CARBURETOR SERVICE PROCEDURE

HOLLEY MODEL 4000

FORM NO. 16-H-41

NOTE: Some models of the Holley 4000 carburetor may vary slightly in general design and appearance from others, but basic cleaning and adjustment procedure will remain the same.

1. DISASSEMBLY

The following procedure for disassembly divides the carburetor into two main sections: Main Body and Throttle Body. Disassembly will be best accomplished by following alphabetical listing which denotes name of part to be removed and number sequence indicating order of removal.

Main Body Section:

A. Pump link, air horn, and throttle body screws — 1 through 6. Lift main body (7) and air horn (8) from throttle body (9). Remove body gasket (10) and air horn seal (11).

B. Bowl vent selector, pump rod seal and spring — 12 through 15.

C. Secondary tube bracket, bowl cover and gasket — 16 through 21.

D. Secondary tubes, jets and economizer diaphragm — 22 through 25.

E. Secondary tube seals and washers — 26 and 27.

F. Pump discharge needle and nozzle assemblies — 28 and 29.

G. Pump rod and plunger assembly — 30 through 34.

H. Needle valve seat plug and gasket — 35 and 36.

I. Needle valve and seat assembly — 37 and 38.

J. Float assembly — 39, 40 and 41.

K. Power valve and gasket — 42 and 43.

L. Main jets — 44.

M. Pump inlet ball and retainer — 45 and 46.

N. Pump rod lubricator washer and ring — 47 and 48.

Throttle Body Section:

O. Fuel inlet adapter and seals — 49 and 50.

P. Secondary check balls and retainers — 51 and 52.

Q. Secondary tube seals and air tube grommet 53, 54 and 55.

R. Fuel inlet fitting assembly — 56 through 59.

S. Thermostat housing assembly (if used) — 60 through 64.

T. Choke housing assembly and fast idle cam (if used) — 65 through 69.

U. Spark valve assembly and distributor check valve retainer — 70 through 73. On some models a nylon check ball is found under retainer (73).

V. Diaphragm cover and assembly — 74 through 80.

W. Diaphragm housing assembly — 81 through 87.

X. Idle adjusting screws and springs — 88 and 89.

2. CLEANING

A. Using a regular carburetor cleaning solution, soak parts long enough to give a thorough cleaning and make sure parts and passages are free of all foreign matter.

B. To remove any residue that might be left after use of the cleaner, it is recommended that parts be immersed in clean gasoline or suitable solvent.

C. BLOW OUT ALL PARTS AND PASSAGES WITH DRY COMPRESSED AIR.

D. Do not soak any parts containing rubber, leather or plastic if they are to be re-used.

3. REASSEMBLY

Reassemble carburetor in the reverse order of disassembly, paying particular attention to the following:

A. When installing the idle adjusting screws (88), lightly bottom (do not force), then back out 1½ turns.

B. After installing diaphragm housing (84), place diaphragm (80), spring (79) and cover (78) in position and hold throttle valves closed while tightening screws (77). Spring (79) should now keep throttle valves fully seated.

C. Before installing secondary tube seals (27 and 54), remove burrs from holes using a sharp pointed instrument and blow out thoroughly with compressed air. Lubricate seals with oil and stake retaining washers (26 and 53) in place.

D. When installing air horn (8), make certain that choke operating lever correctly enters bracket on inner side of choke valve.

E. Use gasket cement or thin film of grease to hold air horn seal (11) in groove on air horn. Cut off excess portion of seal.

F. Before installing main body (7), make certain that pump rod seal, washers and spring (13-15) are positioned over protruding end of pump rod (30).

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4. ADJUSTMENTS

A. Float Level: (Fig. 1)

Hold float up to completely close needle valve in seat. Using the gauge supplied, measure distance from top of casting to top of each float at end farthest from needle valve. Both floats must be checked. To adjust, bend tab that contacts needle valve. If one float is lower than the other, bend portion of the lever that supports float. (If fuel level is checked after cranking or running engine, it should be ½ inch plus or minus 1/32 inch below top of casting.)

B. Bowl Vent:

Seasonal setting provided as follows:

Winter:

Temperatures below 50°F., slide vent selector (12) down on pump rod (30) so that vent hole is covered.

Summer:

Temperatures above 50°F., slide vent selector up on pump rod so that vent hole is open.

