# The A.B.C. of Shorrock Supercharging

By Jonathan Peck

This booklet is the **Shorrock Bible of Supercharging for 'A' Series Engines**, which list just about everything you, need to know about supercharging a Mini, Austin Healey Sprite, A40 or Morris Minor.

SUPERCHARGING is itself a misleading term when applied to the low boost, that is the everyday practice as applied to ordinary touring car of the 30's to 70's. The expression CAPACITY FILLER would be more accurate, for a supercharger is really only a mechanical device to overcome the inefficiency of the internal combustion engine.

Normally the mixture in the carburettor at atmospheric pressure flows into the vacuum created in the cylinder by the suction stroke of the piston. The volume thus admitted is obviously not the full capacity of the cylinder at atmosphere pressure, and consequently the efficiency of the engine suffers.

Various mechanical methods are employed to improve this inefficiency, such as polished induction ports, and high compression ratios, but these all have their drawbacks. Polished ports lose their effectiveness as soon as any carbon deposit is formed, and very high compression leads to 'pinking' and roughness.

The advantage of supplying the mixture to the cylinder under a moderate boost instead of the piston absorbing power in sucking in the mixture is obvious. The power developed from a fully charge cylinder is as much as a third greater than normal. In addition to the greater power available from an engine when " fully charged " the power curve continues to rise with the engine speed far beyond the point at which the normal engine begins to fall off.

In addition to the question of power, there are other advantages to be considered.

1. The normal car is fitted with a 'hot spot', which breaks up the mixture of petrol and air into a more rarified and combustable mixture. The supercharger "stirs up" this mixture and so further increases the amount of atomisation of the fuel. That, and the more even distribution of the gas when under pressure, definitely enables a supercharged engine to use less petrol for a given B.H.P. output.

2. In the normal unsupercharged engine, when the petrol mixture is being introduced by means of the vacuum in the cylinder as explained before, this vacuum also exerts a suction, which draws the oil on the cylinder walls past the piston into the combustion chamber. In a supercharged engine however, this vacuum does not exist, hence less oil consumption.

3. When a car is started from cold, in the normal engine, the atomisation is necessarily poor, so that a "wet" mixture is introduced into the cylinders. This wet mixture washes away the oil film on the cylinder walls, which fact has been proved by many leading authorities to account for the greater part of cylinder wear. With a supercharged engine however, the mixture has been well "masticated" by the supercharger blades, and the petrol air mixture issues as a combustable gas, enabling the car to be driven away from cold, and avoiding the detrimental "washing" of the cylinder walls.

## Super-tuning versus supercharging

Some very wonderful performances are attained with unsupercharged racing and sports cars in the hands of experts, simply by tuning, though perhaps 'simply' is hardly the word to use, as tuning entails special high lift cams, overlapping of valve timing to extreme degree, light valves, multiple valve springs of great strength, polished induction passages, multiple of carburettors, etc, to mention just some of the essentials – few of which are conducive to any permanence of performance. Expert tuning for maximum power produces a temporary condition only, and, moreover, it is accompanied by lack of flexibility and poor top gear performance. On the other hand supercharging calls for none of the above, and enables an ordinary commonplace car engine to become an all round

performer entirely superior to the tuned sports engine, and the condition is permanent. A supercharger is a tangible added mechanical aid to power, and is equivalent to adding another two cylinders to a four-cylinder engine. Even better, in fact because there is not the falling off in volumetric efficiency at high r.p.m. which is inherent to normal types of unsupercharged petrol engines.

## Take a look at these records: -

### 1937

As early as 1937, Shorrock Superchargers have been fitted to small cars, the M.G. range in particular. Subsequent world records by this famous car were achieved with a Shorrock supercharged engine. The most noteworthy was in May 1939, when the M.G., then driven by the late Lt.col.A.T. Gardner, at Dessau Germany, was the first car in the world, in class G, to exceed 200 m.p.h.

### 1957

1 1/2litre supercharged M.G. Ex 181 driven by Stirling Moss at Utah broke five international class F records, including the flying kilometre at 245.64 m.p.h.

### 1959

In 1959 Shorrock were proud to be associated with phenomenal success of the Austin Healey Sprite. Driven by T.H. Wisdom Ed Leavens and Gus Ehrman, it put up a fantastic performance in class G smashing 15 international records and 52 American records – maximum speed 145.56 m.p.h. and 12 hour endurance at 138. 75 m.p.h.
In the same month Phil Hill captured 6 new international class E records in the Shorrock supercharged M.G. 181 including the flying mile at 254.53 m.p.h.

## The effect of supercharging on engine wear

As the supercharged engine develops more power, the first thought is that there will be proportionately more stress on the engine parts. In practice we find that supercharged engines wear equally as well or even better than before, and this we attribute principally to the very much smoother (more stream like ) turning effort of the supercharged engine, and to the fact that there is less use of the lower gears.
Furthermore, supercharging only increases the firing pressure, whereas it is the inertia stresses of a reciprocating engine which are the important factors as regards mechanical failures.

## Performances

The benefits from supercharging a normal road vehicle are; ( 1) Enormously improved acceleration; ( 2) Much greater speed on hills; ( 3 ) Better top gear performance; ( 4 ) Increased maximum speed.
Normal touring cars reduce the time for acceleration from 0.50 m.p.h. by 40% or more, while hills which previously called for lower gears are taken “flying” on top. The combined benefits of rapid acceleration and high speed on hills enable very high averages to be maintained without effort.

## Power absorbed

Superchargers require so little power to overcome mechanical losses that if the drive were disconnected the engine will still run, as the suction of the engine will cause the supercharger to rotate freely

## General Technical Information

Shorrock Supercharger installation are designed for fitting to a wide range of popular cars for normal road use, with in most cases no modifications to the internals of the engine other than fitting a ‘colder’ set of spark plugs and the re-setting of the ignition. However, to get the best from your supercharged engine, it is very important to apply the following general rules.

## Fuel

On all occasions when full performance is likely to be required use a 100 octane rated fuel. However for round town or for trips where a very small amount of boost is used the engine will usually run on normal four-star grade fuel.

## Spark plugs

All engines fitted with a supercharger installation must be fitted with a cooler grade of plug than normally fitted to the unsupercharged engine a Champion types N.3 or N5 or the equivalent heat range of plug should be used for best performance, with standard gap setting.

## Compression Ratio

For all normal roadwork where a maximum boost of not more than 7.5p.s.i. is employed it is not usually necessary to reduce the compression ratio below 9.0:1 on a 1098cc engine. However, generally it is not recommend more than 9.0:1. An ideal ratio for the average engine with a maximum boost of 7.0 p.s.i. would be approximately 8.0:1.

Note 26cc head chamber = compression ratio of 8.0:1
If a higher compression ratio is already being used on the motor, for example 10.0:1, it will be necessary to lower it by inserting a cooper gasket between the cylinder head and the block. The compression ratio should be lowered in proportion to the sq. roots of the absolute pressure.

## Ignition Setting

For most road installations, a static ignition setting of 7º to 10º advance will prove most satisfactory, but as engines vary final adjustments should be made after road testing. For certain engines a limiting bush 5/16” should be fitted over the bob-weight stop peg to limit maximum advance. Also the vacuum advance pipe is normally disconnected. (See fitting instruction)

## Camshaft

Modified camshafts can be fitted to supercharged engines to improve performance, but generally speaking a full race camshaft with a lot of valve overlap should not be used as this will result in a loss of boost pressure and power, as well as a large increase in fuel consumption. This is due to too much of the unburnt or partially burnt gas going straight through the cylinder and out through the exhaust pipe.

## Exhaust

All supercharged engines will benefit to a large extent from the fitting of a bigger bore free flow exhaust manifold and system, allowing the engine which is handling a far greater quantity of gas when supercharged to get rid of this additional gas flow. By reducing or eliminating the exhaust back pressure the engine will run cooler, and therefore produce more power.

## Cylinder heads

As previously mentioned, many engines will benefit from a reduction in compression ratio, which can be achieved by modifying the combustion chamber and or change the pistons for a low compression set, depending on the design of the engine.

## Carburettors

The Shorrock Superchargers use a single S.U. H4 1. 1/2 carburettor or Stromberg unit
With a tickover of around 750 to 850 rpm.
An S.U. H4 Specification on 998cc engine is a 90 main jet, “BG” needle and a blue spring. On 1275cc engine is a 100 main jet, ” A “needle and a red spring.

## Supercharger Unit C75b and C142b.

The supercharger is a positive displacement eccentric-drum-type compressor, employing four vanes. The vanes are mounted radially to the compressor casing, each vane being carried by two ball journals mounted on shafts of ample dimensions, concentric with the outer casing. The vanes are impelled by the internal rotor, which is mounted eccentrically to the outer casing, and through which the vanes pass. The angular motion of the vanes relative to the rotor is accommodated by specially designed trunnions. This construction makes practical the very fine clearances necessary for high efficiencies, since the vanes being mounted radially to the casing, and anchored by the vane shaft, cannot come into contact with the casing, yet can be run at very high speeds.

The four vanes passing through the rotor, and having very fine clearances between their extremities and the casing and the end plates, virtually subdivide the crescent-shaped chamber into four separate chambers. The inlet port of the supercharger is so positioned that as one of the chambers receives its full volume of air the adjacent chamber ( on the inlet side of the until ) is increasing in volume and creating a vacuum at the inlet port. Immediately the vanes have reached the position where, the chamber between them contains its maximum volume, the volume between the vanes diminishes as the space between the rotor and the casing becomes less, thus compressing the charge within the supercharge; itself, before releasing it through the outlet port into the engine manifold.

The rotor itself is carried on its own eight bearings, mounted in the supercharger end plates. The rear end of the rotor is carried by a large ball race bearing whilst the drive end is carried by a substantial roller journal mounted on the drive shaft. The drive shaft is integral with the rotor end plate, the outer race of the roller journal being mounted in the supercharger front end plate. In this end plate is fitted a twin lip seal. (Note: I have found that there are two different size rear end bearing used).

All these bearings and seals are available.

## Lubrication for C75b & C142b

Particular attention has been given to the superchargers lubrication system, which is fully automatic. Due to the special design features only a very small quantity of lubricant is required to enable the supercharger to function withcomplete reliability.

The supercharger lubrication is obtained from the engine oil supply from a “T” piece at oil pressure switch take off, the other end being connected to the supercharger by a 3/16” copper oil pipe. The lubricator consists of reamed 5/16” bore .3125. Into this bore is fitted a finely machined restrictor or metering pin. The size of this pin is dependant upon the engine oil pressure and the viscosity of the oil used, but a range of pins is made to cover nearly all eventualities. The largest of these pins which are lettered alphabetically is the ‘A’ .311. These decrease in size a 1/2 thou. .0005 at a time, thus a ‘B’ pin will be .3105 and a ‘C’ pin .3100 and so on. The supercharger, when it was dispatched by the manufacturer, is fitted with a correct diameter oil metering pin in its lubricator, which should prove satisfactory for initial and permanent running. When starting up from cold there will be a slight amount of smoke from the exhaust, but this is quite normal and should clear after a few minutes running. An oversized metering pin can be fitted should signs of pronounced oiling arise. It is in place of the standard pin. After fitting the new pin check that the supercharger is receiving an adequate supply of oil. Every 5,000 miles remove the lubricator

pin and wipe with a soft rag. **Abrasives must not be used.** To remove the lubricator pin proceed as follows; (Superchargers with external brass lubricator.) Unscrew the plug at the end of the lubricator farthest from the shaft, when the plug spring and pin will come out together. To reassemble, assemble pin, spring and plug together, insert and screw down plug firmly. For superchargers with the lubricator inside the drive shaft unscrew the pipe union at the end of the supercharger, when the spring will push out the pin. To reassemble, insert the spring first, then the pin, and screw up the pipe union firmly.

It will no doubt be realised that if for some reason the engine oil is changed for one of a higher or lower viscosity some adjustment may have to be made by changing the metering pin to compensate for this, and again if a very thin additive is used, thus bringing down the oil viscosity the same will apply. It has been found that the correct rate of oiling for the supercharger is approximately one pint per 850 miles. As this is completely lost to the engine, topping up of the sump oil should be slightly more frequent. Also I should point out that although the oil used by the supercharger is lost to the engine, it has some compensation in the fact that it supplies the engine with upper cylinder lubricant nearly all the time. More especially when the engine is started from cold the presence of oil in the fuel will be visible from the exhaust smoke.

**Note;** The lubricating oil must be kept clean and free from sludge, as dirty, unsuitable or graphited oil will clog the lubricating passage, eventually leading to serious damage.

## Supercharger and engine pulleys

Requiring so little power to drive Shorrock supercharge. Supercharge are generally driven with twin “V” belts off the front main crank pulley. There are many advantages for this type of drive, as it calls for no oiling, or attention, and is absolutely silent. With the exception on the Mini “A” series engine set-up, which requires a twin “V” 55mm jockey wheel due to the length of the vee belts, used.

