1963-73 MG MIDGET 4 CYLINDER

GENERAL SPECIFICATIONS

Year	Displ. cu. ins.	Displ. cc	Carburetor	HP at RPM	Torque (Ft. Lbs. at RPM)	Compr. Ratio	Bore in.	Bore mm	Stroke in.	Stroke mm
1963-66	67	1098	2x1 Bbl.	59 @ 5500	62 @ 3250	8.8-1	2.543	64.58	3.296	83.72
1967-73 H.C.	77.8	1275	2x1 Bbl.	65 @ 6000	72 @ 3000	8.8-1	2.78	70.61	3.20	81.28
1973 L.C.	77.8	1275	2x1 Bbl.	54.5 @ 5500	.....	8.0-1	2.78	70.61	3.20	81.28

ENGINE IDENTIFICATION

Engine number is coded to designate engine use and type. Identification tag or stamp is located on right hand side of cylinder block above generator. Early vehicles, built prior to 1969 use engine codes as follows:

1 O C U H 520

First Digit – Displacement (10 = 1098 cc; 12 = 1275 cc)
Second Digit – Car Make (C = Healey or MG Midget)
Third Digit – Transmission (U = Manual)
Fourth Digit – Compression (H = High; L = Low)
Remaining Digits – Serial Number.

Later vehicles, 1969 and later, use engine codes as follows:

Application	① Engine Code
1098 cc	10CC, 10CG
1275 cc	12CD, 12CJ, 12CC, 12CE, 12V

① – Engine codes with letters "H" or "L" indicate high or low compression ratio. "H" = 8.8-1 and "L" = 8.0-1. Codes with letters "EEC" indicate exhaust emission controls. Codes with letters "ELC" indicate evaporative loss control.

ENGINE REMOVAL

1) Disconnect battery, remove hood, drain cooling system and remove radiator. Disconnect heater hoses at heater unit. Disconnect cables from carburetors.

2) Disconnect oil pressure gauge pipes and oil cooler lines from connections at engine. If tachometer is of mechanical drive type, disconnect cable and reduction gear assembly from rear of generator.

3) Disconnect electrical connections from generator, coil and distributor. Remove distributor cap complete with spark plug wires. Remove starter cable from front end of starter and disconnect fuel line at fuel pump. Release clamp which holds exhaust pipe to exhaust manifold and lower exhaust pipe.

4) Remove fuel filter bowl and starter motor. Support transmission with a jack and remove transmission-to-engine bolts. Disconnect engine motor mounts and hoist engine from vehicle leaving transmission in place.

INTAKE & EXHAUST MANIFOLD REMOVAL

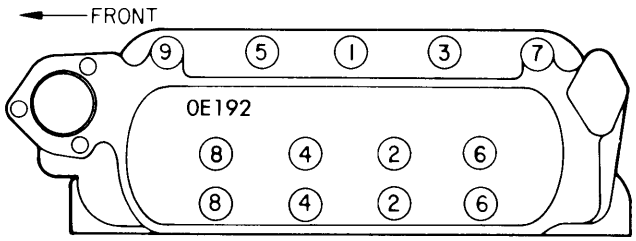
Remove air cleaners and carburetors. Loosen and release exhaust pipe clamp and remove nuts and washers holding manifold to cylinder head. Remove manifold.

NOTE – When equipped with heater, it is necessary to remove water pipe brackets from intake manifold.

CYLINDER HEAD REMOVAL

1) With hood removed, cooling system drained and battery cables disconnected, loosen retaining clip on hose which connects radiator to thermostat housing. Pull hose clear of housing.

2) Remove carburetors and air cleaners and remove rocker cover. Remove spark plug wires and spark plugs. Remove clip holding vacuum pipe onto hot water control valve. If equipped with heater, disconnect inlet hose.



CYLINDER HEAD TIGHTENING SEQUENCE

3) Loosen top clip on water by-pass hose and remove heater hose and pipe. Remove intake and exhaust manifolds as previously described.

4) Loosen rocker shaft bracket nuts and external cylinder head bolts gradually, a turn at a time, until load is released. Remove rocker shaft bracket nuts and lift off rocker assembly together with brackets.

5) Remove push rods and keep them in order of removal. Cylinder head may now be removed. Lift head straight up to prevent studs from binding in holes. To install, reverse removal procedure.

