HOLLEY 4150 & 4160 4-BARREL

HOLLEY 4150

DODGE

Application	Holley Carb. No. Man. Trans.	Auto. Trans.
1970		
413" Motor Home Chassis	R-4399A	R-4399A
1971		
360" (Exc. B300 Van)	R-4665A	R-4666A
360" B300 Van	R-6273A	R-6274A
413" Motor Home Chassis	R-4399A	R-4399A

FORD

Application	①Ford Part No. Man. Trans.	Auto. Trans.
1974		
460"	D4TE-ARA	D4TE-ASA

① — Basic prefix is 9510 for carburetors.

INTERNATIONAL HARVESTER

Application	IHC Part No. Man. Trans.	Auto. Trans.
1969-71		
392"		
Man. Choke	4237,4318,4572	
Auto. Choke	4312,4599	4313,4599
With Governor	4323	4324
1972-73		
392"		
With Governor	4312	4313
Without Governor	4323	4324
1974		
392"		
With Governor	6803-2	6803-2
Without Governor	7035	7035

HOLLEY 4160

DODGE

Application	Holley Carb. No. Man. Trans.	Auto. Trans.
1972		
413" Motor Home Chassis	R-6231A	R-6231A
1973		
413" Motor Home Chassis	R-6495A	R-6495A

JEEP

Application	American Motors Code
1965-69	
327" With Emission Control	R-3394A
327" Without Emission Control	R-3602A

CARBURETOR IDENTIFICATION

Holley part number is stamped on fuel bowl and/or air horn. Complete number may not be used (R-3394A) as "R" indicates carburetor and "A" indicates complete assembly. A suffix number indicates modifications in design.

DESCRIPTION

Models 4150 and 4160 are downdraft, two stage carburetors. Each can be considered a dual carburetor. One stage furnishes air/fuel mixture throughout the entire range of engine operation and the secondary functions only when a greater quantity of air/fuel mixture is required. Primary stage contains fuel bowl, metering block and accelerator pump assembly. Each primary barrel contains primary and booster venturi, main fuel discharge nozzle throttle plate, and idle fuel passage. Secondary stage contains a fuel bowl, metering block and secondary throttle operating diaphragm assembly. Each secondary barrel contains primary and booster venturi, idle passage main and secondary fuel discharge nozzle, throttle plate, and transfer fuel passage.

ADJUSTMENTS

NOTE — Adjustment procedures and specifications for Holley 4150 4-barrel, used on Ford 460", not available at time of publication.

HOT (SLOW) IDLE RPM

See appropriate article in TUNE-UP Section.

COLD (FAST) IDLE RPM

See appropriate article in TUNE-UP Section.

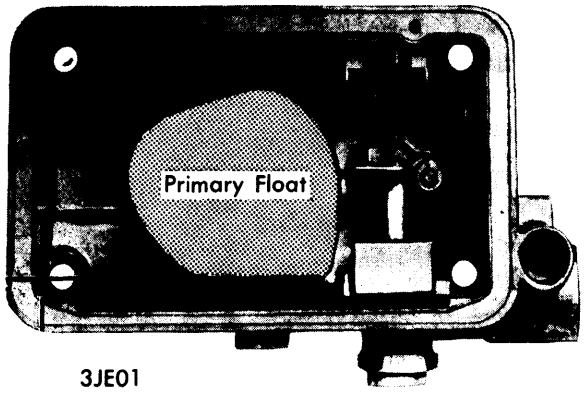
ACCELERATOR LINKAGE

See appropriate article in TUNE-UP Section.

FLOAT LEVEL (DRY)

NOTE — This is preliminary adjustment only. Final (wet) adjustment can only be performed with carburetor installed on engine.

With fuel bowl assemblies removed, adjust inlet needle and seat until floats are parallel to top of fuel bowls.



