CARTER YF SINGLE BARREL

CHECKER — Carter Carb. No.

1964-65 6 Cyl. (Synchro-mesh) 3933S
(Auto. Trans.) 3934S
1967 230" 6 Cyl. (With A.I.R.)
(Synchro-mesh) 4367S
(Auto. Trans.) 4368S

CHEVY II

1963-66 153" 4 Cyl. (No A.I.R.)
(Synchro-mesh) ..... 3379S, SA, SB, SC
(Auto. Trans.) ..... 3402S, SA, SB
1966 194" & 230" 6 Cyl. (With A.I.R.)
(Synchro-mesh) ..... 4079S, SA
(Auto. Trans.) ..... 4080S, SA
1967 153" 4 Cyl. (No A.I.R.)
(Synchro-mesh) 4373S
(Auto. Trans.) 4374S
1967 194" 6 Cyl. (With A.I.R.)
(Synchro-mesh) 4387S
(Auto. Trans.) 4368S
1967 250" 6 Cyl. (With A.I.R.)
(Synchro-mesh) 4367S
(Auto. Trans.) 4368S

CHEVROLET & CHEVELLE

1966 194" & 230" 6 Cyl. (With A.I.R.)
(Synchro-mesh) ..... 4079S, SA
(Auto. Trans.) ..... 4080S, SA
1966 250" 6 Cyl. Taxicab (No A.I.R.)
(Synchro-mesh) ..... 4203S, SA
(Auto. Trans.) ..... 4202S, SA
1967 230" 6 Cyl. (With A.I.R.)
(Synchro-mesh) 4367S
(Auto. Trans.) 4368S
1967 250" 6 Cyl. (With A.I.R.)
(Synchro-mesh) 4367S
(Auto. Trans.) 4368S
1967 250" 6 Cyl. Taxicab (No A.I.R.)
(Synchro-mesh) 4377S
(Auto. Trans.) 4378S

CAMARO

1967 230" 6 Cyl. (With A.I.R.)
(Synchro-mesh) 4367S
(Auto. Trans.) 4368S
1967 250" 6 Cyl. (No A.I.R.)
(Synchro-mesh) 4377S
(Auto. Trans.) 4378S
1967 250" 6 Cyl. (With A.I.R.)
(Synchro-mesh) 4367S
(Auto. Trans.) 4368S

COMET, FALCON, FAIRLANE, & MUSTANG

1967 170" & 200" 6 Cyl. "IMCO"
(Auto. Trans.) ..... ①4411S, SA

OLDSMOBILE

1966 250" 6 Cyl. (With A.I.R.)
(Auto. Trans.) 4080S
1967 250" 6 Cyl. (With A.I.R.)
(Synchro-mesh) 4367S
(Auto. Trans.) 4072SA

RAMBLER AMERICAN

1958-62 (Synchro-mesh) 2014S
1958 (Auto. Trans.) 2757S
1959-62 (Auto. Trans.) 2014S
1962 (With "E-Stick") 3331S

① - Ford Motor Co. No. C7DT-9510-T or C7ZF-9510-A.

►CHANGES, CAUTIONS, CORRECTIONS

►*"A.I.R." CARBURETOR NOTE:* These carburetors are used on engines with Air Injection Reactor exhaust emission control system and are special units with different specifications and calibrations.

►*FORD "IMCO" CARBURETOR NOTE:* These engines have revised parts as follows: Cylinder Head, Exhaust Manifold, Thermostat, Distributor, Air Cleaner, Radiator, and Cooling Fan and are used with the Carter YF carburetor for improved engine combustion control without use of the Thermactor air injection system.

►*1966 CHEVY II, CHEVELLE, CHEVROLET 4 & 6 ENGINE SURGE & STUMBLE CORRECTION:* This condition can be eliminated by installing spring-loaded Intake Needle Assembly (furnished in Carter Kit) and setting float level at 5/16". *See ADJUSTMENTS for float level setting procedure and cautions.*

►*1966 CHEVY II, CHEVELLE, CHEVROLET 6 CYL. ENGINE STALL AFTER COLD START CORRECTION:* Revise the Vacuum Break Setting to .240" (4079S, SA & 4203S, SA Carbs.) or .220" (4080S, SA & 4202S, SA Carbs.). Also adjust fast idle so that the **top** of the fast idle tang is aligned with index mark on fast idle cam with choke valve fully closed. *See ADJUSTMENTS.*

CARBURETOR IDENTIFICATION

Carter carburetor number is stamped on tag attached to carburetor by one air horn screw. *NOTE* - A.I.R. carburetor tag is square (tags on other carburetors are triangular).

