

MOSS MOTORS B-SERIES SUPERCHARGER FAQ LIST

WHAT KITS ARE CURRENTLY OFFERED?

The following kits are specifically designed for each application. Please see following application notes for specifics.

150-040 Fits 1500-1622 MGA pushrod applications

150-050 Fits 1965-67 MGB with 5 Main Engine and Generator

150-060 Fits 1968-74 MGB with 5 Main Engine and Alternator

150-070 Fits 1975-80 MGB with Brake Booster

WHAT ABOUT THE EARLY MGB AND 1974.5 MODELS?

The 3 Main MGB (1963-65) requires a unique water pump pulley which is not yet in production. We have had conflicting information on the late 1974 model which indicates that our standard kits may need some modifications to fit correctly. Please call our technical department for further information.

WHAT IF I DON'T HAVE THE STOCK ENGINE CONFIGURATION?

Each of the kits is designed to fit only the original engine and accessories, the following application notes will help decide which kit will work best for a custom application.

The basic design of Supercharger, manifold and carburetor is the same for all applications.

Items which are specific to each application:

150-040 MGA Supercharger Kit

1. MGA unique water pump pulley
2. Supercharger and Main pulleys sized specifically so no cutting of air intake support is necessary. This pulley set also offers the correct boost for the 1500-1622 engine range.
3. Carburetor is tuned for the 1500-1622 engine
4. Supercharger drive speed is set for the 1500-1622 engine
5. Generator Pulley is supplied

150-050 MGB 1965-67 Supercharger Kit

1. New 5 main water pump and pulley are supplied. Water pump is the 1972-80 short design.
2. Carburetor is tuned for the 1800 engine
3. Supercharger drive speed is set for the 1800 engine
4. Generator Pulley is supplied

150-060 MGB 1968-74 Supercharger Kit

1. New 5 main water pump and pulley are supplied. Water pump is the 1972-80 short design.
2. Carburetor is tuned for the 1800 engine
3. Supercharger drive speed is set for the 1800 engine
4. New Alternator and drive pulley are supplied. Alternator is the latest Lucas model to fit 1978-80

150-070 MGB 1975-80 Supercharger Kit

1. New 5 main water pump and pulley are supplied. Water pump is the 1972-80 short design.
2. Carburetor is tuned for the 1800 engine
3. Supercharger drive speed is set for the 1800 engine
4. Alternator drive pulley only, is supplied
5. Supercharger intake plenum is angled to allow the carburetor to clear the brake booster assembly.
6. A spacer is included to allow the air filter to clear the brake booster assembly.
7. A replacement heater tube is included which routes the heater line over the rocker cover as in 1963-74 cars.
8. A check valve is supplied for the brake booster vacuum line

Here are some examples of typical custom applications:

Example 1: The vehicle is a 1963 MGB, but a 1966 5 main engine has been installed in the car and a 1970 alternator has been installed after the car was converted to Negative ground.

Suggestion: This is a 5 main engine with alternator. Use the 150-060 kit.

Example 2: The vehicle is a 1978 MGB but has been converted to twin HS4 carburetors.

Suggestion: If the original brake booster assembly is still in place use the 150-070 kit.

Example 3: The vehicle is a 1959 MGA, but has a 5 main MGB motor installed.

Suggestion: Use the 150-050 or 150-060 kit depending on whether the car has a generator or alternator. The vent pipe support may have to be trimmed slightly to allow clearance for the larger supercharger drive pulley.

IS IT SAFE TO INSTALL A KIT ON A CAR FITTED WITH A GENERATOR?

We are concerned that the increased loading from the serpentine belt system will reduce the life of the generator rear bronze bearing and suggest that converting to an alternator would give the best long term service. We offer alternator upgrade kits 130-088 for MGA and 130-098 for MGB but understand that there are many owners who would prefer to keep the original generator system. Careful adjustment of the serpentine belt will reduce the loading on the generator bushings and increase bearing life.

ARE THE KITS "SMOG" LEGAL?

