MGB Supercharger System

Installation Instructions

For 1965 to 1967 MGB

PART# 150-050

MOSS MOTORS, LTD.
440 Rutherford St. Goleta, CA 93117
1-800-642-8295 • FAX 805-692-2525 • www.mossmotors.com

Please read and understand these instructions completely before you begin the installation.

A few notes before you begin:

Hose clamps: Re-use hose clamps, or purchase new ones where necessary. Use new hose clamps on all fuel connections.

If you have installed vacuum boosted brakes - you MUST install a check valve (Moss Part # 150-071) in the vacuum line. This will prevent pressurized air from reaching the brake booster system and damaging it. To install, remove the larger of the 3 plugs in the back of the supercharger manifold and install the barbed fitting using teflon tape on the threads. Using ⅜ in vacuum line, install the check valve between the barbed fitting and the brake booster (closer to the booster) with the check valve arrow pointing toward the supercharger manifold.

Engine condition - Your car should have a fresh tune up, including new spark plug wires, points, and a new distributor cap and rotor. Spark plugs are included in the supercharger system.

How superchargers work – Superchargers compress the air/fuel mixture, filling cyclinders with a greater charge that when normally aspirated. Normally aspirated engines produce vacuum, read in inches of mercury, superchargers and turbochargers produce boost, read in positive pounds per square inch.

Boost capacity is determined by supercharger RPM which is, of course, affected by pulley size (the smaller the supercharger pulley, the faster the supercharger turns at the same engine speed). Actual boost is determined by atmospheric pressure (a combination of altitude, temperature, humidity) and internal engine back pressure which is governed by engine design, intake/exhaust valve overlap and engine compression.

Assuming that the car has a stock camshaft and the engine is good shape, you may expect 6 to 7 lbs of boost with the Moss supercharger system.

Due to the phenomenon of "effective boost", raising your compression one point is equivalent to adding two psi of boost. Therefore a higher compression engine with a little less boost will make similar power to a low compression engine with a little more boost, all else being equal.

Higher boost in a higher compression engine will often lead to detonation and engine damage. The most common mistake in supercharging is trying to run too much boost.

Our car made the most power from 6 to 7 lbs. of boost with the stock cylinder head and the small, 2.75IN pulley. We achieved the most boost at sea level, on a 50 degree morning. Our dyno sheets were produced with the recommended distributor, the exact same carburetor tuning as supplied in the Moss system, and 17 degrees of initial timing, on a 1973 MGB with a stock engine and 8.7:1 compression, at sea level on a Mustang Chassis Dynamometer – your results will definitely vary.

You must run premium fuel in your supercharged MGB. Fuel pressure must remain at or under 3.5 P.S.I. If the carburetor vent leaks gasoline with the key on, make sure to check your fuel pressure. The stock SU pumps should not exceed 3.5 P.S.I. If you have more pressure you can use an aftermarket fuel pressure regulator to get the pressure down.

Carburetor – The supplied SU HIF 44 carburetor has been pre tuned and jetted for a supercharged MGB with a stock engine. The metering rod, jet, and slide have been altered to run properly and safely on a wide range of supercharged, unmodified engines. We will not be responsible for modified engines – we recommend dyno tuning modified engines, while reading the air fuel ratio, so as not to run into lean conditions. The carburetor has a BCA needle, a 4.5 OZ spring, and 85-90 WT oil.

Available Moss Motors accessories:

If your car has vacuum boosted brakes, you MUST use a check valve, #150-071.

Distributor we tested with, and highly recommend is #143-114 - it has the proper advance curve and was used for all Moss Motors dyno testing and tuning. If you are not going to change your distributor, set the advance to 13’ before disassembling anything. Note: With the Lucas Centrifical Advance distributor we could only run 3’ to 4’ of advance @ 800 RPM. The total timing available in this distributor is 33’ to 37’ whereas we found peak performance with 44’ of total timing. Again, for optimum performance, we recommend changing to the #143-114 vacuum advance distributor.

Please use NGK BPR7ES replacement spark plugs, #052-504, gap 0.035IN. Be aware that the cross-referenced plugs may NOT be the same heat range, "hotter" plugs could lead to detonation and engine damage.

K&N air filter cleaning kit, #001-130.

If your engine mounts are old or worn, we recommend replacing them, you will be removing them during the installation process anyway. (#413-010 R/H. #413-020 L/H)

Lower boost pulley, #052-276. If you have detonation problems and/or very high boost you may want to consider the lower boost pulley. This pulley should lower the boost 1 to 1.5 PSI. Although we had no problems with an early model car (with a higher compression engine) you may have improved driveability with this pulley. When you change the pulley to anything other than the supplied 2.75 pulley, it voids your supercharger warranty.

Changing the supercharger pulley:

The nose of the supercharger is delicate and should be treated as such. You may have luck removing the pulley without removing the supercharger. If not, you need to remove the supercharger and use the appropriate pulley puller. When installing a pulley, put anti-seize on the pulley shaft. Slip the pulley over the key and threads, wiggle if necessary – do not use a hammer. Use an 18mm socket, and torque the pulley to 40 ft-lb. Use a crescent or 1½" wrench on the back of the pulley to counteract the torque.

Tools required:

- Sockets: US – 5⁄16, 7⁄16, ½, 9⁄16, 7⁄8 (or 22mm), 1 5⁄16. 13⁄16 spark plug. Also a ½ swivel socket will make installation easier. Metric – 10, 12, 18, 22 (or 7⁄8"). 6mm allen socket if you have one.
- Drives: ¼, and 3⁄8 ratchet. ½ drive torque wrench and breaker bar. A ½ impact wrench and 3⁄8 air ratchet will make installation easier.
- Wrenches: ½, 7⁄16, 9⁄16, 7⁄8", and a 13mm combination. ½" ratcheting wrench. 7⁄16" tubing (flare nut) wrench.
- Allen wrenches: 7⁄32" and 5⁄32".
- **Other tools:** A feeler gage or spark plug gap gage. Cold (flat) chisel, large and small flat blade screw drivers. A floor jack, gasket scraper, brake clean and rags, coolant and a catch pan, a rubber mallet, a dial caliper, a bottle of anti-seize, an electric drill and 1⁄8" bit, and a timing light – we recommend a timing light with an adjuster wheel so that you can set your timing more accurately.
-

1. Disconnect the battery ground cable, block your wheels, and open the hood.

2. Drain coolant; please dispose of properly if you are not re-using it. On some cars the radiator has a pet -cock to drain coolant and on others the lower radiator hose must be disconnected from the radiator. Once the radiator is drained, and you haven't already, disconnect the lower radiator hose from the radiator.

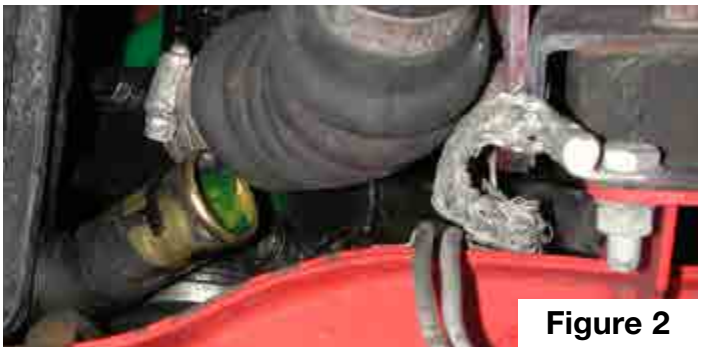


Figure 2

3. Using a ½" socket, remove air cleaners.

Figure 3

4. Once the air cleaners are removed, you can disconnect the choke and throttle cables. Also disconnect the throttle return springs.

