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Miata MP62 Supercharger System

Installation Instructions

FOR 1999 - 2000 Miata

999-810 w/power steering & AC
 999-811 w/power steering, w/o AC
 999-813 w/o power steering, w/AC

READ THESE INSTRUCTIONS THOROUGHLY!

Follow the instructions STEP-BY-STEP, and your installation will be trouble free. If in doubt, CALL 1-888-888-4079. We suggest that as you proceed through the installation, you should read a few steps ahead in the instructions so that you are certain to catch all notes and warnings.

ATTENTION SUPERCHARGER INSTALLER!

Before proceeding with the installation, it is important to know that to validate the 2 year, 100K warranty on your new supercharger, you must completely fill out the Moss Motors warranty card that comes in every kit, including the serial number which is on a small white 'bar code' label on the body of the supercharger. Write down all of the numbers which appear on that label in the appropriate space on the warranty card. Be certain to do this now because once your supercharger is installed, it may be difficult to see the serial number.

SPECIAL NOTE: Moss Motors Supercharger Systems are designed to be installed by individuals with good mechanical skills and with the proper tools. Use your discretion-- if you are not a competent mechanic, do not attempt this installation.

WARNING: 91-octane gasoline (or higher) is required when running a supercharger. Run any lower octane gasoline out of your tank and refill with 91 octane before starting this install. Also, if your fuel filter has more than 40,000 miles on it since it was replaced last, it is recommended that you replace it. During this installation process, you will reuse some parts or hardware and not reinstall others. It is recommended that you make space for those that you will reuse, and a separate space for those that you will not reinstall. In addition, you should save the parts that will not get reused in case you ever have reason to convert the engine back to stock.

TOOLS REQUIRED:

8mm, 10mm, 12mm, 14mm (deep), 16mm, 17mm, and 7/16" sockets, (2)12mm, a 14mm, 15mm, 17mm, 22mm (or adjustable wrench), a 1/2", and 7/8" combination wrenches, 5mm allen wrench, multipurpose pliers, needle nose pliers, wire cutters, wire crimpers/strippers, (2) needle nose locking pliers (Vise Grips), hose cutter, stubby and medium flat blade screwdrivers, #2 and #3 phillips screwdrivers, dead-blow hammer, torque wrench, thread sealing tape (i.e. Teflon tape), heat gun or lighter, #29 and #10 drill bit, electric drill, anti-seize, ruler or straight-edge, timing light, and a utility knife.

INSTALLATION:

1. Use a pair of needle nose pliers to release the clamp securing the PCV hose to the valve cover, connected near the oil filler cap. Disconnect the hose. Illustration 1



Illustration 1



Supercharger Installation Instructions

2. Use an 8mm socket or a phillips screwdriver to loosen the clamps securing both ends of the cross tube. Unclip the PCV hose from it's mount on the front of the valve cover. Then remove the cross tube. Illustration 2



Illustration 2



Illustration 3 con't



3. Disconnect the electrical connector at the mass airflow sensor (MAF). Release the clips securing it's harness to the air box. Also, unclip the MAF wiring harness from the bracket on the timing cover. Disconnect the wiring harness from the Intake Air Temperature sensor and remove the sensor and it's grommet from the air box. Set aside the sensor and grommet to be used later. Using a 10mm socket, remove the two bolts securing the MAF to the air box. Remove the MAF from the air box and remove the rubber donut seal (which seals it to the air box) from the sensor. Set the MAF aside in a safe place to be used later. Illustration 3



Illustration 3

4. Using a 12mm socket, remove the two bolts and one nut securing the air box to the car. Using a 10mm socket, remove the bolt securing the intake snorkel to the inner fender. Remove the air box and snorkel as an assembly and set it aside. Use the 10mm socket and combination wrench to remove the two bolts securing the relays to the plastic shield. Save these bolts to mount the relays to their new location. Again, using the 10mm socket, remove the three bolts and one nut holding the plastic shield and the air box bracket to the car. Remove the plastic shield and the air box bracket. Illustration 4

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Illustration 4



5. On the other side of the engine compartment, disconnect the electrical connectors at the throttle position sensor and at the idle air control valve. Using two 12mm combination wrenches, loosen the nuts securing the throttle cable to its bracket on the side of the intake manifold. Once the nuts have been loosened, push the sleeve out of the center of the rubber grommet. Then slide the grommet and cable out of the bracket. Disconnect the cable from the throttle bell crank. Use a 10mm socket to remove the throttle cable bracket from the intake manifold. Disconnect the clip securing the throttle cable to the cruise control cable. Unclip the throttle cable from the firewall mounting brackets and pull it over to the driver's (left) side of the car. Illustration 5

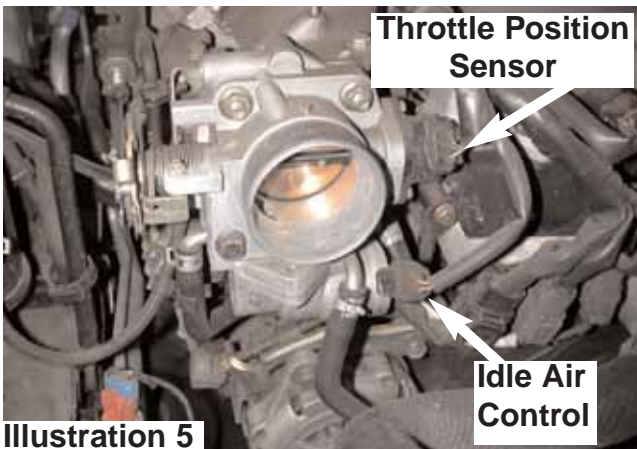


Illustration 5



Illustration 5 cont't



6. Use two pairs of needle nose locking pliers to pinch off the two small coolant hoses leading to and from the idle air control valve. Using a pair of needle nose pliers, release the clamps on the two small hoses. Disconnect the hoses. Next, using a 12mm socket, remove the two bolts and two nuts securing the throttle body to the intake manifold. Slide the throttle body off of the studs. Remove the factory throttle body gasket. Illustration 6



Illustration 6

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Illustration 6 con't



7. Use a 10mm socket to disconnect the ground wires attached to the wiring harness support bracket just above the throttle body opening on the intake manifold. Then remove the bolt securing the bracket to the intake manifold. Use wire cutters to cut the tie wrap mount securing the harness to the bracket. Set the bracket aside. Reuse one of the removed bolts to reattach the ground wires to the intake manifold where the bracket was removed. Tighten the bolt to 9 ft. lbs. Illustration 7



Illustration 7



Illustration 7 con't



8. There is a steel support bracket in the shape of an inverted "L" just below and behind the throttle body location on the intake manifold. Use a 12mm socket to remove the four bolts securing the bracket to the manifold. Reattach the ground wires using a M8 X 20mm flange head bolt included in the kit. Illustration 8



Illustration 8



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9. Take the throttle body to a worktable and use a #3 phillips screwdriver to remove the two screws securing the Idle Air Control Valve (IAC) to the throttle body. If the screws are really tight, pliers can be used from the side to loosen them. Gently separate the IAC from the throttle body. Remove the factory IAC gasket. Illustration 9



Illustration 9



10. Gather the dummy throttle body, (2) M6 X 10mm phillips head screws, (1) of the new Idle Air Control Valve gaskets and the IAC block off plate from the kit. The IAC block off plate will mount to the bottom of the dummy throttle body. Apply the included silicone sealant to both sides of the gasket. Attach the block off plate and gasket to the dummy throttle body using the included M6 X 10mm phillips head bolts. Tighten the bolts evenly to avoid vacuum leaks. Tighten to 9 ft lbs. Illustration 10



Illustration 10

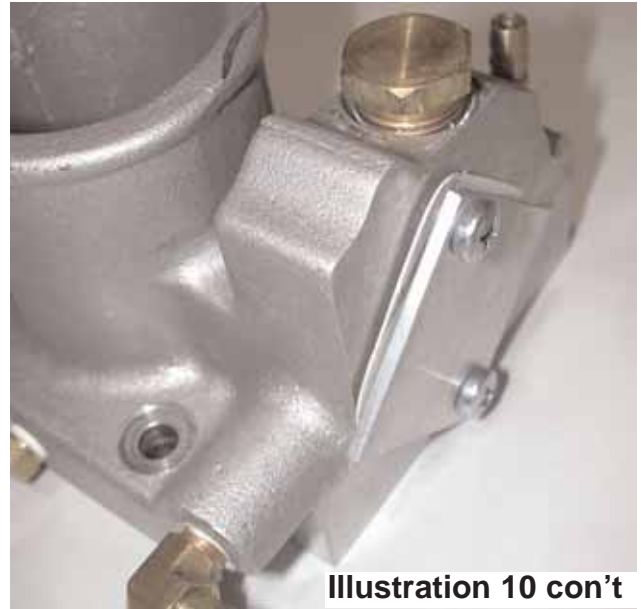


Illustration 10 con't

11. Install the dummy throttle body in place of the original throttle body, reusing the nuts that were removed and (2) M8 X 40mm flange head bolts included with the kit. Use a new gasket. Using a 12mm socket, tighten the fasteners in a cross pattern to 18 ft-lbs. Reconnect the small coolant hoses and clamp using the factory hose clamps. Then remove the two pairs of locking pliers used to pinch the coolant hoses for the throttle body. Illustration 11