Sorry, no. There is no provision for an air pump, and later cars must have some type of separate exhaust manifold fitted. Please check with your local authorities before ordering.

WILL THE SUPERCHARGER BE SAFE ON A MODIFIED ENGINE?

We have not tested modified motors and results will differ. The MGB kit was tested on a 1973 low compression 8.0:1 motor, 1976 low compression motors 8.0:1 and a 1969 high compression 8.8:1 motor. All engines were stock. There was no evidence of detonation under some pretty stressful testing. Any detonation typically indicates incorrect timing or too lean of a mixture under load, and will quickly kill an engine. The kit as supplied will work safely on a stock engine with correct timing and original good condition fuel system. Anything other than that is going to be out of our current realm of experience. We are interested in hearing about installations on modified engines, so that we can keep this FAQ current.

WHAT ARE THE DANGERS OF FITTING A SUPERCHARGER?

Luckily the majority of noticeable power increase is from more efficient filling of the cylinders. This actually reduces the stresses on the engine as each cylinder contributes a more balanced thrust on the crankshaft. Under normal driving, you will notice smoothness and more power throughout the rev range. Under full boost there is an increased load on all wearing surfaces, so rod bearings in particular are going to be more highly stressed. Combustion temperatures are going to be higher under load, so valves and valve seats are going to have to be in good shape. Again, most MG valve problems are due to mis-adjusted carbs so in most cases the likelihood of damage is going to be less. Marginal systems may fail under the increased load of the supercharger. Our experience has been that the cars ran cooler when supercharged, but under long term load such as climbing a hill marginal systems could overheat. A failing SU fuel pump can cause a lean condition which will produce damaging detonation, so ensure that the fuel system is in good condition.

DO I HAVE TO USE A SPECIAL FUEL?

We recommend that you use the highest octane generally available. Our cars were tested using Unleaded Premium fuel. Depending on timing and driving technique it is possible that lower rating fuel may be used but we do not recommend it.

HOW WILL THE SUPERCHARGER EFFECT MY FUEL MILEAGE?

From our experience and feedback from customers, if you drive the car normally, mileage will not decrease. This is probably due to higher efficiency. If you drive the engine hard, expect that there will be a drop in fuel mileage, but it should still be higher than a comparable “modified” normally aspirated motor.

HOW COME YOU SAY YOU GOT 100% INCREASE IN POWER ONE PLACE, AND 40% IN ANOTHER?

We tested the 1973 low compression MGB on a Rolling Road Dynamometer. The Horsepower and Torque overlays are printed in the instruction sheets. The figures reflect “Rear Wheel Horsepower” which is what actually hits the road after all the transmission and driveshaft losses. Most people are more familiar with “Flywheel Horsepower” which is what is printed in the workshop manuals. We have not tested any of the kits on an Engine Dynamometer, so are only guessing that based on the improvement in Rear Wheel Horsepower the supercharger will give approximately 40% improvement

in Flywheel Horsepower. The published figure that sticks in most peoples minds is 90-98 bhp for a stock MGB engine. We believe the supercharged engine is putting out somewhere in the 130-140 bhp range. The figures are really not very insightful as improved drivability is the true test of success.

WHAT IS IT LIKE TO DRIVE?

Here comes the true test.

1. You can drive the car at 20mph in 4th gear. Press down on the accelerator and the car will accelerate like there is an electric motor under the hood.
2. You can drive up a winding mountain road in 4th gear, slow down for 35 mph corners and accelerate out of the corner still in 4th.
3. In a non-OD car, you can enter an on-ramp at 70 mph and accelerate to 90 to get past any traffic that won't let you in.
4. On an uphill two lane mountain road, you can pass that Motor Home without seeing your life rush before your eyes as the oncoming semi gets closer.
5. It won't leap buildings in a single bound, but it will act like no MGA/B you have ever driven.

HOW COST EFFECTIVE IS THE SUPERCHARGER COMPARED TO OTHER MODIFICATIONS?