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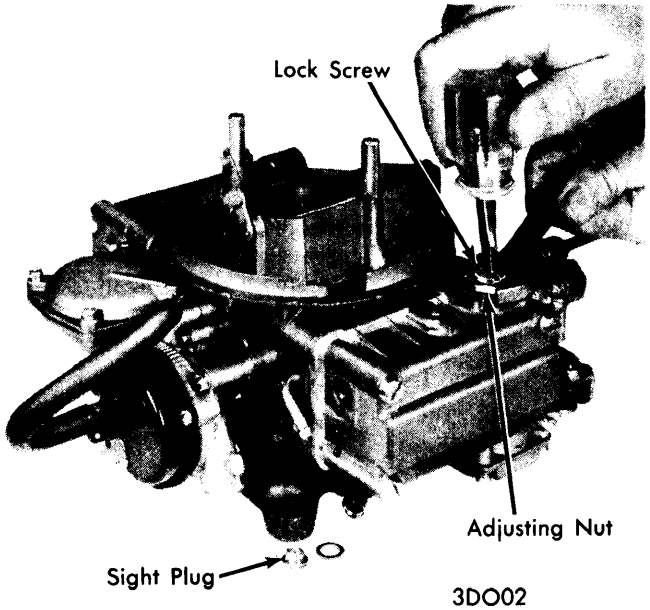
FLOAT LEVEL (DRY)

HOLLEY 4150 & 4160 4-BARREL (Cont.)

FLOAT LEVEL (WET)

With engine at normal operating temperature, and vehicle on flat surface, stop engine and remove air cleaner. Remove fuel level sighting plug. Fuel level should be at lower edge of sight plug opening. If necessary to adjust, loosen fuel level adjusting nut and turn adjustor until correct fuel level is obtained. Tighten locknut and check fuel level.



FLOAT LEVEL ADJUSTMENT (WET)

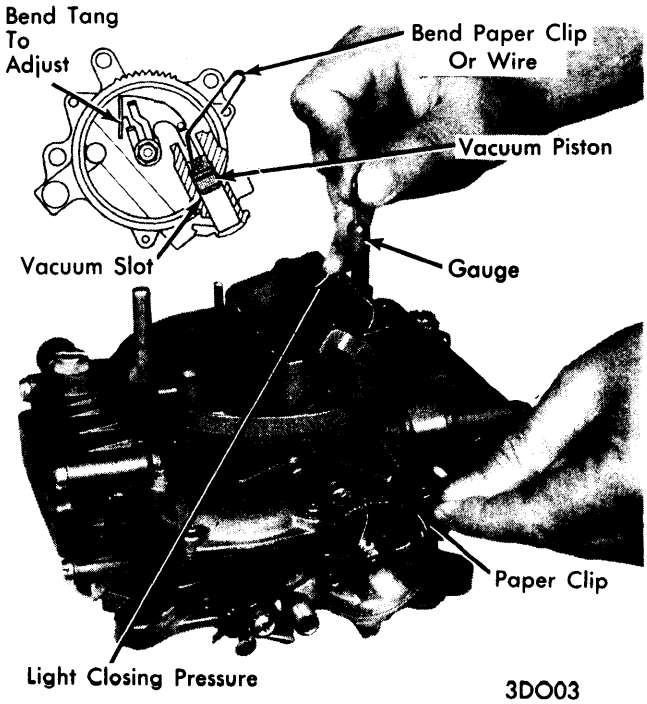
CHOKE VACUUM PISTON

Dodge – Remove choke cover. Bend paper clip or piece of .036" wire and insert bent end into slot of vacuum piston bore. Apply light closing pressure against choke valve. With wire held in place it should be possible to insert specified gauge between choke valve and air horn wall. If adjustment is necessary, bend adjustment tang on choke piston linkage, until correct clearance is obtained.

