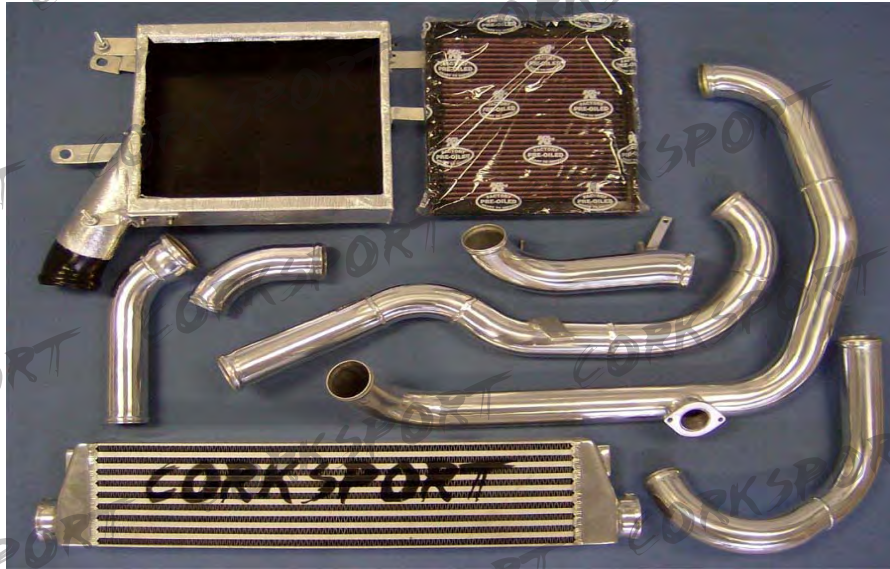


CorkSport Mazda Performance Products

[c o r k s p o r t]



Installation Instructions for the CorkSport Mazdaspeed 3 Front Mount Intercooler Kit

Contents

- 24x6x3.5 inch intercooler
- Five intercooler pipes
- Airbox
- MAF Pipe
- 10mm diameter, 12 inch long silicone hose
- One 3 inch Silicone connector
- One 2.25 to 3 inch Silicone connector
- Thirteen 2.25 inch t-bolt clamps
- Two 2.5 inch t-bolt clamps
- Two 2.75 inch t-bolt clamps
- Three 3 inch t-bolt clamps
- 40 Page Installation Instructions
- Turbo inlet pipe
- K&N Panel Air Filter
- One 2.0 to 2.25 inch Silicone connector
- Four 2.25 inch Silicone connectors
- Two 2.25 to 2.5 inch Silicone connectors
- One 2.75 inch Silicone connector
- Boost Cut Killer
- 6 inch 3.5mm Silicone hose
- 8 inch zip tie
- Two M8 x 1.25 bolts
- Two M8 lock washers

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Tools Required

- 7mm wrench
- 8mm wrench or socket
- 11mm wrench or socket
- Floor Jack
- Sharpie or marker
- Two jack stands
- 4mm Allen wrench
- 10mm wrench or socket
- 12mm wrench or socket
- 14mm wrench or socket
- Philips screwdriver
- Pliers

WARNING: This kit will raise boost level approximately 2 to 3 psi on an otherwise stock car. Please make sure if you have other modifications to your vehicle that fuel delivery is correct and safe for your modifications including this intercooler kit.

CAUTION: Installation of this kit takes 5-6 hours for experienced mechanic. Installation of this kit is fairly complex and requires more than a basic auto repair skills. Read the instructions completely before starting installation. It is best to have the Mazda factory service manual for reference.

WARNING: This kit requires removal and re-installation of fragile electronic sensors. Careful handling is required.

NOTE: The vehicle used in these installation instructions was a 2006 Mazdaspeed 3 equipped with a Mazdaspeed Intake. These instructions do not cover the removal of the factory airbox, which needs to be removed for this installation.

NOTE: Before you get started make sure the car is cooled off and disconnect the negative battery cable. Also make sure there is no residual oil in the new intercooler piping. If there is oil rinse out the pipes with warm soapy water until clean.

NOTE: This kit has been tested and is known to fit the following Bypass/Blow off valves; HKS, Greddy, OEM Mazda and forge. If you have another type of valve there may be clearance problems and relocation of the valve flange may be required.