Figure 4

5. Disconnect the fuel line at the threaded junction, at the back of the engine, in front of the heater box. Disconnect and remove the metal heater tube that runs past the carburetors.

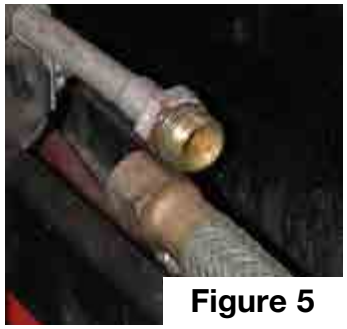


Figure 5

6. Disconnect various vent and vacuum lines to and from the carburetors. If you decide not to go with our recommended distributor, pay close attention to the vacuum arrangement of your distributor – it will either be manifold or ported vacuum. Manifold vacuum is taken from the intake manifold. Ported vacuum is taken from the bottom of the carburetor.

Figure 6

7. Using a ½" wrench, remove the nuts securing the carburetors. Then remove the carburetors, insulators, and heat shield.

Figure 7

8. Disconnect rubber hose on engine side cover vent.

Figure 8

9. Using a ½" socket, remove the nuts securing the intake manifold. Then remove the intake manifold. A new intake/exhaust manifold gasket is included in your supercharger system. It will be replaced later. You will reuse the manifold fasteners. Also, this is a good time to replace your studs if they are corroded or worn.

Figure 9

10. Remove upper radiator hose. Now, using a ½" socket and wrench, remove the bolts that secure the radiator surround to each fender. Now remove the bolts securing the radiator. Remove the radiator from the car. If your car has an oil cooler, just let the radiator surround sit in the car loose. If not remove the radiator surround.

Figure 10

11. Completely remove the lower radiator hose assembly from the water pump.

12. At this time, using a 7/16" socket, just loosen the four bolts that hold the fan to the water pump.

Figure 12

13. Loosen the 1⅛" or 18mm" (this could be different for your car, use the appropriate socket) nut in the center of the generator. You will need to stop the fan from turning. A carefully positioned rag can help. We recommend using an impact wrench for loosening this nut.

Figure 13

14. Loosen the generator bolts, and remove the belt.

Figure 14

15. Remove the four 7/16" headed bolts holding on the fan and water pump pulley, and remove them. Using a ½" socket, remove the water pump. You may need a catch pan for additional coolant. Scrape the gasket surface in preparation for the new water pump.

Figure 15

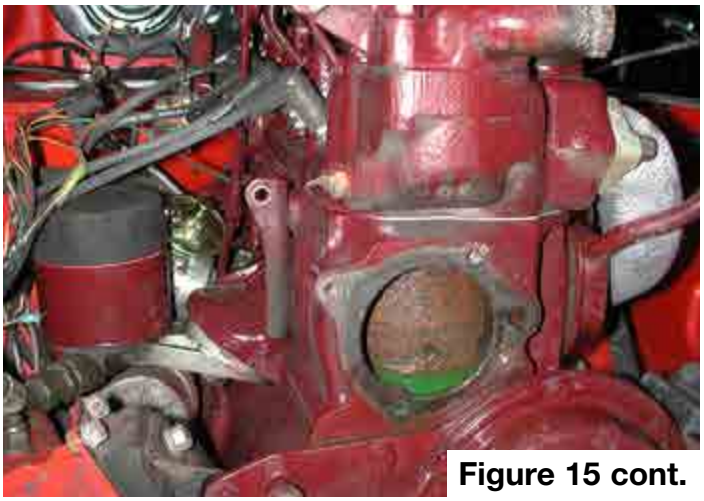


Figure 15 cont.

16. Install the supplied new water pump. Included is a new gasket, new bolts, and lock washers (2 x 5/16-24 x 1", 1 x 5/16-24 x 1.25", 1 x 5/16-24 x 1.75").

Figure 16

17. You must remove the crankshaft pulley to install the new serpentine pulley. To do so, you need to raise the engine slightly. At this point, you will be going after the engine mounts. First, set a jack, with a wood block on it (or something similar to protect the oil pan), underneath your car. Apply very slight pressure to the oil pan. When removing the driver's (left) side engine mount, complete removal of the ground strap will be necessary. The strap will be relocated to the mount on the other side of the car. Remove each of the 4 bolts that hold the engine mount to the chassis. A ½" ratcheting box end wrench is a very handy tool when disconnecting the engine mounts from the chassis.

Figure 17

Figure 17 cont.

18. Once all 8 fasteners are clear, jack up the engine enough to get to the crank pulley. A few inches should be enough, two inches was sufficient in our test car.

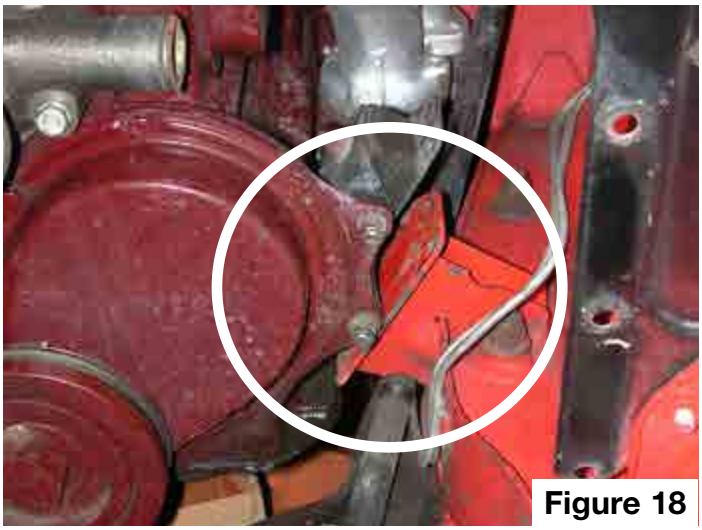


Figure 18

19. Remove the crank pulley. There is a tab-locking washer holding the crank pulley bolt in place. Using a chisel bend the tab away from the bolt. Put the car in gear and set the e-brake. Using a breaker bar and a 1⅝" socket remove the crank pulley bolt. You may need a friend to hold the brakes on. You may also need an impact wrench to remove the bolt if it is stubborn. With the bolt removed, remove the pulley. You may have to rock it back and forth to slide it off of the crank.

Figure 19

Figure 19 cont.

20. Compare your old pulley to your new serpentine pulley, the new pulley has two timing marks, please determine the appropriate mark for your application. If desired, you can use a black marker on the extraneous mark to eliminate confusion.

21. Now install your new serpentine pulley. A little anti-seize on the end of the crank may ease installation. You may also need a rubber mallet to install it. We've supplied a new tab washer that will need to be bent toward the crank pulley and fit into the slot on the pulley. Tighten and torque the bolt to 70 ft-lb (9.6 kg. m.). You may want to also use anti-seize on the crank pulley bolt. Again you may need someone to hold the brakes while you torque the bolt. Bend the tab-locking washer over the bolt head, with a screw driver. Protect the pulley from the screw driver with a rag.

Figure 21

22. Lower the engine, and re-install the engine mount bolts. You may want to keep the jack under the engine just in case you have to use it to aid in alignment. Don't forget to relocate the ground strap to the passenger's (right) side engine mount. Make sure that the strap has a good, clean, bare surface to ensure proper contact. It is essential to have a ground strap, the electrical system will search for a ground when trying to start the car – this could damage a number of systems, so don't forget.

