CARBURETOR SERVICE PROCEDURE

HOLLEY MODEL 1920

FORM NO. 16-H-12

NOTE: Some models of the Holley 1920 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 will separate the carburetor into its component parts far enough to permit a thorough cleaning. Disassembly will be best accomplished by following alphabetical listing which denotes name of part to be removed and number sequence indicating order of removal.

CAUTION: Do not remove idle mixture screw (30) or idle limiter cap (32) unless required calibrating equipment and a new replacement limiter cap is available.

A. Economizer cover, gasket and diaphragm assembly – 1, 2, 3 and 4.
B. Mechanical vent rod and valve assembly – 5, 6, 7 and 8. Be careful that vent spring (6) is not lost during removal.
C. Float bowl, gasket and fuel inlet baffle – 9, 10, 11 and 12.
D. Needle and seat assembly – 13 and 14.
E. Float and lever assembly – 15 and 16.
F. Main well and economizer body – 17, 18 and 19. Take note that screws (17), located at lower left and upper right-hand corners of economizer body, are shorter than screws (18).
G. Main jet – 20.
H. Pump return spring, diaphragm and rod assembly – 21 through 25. Assembly is removed as a unit. To disassemble, apply pressure to end of sleeve (24), compressing spring (25), allowing ball (23) to drop out.
I. Pump operating lever and link – 26, 27, 28 and 29.
J. Idle adjusting screw and spring – 30 and 31.
K. Idle screw limiter cap – 32.

Note: For general cleaning purposes, disassembly need not be carried further than stated above. If choke piston must be removed due to carbon build-up, remove cotter pin that joins piston link to choke valve and while holding piston at inner end of its travel, drill a 1/8" hole (or drive a sharp punch) through center of choke piston plug and pry plug out. Be careful not to damage piston when removing plug. Use a new plug during reassembly.

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. Do not soak any parts containing rubber, leather or plastic if they are to be re-used.
C. 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.
D. BLOW OUT ALL PARTS AND PASSAGES WITH DRY COMPRESSED AIR.

3. REASSEMBLY

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

A. When installing the idle adjusting screw (30), lightly bottom (do not force), then back out screw 1½ turns.
B. If choke piston and link were removed for cleaning, position link with end pointing upward. Choke interference will result if end of link points downward.
C. When installing the pump return spring (21), place the large end of spring against the pump diaphragm (22).
D. The power valve and the intake and discharge check valves are held in place in the main well and economizer body (19) with pressed-in plugs. These valves are non-removable and if found to be defective, entire economizer body must be replaced.

Special Note:

On engines equipped with emission reduction (positive crankcase ventilation), use only the thick flange gasket (34) under carburetor and make certain that flange gasket is correctly installed. (Small hole in gasket must match vent hole in base of carburetor.)

On engines that are not equipped with emission reduction, both the thick and thin flange gaskets (34 and 35) must be used. The thin gasket is placed between the thick gasket and carburetor.

4. ADJUSTMENTS

A. Float Level: (Fig. 1)

Invert carburetor, allowing tab on float lever to rest against pin on the closed needle valve. Using gauge supplied and measuring at a point 1 inch from left edge of fuel bowl, the distance between float and inner edge of fuel bowl should be as listed in specification table. Never force resilient tipped needle valve.

Note: This is a bench adjustment and Fuel Level must be checked after installing carburetor on engine.

B. Fuel Level: (Fig. 2)

With carburetor installed and car on a level surface, crank or run engine until fuel bowl is full and fuel ceases to enter. With economizer parts (1 through 4) removed, the distance measured from economizer hole to level of fuel should be as listed in specification table. If measurement is incorrect, remove float bowl and readjust tab that contacts needle valve.

C. Pump Link Position: (Fig. 3)

Position pump link in hole in throttle lever as indicated in specification table.

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D. Bowl Vent: (Fig. 4)

1. With throttle closed at normal idle position, and using a drill as a gauge, the distance (A) between vent valve and seat on casting should be as listed in specification table. To adjust, bend tab (B) or operating lever (C) up or down as needed.
2. E.C.S. Carburetors; with throttle set at Hot Idle position, gap (D) between end of vent valve stem and operating rod should be as listed in specification table. To adjust, bend short horizontal portion of operating rod up or down as required.

E. Fast Idle – Cam: (Fig. 5) Carb. off Engine.

Type I

Hold choke valve closed and then close throttle valve. The end of fast idle screw should align with index mark on fast idle cam. To adjust, bend fast idle rod.