TIP: When installing the intercooler leave the bubble wrap on the pipes to keep from scratching them. Once you have the pipes installed remove the bubble wrap.

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Component Pictures

MAF Pipe



Airbox



Air Filter



Intercooler



Intercooler Pipe #1



Intercooler Pipe #2



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Intercooler Pipe #3



Intercooler Pipe #4



Intercooler Pipe #5



Turbo Inlet Pipe



Intercooler Brackets



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Step 1: Remove factory battery cover, by pulling out and up at the two clips shown.



Step 2: Disconnect battery terminals with a 10mm wrench negative cable first. Remove the two 10mm head nuts on battery bracket and remove battery and bracket.



Step 3: Disconnect MAF sensor plug from MAF sensor.

Step 4: With a Phillips head screwdriver, loosen hose clamps at air box and at inlet pipe.

Step 5: Pinch the blue clip at vent hose and disconnect vent hose from inlet pipe.

Step 6: Disconnect rubber hold down clip at air box. Pull up on air box to remove. Remove with the soft inlet pipe attached.

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Step 7: Remove three (3) wire harness clips from front battery box cover. Pulling up on cover, remove from battery box.



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Step 8: Remove cover from vehicle ECU by pressing in on the three (3) clips and pulling up.



Step 9: Disconnect wiring harness plugs from ECU by pressing in on tabs and pulling up on white lock handle.



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Step 10: Remove the three 10mm head bolts from bottom of the battery box and remove battery box with ECU attached.



Step 11: Remove the two 10mm headed nuts from top of intercooler cover. Slide back and up to remove.



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Step 12: Using a 10mm socket or Phillips head screwdriver, loosen hose clamps at the outlet of the turbo and at the throttle body.



Step 13: Remove the three 12mm headed nuts from the intercooler mounting brackets and the two at the front and one on the rear.



Step 14: Using pliers, pinch the hose clamp on the vacuum line on the B.O.V., slide back and remove hose.



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Step 15: Using pliers, pinch the hose clamp on the factory B.O.V. outlet hose, slide back and remove hose.



Step 16: Now you can remove the factory intercooler from the vehicle by lifting up on the backside first to get it out of the turbo outlet hose then towards your right side off of the throttle body and out of the car.

Step 17: Remove the two wire harness clips from turbo inlet hard pipe.



Step 18: Remove the 10mm head nut from bracket on turbo inlet hard pipe.



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Step 19: Carefully remove wastegate control vent hose from turbo inlet hard pipe.



Step 20: Loosen the 10mm head or Phillips head hose clamp at turbo inlet and remove inlet hard pipe.



Step 21: Install the 2.0 to 2.25 silicone coupler with 2.25" hose clamp on turbo inlet and tighten clamp. Install the 2.0" side on the turbo inlet.



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Step 22: Slide on 2.25" hose clamp onto previously installed silicone coupler, install turbo inlet pipe into silicone hose coupler and position bracket onto factory stud. Tighten hose clamp and install factory 10mm head nut onto stud and bracket and tighten nut.



Step 23: Remove hose from waste gate control solenoid. Install the supplied 4mm silicone hose onto wastegate control solenoid and onto small nipple on turbo inlet pipe.

Step 24: Remove crank case vent hose from valve cover. Install supplied 12mm silicone hose from crank case vent tube on valve cover to big nipple on turbo inlet pipe.



Pictures Continued On Next Page

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Step 25: Remove the four Phillips head screw type clips from inlet ducts to core support.



Step 26: Remove two Phillips head screw type clips from corners of bumper grill.



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Step 27: Remove the two Phillips head screws from corners of bumper grill.



DANGER: Follow instructions that came with your jack/stands. Death and or significant property damage could result if you do not.

Step 28: Jack up front of vehicle and place securely on jackstands.

Step 29: Remove the four Phillips head screw type clips (two on each side) from inner fender liner to bumper.



Step 30: Remove the six (three on each side) 8mm/ Phillips head screws from lower part of inner fender liner to bumper.



Pictures Continued On Next Page

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Step 31: Remove seven (7) 10mm head bolts and two (2) plastic clips from under tray and remove under tray.



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Step 32: Remove the five 8mm/Phillips head screws from the front of the thin under tray attached to the front bottom of bumper and remove the under tray.



Step 33: Unplug wire harness from both front-driving lights and unclip their harness clips from bumper.