Figure 22

23. Now to the timing cover. Remove the four bolts in a row from about 12 o'clock to about 5 o'clock in preparation for the idler pulley plate. You will need 7/16" and 1/2" sockets.

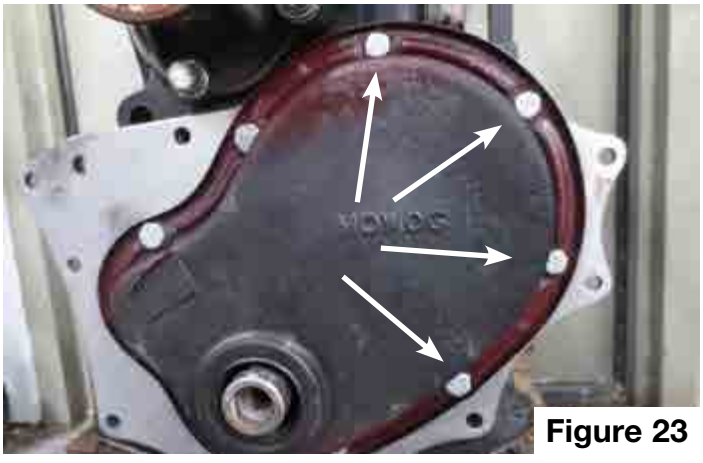


Figure 23

24. Install the idler plate with the four spacers behind it. Use the ¼"-28 x 2¼" flat head screws and the 5/16"-24 x 2¼" hex bolt. Tighten these bolts as you normally would, bearing in mind the cork timing cover gasket. Use a 5/32" Allen wrench and a ½" socket. Now install a flat washer over the three ¼" screws protruding from the rear of the engine bearer plate. Next, install a ¼" self locking nut onto each of the screws. Hold the screw using a 5/32" Allen wrench and torque the nut to 7 ft. lbs. (84 in. lbs) using a 7/16" socket and wrench.

Figure 24

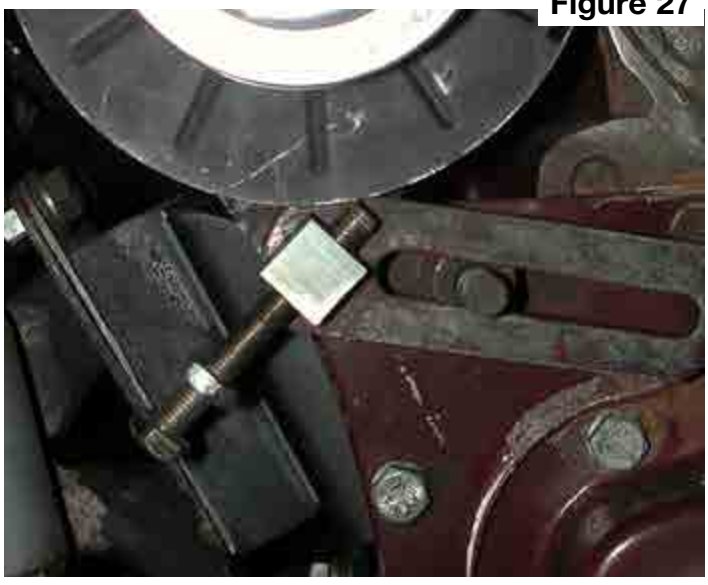
25. Now install one idler pulley. Mount inner most idler pulley first, this is the one that is closest to the water pump and uses the shorter of the two 3/8 bolts. Slip the flat washer over the bolt, then the idler, then the spacer (cone inside the pulley). Install this assembly on the idler plate, in the hole closest to the water pump, then start the lock nut. Tighten to 25 ft-lbs. You can not install the outer idler until the supercharger is in place.

Figure 25

26. Remove your old generator pulley. Now is a good time to refinish your generator fan if you wish. Install the new generator pulley and start the nut. Tighten the nut to 45 ft-lb. We have had good luck holding the fan with a rag and using an impact to tighten the pulley.

27. Now install the slide and tensioner assembly. Remove the nut and bolt securing the old generator slide to the generator. A new slide is included to replace the old slide. Place the square headed adjuster bolt through the hole in the new tensioner slide, and thread it into your generator. Make sure the slot is over the adjuster stud mounted to the engine. The square headed adjuster should not be tightened all the way – the slide needs to be able to move a little. Now find the 2.5" long 5/16-24 bolt, and thread the jam nut all the way on, now thread this assembly through the square headed adjuster, the bolt will thread toward the slide (as shown in the photo). This bolt is used to adjust the alternator to create proper belt tension.

Figure 27



28. Now slip the adjuster receiver block over the big, custom adjuster nut, and install on the stud on the engine. Slip the end of the long adjuster bolt into the adjuster receiver block. Run the nut over the slide but do not tighten – you will need to actuate the slide when you put the belt on. Snug the generator pivot bolts.

Figure 28

29. Using a straight edge, check alignment of the generator pulley - if necessary, you can use two (of the 4) supplied 5/16" washers as shims on the pivot brackets. With the straight edge on the crank pulley there should be about 1/16" gap between the straight edge and the generator pulley.

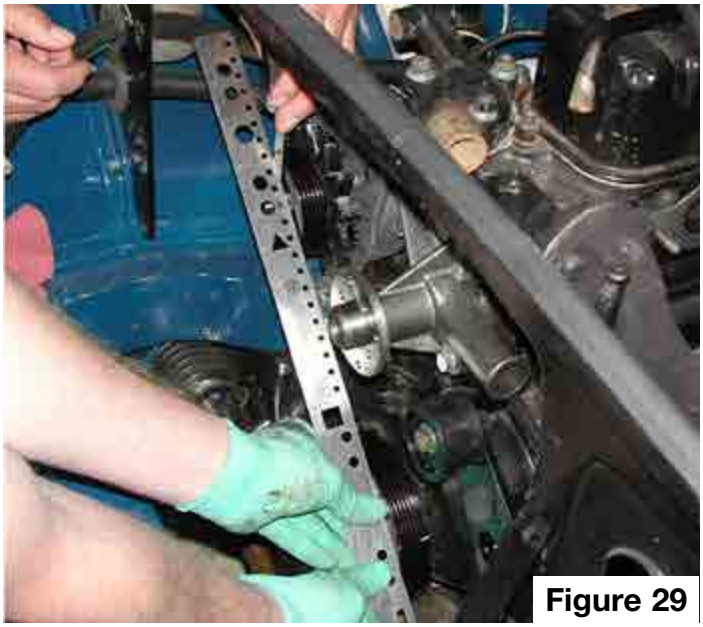


Figure 29

30. Now to the supercharger assembly. Your supercharger, manifold and carburetor come pre-assembled from Moss Motors.

Figure 30

31. The carburetor however is shipped dry. You will need to fill the dashpot with the included 85-90WT oil (Moss # 052-335). To fill the dashpot with 85-90WT oil, unscrew the black dashpot cap, and pull it up to remove the damper. Set it aside. Now fill the center shaft (piston shaft) to about ½" from the top, with the supplied oil (you may want to use side-cutters to increase the opening in the bottle's nozzle). Reinstall the damper and screw on the dashpot cap. Although oil weight can be change for tuning, we highly recommend using the recommended 85-90WT oil unless you are very familiar with SU carburetors, and have a dynamometer and wide-band O2 sensor available for tuning.