The main crank pulley is replaced with the three-vee- grooved 115.5mm single vee to twin 89mm dia pulley. The 89mm size pulley is the drive for the supercharger.
However in the 1960's the Mini installation kits used a 2 'V' crankshaft pulley and a single V pulley on the supercharger. Which meant that no modification required the fan cowling.
In the 1970's the Mini installation kit was modified for the 998 and 1275 Coopers, that the single drive belt is replaced by twin 'V' belt, together with new twin 'V' supercharger and 3'V' crankshaft pulleys, the belt tension being adjusted by means of an adjustable tensioner pulley mounted on the front plate.The fitting of the twin 'V' beltdrivesetup does necessitate some modification to the fan cowling and enginemounting on Minis

## Ratio

This area I believe to be a point where pulley sizes and ratio vary from article to article and boost pressure are what one would like to see but not necessarily achievable
Anyway I record my own set-up and the results obtained. The Supercharger used was a C75b on a Downton 998cc Cooper Mk1 Mini with a new engine. Main crank pulley 89mm dia and the first supercharger pulley a 92mm. Running up to 7,000 r.p.m. I only managed to achieve a maximum boost of 6 p.s.i. Ratio = 0.97:1
I changed the supercharger Pulley for an 82mm pulley and at 7,000r.p.m managed to achieve 10 p.s.i. Ratio = 1.085:1 Ah you say but will it hold up? Well I completed the 1998 Monte Carlo rally where we drove some 4000 hard miles in 8 days from Aberdeen to Monte Carlo indirect route and back again. The supercharger never missed a beat !

This following information on ratios and pulley sizes has been handed down over the year.

First to find the ratio the calculation is as follows: - Main crank pulley divided by supercharger pulley. I.e. measure across the flat of the pulley to give you the diameter. If the crank pulley = 89mm and the supercharger = 82mm. The sum of 89 divided by 82 = 1.085:1 = ratio.
Now you have to find out what size of drive belts are required to drive the supercharger from the engine crank. The calculation is as follows: -

Crank pulley = 89 X 1.5708 div by 10 = 13.98
Supercharger pulley = 82 X 1.5708 div by 10 = 12.8806
Add both together = 26.86

Measure the distance between both drive centres i.e. crank centre to supercharger centre. I n my case it = 42cm X by 2 = 84.

Then add the number 26.86 + 84 = 110.86cm. This = the length of vee belt required. and you should be able to find a vee belt close to this size, taking up any slack with the jockey wheel adjustment.

Its worth noting that the pulley I use only has a 40ª inc. (the vee)

Below I have listed some of the ratio and engine size data that I know about.

## Early Duplex belts

**Using a 70mm dia crank pulley: -**

79mm supercharger pulley = drive ratio of 0.886:1 believed to have been used on 850cc engine.
74mm supercharger pulley = drive ratio of 0.946:1 believed to have been used on 950cc engine.
69mm supercharger pulley = drive ratio of 1.0145:1 believed to have been used on 998cc engine.

## Later twin Vee belts

**Using a 89mm dia crank pulley: -**

92mm supercharger pulley = drive ratio of 0.97:1 has been used on 950cc engine.
92mm supercharger pulley = drive ratio of 0.97:1 has been used on 998cc engine
82mm supercharger pulley = drive ratio of 1.085:1 has been used on 998cc engine.
74mm supercharger pulley = drive ratio of 1.2:1 believed to have been used on 1275cc engine.
74mm supercharger pulley = drive ratio of 1.20:1 has been used on 1098cc engine.

Other pulley size also exist, but the above have been used, and size depends on what performance one is looking for.

## Shorrock Supercharger kit

Installation superchargers kits were available for the following range of cars:-

| Make of Car | Supercharger | Carburettor | Maximum boost |
|---|---|---|---|
| Anglia 997cc | C75b | 1 – 11/2” SU | 7.0.p.s.i. |
| Anglia, Cortina 1200 | C75b | 1 – 11/2” SU | 8.0.p.s.i. |
| Cortina 1300 | C75b | 1 – 11/2” SU | 7.0.p.s.i. |
| Escort 1100,1300,1300GT | C75b | 1 – 11/2” or 13/4”SU | 7.0.p.s.i. |
| Capri 1300,1300GT | C75b | 1 –13/4”SU | 7.0.p.s.i. |
| Cortina 1500. 1500 GT | C142b | 1 –2”SU | 7.5.p.s.i. |
| Cortina 1600. 1600 GT | C142b | 1 –2”SU | 7.0.p.s.i. |
| Capri 1600,1600GT | C142b | 1 –2”SU | 7.0.p.s.i. |
| Cortina-Lotus | C142b | 2 – 13/4: SU | 7.0,p.s.i. |
| Escort twin cam | C142b | 2 – 13/4: SU | 7.0,p.s.i. |
| Herald 1200 | C75b | | |
| 1300 Triumph | C75b | | |
| Viva 1098 | C75b | | |
| Hillman Imp | C75b | | |
| Volkswagen 1200 | C75b | | |
| Renault R8 | C75b | | |
| Mini / Cooper | C75b | 11/2” SU | 7.0,p.s.i. |
| Austin A40 | C75b | 11/2” SU | 7.0,p.s.i. |
| MGB | C142b | 2 – 13/4: SU | 7.0,p.s.i. |
| Morris Minor | C75b | 11/2” SU | 7.0,p.s.i. |
| Austin Healey Sprite | C75b | 11/2” SU | 7.0,p.s.i. |
| MG 1300 | C75b | 11/2” SU | 7.0,p.s.i. |
| MG Midget | C75b | 11/2” SU | 7.0,p.s.i. |
| MG TD | C75b | 11/2” SU | 7.0,p.s.i. |

Plus other cars, boats and planes. The list goes on.

## Installation Parts you will require

Installation part form many different items as follows:-

1. Engine to supercharger mounting bracket, but these all vary depending on which car you intent to fit the supercharger to. Also most engine bracket require distance pieces off the timing cover of the engine. This is important, as you won't be able to line up the pulleys and the inlet manifold.

4. One 2 1/2inch length of 42mm id. rubber inlet hose and two jubilee clips
5. Engine Stay
6. Throttle adaptor
7. Engine to supercharger oil supply hose
8. Crank 3 vee pulley
9. Supercharger pulley
10. Two drive belts
11. BSP union and fittings
12. Set of BSF Bolts 1/4 x 11/2 – 5/16 x 1/1/2 – 5/16 x 3/4
13. Distributor bush
14. Metering pins
15. H4 1 1/2 SU Carburettor
16. Distance pieces
17. Gaskets set ( or make your own )
18. Copy of Shorrock fitting instruction for the car you intend to fit a supercharger to.
19. Optional Shorrock boost gauge ( like rocking horse sh-t to find)

A modern modification which one should consider on an 'A' series engine is to replace the rear scroll for BCSC crank oil seal kit due to the possible crank pressure increase.

## Heating

One thing I have found that the supercharge set up runs a lot hotter than normal. This mainly applies to a Mini set-up. But if you have an installation that is running hot you can try the following to over come this:-

1. Have the radiator replaced with a two row high flow unit.
2. Replace the thermostat for a racing blacking kit
3. Fit a 74c thermostat
4. Fit my New 5 Port A-Series Alloy cylinder head with runs a lot cooler, and is 30% more efficient.

Any one of the above should bring the engine temperature back to normal running temperature.

## Books to find and read

As for the published books to read, the following are worth reading if you can obtain a copy. I think most are out of print.

1. Quicker off the mark with Shorrock Superchargers
2. Shorrock Superchargers original brochure
3. Supercharging Cars and Motorcycles by Maurice Brierley
4. Turbocharging and Supercharging for Maximum power and Torque by LJK Setright
5. Automotive Supercharging & Turbocharging Manual – A technical guide by John D Humphries
6. Turbocharging and Supercharging by Alan Allard
7. Shorrock fitting instruction
8. Shorrock supercharger dismantling and reassembling instructions book
9. Shorrock supercharger installation parts catalogue

Plus many of the 1960's Autosports and Custom Car magazine's etc.

I hope this data will help those starting out in supercharging, but be warned it is not cheap, however once you have driven a supercharged car there is going back !

Good luck

**Jonathan Peck** ©

# SUPERCHARGERS

These are all rebuilt Superchargers and we can supply as a complete package or as parts needed to build up your own kit. Our workshop is able to undertake fitting complete system to you're 'A'-Series car, and Quotations are available on request. Superchargers fitted by us carry a 3 months parts and labour guarantee against faulty workmanship.

## Shorrock Supercharger Austin Healey Mk1 Sprite Set up

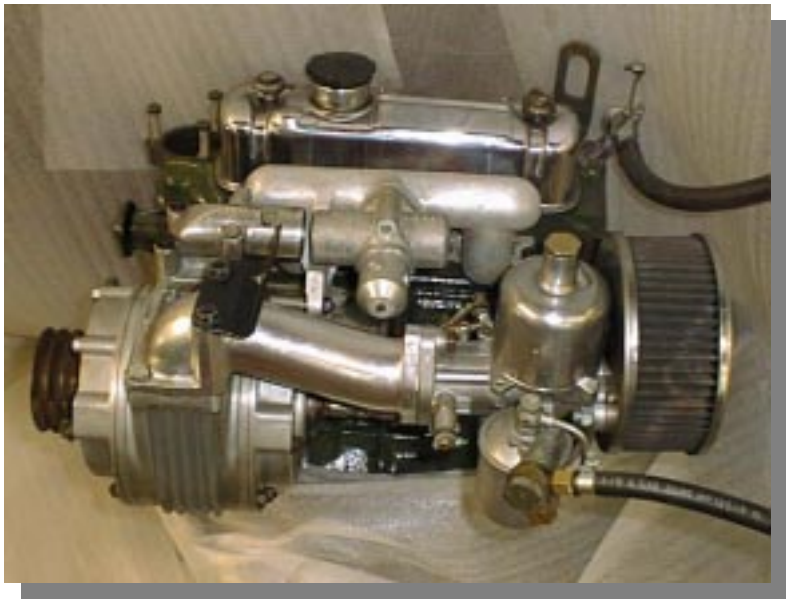
| Qty | Part No | Description | Cost Each | Basic Kit |
|---|---|---|---|---|
| 1 | CPP 017 | RELIEF VALVE PIPE | £150.00 | 1 |
| 2 | PCP 016 | WATER BEND PIPE | £20.00 | |
| 1 | CNM 007 | INDUCTION MANIFOLD | £250.00 | 1 |
| 1 | CDS 046 | FAN DISTANCE PIECE | £25.00 | 1 |
| 1 | CPP 067 / 1 | OUTLET PIPE | £55.00 | 1 |
| 1 | CPP 057 | CARBURETTOR PIPE | £75.00 | 1 |
| 1 | S75 –19 | SUPERCHARGER C75B | £850.00 | 1 |
| 1 | CDS 081 | DISTANCE PIECE | £35.00 | 1 |
| 1 | CNM 001 | EXHAUST MANIFOLD (steel) | £75.00 | |
| 1 | SHL41 | SILICONE HOSE | £7.50 | 1 |
| 1 | CPU 084 | 3V CRANK PULLEY | £120.00 | 1 |
| 1 | CPU 047 | 2V DRIVE PULLEY | £85.00 | 1 |
| 1 | CPL 021 | MOUNTING PLATE | £68.50 | 1 |
| 2 | SPZ 940 | V BELTS | £14.50 | 2 |
| 2 | G – 600 – 3 | BRAIDE OIL HOSE | £35.00 | 1 |
| 2 | G-321-03P | BSP FEMALE SWIVEL FITTING | £7.50 | 1 |
| 2 | G-32103SMP | SWIVEL FEM ST BSP 600 | £7.50 | 1 |
| 1 | 2-T | 1/8" T" FEMALE PIECE | £7.50 | 1 |
| 2 | 2-HN-2RT | 1/8" BSP MALE/ MALE TAPERED FITTING | £5.00 | 1 |
| 1 | | 0 –12 PSI PRESURE GAUGE | £145.00 | |
| 1 | YDB 001 | 1/8" X 1/4" BSP REDUCING UNION | £7.50 | 2 |
| 1 | CSV 010 | 1/4" DISTRIBTOR BUSH | £9.50 | 1 |
| 1 | 43 / 45D4 | NEW DISTRIBUTOR ALL SET UP | £185.00 | |
| 1 | | NEW SU H4 1 1.2" CARB | £265.00 | |

