaskets and fasteners. You may reattach the turbo end of the coolant return line at this time.

Do not install the other oil / coolant lines, turbo support bracket or intake for now.



Figure 3

Step 4:

Install the turbo outlet hose shown in Figure 4 using the included T-bolt clamps. The smaller clamp is used on the turbo side, the larger on the pancake pipe side. Re-install the OE pancake pipe at this time.



Figure 4

Step 5:

Install the included coolant return line. Attach the end with the 90 degree fitting to the engine block using the included hex head banjo bolt and two new crush washers. Orient the fitting as shown at the arrow in Figure 5. Leave the fittings loose for later adjustment.

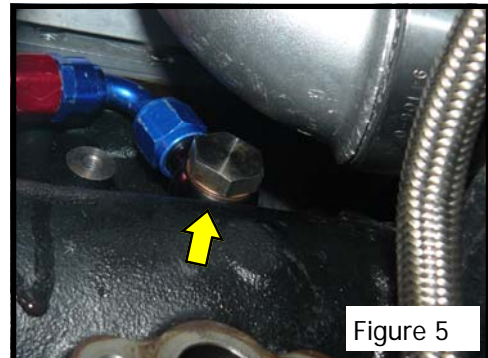


Figure 5

Step 6:

Attach the 45 degree end to the turbo using the OE banjo bolt and two new crush washers. Leave the fittings loose until final adjustment

Re-install the turbo support bracket. Make sure the coolant return line is positioned as shown in Figure 6 and that it does not make contact with the turbine housing.

Tighten the banjo bolts and hose fittings.

Re-install the oil feed line using the new crush washers included with the kit.

Re-install the oil return line using the included gaskets.

Re-install the exhaust system using the included down pipe gasket and new fasteners.

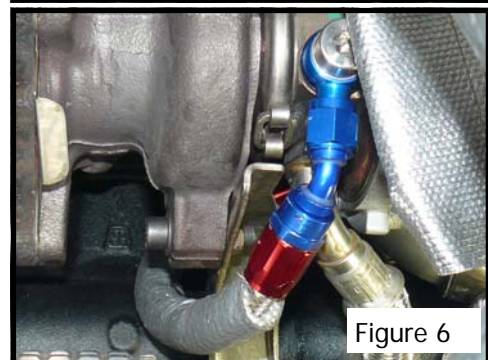
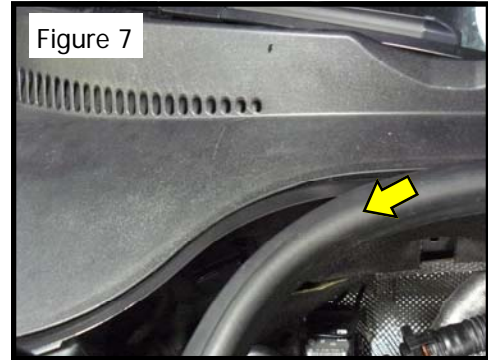


Figure 6

The next steps detail the installation of the diverter valve and intake.

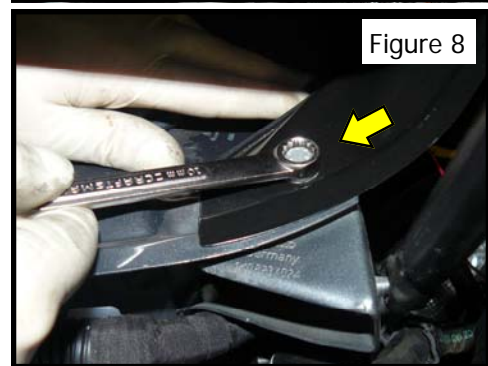
Step 7:

Remove the rain tray weather striping shown in Figure 7.



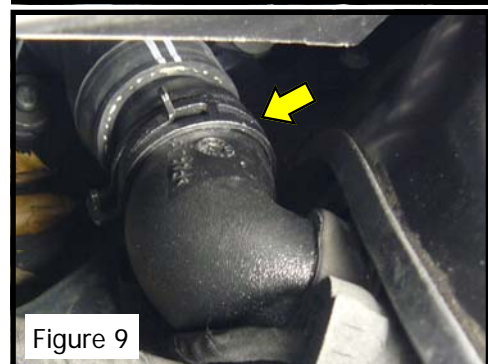
Step 8:

Pull up on the rain tray on the passenger side and remove the 10mm bolt shown in Figure 8.