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Step 34: Remove the Phillips head screw from air temperature sensor bracket to bumper. Unclip wire harness clips from bumper and position assembly out of your way.



Step 35: Gently move the inner fender liner towards wheels and remove the two (one on each side) 8mm/Phillips head screws from bumper to fender mounting location.



Step 36: Remove bumper from vehicle. Note: there are 2 clips that you have to access from behind the grill to the crash bar that you need to pull up on to remove bumper from vehicle.



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Step 37: Install a 2.25" straight silicone coupler with hose clamp on to turbo outlet. Tighten hose clamp.



Step 38: Install a 2.25" hose clamp onto other side of previously installed silicone coupler and install I/C pipe # 1 into coupler as shown. Leave hose clamp somewhat loose at this time.



Step 39: Install a 2.25" straight silicone coupler on other end of I/C pipe # 1 and slide hose clamps onto coupler.



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Step 40: Remove the 12mm headed bolt from A/C compressor bracket shown. Set aside for later use.



Step 41: Install I/C pipe # 2 into coupler on pipe #1 and attach bracket to A/C compressor using the factory 12mm head bolt. Leave bolt and hose clamps loose at this time.



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Step 42: On passenger side of vehicle, remove the two 10mm head bolts from diffuser to core support and remove diffuser.



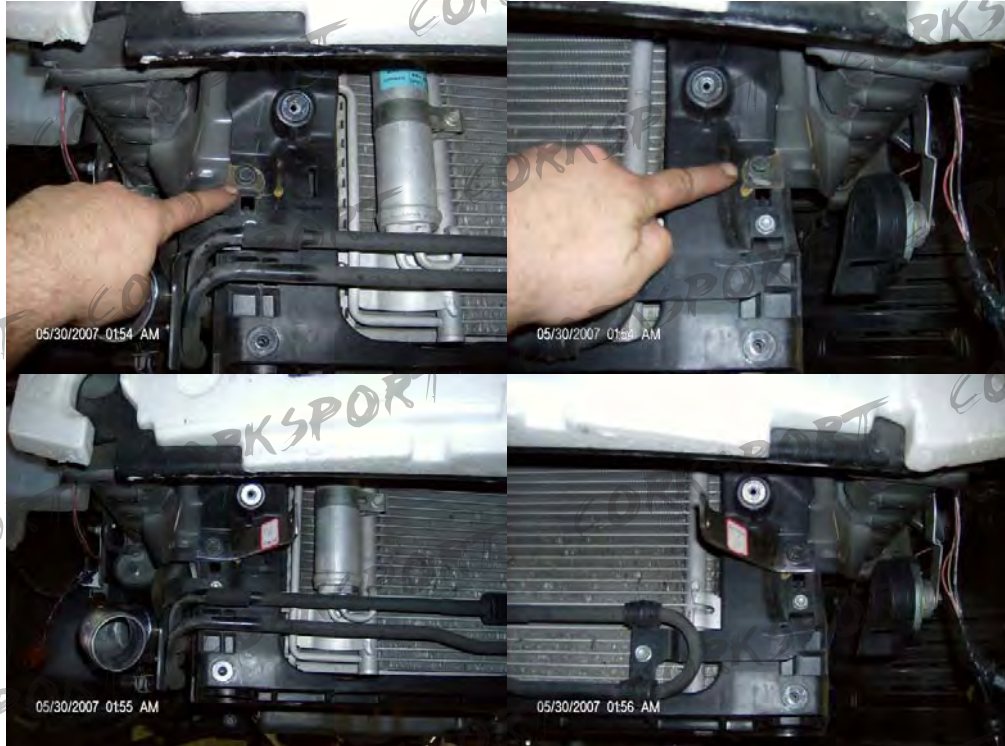
Step 43: On the drivers side, remove the two 10mm head bolts and one plastic clip from diffuser to core support and remove diffuser.



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Step 44: Remove the two 10mm head bolts shown and install intercooler mounting brackets using the bolts removed as shown.



