



Miata Boost Upgrade Kit Installation Instructions

For Superchargers with PowerCard® Fuel Management

FOR 1994-1997 Supercharged Miatas with Factory 1.8L Motors

PART # 999-180

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Tools required: 10mm, 12mm, 14mm, 14mm deep, and 17mm sockets, 13mm combination wrench, 5/16" nut driver, Phillips and flat blade screwdrivers, 4mm Allen wrench, Torque Wrench (6-12 ft-lbs), pliers, strap wrench, rags.

Read and understand these instructions before installing this kit.

1.0 SAFETY PREPARATION

1.1 Disconnect the negative battery cable. Caution: If you have a code stereo, make sure you know the code and make note of your pre-sets.

3.0 BOOST UPGRADE PULLEY

3.1 Using a 5/16" nut driver or a flat blade screwdriver, loosen the hose clamps holding the crossover tube to the supercharger outlet manifold and the dummy throttle body. Pull the crossover tube out and set it aside. If you have an intercooler type crossover tube, you can just set it on the top of the radiator without disconnecting the coolant hoses. Illustration 1



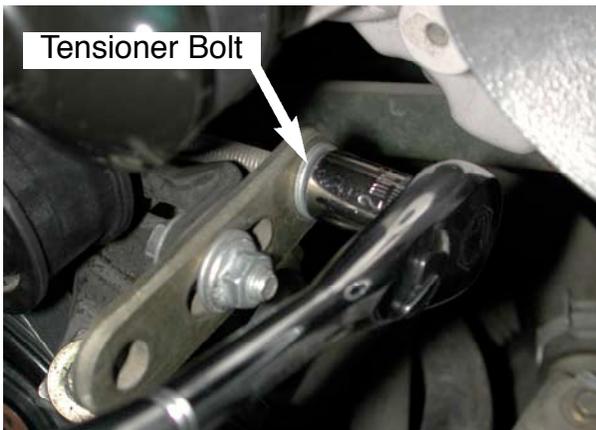
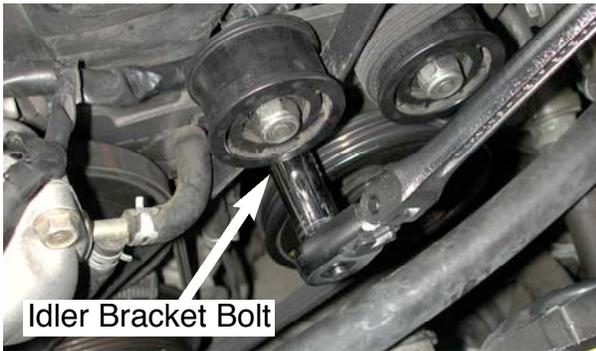
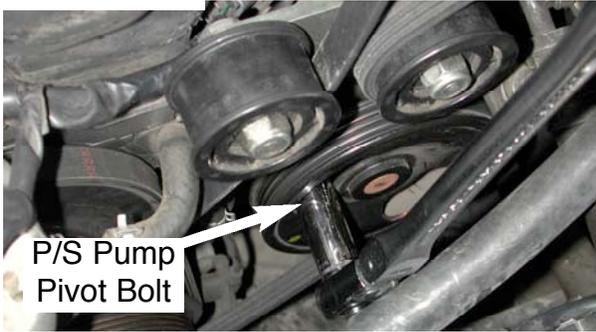
Illustration 1

3.2 The next step is to remove the supercharger belt. Loosen the pillow block bolt behind the idler pulley bracket using a 13mm socket, but do not remove. Then, using a 14mm deep socket, just loosen the power steering pump pivot bolt which holds the pump to the engine block. Loosen the idler bracket bolt using a 14mm socket, but do not remove. Then loosen the power steering bracket tensioner bolt using a 12mm socket, but do not remove. Ensure that the power steering pump and idler pulley bracket assembly are now free to move. To remove the supercharger belt, unbolt the driver's side idler pulley using a 17mm socket and pull the belt off with the pulley. This is also how the new belt will be reinstalled. Illustration 2