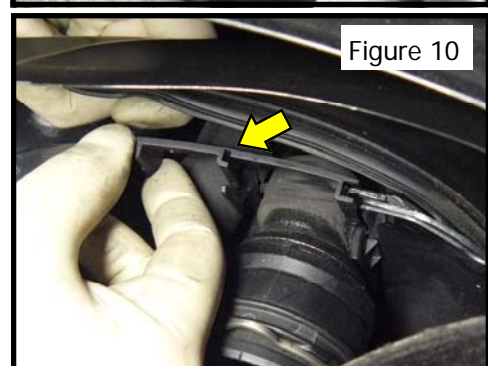
Step 9:

Expose the pipe located underneath the passenger side of the rain tray and remove the spring clamp shown in Figure 9.



Step 10:

Remove the firewall gasket clip shown in Figure 10 by pulling the release clip on the left side towards the front of the vehicle and pulling the gasket clip upwards.



Step 11:

Remove the section of pipe shown in Figure 11.



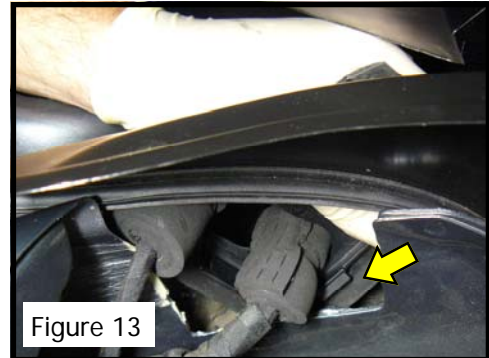
Step 12:

Remove the intake amplification device located under the rain tray shown in Figure 12. There are two T-30 torx screws securing it.



Step 13:

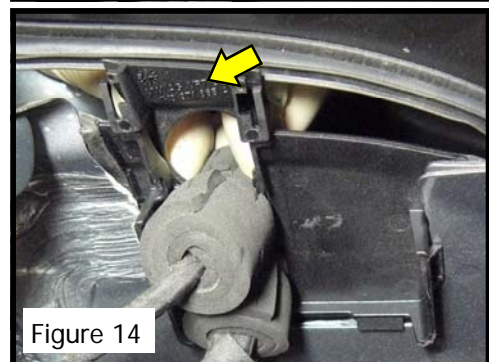
Remove the firewall gasket as shown in Figure 13.



Step 14:

Install the new firewall gasket included with the kit. It is installed in the reverse order of removal.

Install the new firewall gasket clip included with the kit as shown in Figure 14.



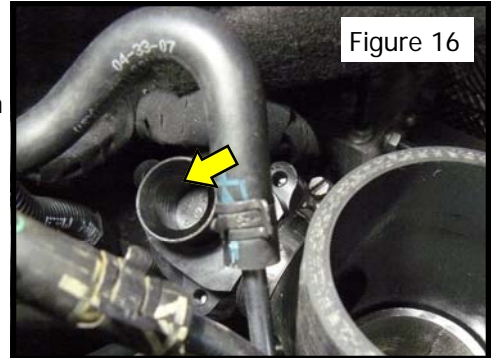
Step 15:

Install the included turbo inlet coupler as shown in Figure 15 using the included 50-70 hose clamp.



Step 16:

Install the diverter valve into the included housing and attach it to the turbo inlet coupler using a 25-40 hose clamp as shown in Figure 16.



Step 17:

Install the included noise pipe to diverter valve hose as shown in Figure 17 using the included 25-40 and 32-50 hose clamps.



Step 18:

If using the factory intake, install the adapter coupler as shown in Figure 18.

Reinstall any previously removed parts following the factory installation procedures.



Step 19:

After the K04 turbocharger has been bolted to cylinder head and the oil feed and return lines have been reconnected, replace oil filter and refill engine with fresh oil. Because of extreme oil operating temps, use synthetic engine oil only.

