1974-79 FUEL SYSTEMS
S.U. HIF 1-Barrel Carburetors

1974 Austin Marina, MGB

DESCRIPTION

Carburetor is a sidedraft type. The vacuum chamber has a piston which moves up and down, depending upon manifold vacuum. This piston controls air flow through the carburetor, and therefore controls acceleration. Piston is damped by oil filled chamber; which prevents piston from rising too rapidly on acceleration and yet allows mixture to increase in richness for sudden acceleration.

For cold starts, a cold start valve provides an extra amount of air/fuel mixture and a fast idle cam increases engine RPM. Carburetor is also equipped with a temperature controlled fuel jet, overrun poppet valve (in throttle butterfly), and a hot start valve.

Temperature controlled fuel jet, thermostatically controls air/fuel ratio over a wide range of operating temperatures. Overrun valve prevents overrich mixtures when throttle is closed suddenly (deceleration). Hot start valve vents hot fuel vapor from float chamber to prevent hard starting when engine is hot.

TROUBLE SHOOTING

STICKING PISTON

1) The vacuum disc, piston, and needle all have clearances to prevent sticking. If sticking does occur, the whole assembly should be carefully cleaned and the piston rod should be lubricated with a drop of thin oil.
2) To test for a sticking piston, remove piston damper and lift piston with a pencil or similar instrument. The piston should come up freely and fall freely back on bridge when released. Piston return spring should not be stretched or increased in tension to improve the rate of piston return.

NOTE: Do not apply oil to any part except the piston rod.

AIR VALVE

1) To check for proper function of air valve, remove vacuum chamber and air valve. Return air valve to chamber. Using a nut, screw and flat washer, place flat washer so that it goes over edge of vacuum chamber to prevent air valve from being dropped.
2) Raise air valve up against flat washer and then release. *See Fig. 1.* It should take 5-7 seconds for air valve to fall the full extent of its travel. If, after through cleaning and checking for damage, air valve doesn't fall within 5-7 seconds, replace air valve and vacuum chamber.

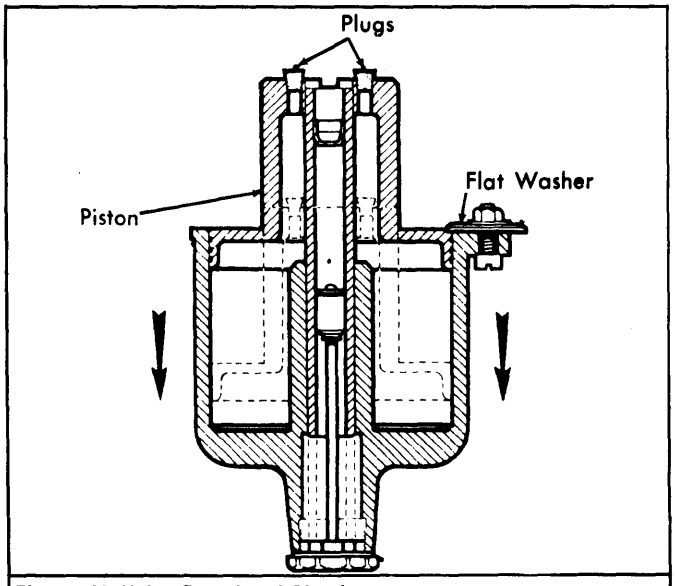

Fig. 1: Air Valve Functional Check

FLOODING

If flooding occurs check float needle and float needle seat. Clean thoroughly and inspect for any signs of wear. If wear is found replace needle and needle seat. Recheck float level setting when replacing float needle assembly.

ADJUSTMENTS

IDLE SPEED & MIXTURE

See appropriate TUNE-UP PROCEDURES article.

COLD (FAST) IDLE RPM

See appropriate TUNE-UP PROCEDURES article.

FLOAT LEVEL

With carburetor removed from vehicle, float bowl cover removed and carburetor body inverted, measure distance between float and carburetor body surface. If measurement is incorrect, adjust float height by bending float arm.