Illustration 11



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12. Locate the main engine wiring harness on the left side of the engine (as viewed from the front of the engine) where it runs between the intake manifold and the valve cover. Gently remove the PCV valve from the valve cover. Use caution, plastics exposed to heat can be brittle. Unclip the harness mount at the back of the valve cover to allow more slack in the harness to ease working on it. It may also be helpful to disconnect the three inline harness connectors, O2 sensor connector (if applicable) and cam position sensor at the front of the engine. Illustration 12



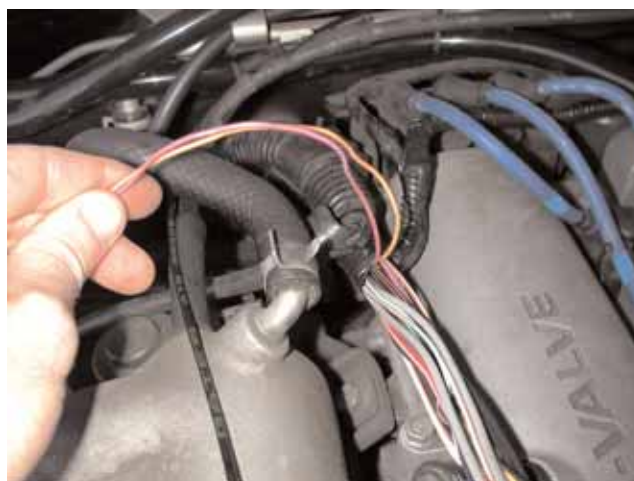
Illustration 12



13. Starting at the front of the harness, unwrap the tape around the individual harnesses exiting the main harness. Remove the tape all the way along the main harness until you are able to remove the large diameter split loom. Once the wires are exposed, locate the IAC connector and its wires. (Purple and Orange) Pull these wires out of the harness until they stop at the back of the valve cover. This will allow slack for the connector to reach the new IAC location. Cut a length of the small diameter split loom, included with the kit, to cover the IAC wires, from the connector to the main harness. Install the split loom over the wires. Illustration 13



Illustration 13



14. Now, locate the Throttle Position Sensor connector. These wires (Light Green/Red, Green/Black, and Black/Pink) will be pulled out of the main harness all the way back to the mounting clip at the rear of the valve cover. Sometimes the wires are tangled and do not pull easily from the main harness. Usually the Light Green/Red wire. If this is the case, either cut the tangled wire, untangle it, and splice it back together using the included crimp connector or remove the pin from the connector that corresponds to that wire. To cut

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and crimp, choose the tangled wire. Cut it at least 2" from the connector, strip 1/4" of insulation off the ends, and untangle it. Use crimping pliers to crimp the included butt connector onto the wire and heat the connector to shrink the tubing on each end. To remove the pin, remove the white plastic center from the face of the connector. It pulls straight out. Then reach into the connector with a small pointed object and pull the lock tab away from the metal pin just enough to release it. Gently pull the pin out. Only remove one pin at a time if more than one wire needs to be untangled. Replace the pin in the reverse order. Illustration 14



Illustration 14



15. Again, using the small diameter split loom, cover the TPS wires. Use the removed large split loom to recover the main harness. Use the included electrical tape to wrap the harness in the same manner as the factory. Be sure to tape up each branch harness and where they join the main harness to protect the wires. Remount the main harness at the rear of the valve cover and reconnect the harness connectors at the front of the engine. The TPS will be connected after the installation of the supercharger and throttle body assembly. The IAC will be connected after relocating it to the firewall.

16. Gather together the IAC Plate, the IAC Plate Bracket, the vacuum distribution block, (3) M6 X 16mm Socket Head Cap Screws, (3) M5 X 20mm Hex Head Screws, (3) M5 locknuts, (1) 1/8" NPT Plug, (1) 1/4" NPT close nipple, (2) 1/4" NPT X 3/8" barbed fittings, and (1) 1/8" NPT X 3/16" barbed fitting. Wrap the fittings with thread sealing tape. Illustration 15



Illustration 15

17. Thread one of the large barbed fittings into the end of the distribution block. Thread the close nipple into the other end. Thread the small barbed fitting and 1/8" plug into the side of the block. Tighten the fittings in the side using a 7/16" combination wrench. Thread the end of the block with the close nipple into the IAC Plate. It will thread into the hole nearest the pointed end of the plate. The hole has tapered threads in it and the fitting has to be started into the correct side. Look at the hole carefully. The close nipple will start easier on one side. Tighten the block to the plate by holding the plate in a vise and using an adjustable wrench. Then tighten the barbed fitting to the block using a 9/16" combination wrench. See the illustration for orientation. Thread the last, large barbed fitting into the remaining hole in the plate and tighten with a 9/16" combination wrench. Illustration 16

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Illustration 16



18. Mount the IAC Valve to the plate using the factory bolts. Use one of the included gaskets. The valve will mount with the electrical connector furthest away from the straight edge with three holes in it. Tighten the phillips head bolts evenly to 9 ft lbs. Illustration 17



Illustration 17



19. The IAC Plate Bracket will mount to the firewall between the windshield wiper motor and the bolt that mounts the vacuum line for the brake booster. Hold the bracket up to the firewall with the narrow side closest to the bolt securing the vacuum line. Place the bracket approximately 5" from the center of the bolt and vertical. Mark the center hole with a scribe. Remove the bracket and center punch the location. Drill a hole using a #10 drill bit. Next use one of the M5 hex screws and an M5 lock nut to fasten the bracket to the firewall through that hole. Align the bracket so that it is vertical and tighten the bolt using an 8mm socket and combination wrench. Drill the other two holes through the bracket. Remove the bracket from the firewall. Illustration 18

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Illustration 18



20. Slip one of the M5 hex screws through the center hole in the bracket. Note: Once the bracket is assembled to the plate the bolt cannot be installed. Attach the bracket to the plate using the M6 X 16 Socket Head Cap Screws. The bracket will be on the same side as the barbed fittings. Tighten the screws using a 5mm allen wrench. Illustration 19



Illustration 19



21. Attach the assembly to the firewall with the fittings pointing toward the center of the car. Use the three M5 hex screws and M5 lock nuts. Tighten using the 8mm socket and combination wrench. Reconnect the IAC wiring harness. Illustration 20



Illustration 20

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22. For No PS - AC only applications, move on to step 26. Use a 12mm socket and combination wrench to loosen the power steering slide lock bolt. Then loosen the tensioning bolt. Use a 14mm deep socket and combination wrench to loosen the power steering pump pivot bolt. You may have to rotate the pulley to access this bolt. Using a 14mm socket loosen and remove the slide anchor bolt at the engine. At this point the power steering pump should be able to pivot. Push the pump downward towards the air conditioning compressor and remove the belt. Now, use a 12mm socket to remove the nut securing the power steering hose to the bracket. Using a 14mm socket, remove the two bolts securing the power steering bracket to the power steering pump. Remove the whole tensioning system including the tensioning and power steering brackets. Then, remove the nut from the power steering pump pivot bolt. Illustration 21

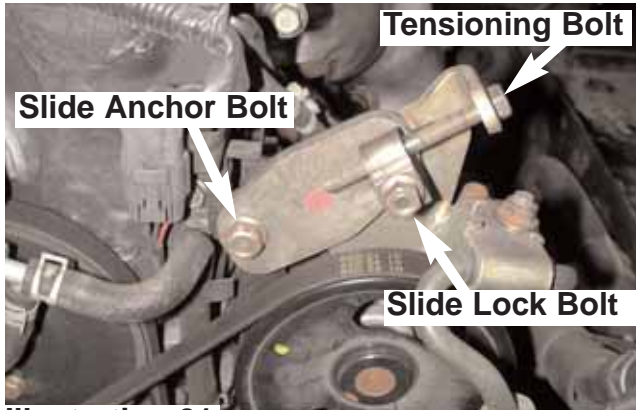


Illustration 21



23. Gather together the new belt tensioner assembly, the new power steering hose support bracket and the supercharger strap bracket. It will be necessary to remove the two small brackets attached to the front of the timing cover. The MAF sensor harness was attached to one bracket and the Crankshaft Position (CKP) sensor connector is attached to the other bracket. Disconnect the CKP connector and reach behind it with needle nose pliers to release it from the bracket. Then, using a 10mm socket, remove the bolts securing both brackets to the front of the timing cover. Set the brackets aside and reinstall the bolts. Reconnect the CKP connector. The CKP connector will be tucked neatly behind the new tensioner plate. Install the new power steering hose support bracket in the same place as the factory bracket. Temporarily install the upper bolt to help with alignment and then install the lower bolt. Tighten the lower bolt to 36 ft lbs. Once the lower bolt is tight, remove the upper bolt. Illustration 22