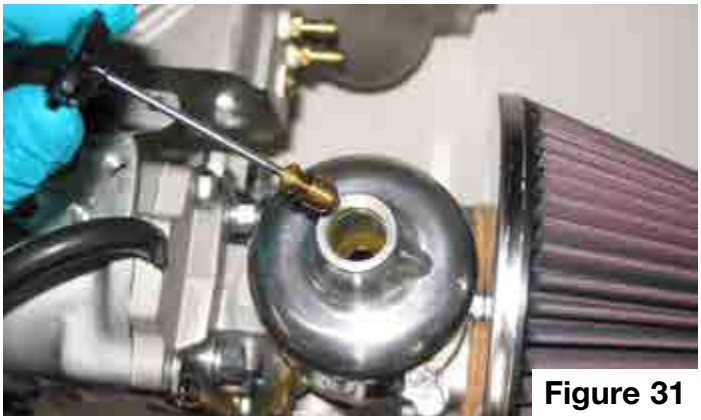


Figure 31

32. At this point replace your intake/exhaust gasket. Remove your exhaust manifold, clean the surface, and install the supplied intake gasket. (Metallic side facing away from engine) As previously stated, this is a good time to replace the studs. You will use your old, large manifold fastener washers. Using dial calipers, measure the exhaust manifold flange thickness and write it down for future use. Reinstall the exhaust manifold.

33. Install the supercharger assembly. Measure the flange thickness of the supercharger manifold. Compare this measurement to the exhaust flange measurement. If the measurements are the same, install the supercharger assembly. If not you will need to shim the washers. Use the supplied shims to achieve the proper thickness. Use the supplied adhesive to hold multiple shims together and also hold the shims to the washers to aid in assembly. Once your shims are in-place, install the supercharger assembly. Slip on the big washers, lock washers, and start the nuts. Tighten the manifold fasteners from the center ones to the outer ones; torque them to 20 ft-lb (we had good luck using a swivel socket). If you are having trouble reaching the center nuts, you may try removing the front tappet cover/vent pipe.

Figure 33

34. Installing the supercharger brace. Start by removing the two lower bolts on the front of the supercharger gear housing, using a 10mm socket. Next offer the brace up to the front of the charger aligning the holes in the brace and charger. The bottom end of the brace should end up behind the idle plate. Install the two M8- 1.25 x 55mm grade 10.9 bolts through brace and thread them into the charger. These bolts will be torqued in the next step.

Figure 34

35. Now install the outer (lower) idler pulley, this one uses the longer of the two ⅜" bolts. Again, slip the flat washer over the bolt, then the idler, then the spacer (cone inside the pulley). Install this assembly on the idler plate in the available hole, make sure the bolt goes through the supercharger support bracket, then put on the ⅜" "D" washer (the "D" washer sits against the back of the support bracket) and start the lock nut. Tighten the idler bolt to 25 ft-lbs. Then tighten the blower housing bolts, and torque them to 20 ft-lb.

Figure 35

36. Install the fuel line. The fuel lines differ year to year, we have included the parts necessary to do a typical installation. Now connect your hard fuel line to the carburetor. Included in the supercharger system are new flexible fuel lines, and a new fuel filter. Your new braided line should connect to your existing hard line. Connect this to the "IN" side of the fuel filter, and connect the ¼" fuel line from the "OUT" side of the filter to the carburetor. Make sure that there are no kinks in the hoses, and tighten all connections. The float lid is installed on the float bowl with the fuel and vent tubes pointing toward the front of the car. The lid can be installed with the tubes pointing left and slightly rearward (pictured) if desired.

Figure 36

37. On to the lower radiator hose assembly. You will only use a portion of the provided molded lower hose. See the pictures for a better understanding of the assembly. The new hose will be cut 5¾" from the end furthest from the small diameter offshoot. The uncut end will connect to the radiator while the cut end will connect to the uncluttered end of the elbow. If you want, use some silicone lubricant or WD-40 to ease the installation of the elbow. Make sure to note the proper alignment of the molded hose. Now install the 5" piece of straight radiator hose on the other end of the elbow. Then install the 7" of ½" heater hose. Make sure to clamp all connections.

Figure 37

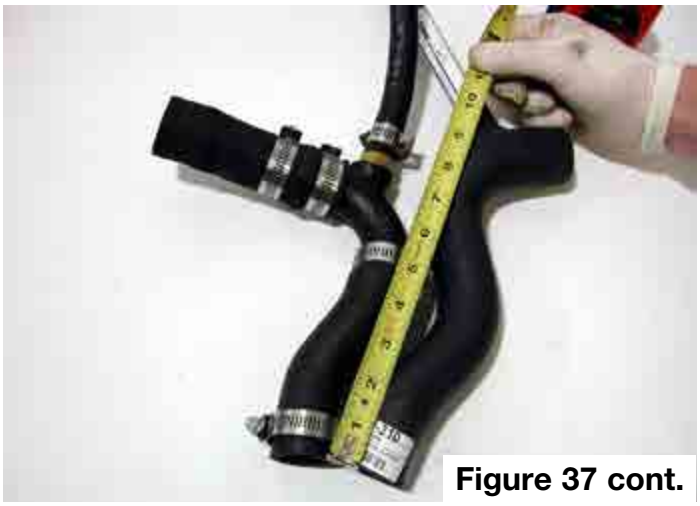


Figure 37 cont.

38. Now install your lower radiator hose assembly onto the water pump. Please look at the images to make sure that your hose is the right shape and will not interfere with anything. Install the heater line from the elbow to the metal tubing which passes the valve cover, and clamp. Connect the heater core to the tube passing the valve cover using 12" of ½" heater hose. Double check all clamps. Install the heater hose retaining hook over the rear valve cover bolt and hook the hose into it. Slip the lower radiator hose clamp over the hose and wedge it there for later.

Figure 38

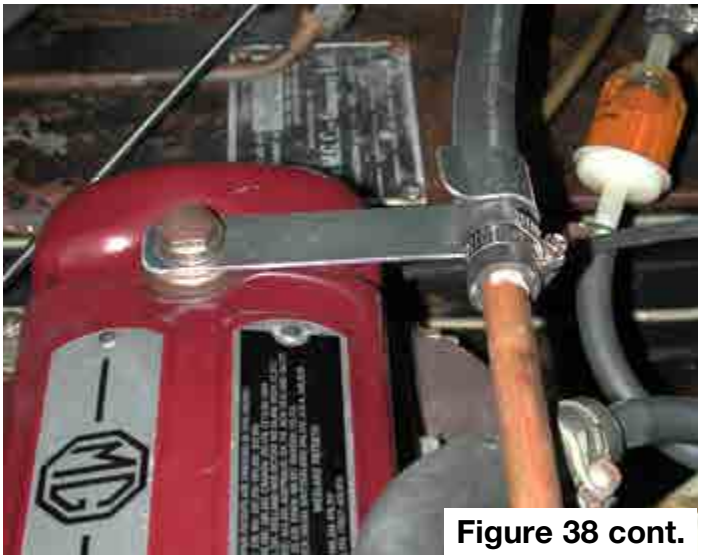


Figure 38 cont.

39. Install the new water pump pulley and your old fan. If you had a long water pump you will need the supplied fan spacer. Use the supplied bolts if you use the spacer, and your old bolts if you don't, and a 7/16" socket. Don't forget the lock washers. Tighten to 9 ft-lb. Snug in a cross pattern. Spin the fan to make sure everything is OK.