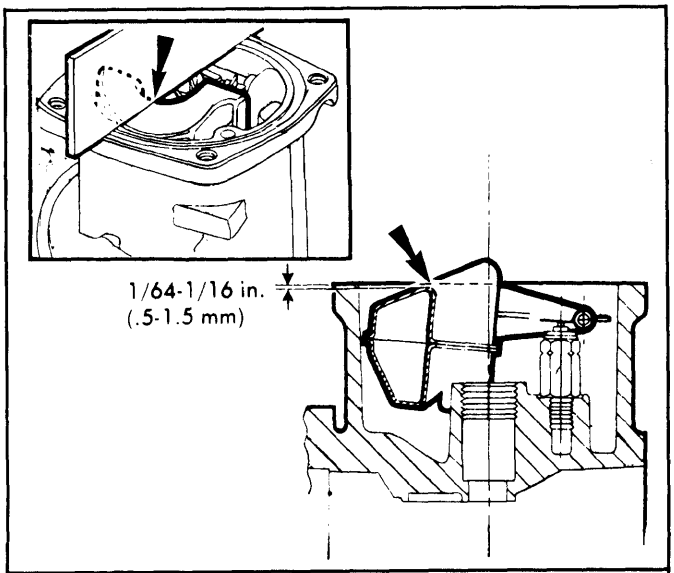

Fig. 2: Float Level Adjustment

METERING NEEDLE

1) With vacuum piston removed and inverted, check that etched mark on needle is aligned between two piston transfer holes. Place straight edge across bottom of piston and check that needle shoulder is level with straight edge.
2) If adjustment is necessary, loosen needle locking screw and rotate or raise needle. Remove air cleaner and check throttle for signs of sticking. Unscrew throttle adjusting screw (idle speed screw) until just clear of throttle lever, then turn clockwise 1 1/2 turns.
3) Turn jet adjusting screw counterclockwise until jet is flush with bridge. Lift piston and observe that needle guide is flush with bottom of piston. Turn each jet adjusting screw clockwise 2 turns.

OVERHAUL

DISASSEMBLY

1) Remove air cleaner and rod ball joints from carburetors. Remove all hoses and choke cable. Remove nuts and washers from mounting studs and take off carburetors.
2) Remove piston damper and its washer. Unscrew piston vacuum chamber retaining screws and remove identification tag. Lift chamber vertically from body without tilting it. Remove piston spring and piston assembly.

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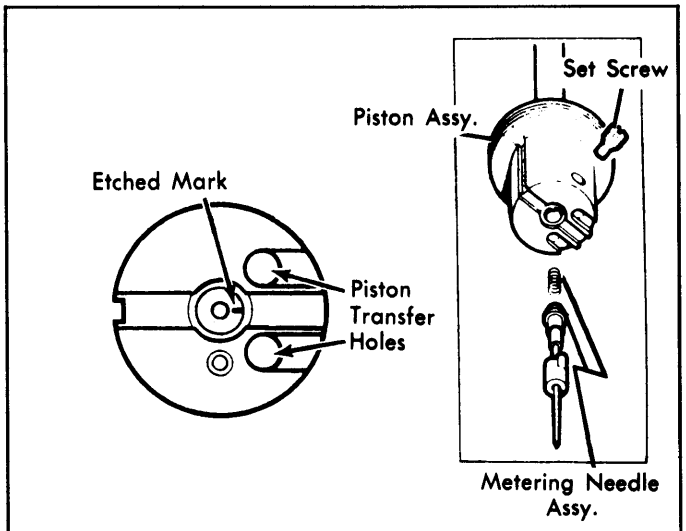

Fig. 3: Metering Needle Adjustment

3) Unscrew needle guide locking screw. Withdraw needle guide and spring. Mark bottom cover plate and body to make sure of correct reassembly. Remove screws and cover-plate complete with sealing ring.

4) Remove mixture adjusting screw and "O" ring. Remove jet complete with adjusting lever, adjusting lever retaining screw and spring. Remove float spindle and fiber washer. Then remove float and unscrew float needle and valve.

5) Unscrew jet bearing lock nut and withdraw bearing complete with fiber washer. Remove fast idle cam retaining nut and washer. Note position of cam and lever.

6) With return spring held towards carburetor body, pry off cam lever and remove return spring. Remove screw from cover of cold start valve and withdraw cold start valve assembly. Pull out valve spindle, "O" ring, seals and dust cap.

7) Note location of throttle lever return spring and remove spring. Remove nut and tab washer retaining throttle levers. Remove throttle lever and throttle actuating lever. Remove throttle valve retaining screws. Withdraw throttle valve taking care not to damage throttle overrun poppet valve.

CLEANING & INSPECTION

Wash parts in carburetor cleaner (solvent). DO NOT soak any components containing rubber, leather, or plastic. Soak components long enough to thoroughly clean all surfaces and passages of foreign matter. Remove any residue after cleaning components in solvent. Blow out all fuel passages dry with compressed air. Inspect all parts for wear or damage and replace as necessary.

REASSEMBLY

NOTE: A new throttle valve retaining screws must be used on reassembly. Withdraw throttle spindle and seals.