DESCRIPTION

Single barrel downdraft type with diaphragm type accelerating pump. Metering rod is mounted on lifter link (pump link) and is controlled by the throttle valve lever. Carburetors have different type choke mechanisms as follows:

Manual Choke (Chevy II 4 Cyl.) - Has interconnected fast idle lever. *See Adjustments.*

Integral Automatic Choke (Comet, Falcon, Fairlane, Mustang, Rambler) - Automatic choke assembly is mounted on air horn and linked directly to choke shaft lever. Fast idle cam and unloader arm are located within the choke housing and cover must be removed for checking and adjustment. *See Adjustments.*

Well Type Automatic Choke (Chevy II 6 Cyl., Chevrolet, Chevelle, Camaro, Oldsmobile) - Automatic choke is mounted on intake manifold and linked to choke shaft lever by an adjustable rod. A vacuum diaphragm unit mounted on the carburetor is used to provide initial choke opening. *See Adjustments.*

(Continued)

CARTER YF SINGLE BARREL (Continued)

ADJUSTMENT

COMET, COUGAR, FALCON, FAIRLANE, MUSTANG
NOTE: On cars with air conditioning, operate engine for 20 minutes before making idle speed and mixture adjustment, then adjust with air conditioning operating. On all cars, turn on headlights to place alternator under load. Check and adjust idle speed with transmission in neutral, then adjust idle speed with automatic transmission in Drive. Adjust anti-stall dashpot after idle adjustment completed.

NOTE - If initial adjustment required to warm up engine, turn idle mixture adjusting screw out 1½ turns (except A.I.R.), 3 turns (A.I.R.) from a lightly seated position. Make idle speed and mixture adjustment with Automatic Transmission in Drive, and Air Conditioner OFF (except as noted in Specifications).

Idle Speed & Mixture

With engine at normal operating temperature, choke valve wide open and fast idle inoperative, adjust throttle stopscrew for correct engine idle speed (see specifications). Adjust idle mixture screw for smoothest engine operation, highest vacuum and highest RPM, then make final adjustment as follows:

Chevy II, Camaro, Chevelle, Chevrolet "A.I.R." Cars - Turn idle mixture screw in to "lean roll" point (20-30 RPM drop in engine speed from maximum), then turn screw out 1/4 turn for final setting. Recheck idle speed and repeat idle mixture adjustment if necessary to readjust idle speed.

Comet, Cougar, Falcon, Fairlane, Mustang "Imco" Cars - Turn idle mixture screw inward until engine RPM begins to drop due to lean mixture, then turn screw outward until engine RPM increases and begins

CARBURETOR ADJUSTMENT SPECIFICATIONS

Carter Carb. No.	Idle Speed (Engine RPM) Hot ①	Fast Idle (Off Engine)	Float Level Setting	Float Drop Setting	Idle Vent Setting	Unloader Setting	Auto. Choke Setting	Vacuum Break Setting
2014S	550 ②	.054"	1/2"	.....	.....	9/32"	1 Lean	.....
2757S	475	.054"	1/2"	.....	.....	9/32"	1 Lean	.....
3331S	550 ③	.054"	1/2"	.....	.....	9/32"	1 Lean	.....
3379S,A,B	450-500	.....	7/16" ⑥	1 1/4"	.025-.030"	.....	.....	.....
3933S	450-500	.040"	7/16" ⑥	1 1/4"	.....	1/4"	⑦	.....
3934S	450-500	.040"	7/16" ⑥	1 1/4"	.....	1/4"	⑦	.....
3402S,A,B,C	④	.....	7/16" ⑥	1 1/4"	.025-.030"	.....	.....	.....
4072SA	600 ⑤	.....	7/32"	2 1/4"	.060"	.250"	⑦	.215"
4079S,SA	700 ⑤	.030"	⑨	1 3/16"	1/16"	.260"	⑦	.320" ⑭
4080S,SA	600 ⑧	.035"	⑨	1 3/16"	1/16"	.260"	⑦	.300" ⑮
4202S,SA	500	.040"	⑨	1 3/16"	.065"	.250"	⑦	.300"
4203S,SA	500	.040"	⑨	1 3/16"	.065"	.250"	⑦	.320"
4367S	700 ⑤	.030"	7/32"	⑪	⑫	.250"	⑦	⑬
4368S	⑩	.035"	7/32"	1 3/16"	.065"	.250"	⑦	.220"
4373S	500	.....	7/32"	1 3/16"	.065"	.250"	.....	.....
4374S	500	.....	7/32"	1 3/16"	.065"	.250"	.....	.....
4377S	500	.040"	7/32"	1 3/16"	.065"	.250"	⑦	.240"
4378S	500	.040"	7/32"	1 3/16"	.065"	.250"	⑦	.220"
4387S	700 ⑤	.030"	7/32"	1 3/16"	.065"	.250"	⑦	.240"
4411S,SA	550	.063"	7/32"	1 1/4"	.....	9/32"	1 Rich	.....