*NOTE – To facilitate breaking cylinder head joint, tap **each** side of head with a drift made of wood.*

1963-73 MG MIDGET 4 CYLINDER (Cont.)

VALVES

Engine & Valve	Head Diam. In. (mm)	Face Angle	Seat Angle	Seat Width In. (mm)	Stem Diameter In. (mm)	Stem Clearance In. (mm)	Valve Lift In. (mm)
1098 cc							
Intake	1.213-1.218	45	45	.....	.2793-.2798	.0015-.0025	.312
	(30.8-30.9)			.....	(7.09-7.11)	(.04-.06)	(7.9)
Exhaust	1.000-1.005	45	45	.....	.2788-.2793	.002-.003	.312
	(25.4-25.5)			.....	(7.08-7.09)	(.05-.08)	(7.9)
1275 cc							
Intake	1.307-1.312	45	45	.....	.2793-.2798	.0015-.0025	.318
	(33.2-33.3)			.....	(7.09-7.11)	(.04-.06)	(8.1)
Exhaust	1.152-1.157	45	45	.....	.2788-.2793	.0015-.0025	.318
	(29.36-29.39)			.....	(7.08-7.09)	(.04-.06)	(8.1)

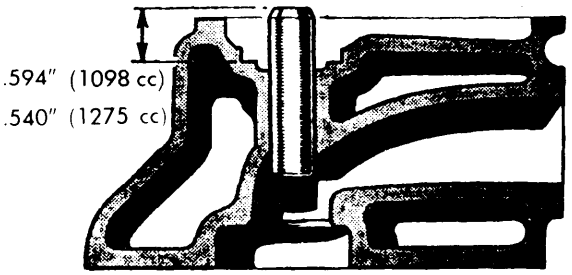
VALVE ARRANGEMENT

E-I-I-E-E-I-I-E (front to rear).

VALVE GUIDE SERVICING

1) With cylinder head removed, remove valve and valve spring at valve guide where service is required. Place cylinder head with machined face down on clean surface. Drive valve guide down into combustion space with suitable drift.

2) Drift should be hardened steel 7/16" in diameter and not less than 4" long. Drift should be machined to 9/32" for a distance of 1" at one end. This is to allow drift to engage bore of guide.



VALVE GUIDES

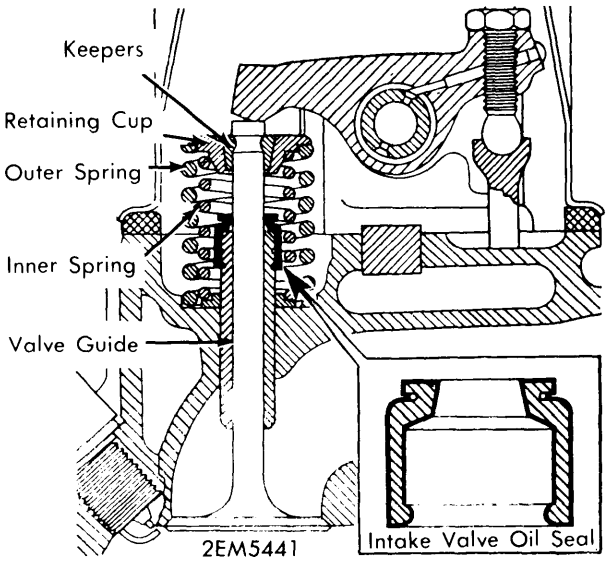
3) When installing new guides, they should be driven in from top of cylinder head. Intake valve guides must be inserted with largest chamfer at top. Exhaust valve guides should have counterbored ends at bottom.

VALVE SPRINGS

Engine & Spring	Free Length In. (mm)	PRESSURE Lbs. @ In. (kg @ mm)	
		Valve Closed	Valve Open
1098 cc			
Inner	1.672	18 @ 1.179	30 @ .867
	(43)	(8 @ 30)	(14 @ 22)
Outer	1.750	52 @ 1.291	88 @ .979
	(45)	(24 @ 33)	(40 @ 25)
1275 cc			
Inner	1.703	25 @ 1.270	44 @ .952
	(43)	(11 @ 32)	(20 @ 24)
Outer	1.828	51 @ 1.383	87 @ 1.065
	(46)	(23 @ 35)	(39 @ 27)

VALVE STEM OIL SEAL & VALVE SPRING REPLACEMENT

1275 cc Engines – 1) With cylinder head removed, use suitable tool (18G 45) to compress valve springs. Remove keepers, valve spring cups, springs and valve spring seats. Remove valve stem oil seal (intake valves only) and remove valves.