**THE ABOVE BASIC KIT IS OFFERED AT £1495.00**

# Shorrock Supercharger Austin Healey Mk11 Sprite Set up

| Qty | Part No | Description | Cost Each | Basic Kit |
|---|---|---|---|---|
| 1 | CPP 0105 | RELIEF VALVE PIPE | £165.00 | 1 |
| 2 | PCP 016 | WATER BEND PIPE | £20.00 | |
| 1 | CNM 014 | INDUCTION MANIFOLD | £265.00 | 1 |
| 1 | CDS 046 | FAN DISTANCE PIECE | £25.00 | 1 |
| 1 | CPP 067 / 1 | OUTLET PIPE | £55.00 | 1 |
| 1 | CPP 013 / 1 | CARBURETTOR PIPE | £85.00 | 1 |
| 1 | S75 –19 | SUPERCHARGER C75B | £850.00 | 1 |
| 1 | CDS 081 | DISTANCE PIECE | £35.00 | 1 |
| 1 | SHL41 | SILICONE HOSE | £7.50 | 1 |
| 1 | CPU 084 | 3V CRANK PULLEY | £120.00 | 1 |
| 1 | CPU 047 | 2V DRIVE PULLEY | £85.00 | 1 |
| 1 | CPL 048 | MOUNTING PLATE | £68.50 | 1 |
| 2 | SPZ 940 | V BELTS | £14.50 | 2 |
| 2 | G – 600 – 3 | BRAIDE OIL HOSE | £35.00 | 1 |
| 2 | G-321-03P | BSP FEMALE SWIVEL FITTING | £7.50 | 1 |
| 2 | G-32103SMP | SWIVEL FEM ST BSP 600 | £7.50 | 2 |
| 1 | 2-T | 1/8” T” FEMALE PIECE | £7.50 | 1 |
| 2 | 2-HN-2RT | 1/8” BSP MALE/ MALE TAPERED FITTING | £5.00 | 2 |
| 1 | | 0 –12 PSI PRESURE GAUGE | £145.00 | |
| 1 | YDB 001 | 1/8” X 1/4” BSP REDUCING UNION | £7.50 | |
| 1 | CSV 010 | 1/4” DISTRIBTOR BUSH | £9.50 | 1 |
| 1 | 43 / 45D4 | NEW DISTRIBUTOR ALL SET UP | £185.00 | |
| 1 | | NEW SU H4 1 1.2” CARB | £265.00 | |

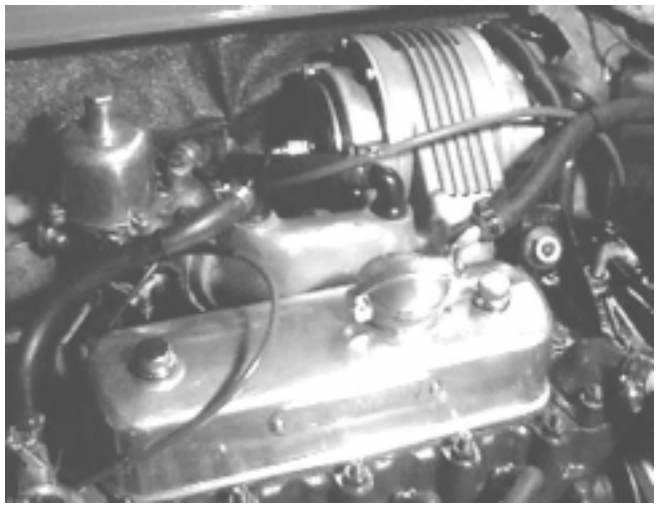
**THE ABOVE BASIC KIT IS OFFERED AT £1520.00**



# Shorrock Supercharger Mini & Mini Cooper Set up

| Qty | Part No | Description | Cost Each | Basic Kit |
|---|---|---|---|---|
| 1 | CPP 0113 / 1 | CARBURETTOR PIPE | £95.00 | 1 |
| 1 | CPP 0108 / 1 | RELIEF VALVE & REAR MOUNT PLATE | £175.00 | 1 |
| 1 | CPP 0107 | OUTLET PIPE | £56.00 | 1 |
| 1 | S75 – 19 | SUPERCHARGER C75B | £850.00 | 1 |
| 1 | CDS 081 | DISTANCE PIECE ON TIMING COVER | £35.00 | 1 |
| 1 | CNM 0015 | INDUCTION MANIFOLD | £300.00 | |
| 1 | CDS 046 | FAN DISTANCE PIECE | £25.00 | 1 |
| 2 | CDS 073 | A & B REAR DISTANCE PIECES | £4.50 | 2 |
| 1 | SHL41 | SILICONE HOSE | £7.50 | 1 |
| 1 | CPU 084 | 3V CRANK PULLEY | £120.00 | 1 |
| 1 | CPU 046 | 2V DRIVE PULLEY | £85.00 | 1 |
| 1 | CPU JP | JOCKY WHEEL | £95.00 | 1 |
| 1 | CPL 045 | MOUNTING PLATE | £75.00 | 1 |
| 1 | CPL 046 | JOCKY WHEEL MOUNTING PLATE | £15.00 | 1 |
| 2 | SPZ 1112 | V BELTS | £16.50 | 2 |
| 2 | G – 600 – 3 | BRAIDE OIL HOSE | £35.00 | 1 |
| 2 | G-321-03P | BSP FEMALE SWIVEL FITTING | £7.50 | 1 |
| 2 | G-32103SMP | SWIVEL FEM ST BSP 600 | £7.50 | 1 |
| 1 | 2-T | 1/8” T” FEMALE PIECE | £7.50 | 1 |
| 2 | 2-HN-2RT | 1/8” BSP MALE/ MALE TAPERED FITTING | £5.00 | 1 |
| 1 | | 0 –12 PSI PRESURE GAUGE | £145.00 | |
| 1 | YDB 001 | 1/8” X 1/4” BSP REDUCING UNION | £7.50 | 1 |
| 1 | CSV 011 | 1/4” DISTRIBTOR BUSH | £9.50 | 1 |
| 1 | CSV012 | 5/16” DISTRIBTOR BUSH | £10.50 | |
| 1 | 43 / 45D4 | NEW DISTRIBUTOR ALL SET UP | £185.00 | |
| 1 | | NEW SU H4 1 1.2” CARB | £265.00 | |

**THE ABOVE BASIC KIT IS OFFERED AT £1485.00**



# Shorrock Supercharger Ford 105E/9 Set up

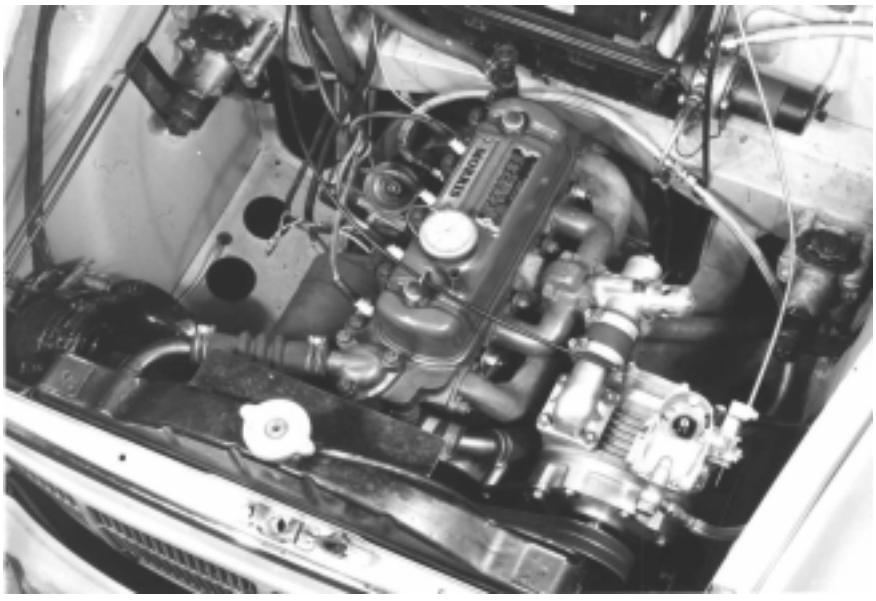
| Qty | Part No | Description | Cost Each | Basic Kit |
|---|---|---|---|---|
| 1 | CPP 083 | RELIEF VALVE PIPE | £48.00 | 1 |
| 1 | CNM 012 | INDUCTION MANIFOLD with out Relief valve | £120.00 | 1 |
| 1 | CNM 012/1 | INDUCTION MANIFOLD with built in Relief valve | £165.00 | |
| 1 | CDS | FAN DISTANCE PIECE | £25.00 | 1 |
| 1 | CPP 067 | OUTLET PIPE | £55.00 | 1 |
| 1 | CPP 0105 | MINIFOLD INLET PIPE | £35.00 | |
| 1 | CPP 073/1 | CARBURETTOR PIPE | £65.00 | 1 |
| 1 | S75 –19 | SUPERCHARGER C75B | £850.00 | 1 |
| 1 | SHL41 | SILICONE HOSE | £7.50 | 1 |
| 1 | CPU | 3V CRANK PULLEY | £120.00 | 1 |
| 1 | CPU 047 | 2V DRIVE PULLEY | £85.00 | 1 |
| 1 | CPL | MOUNTING PLATE | £72.00 | 1 |
| 2 | G – 600 – 3 | BRAIDE OIL HOSE | £35.00 | 1 |
| 2 | G-321-03P | BSP FEMALE SWIVEL FITTING | £7.50 | 1 |
| 2 | G-32103SMP | SWIVEL FEM ST BSP 600 | £7.50 | 1 |
| 1 | 2-T | 1/8” T” FEMALE PIECE | £7.50 | 1 |
| 2 | 2-HN-2RT | 1/8” BSP MALE/ MALE TAPERED FITTING | £5.00 | 1 |
| 1 | | 0 –12 PSI PRESURE GAUGE | £145.00 | |
| 1 | YDB 001 | 1/8” X 1/4” BSP REDUCING UNION | £7.50 | |
| 1 | CSV009 | 1/4” DISTRIBTOR BUSH | £9.50 | 1 |
| 1 | CSV006 | 5/16” DISTRIBTOR BUSH | £10.50 | |
| 1 | 43 / 45D4 | NEW DISTRIBUTOR ALL SET UP | £185.00 | |
| 1 | | NEW SU H4 1 1.2” CARB | £265.00 | |

**THE ABOVE BASIC KIT IS OFFERED AT £1245.00**

# Shorrock Supercharger Austin A40 Set up

| Qty | Part No | Description | Cost Each | Basic Kit |
|---|---|---|---|---|
| 1 | CPP 017 | RELIEF VALVE PIPE | £150.00 | 1 |
| 2 | PCP 016 | WATER BEND PIPE | £20.00 | |
| 1 | CDS 046 | FAN DISTANCE PIECE | £25.00 | 1 |
| 1 | CPP 067 / 1 | OUTLET PIPE | £55.00 | 1 |
| 1 | CPP 013 / 1 | CARBURETTOR PIPE | £75.00 | |
| 1 | S75 –19 | SUPERCHARGER C75B | £850.00 | 1 |
| 1 | CDS 081 | DISTANCE PIECE | £35.00 | 1 |
| 1 | CDS 046 | FAN DISTANCE PIECE | £25.00 | 1 |
| 1 | SHL41 | SILICONE HOSE | £7.50 | 1 |
| 1 | CPU 084 | 3V CRANK PULLEY | £120.00 | 1 |
| 1 | CPU 047 | 2V DRIVE PULLEY | £85.00 | 1 |
| 1 | CPL 048 | MOUNTING PLATE | £68.50 | 1 |
| 2 | SPZ 940 | V BELTS | £14.50 | 2 |
| 2 | G – 600 – 3 | BRAIDE OIL HOSE | £35.00 | 1 |
| 2 | G-321-03P | BSP FEMALE SWIVEL FITTING | £7.50 | 1 |
| 2 | G-32103SMP | SWIVEL FEM ST BSP 600 | £7.50 | 1 |
| 1 | 2-T | 1/8” T” FEMALE PIECE | £7.50 | 1 |
| 2 | 2-HN-2RT | 1/8” BSP MALE/ MALE TAPERED FITTING | £5.00 | 1 |
| 1 | | 0 –12 PSI PRESURE GAUGE | £145.00 | |
| 1 | YDB 001 | 1/8” X 1/4” BSP REDUCING UNION | £7.50 | |
| 1 | CSV 010 | 1/4” DISTRIBTOR BUSH | £9.50 | 1 |
| 1 | 43 / 45D4 | NEW DISTRIBUTOR ALL SET UP | £185.00 | |

**THE ABOVE BASIC KIT IS OFFERED AT £1245.00**



# Shorrock Supercharger Morris Minor Set up

| Qty | Part No | Description | Cost Each | Basic Kit |
|---|---|---|---|---|
| 1 | CPP 017 | RELIEF VALVE PIPE | £150.00 | 1 |
| 2 | PCP 016 | WATER BEND PIPE | £20.00 | |
| 1 | CDS 046 | FAN DISTANCE PIECE | £25.00 | 1 |
| 1 | CPP 067 / 1 | OUTLET PIPE | £55.00 | 1 |
| 1 | CPP 013 / 1 | CARBURETTOR PIPE | £75.00 | |
| 1 | S75 –19 | SUPERCHARGER C75B | £850.00 | 1 |
| 1 | CDS 081 | DISTANCE PIECE | £35.00 | 1 |
| 1 | CDS 046 | FAN DISTANCE PIECE | £25.00 | 1 |
| 1 | SHL41 | SILICONE HOSE | £7.50 | 1 |
| 1 | CPU 084 | 3V CRANK PULLEY | £120.00 | 1 |
| 1 | CPU 047 | 2V DRIVE PULLEY | £85.00 | 1 |
| 1 | CPL 048 | MOUNTING PLATE | £68.50 | 1 |
| 2 | SPZ 940 | V BELTS | £14.50 | 2 |
| 2 | G – 600 – 3 | BRAIDE OIL HOSE | £35.00 | 1 |
| 2 | G-321-03P | BSP FEMALE SWIVEL FITTING | £7.50 | 1 |
| 2 | G-32103SMP | SWIVEL FEM ST BSP 600 | £7.50 | 1 |
| 1 | 2-T | 1/8” T” FEMALE PIECE | £7.50 | 1 |
| 2 | 2-HN-2RT | 1/8” BSP MALE/ MALE TAPERED FITTING | £5.00 | 1 |
| 1 | | 0 –12 PSI PRESURE GAUGE | £145.00 | |
| 1 | YDB 001 | 1/8” X 1/4” BSP REDUCING UNION | £7.50 | |
| 1 | CSV 010 | 1/4” DISTRIBTOR BUSH | £9.50 | 1 |
| 1 | 43 / 45D4 | NEW DISTRIBUTOR ALL SET UP | £185.00 | |

