



## **Shorrock Supercharger C75B Installation**

### Fitting Instructions for Mini and Mini Coopers

#### **Introduction.**

The design of the supercharger set for the 850, 977, 998, 1071 or 1275 BMC engine is such that the work may be confidently carried out by any competent garage mechanic or owner driver, and necessitates no modification to the engine or chassis. Fitting is simplified by reading through these instructions before starting work.

The supercharger is mounted on the manifold side of the engine with the ports facing on an angle towards the manifold, and is driven by the pulley belt from the front end of the crankshaft.

Note. These kits are not suitable for left-hand drive Minis.

During the installation care should be taken to retain all nuts and washer removed and to avoid damaging any packing as some of these are used again with the supercharger set.

#### **Basic Specification.**

Drain cooling system and disconnect battery.

Remove:-  
Bonnet  
Front Grill  
Dynamo  
Top Radiator Hose  
Radiator Cowling  
Fan Blades  
Radiator  
Bottom Radiator Hose  
Crankshaft Pulley  
Air Cleaner  
Carburettor  
Carburettor Flange Studs  
Choke Control Cable

Disconnect heater pipes and keep them clear of engine compartment.

Fit Crankshaft Pulley and tighten securing bolt

#### **Hydrolastic Pipe.**

When the hydrolastic system is fitted, it will be found necessary to reposition the hydrolastic pipe fitted to the bulkhead near the radiator. This must be moved closer to the radiator sufficient to clear the supercharger pulley and belt, and then refitted to bulkhead panel.

#### **Belt Tensioner Pulley**

As the supercharger cannot be moved to take up any drive slackness a belt tensioner pulley (Jockey wheel) is to be fitted, so that the drive belts can be tensioned correctly.

Normally the tensioner pulley will be fitted to the front mounting plate but of course will need adjusting before finalising the installation, this is done by slackening the bolts in the slotted hole in the pulley mounting plate. (Note excessive tension on the drive belts should be avoided) Tension similar to that of the fan belt is quite adequate.



### **Fitting Front Plate.**

Remove the two bolts from the timing cover, one located at its highest point and the other one adjacent at approximately 2 O'clock.

Front plate, with distance piece should now be fitted leaving the bolts loose.

Note: At this stage both fan and supercharger drive belts should slip over the crankshaft pulley. Check the fan belt is in good condition.

### **Replacing Radiator and Fan**

Fit bottom hose complete with extension piece to radiator.

It is essential that the head of the bolt which passes through the radiator mounting bracket and is located nearest to the bulkhead be reduced by 1/8" to 3/16".

Replace fan. Fit radiator and connect bottom hose, tighten clips and mounting bolts.

### **Fitting Engine Tie Bar to Bulkhead**

Remove the bolts which passes through the heater pipe location plate nearest to the edge of the bulkhead strengthening rib.

Remove nut and studs nearest to rocker cover from thermostat housing. Locate tie bar on bulkhead rid and fit securing washer and nut but do not tighten at this stage.

(screw the adjusting bolt in the required direction to locate engine end of the tie bar.)

Tighten bulkhead securing nut.

At this point the front plate can be tightened

### **Fitting Supercharger**

The supercharger complete with pulley, carburettor, and outlet pipe is turned until the carburettor flange is vertical. Place it in the space between engine and bulkhead and move towards front plate. Locate the Supercharger mounting studs in the front plate and fit washers and nuts. Do not tighten nuts at this stage.

Fit gasket between supercharger outlet pipe and inlet manifold. Fit bolts through supercharger outlet pipe and screw lightly into inlet manifold. Tighten up front plate nuts or bolts. Then tighten supercharger outlet pipe to manifold bolts. Fit belt onto supercharger pulley. Fit and tighten relief valve in outlet pipe, if not already fitted.

### **Fitting Carburettor and Controls**

Fit carburettor to supercharger pipe and secure using gasket and bolts. Connect fuel supply line next. Fit copper or steel braided pipe to carburettor and connect the other end to flexible pipe removed from original carburettor. Fit choke control cable to carburettor, and then connect the throttle cable to the carburettor by locating the outer cable into the location boss fitted to the cable anchor bracket on the flange of the carburettor. By threading the inner cable through this boss and then fastening it to the throttle lever arm. Finally check that the throttle is opening fully.

### **Throttle Return Spring**

Fit one end to the throttle return spring to the throttle cable anchor bracket and the other end to the top lever arm fitted to the carburettor butterfly spindle. This should then be adjusted to give sufficient tension to fully return the butterfly adjustment, screw onto its stop.



## Oil Supply to Supercharger

Remove banjo bolt connecting filter pipe to engine and replace with tapped banjo bolt with oil union. ( Or fit to oil gauge take off point ) With 24" petroflex lay an oil supply to the lubrication connection at rear of supercharger passing round rear of engine to the banjo bolt this should then be secured.

## Reassembling Heater Pipes

The pipe at the radiator end of the engine will need to be fitted with the piece of extension hose and copper pipe, and secured by jubilee clips. This is best routed over the front of the supercharger unit well clear of the supercharger pulley and supported by bracket bolted to the supercharger casing nearest to the bulkhead.