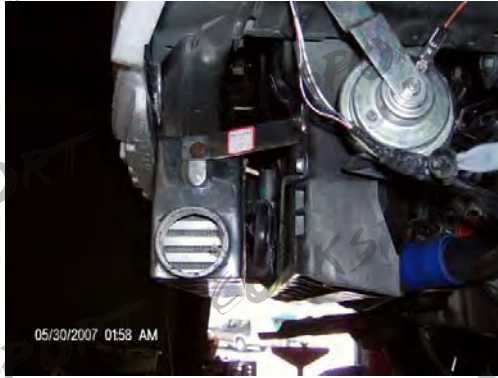
Step 45: Position intercooler between brackets and install 2 supplied M8 x 1.25 bolts and two M8 lock washers through brackets into intercooler.



Pictures Continued On Next Page

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Step 46: Install a 2.25" straight silicone coupler with two hose clamps on the end of I/C pipe # 2.



Step 47: Install a 2.5" – 2.25" silicone reducer with one 2.25" and one 2.5" hose clamp on the end of I/C pipe # 3 and slide on until the 2.5" diameter side is even with the end of pipe.



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Step 48: Install open end of I/C pipe # 3 into silicone coupler on I/C pipe # 2. Slide the 2.5"-2.25" silicone reducer onto intercooler.



Step 49: At this time you can go back through and check clearance of installed intercooler piping and tighten all clamps and bolts.

Step 50: Install a 2.5"-2.25" silicone reducer with hose clamps onto I/C pipe #4.



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Step 51: Install a 2.25" straight silicone coupler with hose clamps onto other end of I/C pipe # 4.



Step 52: Install I/C pipe # 4 onto coupler installed on the intercooler and tighten hose clamp on intercooler.



Step 53: Install a 2.75" straight silicone coupler with hose clamps onto I/C pipe # 5.



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Step 54: Install I/C pipe #5 onto throttle body and into coupler on I/C pipe # 4.



Step 55: At this time, go back and check clearance of the pipes and tighten all hose clamps.

Step 56: Install the supplied Boost Cut Killer with the installation instructions provided with it.

Step 57: Install 3" straight silicone coupler with hose clamps onto air box.

WARNING: When removing the airbox or adjusting the 3" silicone coupler do not use a screwdriver or other metal tool to remove the silicone by prying. It can damage the airbox. With the hose clamp removed pry back the edges around the silicone connector by hand on the airbox side to get the silicone connector loose then pull it off.



DO NOT USE A DAMAGED AIRBOX. TURBO FAILURE COULD RESULT!!!

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Step 58: Install air box onto factory top mount I/C mounting location. Re-install factory nuts with supplied washers and tighten.

NOTE: Some adjustment might be required of the metal brackets that the airbox mounts to the engine. If the airbox does not sit even, gently bend the aluminum mounting brackets to correct the level.



Step 59: Install your BOV on the BOV flange on intercooler. Face outlet of BOV towards recirculation pipe on inlet pipe. Install hose between BOV nipple and recirculation nipple on inlet pipe.

NOTE: A factory bypass valve was used as well as the factory bypass valve hose. The use of the factory hose may work with other BOV but a length of hose has been provided if it doesn't.



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Step 60: Install a 3"-2.25" Straight silicone reducer onto MAF sensor housing with hose clamp, and tighten hose clamp on MAF housing.



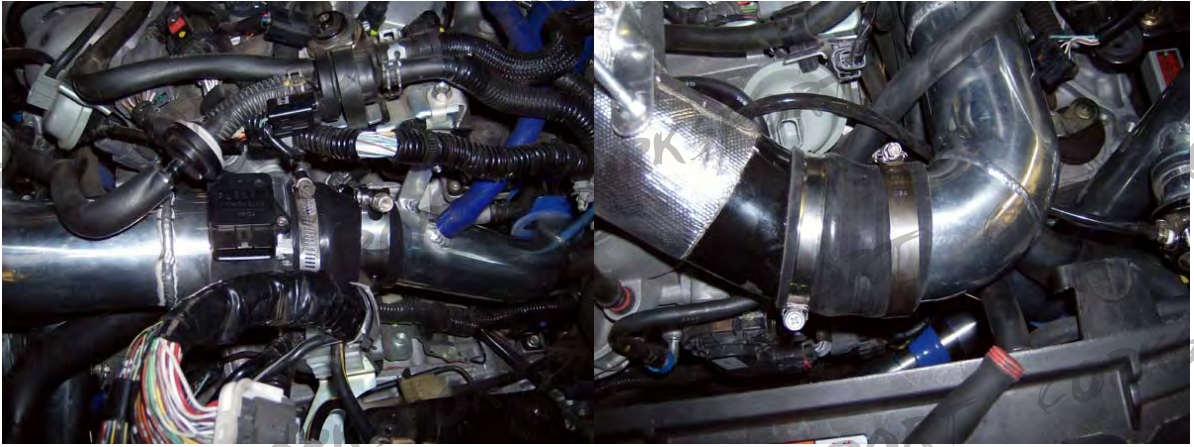
Step 61: Install MAF sensor into MAF housing with supplied Allen head bolts. MAF sensor will only go into housing one direction.