① - Auto. Trans. in "D". Air Conditioner ON (except as noted).
② - Synchro-mesh only. 475 RPM for Auto. Trans.
③ - Synchro-mesh only. 500 RPM for Auto. Trans. or with Air Conditioning.
④ - On Auto. Trans. cars, set idle as low as possible in "D" to prevent creep and harsh shifts in service.
⑤ - Air Conditioner OFF (when used).
⑥ - **With solid seat.** ½" with resilient seat.
⑦ - **See text for adjustment.**
⑧ - **Chevy II**, Chevelle, Chevrolet - Air Cond. OFF. **Oldsmobile 650** RPM for Air Cond. Cars (Air **Cond. OFF**).
⑨ - ½" with resilient seat, 7/16" with solid seat, 5/16" with spring-loaded needle, 7/32" with flared tip spring-loaded needle. *See "Changes, Cautions, Corrections".*
⑩ - 600 RPM (Checker), 500 RPM (All Chevrolet Engines).
⑪ - 1 3/16" (Chevrolet), 2 1/4" (Oldsmobile).
⑫ - .065" (Chevrolet), .060" (Oldsmobile).
⑬ - .240" (Chevrolet), .230" (Oldsmobile).
⑭ - Set at .240" to correct stalling after **cold start.** *See "Changes, Cautions, Corrections".*
⑮ - Set at .220" to correct stalling after **cold start.** *See "Changes, Cautions, Corrections".*

CARTER YF SINGLE BARREL (Continued)

to drop due to rich mixture, finally adjust screw approximately midway between the lean and rich mixture settings. Recheck idle speed.

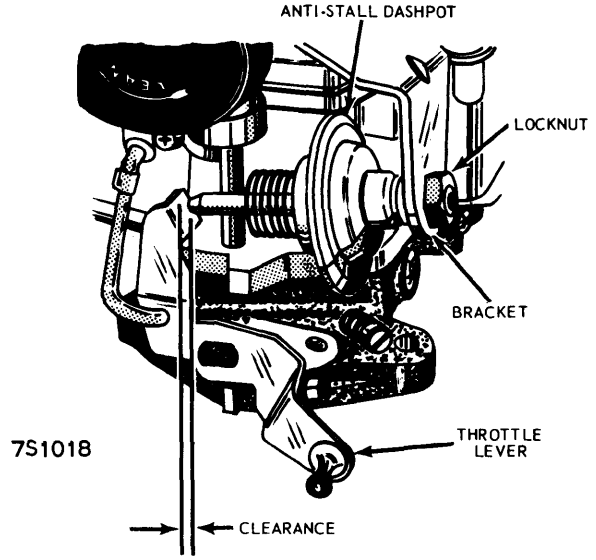
Oldsmobile - Turn screw out 1/4 turn for final setting (vacuum and RPM will drop off slightly). Recheck idle speed. Repeat idle mixture adjustment if necessary to readjust idle speed.

Anti-Stall Dashpot

Comet, Cougar, Falcon, Fairlane, Mustang - After idle speed adjustment completed, hold throttle valve closed with choke valve wide open, fully depress dashpot plunger, measure clearance between dashpot plunger tip and throttle lever with correct size drill rod. If clearance not correct, adjust by loosening dashpot locknut and turning dashpot in or out of mounting bracket as required.