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Illustration 2

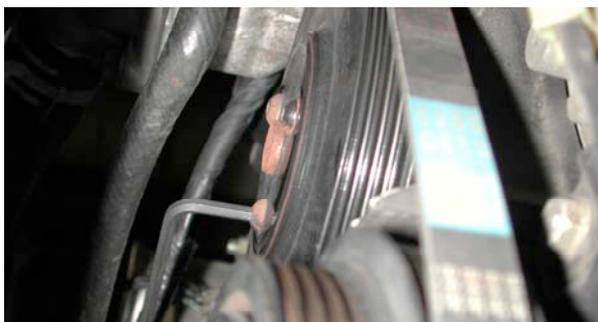
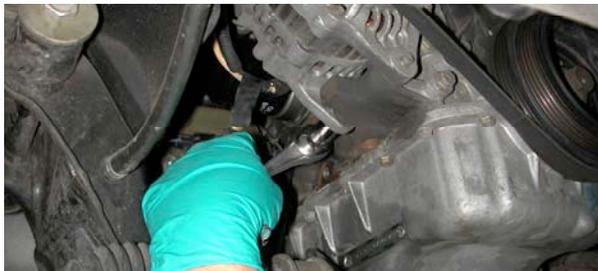


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3.3 Once the supercharger belt is off, you must install the new water pump hardware. Loosen the three original water pump pulley bolts, but do not remove them. Loosen the upper alternator bolt, which prevents the alternator from sliding in the slotted tensioner bracket, using a 12mm socket. Then loosen the tensioner bolt using a 12mm socket and see if the alternator rotates freely. If not, the lower alternator bolt will have to be loosened. Once the belt is loose, do not remove it. Remove the water pump pulley bolts and replace them with the M6x10mm button head cap screws included with the kit. Torque each bolt to 6-8 ft-lbs. Note: Though some of the photos are taken from under the vehicle, this install can be accomplished from above or below the car. Illustration 3



Illustration 3



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3.4 After changing the water pump bolts, then comes installation of the boost upgrade pulley. Using a 10mm socket, remove the four bolts and large washer from the center of the stock crank pulley. Do not remove the crank pulley! Use a damp cloth to remove any built up dirt from the center surface of the pulley. Next, install the boost upgrade pulley over the stock crank pulley. Be careful to align the dowel pin with either of the smaller holes on the boost pulley. Then place the large washer over the boost pulley and install the four new pulley bolts and lock washers supplied. Tighten the bolts in a cross pattern to 10-12 ft-lbs. Illustration 4



Illustration 4



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3.5 Once the boost pulley is installed, tighten up the alternator belt at the alternator tensioner bolt using a 12mm socket. Once tight, lock the alternator in place by tightening the upper alternator bolt using a 12mm socket. Use a 14mm socket to tighten the lower alternator bolt.

3.6 Now you can install the longer supercharger belt supplied. Wrap the belt in the same way around the pulleys as before. Install the previously removed Idler pulley with the belt wrapped around it in the proper manner. It will take a little effort to slip the idler back over it's bolt with the belt around it, but it can be done as long as the belt is in the grooves of the other pulleys and the slack is taken out. Tighten up the idler pulley with the 17mm socket and then tighten the tensioner bolt on the power steering pump bracket using a 12mm socket. Then tighten the pillow block bolt with a 13mm socket and the power steering pump pivot bolt with a 14mm socket. Finally, tighten the idler pulley bracket bolt using a 14mm socket.

3.7 Reinstall the crossover tube and tighten the hose clamps.

4.0 INSTALLATION COMPLETION

4.1 Check to make sure all electrical connections are properly plugged in and all fuel hoses are attached and clamped.

4.2 Extensive testing on our dynamometer has shown the best results are achieved with the ignition timing set at a MAXIMUM of 8 degrees BTDC using 91-octane fuel. If detonation is occurring, further retard the timing to eliminate the problem.

4.3 Reconnect the battery negative cable.