C. Accelerator Pump: (Fig. 2)

Seasonal setting provided as follows:

Winter:

Position pump link in throttle lever hole farthest from throttle shaft.

Summer:

Position pump link in throttle lever hole closest to throttle shaft.

D. Fast Idle:

With engine running and idle speed properly adjusted, turn fast idle screw in until it just touches the "low" step of fast idle cam. If speed is excessive, back off screw not more than one additional turn.

E. Dashpot: (Fig. 2) .045"-.064"

If dashpot is used, this setting should be checked after idle speed is properly adjusted. With engine idling, hold dashpot stem all the way in. The clearance (A), between stem and dashpot adjusting screw, should be as listed above. To adjust, rotate adjusting screw.

F. Automatic Choke:

With screws loosely in place, rotate cover against spring tension until index mark on cover is aligned with mark on housing. Tighten screws. Choke valve should be completely closed, but free to open with slight finger pressure.

5. IDLE ADJUSTMENT (Fig. 3)

A. Rotate throttle stop screw (1) to slightly open throttle.
B. Allow engine to warm up thoroughly before making final adjustment.
C. Rotate idle adjusting screws (2), in or out, until engine idles smoothly.
D. Rotate throttle stop screw (1) for proper R.P.M. (Approx. 450-500).
E. Recheck idle adjusting screws (2) for best setting.

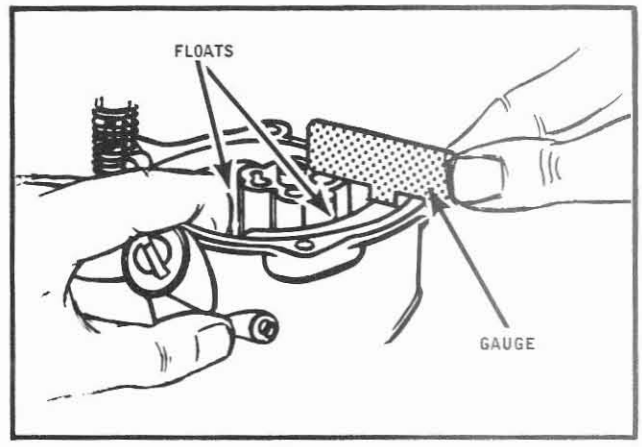

FIGURE 1

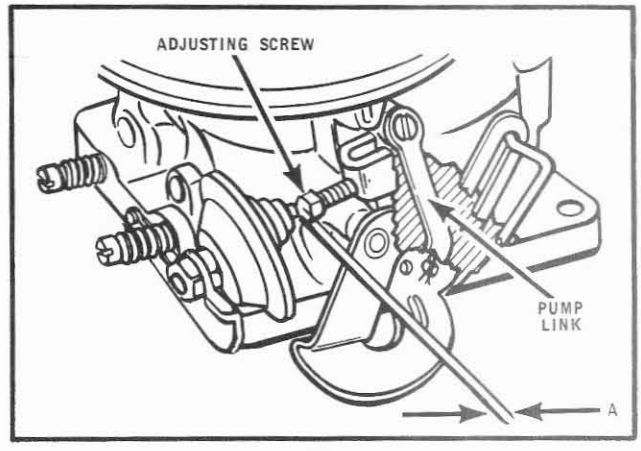

FIGURE 2

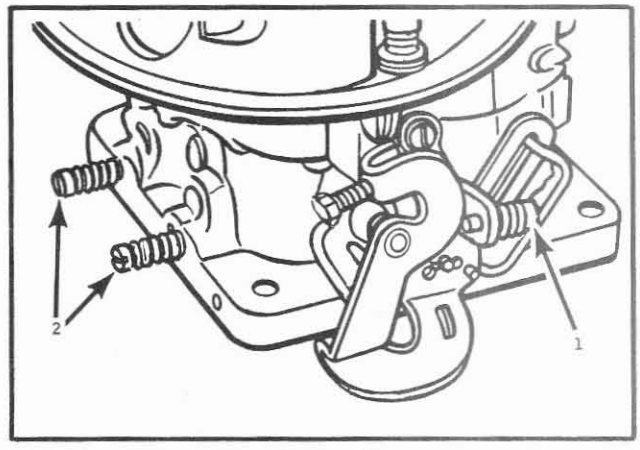

FIGURE 3

HELPFUL SERVICE SUGGESTIONS

Loose Choke Tube Seal:

Early model 1955 carburetors have an "O" ring and retaining washer which seals the choke air inlet tube when carburetor is installed on engine. Washer must be firmly staked in throttle body and caution must be used when installing carburetor so that seal and washer are not dislodged and carried into engine. If washer cannot be tightened, replace both seal and washer with later type air tube rubber grommet.