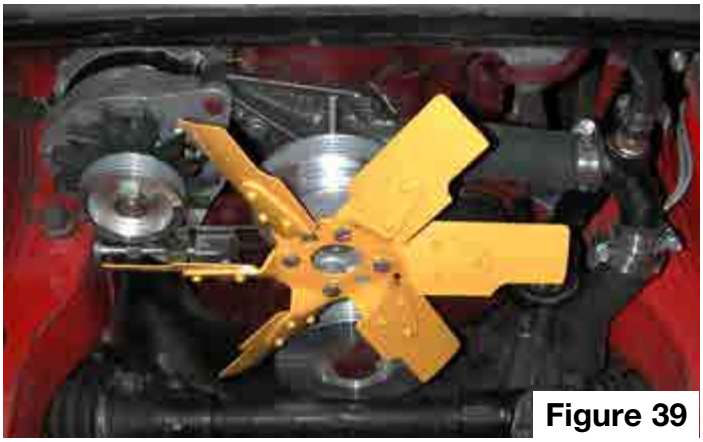


Figure 39

40. Install your new throttle cable. Lubricate the cable with automotive grade grease before installing. It is very straightforward, just trace the old cable. Route the cable behind the hood hinge to avoid interference. You may want to shorten/trim your cable, if not, you can zip tie it out of the way, just make sure it is not bent so much that the cable can not function properly.

41. Slip the throttle cable through the top hole on the throttle cable bracket, over the bellcrank, and through the trunion. Lock the cable in with the trunion bolt. Check travel - make sure you get full range of motion, both wide open throttle and closed throttle. You will need to verify the same on the choke.

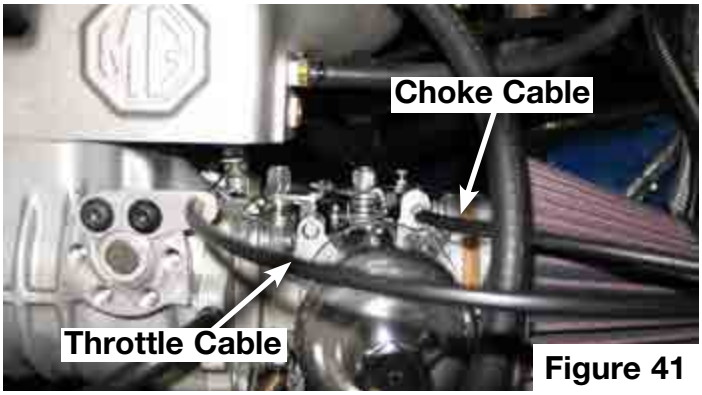


Figure 41

42. Whether or not you use the new choke cable, the route will change - if you are using your existing cable, pull it back through the firewall, into the interior of the car. Now remove the big body plug (a rubber panel approx 3" x 4", located behind the clutch master cylinder) from the inside of the car. Now drill a 1/8" hole in the plug – the hole needs to be located in the recess on the right side (toward center of the car) of the plug in the lower quadrant, once it is re-installed.

Figure 42

43. Install the choke cable. If your choke cable is good, you can use it. If it is beat up, replace it with the included cable. If you do not have a choke cable, install the new cable in a reasonable place under the dash board (many cars have a plastic plug where the choke normally goes). Now route the chosen cable – slip the cable through the hole in the body plug (the plug should be free), feed the cable into the engine compartment (snaking it through the master cylinder bracketry), and install the body plug. Now route the cable to the carburetor, feed it through the throttle cable bracket, and the trunion and tighten. Check travel - make sure you get full range of motion, both wide open choke and closed choke. See Figure 41.

44. Now it is time to install the serpentine belt. Follow the belt path in the photo. Now tighten the generator with the adjuster system. Tighten so that when you press down on the belt between the upper idler and the supercharger there is approximately ½" of deflection. After 500 miles re-check the belt for tension, and periodically thereafter. Lock the jam nut on the adjuster and, using a 7/8" socket tighten the custom adjuster nut. Also tighten pivot bolts.

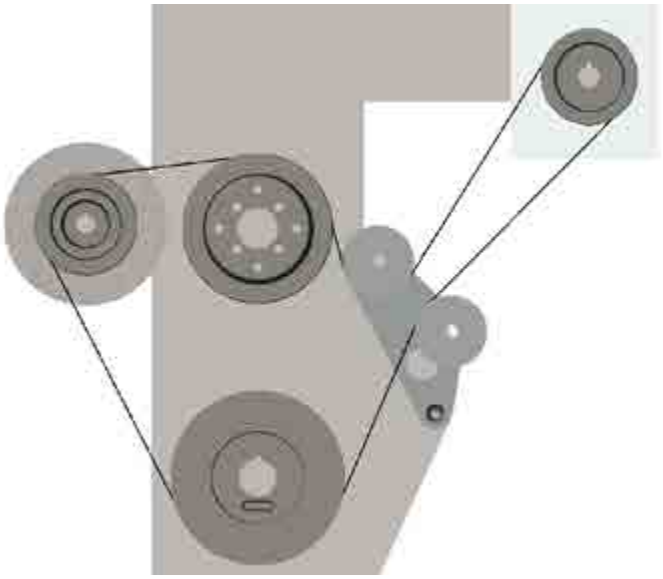


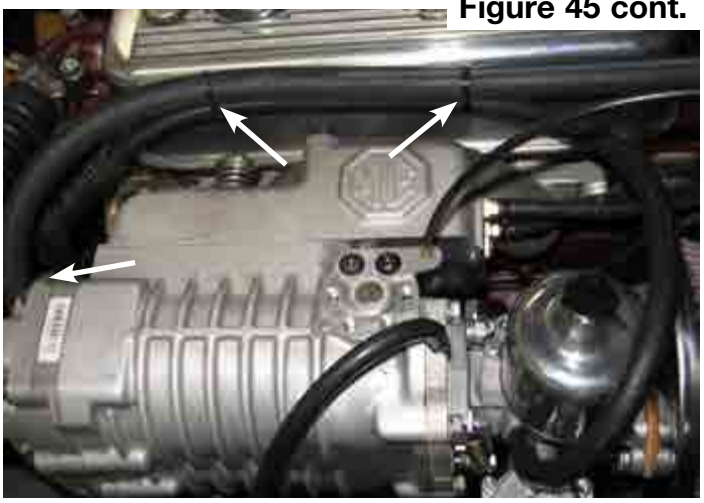
Figure 44

Figure 44 cont.

45. Install the side cover vent. Assemble the hose setup: find the ½" diameter molded hose, the barb adapter, and 18in of the 5⁄16" hose. Cut the molded hose as shown in the photo. Install the barb into the 5⁄16" hose, and connect it to the long, straight side of the shortened molded hose. Now install the hose assembly. The large end fits over the side cover vent tube and the hose routes up to the coolant tube on the valve cover. The hose follows the tube rearward to the carburetor and connects to the barb on the engine side of the carburetor, closest to the blower (see photo). Use two of the included tie wraps to secure the hose to the coolant tube.

