1974-79 TUNE-UP PROCEDURES
MG 4-Cylinder

Midget, MGB, GT

ENGINE IDENTIFICATION

Engine number on Midget is stamped either on a plate or directly onto cylinder block, on left side of engine. The MGB engine number is stamped on a plate attached to right side of cylinder block. Engine may be identified by prefix of engine number.

1974 ENGINE CODES

Application	Code
Midget	12V
MGB & GT	18V

1975-76 ENGINE CODES

Application	Code
Midget	PE94J
MGB	
With Overdrive	18V798AE
Without Overdrive	18V797AE

1977 ENGINE CODES

Application	Code
Midget	9E94J
MGB	
With Overdrive	
Federal	18V883
Calif.	18V890
Without Overdrive	
Federal	18V884
Calif.	18V891

1978-79 ENGINE CODES

Application	Code
Midget	FP
MGB	
With Overdrive	
Federal	18V884
Calif.	18V891
Without Overdrive	
Federal	18V883
Calif.	18V890

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

Vehicle Identification Number is stamped on a plate attached to left-hand door post and to rear underside of hood.

ENGINE COMPRESSION

ENGINE COMPRESSION PRESSURE

Application	Pressure
Midget	145 psi (10.2 kg/cm²)
MGB	130 psi (9.1 kg/cm²)

VALVE CLEARANCE

Remove valve cover and observe opening and closing of valves. Measure clearance between rocker arms and valve stems. To check clearance, turn crankshaft until valves in first column are fully open, then check or adjust valves in second column. See VALVE CLEARANCE ADJUSTMENT SEQUENCE table.

VALVE CLEARANCE ADJUSTMENT SEQUENCE

Valve Open No.	Adjust Valve No.
8	1
6	3
4	5
7	2
1	8
3	6
5	4
2	7

VALVE CLEARANCE SPECIFICATIONS

Application	Clearance
1974 Models	
Midget (Cold)	.012" (.30 mm)
MGB & GT (Cold)	.015" (.38 mm)
1975-79 Models	
Midget (Cold)	.010" (.25 mm)
MGB (Hot)	.013" (.33 mm)

SPARK PLUGS

SPARK PLUG SPECIFICATIONS

Application	Specification
Gap	
Midget	.025" (.64 mm)
MGB & GT	[1] .035" (.90 mm)
Torque [2]	
Midget	20 ft. lbs. (27 N.m)
MGB	18 ft. lbs. (24 N.m)

[1] - Set gap to .025" (.64 mm) on 1974 models.
[2] - On 1974 models, torque spark plugs to 30 ft. lbs. (41 N.m)

SPARK PLUG TYPE [1]

Application	Champion No.
Midget	N12Y
MGB	N9Y

[1] - Use Champion No. N9Y spark plugs in all 1974 models.

HIGH TENSION WIRE RESISTANCE

Remove high tension wires from spark plugs and distributor cap. Using an ohmmeter, check high tension wire resistance while gently twisting wire. If resistance is not to specifications, or fluctuates from infinity to any value, replace wire(s).

HIGH TENSION WIRE RESISTANCE

Application	Resistance (Ohms)
All Models	25,000-30,000

DISTRIBUTOR

Models are equipped with Lucas single-point distributors or Lucas electronic ignition system.

DISTRIBUTOR SPECIFICATIONS

Application	Specification
Air Gap	[1] .014-.016 (.35-.40 mm)
Point Gap	.014-.016 (.35-.40 mm)
Dwell Angle	46-56°
Breaker Arm Spring Tension	18-24 ozs. (510-680 g)
Condenser Capacity	.18-.25 mfd.

[1] - Electronic ignition equipped models only.

1974-79 TUNE-UP PROCEDURES
MG 4-Cylinder (Cont.)