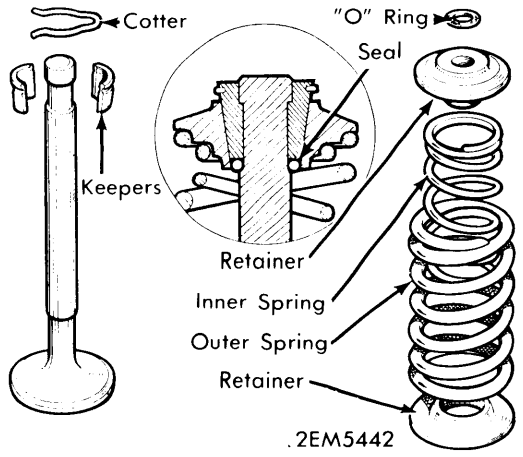
1275 cc ENGINE VALVE COMPONENTS

2) To install, place valve into its guide, followed by spring seat (if equipped). Slide an oil seal down each intake valve stem and fit it over valve guide. Install spring seat, springs and spring cups. Compress spring and install keepers.

1098 cc Engines – 1) With cylinder head removed, compress valve spring using suitable tool (18G 45) and remove keepers. Remove spring compressor tool, retaining cap, valve springs, retainers and rubber seal.

2) To install, replace retainer, springs, and compress spring. Install new seal on valve stem, pushing seal against bottom shoulder of keeper recess. Install keepers and make sure that seal is not pushed out of keeper recess. Release compressor tool and install split keeper retaining clip.

1963-73 MG MIDGET 4 CYLINDER (Cont.)



1098 cc ENGINE VALVE COMPONENTS

ROCKER ARM ASSEMBLY

Removal – 1) Drain cooling system and remove rocker cover. Loosen rocker shaft bracket nuts and external cylinder head stud nuts gradually, a turn at a time, until all load is released.

NOTE – It is important that external cylinder head nuts are loosened at the same time to avoid possibility of head distortion.

2) Remove rocker arm bracket nuts and remove rocker assembly together with brackets. Remove push rods, marking them for replacement in their original positions. To install, reverse removal procedure.

Disassembly – Remove screw holding rocker shaft in front rocker mounting bracket. Remove split pins, flat washer and spring washer from end of shaft and slide rockers, brackets and springs from shaft. Remove threaded plug installed in one end of shaft and clean out oil passages.

Reassembly – When reassembling, start with front mounting bracket and hold it with screw. Follow with remaining brackets and springs. Replace in original positions on shaft. The threaded plug end of shaft should be positioned to front of engine.

VALVE TAPPETS

With carburetors, manifold, rocker cover and rocker assembly removed, remove pushrods. Remove tappet covers and lift out tappets, keeping them in correct order. When installing, tappets should fall into their guides under their own weight after being coated with engine oil.

VALVE CLEARANCE ADJUSTMENT

With engine cold, set clearance to .012" (.30 mm). To adjust clearance, loosen rocker arm lock nut and adjust screw while measuring clearance with a feeler gauge. Adjust valves in listed order to avoid unnecessary turning of crankshaft. For example, with number eight valve open, adjust valve number one. Rotate crankshaft as required to adjust remaining valves.

Valves to Adjust	Valves Fully Open
1	8
3	6
5	4
2	7
8	1
6	3
4	5
7	2

PISTONS, PINS, RINGS

Engine	PISTONS	PINS		RINGS		
	Clearance In. (mm)	Piston Fit	Rod Fit	Rings	End Gap In. (mm)	Side Clearance In. (mm)
1098 cc	①.0005-.0011 (.013-.028) ② .0021-.0037 (.053-.094)	Push Fit	Push Fit	1 2 3 Oil	.007-.012 (.18-.30) .007-.012 (.18-.30) .007-.012 (.18-.30) .012-.028 (.30-.71)	.002-.004 (.05-.10) .002-.004 (.05-.10) .002-.004 (.05-.10) .....
1275 cc	① .0015-.0021 (.038-.053) ② .0029-.0037 (.074-.094)	Push Fit	Interference Fit	1 2 3 Oil	.011-.016 (.28-.41) .008-.013 (.20-.33) .008-.013 (.20-.33) .012-.028 (.30-.71)	.0015-.0035 (.04-.09) .0015-.0035 (.04-.09) .0015-.0035 (.04-.09) .....