Illustration 22



Supercharger Installation Instructions



Illustration 22 con't



24. The radiator cooling fan in front of the power steering pump will have to be lifted slightly to allow the power steering pump pivot bolt to be removed. Using a 10mm socket, remove the two bolts at the top of the cooling fan and lift it up enough so that the pivot bolt can be removed. Now slide the power steering pivot bolt forward out of the pump. Remove the rubber sleeve holding the bolt in the new tensioner assembly. Slip the new tensioner assembly into place behind the power steering pulley, aligning its lower hole with the pivot bolt hole. Reinstall the pivot bolt. The cooling fan can also be reinstalled at this time. Be sure its lower pins are in their correct locations. Tuck the CKP connector behind the new tensioner assembly and install the short-headed bolt again just above the pivot bolt. It should thread into the cast power steering bracket, bolted to the engine. Finally, install the last bolt through the tensioner assembly and through the power steering hose support bracket into the upper hole in the pump. Slide the round hole of the strap bracket onto the end of the pivot bolt on the back side of the power steering pump and start the flanged nut. Tighten the two upper bolts

on the tensioner assembly, securing it to the power steering pump and the cast power steering bracket, bolted to the engine. Tighten to 36 ft lbs. The power steering pump pivot bolt will stay loose until the supercharger is installed. At this point, also route the MAF and IAT harness over the top and behind the new tensioner assembly toward the left (drivers) inner fender. Illustration 23



Illustration 23



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25. Gather one M8 x 20mm flanged bolt, an M8 lock nut, an M8 hex nut, an M8 flange nut, and the power steering link. Thread the M8 hex nut all the way down the stud on the power steering hose support bracket and snug it in place. Install the power steering link over the stud on the power steering bracket and start the lock nut. Tighten it until it just touches the power steering link. Align the clamp on the power steering line with the remaining hole in the power steering link. Slip the bolt through the hole and start the flange nut. Once the bolt and nuts are started, tighten them to 18 ft lbs. Illustration 24



Illustration 24



26. For No PS - AC only application, use a 22mm socket or combination wrench to loosen the lock nut in the center of the factory idler pulley. Use a 10mm socket to loosen the tensioner bolt, therefore loosening the belt. Remove the belt.

27. Unthread the tensioner bolt all the way out of the idler pulley stud and set it aside. Next, unthread the nut from the center of the idler pulley and remove the pulley, spacer, and stud. Set them aside. They will not be reused. Gather from the kit a M10 X 60mm hex head bolt, a thick, black washer, an idler pulley, an idler pulley spacer, and a t-nut. Notice that the t-nut has a small hole in one end. The tensioning bolt will engage it here. Slip the thick, black washer onto the bolt and slip the bolt through the idler. Then, slip on the idler spacer with the small diameter against the idler. Insert this assembly through the slot on the front of the cast steel bracket and thread on the t-nut. When the t-nut is in the slot the small hole should be facing up. Illustration 25



Illustration 25



Supercharger Installation Instructions



Illustration 25 con't



28. Gather together two M6 nuts and the factory tensioner bolt. Thread one nut all the way up the tensioner bolt, almost to the head. Slip the bolt through its hole in the cast steel bracket and thread on the second nut about 3/8". Slide the idler assembly to the top of the slot and just snug its bolt by hand so that it stays at the top. Illustration 26



Illustration 26



29. Using a 14mm socket, remove the front, lower bolt securing the cast steel bracket to the engine block. Gather together from the kit a M10 X 45mm flange bolt, the "L" bracket, a M10 X 25mm flange bolt, a M10 locknut, and the supercharger strap brace. Attach the "L" bracket to the cast steel bracket using the M10 X 45mm bolt. The curved cut-out on the "L" bracket should be on the bottom when installed. Position the "L" bracket so that it is not sitting on the casting beneath it and tighten the bolt to 32 ft. lbs. Attach the supercharger brace to this bracket using the M10 X 25mm flange bolt. Slip the bolt through the hole in the "L" bracket from the front, pointing rearward. There is a hole in one end of the brace that will slip over the bolt and then the locknut. Snug the nut so that the brace can still move. It will be tightened in a later step. Illustration 27



Illustration 27

30. Using a 14mm socket, remove the front engine lift eye. Using a 10mm socket, remove the six bolts securing the heat shield to the exhaust manifold. Remove the heat shield. Illustration 28



Illustration 28



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31. Use a 14mm socket to remove the nuts on the two center studs securing the exhaust manifold to the cylinder head. Spray penetrating oil (WD-40) on the center studs, up against the head. Let it soak in for a few minutes. Install the two M10 nuts supplied in the kit onto one of the studs and using two 17mm combination wrenches, tighten them together. Now use them to unscrew the stud. Repeat for the other stud. Apply anti-seize to the short thread on the new studs. Install the new studs using the same method. Thread them in until they are snug, but do not over tighten. Illustration 29

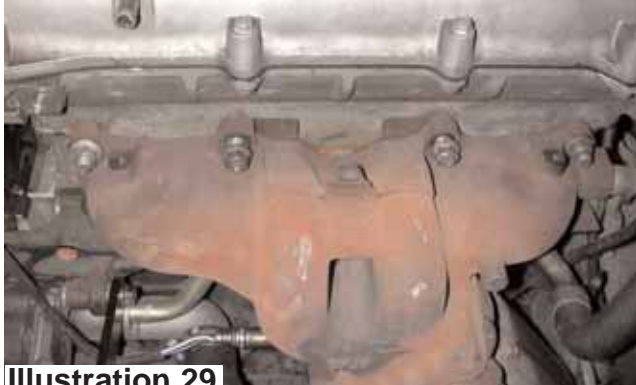


Illustration 29



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32. Gather together the two exhaust mount blocks, the side plate and the side plate block. Also gather together two coarse-threaded M10 x 25mm flange head bolts and two M8 x 20mm flange head bolts. Apply thread lock to the two M8 bolts and use them to attach the exhaust mount block to the side plate. Drop one of the M10 bolts into the lower hole in the side plate and then tighten the M8 bolts to 18 ft lbs. The M10 bolt will align the lower hole in the block to the hole in the plate. Remove the M10 bolt and apply thread lock to both of them. Thread them, hand tight, into the side plate block through the slots in the side plate. Illustration 30



Illustration 30



Supercharger Installation Instructions



Illustration 30 con't

33. Take the side plate assembly and slide it onto the two exhaust studs previously installed in the cylinder head. You may need to use a dead-blow hammer to lightly tap it into place against the exhaust manifold. Slip on two 10mm lock washers and start the two M10 nuts, previously used to install the studs. Use a 17mm socket to tighten them to 36 ft lbs. Slide the side plate block all the way forward. Illustration 31



Illustration 31

34. Locate the M10 x 1.25 x 25mm (fine thread) flange bolt and thread it into the head where you removed the engine lift eye earlier. Thread it into the head until there is about 1/2" of thread left sticking out. Illustration 32



Illustration 32

35. Locate the heater hose connected to the metal pipe, bolted to a lower bolt on the rear of the exhaust manifold. In order to gain more clearance between this hose and the new inlet tube, slide the hose further on the pipe. Use needle nose pliers to release the clamp, carefully break the hose loose from the pipe, and slide it further on about 1/2". Slide the clamp back onto the hose over the same spot on the pipe so that the clamp is between the two beads. Illustration 33



Illustration 33



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36. Gather together the factory throttle body, an Idle Air Control (IAC) block off plate, an IAC gasket, and (2) M6 X 10mm phillips head screws. Apply silicone sealant to both sides of the gasket. Attach the block off plate and gasket to throttle body where the IAC was removed. Use the gasket and the two M6 phillips head screws to secure it. Tighten the screws to 9 ft lbs using a #3 phillips screwdriver. Illustration 34

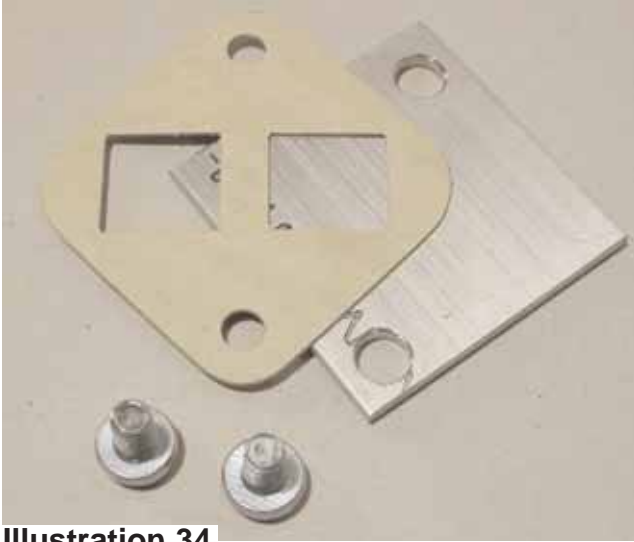


Illustration 34



37. Gather together two M8 x 35mm, one M8 X 40mm, one M8 X 55mm flange head bolts, the throttle body gasket, the stock throttle body, and the supercharger assembly. Apply thread lock to the four bolts. Slip the short bolts through the top holes in the throttle body. (Should be the narrowest part of the throttle body casting.) Slip the gasket over the bolts. Hold the throttle body and gasket up to the supercharger. Note that the throttle cable bell crank fits in the machined step on the side of the throttle body adapter. Thread in the upper bolts. Insert and thread in the lower bolts. Then tighten the bolts in a cross pattern to 18 ft. lbs. using a 12mm socket. The coolant tubes on the bottom of the throttle body need to be rotated 90 degrees counter-clockwise from their standard position so that they point in the same direction as the throttle

body inlet. Although these tubes will not be reused, this step will move them out of the way. Use a large adjustable wrench (Crescent wrench), closed down on the tube, to rotate them. Try not to crush the tube or allow them to kink as you rotate them. Ideally the tubes will rotate in the aluminum throttle body housing. It is best not to damage the tubes in case you want to return to stock. Illustration 35