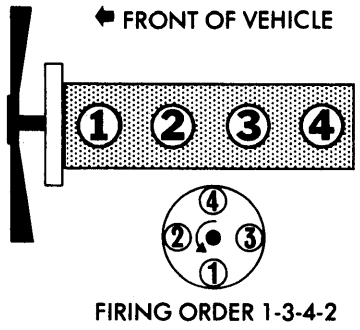

Fig. 1: Typical Midget Firing Order & Distributor Rotation

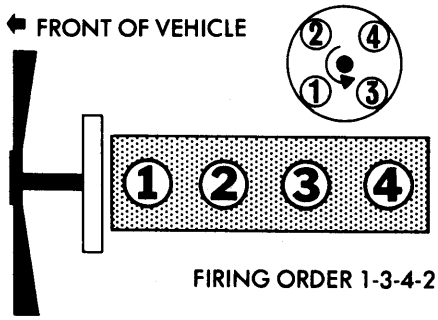

Fig. 2: Typical MGB Firing Order & Distributor Rotation

IGNITION TIMING

Check or adjust ignition timing with engine at normal operating temperature and point air gap set to specifications. Disconnect and plug distributor vacuum hose (if applicable). Rotate distributor housing to achieve correct timing. Tighten distributor lock nut and reconnect vacuum hose.

1974 IGNITION TIMING SPECIFICATIONS

Application	RPM	Timing [1]
Midget	1500	9°BTDC
MGB & GT	850	11°BTDC

[1] – With distributor vacuum hose disconnected and plugged.

1975-76 IGNITION TIMING SPECIFICATIONS

Application	RPM	Timing
Midget	800	2°ATDC
MGB		
With Catalytic Converter	1500	13°BTDC
W/O Catalytic Converter	1500	10°BTDC

1977 IGNITION TIMING SPECIFICATIONS

Application	RPM	Timing
Midget		
Federal	800	10°BTDC
Calif.	800	2°ATDC
MGB		
Federal	1500	10°BTDC
Calif.	1500	10°BTDC
Canada	1500	13°BTDC

1978-79 IGNITION TIMING SPECIFICATIONS

Application	RPM	Timing
Midget		
Federal	800	[1] 10°BTDC
Calif.	800	[1] 2°ATDC
MGB	1500	10°BTDC

[1] – With distributor vacuum hose disconnected and plugged.