Type II and III

Place fast idle screw on lowest step of fast idle cam for Type II. Place fast idle screw on second step, against top step, for Type III. Lightly close choke valve until resistance is felt. The distance measured between upper edge of choke valve and inner wall of air horn, should be as listed in specification table. To adjust, bend fast idle rod.

F. Unloader:

No adjustment necessary. Unloader setting will be correct when fast idle cam is properly indexed, as stated above.

G. Vacuum Kick: (Fig. 6)

With separate vacuum source (minimum 10" of mercury) from distributor tester or another engine applied to diaphragm housing, lightly close choke valve as far as possible without forcing. Using a drill or suitable rod gauge, the distance the upper edge of choke valve remains open should be as listed in specification table. To adjust, bend choke operating link. Link must be removed from carburetor when bending, to prevent damage to diaphragm.

H. Idle Mixture and Speed: (Fig. 3)

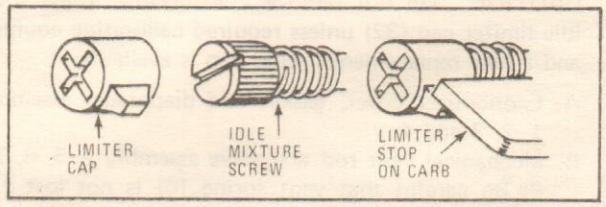
1962-67: Without C.A.P.

(Alternator equipped engines, turn head lights on to compensate for charging drag. Also, if so equipped, turn air conditioner ON). With engine hot and choke wide open, adjust idle adjusting screw for highest RPM. Then turn screw inward until lean mixture causes engine to run rough and loose speed. Finally turn screw out just enough to regain lost speed and smoothest idle with "lean as possible" setting. Adjust throttle stop screw for correct RPM. Recheck idle adjusting screw for best setting.

Beginning 1966 C.A.P., C.A.S., and E.C.S. carburetors require special idle mixture and speed settings with use of an electric tachometer, vacuum gauges and exhaust analyzer. Follow car model manufacturer's instructions in service manual and on decal in engine compartment. If special equipment is not available, temporary adjustment can be made in normal manner providing idle adjusting screw is not backed out more than 2 turns from lightly seated position. Best results obtained only by use of above equipment.

Note: On cars with automatic transmission, unsnap ball joint connection at accelerator shaft bell crank. This insures against the possibility of excessive idle speed due to trans. internal stop holding throttle open. After idle adjustment is completed, screw ball joint connection up or down until ball joint lines up evenly with socket. Snap into place.

I. TO INSTALL NEW IDLE LIMITER CAP



New idle limiter cap must be installed after completing above steps to comply with State and Federal regulations regarding Emission Control by limiting range of mixture screw travel.

1. Plastic cap can be softened for easier installation by soaking it in hot water for a few minutes.
2. Use care not to turn mixture screw when forcing cap in place.
3. Place cap on head of mixture screw in extreme counter-clockwise position with ear of cap against stop on carburetor.
4. Press firmly until cap snaps into place.

J. Fast Idle Speed: (Fig. 5)

With hot idle speed correctly adjusted, engine idling at normal operating temperature and Auto Trans in neutral, position fast idle screw on specified step of fast idle cam as listed in table. Turn fast idle adjusting screw in or out for correct engine RPM.

K. Automatic Choke – (Unit in Manifold)

Remove unit from well in manifold. Loosen lock nut and turn mounting post with screw driver until index mark on disc is aligned with specified mark (between "L" and "R" scale markings) as listed in table. Tighten locknut and reinstall unit. Connect to carburetor and check for correct closed choke valve tension when cold.

L. Dashpot (When Used)

After idle speed and mixture have been adjusted, run engine with tachometer attached and open throttle until tab on throttle lever contacts stem of dashpot. (Do not compress stem.) Turn dashpot in or out of bracket as required to maintain a 2500 RPM tachometer reading. Lock dashpot in this position.