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Step 62: Install a hose clamp onto 2.25" side of silicone reducer and position pipe onto turbo inlet pipe and air box. Tighten hose clamps.



Step 63: Trim factory top mount I/C cover to clear turbo outlet pipe (I/C pipe # 1).

NOTE: You only have to trim enough to clear pipe, so your finished part may differ from picture.



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Step 64: Install supplied air filter into air box. Install cover onto tab at rear of air box, then onto studs on front of air box. Install the two supplied 10mm head nuts with washers onto studs and tighten.



Step 65: Re-install battery box with ECU attached, using the three original 10mm head bolts.



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Step 66: Reconnect ECU plugs. Insert plugs into ECU and push down on white tabs until they lock. Plugs should go in easy so do not force them.



Step 67: Re-install battery with battery hold down and the two original 10mm head nuts. Do not reconnect battery at this time.



Step 68: Re-install the ECU cover.



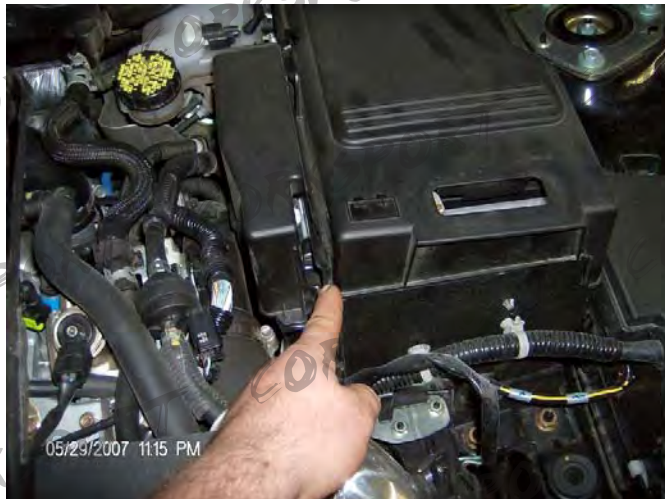
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Step 69: Position battery wires through slots in battery box and re-install battery box front cover.
Reconnect wire clips to front cover.



Step 70: Reconnect battery cables (positive cable first) and tighten with a 10mm wrench. Re-install battery box cover.



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Step 71: Reconnect MAF sensor plug.



Step 72: Position ambient air temp sensor on drivers left side intercooler bracket using supplied zip ties.

NOTE: At this time we would recommend starting up the vehicle and letting it warm up to operating temperature to check for air leaks. To check for air leaks start your car and check for running issues or hard starting. If any hard starting or running issues occur then check for air leaks. This can be done with a spray bottle of water by spraying the silicone connectors and joints. If the idle changes when spraying connections then check the hose clamps for tightness and the fitment of the silicone couplers. After finding a connection leak re-start your car and repeat if necessary. You may want to drive vehicle as well. If everything is satisfactory you may move on to re-installing your bumper.

Step 73: Re-position bumper cover back on vehicle and install the two 8mm/Phillips head screws into corners of bumper at fenders.



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Step 74: Reconnect driving lights and their wire clips.



Step 75: Re-install front under tray with the original five 8mm/Phillips head screws.



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Step 76: Re position inner fender liner to bumper and re install the original Phillips head screw clips, two on each side (Four total).



Step 77: Re-install under tray with the original seven 10mm head bolts and two plastic clips.



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Step 78: Reinstall the six 8mm/Phillips head screws (three each side) into the lower part of the inner fender liners.



Step 79: Re-install the two original Phillips head screws in corner of grill.



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Step 80: Re-install the two Phillips head screw type plastic clips in the corner of the grill.



Step 81: Re-install four (4) Phillips head screw type plastic clips into air ducts to core support.



Step 82: Carefully remove vehicle from jack stands.

Install complete, enjoy!

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