The other heater pipe from the engine should be connected to the hot spot union on the carburettor pipe nearest to radiator. The other union on the carburettor pipe should finally be connected to the heater pipe which passes through the bulkhead at the rear of the supercharger.

## Refitting the Accessories

Replace the following:- Dynamo, Radiator Cowling (the near-side of the cowling will have to be cut away to give clearance for the drive belts) Top Radiator Hose then refill the cooling system and connect battery.

## Ignition Setting and Modification to Distributor

It is necessary to limit the advance on most supercharged engines and below is described the method of carrying this out. *For full details see notes " Ignition Setting Modification to Distributor" within this booklet.*

While it is easier to remove the distributor to carry out this work it can be carried out with the unit in position which can save time.

Disconnect automatic advance tube, remove HT cap, rotor and contact base plate. A peg fitted to the automatic base controls the limit of the weights. This peg also acts as anchor point for a spring. Remove this spring and fit a 1/4" bush to the peg then replace the spring making sure that the spring sits in the notch in the peg. Assemble the contact base check that the points have a gap of .015". Set the ignition advance Cooper S 12° standard Mini 8° - 10° static.

## Servicing Instructions

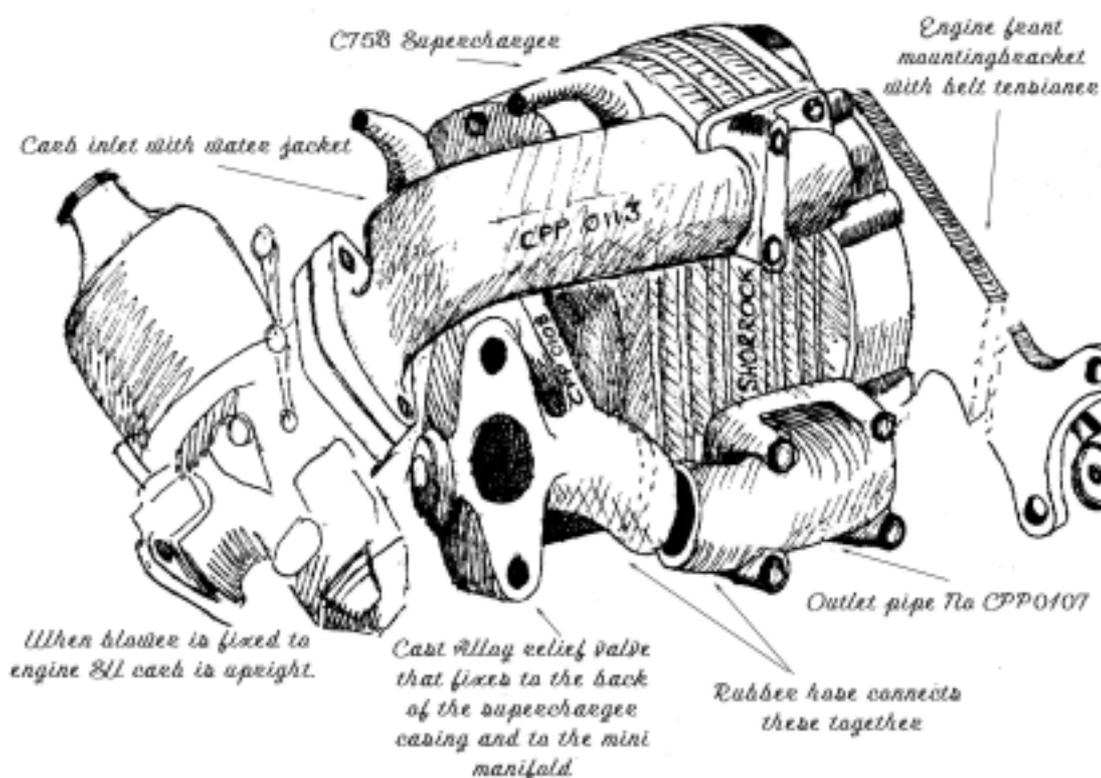
Introduction:- The Shorrock Supercharger is a precision mechanism, which is fully tested of the years. Like any other machine however, it requires running in and should be driven for the first 250 miles. During this period the maximum road speed in top and third gears should not exceed 45 m.p.h. and 25m.p.h. respectively or 3500 rpm maximum. Property treated it will give many thousand of trouble free miles.

## Lubrication

It is essential that the engine oil be kept clean and free from sludge. The supercharger has fitted a "B" pin in its lubricator (as new ) this should be satisfactory for the initial running and quite likely permanently. As a guide, there should be a slight amount of smoke from the exhaust on starting up from cold, which should clear after a few minutes running. Should, however, signs of pronounced over oiling arise (for instance clouds of exhaust smoke) then the larger one type "A" should replace the lubricator pin type "B".

After every 5,000 miles the lubricator pin should be removed from the supercharger and the pin wiped with a soft rag. On no account should abrasives be used. To remove and replace the lubricator pin, proceed as follows:

Models with external lubricator body:- Unscrew the plug at the end of the lubricator, when the plug, spring and pin will come out together. To re-assemble, assemble pin, spring and plug together, then insert spring first and screw plug down firmly.



Installation drawing and photo are available from British Classic Sports Cars at a cost of £ 8.50 a set