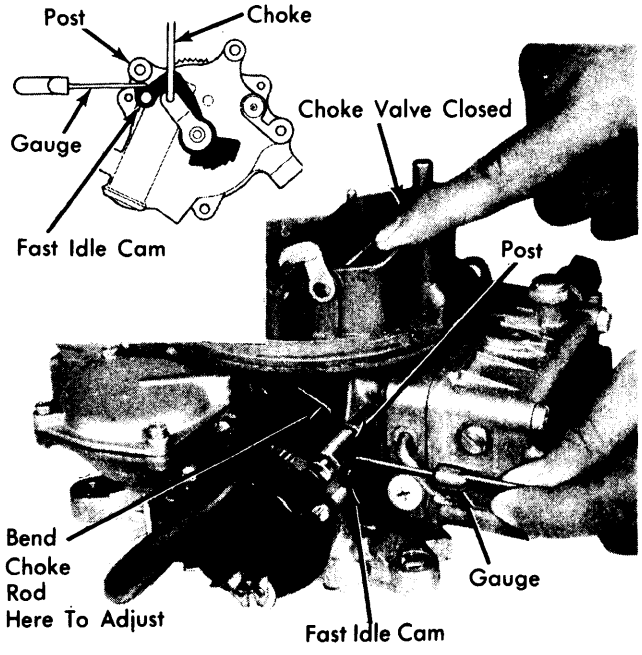
FAST IDLE CAM POSITION

Dodge – With choke vacuum piston properly adjusted, and choke assembly reassembled on carburetor, insert specified gauge between top of fast idle cam and choke housing post. Apply light closing pressure to choke plate. If slight drag is not felt as gauge is withdrawn, adjust by bending choke linkage, as indicated.

International Harvester – With fast idle speed adjusting tang on second step of fast idle cam, move choke plate toward closed position with light closing pressure on choke control lever. Insert specified gauge between choke plate and air horn wall. Adjustment will be necessary if slight drag is not felt as gauge is withdrawn. To adjust, bend tang until correct clearance is obtained.



CHOKE VACUUM PISTON ADJUSTMENT

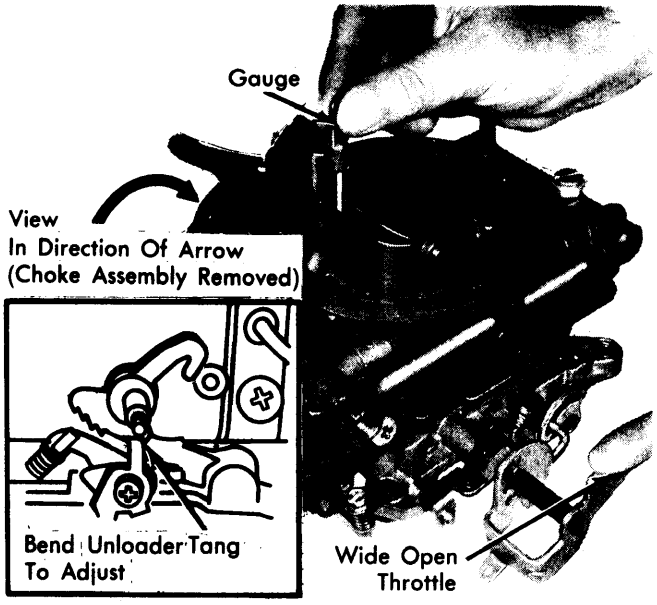


FAST IDLE CAM POSITION ADJUSTMENT

HOLLEY 4150 & 4160 4-BARREL (Cont.)

CHOKE UNLOADER

All Models – Hold throttle in wide open position and insert specified gauge between choke plate and air horn wall. With light pressure on choke plate, a slight drag should be felt as gauge is withdrawn. If adjustment is necessary, bend tang that contacts fast idle cam.



CHOKE UNLOADER ADJUSTMENT

VACUUM KICK

International Harvester – Depress choke diaphragm with screwdriver or drift punch. Insert specified gauge between choke plate and air horn wall. Apply sufficient closing pressure on lever to which choke rod attaches. *NOTE – Cylindrical spring of diaphragm will extend as internal spring is compressed. This spring must be fully compressed for proper measurement of vacuum kick.* An adjustment will be necessary if slight drag is not felt as gauge is withdrawn. Shorten or lengthen diaphargm to obtain correct choke opening. Length changes should be made carefully by bending (opening or closing) bend provided in link.