① – At bottom of skirt.
② – At top of skirt.

1963-73 MG MIDGET 4 CYLINDER (Cont.)

OIL PAN REMOVAL

Drain engine oil, remove oil pan screws and lower oil pan.

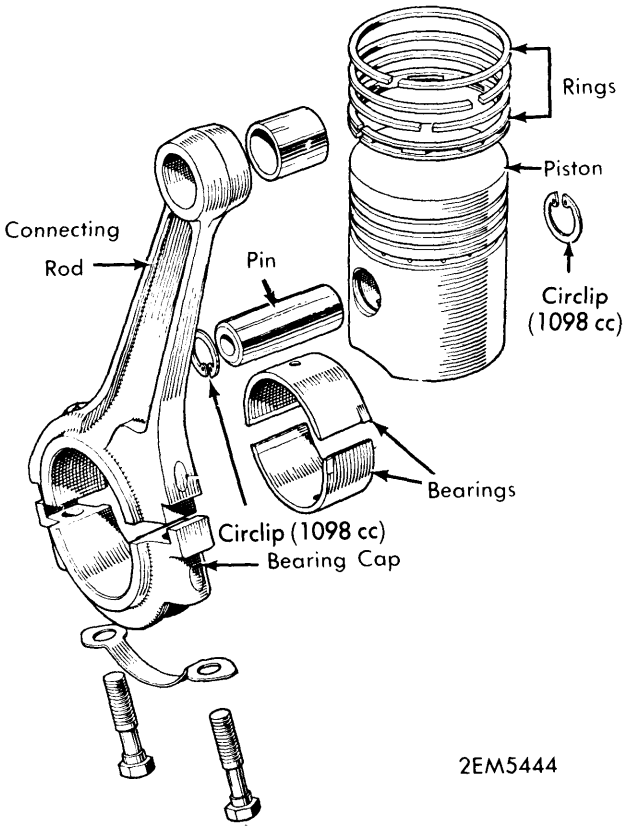
PISTON & ROD ASSEMBLY

1) Remove cylinder head and drain and remove oil pan. Bend back locking plate tabs and remove bearing cap bolts. Remove bearing cap and move connecting rods off of crankshaft. Remove piston and rod assembly from cylinder head side of block.

2) To install assembly, reverse removal procedure making sure that piston ring gaps are staggered at 90° to each other. On early engines which use clamp bolt, make sure that clamp bolt is on camshaft side of engine.

PISTON PIN REPLACEMENT

1098 CC Engines – Remove circlips locating pin and press pin out. Mark pin and piston so that assemblies will be replaced in original positions. To install, pin should be a hand push fit at 68°F. Replace circlips, making sure they fit correctly into grooves.



PISTON & ROD ASSEMBLY (LATER CARS)

1275 cc Engine – 1) *NOTE – Piston pin is an interference fit in connecting rod.* To remove piston pin, use suitable tool (18G 1002), to avoid crushing or distorting piston. Hold hexagon body of tool in vise with cutout facing up.

2) Screw large nut back until flush with end of center screw. Push screw and nut forward until nut contacts thrust race. Slide parallel sleeve, short length diameter first, onto center screw, up to its shoulder.

3) Place piston assembly on center screw and attach remove/replacer bushing, longest diameter portion toward piston. Screw stop nut onto center screw and adjust until there is about 1/32" end play in whole assembly.

4) Lock stop nut securely in position with lock screw and check that curved face of body is clean. Slide piston assembly into position against curved face. Check that piston rings are over cut-out in tool body.

5) Screw large nut up to thrust race and hold lock screw (not stop nut) with a wrench. Turn large nut until pin is pulled out of piston.

6) To install pin, remove large nut of tool and pull center screw out a few inches. Slide parallel sleeve, longest length diameter part first, onto center screw up to its shoulder.

7) Place piston on connecting rod small end up to undercut. Smear pin with thin oil and slide it over center screw and into piston bore up to face of connecting rod. Slide remover/replacer bushing, short spigot toward pin, onto center screw.

8) Screw stop nut onto center screw and adjust until there is about 1/32" end play. Lock nut securely in position with lock screw. Check that curved face of body is clean and slide piston into position against curved face. Check that piston rings are over cut-out in tool body.