Choke Valve Clearance:

If choke valves bind or stick on early model 1955 carburetors, correct by slightly grinding top of throttle body to provide a clearance of .020" between valves and body. Later models have additional clearance.

Bent Heat Baffle:

Choke valve sticking on 1956 models may be caused by the aluminum heat baffle being bent toward the rear causing interference with choke linkage.

Defective Heat Tube:

Cold weather hard starting due to choke valves sticking open may be caused by carbon and moisture forming inside of choke housing and restricting movement of choke piston. This condition is due to a broken or leaking heat choke tube, which allows exhaust gases to enter choke passage. Replacement of tube necessitates removal of manifold.

Fuel Leakage:

Rough engine idle, stalling and hard starting may be caused by fuel leaking past the needle valve seat plug and entering the engine through the secondary side of the carburetor. Use two gaskets, if necessary, and firmly tighten plug. If roughness continues and cannot be eliminated with engine tune-up or idle adjustment, check gasket for air leak between manifold and cylinder heads.

Improper Choke Closing:

On 1955 Mercury engines a ½" thick spacer is used between manifold and carburetor. The automatic choke rod should be 4¼" in length. Check these dimensions whenever difficulty is encountered in adjusting choke rod for proper closing of choke plates.

Main Body Distortion:

Do not exert undue force when tightening the air cleaner anchor screw. Over tightening could distort the main body thereby changing calibration of the metering passages.

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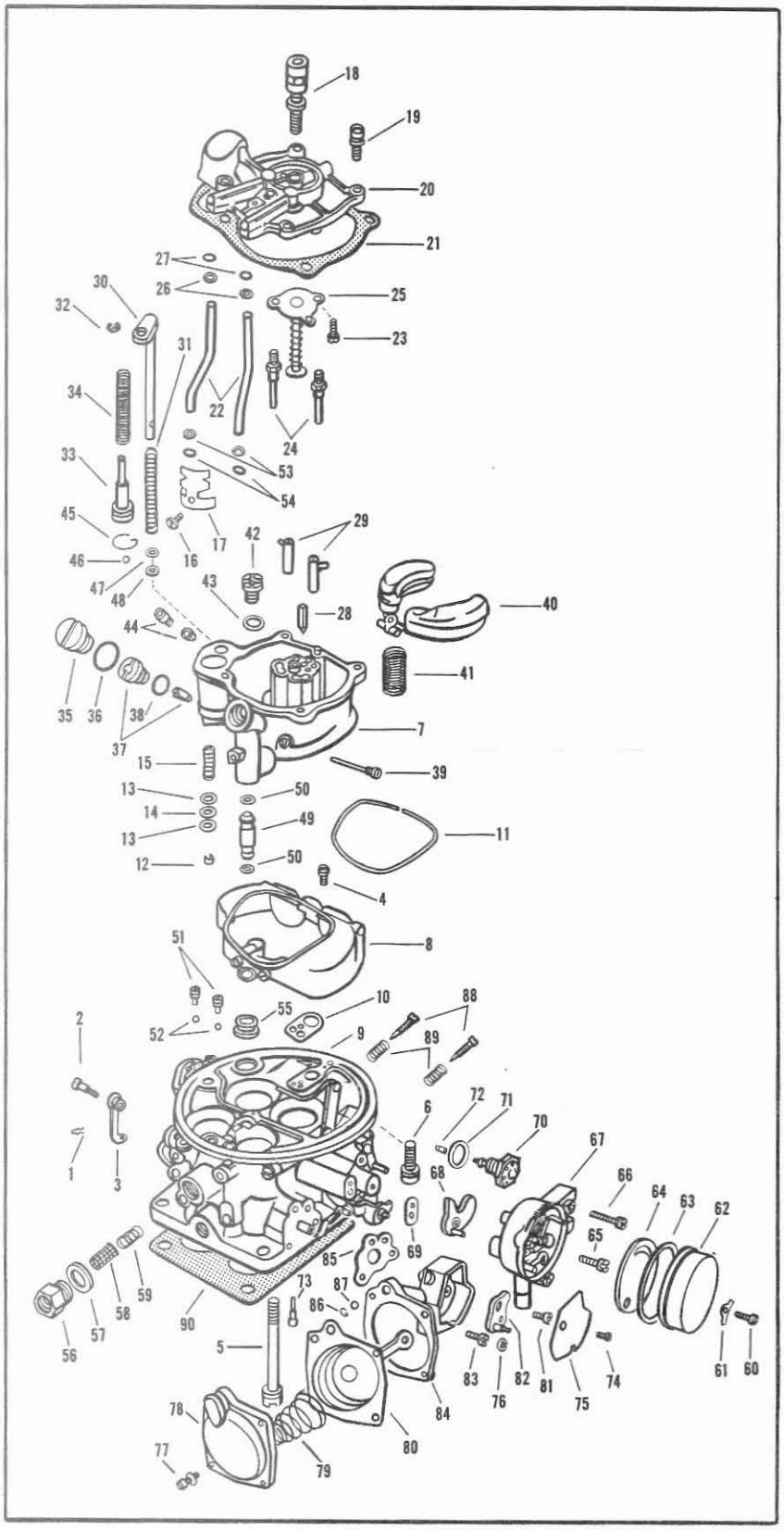
EXPLODED VIEW OF TYPICAL HOLLEY CARBURETOR MODEL 4000