Before restarting the engine for the first time, the engine, oil lines and turbocharger must be primed with oil. To perform this procedure, first locate the engine ECU and disconnect the multipin connectors from the ECU. Next turn the ignition to the RUN position and crank the starter motor in several 4-5 second bursts. (Your oil pump will circulate oil, however no spark or fuel will be introduced into the engine.) Next turn the ignition key to the OFF/LOCK position and reconnect the multipin connectors to the ECU. **Specific GIAC software is to be used with this kit, and it should be installed at this point.**

After initial start-up, allow the vehicle to idle for several minutes. Do not rev the motor at this time. Shut down the engine and check the oil level. Top off if necessary.

OPERATION

K04 users should always bring their vehicle to a complete stop and allow the engine to idle prior to shutting down the engine. Recommended idle times vary from 1 minute after mild driving, to 5 minutes after aggressive driving. The idle-down procedure circulates fresh oil and coolant through the turbocharger, allowing it to cool gradually, prior to shutdown.

Cool down is required to be performed at the end of every hard driving session. Otherwise, the rapid heat build-up from high boost/high rpm operation can cause the turbine shaft to soften, and allow the turbine head to droop. The result is an imbalance that ultimately leads to turbine shaft failure. Improper cool down is the most common cause of turbo failure and is grounds for warranty denial.

Aftermarket boost control devices, electronic or mechanical, are not to be used with this kit. All boost control is done by fuel injection computer, and excessive boost without fuel injection control can lead to engine and turbo damage. Use of these devices is grounds for warranty denial.

MAINTENANCE

1. Engine oil and filter should be replaced every 3000 miles. Do not change engine oil without installing a new oil filter. Check your engine oil level frequently. The turbocharger shaft spins over 10 times faster than your engine's crankshaft, so an adequate oil supply is critical.
2. Periodically inspect the turbocharger to determine if the wastegate rod and hardware has been bent or damaged. The K04 wastegate rod comes from the factory with a locking clip over the adjustment nuts. DO NOT attempt to recalibrate the wastegate by moving the adjustment nuts. Any tampering with the wastegate can dramatically alter the boost characteristic of the turbocharger and lead to serious engine damage.
3. In the event that any air intake hoses are removed or disconnected during any service, thoroughly inspect every hose and remove any foreign objects or debris that may have fallen or collected inside the hose(s). Any loose objects inside the air intake tract may be sucked into the turbocharger upon start up, seriously damaging the compressor blades.

Any questions or comments, please do not hesitate to contact us:

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Thank you for choosing A.W.E. Tuning as your performance automotive parts supplier. Please remember that a performance car is only as strong as its weakest link. Therefore, it is vital that you maintain your vehicle to factory specifications.

By installing or using the purchased product, the Consumer accepts this warranty and any specific Manufacturer warranties enclosed.

Limited Warranty

The following warranty is valid only in the United States.

The Manufacturer's full warranty applies to all products sold.

Secor Ltd. (A.W.E. Tuning) warrants to the original retail purchaser (Consumer) this product:

90 days on turbo unit
Balance of parts 1 year

Upon verification of warranty coverage, A.W.E. Tuning will repair or replace the defective product at their discretion, without charge. This is the only remedy the Consumer has for any loss or damage, however arising, due to nonconformity in or defect of the product. This warranty does not cover consequential damage, loss of time or revenues, inconvenience, loss of use of vehicle, damage to the vehicle or components, or other incidental or indirect damage.

All warranties are void if the product was not installed by a certified auto mechanic, improperly serviced, modified, or used in a way not intended by the Manufacturer. Use of product in Motorsports or Racing conditions is grounds for warranty denial. Motorsports and Racing is an inherently abusive operational condition, and it is impossible to warranty for this type of usage.

The Consumer is responsible for ensuring that the product is installed in a safe and proper manner, and should cease usage of the product immediately if an unsafe or improper condition is noted. If an unsafe or improper condition is noted, the Consumer should then immediately contact the facility where the product was installed or A.W.E. Tuning directly.

Please contact the original place of purchase for any warranty claims or explanations of this document.