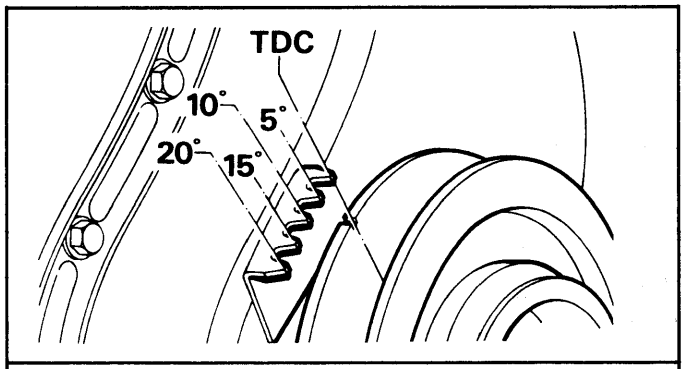

Fig. 3: Typical MGB Ignition Timing Marks

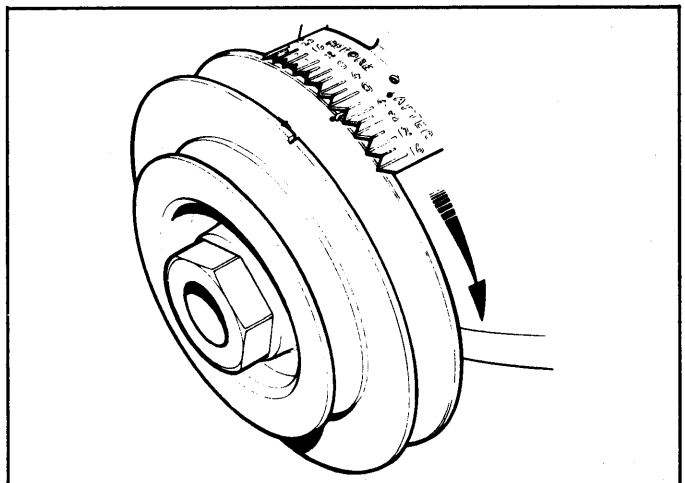

Fig. 4: Typical Midget Ignition Timing Marks

IDLE SPEED & MIXTURE

1974 Midget – 1) Warm engine to normal operating temperature and remove air cleaners. Ensure carburetor piston dampers are filled to correct level with engine oil.

2) Loosen clamping bolts on throttle spindle interconnections and disconnect jet control interconnection. Unscrew fast idle screws until they are clear of cams. Unscrew throttle adjusting screws until they are clear of stops and throttles are closed.

3) Connect tachometer and exhaust gas analyzer to vehicle. Check idle speed and CO% level. To adjust idle speed, turn throttle adjusting screws until specified RPM is obtained. Turn each adjusting screw an equal amount.

4) Use a carburetor synchronizer to ensure proper balance between carburetor throttle valves. Adjust each throttle valve adjusting screw so that an equal amount of air is passing through intakes.

5) Turn jet adjusting nut on both carburetors up to lean mixture, down to richen mixture, until fastest idling speed is obtained. Turn each adjusting nut up (lean) until engine RPM just starts to drop, then turn both adjusting nuts one full turn down (rich).

6) Gently tap neck of each carburetor suction chamber with screwdriver handle. Check that CO% level is set to specification. If not, reset both jet adjusting nuts by the minimum amount necessary to bring CO% level just within specifications.

1974-79 TUNE-UP PROCEDURES
MG 4-Cylinder (Cont.)

7) Hold jet adjusting nut on each carburetor to prevent it from turning. Rotate adjustment restrictor around nut until vertical tab contacts carburetor body on left-hand side, when viewed from air cleaner flange. Bend down small tab on adjustment restrictor. Tighten and/or reconnect components. Install air cleaners and recheck idle speed and CO% level.

1974 MGB & GT - 1) Warm engine to normal operating temperature and remove air cleaners. Ensure carburetor piston dampers are filled to correct level with engine oil.

2) Loosen clamping bolts on throttle interconnection and cold start valve interconnection. Using carburetor synchronizer, balance carburetors at specified idle speed.

3) Turn jet adjusting screw on each carburetor equally to obtain fastest speed, then turn screws counterclockwise until engine speed begins to drop. Slowly turn screws clockwise until maximum speed is again obtained.

4) Tap neck of each carburetor suction chamber with screwdriver handle. Check that CO% level is set to specification. If not, turn jet adjusting screw to bring CO% level within specifications.

1974 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
Midget	1000	[1]
MGB & GT	850	[1]

[1] - See emission control/tune-up decal under hood.

1975-76 Models - 1) With engine at normal operating temperature and air cleaner removed, ensure choke is off and fast idle screw is not in contact with fast idle cam.

2) Make sure oil in carburetor damper is 1/4" below top of piston guide rod. Adjust idle speed to specifications by means of idle adjusting screw.

3) Connect exhaust gas analyzer to vehicle. Disconnect air injection pump outlet hose. If CO% level is not within specifications, turn fine mixture trim screw clockwise to richen mixture, or counterclockwise to lean out mixture.

4) If specified CO% level cannot be obtained by adjusting fine mixture screw, remove carburetor damper piston. Using Adjusting Tool (S353), turn idle mixture needle clockwise to richen mixture or counterclockwise to lean out mixture. Reconnect air pump hose and check idle speed and adjust if necessary.