Ref. No.	Nomenclature
1	Pin Spring
2	Pump Rod Stud
3	Pump Link
4	Air Horn Screw and Lockwasher
5	Throttle Body Screw (long)
6	Throttle Body Screw (short)
7	Main Body
8	Air Horn
9	Throttle Body
10	Main Body to Throttle Body Gasket
11	Air Horn Seal
12	Bowl Vent Selector
13	Pump Rod Seal Washer
14	Pump Rod Felt Seal
15	Pump Rod Seal Spring
16	Screw and Lockwasher
17	Secondary Connecting Tube Bracket
18	Air Cleaner Screw
19	Main Body Cover Screw and Washer
20	Main Body Cover
21	Main Body Cover Gasket
22	Secondary Connecting Tube
23	Screw and Lockwasher
24	Secondary Jet Assembly
25	Economizer Diaphragm
26	Secondary Tube Seal Washer
27	Secondary Tube Seal
28	Pump Discharge Needle
29	Discharge Nozzle Assembly
30	Pump Operating Rod
31	Pump Return Spring
32	Pump Operating Rod Retainer
33	Pump Plunger
34	Pump Spring
35	Needle Valve Seat Plug
36	Needle Valve Seat Plug Gasket
37	Needle Valve and Seat Assembly
38	Needle Valve Seat Gasket
39	Float Pin
40	Float Assembly
41	Float Spring
42	Power Valve Assembly
43	Power Valve Gasket
44	Main Jet
45	Pump Inlet Check Ball Retainer
46	Pump Inlet Check Ball
47	Pump Rod Lubricator Washer
48	Pump Rod Lubricator Ring
49	Fuel Inlet Adapter
50	Fuel Inlet Adapter Seal
51	Secondary Check Ball Retainer
52	Secondary Check Ball
53	Secondary Tube Seal Washer
54	Secondary Tube Seal
55	Air Tube Grommet
56	Fuel Inlet Fitting
57	Fuel Inlet Fitting Gasket
58	Filter Screen
59	Filter Screen Retainer Spring
60	Thermostat Housing Screw
61	Thermostat Housing Retainer
62	Thermostat Housing Assembly
63	Thermostat Housing Gasket
64	Baffle Plate
65	Choke Housing Screw (short)
66	Choke Housing Screw (long)
67	Choke Housing Assembly
68	Fast Idle Cam
69	Choke Housing Gasket
70	Spark Valve Assembly
71	Spark Valve Gasket
72	Spark Valve Restriction
73	Distributor Check Ball Retainer
74	Screw and Lockwasher
75	Diaphragm Housing Cover
76	Diaphragm Link Retainer
77	Screw and Lockwasher
78	Diaphragm Cover
79	Diaphragm Spring
80	Diaphragm Assembly
81	Screw and Lockwasher
82	Diaphragm Lever Assembly
83	Screw and Lockwasher
84	Diaphragm Housing Assembly
85	Diaphragm Housing Gasket
86	Diaphragm Check Ball Retainer
87	Diaphragm Check Ball
88	Idle Adjusting Screw
89	Idle Adjusting Screw Spring
90	Flange Gasket