**THE ABOVE BASIC KIT IS OFFERED AT £1245.00**

# Shorrock Supercharger H4 SU Carburettor & Spark Plugs

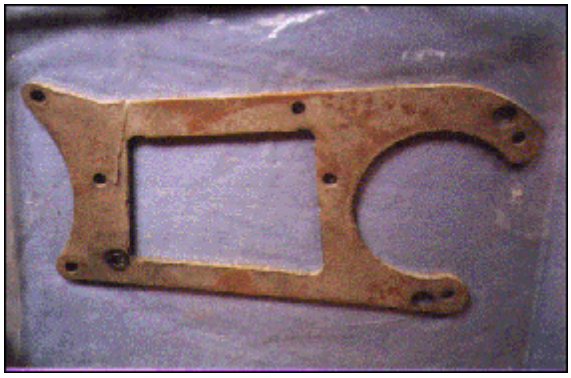
| Qty | Part No | Description | Cost Each |
|---|---|---|---|
| 1 | R.A. | H4S.U. CARB NEEDLE SIZE ROAD USE | £8.50 |
| 1 | R.F. | H4S.U. CARB NEEDLE COMPETITION USE | £8.50 |
| 1 | 0.100 | H4 S.U. CARB MAIN JET | £9.95 |
| 4 | N3 | CHAMPION SPARK PLUGS / EQUIVALENT | £ |
| 1 | 0.90 | H4S.U.CARB MAIN JET | £9.95 |
| 1 | B.G. | H4S.U. CARB NEEDLE SIZE ROAD USE | £8.50 |
| 1 | BLUE | SU CARB SPRING | £6.50 |
| 4 | N6Y | CHAMPION SPARK PLUGS / EQUIVALENT | £ |
| 1 | R.C. | H4S.U. CARB NEEDLE SIZE ROAD USE | £8.50 |
| 1 | 0.100 | H4S.U.CARB MAIN JET | £9.95 |
| 1 | RED | SU CARB SPRING | £6.50 |
| 4 | N6Y | CHAMPION SPARK PLUGS / EQUIVALENT | £ |
| 1 | R.G. | H4S.U. CARB NEEDLE COMPETITION USE | £8.50 |
| 1 | 0.100 | H4S.U.CARB MAIN JET | £9.95 |
| 1 | RED | SU CARB SPRING | £6.50 |
| 4 | N.3 | CHAMPION SPARK PLUGS / EQUIVALENT | £ |
| 1 | | SU H4 NEW CARBURETTOR | £265.00 |

# Shorrock Supercharger Hoses

| Qty | Hose size | Description | Part No | Required location | Cost Each |
|---|---|---|---|---|---|
| 1 | 41mm x 51mm | SILICONE HOSE | SHL41 | OUT LET PIPE INTERCONNECT | £7.50 |
| 2MTR | 16MM OR 5/8” | HEATER HOSE | 836-10 | INLET MANIFOLD | £0.85 per foot |
| 2 | 3/8” X 3/8” | S/ ELBOW MALE/FEM | RS231-6335 | WATER INLET MANIFOLD | £2.95 |
| 2 | 3/8” | MALE INSERT | RS257-7906 | WATER INLET MANIFOLD | £1.75 |
| 1 | 1/4” X 12” | COPPER TUBE | CCP 0130 | | £10.50 |

# Shorrock Supercharger Mounting plates

| Qty | Bracket no | Description | Spacer size | Rear spacer | Cost Set |
|---|---|---|---|---|---|
| 1 | CPL 045 | 5MM FRONT PLATE | 1.3/4 INCHES | 17MM | £75.00 |
| 1 | CPL 046 | 5MM JOCKEY WHEEL PLATE | | | £15.00 |
| 1 | CPL 021 | 5MM FRONT PLATE | 1.3/4 INCHES | NONE | £68.50 |
| 1 | CPL 048 | 5MM FRONT PLATE | 1.3/4 INCHES | NONE | £68.50 |
| 1 | CPL 047 | 5MM FRONT PLATE | 1.3/4 INCHES | NONE | £68.50 |
| 1 | CPL 100E | 5MM FRONT PLATE | | | £75.00 |
| 1 | CPLALB | 5MM FRONT PLATE | | | £75.00 |
| 1 | CPL 0105E | 5MM FRONT PLATE | | | £72.00 |
| 1 | CPL 037 | 5MM FRONT PLATE | | | £65.00 |
| 1 | CPK | FRONT MOUNTING BRACKET | | | £ |
| 1 | CDS | 5MM FRONT PLATE | | | £95.00 |



# Shorrock Supercharger Fans

| Qty | Type | Part No | Description | Cost Each |
|---|---|---|---|---|
| 1 | 2 | AEA301 | TWO BLADED FAN | £15.50 |
| 1 | | 2A803 | STIFFENER | £4.50 |
| 1 | 1/4” | AEG560 | BL DISTANCE PIECE | £5.50 |

# Shorrock Supercharger Thermostat

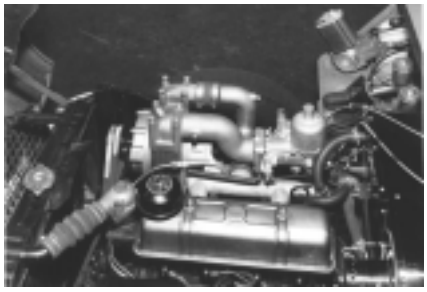
| Qty | Part No | Description | Cost Each |
|---|---|---|---|
| 1 | AJJ4012 | RACING BLANKING KIT | £12.00 |
| 1 | GTS 102 | 74C THERMOSTAT | £5.50 |

# Shorrock Supercharger Distributors

| Qty | Part No | Description | Cost Each |
|---|---|---|---|
| 1 | DIS 100 AR | DISTRIBUTOR | |
| 1 | DIS 100 AR | DISTRIBUTOR | |
| 1 | 43 / 45D4 | DISTRIBUTOR | £185.00 |

# Shorrock Supercharger Distributors Bushes

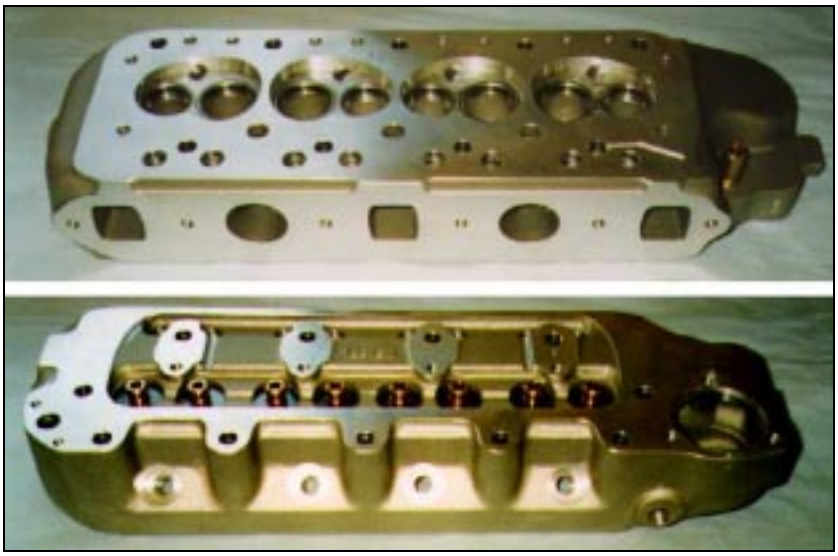
| Qty | Part No | Description | Cost Each |
|---|---|---|---|
| 1 | CSV 010 | 1/4” DIA BUSH | £9.50 |
| 1 | CSV 012 | 5/16” DIA BUSH | £10.50 |
| 1 | CSV 011 | 1/4” DIA BUSH | £9.50 |
| 1 | CSV 006 | 5/16” DIA BUSH | £10.50 |
| 1 | CSV 009 | 1/4” DIA BUSH | £9.50 |



TRIUMPH HERALD

TRIUMPH VITESSE

# Alloy Head To Suit Supercharging



NEW ALLOY HEAD WITH 23CC CHAMBER WITH 30% INPROVEMENT IN POWER WITH EXCELLENT COOLING PROPERTIES FOR SUPERCHARGERING. A BOLT ON MOD FOR 1275CC ENGINES. YOU WILL HAVE TO POCKET A BLOCK IF USED ON 850.948, 977, 998 AND 1098CC ENGINES.

**Cost £625.00**

# Shorrock Supercharger Bearing and Seal Kit

| Qty | Bearing No | Oil Seal Number | Location | Cost Each |
|---|---|---|---|---|
| 8 | 16004 | | VANE CARRIER | £7.50 |
| 1 | TYPE TWO XLJ2,1/4J | | REAR END PLATE | £ POA |
| 1 | TYPE ONE 6010 | | REAR END PLATE | £17.50 |
| 2 | | W13708737R5 | FRONT SHAFT SEAL | £8.50 |
| 1 | N205C3 | | FRONT END PLATE | £32.00 |
| 1 | JP/OB | | JOCKEY WHEEL | £ POA |

XLJ2,1/4J

N205C3

16004

W13708737R5

# Shorrock Supercharger Nut & Bolts

| Qty | Bolt Size | Location | Supercharger | Cost Each |
|---|---|---|---|---|
| 8 | 1/4 X 1 1/2” BSF | FRONT FACE | C75B | £ |
| 8 | 5/16 X 1 1/2” BSF | REAR FACE | C75B | £ |
| 2 | 1/4 X 2 1/4” BSF | REAR MOUNTING BRACKET | C75B | £ |
| 2 | 5/16 X 3/4” BSF | FRONT MONTING BRACKET | C75B | £ |
| 1 | 1/4 X 2” BSF | FRONT MONTING BRACKET | C75B | £ |
| 2 | 7/16 X 2 1/4” UNF | FRONT DISTANCE PIECE TIMING COVER | C75B | £ |
| 2 OR 4 | 5/16 X 3/4” BSF | INLET CARB PIPE | C75B | £ |
| OR 2 | 5/16 X 2” BSF | INLET CARB PIPE | C75B | £ |
| OR 2 | 5/16 X 2 1/4” BSF | INLET CARB PIPE | C75B | £ |
| 2 OR 4 | 5/16 X 3/4” BSF | OUTLET PIPE | C75B | £ |
| OR 2 | 5/16 X 2” BSF | OUTLET PIPE | C75B | £ |
| OR 2 | 5/16 X 2 1/4” BSF | OUTLET PIPE | C75B | £ |
| 1 | | DRIVE SHAFT NUT | C75B | £ |
| 2 | 1/4 X 2 1/4” BSF | POP OFF VALVE | C75B | £ |
| 2 | 3/8 X 1” BSF | H4 CARB BOLTS | C75B | £ |

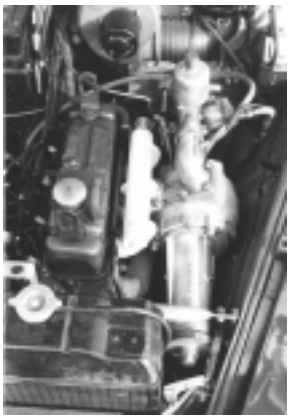
# Shorrock Supercharger Jublilee Clips

| Qty | J-Clip Size | Location | Supercharger | Cost Each |
|---|---|---|---|---|
| 2 | 28 = 34 – 57MM | OUTLET INTERCONNECTING PIPE | C75B | £0.90 |
| 2 | 5/8” | WATER PIPES | C75B | £0.65 |

# Shorrock Supercharger Withdrawal bolts

| Qty | Bolt Size | Location | Supercharger | Cost for set |
|---|---|---|---|---|
| 2 | 3/16” | ROTOR DRIVE PLATE | C75B & C142B | £5.50 |

MGA 1500CC SET UP



RILEY 1500 SET UP

# Shorrock Supercharger Models

| Qty | Casting No | Description | Cost Each |
|---|---|---|---|
| 1 | C142B | HORSEHOE TYPE | £750.00 |
| 1 | C75B | HORSEHOE TYPE | £850.00 |
| 1 | C75S | STRAIGHR TYPE | £950.00 |
| 1 | C75B | HORSEHOE TYPE WITH LONG NOSE | £1050.00 |

C75B HORSEHOE TYPE

C75S STRAIGHT TYPE

C75B HORSEHOE TYPE WITH LONG NOSE

THERE ARE THREE TYPES OF CASING USED, TWO OF THE ABOVE LISTED ARE CALLED HORSESHOE TYPE THE THIRD IS CALL A STRAIGH CASING AS THE INLET AND OUT LET ARE AT 9 O CLOCK AND 3 O CLOCK.