9) Screw large nut onto center screw until it contacts thrust race. Using a torque wrench set to 16 ft. lbs., and holding lock screw with wrench, turn large nut with torque wrench to pull pin until flange of remover/replacer bushing is 1/32" from piston skirt.

NOTE – It is important that care is taken to prevent flange from contacting piston.

10) If torque wrench reading has not reached 16 ft. lbs. during the pull, fit of pin to connecting rod is not correct and piston and pin must be replaced. Make sure to keep large nut and center screw of tool lubricated with engine oil.

11) Check assembly and make sure that piston pivots freely on pin and is free to slide sideways. If assembly is satisfactory, reinstall in engine.

FITTING PISTONS

Select smallest oversize necessary when installing new pistons in engine. Pistons are marked with actual oversize dimensions enclosed in an oval. These markings indicate actual bore size to which they must be fitted, the required clearance has been allowed for. See following table for oversizes and bore sizes:

Engine	Oversize	Suitable Bore Size
1963-66		
1098 cc	Standard	2.5424-2.5447" (64.58-64.64 mm)
	+.010" (+.254 mm)	2.5524-2.5547" (64.83-64.89 mm)
	+.020" (+.508 mm)	2.5624-2.5647" (65.08-65.14 mm)
1967-73		
1275 cc	Standard	2.7800-2.7803" (70.61-70.62 mm)
	+.010" (+.254 mm)	2.7900-2.7903" (70.86-70.87 mm)
	+.020" (+.508 mm)	2.8000-2.8003" (71.12-71.13 mm)

1963-73 MG MIDGET 4 CYLINDER (Cont.)

CRANKSHAFT MAIN & CONNECTING ROD BEARINGS

	MAIN BEARINGS				CONNECTING ROD BEARINGS		
Engine	Journal Diam. In. (mm)	Clearance In. (mm)	Thrust Bearing	Crankshaft End Play In. (mm)	Journal Diam. In. (mm)	Clearance In. (mm)	Side Play In. (mm)
1098 cc	1.7505-1.7510 (44.46-44.48)	.001-.0025 (.025-.063)	Center	.002-.003 (.05-.08)	1.6254-1.6259 (41.29-41.30)	.0010-.0025 (.025-.064)	.008-.012 (.20-.30)
1275 cc	2.0005-2.0010 (50.81-50.83)	.001-.0027 (.025-.069)	Center	.002-.003 (.05-.08)	1.6254-1.6259 (41.29-41.30)	.0010-.0025 (.025-.064)	.006-.010 (.15-.25)

CRANKSHAFT & MAIN BEARING SERVICE

1) Drain oil pan and remove engine as previously described. Place engine upside down on engine stand. Remove oil pan, oil strainer, timing chain and sprockets. Remove flywheel and engine rear plate. Remove spark plugs to allow easy turning of crankshaft.

2) Remove connecting rod bearing caps and bearings. Keep bearings in order for correct replacement. Remove main bearing caps complete with bottom bearing halves. Caps and their respective bearings should be kept together.

3) Remove threaded plug from rear bearing cap oil return pipe and remove pipe. Each bearing cap is stamped with a number and this number is also stamped on web of crankcase near bearing cap. The bottom halves of the thrust washers are removed with center main bearing cap.

4) Remove crankshaft, two remaining halves of thrust washers, and top halves of main bearings from crankshaft. Bearings, both main and connecting rod, are available in .010" (.25 mm), .020" (.508 mm), .030" (.76 mm) and .040" (1 mm) undersizes for 1098 cc engine only. The crankshaft for the 1275 cc engine may only be ground to .010" (.25 mm) undersize without heat treatment.

5) To install crankshaft or bearings, reverse removal procedure making sure that thrust washers are placed with oil grooves outward and bearings are lubricated and placed into notched recesses machined in bearing cap. When installing rear main bearing cap, coat mating surfaces with Hylomar Jointing Compound.

ENGINE FRONT COVER & OIL SEAL

1) Drain cooling system and remove radiator. Loosen but do not remove generator attaching bolts. Remove fan belt. Bend back tab on crankshaft pulley nut lock washer. Remove pulley nut using suitable tool (Service Tool 18G 98) and pry pulley from crankshaft.

2) Remove set screws which hold timing cover to front engine plate and remove cover. Using suitable tool (18G 134 & Adapter 18G 134BD), remove front oil seal.

3) Make sure oil thrower behind crankshaft pulley is installed with face marked "F" away from engine. Fill groove between lips of oil seal with grease and using suitable tool (Service Tool 18G 1044) centralize oil seal on crankshaft.