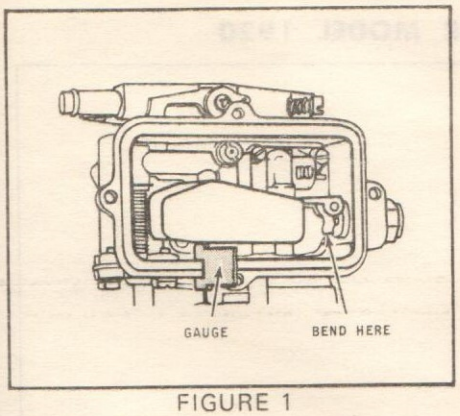


FIGURE 1

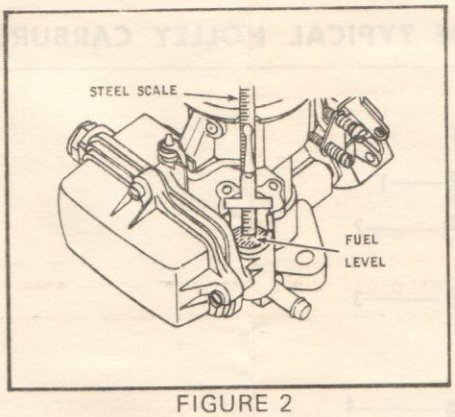


FIGURE 2

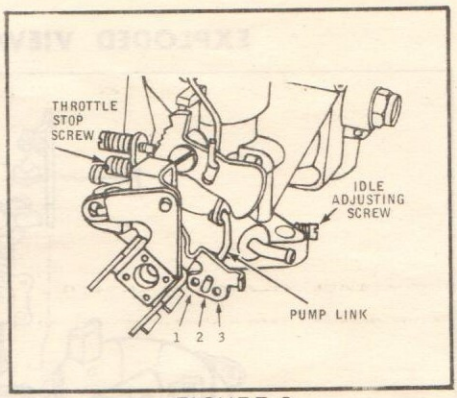


FIGURE 3

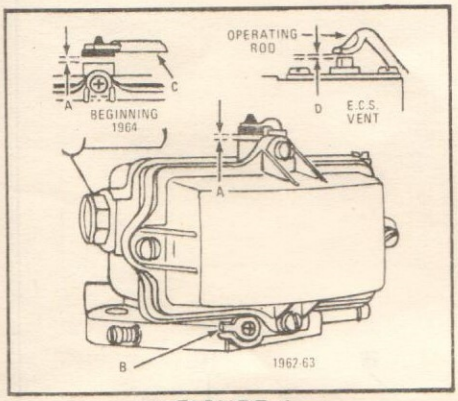


FIGURE 4

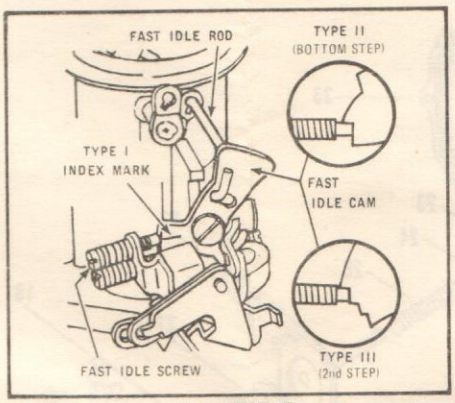


FIGURE 5

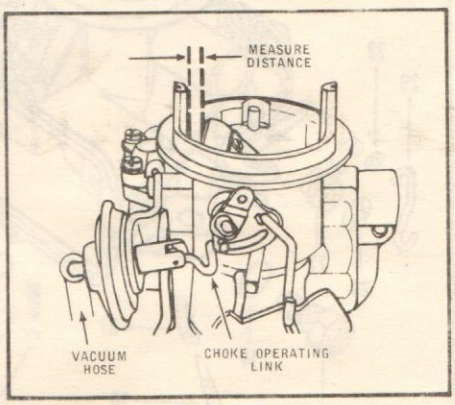


FIGURE 6

SPECIFICATION AND ADJUSTMENT TABLE

***NOTE:** See Service Manual and/or Decal in engine compartment for additional Idle Mixture specifications and procedures.