1) To reassemble, reverse disassembly procedure. Throttle spindle must be fitted with threaded end at piston lifting pin side of body. Fit throttle valve so that overrun valve is at top of bore and its spring is toward inside when throttle is closed. Ensure that throttle valve does not bind when closed.

2) Position throttle shaft end seals just below throttle shaft housing. When installing jet adjusting screw, ensure that small tip of screw engages into slot of jet adjusting lever.

3) Set jet flush with bridge of body. When installing needle, ensure that etched mark aligns between two transfer holes of piston. Also check that shoulder of needle is flush with bottom of piston. This is checked with straight edge placed across bottom of piston.

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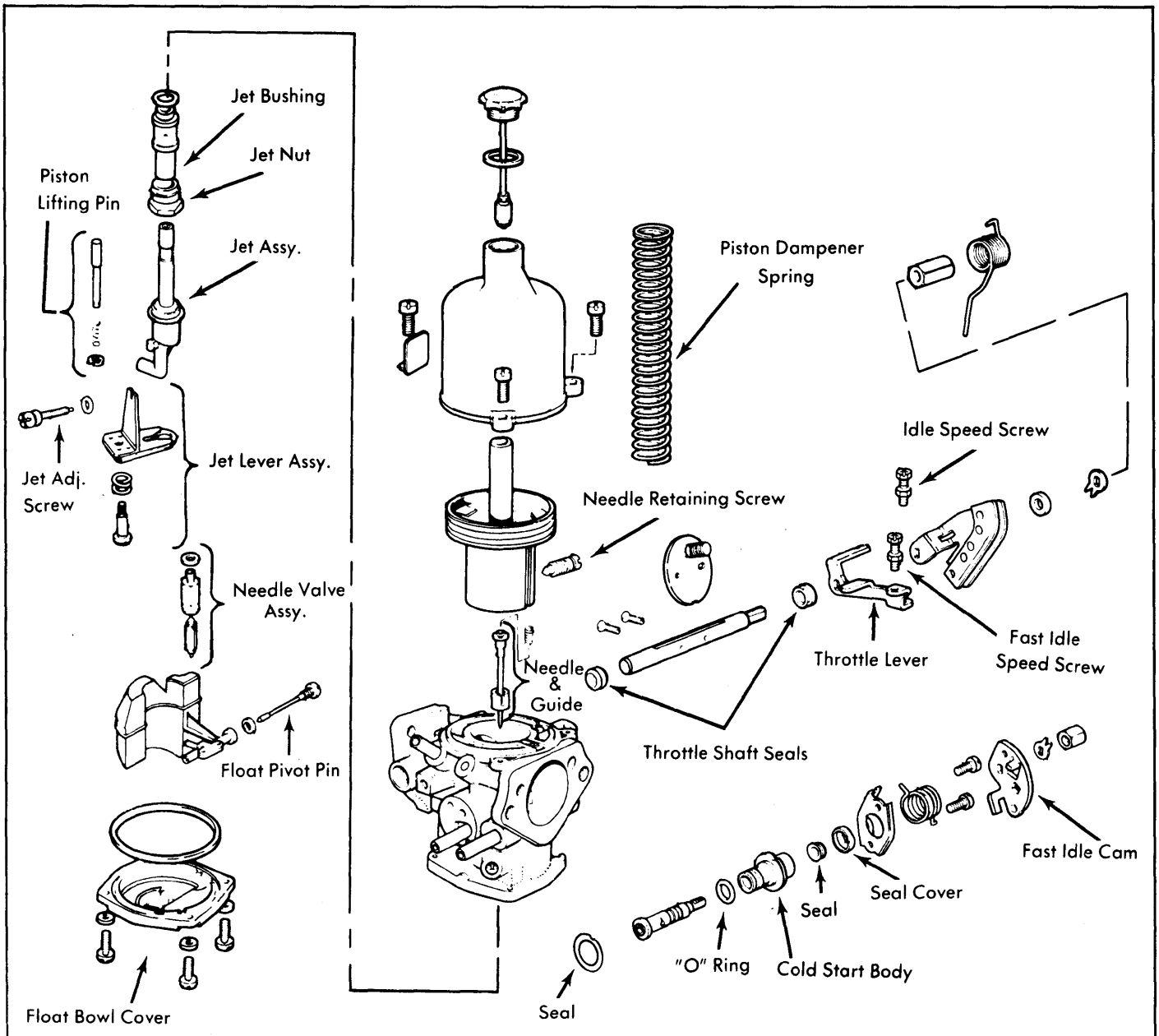

Fig. 4: Exploded View OF S.U. HIF 1-Barrel Carburetor