Illustration 35



38. Gather the M12 x 40mm flanged bolt, one M10 x 25mm coarse thread flange head bolt and one M10 locknut. The M12 bolt will be the rear supercharger mount bolt and will pass through the throttle body adapter on the supercharger and thread into the side plate block once the supercharger is in place. The M10 bolt is for the supercharger strap bracket that is already installed on the pivot bolt of the power steering pump. Illustration 36

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Illustration 36

39. Measure the thickness of your exhaust header flange. The measurement can be approximated using combination wrenches. We have included three thin flat washers to shim the front mount of the supercharger, away from the head, in the case your flange is thicker than 7/16". Slip the washer onto the M10 bolt in the front lift eye location. If your flange is thinner, a washer will have to be installed on the rear studs, between the side plate assembly and the header flange. Take the supercharger assembly over to the car. Slide the keyhole slot, in the front bracket, over the M10 bolt. Slip the M12 bolt through the throttle body adapter plate and thread it all the way into the side plate block. Now, while lifting up on the supercharger assembly, snug the M10 bolt just until it touches the bracket. The supercharger assembly must be able to slide. Illustration 37



Illustration 37



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40. While the supercharger is hanging loosely on the engine, remove the sliding tensioner pulley from the tensioner plate. Be sure that the T-nut on the back side of the tensioner plate doesn't fall. Hold a straight edge between the supercharger pulley and the crankshaft pulley. Then slide the supercharger assembly forward or backward to align the front face of the supercharger pulley with the front face of the crankshaft pulley. Once they are aligned, use a 14mm combination wrench to tighten the M10 bolt at the front supercharger mount to 36 ft lbs. Then use a 16mm socket to tighten the M12 bolt at the back of the supercharger to 45 ft lbs. Now use a 15mm combination wrench to tighten the two bolts securing the side plate block to the side plate. Tighten them to 36 ft lbs. Reinstall the tensioner pulley assembly onto the tensioner plate. Illustration 38



Illustration 38

41. Underneath the supercharger, align the supercharger strap bracket with the rear side of the front tab on the supercharger support bracket. Slip the M10 x 25mm coarse thread bolt through both brackets, start the M10 locknut and tighten using a 15mm combination wrench and 17mm socket. Use a 14mm deep socket and combination wrench to tighten the power steering pump pivot bolt to 36 ft lbs. For No PS – AC only applications, tighten the lower bolt securing the supercharger brace to the "L" bracket also. Illustration 39



Illustration 39

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42. Gather together an M10 x 35mm coarse thread flange bolt, an M10 locknut, the throttle cable bracket spacer, and throttle cable bracket. Stretch the throttle cable out to the front of the car and install the throttle cable bracket onto the grommet with the open side facing down. Slide the sleeve into the grommet and then run the nuts down on each side by hand so that the bracket ends up approximately in the center of the adjustment. Route the throttle cable under the brake line at the master cylinder, then loop it over the strut tower and under the front of the supercharger but over the supercharger strap bracket, pointing it towards the throttle body. Hook the end of the cable into the bell crank on the throttle body and then pull the throttle cable bracket back towards the rear tab on the supercharger support bracket. Slip the M10 bolt through the hole in the tab from the front. Slip the throttle cable bracket spacer over the bolt and then the throttle cable bracket. Start the locknut. Tighten the M10 bolt and nut until it just makes contact with the throttle cable bracket. Rotate the throttle cable bracket until the throttle cable is aligned with the bell crank on the throttle body. Use two 12mm combination wrenches to adjust the cable using the two nuts on either side of the throttle cable bracket. Adjust it so that there is a small amount of slack in the cable when the throttle is released but that full throttle is available when the throttle pedal is fully depressed. It may help to have an assistant press the throttle pedal while observing for wide open throttle at the throttle body. If you find that it is too difficult to tighten the two throttle cable nuts together underneath, get a close adjustment by hand, remove the M10 locknut, remove the cable and bracket, snug the two nuts together with wrenches and then reinstall the cable, rechecking the cable for proper slack and wide open throttle actuation. Finally, tighten the M10 bolt and locknut using a 15mm combination wrench and a 17mm socket to 36 ft lbs. Illustration 40



Illustration 40



Illustration 40 con't



Supercharger Installation Instructions

43. Route the drive belt around the crank pulley, over to the air conditioning compressor pulley (if present, if not, route to the P/S pump), up to the power steering pump pulley, between the idler and tensioner pulleys, over the supercharger pulley, down between the idler and tensioner pulleys and back to the crank. Tension the belt using a 17mm socket on the tensioner bolt. Tighten the bolt until there is 1/2" of deflection when you press firmly on the belt between the idler and the crank pulleys. Thread the jam nut on the tensioner bolt down against the tensioner bracket. Use a 17mm combination wrench to lock the jam nut into place. Torque the tensioner pulley bolt to 36 ft lbs. Also double check the torque on the fixed idler pulley bolt. If you hear belt squeal when you turn the steering or use the Air Conditioning, the belt is not tight enough. For No PS – AC only applications, route the belt from the crankshaft pulley, under the AC pulley, up to the supercharger pulley, down under the idler and back to the crankshaft pulley. The belt may have to be rolled on. Loosen and slide the idler down to put tension on the belt. Guide the tensioner bolt down to the hole in the top of the t-nut and thread the M6 nut up against the under side of the cast steel bracket. Using a 10mm socket and combination wrench, tighten the bolt while holding the nut with the combination wrench. Tighten until there is about 1/2" of deflection when you press firmly on the belt between the supercharger pulley and the idler. Once tight, use a 17mm socket to tighten the bolt in the center of the idler to 36 ft. lbs. Thread the upper nut on the tensioner bolt down against the cast bracket and tighten to lock the bolt in place. Illustration 41



Illustration 41



Illustration 41 con't



44. Gather together the 180 degree plastic inlet tube, the shortest of the straight hoses, the longest of the straight hoses, (4) large hose clamps, a brass pipe bushing, an 1/8" NPT X 3/8" straight barbed fitting and a 1/4" NPT X 3/8" barbed 90 degree fitting. Wrap the bushing and the barb fittings with thread sealing tape. Install the bushing and barbs into the correct threaded hole in the inlet tube. Snug the fittings using 1/2" and 7/8" combination wrenches. Illustration 42

Supercharger Installation Instructions



Illustration 42



45. Install the short hose over the throttle body and clamp it using one of the large hose clamps. Slip a second large hose clamp over that hose. Illustration 43



Illustration 43

46. Remove the engine oil dipstick and release the clip securing the cruise control cable to it's bracket at the brake master cylinder (if applicable). Now connect the 180 degree plastic inlet tube to the short hose on the throttle body and snug the hose clamp. Leave the clamp loose enough to be able to rotate the tube. Now install the long straight hose on the other end of the 180 degree tube. Slip two hose clamps over the long hose with their tightening screws on the same side as the brake master cylinder. Note: The Inlet Tube runs close to the heater hoses. If it is in contact with the hose, a tie wrap can be tied around them to pull the hose away from the Inlet Tube. Illustration 44



Illustration 44

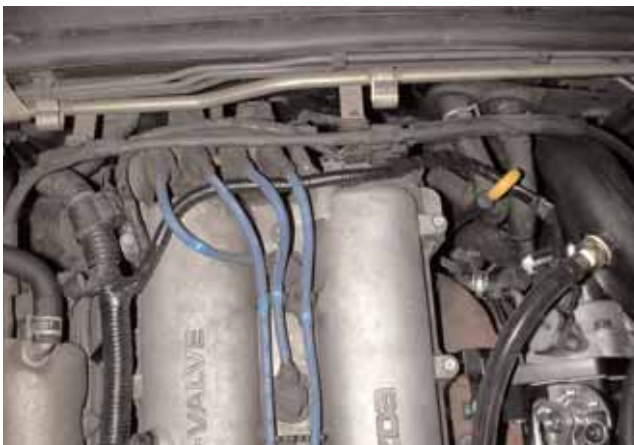


Supercharger Installation Instructions

47. Now, slide the Mass Airflow sensor (MAF) into the hose, paying attention to the arrow on the side of the sensor for airflow direction (arrow points toward the throttle body). The inlet tube can be rotated to help the MAF align with the holes in the bracket on the supercharger. Install two M6 x 10mm flanged-head bolts through the MAF mounting bracket and into the threaded mounting holes in the MAF. Tighten the bolts to 6 ft lbs. Once the two M6 bolts are tight and the tube is rotated for best alignment, tighten all of the hose clamps. Route the wiring harness for the mass airflow sensor underneath the sensor and connect it. Reinstall the dipstick and route the branch harness for the TPS under the spark plug wires at the ignition coil. Connect it to the Throttle Position sensor on the throttle body. Illustration 45