NOTE – By assembling crankshaft pulley onto front cover before cover is reinstalled, oil seal may be centralized. Lubricate hub and insert into oil seal. Turn in clockwise direction. Push pulley and cover onto crankshaft and make sure that keyway on pulley bore is lined up with Woodruff key on crankshaft.

4) With timing cover in place, tap pulley onto crankshaft and tighten attaching screws.

CAMSHAFT

Engine & Bearing	Journal Diam. In. (mm)	Clearance In. (mm)	Lobe Lift In. (mm)
All Engines			
No. 1	1.6655-1.6660 (42.30-42.32)	.001-.002 (.03-.05)	.250 (6.35)
No. 2	1.6228-1.6233 (41.22-41.23)	.001-.002 (.03-.05)	
No. 3	1.3725-1.3735 (34.86-34.89)	.001-.002 (.03-.05)	

CAMSHAFT REMOVAL

NOTE – It is necessary to remove engine from vehicle to remove camshaft.

1) Remove oil pan, rocker assembly, push rods, tappets and timing cover as previously described. Remove oil thrower behind crankshaft pulley. Unlock and remove camshaft sprocket nut and remove nut and lock washer.

NOTE – Locating tag on lock washer fits into keyway of camshaft sprocket.

2) Ease each sprocket forward a little at a time with small levers. Make a note of the number of packing washers immediately behind crankshaft sprocket. Remove sprockets and chain.

3) Remove flywheel and engine back plate, unscrew oil pump retaining screws and remove pump.

4) Turn crankshaft so that rotor arm is pointing to segment in distributor cover for No. 1 spark plug. Disconnect low tension lead from terminal and disconnect vacuum advance pipe at distributor. If equipped with mechanical tachometer, disconnect cable from rear of generator. Remove two bolts holding distributor clamp plate to distributor housing and remove distributor.

5) Remove screws holding camshaft locating plate to cylinder block. Pull camshaft out, rotating shaft slowly.

CAMSHAFT BEARING SPECIAL TOOL

Old bearings can be punched out, new ones must be tapped into position. Bearings are easily damaged and use of Service Tool 18G 124A is recommended. Tool consists of a body with built in thrust race, screw wing nut, stop plate, "C" washer and handle. Tool is used in conjunction with special adaptors.

1963-73 MG MIDGET 4 CYLINDER (Cont.)

CAMSHAFT CENTER BEARING REPLACEMENT

1) Insert suitable pilot adaptor (18G 124K) into camshaft front bore from inside block and insert suitable adaptor (18G 124B) into center bearing from rear, small end first.

2) With body of tool positioned on center screw, pass screw through pilot adaptor and adaptor in center liner. Place slotted washer on flat at rear of center screw and insert handle into screw behind slotted washer. Tighten up wing nut to remove bearing.

NOTE – When installing bearings, line up oil holes in bearings and cylinder block and make sure that they remain correctly positioned during installation procedure.

3) To install center bearing, insert suitable pilot adaptor (18G) into camshaft front bearing from inside of block. Place new bearing on small end of suitable adaptor (18G 124B) and place adaptor in center bore from rear, largest diameter first.

4) With body of tool positioned on center screw, insert screw through pilot adaptor and adaptor in center bore. Place larger "C" washer on center screw with cut away part turned away from butt joints of bearing; this joint must be covered by washer.

5) Place slotted washer and handle in center screw and tighten up wing nut to pull liner into position.

CAMSHAFT FRONT & REAR BEARING REPLACEMENT

1) Insert small end of suitable adaptor (18G 124K) into camshaft front bearing, from inside block, and thread body of tool onto center screw. Pass screw through adaptor from front of block. Place slotted washer on flat at rear of center screw.

2) Insert handle into center screw behind slotted washer and tighten up wing nut to remove worn bearing. The rear bearing is removed by the same method, using suitable adaptor (18G 124M) and removing bearing from rear of block.

NOTE – When installing bearings, line up oil holes in bearings and cylinder block and make sure that they remain correctly positioned during installation procedure.

3) Place new bearing on smallest diameter of suitable adaptor (18G 124K) and insert adaptor into camshaft front bearing bore from inside block, largest diameter first.