Application	Float Level	Fuel Level	Bowl Vent	Pump Link Hole	Vacuum Kick S/T	Vacuum Kick A/T	Auto. Choke	Fast Idle Cam Type	Fast Idle Cam Setting	Engine Speed — RPM Hot Idle* S/T	Hot Idle* A/T	Fast Idle* S/T	Fast Idle* A/T
AMERICAN MOTORS													
1964-65 All	13/64	27/32	3/32	1	1/8	1/8	Index	III	1/8	550	500	1800	1800
1966-69 All	13/64	27/32	3/32	3	1/8	1/8	2 Rich	III	1/8	600	550	1600	1600
CHEVROLET													
1963-67 All	13/64	3/4	5/64	3	9/64	9/64	—	III	9/64	600	500	1700	1700
DART-DODGE PLYMOUTH-VALIANT													
1960-63 All	13/64	11/16	1/16	2	—	—	—	I	Index	550	550	1500 [1]	1700
1964 All	13/64	11/16	1/16	2	3/16	5/32	—	II	15/64[2]	550	550	700 [3]	700
1965 All	13/64	27/32	1/16	2	1/8	3/32	2 Rich	III	5/64[2]	550	550	700 [3]	700
1966-68 All (Exc. Taxi)	13/64	27/32	1/16	2	1/8	3/32	2 Rich	III	1/16[4]	[5]		[6]	
1968 Taxi	13/64	27/32	1/16	2	9/64	9/64	2 Rich	III	1/16[4]	650	650	1500 [1]	1550
1969 All (Exc. Taxi)	13/64	27/32	3/32	2	3/32	1/16	2 Rich	III	1/16	700	650	1600 [1]	1800
1969 Taxi	13/64	27/32	3/32	2	3/32	3/32	2 Rich	III	1/16	650	650	1700 [1]	1700
1970 C.A.S. & E.C.S.	13/64	27/32	3/32[7]	2	3/32	1/16[8]	2 Rich	III	1/16	700	650	1600 [1]	1800
1971 All	13/64	27/32	1/32	2	3/32	3/32	2 Rich	III	1/16	750	750	1600 [1]	1900
1972 All	13/64	27/32	.015	2	.100	.100	—	III	1/16	[9]		2000 [1]	1900
1973 All	9/32	—	.015	—	.100	.100[10]	—	III	1/16[11]	750	750	2000 [1]	1700
DODGE TRUCK												[6]	
1965-69 U.S. & Canada	13/64	27/32	1/16	2	1/8	3/32	Index	III	5/64[2]	550	550		
1968 C.A.P.	13/64	27/32	1/32	2	1/4	9/32	—	—	—	—	—	—	—
1969 C.A.S.	13/64	27/32	3/32	2	9/32[12]	3/8	—	—	—	—	—	—	—
1970-72 All	13/64	27/32	.015[13]	2	.100	.100	—	—	—	—	—	—	—
1973 All	9/32	—	.015	—	.100	.100[10]	—	—	—	—	—	—	—
I.H.C.													
1968-72 All	13/64	27/32	—	2	—	—	—	—	—	—	—	—	—
JEEP													
1964-66 230" Eng.	13/64	27/32	—	2	—	—	—	—	—	—	—	—	—

Abbreviations: C.A.P. = Cleaner Air Package; C.A.S. = Cleaner Air System; E.C.S. = Evaporation Control System

[1]Fast idle screw on 2nd highest step of cam.
[2]Not required on 170" Engine.
[3]Fast idle screw on bottom step of cam.
[4]C.A.P. Std. Trans. 3/32
[5]w/o C.A.P. 550 rpm; with C.A.P. 650 rpm.
[6]w/o C.A.P. 700 rpm with screw on bottom step of cam. With C.A.P. 1500 rpm with screw on 2nd highest step of cam.
[7]E.C.S. & Taxi 1/32
[8]Tax with A/T 3/32
[9]198" Eng. 800 rpm; 225" Eng. 750 rpm.
[10]198" Eng. 080"
[11]198" Eng. with A/T 3/64
[12]225" Eng. 3/8
[13]1971 Calif. with NOX 1/32

