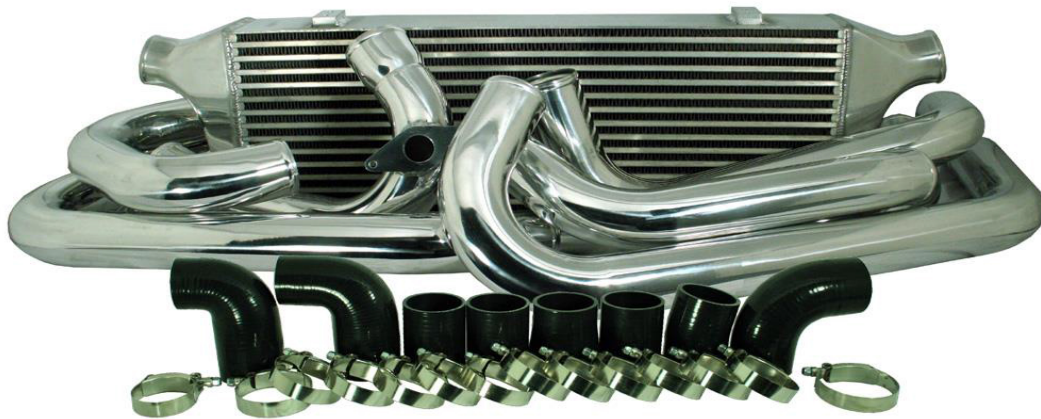




FRONT MOUNT INTERCOOLER 2008+ Subaru WRX/STi (WS08-FMIC)



Thank you for purchasing the TURBOXS front mount intercooler system for your 2008+ Subaru WRX/STi. Please check the box contents to make certain that you have received all parts and read these instructions **from start to finish** before beginning installation. Read the IMPORTANT NOTES section below carefully before beginning installation.

This document is meant to be used as a guide for an experienced mechanic or car enthusiast during the installation of the TurboXS WRX/STi Front Mount Intercooler Kit. While the guide offers a straightforward, step-by-step procedure, it does not go into fine detail on how to complete each step. The use of factory service manuals is highly recommended.

Note that while the kit has been designed to work on MY2008+ WRX and STi, most pictures in this manual were taken during installation of a 2008 WRX. Because the kit is designed to be used on both the WRX and STi - different cars which have different turbochargers and intake manifolds - there WILL be parts left over after installation. We suggest you keep these parts in the event you want to use the kit on a different car or with a different turbocharger/intake manifold.

IMPORTANT NOTES:

- The stock intake system on the 2008+ WRX and STi will NOT work with this front mount intercooler. TURBOXS Intake part # WS08-CAI or similar is required in order to install that TURBOXS Front Mount Intercooler Kit.

- The stock bypass valve on the STi will NOT work with this front mount intercooler. TurboXS part number WS08-FMIC-BPV is required to re-install the stock bypass valve. Alternatively, you can purchase TurboXS blow off valve part number BOV-H or BOV-H-RFL. No adapter kit is required to install either of those valves to this intercooler.
- Installation of the WS08-FMIC will require you to cut out parts of your bumper in order to fit the intercooler core.
- Fog lights remain intact for both the WRX and STi

Parts Included with the TurboXS Front Mount Intercooler:

Item #	Part Description	Quantity
1	Front Mount Intercooler Core Assembly	1
2	Front Bumper Support Beam	1
	Common Intercooler Pipe Kit	
3	Pipe 1a	1
4	Pipe 1b	1
5	Turbo Adapter Flange	1
6	Pipe 2; Into Core, Passenger Side	1
7	Pipe 3; Out of Core, Driver Side	1
8	Pipe 4; Up towards Throttle Body	1
	STi Specific Intercooler Pipe Kit	
9	Pipe 5b	1
10	SR63-70; Black	1
11	T74-80 T-bolt Clamp	1
12	T67-74 T-bolt Clamp	1
	WRX Specific Intercooler Pipe Kit	
13	Pipe 5a	
	Common Silicone Hose Kit; Black	
14	SC-63 Silicone Coupler; Black	3
15	ER-5153T; Black	1
16	ER-5163T2; Black	1
17	E12-63; Black	1
18	E90-63; Black	1
19	T67-73 T-bolt Clamp	11
20	T55-61 T-bolt Clamp	1
	Common Miscellaneous Hardware Kit	
21	Radiator Overflow Bottle	1
22	1/2" Vacuum Line; 660mm	1
23	1/2" T-piece	1
24	Edge Strip; 1000mm	1
25	M8 x 35mm Bolt	4
26	M8 x 20 Bolt	2
27	M8 Washer	6