# Shorrock Supercharger Metering Pins

| Qty | Pin No | Description | Cost Each |
|---|---|---|---|
| 1 | CMP 002A | METERING PIN A = .311 THOU | £16.00 |
| 1 | CMP 002B | METERING PIN B = .3105 THOU | £16.00 |
| 1 | CMP 002C | METERING PIN C = .3100 THOU | £16.00 |
| 1 | CMP 001JP | OVERSIZE METERING PIN | £17.50 |
| 1 | A | METERING PIN A = .304 THOU C75B WITHOUT CONNECTION TO ENGINE OIL SUPPLY | |
| 1 | B | METERING PIN A = .306 THOU C75B WITHOUT CONNECTION TO ENGINE OIL SUPPLY | £18.50 |

FORD 100E ALBATROSS BOAT SET UP

# Shorrock Supercharger Pulleys

| Qty | Part No | Description | Cost Each |
|---|---|---|---|
| 1 | CPU 084 | 89MM 3V CRANK PULEY | £120.00 |
| 1 | CPU 047 | 92MM 2V SUPERCHARGER PULLEY | £85.00 |
| 1 | CPU 046/1 | 82MM 2V SUPERCHARGER PULLEY | £85.00 |
| 1 | CPU 093/S | 74MM 2V SUPERCHARGER PULLEY | £85.00 |
| 1 | CPU JP | 55MM JOCKEY WHEEL | £95.00 |

PART NO CPU 047

PART NO CPU 046

PART NO CPU 093

P/NO CPU 084


PART NO CPU / JP

# Shorrock Supercharger Drive Belts

| Qty | Part No | Crank Pulley | S/C Pulley | Centres | vehicle | Cost Each |
|---|---|---|---|---|---|---|
| 2 | SPZ 1120 | 89MM | 92MM | 42CM | MINI | £16.50 |
| 2 | SPZ 1112 | 89MM | 82MM | 42CM | MINI | £16.50 |
| 2 | SPZ 1087 | 89MM | 74MM | 42CM | MINI | £16.50 |
| 2 | SPZ 940 | 89MM | 92MM | 33CM OR 13” | SPRITE | £14.50 |
| 2 | SPZ 922 | 89MM | 82MM | 33CM OR 13” | SPRITE | £14.50 |
| 2 | SPZ | 89MM | 74MM | 33CM OR 13” | SPRITE | £14.50 |

# Shorrock Supercharger C75B Spares

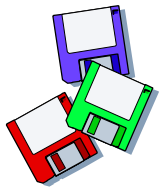
| Qty | Part No | Description | Cost Each |
|---|---|---|---|
| 1 | C75B | FRONT END PLATE | £150.00 |
| 1 | C75B | ROTOR DRIVE PLATE | £165.00 |
| 1 | C75B | MAIN CASING | £280.00 |
| 1 | C75B | ROTOR | £400.00 |
| 1 | C75B | VANE SHAFT | £220.00 |
| 1 | C75B | REAR END PLATE | £185.00 |
| 4 | C754 | TRUNNIONS | £55.00 |
| 4 | C75B | VANES | £65.00 |
| 8 | C75B | VANE AND BEARING CARRIER | £ POA |
| 1 | C75B | VANE NUT | £20.00 |
| 1 | C75B | LOCKING PLATE | £25.00 |
| 1 | C75B | RELIEF VALVE | £86.00 |

The supply of second hand spares is finite so listed items may not always be in stock or available. It is therefore essential when ordering second hand goods that you enquire as to availability.

# Supercharger Computer Program on CD or disc

We have now a new Excel program that allow you to calculate what size supercharger pulley require to Increase performance. What size drive belts you would require, and the maximum RPM you can run engine and supercharger. Included in this is the ABC of supercharging catalogue , all the fitting instructions listed below, plus photos old press cuttings and lots more.

**Cost** £25.00



# Shorrock Supercharger C75B Copies of Fitting Instructions

| Qty | Part No | Description | Cost Each |
|---|---|---|---|
| 1 | C75B | AUSTIN HEALEY SPRITE MK1 / 2 | £8.50 |
| 1 | C75B | MINI / MINI COOPER | £8.50 |
| 1 | C75B | MORRIS MINOR | £8.50 |
| 1 | C75B | A40 | £8.50 |
| 1 | C75B | FORD 105/9 | £8.50 |
| 1 | C75B | FORD | £8.50 |
| 1 | C754 | MG TB/TC | £8.50 |
| 4 | C75B | TRIUMPH HERALD | £8.50 |
| 8 | C75B | DISMANTLING & REASSEMBLING | £9.50 |
| 1 | C75B | PRESS CUTTINGS | £5.50 |

# Supercharger engine fitting projects

We can supply a complete supercharger package of all the parts needed to build up your own engine, or have us fit a standard kit to your car. If we don't have a kit we can prototype your car to fit a supercharger. Our labour costs are very reasonable at £20.00 an hour.

We always have other Supercharger s and kits available that aren't listed within this spares catalogue, so please contact us with your requirements and see if we can help.

**We also offer a precision sand casting of magnesium or aluminium alloy service along with full precision machine shop facilities .**

**BSCS also offer a car or engine collection and delivery service. (Terms available) – 70p per mile Prices do not include UK Vat which must be added as required.**

# ***Cure for BMC A-SERIES engine rear crank oil leaks.***

OIL LEAKS from the rear main bearing is a common problem with BMC A- series engines as used in Austin A35s, Morris Minors, MG Midgets, A40's, Austin Healey Sprites and Marina/Ital.

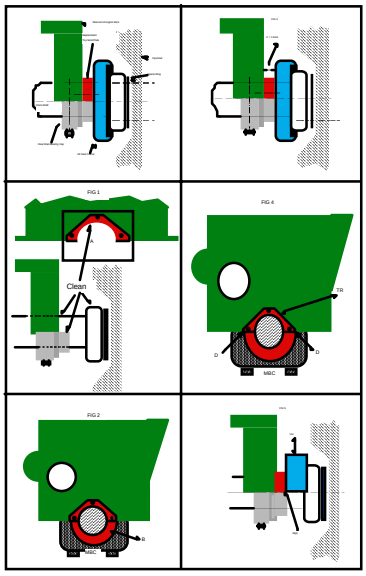
On these engines there is no conventional rubber seal, instead there is a throw plate machined as part of the crankshaft and sited close to the block. A scroll cut into the crank extension directs oil that gets past the throw plate back towards the plate into the drain hole. This arrangement can cope with about 90 percent of the oil flow, and a close-fitting mechanical seal at the outer end is designed to cope with the remainder.
When the engine wears, the mechanical seal becomes oval and the leak gets worse and worse.

***British Classic Sports Cars*** of Aberdeen Scotland ***Tel 01224 868633 Fax 01224 868151*** are selling a three-part carrier assembly that bolts to the rear of the engine block and carries a conventional lip seal that runs on the flywheel mounting boss at the end of the crank. This is effective on all but badly worn engines, but do ensure that the breather system is working correctly. These kits fit the 984cc both types of 1098cc,1275cc and the 1300cc.

*10cc 1098 engine fitted with the above oil seal kit*

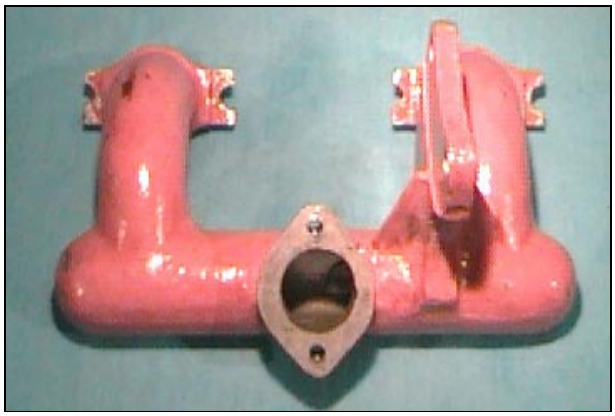
Being prepared to fit into an 1962 Ex works Austin Healey Sprite

***£68.50 Plus P&P***



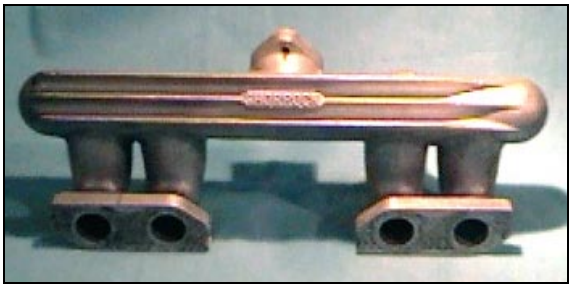
## Shorrock Supercharger Manifolds

SPRITE MK1 OR A40 INLET MANIFOLD NO CNM 007



SPRITE MK2/MG MIDGET INLET MANIFOLD NOCNM 014

FORD 109E INLET MANIFOLD NO CNM 012 /1



FORD 105E INLET MANIFOLD NO CNM 012

## Shorrock Supercharger Outlet Pipe

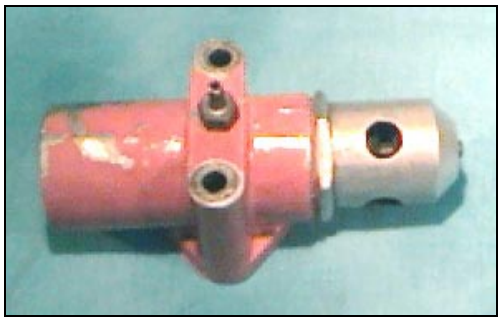
SPRITE  OUTLET PIPE NO CPP 067

MINI OUTLET PIPE NO CPP 0107

## Shorrock Supercharger Relief Valves

MINI RELIEF VALVE CPP 0108/1

SPRITE MK1 RELIEF VALVE
CPP 017



SPRITE MK1 1 RELIEF VALVE
CPP 0105

FORD ESCORT 1300 RELIEF VALVE

RELIEF VALVE CPP 083 FORD CLASSIC
MORRIS MINOR SIDE VALVE

## Shorrock Supercharger Carburettor Pipes

FORD 105E CARB PIPE
FORD CLASSIC

SPRITE MK2 / MIDGET CARB PIPE
CPP 013/1

HERALD CARB PIPE NO CPP 0124

FORD CARB PIPE NO CPP 073
CORTINA/ANGLIA/MORRIS MINOR

MINI CARB PIPE NO 0113
LATER TYPE

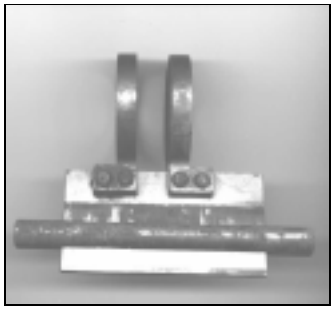
MINI CARB PIPE NO CPP 0113
EARLY TYPE

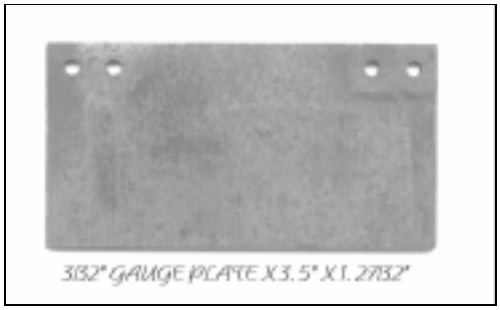
MK1 SPRITE / A40 CARB PIPE NO CPP 057

ALLARD SHORROCK FORD CASTING

FORD 105E MANIFOLD INLET PIPE CPP 0105
FORD CORTINA MK1

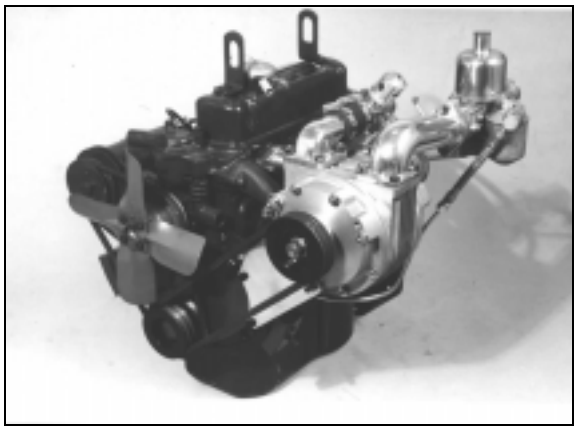
## Shorrock Supercharger Vane






BRONZE VANE CARRIER WITH VANE AND VANE TRUNNION - C75B SUPERCHARGER VANE

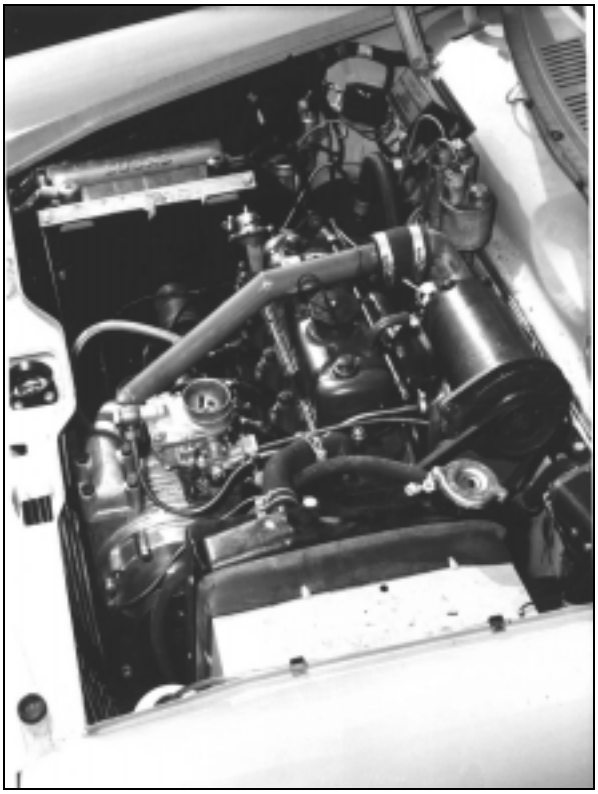
## Shorrock Supercharger Installations Photos



