



Built-up Short Engine

1380cc Built-up Short (half) Engine for Road Use.

1. This engine is vacuum packed for storage and is built to the following specifications based on A-plus engines. Crankshaft reground and fitted with new bearings and thrusts. Set of remanufactured selected con rods with 73.5mm pistons fitted. Block is correctly offset bored to take the larger pistons, refaced, cleaned and then refitted with new core plugs and oil bungs. New camshaft bearings fitted and the crankshaft main bearing housings line bore honed. An Evolution fast road camshaft is dial gauge timed exactly and fitted with new cam followers. This camshaft was selected because during extensive testing and trials it gave the broadest range of power and torque to over 6000 rpm, although only 5500rpm was required for fast road use, still giving acceptable economy. Distributor spindles are fitted so ensure you have A-plus distributor. A front plate and timing cover are fitted to accept a set of new duplex gears and timing chain. The compression ratio is 9.75 to 10 to 1 when using a standard 21cc head. The engine is painted. The following are not supplied : Primary gear and all clutch ancillaries/ components, head studs and water pump, front pulley and bolt, oil pump and oil filter assembly.



All the parts not supplied are considered bolt on parts which should make the rest of assembly within the ability of any Mini owner who is armed with a technical manual for torque settings and fitting procedures.

- 1. a. Half engine - +40 for 1310cc **ENG003**
- b. Half engine - 1380cc **ENG001**

Refundable surcharge may apply. Call for details.

WARNING: Do not use synthetic based oil for the running-in period as it is detrimental to the ring bedding in process.

NOTE: The ring packs on these engines are coated in special heavy oil for storage and will smoke heavily on start up.

Main Straps

On all performance 'A' series engines it is essential to ensure accurate and as near permanent location of the center main of the crank as possible. Movement allowed here, especially at sustained high rpm levels, can cause spun bearings, crank or main cap breakage with severe or mortal damage to the engine. We, therefore, offer a range of strengthening products, plus 'S' main bearing studs and nuts.

- 2. **4 bolt steel center main cap for large bore engines** (not 'S'). Ultimate center main location. Essential for all stroked engines. Needs line boring, and two extra holes drilling in the block and tapping 7/16UNF. The thrust faces are part machined for final finishing whilst the line boring is being done. Comes with correct length high tensile bolts. Bolts on one way only so take care to read instructions **C-AGA619**

- 3. a. **Steel center main strap for 1275cc, non 'S' large bore engines.** Comes with longer high tensile bolts. Main cap top needs machining flat. No other modifications required. . . **CMS13**

- b. **Steel center main strap for small bore engines.** Comes with longer high tensile bolts. Main cap top needs machining flat. No other modifications required **CMS10**

- 4. a. **'S' main stud set** (6 studs. 4 short & 2 long). Can be used on non 'S' blocks, but cap locating section on stud may need to be shortened by 2.5mm to avoid fouling bearing cap **AEG323**

- b. **'S' center main strap studs** (6 studs. 4 short & 2 extra long) for center main and strap **AEG323L**

- 5. **Special 'S' mains nut**, sold as a set of 6. **C-AJJ4013**



Connecting Rods and Bolts

As the Cooper 'S' con rod has not been produced by BL for many years, we have had them reproduced, faithful to the ORIGINAL specification - including material type, EN24V. These are the strongest production 'A' series con rods produced.

- 6. a. 1071cc and 1275 'S' rod 5.75" centers. Individually. . . . **AEG624**
- b. 970 'S' rod 5.875" center length. Order individually . . **AEG309**



Fitted with ARP nuts and bolts. These are made in a higher grade material and to specific tolerances, including the thread grade. Poor threads vastly reduce torque accuracy causing premature bolt failure.



- 7. **ARP Hi-grade 'S' big end bolt and nut set.** Torque up to 40-42lb ft. Order set. **C-STR288**



- 8. **ARP Hi-grade 1300cc type big end bolt set.** Torque up to 38-40lb ft. Order set **C-STR289**



- 9. **The Cooper 'S' big end nut** is now in all metal self locking material. Order individually **AEG147**



- 10. **Alternative multi-point nut for 'S' big end bolt** - ex Jaguar nut. Order individually. **EAC5541A**



- 11. **Shouldered big end nut** for 1300cc rod bolts. Give better clamp down than standard 1300cc type. Order individually **C-STR290**

Dipsticks



- 12. **Stainless steel dipsticks with anodised knob** in red or blue.

- a. **Red knob**. **MSA1125**
- b. **Blue knob**. **MSA1124**

- 13. **With chrome T-handle knob**. **MSA1134**

- 14. **Dipstick tube plastic**. **12G107**



Sumpguards



- 15. **For serious off-road and rough stages**, the only type to fit is the rounded sledge front version, which helps ride the car over potentially damaging rough terrain. Extra strengthening bar fits on to front subframe cross member adding reinforcements. Similar design to the Scottish/ Scandinavian works design. Weight 8.335 kilos **C-AJJ3320**



- 16. **Extension piece for either sumpguard 15 or 17** to give added protection. Weight 2.770 kilos **C-AJJ3320EXT**



- 17. **The square front type** is adequate for competition road use and is cheaper and lighter than item 15. Weight 4.885 kilos **C-AJJ3321**



- 18. **Mini Spares Mag/Alloy Sumpguard** for road use only. Adequate protection for everyday use. Especially on lowered cars to protect the gearbox cooling fins. 5mm clearance from gearbox case. CNC designed to fit front sub frames correctly. Weight 2.770 kilos **SUMPGUARD**



- 19. **Innocenti - original type of Italian Mini Sumpguard** Very useful, inexpensive protection for the fins on the gearbox. Sturdy steel construction. Weight 4.23kilos. **MS96**