Extremely. The power and drivability was judged by an un-solicited expert as superior to one where \$10,000 of "the right" engine modifications had been done. Luckily much of the expensive engine work in a modified engine can be utilized with the Supercharger, but it is not necessary.

WILL THE KIT WORK WITH A MODIFIED ENGINE?

Superchargers are very effective at increasing the efficiency of a poorly designed engine. The biggest improvement will be seen on a stock low compression engine. Higher than stock compression engines will have much less of a gain as boost pressures may need to be reduced to prevent detonation. A high flow head will also not show as much improvement, as much of the gain from a Supercharger is due to it's ability to fill cylinders effectively despite poor cylinder head design. Any work to improve bottom end strength and lubrication will be a benefit under the higher loads imposed by full boost driving.

WHAT ENGINE MODIFICATIONS DOES THE KIT REQUIRE?

Absolutely none. The kit works best on a stock engine. If you really want to spend some extra money, we have found the best distributor to use with the kit is the modern replacement for the stock 1962-71 distributor (143-114). This distributor has the modern 45D design, so is less susceptible to tracking and cross firing. Modified with a Pertronix Igniter (222-435) and high output coil you can be sure that your ignition is not going to be a weak point.

WHAT COMES IN THE SUPERCHARGER KIT?

The Supercharger Unit is a complete assembly of intake, supercharger and carburetor ready to hang onto the intake studs. Each kit includes all the parts necessary to install the Supercharger Unit on to the specific car. All of the hardware, hoses, hoseclamps, cables and sundries are included so you have everything at hand to bolt the kit onto your car.

The MGB kits include a new cast iron water pump (1975-80 design) with 4 rib pulley. The 1968-74.5 kit includes a new late type high output Lucas Alternator and 4 rib pulley (you must use your existing alternator fan). The 75-80 kit includes a pulley to be used on your existing alternator. A really nifty, screw belt tensioner assembly makes adjusting belt tension much easier. To get the best airflow a K & N air filter assembly is included. All 1974.5-80 models will require the addition of some type of separate exhaust manifold and downpipe. The kit is designed to work with both early stock cast iron 3 into 2 manifolds and most aftermarket headers. Shims are included to allow the fitting of the various thickness exhaust manifolds. Please note that tubular headers typically have larger flanges than the stock cast iron manifolds, and these flanges must be trimmed to clear the supercharger inlet flanges.

WHAT OTHER PARTS ARE AVAILABLE?

If you are running a brake booster, you must have a one way valve installed to prevent boost from damaging the brake servo. This is included in the 1975-80 kit.

One Way Valve 150-071

We do offer both a low boost, and high boost pulley so installers can set up the blower for their particular applications. Changing out the pulley without damaging the blower is tricky, so ask before ordering.

High Boost Pulley. 052-221 Low Boost Pulley. 052-276

WILL A SUPERCHARGER KIT FIT ON AN MGB WITH AIR CONDITIONING?

The kit is only designed to mount on the standard layout engine. Since the Supercharger only fits on the left hand side of the engine, it is feasible that the dealer installed rotary type air conditioning could be used with the supercharger if the customer was able to source a suitable pulley and belt. Moss Motors does not have any experience with such a conversion but would be interested in hearing about successful applications.

WHAT MODIFICATIONS WILL IMPROVE THE OUTPUT OF A SUPERCHARGED MG ENGINE?

We have found that the Crane 270 degree duration cam we carry #222-270 works well with the Supercharger. Traditional head porting and flowing techniques also work well with emphasis on cleaning up the exhaust ports. A larger bore free flow exhaust system will also help in reducing exhaust back pressure. With these changes experience has shown that the ignition may be advanced resulting in substantial increases in power.

WHAT RATING IS THE BLOW OFF VALVE ON THE SIDE OF THE MANIFOLD?

Unlike a turbocharger, the supercharger does not require an over boost blow off valve. The valve on the side of the manifold is designed to protect the supercharger vanes in the event of a backfire occurring in the intake manifold.