Installation Instructions

Preparation

1. Disconnect the battery.
2. Remove existing Top Mount Intercooler
3. Remove intake system up to turbo inlet hose. This includes removing the rubber intake elbow (2 x hose clamps), airbox (2 x 10mm bolt located on chassis and 1 x 10mm nut on inside of airbox).
4. Remove OEM coolant overflow bottle. Drain coolant into a clean container and save to re-use later.
5. Remove bumper cover from car. Carefully remove all plastic clips holding bumper in place. Two (2) are not visible and are located behind grill next to the headlights. Once all clips are removed the bumper is held in place by snaps located under the headlights. Unplug the foglight connectors – one on each side before removing the bumper. To complete bumper removal, tug bumper away from headlights. It is very help full to have a second person to complete this step so you can do both side at the same time.

Intercooler Core Installation

1. Remove bumper support beam by removing the eight (8) x 12mm bolts that attach the beam to the frame.
2. Remove the three (3) small tabs on chassis using a cut-off wheel. Alternatively, they can be bent downward with a hammer. There are also two (2) plastic brackets that will need to be removed or trimmed in order to allow the intercooler core to fit.
3. Install E12-63 silicone coupler to driver side Intercooler Core outlet. Loosely secure with T67-73 T-bolt clamp.
4. Install SC-63 silicone coupler on the passenger side Intercooler Core inlet. Loosely secure with T67-73 T-bolt clamp.
5. Install intercooler core to bumper beam using four (4) M8 x 35mm bolts. NOTE: Make sure that the mounting tabs on the bottom of the intercooler core are pointing towards the rear of the car. Tighten bolts to ~20f-t-lbs.
6. Install supplied intercooler support beam/intercooler core assembly to chassis frame using OEM bolts. Torque bolts to ~20ft-lbs.

Illustration 1: FMIC Core mounted to Bumper Beam

Intercooler Piping Installation

In all installations, five (5) pipes are used to connect the turbocharger outlet to the throttle body inlet on the intake manifold. However, you will note that your TurboXS 2008+ Subaru WRX/STi FMIC comes with seven (7) pipes. This is because the WRX and STi have different turbocharger outlets and different intake manifolds. Therefore, the first pipe (coming off the turbocharger) and the last pipe (going into the throttle body) will be different depending on whether you are installing this kit on an STi or a WRX. Follow the instructions below and reference the individual pipe pictures as well as the installation pictures in this document to determine which pipe goes where.



Illustration 3: Pipe 1b



Illustration 2: Pipe 1a



Illustration 4: Pipe 2



Illustration 5: Pipe 3



Illustration 8: Pipe 4



Illustration 7: Pipe 5b

WRX Intercooler Piping:

1. Install Turbo Adapter Flange to Turbocharger. Use silicone RTV on the mating surfaces of the flange and turbo to seal the joint. Tighten flange bolts to ~14ft-lbs, using OEM bolts.
2. Install ER-5163T2 to outlet of Turbo Adapter Flange. Loosely secure with T55-61 T-bolt clamp.
3. Install Pipe 1a to ER-5163T2 silicone coupler on Turbo Adapter Flange. Loosely secure with T67-73 T-bolt clamp.
4. Install SC-63 coupler to outlet of Pipe 1a. Loosely secure with T67-73 T-bolt clamp.
5. Install Pipe 2 between to SC-63 coupler on outlet of Pipe 1a and the SC-63 coupler on the passenger side Intercooler Core inlet. Loosely secure with T67-73 T-bolt clamp.
6. Install Pipe 3 (u-pipe) to E12-63 coupler on driver side Intercooler Core outlet. Loosely secure with T67-73 T-bolt clamp.
7. Install E90-63 coupler to outlet of Pipe 3. Loosely secure with T67-73 T-bolt clamp.
8. Install Pipe 4 to E90-63 coupler on outlet of Pipe 3. Loosely secure with T67-73 T-bolt clamp.
9. Install SC-63 coupler to outlet of Pipe 4. Loosely secure with T67-73 T-bolt clamp.
10. Install Pipe 5a between SC-63 coupler on outlet of Pipe 4 and factory inlet to throttle body. Loosely secure with factory hose clamp.

NOTE: LOOSEN AND REMOVE 10MM BOLT SECURING FUEL LINES TO INTAKE MANIFOLD. THIS WILL HELP ALLEVIATE TENSION ON RUBBER FUEL LINES AFTER INSTALLATION OF THIS PIPE. INSTALLER IS RESPONSIBLE FOR ADEQUATE CLEARANCE FROM FUEL LINE TO PIPE. FAILURE TO PROPERLY ALLEVIATE TENSION ON THESE LINES CAN EVENTUALLY WEAR LINES. FIRE, INJURY AND DEATH CAN RESULT!