Illustration 45



48. Gather the Intake Air Temperature sensor bracket, a M6 X 10mm flange bolt, the Intake Air Temperature sensor, and its grommet. Secure the bracket to the car under the end of the MAF. Slip the M6 bolt through the bracket and thread it into the second threaded hole just rearward of the power steering reservoir. Tighten to 9 ft lbs. Install the grommet into the large hole in the bracket and install the sensor from the rear side of the bracket. Connect the wiring harness to the sensor. Illustration 46



Illustration 46



49. On the left (drivers) side of the car, on the inner fender just forward of the diagnosis port there are two holes. One threaded, where the intake snorkel was fastened and the other has a plastic push-in fastener that holds up the inner fender liner. Remove the plastic fastener from inside the wheel well. Locate the bolts and nuts

Supercharger Installation Instructions

that were securing the two relays to the plastic shield. Thread one of the bolts up from inside the wheel well into the threaded hole. Tighten using a 10mm socket. Attach one of the relays to the bolt with the metal bracket on the relay and start a flange nut. We have included an 18mm outside diameter flat washer. Slip the flat washer over the second bolt and insert it up through the hole from in the wheel well and attach the second relay. Start the second flange nut. Rotate the relays until they look good and tighten the bolts. Illustration 47



Illustration 47



50. Locate the (2) pieces of 10mm silicone hose. One is 24" and the other is 26" long. Connect one end of the 24" long hose to the barbed fitting in the IAC adapter plate that is closest to the firewall. Route the hose across the firewall toward the 90 degree fitting on the inlet tube. Connect the 26" long hose to the large barbed fitting in the vacuum distribution block attached to the IAC adapter plate. Route this hose toward the 90 degree fitting in the

throttle body adapter plate between the supercharger and the throttle body. Start back at the IAC Valve. Secure the hose to the fitting and to the vacuum hard line crossing the firewall with the included tie wraps. Be careful not to pinch the hose or idle will be affected. Cut off the excess tie-wrap. At the other end cut the hoses to length if necessary. Remember to leave a little slack to take up engine rock. Tie wrap the hoses to the fittings. Illustration 48



Illustration 48



Supercharger Installation Instructions

51. Install the small plastic restrictor in the 11" long piece of 3/8" hose. Use the (2) small hose clamps to fasten the 3/8" hose to the small barbed fitting, on the inlet tube, closest to the MAF and the PCV nipple on the valve cover. Position and tighten the clamps. Install the air filter over the open end of the MAF and tighten the clamp. Illustration 49



Illustration 49



52. If your car has cruise control, disconnect the existing vacuum hose at the intake manifold and install a vacuum cap over the nipple. Unclip the hose where it is supported as it crosses the firewall and disconnect it from the cruise control servo. Use the included 5/32" vacuum hose to connect to the small hose barb on the bottom of the vacuum distribution block. Route the hose across the firewall all the way to the servo. Neatly tie wrap the hose out of harms way. Cut the hose to length and attach it to the servo. If your car doesn't have cruise control, install a vacuum cap over the small hose barb in the vacuum distribution block. Illustration 50



Illustration 50



53. Gather together the crossover tube, (4) large clamps and the remaining (2) hoses. The crossover tube has a part number molded into the bottom of it. With the blank side facing up and the tube openings facing away from you, put the small end of the reducer hose on the left hand side and the straight hose on the right hand side. Slip the remaining four clamps over the hoses. Arrange the clamps so that the tightening screw faces up. On the supercharger side, the clamps may have to be staggered so they don't come in contact with the pulley or the power steering reservoir. Do not snug the clamps at this time. Slip the reducer hose over the dummy throttle body. Then slip the straight

Supercharger Installation Instructions

hose over the supercharger outlet. Make sure the crossover tube is as low as it can be on the supercharger outlet side. Doing this will improve hood clearance. Position the clamps and tighten them. Illustration 51



Illustration 51



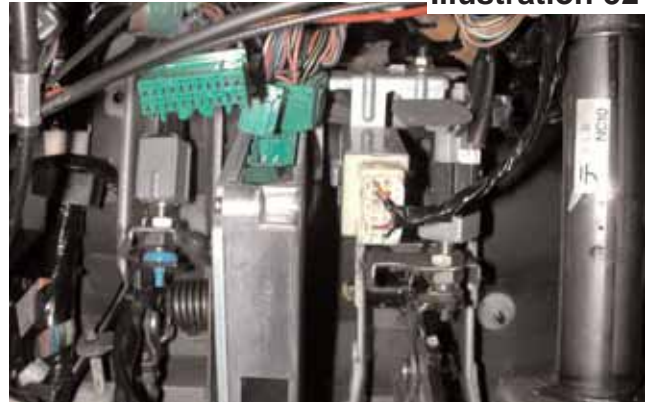
54. There are NGK BKR7EIX spark plugs included with the kit. These plugs are a cooler heat range and are a special Iridium to help prevent detonation. Remove the old spark plugs and install the new ones. If in the future you find it necessary to replace these spark plugs, it is very important to replace them with the same spark plug. (Moss #052-960)

55. Locate the PowerCard (Fuel Management System) and the TimingCard from your kit. We have included enough wire with the Cards to mount them in one of three places. On the center console, in the glove box, or tucked away behind the fuse box cover. Decide where you want to mount them and cut the wires to length if necessary. Strip 1/4" of insulation off each of the PowerCard's wires. Gather together one (1) female spade connector and seven (7) male spade connectors. Crimp the female spade connector onto the Purple wire and then crimp the male spade connectors onto the rest of the wires. Slip the wires into the included split loom. The split loom can be cut to length as necessary. If the PowerCard will be mounted to the center console or to the inside of the glove box, we recommend routing the wires under the dash, behind the center console to keep them out of the drivers way. Tie wraps are included to help secure the wires out of harms way.

56. The car's Electronic Control Unit (ECU) is located on the drivers (left) side of the car directly above the clutch pedal. The ECU has three connectors attached to it. A Top, Middle, and Bottom. Release all three connectors from the ECU. Illustration 52



Illustration 52



57. Use the attached ECU pin out diagram to help locate the wires. First, locate the White/Red wire in the bottom connector at the 1B pin location. This is a switched 12V power source. Use multi-purpose pliers to install two T-taps onto the White/Red wire 1"-2" from the ECU connector. Illustration 53

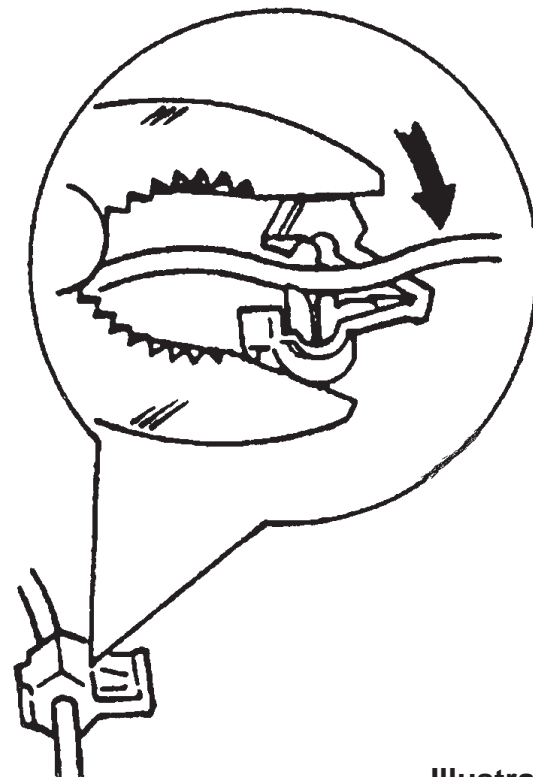


Illustration 53

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58. Next, locate the ground wire and the four injector wires in the top connector at the 3A (ground), 3W, 3X, 3Y, and 3Z pin locations. The ground wire is a Black/Yellow wire and the injector wires are Yellow/Black, Violet/Green, Yellow/Red, and Yellow/Green. Install a T-tap onto each of these wires and two taps onto the Black/Yellow (Ground) wire.

59. Next, locate the Green/Black wire at the 3E pin location in the top connector. Cut this wire about 2" from the ECU connector. Strip 1/4" of insulation from both ends of the cut wire. Crimp a Male Spade connector onto the side of the cut wire that leads into the harness. Crimp a Female Spade connector onto the side of the cut wire that leads to the ECU connector.