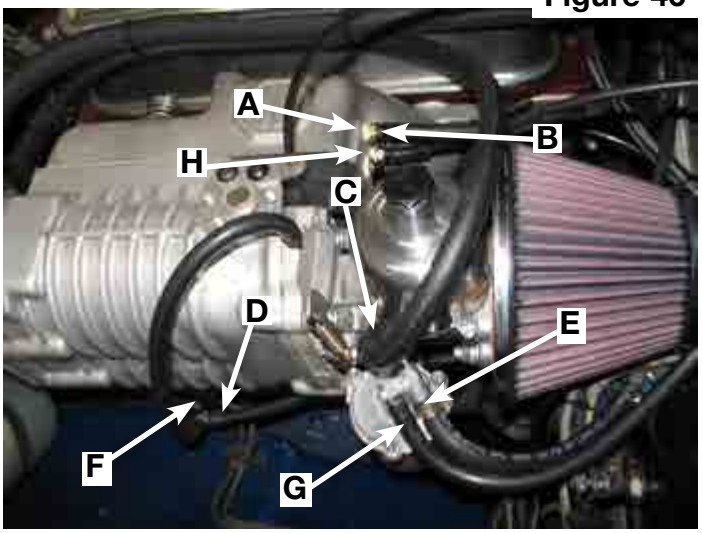
Figure 45

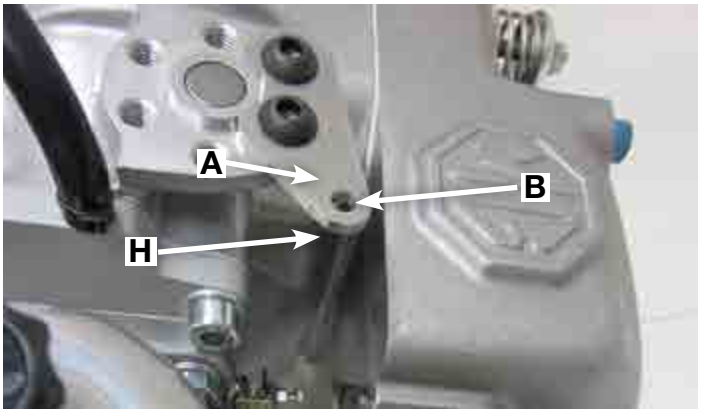
Figure 45 cont.



46. Hook up the vacuum advance using the 5⁄32" vacuum hose. For the recommended distributor, the hose connects to the "T" fitting in the vacuum hose that connects the supercharger bypass valve to the carb. adapter plate ("D" in the illustration). Route the hose behind the valve cover, to the distributor. We highly recommend using distributor #143-114. You may already have this distributor, which is great. If you don't, your existing distributor may not have an advance curve that is compatible with the supercharger. If you do not use the recommended distributor, see step 56. You may need to use some of the supplied vacuum caps, and on other cars you will need to hook up your evaporative system. Also, if you have a run-on valve, you will need to hook it up to the hose barb on the intake manifold. There are three ports on the manifold, one each for the run-on valve, boost gauge (#150-028), and vacuum brakes source. If your car has vacuum boosted brakes, you MUST use a check valve, #150-071. Also, do NOT plug the carburetor bowl vent. Either hook it up to the evap system with the supplied 7⁄32" hose or if your car does not have an evap system, you may also connect the carburetor vent hose to one of the original metal tubes that fasten to the engine and vent out at the bottom of the engine.

Figure 46





GLOSSARY:

A To anti run-on valve
B To boost gauge
C To side cover vent
D To vacuum on distributor (non-boosted manifold vacuum)
E Fuel Inlet
F Supercharger bypass valve
G To charcoal (EVAP) canister or free air bowl vent
H Port for vacuum assisted brakes

47. Time to re-install the radiator. Make sure you already have a lower radiator hose clamp on the lower hose. Slip the radiator into place and start all the bolts using a ½" socket. Work at it gingerly. Tighten the radiator bolts. Next, start the bolts that secure the radiator surround. Tighten the surround bolts. Now work the lower radiator hose over the fitting. Some lubricant may be helpful in slipping the hose over. There is not much room to work, so be patient. Make sure that there is clearance between the hose, the idler pulleys, the belt system, and the chassis. If everything is OK, tighten the hose clamp. If not, you will need to twist (rotate) the hose assembly to gain clearance. Then tighten the hose clamp. Use a 5⁄16" socket and a ¼" drive ratchet to tighten the hose clamp. Also make sure there are no kinks in the hoses.

Figure 47

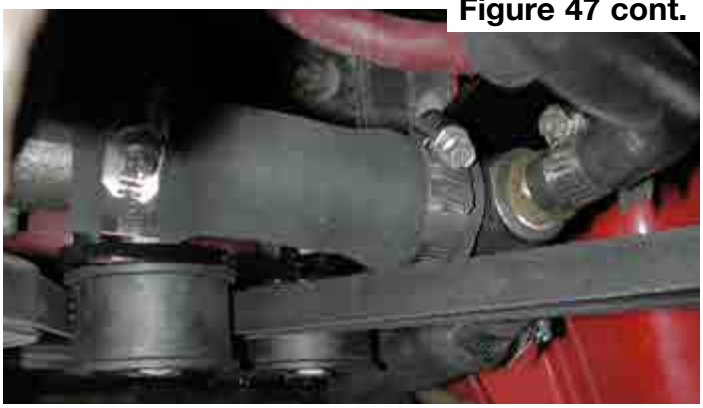


Figure 47 cont.

48. Now install the upper radiator hose, if your hose or clamps show any age, we highly recommend replacing them.

Figure 48

49. Double check all radiator hose connections and clamps, and refill your radiator with the proper mix of coolant and water. Re-install the radiator cap – check the cap, and replace it if it is no longer functioning at the indicated pressure.

50. Install the supplied spark plugs. We recommend using anti-seize on the threads. The gap is .035IN. Again, we highly recommend installing new spark plug wires, points, condenser and the cap and rotor – all readily available from Moss Motors. You will use a 13⁄16" socket on the new plugs.

Figure 50

51. Double check everything. Especially all bolts, connections, and fuel line clamps.

Figure 51

52. Whenever working with fuel, it is good to keep a fire extinguisher near by.

53. Re-connect the battery ground cable. Turn the ignition to on, and your fuel pump should pressurize the fuel system. Turn the key off, and check very carefully for fuel leaks.

54. Pull the choke to the full on position. Do not depress the throttle pedal. Start the car. When the car starts for the first time with the supercharger, bring the engine up to 2200 RPM, as the car warms, reduce the choke amount until the car is warm enough to run without it. With the supercharger pushing volumes of air into the engine, you will have to use the choke more frequently and for longer periods of time than you may be used to. Do not roll into the throttle hard until the engine is fully warmed up, this can cause backfiring - the backfire valve is there to protect your engine as best it can. The mixture jet has been set 1 turn (6 flats) down from flush with the bottom of the carb. We found this to be a good initial setting. If your car is not idling smoothly, turn the jet in or out a few flats until the idle smoothes out. Turning the jet down enriches the mixture and up leans out the jet mixture. As the engine smoothes out it may rev up and an adjustment must be made to the idle stop screw. **Use caution when working around the hot exhaust manifold**.

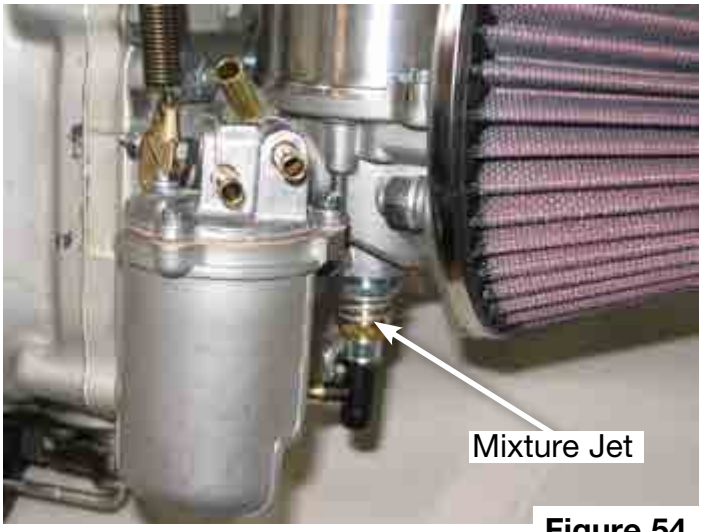
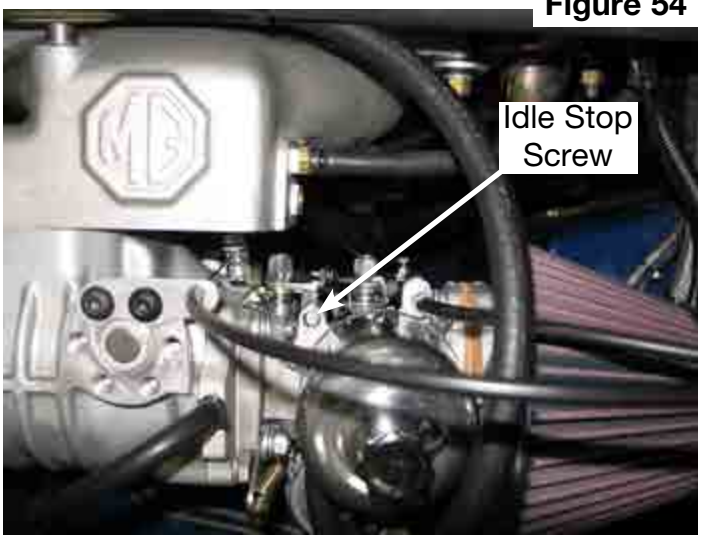