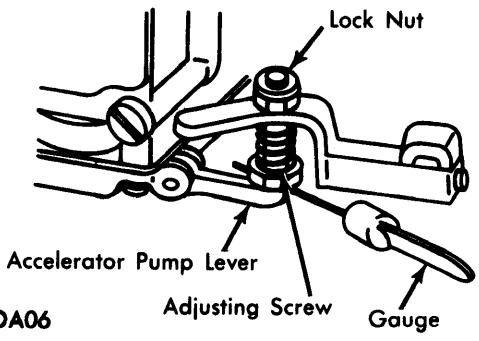
Dodge – Remove choke cover and bend paper clip or piece of .036" wire as illustrated. Insert bent end into slot of vacuum piston bore. Apply light closing pressure against choke valve. With wire held in place between piston and top end of slot, it should be possible to insert specified gauge between choke valve and air horn wall. If adjustment is necessary, bend adjusting tang on choke piston linkage. Install choke cover.

FUEL BOWL VENT VALVE ADJUSTMENT

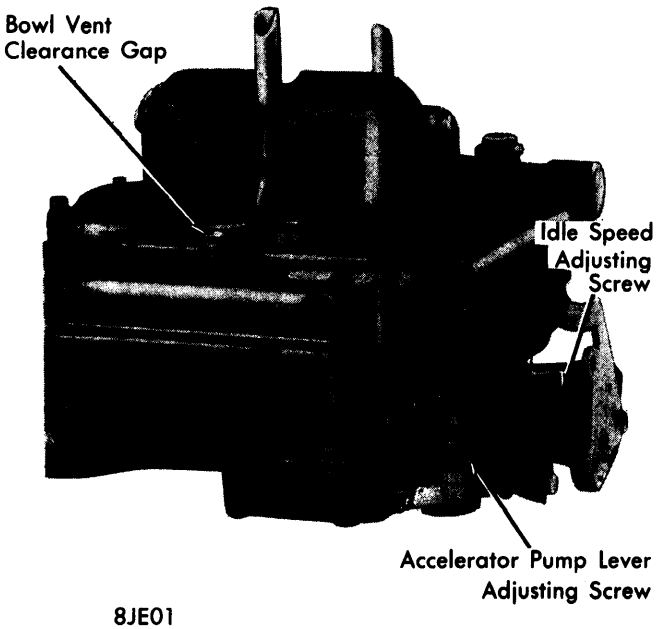
I.H.C. & Jeep – With engine at normal operating temperature and curb idle set to specifications, measure clearance between fuel bowl and vent valve operating rod. If adjustment is necessary, bend operating rod to obtain specified clearance of .050-.070".

ACCELERATOR PUMP LEVER CLEARANCE

With throttle lever held wide open, and pump lever held down, it should be possible to insert .015" feeler gauge between pump lever and adjusting screw. If necessary, adjust screw to specifications.



CHECKING ACCELERATOR PUMP LEVER CLEARANCE

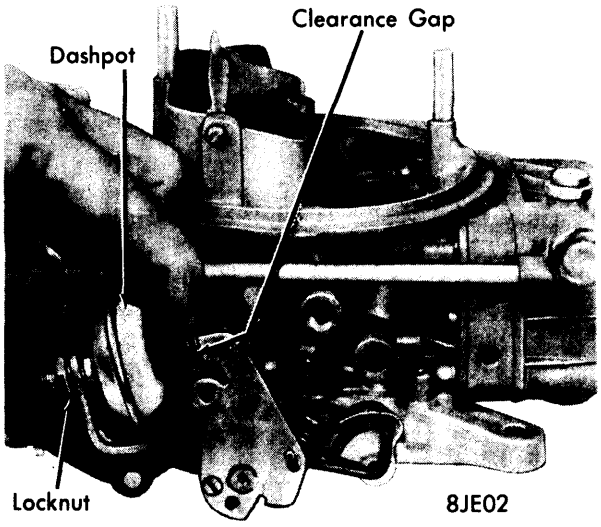


EXTERNAL FUEL BOWL VENT VALVE ADJUSTMENT

HOLLEY 4150 & 4160 4-BARREL (Cont.)

DASHPOT ADJUSTMENT

I.H.C. & Jeep – With engine at normal operating temperature and choke valve fully open, depress dashpot stem and measure clearance between stem and throttle operating rod. If adjustment is necessary, loosen locknut and turn dashpot in or out to obtain specified clearance of .090-.120".