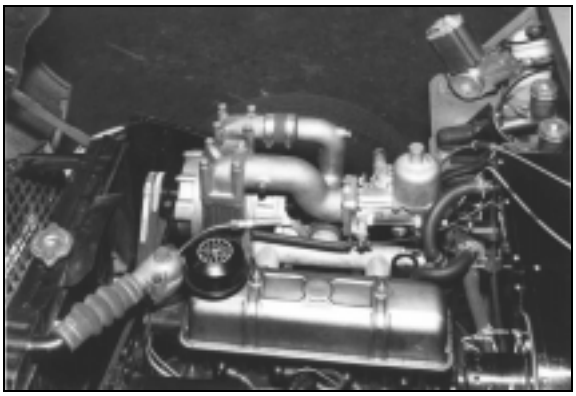
SHORROCK SUPERCHARGER C75B
FITTED TO BMC 'A' SERIES ENGINE ( Sprite, Minor, A40)

SHORROCK SUPERCHARGER C75B
FITTED TO FORD CORTINA ENGINE

SHORROCK SUPERCHARGER C75B
FITTED TO FORD 105E ENGINE

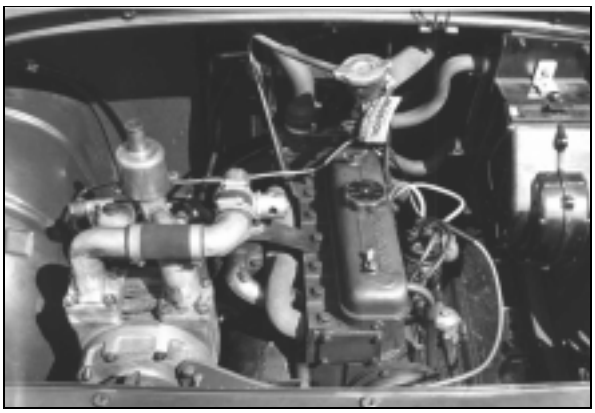


SHORROCK SUPERCHARGER C75B
FITTED TO MORRIS 1100 ENGINE

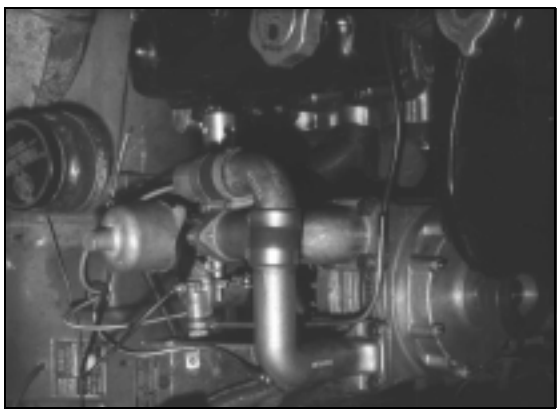


SHORROCK SUPERCHARGER C75B
FITTED TO HERALD 1200CC ENGINE

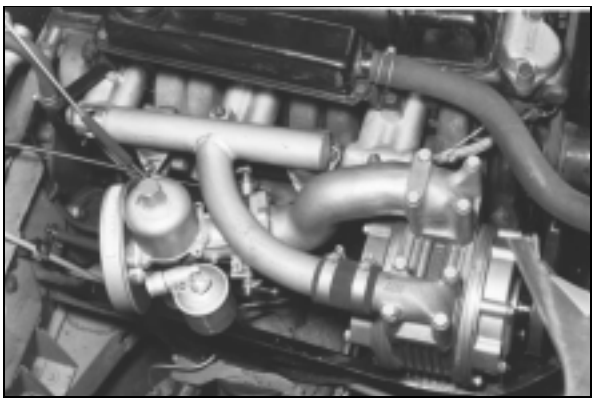
SHORROCK SUPERCHARGER C75B
FITTED TO LAND ROVER ENGINE



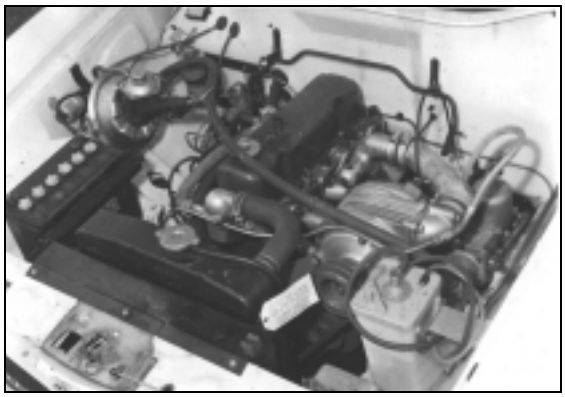
SHORROCK SUPERCHARGER C75B
FITTED TO R8 ENGINE



SHORROCK SUPERCHARGER C75B
FITTED TO SIMCA ENGINE

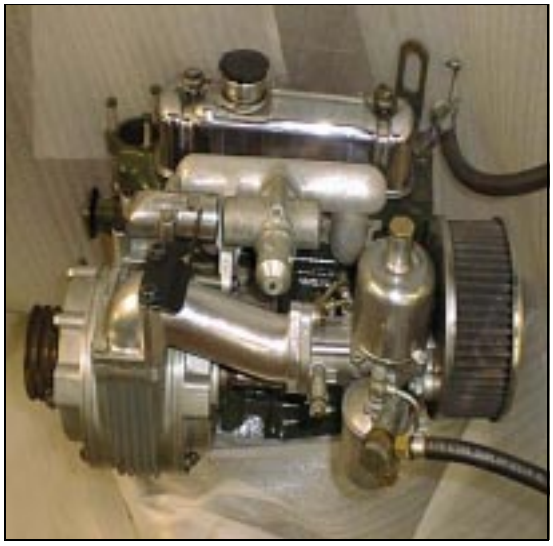


SHORROCK SUPERCHARGER C75B
FITTED TO TRIUMPH VITESSE 6



SHORROCK SUPERCHARGER C75B
FITTED TO VAUSHALL VX 4/90

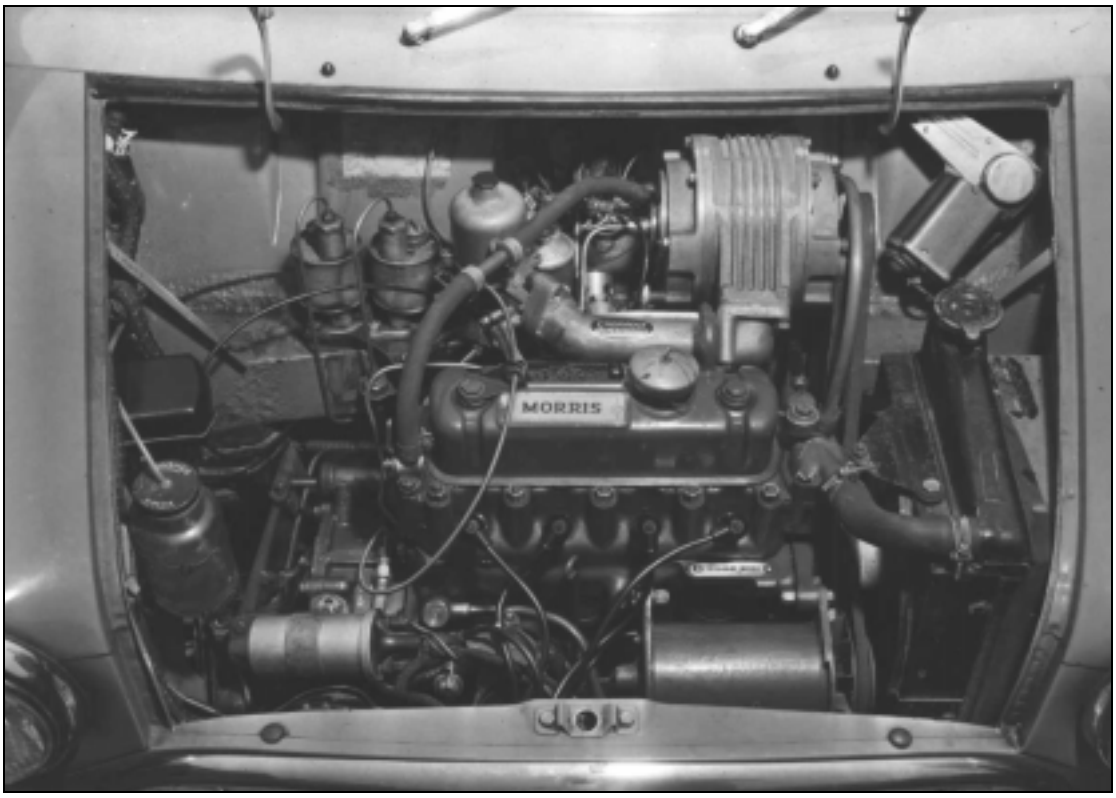
SHORROCK SUPERCHARGER C75B
FITTED TO MK11 AUSTIN HEALEY SPRITE



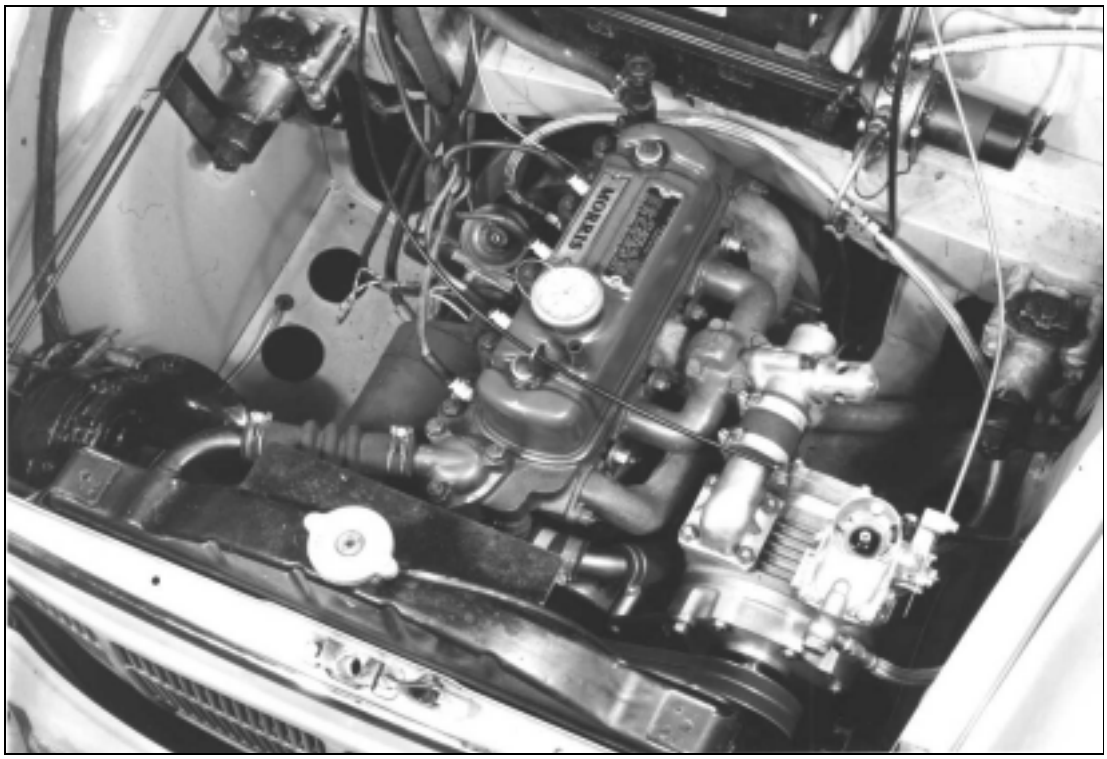
SHORROCK SUPERCHARGER C75B
SPRITE MK11 SUPERCHARGER KIT