Figure 54



55. Turn off the car and double check everything. After running it up to operating temperature, check everything again. Once it cools, you will need to re-check the coolant level.

56. Run your engine, and set your idle at 900 to 950RPM. Remove the vacuum advance, plug it, and set 13 degrees of timing, this is a conservative number, we recommend 15 degrees and found that 17 degrees was the most we could run in our 8:1 compression engine - you are free to experiment at your own risk. Test the timing: When driving under load, listen very carefully for engine knocking (detonation), if you hear any sort of knocking, you will need to retard your timing, and experiment. Our recommended numbers worked for the cars we tested, however every MGB is a little different. If you want to experiment with additional timing, be very careful, and advance your timing 2 degrees at a time. Listen for knocks/ detonation. A knocking engine will self-destruct fairly quickly.

    The new HS-6 carburetor does not have a "ported vacuum" source. The difference between ported and manifold vacuum is that ported vacuum does not supply the distributor with vacuum (and therefore advance) at idle or closed throttle. The throttle must be depressed (the butterfly must be open) for vacuum to reach the distributor. Ported vacuum is in general used for smog purposes, I.E. less advanced (or more retarded) ignition timing at idle makes for a cleaner burn out of the tail pipe. Retarded ignition timing raises exhaust gas temperatures, keeping the catalyst hotter and more efficient.

    Manifold vacuum is just as implied. Whatever vacuum is in the manifold is supplied to the distributor at all times regardless of throttle position. More timing at idle and light throttle applications makes for a smoother, quicker responding and cooler running engine. In a wide open throttle situation, manifold and ported vacuum are identical.

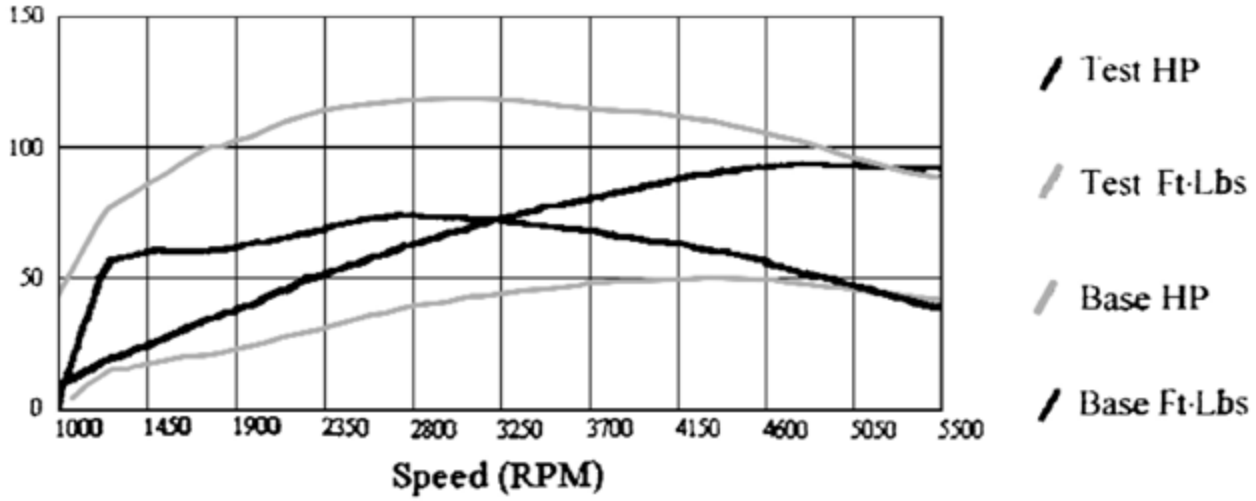
    If your distributor was hooked up to ported vacuum try hooking it to manifold vacuum. You will need to experiment more with your base timing settings. Any change to base timing will impact the whole range. If you simply cannot get rid of the "tip in" detonation that may occur when transitioning from light to heavy throttle applications, unhook and cap off the distributor and vacuum source. You will only have centrifugal advance.

57. Enjoy!

Customer	: Moss Motors,	Miles	:
License	:	Weight	: 0.0
VIN	:	HP @ 50 MPH	: 0.00
Yr/Mk/Mdl	: MG B Roadster	Cyl/Disp.	: 4/1800
Comments	:		

HorsePower Curve Test Results

Test Run	: 1/29/2003 10:57:45 AM	Base Run	: 2/18/2003 10:30:20 AM
Max Power	: 94.0 @ 4750 RPM	Max Power	: 50.1 @ 4250 RPM
Max Torque	: 118.4 @ 3000 RPM	Max Torque	: 74.1 @ 2750 RPM
Comments	:		