DASHPOT ADJUSTMENT

OVERHAUL

DISASSEMBLY

Disassemble Into Subassemblies – 1) Remove idle stop solenoid (if equipped) from bracket on throttle body. *NOTE – Do not remove bracket from throttle body. Further, do not immerse solenoid in any type of carburetor cleaner.*

2) With carburetor mounted on a suitable jig or elevating legs, remove primary fuel bowl, metering body and gaskets. Disconnect secondary throttle operating rod at throttle lever.

3) Remove secondary fuel bowl, metering body and gaskets. Remove secondary throttle diaphragm from main body. Remove secondary diaphragm rod retaining clip. Remove throttle body from main body.

Disassemble Fuel Bowls – 1) Loosen inlet needle and seat lock screw, turn adjusting nut counterclockwise and remove needle and seat assembly.

2) Remove hinge pin retainer and slide float from bowl. Note position and remove spring and hinge pin. Remove bowl filler from primary bowl after float is removed.

3) Remove sight plug, inlet fitting, fuel filter, spring and gaskets.

4) On primary bowl only, remove pump diaphragm screws and lift pump housing, diaphragm and spring from fuel bowl. Check pump inlet ball for free movement and damage. Damage to ball, passage or retainer requires a new bowl.

Disassemble Metering Bodies – 1) Remove the body filler block from primary body. Remove main metering jets. Remove the power valves.

2) Remove idle mixture screws and limiter caps (primary side only). On 4160 carburetors, remove limiter caps, then lightly seat idle screws with fingers and count number of turns that were necessary to seat screws. This is necessary as screws must be returned to original position on reassembly.

3) Disassembly of the secondary metering body is not required. However, it is important that the well bleed parts, main metering restrictions and idle feed restrictions are clean.

Disassemble Secondary Operating Diaphragm – Remove cover screws and separate cover from housing. Remove return spring from cover, then slide diaphragm from housing.

Disassemble Main Body – 1) Remove choke vacuum break, disconnecting link at choke lever. Remove choke lever and fast idle cam and hot idle compensator valve (if used).

2) Remove pump discharge nozzle screw and nozzle. Invert the body to remove the pump discharge check valve. *NOTE – Further disassembly of the main body is not required for cleaning purposes since the choke rod seal will stand normal cleaning in carburetor cleaner.*

3) If parts replacement is necessary, remove shaft screws and remove choke rod (upward through plastic seal) and remove seal from main body. Remove valve from shaft slot and slide shaft from body.

Disassemble Throttle Body – 1) In normal cleaning and overhaul procedures, do not remove the throttle valves unless they are nicked or damaged.

2) If necessary to remove throttle valves, file staking from ends of screws, remove screws and slide damaged valves from bores. Secondary valves are thicker than the primary valves. *NOTE – Install valves in same bores as when removed. Relationship of the primary valves to the idle transfer port and spark advance control ports is carefully established for one particular assembly.*

CLEANING & INSPECTION

CAUTION – Rubber parts, plastics, diaphragms, pump plungers and electric parts should not be immersed in carburetor cleaners. The pressure relief valve in the air horn will withstand normal cleaning in carburetor cleaners.

1) If the carburetor cleaner used recommends the use of water as a rinse, the water should be hot. After blowing out all passages with compressed air, it is recommended that the parts be rinsed with kerosene or gasoline to be sure that no moisture remains.

2) Check secondary throttle diaphragm for free operation and leakage. Inspect idle mixture needles for grooves or ridges and replace if damaged. Check fast idle cam for excessive wear or damage.

3) Check for binding or damage to throttle and choke levers, valves and shaft. Replace filter element.

REASSEMBLY

Assemble Throttle Body – 1) If throttle shafts were removed, install throttle shafts in throttle body. *NOTE – Shafts have plastic bushings. Roll new bushing between fingers to help shape the bushing on the shaft for easier installation.*

2) Install valves on shaft but do not tighten screws. Center the valves on the shafts by holding valves closed while tightening the screws. *NOTE – The throttle valves are installed with identification numbers down (to manifold side).* Stake the valve screws with pliers.

3) Install throttle connecting link (secondary lockout) to the throttle shaft levers. Install fast idle cam lever on primary throttle shaft and diaphragm lever on secondary throttle shaft.