11. Bolt factory BOV to flange on Pipe 5a using Silicone Gasket seal and supplied M6 x 30mm bolts/nuts/washers.

STi Intercooler Piping:

1. Install ER-5163T to outlet of Turbocharger. Loosely secure with T55-61 T-bolt clamp.
2. Install Pipe 1b to ER-5163T silicone coupler on Turbocharger. Loosely secure with T67-73 T-bolt clamp.
3. Install SC-63 coupler to outlet of Pipe 1b. Loosely secure with T67-73 T-bolt clamp.
4. Install Pipe 2 between to SC-63 coupler on outlet of pipe 1b and the SC-63 coupler on the passenger side Intercooler Core inlet. Loosely secure with T67-73 T-bolt clamp.
5. Install Pipe 3 (u-pipe) to E12-63 coupler on driver side Intercooler Core outlet. Loosely secure with T67-73 T-bolt clamp.
6. Install E90-63 coupler to outlet of Pipe 3. Loosely secure with T67-73 T-bolt clamp.
7. Install Pipe 4 to E90-63 coupler on outlet of Pipe 3. Loosely secure with T67-73 T-bolt clamp.
8. Install SC-63 coupler to outlet of Pipe 4. Loosely secure with T67-73 T-bolt clamp.
9. Install SR-6370 coupler to the throttle body inlet on the intake manifold. Loosely secure to throttle body with T74-80 T-bolt clamp.
10. Install Pipe 5b between SC-63 coupler on outlet of Pipe 4 and factory inlet to throttle body. Loosely secure hose clamps.

NOTE: LOOSEN AND REMOVE 10MM BOLT SECURING FUEL LINES TO INTAKE MANIFOLD. THIS WILL HELP ALLEVIATE TENSION ON RUBBER FUEL LINES AFTER INSTALLATION OF THIS PIPE. INSTALLER IS RESPONSIBLE FOR ADEQUATE CLEARANCE FROM FUEL LINE TO PIPE. FAILURE TO PROPERLY ALLEVIATE TENSION ON THESE LINES CAN EVENTUALLY WEAR LINES. FIRE, INJURY AND DEATH CAN RESULT!

NOTE: In order to reinstall the factory Bypass valve on the 2008+ STi you will need to purchase the TurboXS 2008+ FMIC Bypass Valve Adapter kit (WS08-FMIC-BPV) from TurboXS.

12. Follow the instructions included with the WS08-FMIC-BPV in order to re-install the factory bypass valve.

Completing Intercooler Installation (WRX and STI)

1. Position each intercooler pipe exactly as you want it making sure each pipe is inserted inside silicone coupler far enough to allow T-bolt clamps to be positioned behind the raised bead on each pipe.
2. **Tighten all T-bolt clamps.** It is best to start from one end and work your way to the other end to make sure you do not miss any. Loose clamps will result in an intercooler pipe blowing off under boost. This will likely cause the car to stall.
3. As each clamp is tightened, some adjusting of the remaining intercooler pipes may be necessary to maintain proper positioning and clearances. Take your time. Trust me, you don't want to do this more than once!
4. Remove plastic cap from OEM coolant overflow bottle and snap onto TurboXS Coolant Bottle lid.
5. Install Coolant Overflow Bottle using OEM bolt in the position shown in picture below.

6. Insert OEM coolant hose into TurboXS Coolant Overflow bottle opening. Trim hose length as needed.
7. Fill coolant Overflow Bottle about half-full using either the coolant from the OEM overflow reservoir or new coolant.



Illustration 9: Coolant Overflow Bottle Installed

8. Install appropriate intake system into vehicle. **A TurboXS 2008+ Cold Air Intake (WS08-CAI) or similar intake is required.**
9. Re-connect battery.
10. Start car and make sure the car is idling normally. If it is not, check for vacuum leaks. More than likely you will have a loose T-bolt clamp that needs to be tightened.
11. Do a final check of pipe positioning and make sure that there is clearance around all the pipes. The next step is to replace the bumper, so you want to make sure the pipes are in position now as it is much harder to get at some of the T-bolt clamps when the bumper is back on.
12. A section of the bumper must be cut out in order to reinstall the bumper. Trimming is required to give enough room for the intercooler core and piping. This is best done with an air powered cut off wheel. However, it can be done with a utility knife with a fresh blade. Hold the bumper up to the car to see where you need to trim. It is best to mark the line you want to cut on using masking tape. Next, lightly scribe a line with a utility knife with a new blade. Then make progressively deeper cuts. It is best to do this when the temperature is warm.
13. Disconnect battery.
14. Re-install bumper cover, connect battery and proceed to test drive.