Dashpot Setting (All Carburetors) - 1/8".

Rambler with "E-Stick" Control - Back out idle speed screw so that throttle valve tightly closed. Depress dashpot stem fully and check clearance between end of dashpot stem and throttle lever. Clearance should be 1/8". Adjust by loosening locknut and turning dashpot assembly in or out of mounting bracket, tighten locknut, reset idle speed.



ANTI-STALL DASHPOT ADJUSTMENT

Fast Idle Speed (On Engine)

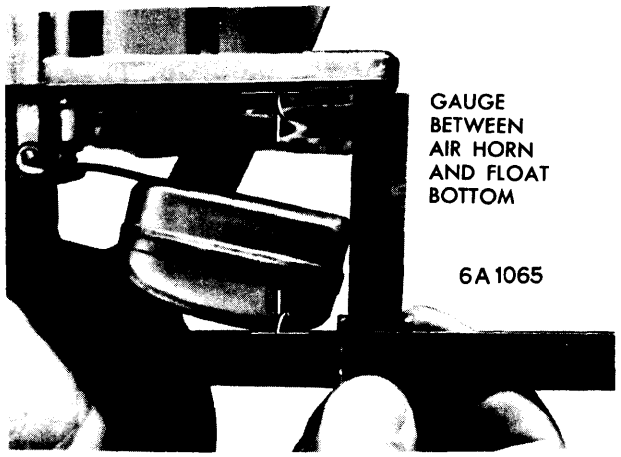
No adjustment required on engine. Fast idle speed will be correct when hot or slow idle speed is correctly adjusted. *See "Fast Idle Linkage" for linkage adjustment and "Fast Idle Speed (Off Engine)" for bench adjustment.*

Float Level

Invert air horn and float cover assembly, allowing float to hang free. Distance from top of float to gasket surface on cover (gasket removed) should be as indicated in specifications. To adjust, bend lip that contacts intake needle valve (see illustration). *CAUTION* - When gauging float level, only the float weight should rest on intake needle (excessive pressure will compress resilient seat or spring-loaded needle and cause false setting). Do not allow float lip to contact needle when making an adjustment.

Float Drop

With bowl cover assembly held in upright position, distance between outer end of float and bowl cover, should be as indicated in specifications. To adjust, bend stop tabs on float arm.



FLOAT DROP ADJUSTMENT

Accelerating Pump

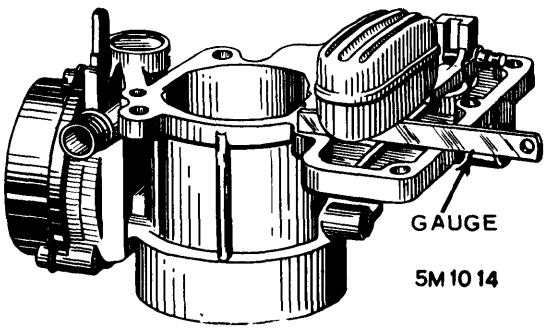
►*COMET, COUGAR, FALCON, FAIRLANE, MUSTANG*

NOTE: No adjustment required on these carburetors.

Make this adjustment before adjusting metering rod. Check the adjustment each time carburetor is assembled. With throttle valve seated in bore, press down on upper end of diaphragm shaft until it reaches bottom and hold in this position. Upper pump spring lower retainer should just contact pump lifter link *(CAUTION - Upper pump spring must not be compressed).* To adjust, bend pump connector link at "U" bend as necessary.

Metering Rod

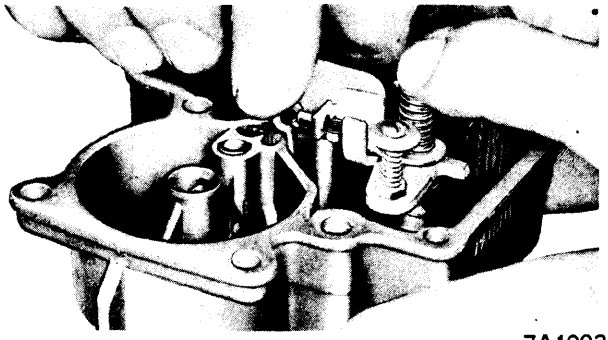
Check after making accelerating pump adjustment. With throttle valve closed, press down on upper pump spring until pump bottoms. In this position, metering rod arm should rest parallel on pump lifter link and metering rod eye should slide over metering rod arm pin freely with lower end of metering rod touching



FLOAT LEVEL ADJUSTMENT

CARTER YF SINGLE BARREL (Continued)

bottom of metering rod well. Adjust by bending metering rod pin flange on metering rod arm up or down as necessary.