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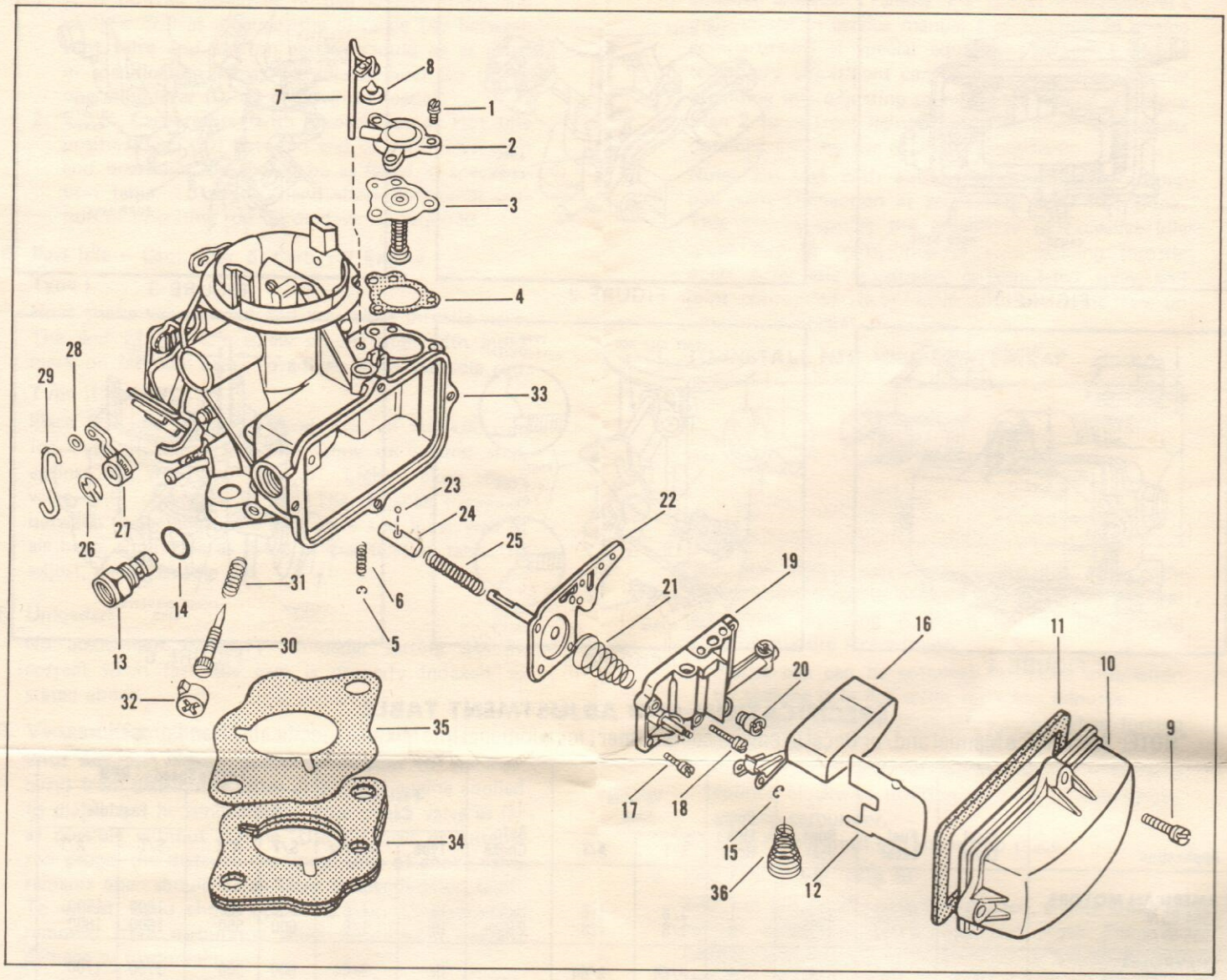
EXPLODED VIEW OF TYPICAL HOLLEY CARBURETOR MODEL 1920



Ref. No.	Nomenclature
1	Economizer Body Cover Screw
2	Economizer Body Cover
3	Economizer Diaphragm and Stem
4	Economizer Body Gasket
5	Vent Spring Retainer
6	Mechanical Vent Spring
7	Mechanical Vent Rod
8	Mechanical Vent Valve
9	Float Bowl Screw and Washer
10	Float Bowl
11	Float Bowl Gasket
12	Fuel Inlet Baffle
13	Needle and Seat Assembly
14	Needle Seat Gasket
15	Float Retainer
16	Float and Lever Assembly
17	Main Well Body Screw (Short)
18	Main Well Body Screw (Long)

Ref. No.	Nomenclature
19	Main Well and Economizer Body
20	Main Jet
21	Pump Return Spring
22	Pump Diaphragm and Rod Assembly
23	Pump Push Rod Sleeve Ball
24	Pump Push Rod Sleeve
25	Pump Operating Spring
26	Pump Operating Lever Retainer
27	Pump Operating Lever
28	Pump Operating Lever Washer
29	Pump Operating Link
30	Idle Adjusting Screw
31	Idle Adjusting Screw Spring
**32	Idle Screw Limiter Cap
33	Main Body Assembly
34	Flange Gasket (Thick)
*35	Flange Gasket (Thin)
36	Float Stabilizing Spring

* Not used on engines with emission reduction.
** Not used on all models.