1975-76 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
Midget	700-900	0.5-2.0
MGB	750-950	4.5-6.5

1977-79 Models - 1) Before checking idle speed and CO% level, be sure valve clearance, spark plug gap, and ignition timing are to specifications. Connect tachometer and exhaust gas analyzer to vehicle.

2) Run engine until it reaches normal operating temperature. Remove air cleaner. Ensure choke is off and fast idle screw is not in contact with fast idle cam. Make sure oil in carburetor damper is 1/4" below top of piston guide rod.

3) Disconnect air injection pump outlet hose and plug the hose. DO NOT plug air pump outlet, or damage to pump may occur. Disconnect float chamber vent pipe from carburetor. *See Fig. 5.*

4) Run engine at 2500 RPM for 30 seconds and check idle speed. Adjust idle speed to specifications and check CO% level. If CO% level is not within specifications, turn fine idle CO screw clockwise to enrich and counterclockwise to lean out mixture.

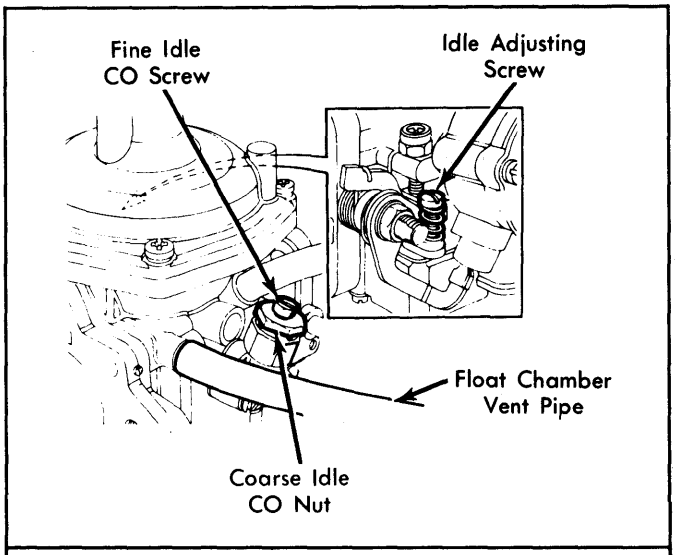

Fig. 5: Idle Speed & CO% Level Adjustment Points

1977-78 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	[1] CO%
Midget		
Federal	700-900	3.0-7.0
Calif.	700-900	0.5-6.5
MGB	750-950	4.5-6.5

[1] - With air injection disconnected.

NOTE: Perform steps 5) through 10) on 1977-78 MGB models only. If correct CO% level is still not within specifications on all other models, go directly to step 11).

5) Turn fine idle CO screw clockwise as far as possible. Now turn screw counterclockwise 2 1/2 turns. This places screw in mid-point of adjustment range.

6) Remove suction chamber cover, spring, and air valve from carburetor. Check that initial needle adjustment is correct (shoulder of needle should be flush with underside of air valve).

7) If needle requires adjustment, remove air valve damper from suction chamber. Carefully insert inner part of Adjusting Tool (S353) into hexagon hole in needle adjuster plug. *See Fig. 6.* Turn tool to adjust needle position.

8) Install air valve with diaphragm tab in housing recess. Align and install suction chamber cover and damper. Recheck idle speed and CO% level as instructed in steps **1)** through **4)**.

9) If correct CO% level is still not within specifications, adjust fine idle CO screw to its mid-point adjustment range. Then, turn coarse idle CO nut clockwise to enrich and counterclockwise to lean out mixture.

10) If correct CO% level is still not within specifications, turn coarse idle CO nut clockwise as far as possible. Then, turn nut counterclockwise 2 turns to place nut in mid-point of adjustment range.

11) On all models, remove piston damper and insert Adjusting Tool (S353) into dashpot. Ensure that outer tool is engaged in piston and inner tool engages hexagon hole in needle adjuster plug.