60. We recommend mounting the TimingCard near the PowerCard. Route it's wires along the PowerCard's and cut them to length. They will have to reach the ECU. Strip 1/4" of insulation off each of the TimingCard's wires. Crimp Male Spade connectors onto the Red, Black, White/Yellow, and Green/Gray wires. Crimp Female Spade connectors onto the Yellow and Gray wires. Once the connectors are crimped on, slip the wires into the included split loom.

61. Back at the ECU, locate the Brown/Yellow and Brown wires in the top ECU connector at the 3G and 3H pin locations. Cut both of these wires at least 2" from the connector and strip 1/4" of insulation off all four ends. Crimp Female Spade connectors onto the ends of the wires leading into the harness and crimp Male Spade connectors onto the ends of the wires leading into the ECU connector.

62. Connect the Yellow wire, of the TimingCard, to the Male spade connector on the Brown/Yellow wire leading to the ECU connector. Connect the White/Yellow wire, of the TimingCard, to the Female Spade connector on the Brown/Yellow wire leading into the harness. Connect the Gray wire, of the TimingCard, to the Male Spade connector on the Brown wire leading into the ECU connector and connect the Green/Gray wire to the Female Spade connector on the Brown wire leading into the harness. Connect the Red wire to one of the T-taps on the White/Red wire in the Bottom connector at the 1B pin location and connect the Black wire to one of the T-taps on the Black/Yellow wire in the Top connector at the 3A pin location.

63. At this point, connect the PowerCard. Connect the Red wire of the PowerCard to the T-tap on the White/Red wire of the ECU, connect the Black wire to the T-tap on the Black/Yellow wire. Connect the White/Yellow, Green/Gray, Red/Blue, and White/Green wires of the PowerCard to the T-taps on the Yellow/Black, Violet/Green, Yellow/Red, and Yellow/Green wires at the ECU connector. These wires can be connected in any order. Connect the Female spade connector on the Purple wire of the PowerCard to the Male spade connector on the Green/Black wire leading into the harness. Connect the Male spade connector on the Purple/Yellow wire of the PowerCard to the Female spade connector on the Green/Black wire leading into the ECU connector.

64. Now is a good time to run the plastic vacuum tube through the firewall. Connect the tube to a vacuum port on the intake manifold, using the included 90 degree, rubber fitting and route it back toward the firewall. (There is a Tee included if there is no available vacuum port. Cut a small vacuum hose and install the Tee into the hose and insert the plastic tube into the Tee. Use a small tie wrap to secure the hose connections.) Once at the firewall, route it over to the left (drivers) side of the car and locate the main wiring harness grommet, over near where the firewall meets the fender. Cut a small slice in the rubber grommet and push a screwdriver through to make sure you can push the tube through. Don't push the screwdriver through too far and look inside if you feel any resistance. Feed the plastic tube through the grommet and into the interior through the opening you just made. Pull all of the slack inside the car. Route the tube to the PowerCard and TimingCard locations and cut it to length. Install the included Tee at the end of the plastic tube. Cut two small (1" long) pieces of the extra plastic tube to insert into the Tee and connect the blue hoses of the two cards to the tube. Make sure the hoses are not kinked and the plastic tube is routed along a safe path and will not be damaged. Use tie wraps to secure the tube. Illustration 54

Supercharger Installation Instructions



Illustration 54



65. Start your engine. The lights on the PowerCard display will energize. With a proper installation, you will see a continuous sequence of lights run from left to right and then a single green light at position one. This single green light will flash every two seconds when the engine is running but there is no boost. If PowerCard doesn't power up after 4 seconds double check your power and ground. One or both are incorrectly hooked up. The single green light may "flicker," however a flashing green and flashing red together indicate improper hookup of the injector leads and PowerCard is not getting an injector signal. If this happens, recheck installation of wiring to the injector leads. Again, make certain spade connectors are inserted properly into the square slot of the t-tap, and not off to the side. If you can see the silver spade connector through the translucent insulation, then you need to disconnect and properly reconnect this connection. Although it doesn't matter which injector lead is connected to the injector wire, the PowerCard injector leads are "numbered", which can aid in troubleshooting. When you have a flashing green and flashing red together, the position of the flashing green indicates which

lead is improperly connected. Trace the problematic lead to the injector wire and carefully inspect its connection. NOTE: When driving, it is possible to see the flashing green and red together. This is perfectly normal as most engine ECUs will shut off the injectors under extended periods of deceleration. However, if you get a flashing green and red at idle, PowerCard is not seeing the injector signal and you must recheck your installation. The PowerCard is pre-set and should not need adjustment. However, if you wish to check the settings, do so as follows. Push the Mode button once. The green LED will start flashing. It should be set all the way at zero. Push the Mode button a second time and the Yellow LED will start to flash. It should also be at the Zero setting. A third push and the Red LED will flash and should also be set to Zero. These three Modes add fuel under boost at different ranges of engine speed. Green for Idle to 2800 rpm, Yellow for 2800 to 5000 rpm, and Red for 5000 to 7000 rpm. Push the Mode button again and this time both the Green and Blue LED's light. The Green LED should be at the number 6 1/2 location. (6 1/2 = both the 6 and 7 LED's light) This Mode adds fuel in relation to boost pressure and engine load at all RPMs. Press the Mode button a final time and the Yellow and Blue LED's will light. The Yellow LED should be at Zero. This Mode controls the amount of fuel added right at hit of the gas, like a carburetor's accelerator pump. One more press of the Mode button and the sequence starts over. While in any of the adjustment modes, the + and - buttons move the LED's up and down the scale. When untouched for a few seconds, the PowerCard automatically exits its adjustment mode.

66. The TimingCard is a device which electronically retards the timing when there is boost in the intake manifold. The amount of timing retard is adjusted by changing the button settings on the front of the card. It works in a similar way as the PowerCard, in that it does its work only when necessary under positive manifold pressure or "boost".

Although the ability to retard timing relative to the amount of boost is still available, we have found that for optimum performance the Miata ECU's timing curve does not need to be retarded as much at low rpm versus high rpm. So, we have included three rpm-based "zones" where different amounts of timing retard can be used based on engine rpm.

We have provided the TimingCard with base settings for your 99-00 Miata at ~6 1/2 psi of boost running on California 91 octane gasoline.

Supercharger Installation Instructions

Every car is different and you may be able to run more timing if you have better gasoline available, but run these settings first and then listen for any detonation before straying below the recommended settings.

ADJUSTMENT:

Timing adjustments on the TimingCard are similar to the PowerCard. Press the MODE button once to enter the "GREEN" adjustment mode. You should see a single green LED flashing quickly and no other lights (blue, red or otherwise) on the TimingCard. If you hit the button and skip beyond to the YELLOW or other adjustment modes, simply hit the button again until you return to the "GREEN" adjustment mode.

The GREEN zone corresponds to boost retard at RPMs of 0 to 2500rpm. Hit the "+" PLUS button and the same LED will flash slowly. Hit it again and the light will begin to move up the scale, representing more and more timing retard (when there is boost). Now hit the "-" MINUS button until the green light goes back to the first position and is flashing slowly, then once again until its flashing quickly, which represents no timing retard.

Press the MODE button again to move to the "YELLOW" adjustment mode. The YELLOW zone corresponds to boost retard at RPMs of 2500 to 5000rpm. The display should show four lights. This represents about 7 degrees of timing retard under boost.

Press the MODE button again to move to the "RED" adjustment mode. The RED zone corresponds to boost retard at RPMs above 5000rpm. The display should show five lights. This represents about 9 degrees of timing retard under boost.

Finally, press the MODE button again and you should see a green LED flashing AND a blue LED flashing. This "GREEN WITH FLASHING BLUE" mode represents timing being retarded in relation to boost. This mode is still there, but 99-00 computers run best without using this mode. Leave it set to 0 (first LED flashing quickly).

Allow the card a few seconds to save the settings and reset from adjustment mode before turning off the ignition power to the card. The settings can be changed while driving the car and will be used immediately without waiting for the adjustment mode to reset, but if you turn the power off before the adjustment mode has reset, your setting changes may not be saved.

SETTINGS & STRATEGY:

The Miata ECU's timing curve needs the most timing retard above 5000rpm. It needs some in the midrange and very little or none at the low end. Specifically, the base TimingCard setting for 01-05 computers is 0 lights of GREEN, 4 lights of YELLOW, 5 lights of RED and 0 lights of GREEN WITH FLASHING BLUE.

If you ever hear any detonation, try to remember what RPM the engine was at and adjust YELLOW or RED depending on whether the engine was under or over 5000RPM. Be aware that the 99-05 Miata has a factory knock sensor, which makes it difficult to hear detonation if you have reduced the timing retard too much.

The TimingCard is designed to work with stock base timing. If you have a physical device affecting the base timing (slotted trigger wheel, timing bracket, etc) it should be reset to stock or removed.