SHORROCK SUPERCHARGER C75B
FORD 100E ALBATROSS KIT

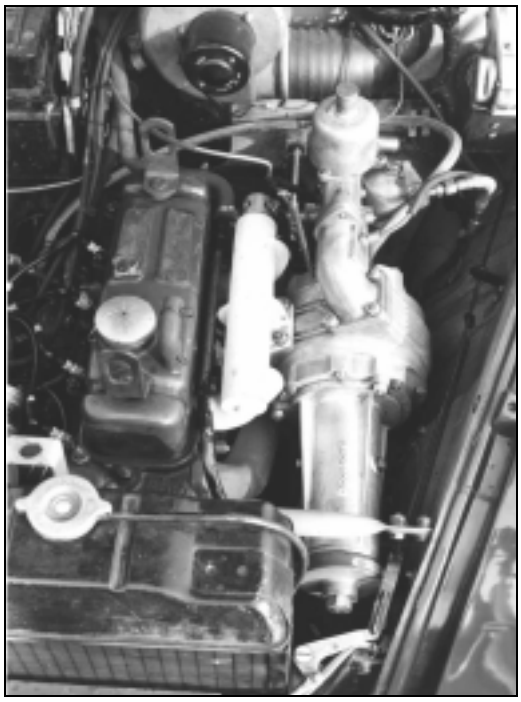
SHORROCK SUPERCHARGER C75B
FITTED TO MOTOR BIKE



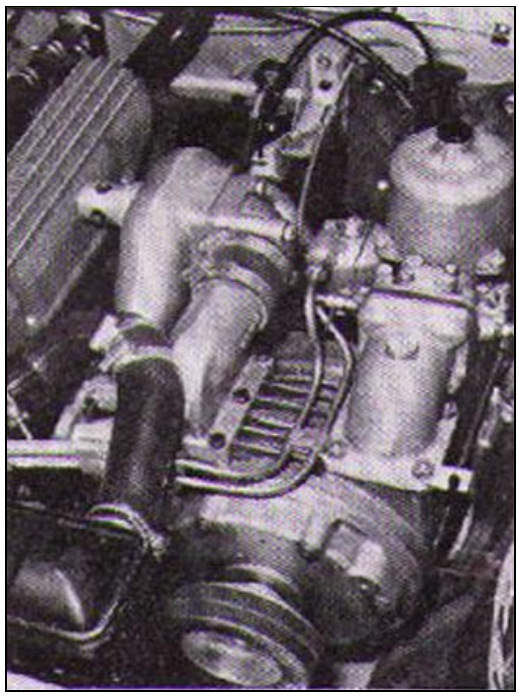

SHORROCK SUPERCHARGER C75B FITTED TO MINI ENGINE.



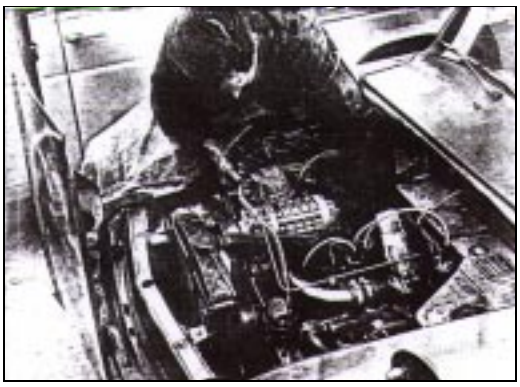

SHORROCK SUPERCHARGER C75B FITTED TO MORRIS MINOR



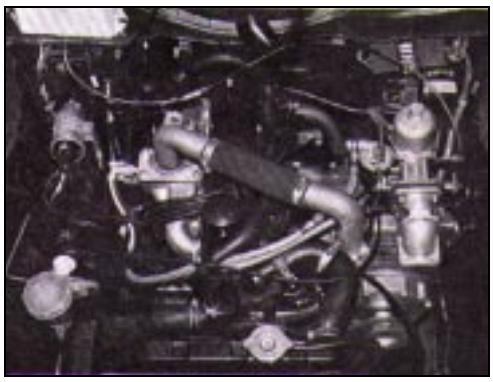
SHORROCK SUPERCHARGER LONG NOSE C75B
FITTED TO RILEY 1.5 OR M.G. MAGNET



SHORROCK SUPERCHARGER C142B
FITTED TO FORD 1500 GT



SUPERCHARGER FITTED FORD 100E

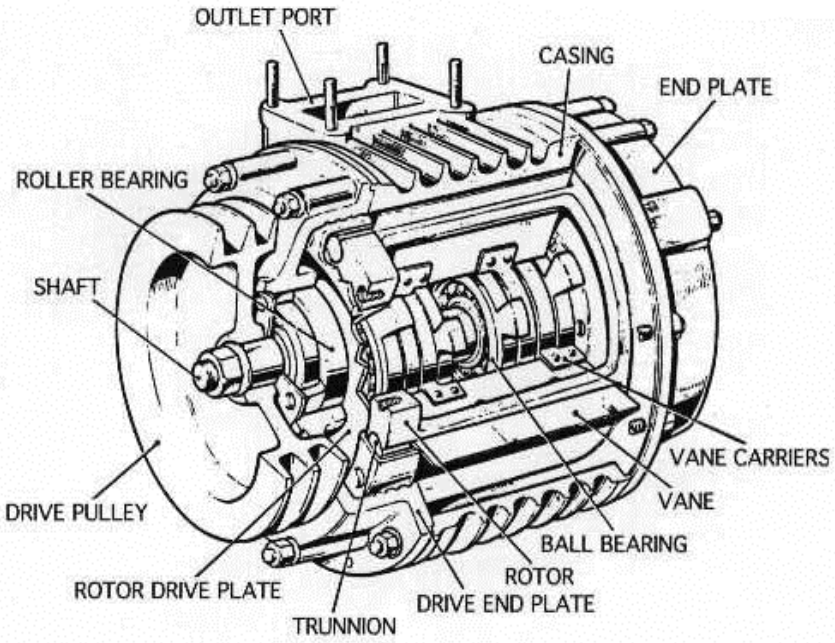


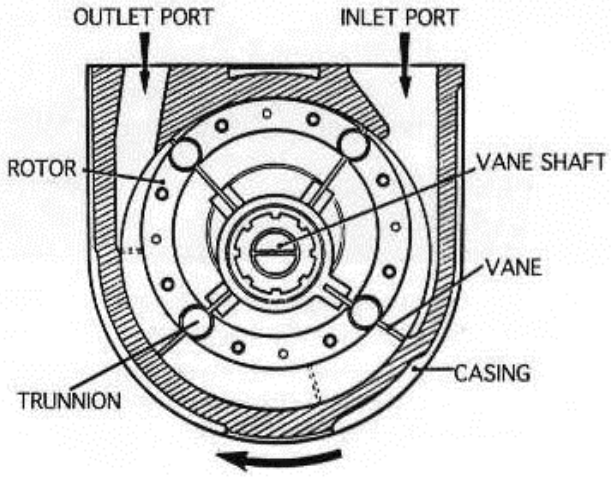
SHORROCK SUPERCHARGER C142B
FITTED TO FORD ESCORT 1300

SHORROCK SUPERCHARGER C75B
FITTED TO MGA 1500 ENGINE

SHORROCK SUPERCHARGER C142B
FORD SETUP

# Shorrock Supercharger Exploded View
# C75B and C142B




END VIEW

OILING SYSTEM FOR THE C75B AND 142B ©

## S.U. Carburettor

Setting of single H type carburettor.

Carburettor details:-

- Type S.U. 1 1/2" H4
- 948cc Needle size RA for road use
- 948cc Needle size RF for competition use
- Main Jet .0100

- 998cc Needle size BG for road use
- Blue Spring
- Main Jet .0100

- 1275cc Needle size RC for road use
- 1275cc Needle size RG for competition use
- Red Spring

As the needle size is determined during engine development, tuning of the carburettor is confined to correct idling setting.
The engine should be run until it has attained its normal temperature, then close the throttle completely by unscrewing the throttle adjusting screw until the face of the screw just clears its stop. Open it by screwing down the screw 1 1/2 turns.

Remove the piston and suction chamber, disconnect the mixture control wire and screw the jet adjusting nut until the jet is flush with the bridge of the carburettor, or 'full up' if this position cannot be obtained. Replace the piston and suction chamber assembly, and check that the piston falls freely on to the bridge of the carburettor ( by means of the piston lifting pin.) Turn down the jet adjusting nut two complete turns (12 flats).

Re-start the engine and adjust the throttle adjusting screw to give the desired idling speed, generally 750 - 850 rpm.

Turn the jet adjusting nut until the fastest idling speed is obtained, consistent with even firing. During this adjustment it is necessary to ensure that the jet is pressed upwards and is in contact with its adjusting nut.
As the mixture is adjusted the engine will probably run faster, it may therefore be necessary to unscrew the throttle adjusting screw a little, in order to reduce the speed.

Now check the mixture strength by lifting the carburettor piston (by means of a lift pin situated on the side of the carburettor body) by approximately 1/32" (.75mm)

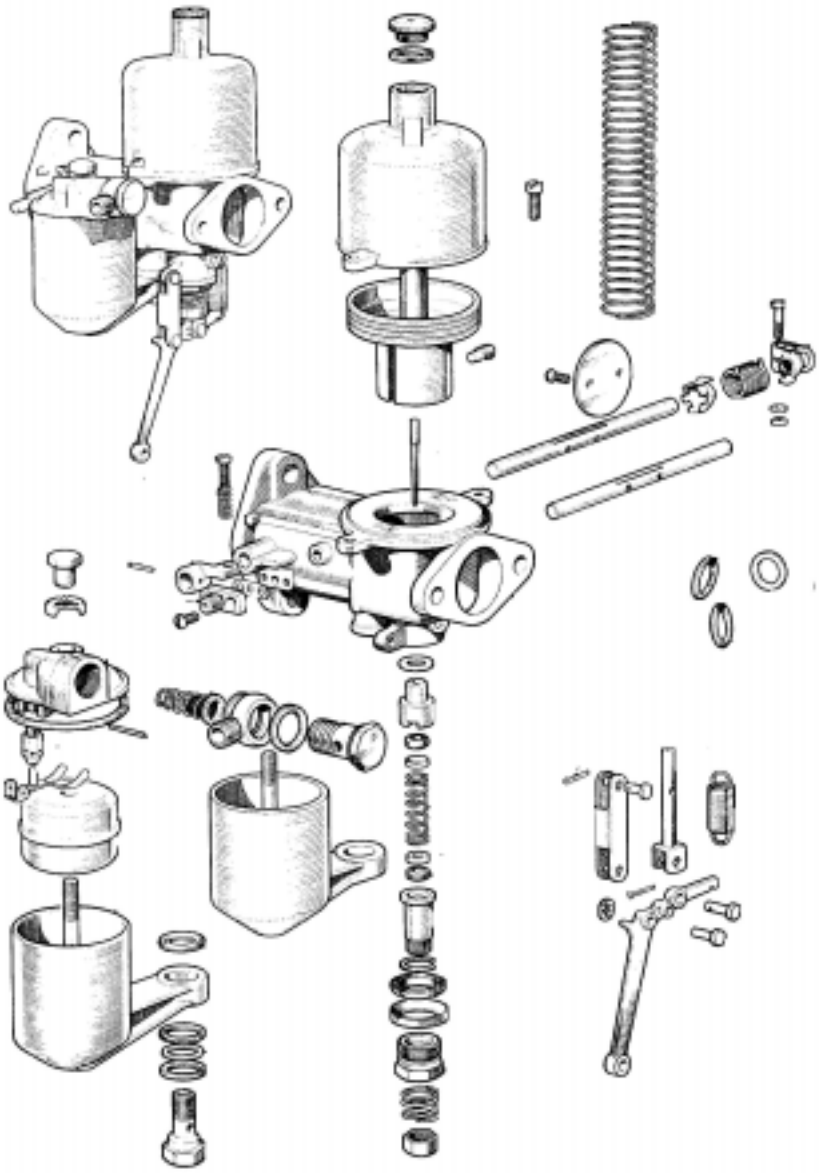
If:-

1. The engine speed increase and continues to run faster, this indicates that the mixture is too rich.
2. The engine speed immediately decrease, this indicates that the mixture is too weak.
3. The engine speed momentarily increases very slightly, this indicates that the mixture is correct.

When the mixture is correct the exhaust note should be regular and even. If it is irregular with a splashy type of misfire and colourless exhaust, the mixture is too weak. If there is a regular or rythmical type of misfire. Together with a blackish exhaust, than the mixture is too rich. N.B. It is always best to err on the rich side rather than set the carburettor weak.

Re-connect the choke control wire with approximately 1/16" free movement before it starts to pull on the jet lever.

Fill the carburettor dash pot with clean S.A.E. 20 engine oil.



**S.U. H4 1 1/2 inch AUC 818 Carburettor used on Mini or Sprite Shorrock C75B Superchargers**

# BMC 'A' Series Engine

## Ignition setting and modification to distributor

1. Remove the distributor from the engine.

2. Remove the bakelite cap rotor arm and top plate to expose the bob weights.

3. Mark the weights so that they can be returned to their respective positions after removal.

4. Examination of the weights will show that they are limited in their outward throw by a peg which is cast into the weight itself. This peg fits into a slotted hole, located beneath it when in position. Thus the maximum movement of the weight is controlled by the pegs movement with this slot.