4) Thread body of tool onto center screw and pass screw through adaptor located in front bearing from front of block. Position larger "C" washer on center screw with cut away portion turned away from butt joint of bearing. *NOTE – This joint must be covered by washer.*

5) Place slotted washer on flat at rear of center screw and insert handle into screw behind slotted washer. Tighten wing nut to pull bearing into position. Replace rear bearing by the same method, using suitable adaptor (18G 124M) and pulling bearing into position from rear of block. Do not use "D" washer when installing rear bearing.

REAMING CAMSHAFT BEARINGS

NOTE – Make sure that cutting tool is kept clear of cuttings at all times. Cutting tool should be removed from bearing half way through the cut and cuttings removed. Feed reamer very slowly and keep cutters dry. Arbor should be lightly lubricated before assembling cutters and pilots. Clean thoroughly when operation is completed.

1) Insert suitable taper pilots (18G 123AT and 18G 123BA) into center and rear bearings respectively. Place suitable parallel pilot (18G 123AQ) on arbor, followed by suitable cutter (18G 123AN).

2) Thread arbor through front and center bearings, place suitable cutter (18G 123AP) on arbor, and thread arbor through taper pilot in rear bearing. Secure cutters and pilots in respective positions. Cutter (18G 123AN) should be located in No. 10, and cutter (18G 123AP) should be located in No. 7 on arbor.

3) Cutter for front bearing will cut first with arbor piloting in center and rear bearings. Cutter for rear liner will follow with arbor piloting in front and center bearings. Clear away all cuttings before plain pilot is allowed to enter front bearing. When cut in rear bearing is finished, free cutters and remove arbor.

4) To ream center bearing, insert suitable pilots (18G 123BC and 18G 123BB) in front and rear bearings. Thread arbor through pilot in front bearing and place cutter for center bearing on arbor. Thread arbor through center bearing and pilot located in rear bearing.

5) Secure cutter and pilot in position. Suitable adaptor (18G 123B) should be located in No. 7 position on arbor. Ream center bearing, release cutter, remove arbor.

VALVE TIMING				
	INTAKE		EXHAUST	
Engine	Open (BTDC)	Close (ALDC)	Open (BLDC)	Close (ATDC)
All Engines	5°	45°	51°	21°

TIMING CHAIN REPLACEMENT

1) Remove engine front cover and oil thrower as previously described. Remove camshaft sprocket nut and lockwasher. Note that locating tag on lock washer fits into keyway of camshaft sprocket.

2) Camshaft and crankshaft sprockets may now be removed together with timing chain. Ease each wheel forward a fraction at a time using small levers. Note number of packing washers immediately behind crankshaft sprocket.

3) When reassembling original components, the same number of washers should be replaced. If new components have been installed which would disturb alignment of sprockets, thickness of washers will have to be determined.

4) To determine washer thickness, place straight edge across sides of camshaft sprocket teeth and measure gap between straight edge and crankshaft gear.

5) When replacing timing chain and sprockets, set crankshaft with keyway at TDC and camshaft with keyway at about one o'clock position as viewed from front. Assemble sprockets into timing chain with two marks on sprockets opposite to each other.

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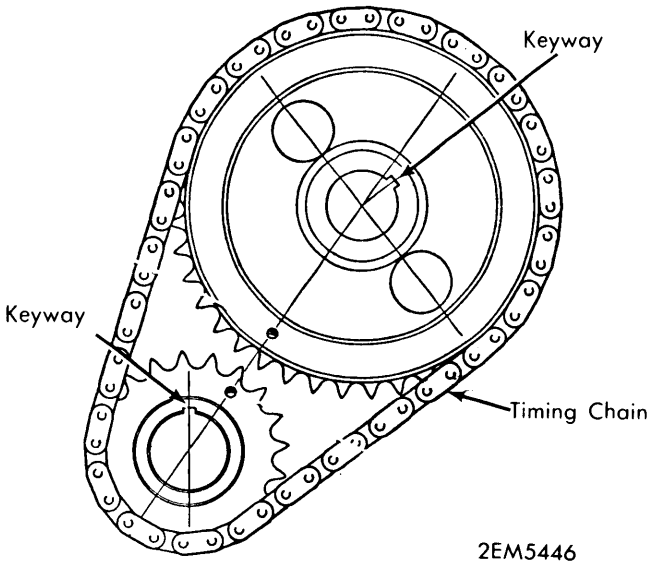

TIMING SPROCKET & CHAIN INDEX MARKS

6) Keep sprockets in this position, engage crankshaft gear keyway with key on crankshaft and rotate camshaft until camshaft sprocket keyway and key are aligned. Push sprockets onto shafts as far as they will go. Secure camshaft gear with lock washer and nut.