Also, if you raise the boost level on the stock non-intercooled kit, you will need to add more timing retard. You will want to add in the "YELLOW" and "RED" zones first rather than using the "GREEN WITH FLASHING BLUE". This will keep the low end crisp on 99-05 Miata applications.

67. On some supercharged Miata's, an idle droop is noticed when the engine is run at a cruising RPM and then allowed to drop to idle. To combat this problem open up the idle air bypass screw on your throttle body, now located on the back of the supercharger. The screw is located in a little round cast recess in the side of the throttle body, perpendicular to the venturi. It is now pointing down at an angle toward the left (drivers) inner fender. Use a stubby flat blade screwdriver to turn the screw counter-clockwise about 1 1/2 - 2 turns. You will hear the hiss of air passing the throttle plate and the engine may rev up, but will soon settle down to a 900 to 950 RPM idle speed. When you first drive your car, drive with the headlights on for a while, then turn them off. Turn on the air conditioning (if applicable) for awhile. Do this several times over the next few drive cycles. In town driving is best so the engine has a chance to come down to an idle. A slight droop of 100 rpm or so is acceptable and normal. More than that may create a stalling problem during driving.

68. Your Miata supercharger kit is designed to operate on 91 Octane fuel. Make sure that any fuel you use meets or exceeds this octane level. Failure to use at least 91 Octane fuel will result

Supercharger Installation Instructions

in engine-damaging detonation. Make sure that you run your engine on 91 Octane only. In any case, should you ever hear “pinging” or knocking from your engine when under acceleration, you should take measures to eliminate this detonation, i.e. higher-octane fuel or a further adjustment of the Timing Card. Mixing fuels of different octane will lower the overall rating and detonation could be a problem.

69. Start your engine as you would a standard Miata. Remember to bring the engine up to operating temperature (as indicated by your water temperature gauge) before running it hard. Full boost on a cold engine will greatly increase your engine wear.

70. Oil changes: we suggest you use synthetic oil such as Mobil 1 and change it regularly (5000 miles maximum). If you use a mineral oil, change it every 2500 miles. While your supercharger does not use any engine oil for its lubrication, your engine will be working a little harder with the addition of a supercharger. The synthetic oil provides an extra measure of protection, but is not necessary for safe and reliable operation.

71. Breaking-in: Your supercharger will work perfectly from the first time you fire it up. However, it does need about 500 miles to fully seat the rotors. Up to that time, you may notice a slight noise coming from the supercharger at idle. This is normal.

72. The only item to watch with your supercharger kit will be the belt tension for the supercharger drive belt. If you have a tension gauge for a serpentine belt, the tension is to be 90 pounds. Without a gauge, look for less than 1/2” deflection on the long run of the belt. If you see a large accumulation of belt dust on your supercharger, it is an indication that your belt is slipping. A slight amount of belt dust is normal. The drive belt will stretch and will need to be re-tensioned after the first 500 miles. **CHECKING YOUR BELT FOR WEAR:** As the belt wears, small cracks will form in each of the ribs on the inside run of the belt. Replace your belt when you can count six cracks within one inch of length (six cracks total from all ribs combined).

73. Every six months or so, check your hose clamps for correct tension. The rubber hoses will take a set and the clamps may not be holding as tight. Also check all mounting bolts and nuts, particularly the throttle cable bracket.

74 Troubleshooting:

SYMPTOM: Engine cranks but will not start.

PROBABLE CAUSES: Airflow meter disconnected; Idle air line open; Low battery voltage; Boost Timing Controller power/ground not connected.

CURE: Double check that the airflow meter is well connected. Re-check the 10mm IAC line and the PCV line to see that they are not leaking. Use a known good battery to “jump” the Miata’s battery. It is possible to have enough voltage to crank a Miata but not enough to correctly run the engine’s control computer. Check connections at the Timing Card.

SYMPTOM: No power during boost.

PROBABLE CAUSES: Cross over tube loose; Idle Compensator not connected/not functioning; PowerCard boost hose disconnected; PowerCard power/ground disconnected.

CURE: Check fuel lines for kinking. Check the cross over tube to see that it is well connected at both ends. Check Idle Compensator electrical connections, check its resistance; should be approximately 22k ohms

SYMPTOM: Unstable Idle.

PROBABLE CAUSE: Idle airscrew set incorrectly; Restrictor left out in step 47; air leak in intake track.

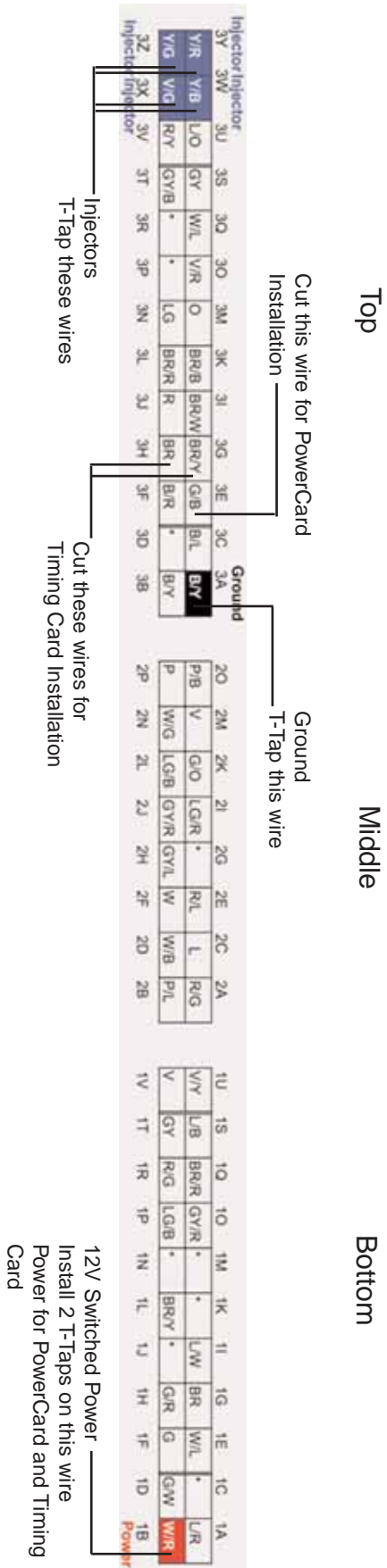
CURE: Re-check restrictor. Check idle adjustment procedure in step 67 above. Check for air leaks - vacuum at idle should be at least 17.7 in Hg.

FURTHER MODIFICATIONS

Now that your Miata has a stronger engine, there are a few changes you might want to make to the rest of the car to improve its performance. A free flowing exhaust system will make your supercharged Miata that much faster. Options include a 4-2-1 header (#903-120, CARB approved, Manual Transmission only) and a cat-back exhaust system. Both are available at MiataMania.com . Also, while your new supercharger and the standard Mazda clutch work well together, it is a good idea to step up to the ACT Stage 1 clutch kit (#999-606) when you change your clutch.

Supercharger Installation Instructions

99-00 Miata ECU Pin-Out Diagram



Supercharger Installation Instructions

Contents of the kit #999-810, #999-811

Note – Specifications and components are subject to change and revision without notice.

No.	Description	Quantity	Unit of Measure
SUPERCHARGER SYSTEM, MP62			
052-902	CROSSOVER TUBE, MP62, 1.8	1	EACH
052-921	TUBE, MAF TO THROTTLE BODY	1	EACH
999-012	BELT, 4PK1330 A/C and P/S	1	EACH
OR			
051-424	BELT, 4PK1245 P/S, NO A/C	1	EACH
052-423	POWERCARD, MP62 SC, 99-00	1	EACH
053-002	TIMING CARD	1	EACH
052-937	AIR FILTER, K&N, 2-5/8X4-3/8X5	1	EACH
052-906	EXHAUST MOUNT BLOCK	2	EACH
052-907	SIDE PLATE	1	EACH
052-909	SIDE PLATE BLOCK	1	EACH
772-396	BRACKET, INTAKE AIR TEMP, MP62	1	EACH
052-960	SPARK PLUG, BKR7EIX, 2667	4	EACH
051-636	BOX, 14X14X7 200# SNG WALL	1	EACH
051-381	BOX, 30 X 15 X 15, 350LB TEST	1	EACH
TENSIONER ASSEMBLY, MP62			
051-084	BOLT, HEX, M10 X 1.50 X 50	1	EACH
1- Idler Pulley to T-Nut			
051-215	SPACER, SHOULDER	2	EACH
2- b/t M10 bolt head and Idler			
052-904	TENSIONER, T-NUT, MIATA MP62	1	EACH
051-627	PULLEY, 2.0IN IDLER, NYLON	2	EACH
052-923	BOLT, M10 X 1.5 X 45, HEX HEAD	1	EACH
1- Idler Pulley to Bracke			
051-916	BRACKET, POWER STEERING HOSE	1	EACH
052-903	BELT DRIVE BRACKET	1	EACH
052-331	SPACER, IDLER, .325	2	EACH
052-367	BOLT, FLANGE, M10 X 1.25 X 20	1	EACH
1- Belt Drive Bracket - Engine			
052-922	JAM NUT, M10 X 1.5	1	EACH
1 - belt tension adjustment			
052-924	BOLT, M10 X 1.5 X 60, HEX HEAD	1	EACH
1 - belt tension adjustment			
SUPERCHARGER ASSY, MP62			
052-900	OUTLET MANIFOLD, MACHINED,MP62	1	EACH
052-625	GASKET, OUTLET, MP62 GEN4	1	EACH
052-947	BOLT,BHCS,M8X1.25X25,ZINC	6	EACH
6-outlet manifold to s/c			
052-216	S/C GEN4 M62CW WITH 52MM	1	EACH
052-834	GASKET, INLET, M45/MP62 GEN4	1	EACH
051-553	CLAMP, HOSE,SPRING,7/32 VACUUM	1	EACH
051-142	HOSE BARB, 5/32 VACUUM	1	EACH
772-099	HOSE BARB, 90° ELBOW	1	EACH
052-962	THROTTLE BODY PLATE, 99-05	1	EACH
052-925	SHCS, M8X1.25X20MM	8	EACH
4 - TB plate to S/C			
4 - Support rear to S/			
052-901	BRACKET, MAF SUPPORT, 99-05	1	EACH
770-971	WASHER, FLAT, M8 X 16MM OD	2	EACH
052-912	SUPPORT, MIATA MP62	1	EACH
052-905	FRONT DRIVE PLATE	1	EACH
052-910	SUPPORT SPACER	1	EACH
051-075	WASHER, LOCK, M8	6	EACH
6 - Outlet manifold to S/C			