Bill of Materials for 150-050

INTAKE & S/C ASSEMBLY 65-74.5 MGB HS6

Item No.	Description	Qty	Unit of Measure
051-207	SCREW, AHCS, M8 X 1.25 X 25	4	EACH
051-203	PLUG, PIPE, 1/8 NPT, HEX HEAD	1	EACH
051-438	SPRING, AFPR	1	EACH
051-446	NUT, STANDARD, 5/16-18	4	EACH
052-835	GASKET, OUTLET, M45 GEN4	1	EACH
052-834	GASKET, INLET, M45/MP62 GEN4	1	EACH
051-551	HOSE, VACUUM, 7/32 IN., BULK	15	INCH
051-587	WASHER, LOCK, 5/16 IN.	6	EACH
051-719	O-RING, VITON, NO. 202	1	EACH
051-720	O-RING, VITON, NO. 218	1	EACH
051-074	WASHER, FLAT, M8	4	EACH
053-150	MANIFOLD, SUPERCHARGER TO HEAD	1	EACH
052-096	PULLEY, MGB S/C, 2.75 4-RIB	1	EACH
052-838	S/C GEN4 MP45CW,NO NOSE PULLEY	1	EACH
052-836	ADAPTER, SU HIF 44 TO M45 GEN4	1	EACH
051-142	HOSE BARB, 5/32 VACUUM	1	EACH
053-308	CARB, FIN, SU HS6, MGB S/C MOD	1	EACH
053-321	ARM, THROTTLE RETURN SPRING	1	EACH
324-590	WASHER, FLAT, 1/4 ID, ZINC	1	EACH
053-428	THROTTLE SPRING BRACKET, CARB	1	EACH
053-228	SCREW, AHCS, M8 X 1.25 X 90	1	EACH
051-736	SCREW, AHCS, M8 X 1.25 X 50	1	EACH
052-247	STUD, 5/16-18 X 1.25	4	EACH
052-257	PLUG, PIPE,1/4 NPT,SOCKET HEAD	1	EACH
052-840	GASKET, HIF44 TO MANIFOLD	1	EACH
770-572	VALVE BODY, POP-OFF	1	EACH
770-573	RETAINER, SPRING	1	EACH
770-576	STUD, POP-OFF VALVE	1	EACH
770-577	NUT, NYLOC, 1/4-28	1	EACH
053-314	BRACKET, THROTTLE CABLE, MGB	1	EACH
051-147	SCREW, BHCS, M8 X 1.25 X 16	2	EACH
053-282	THROTTLE SPRING, TR3-4 SC	1	EACH
053-251	RETURN SPRING BRACKET, TR3	1	EACH
375-128	CABLE STOP	2	EACH
051-389	TEE, VACUUM, 3/16	1	EACH
051-151	CAP, VACUUM, RUBBER, 5/32	3	EACH
051-016	CABLE TIE, 4IN.	4	EACH
051-242	CAP, VACUUM, RUBBER, 5/16	1	EACH
322-290	BOLT, 5/16 UNF X 1, G5	2	EACH
052-339	NUT, STANDARD, 5/16 UNF	2	EACH
051-917	HOSE BARB, 1/8NPT X 3/16	1	EACH
052-947	BOLT,BHCS,M8X1.25X25,ZINC	2	EACH
053-290	AIR FILTER & PLATE, MGB SC HS6	1	EACH
052-656	RETURN SPRING	1	EACH
053-427	THROTTLE SPRING BRACKET, SC	1	EACH

HARDWARE AND HOSE BAG

Item No.	Description	Qty	Unit of Measure
051-081	WASHER, FLAT, M10	2	EACH
051-627	PULLEY, 2.0IN IDLER, NYLON	2	EACH
052-092	PLATE, IDLER	1	EACH
052-093	SPACER, IDLER PLATE	3	EACH
053-433	BOLT, HEX,5/16-24 X 2-1/4,GRD8	1	EACH
052-240	SPACER, IDLER, .310	2	EACH
771-645	NUT, NYLOC, 3/8-16	2	EACH
771-668	WASHER, FLAT, D SHAPED, 3/8	1	EACH
772-533	SCREW,ALLEN DRIVE,1/4-28X2 1/4	3	EACH
772-534	NUT, NYLOC JAM, 1/4-28	3	EACH
324-590	WASHER, FLAT,1/4 IN	3	EACH
771-670	BOLT, HEX HEAD, 3/8-16 X 2	1	EACH
771-671	BOLT, HEX HEAD, 3/8-16 X 2-1/4	1	EACH
052-506	BRACKET, HOSE, MGA S/C	1	EACH
051-588	WASHER, FLAT, 5/16 IN., SAE	4	EACH
052-516	ADJUSTER BASE, 65-67 MGB	1	EACH
052-517	BRACKET, SLIDE, GENERATOR	1	EACH
052-505	ADJUSTER BLOCK, MGA	1	EACH
052-091	ADJUSTER LOCK BOLT	1	EACH
052-250	BOLT, HEX, 5/16-24 X 2.5	1	EACH
052-251	NUT, JAM, 5/16-24	1	EACH
052-252	BOLT, HEX, 5/16-18 X 1.0	2	EACH
052-268	ADHESIVE, FUTURE GLUE GEL	1	EACH
052-277	SHIM, MANIFOLD, 0.14 THICK	8	EACH
052-278	SHIM, MANIFOLD, 0.06 THICK	8	EACH
052-279	SHIM, MANIFOLD, 0.03 THICK	8	EACH
052-280	SHIM, MANIFOLD, 0.02 THICK	8	EACH
220-136	REMOVABLE THREADLOCKER, BLUE	1	EACH
460-470	WASHER	1	EACH
770-055	CABLE TIE, 6 IN.	6	EACH
771-530	NUT, NYLOC, 5/16-18 THREAD	1	EACH
051-583	WASHER, LOCK, 1/4IN	4	EACH
051-587	WASHER, LOCK, 5/16 IN.	4	EACH
052-098	PULLEY, WATER PUMP	1	EACH
771-642	BOLT, HEX, 5/16-24 X 1	2	EACH
771-643	BOLT, HEX, 5/16-24 X 1.25	1	EACH
771-644	BOLT, HEX, 5/16-24 X 1.75	1	EACH
771-715	BLOCK, FAN SPACER,ORIGINAL,MGB	1	EACH

Item No.	Description	Qty	Unit of Measure
771-769	BOLT, HEX, 1/4-28 X 1.75	4	EACH
051-151	VACUUM CAP, 5/32	3	EACH
051-190	CLAMP, HOSE, SAE NO. 6	4	EACH
051-191	CLAMP, HOSE, MINI, SAE NO. 4	3	EACH
051-257	HOSE, HEATER, 1/2 IN., BULK	19	INCH
051-259	HOSE, VACUUM, 5/32 IN., BULK	36	EACH
051-261	HOSE, FUEL, HP, 1/4 IN., BULK	6	EACH
051-262	HOSE, FUEL, HP, 5/16 IN., BULK	24	EACH
051-551	HOSE, VACUUM, 7/32 IN., BULK	14	INCH
052-248	ADAPTER,HOSE BARB, 5/16 TO 1/2	1	EACH
052-254	CLAMP, HOSE, SAE NO. 20	4	EACH
052-256	HOSE, MOLDED, 1/2" HOSE	1	EACH
376-320	HOSE, FUEL PIPE TO CARB	1	EACH
434-485	HOSE, 1 1/8 DIAMETER	5	INCH
470-310	HOSE, RADIATOR, LOWER	1	EACH
053-007	BOLT,HEX FLANGE,M8 X 1.25 X 55	2	EACH
052-095	PULLEY, ALTERNATOR, 4-RIB	1	EACH
052-097	PULLEY, CRANK, 4-RIB	1	EACH
052-234	BELT, K040595	1	EACH
331-225	CABLE, CHOKE, ROUND KNOB, C	1	EACH
053-311	INSTRUCTIONS,65-67 MGB S/C,HS6	1	EACH
052-504	SPARK PLUG, NGK 2023 BPR7ES	4	EACH
052-337	OIL, SAE 90 WEIGHT	2	OZ-01
052-343	FUEL FILTER, UNIVERSAL	1	EACH
297-535	GASKET, MANIFOLD, PREMIUM	1	EACH
331-451	CABLE, THROTTLE	1	EACH
434-045	WATER PUMP	1	EACH
053-224	SUPERCHARGER BRACE, MGB MP45	1	EACH
052-431	IDLER PLATE SPACER	1	EACH

Although every effort has been made to ensure the accuracy and clarity of this information, any suggestions that you may have that will improve the information (especially detailed installation notes and photos) are welcome. These instructions were developed and written by Moss Technical Support. If you have any questions or difficulties with your installation of this product, telephone 800-667-7872 between 7:00 a.m. and 4:00 p.m., Pacific Time for assistance.

Moss Motors, Ltd.
440 Rutherford Street, Goleta, California 93117
In the US & Canada Toll Free (800) 667-7872
LOCAL (805) 681-3400 FAX (805) 692-2510

Moss Europe Ltd.
Hampton Farm Industrial Estate
Hampton Road West, Hanworth Middlesex, TW13 6DB
In the UK: 020-8867-2020 FAX: 020-8867-2030