7) Replace oil thrower with face marked "F" or concave side away from engine.

VALVE TIMING

1) Set No. 1 cylinder intake valve clearance to .021" with engine cold. Turn crankshaft until valve is about to open. Indicator groove in flange of crankshaft pulley should be opposite center pointer on indicator bracket beneath crankshaft pulley.

2) After timing has been checked, valve clearance should be reset to specifications. *See Valve Clearance Adjustment.*

ENGINE OILING

Crankcase Capacity – 3.9 qts. including filter.

Oil Filter – Full flow type with replaceable element (early cars), or disposable cartridge (later cars).

Oil Pressure (1098 cc) – 10-25 psi idling, 30-60 psi above idle speed.

Oil Pressure (1275 cc) – 20 psi idling, 40-70 psi above idle speed.

Pressure Relief Valve – Valve is nonadjustable and is located at right rear of cylinder block. It is held in position by a domed hex nut sealed by two fiber washers or one copper washer. Valve is set for 60 psi (1098 cc) and 50 psi (1275 cc), spring free length for both engines is 2.86" (73 mm).

ENGINE OILING SYSTEM

System employs a rotor type oil pump and a full-flow oil filter is used. An oil pressure relief valve is used to provide by-pass for oil if filter becomes blocked.

OIL PUMP

Engine must be removed to gain access to oil pump. Remove flywheel, clutch assembly and engine back plate. Unscrew oil pump retaining screws and remove pump. To disassemble, proceed as follows:

Concentric Type – Serviced as assembly only.

Burman Type – Unscrew cover securing screws and remove cover. Remove rotor and vane assembly. Remove retaining sleeve from end of rotor and remove vanes.

Hobourn-Eaton Type – 1) Remove cover screw and remove cover from dowels in pump body. Remove outer and inner rotors complete with drive shaft.

2) Clean all parts and inspect for wear or damage. Check clearance between rotor and pump body. If clearance exceeds .010", rotors, pump body, or complete assembly must be renewed.

3) Place straight edge across joint face of pump body and measure clearance between underside of straight edge and face of rotors. If clearance exceeds .005", cover locating dowels can be removed and joint face can be carefully lapped.

4) Check clearance between rotor lobes. If clearance exceeds .006" rotors must be renewed. To reassemble, reverse disassembly procedure.

1963-73 MG MIDGET 4 CYLINDER (Cont.)

ENGINE COOLING

Cooling System Capacity (1098 cc) – Approximately 6 qts.

Cooling System Capacity (1275 cc) – Approximately 3.5 qts.

Thermostat – Three different temperature controlled thermostats are used depending on climate. Standard is 180°F, for cold climates 190°F and for warm climates 165°F.

WATER PUMP

1) Remove radiator. Remove fan retaining screws and remove fan. Loosen air pump mounting screws and remove pump drive belt. Remove air pump adjusting link bolt and raise air pump as high as hoses will allow. Tighten mounting bolts to retain pump.

2) Loosen generator/alternator mounting bolts and remove fan belt. Remove the two generator/alternator top mounting bolts and swing generator/alternator down so that it rests on fender panel.

3) Disconnect by-pass hose from water pump and disconnect radiator bottom hose from water pump and heater tube. Remove water pump mounting screws and remove pump from cylinder block. To install, reverse removal procedure.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Cylinder Head	
1098 cc	40 (5.5)
1275 cc	① 42 (5.8)
Connecting Rod Bolts	
1098 cc	35 (4.8)
Connecting Rod Nuts	
1275 cc	② 45 (6.2)
Crankshaft Pulley	70 (9.7)
Engine Front Cover Bolts	
1/4" (6.4 mm)	6 (.83)
5/16" (7.9 mm)	14 (1.9)
Flywheel	40 (5.5)
Manifolds	15 (2.1)
Oil Pan	6 (.83)
Oil Pump	9-12 (1.2-1.7)
Rocker Cover	4 (.55)
Water Pump	70 (9.7)
Main Bearing Bolts (1098 cc)	60 (8.3)

① – Studs stamped "22" or with a small drill point should be tightened to 50 ft. lbs. (6.9 mkg).

② – Tighten Nyloc nuts to 32-34 ft. lbs. (4.4-4.7 mkg).