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051-551	HOSE, VACUUM, 7/32 IN., BULK - Bypass signal	9	INCH
052-916	BLOWER PULLEY, MIATA MP62,6PSI	1	EACH
DUMMY THROTTLE BODY			
051-384	DUMMY THROTTLE BODY	1	EACH
051-212	HOSE BARB, 1/8NPT X 5/16 X90DEG	1	EACH
051-203	PLUG, PIPE, 1/8 NPT, HEX HEAD	1	EACH
051-001	HOSE BARB, 1/8 NPT X 5/16	1	EACH
052-447	PLUG, 1/2 NPT	1	EACH
IDLE AIR CONTROL RELOCATION			
051-248	BOLT, HEX, M5 X 0.8 X 20	3	EACH
051-151	CAP, VACUUM, RUBBER, 5/32	2	EACH
051-819	HOSE BARB, 1/4 NPT X 3/8	2	EACH
051-259	HOSE, VACUUM, 5/32 IN., BULK	48	INCH
051-203	PLUG, PIPE, 1/8 NPT, HEX HEAD	1	EACH
052-440	NUT, NYLOCK M5 X.8	3	EACH
052-441	BOLT, M6X1.0X16 SHCS	3	EACH
052-442	NIPPLE, 1/4 NPT X 7/8	1	EACH
052-443	IDLE AIR CONTROL PLATE	1	EACH
052-444	IDLE AIR CONTROL PLATE BRACKET	1	EACH
052-445	VACUUM DISTRIBUTION MANIFOLD	1	EACH
052-446	HOSE BARB, 1/8 NPT X 3/16 BARB	1	EACH
HOSE BAG, MP62			
051-016	CABLE TIE, 4IN.	8	EACH
051-094	TIE WRAP	8	EACH
051-260	HOSE, PCV, 3/8 IN ID, BULK 11in. x1-Valve Cover Vent Hose	11	INCH
051-320	ELBOW,VACUUM, 1/8X11/64X90 DEG 1-Intake to DFMM signal	1	EACH
051-372	SLIT LOOM.1/4 INCH 48in. x1-various exposed wires	126	INCH
051-481	RESTRICTOR. VENT HOSE	1	EACH
051-544	COUPLER, ELBOW, 3/8 X 90 DEG 1-IAC hose	1	EACH
052-350	HOSE,REDUCER,2.75 X 2.5 X 2.75 1-Crossover Tube -Dummy T-Body	1	EACH
052-351	CLAMP, HOSE, SAE NO. 44	8	EACH
163-655	HOSE, VACUUM, BLACK PLASTIC 10ft. x1-DFMM signal hose	10	FOOT
771-372	HOSE, SILICONE 10MM ID, BLACK 24in- IAC to Inlet Tube 26in- IAC to Adpt. Plate	50	NCH
051-460	HOSE, 94-97, 2.5ID X 2.0LG BLK - Inlet Tube to TB	1	EACH
051-456	HOSE. X-OVER 2.5 ID X 2.75 LG - Outlet to Crossover	1	EACH
052-938	HOSE, 2.75 ID X 3.750 LENGTH - MAF to Inlet Tube	1	EACH
051-133	HOSE BARB, 1/8 NPT X 3/8	1	EACH
051-389	TEE, VACUUM, 3/16	2	EACH
051-819	HOSE BARB, 1/4 NPT X 3/8	1	EACH
051-141	HOSE BARB,1/4NPT X 3/8 X 90DEG	1	EACH
051-191	CLAMP, HOSE, MINI, SAE NO. 4	2	EACH
771-143	ALCOHOL PAD, FOR SURFACE PREP	1	EACH

Supercharger Installation Instructions

INSTRUCTIONS AND STICKERS,MP62

052-926	INSTRUCTIONS, MP62 MIATA,99-05	1	EACH
051-473	JR WARRANTY CARD	1	EACH
052-010	STICKER, PREMIUM FUEL REQUIRED	1	EACH

T/BODY HARDWARD BAG, MP62

051-067	SCREW, PHILLIPS, M6 X 1.0 X 10	4	EACH
051-135	BOLT,HEX FLANGE,M8 X 1.25 X 40 1 - Throttle Bod	3	EACH
	2 - Dummy Throttle Body, Lower		
051-385	PLATE, ICS BLANKING	2	EACH
051-454	BOLT,HEX FLANGE,M8 X 1.25 X 35 2 - Throttle Body	2	EACH
051-535	GASKET, T-BODY	2	EACH
051-538	GASKET, ICS VALVE	3	EACH
052-929	BOLT, M8X1.25X55, FLANGED HEAD 1 - Throttle Body	1	EACH

HARDWARE BAG, MP62

052-915	THROTTLE CABLE STANDOFF	1	EACH
052-918	STRAP BRACKET, MIATA MP62	1	EACH
051-451	TAPE ELEC. 7-MIL VINYL	1	EACH
051-746	CONNECTOR, BUTT 1-reconnect TPS offending wire	1	EACH
052-914	THROTTLE CABLE GUIDE	1	EACH
770-858	LOCTITE 271, INDIVIDUAL USE	1	EACH
052-930	BOLT, M10X1.5X25, FLANGE HEAD 1-S/C brace to S/C 2-sideplate block to sideplate	3	EACH
052-931	BOLT, M10X1.5X35, FLANGE HEAD -Thr. cable brckt to SCsupprt	1	EACH
051-080	NUT, NYLOC, M10 X 1.5 1-S/C brace to S/C 1-Thr. cable brckt to SCsupprt	2	EACH
051-119	BOLT, HEX FLANGE,M6 X 1.0 X 10 2-MAF to bracket No 1-IAT sensor bracket	3	EACH
052-932	BOLT, M12X1.75X40, FLANGE HEAD 1-rearSCthrbdyplt2sidepltblock	1	EACH
052-933	BOLT, M10X1.25X25,FLNG HD,ZINC 1-SCfrontdriveplt 2engineblock	1	EACH
052-934	STUD, M10X1.25X90, ZINC 2 - exhaust mount block	2	EACH
052-935	NUT, M10X1.25, ZINC 2 - exhaust mount block	2	EACH
051-090	WASHER, LOCK, M10 2 - exhaust mount block	2	EACH
051-051	WASHER, FLAT, M6 X 18MM OD 1-head of relay mounting bolt	1	EACH
051-127	BOLT,HEX FLANGE,M8 X 1.25 X 20 2-sideplateblock2exh.mnt block 1-Gnd under Throttle Body	3	EACH
051-395	SPADE CON, MALE, 18-22 GA	2	EACH
051-387	SPADE CON, FEMALE, 22-18 GA	2	EACH

Supercharger Installation Instructions

No PS - With AC Tensioning System

999-067	BRACKET, L	1	EACH
771-376	BOLT,HEX FLANGE,M10 X1.25 X 45	1	EACH
052-930	BOLT, M10X1.5X25,FLANGHD,ZINC	1	EACH
051-080	NUT, NYLOC, M10 X 1.5	1	EACH
051-628	PULLEY, 2.5IN IDLER, NYLON	1	EACH
052-924	BOLT, HEX, M10 X 1.50 X 60	1	EACH
051-215	SPACER, SHOULDER	1	EACH
052-331	SPACER, IDLER, .325	1	EACH
053-082	T-NUT,NO PS MP62 TENSIONER SYS	1	EACH
051-359	NUT, STANDARD HEX, M6 X 1.0	2	EACH
999-012	BELT, 4PK1330	1	EACH