12) Hold outer tool firmly and turn inner tool clockwise to enrich or counterclockwise to lean out mixture. After each adjustment, top up piston with engine oil, reinstall damper and recheck CO% level. When proper CO% level is obtained, increase engine speed to 2500 RPM and recheck idle speed. Restore all components to original positions.

1979 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	[1] CO%
Midget	700-900	3.0-7.0
MGB	750-950	4.5-6.5

[1] - With air injection disconnected.

1974-79 TUNE-UP PROCEDURES
MG 4-Cylinder (Cont.)

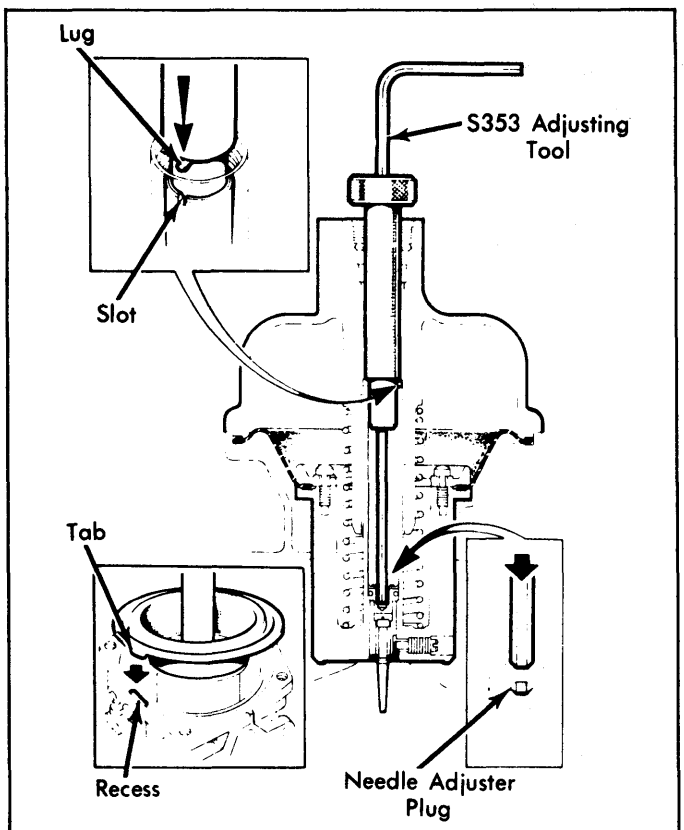

Fig. 6: Setting Initial Needle Adjustment

COLD (FAST) IDLE RPM

1974 Midget - Make sure choke control wire has 1/16" free play before it starts to pull on jet levers. Pull out choke control until linkage is about to move carburetor jets. Adjust fast idle screws to obtain 1100-1200 RPM.

1974 MGB & GT - **1)** With fast idle cams against their stops, set cold start interconnections so that both cams begin to move simultaneously. Make sure choke control wire has 1/16" free play before cams begin to move.

2) Pull out choke control until arrow marked on cam is positioned under fast idle adjusting screw of each carburetor. Turn fast idle adjusting screws to obtain 1300-1400 RPM.

1975-76 Midget With Manual Choke - Warm engine to normal operating temperature. With choke cable correctly adjusted, pull choke knob out until choke cable engages fast idle cam ball locator. Adjust fast idle speed to 1800 RPM.

1977-79 Models - **1)** All models are equipped with automatic choke for fuel enrichment. To check and adjust, remove carburetor. Open throttle butterfly and wedge open. Remove bolt and washer holding water jacket and 3 screws retaining heat mass.

2) Rotate the operating arm and check vacuum kick piston and rod for full, free movement; fast idle cam and thermostat lever freeness to pivot; and spring operation on cam and lever.

3) Remove wedge from throttle opening. Set gap between choke and throttle levers to proper clearance. *See Fig. 7.* Adjust throttle stop screw to obtain proper clearance between end of fast idle pin and cam. Lock adjusting screw with lock nut.