5. The peg on the weight which carries the heavy spring must be bushed to further limit the movement. A 1/4" dia bush should be used, the centre hole of which must be a good fit on the peg.
   With the bush in position, lightly pean the head of the peg to hold the bush securely. On later distributors where the limit for the bob weights is in the form of a separate steel peg riveted to the bottom plate of the distributor a 5/16" bush should be used. This peg also anchors the spring.

6. Return the modified weight to its position in the distributor. Check that both weights and springs are fitted correctly.

7. Re-assemble distributor, check contact points and gap and return to engine.

8. Re- check the ignition setting and give 7 - 10 degrees static advance.

**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 12º standard Mini 8º - 10º static.

## Servicing Instructions

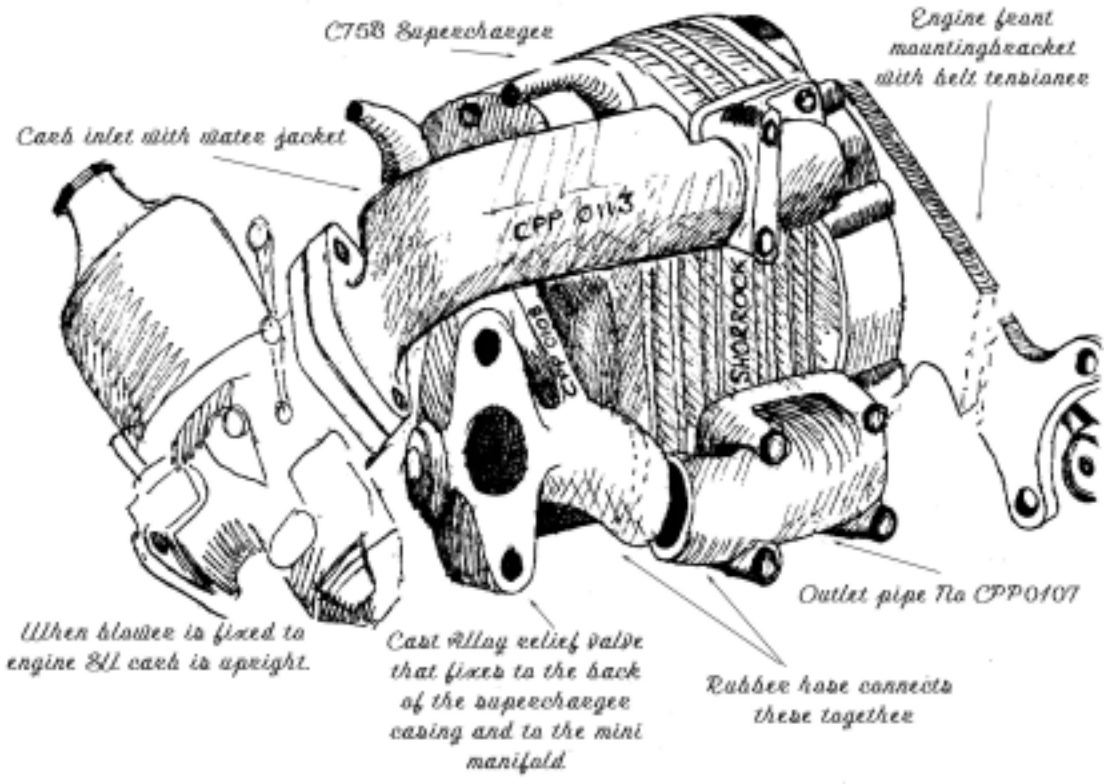
Introduction:- The Shorrock Supercharger is a precision mechansim, which is fully tested of the years. Like any other machine however, it requires running in and should be driven for the first 250 miles. During this period the maximum road speed in top and third gears should not exceed 45 m.p.h. and 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**

**Shorrock Supercharger C75B Installation**
Fitting Instructions for Austin Healey Sprite

## Introduction.

The design of the supercharger set for the 948, 1098 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 upwards towards, and is driven by twin “V” pulley belt from the front end of the crankshaft.

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.

## Preliminary Instructions.

- Drain cooling system and disconnect battery.
- Disconnect carburettor controls, petrol pipe and vacuum ignition control pipe. Remove induction manifold and carburettors complete. Remove radiator, and slacken dynamo belt and remove from crankshaft pulley and fan.

## Crankshaft Pulley

You must slacken off all engine-mounting bolts to allow the front of the engine to be raise some 3" to allow access to remove the engine crankshaft pulley. and fit the new 3 grove crankshaft pulley and tighten the securing bolt. Then reinstate the engine mountings.

## 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 alloy distance piece should now be fitted using 2 x 2 1/4" UNF bolts. Screw into the existing tapped holes and protrude to the rear of the engine front plate where they are finally locked off by using two nuts and spring washers.

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

## Fitting Supercharger

The supercharger can now be positioned. Locate it by the new cast induction manifold, which should be already bolted to the supercharger, to the cylinder head. If care is taken the manifold and supercharger can be fitted as one.
Once the supercharger is in position all nuts, bolts and jubilee clips may now be finally tightened including the locking nuts on the front plate.

## Fitting Carburettor and Controls

Fit carburettor to supercharger inlet 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.
*A separate leaflet is enclosed within this booklet explaining the carburettor set-up and jetting.*

## 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.

## Fan

Refit the fan using the aluminium distance piece to bring the fan clear of the supercharger drive belts. Use 4 longer 7/16" UNF bolts.

## Radiator

Replace the radiator and you may have to re-route the bottom hose to miss the drive belts. Also it can happen where you may have to remove some the cowling near the drive belts.

## 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.

## 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 12º standard Mini 8º - 10º static.

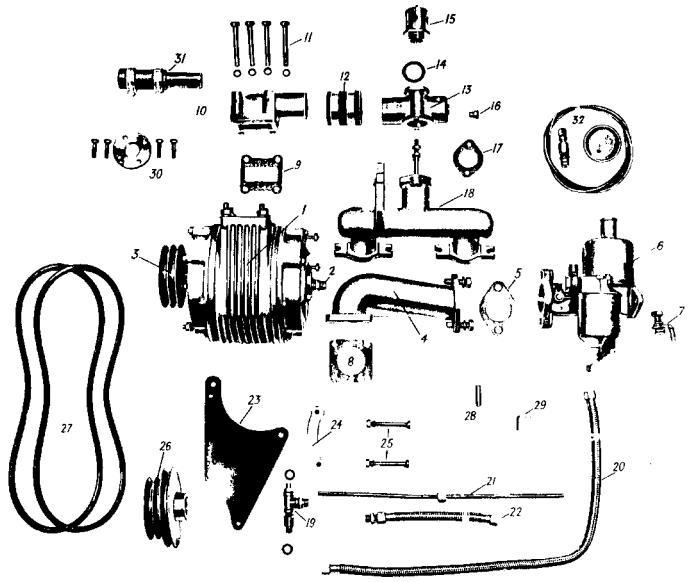
## Servicing Instructions

Introduction:- The Shorrock Supercharger is a precision mechansim, 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.



1. C. 75 B Supercharger.
2. Lubricator.
3. Supercharger Pulley.
4. Carburettor Pipe (Shorter Pipe for Minor 1000 and A/40)
5. Carburettor Gasket.
6. 1½ S.U. Carburettor Type H4 32 M.M. Solex for A/35.
7. Outer Cable Stop Bracket.
8. Inlet Port Gasket.
9. Outlet Port Gasket.
10. Outlet Pipe.
11. Set Bolt and Washer 5/16" B.S.F.
12. Rubber Hose and Clips.
13. Relief Valve Pipe.
14. Relief Valve Gasket.
15. Relief Valve.
16. Brass Plug (Boost Gauge Tapping).
17. Relief Valve Pipe Gasket.
18. Induction Manifold.
19. "T" Piece complete with Union and Washers.
20. Oil Supply Pipe 24" long.
21. Fuel pipe with Nut and Olives.
22. Flexible Pipe with Union (Carburettor Connection not supplied for Minor 1000).
23. Front Plate.
24. Front Plate Distance Piece.
25. UNF Bolts with Nuts and Washers ¼"x 2¼"
26. Crankshaft Pulley.
27. Belts.
28. Spare Metering Pin and Sachet.
29. Throttle Return Spring Bracket.
30. Fan Distance Piece and Set Bolts.
31. Bottom Water Pipe Extension with Hose and Clip (2 Bends and Hose Supplied for Minor 1000).
32. Boost Gauge complete with Nylon Tube and Pipe Connections (OPTIONAL).

WHEN ORDERING SPARES PLEASE QUOTE REFERENCE NUMBER AND DESCRIPTION.

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

| Supercharger type | Shorrock C75B Vane type | Shorrock C142B Vane type |
|---|---|---|
| Overall length (to end of shaft ) | 9.0 ins (28.8cm ) | 10.75 ins ( 69.1cm ) |
| Overall casting length | 7.0 ins ( 17.7 cm ) | 8.0 ins ( 20.3 cm ) |
| Overall diameter | 7.0 ins ( 17.7 cm ) | 8.0 ins ( 20.3 cm ) |
| Weight | 21.0 lbs ( 9.5 kls ) | 30.0 lbs ( 13.6 kls ) |
| Suitable for engines up to | 1,300 c.c. | 2,000 c.c. |
| Capacity per revolution | 750 c.c. | 1,420 c.c. |
| Maximum sustained speed | 6,000 r.p.m. | 4,750 r.p.m. |
| Maximum short duration | 7,250 r.p.m. | 6,500 r.p.m. |
| H.P. absorbtion 5.0 p.s.i. At 5000 rpm | 4.6 HP | 7.4 HP |
| Normal operating range volumetric efficiency | 83% - 88% | 83% - 88% |
| Charge compression within supercharger unit | YES | YES |
| Lubrication | Pressure feed from engine and flow metered by sliding pin | |
| Oil consumption | 2,000 miles per pint | |
| Supercharger drive shaft | 6* taper | 6* taper |
| Vane and rotor clearance | Vane tip to casing 0.004" clearance<br>Vane to end casting 0.0004" clearance<br>Rotor tip to casing 0.004" clearance | |
| Racing clearances | Increase by 0.002 - 0.004" | |
| Free air delivery 5.0 p.s.i at 5000 r.p.m | 114 CFM | 188 CFM |

# British Classic Sport Cars

# Terms of Business

## COMPANY

British Classic Sports Cars
The Old Police House
Ardoe, Blairs, Aberdeen
AB12 5YP
Scotland

Tel 01224 868633
Fax 01224 868151
Mobile 0585 947 316
E-Mail sales@bcsc.demon.co.uk

## PRICES

All prices on goods sold or delivered within Europe are subject to UK Vat.
Prices are subject to change from time to time, so please check when ordering.

## ORDERING / QUOTATIONS

Quotations can be obtained and orders made by fax or E-Mail. Alternatively you may telephone during opening hours or, if you prefer to visit the workshop please make a prior appointment.

**The supply of second hand spare is finite so listed items may not always be in stock. It is therefore essential when ordering second hand goods that you enquire as to availability.**

## PARTS FINDER SERVICE

We offer parts finder service for any classic vehicle. There is a finders fee of £14.95 charged for this service. How this works is will be able to put you in contact with a party sell the part you are looking for if we don't have it.

## PAYMENT

Payment is to be made when ordering or requiring parts finder service as follows:-

### United Kingdom

Payment may be made by Cash, Cheque, Postal Order, Bank transfer or credit card, Visa or Mastercard. All credit card settlements are subject to 4% charge.

## OVERSEAS

Settlement by bank transfer should be for the invoice amount with any bank charges paid by remitter. Travellers cheques are also acceptable payment. Credit Card as listed below. All credit card settlements are subject to 4% charge.

## PACKING AND CARRIAGE

Packing and carriage is additional to the given prices. When you know exactly what you want to order we will quote you the cost of carriage. Or we can arrange for deliver where you pay on delivery.

## RETURNING NEW / RECONDITIONED GOODS

Any faulty goods or problems with the order will be rectified immediately by exchange or refund. Goods returned for other reason must arrive undamaged and within 7 days of receipt quoting the relevant invoice number. A handling charge of 15% will be imposed.

## RETURNING SECOND HAND GOODS

Second hand goods are sold as serviceable units as far as can be know nand are not guaranteed or warranted in any way. Items which are found to be completely unserviceable may be exchanged if there is alternative stock. If no alternative stock is available a refund less 15% handling charge will be made.

## RECONDITIONED – EXCHANGE UNITS

Old units MUST be returned with order or otherwise by special arrangement. Overseas customers are requested to mark the custom's declaration:
"OLD UNIT BEING RETURNED FOR REPAIR, NO COMMERCIAL VALUE"
as this avoids problems with importation. Old units must be reconditionable. A surcharge will be applied if units are beyond repair.

## SHORTAGES

Before destroying a parcel please ensure that no items have been left in the packing. Any shortages must be reported with 3 working days and confirmed in writing.