HOLLEY 4150 & 4160 4-BARREL (Cont.)

4) Install idle speed screw and spring. Install accelerator pump cam on throttle lever. Install pump operating lever assembly.

Assemble Main Body – 1) Install pump discharge valve and nozzle. Install choke rod seal and choke rod in body. Install choke shaft in body and connect upper end of choke rod.

2) Install choke valve on choke shaft but do not tighten screws. Center choke valve on shaft by holding valve closed while tightening screws. Stake ends of screws with pliers. *NOTE – The choke valve is offset and should fall freely to wide open position from its own weight.*

3) Install choke lever and fast idle cam. Connect vacuum break link to choke lever, then install vacuum break to body. Install hot idle compensator valve (if used).

Assemble Secondary Throttle Operating Assembly – 1) Slide diaphragm into housing, making sure that vacuum port in housing is aligned with vacuum port in cover and with hole in diaphragm. Return spring should be installed with coiled end snapped over button in cover.

2) Test diaphragm by pressing in on stem and placing finger over port. Diaphragm should stay in retracted position.

3) Using a new gasket, install diaphragm on main body of carburetor and at the same time engage stem with secondary stop lever. Install and tighten screws.

Assemble Metering Bodies – 1) Install power valve and main metering jets. On primary metering body install filler block.

2) Using new seals, install idle mixture screws and make preliminary adjustment by turning lightly to seat, then back out one turn or back out number of turns counted at disassembly.

Assemble Fuel Bowls – 1) On primary bowl install bowl filler before float installation. Assemble spring to float, slide float into bowl and install retainer screws.

2) Install needles and seats (leave locknuts loose). Install inlet fitting, fuel filter, spring and gasket. Install sight plugs.

3) On primary bowl only, install pump spring and diaphragm in fuel bowl.

CARBURETOR ADJUSTMENT SPECIFICATIONS

Holley Carb. No.	Idle Speed (Engine RPM)		Accel. Pump Setting	Float Setting	Fast Idle Cam Setting	Vacuum Kick Setting	Choke Unloader Setting
	Hot	Fast					
Dodge							
R4399A	.....	1900	.015"	②	.080"	.085"	.074"
R4665A	.....	1900	.015"	②	.080"	.070"	.074"
R4666A	.....	1900	.015"	②	.080"	.070"	.074"
R6189A	.....	1900	.015"	②	.080"	.070"	.074"
R6273A	.....	1900	.015"	②	.080"	.070"	.074"
R6274A	.....	1900	.015"	②	.080"	.070"	.074"
R6231A	.....	1900	.015"	②	.080"	.070"	.074"
R6495A	.....	1900	.015"	②	.080"	.070"	.074"
Ford①							
D4TE-ARA	.....	.....	.....	.....	.....	.....	.....
D4TE-ASA	.....	.....	.....	.....	.....	.....	.....
I.H.C.							
R4237A	700	③	.015"	②	.105"	.170"	.310"
R4264A	550	③	.015"	②	.105"	.170"	.310"
R4312A	700	③	.015"	②	.105"	.170"	.310"
R4313A	550	③	.015"	②	.105"	.170"	.310"
R4318A	475	③	.015"	②	.105"	.170"	.310"
R4320A	475	③	.015"	②	.105"	.170"	.310"
R4323A	475	③	.015"	②	.105"	.170"	.310"
R4324A	475	③	.015"	②	.105"	.170"	.310"
R4572A	700	③	.015"	②	.105"	.170"	.310"
R4599A	700	③	.015"	②	.105"	.170"	.310"
R4602A	550	③	.015"	②	.105"	.170"	.310"
R6444A	700	③	.015"	②	.105"	.170"	.310"
R6803-2A	700	③	.015"	②	.105"	.170"	.310"
Jeep							
3394A	500	1900	.015"	②	.....	.....	.180"
3602A	500	1900	.015"	②	.....	.....	.180"

① – Specifications for Holley 4150 4-Bbl. used on Ford 460", not available at time of publication.
② – See specific adjustment procedure.
③ – Determined by fast idle cam position.