4) Install parts removed, being sure to align index marks on heat mass and automatic choke body. Reinstall carburetor and check or adjust idle speed and CO% level.

1977-79 FAST IDLE GAP SPECIFICATIONS

Application	Clearance In. (mm)
Choke Lever-to-Throttle Lever	.094 (2.4)
Fast Idle Pin-to-Cam	
Midget	.035 (.9)
MGB	.025 (.6)

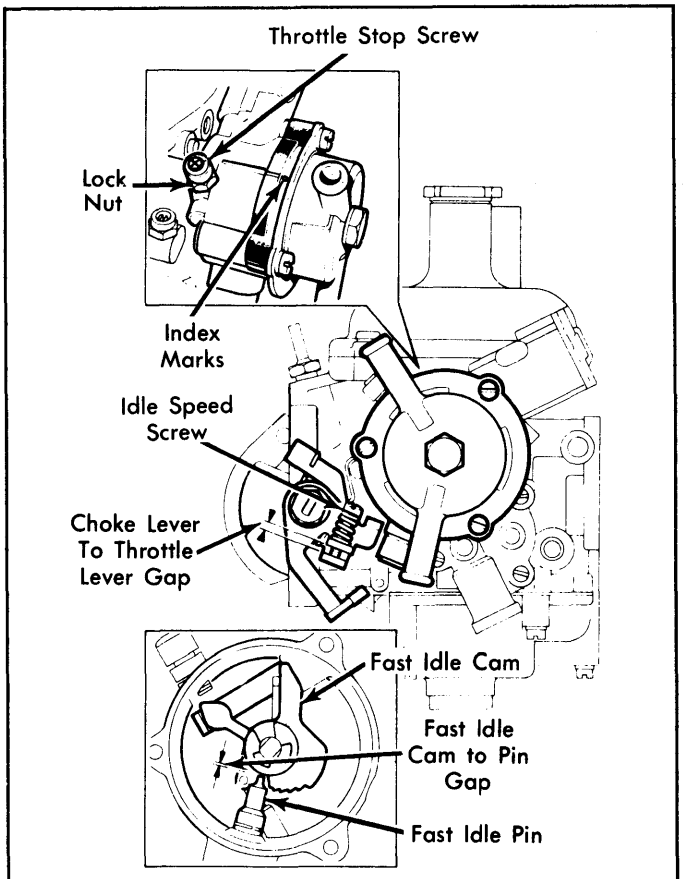

Fig. 7: Setting Fast Idle Clearances

FUEL PUMP

FUEL PUMP SPECIFICATIONS

Application	Specification
Pressure (At Idle)	2.8-3.8 psi (.20-.27 kg/cm²)
Volume	1 pt. in 30 sec.

EXHAUST EMISSION SYSTEMS

See appropriate articles in EXHAUST EMISSION SYSTEMS section.

IGNITION

DISTRIBUTOR

Models are equipped with Lucas single-point distributors or Lucas electronic ignition system.

Other Data & Specifications - See Lucas single point distributor or Lucas Opus Electronic Ignition System article in DISTRIBUTORS & IGNITION SYSTEMS section.

1974-79 TUNE-UP PROCEDURES
MG 4-Cylinder (Cont.)

IGNITION COIL

IGNITION COIL SPECIFICATIONS

Application	Resistance (Ohms)
Primary	
1974 Models	
Midget	2.7-3.1
MGB & GT	3.1-3.5
1975-79 Models	
Midget	1.30-1.45
MGB	1.43-1.58
Ballast Resistor	
1975-79 Models	
Midget	1.3-1.5
MGB	1.3-1.4

FUEL SYSTEMS

CARBURETORS

CARBURETORS

Application	Model
1974 Models	SU 1-Bbl.
1975-79 Models	Zenith-Stromberg 1-Bbl.

Other Data & Specifications - See appropriate SU or Zenith-Stromberg Carburetor articles in FUEL SYSTEMS section.