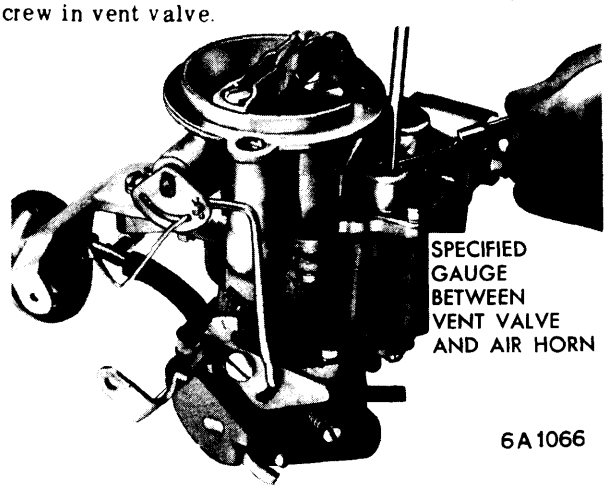


METERING ROD ADJUSTMENT (ALL CARBURETORS)

Idle Vent

►*COMET, COUGAR, FALCON, FAIRLANE, MUSTANG*
NOTE: Idle vent not used on these models.

After completing accelerating pump and metering rod adjustment, seat throttle valve in bore. Clearance between idle vent valve and inside of bowl cover should be as indicated in specifications. To adjust, turn screw in vent valve.



IDLE VENT ADJUSTMENT

Fast Idle Linkage

Manual Choke Carburetors - With choke valve in wide open position, tang on fast idle lever should just contact stop boss on carburetor body (see illustration). Adjust by bending choke connector rod at offset.

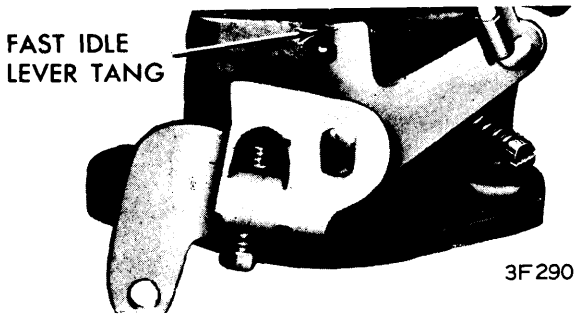
Carburetors with Integral Automatic Choke - No adjustment required. *See "Fast Idle Speed (Off Engine)".*

Carburetors with Separate Automatic Choke - *Check and adjust as follows:*

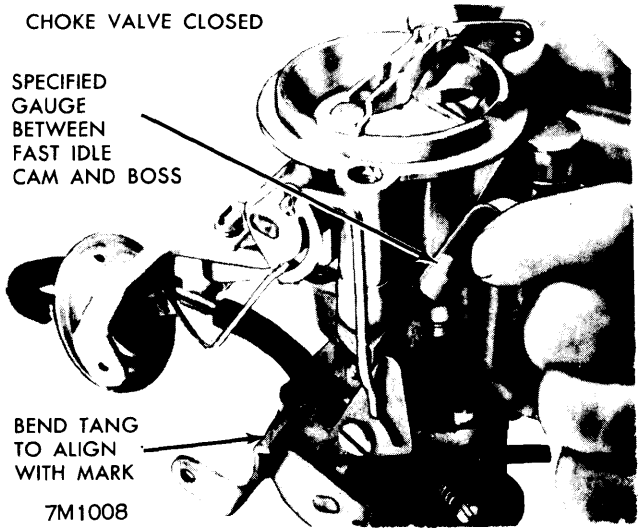
1) With choke valve fully closed, there should be slight clearance (.015" maximum) between fast idle cam and boss on carburetor bowl (see illustration). **Adjust by bending choke connector rod at the angle.**

2) With choke valve fully closed, close throttle valve. Index mark on fast idle cam should be aligned with upper edge of fast idle tang on throttle lever. Adjust by bending fast idle tang up or down as necessary.

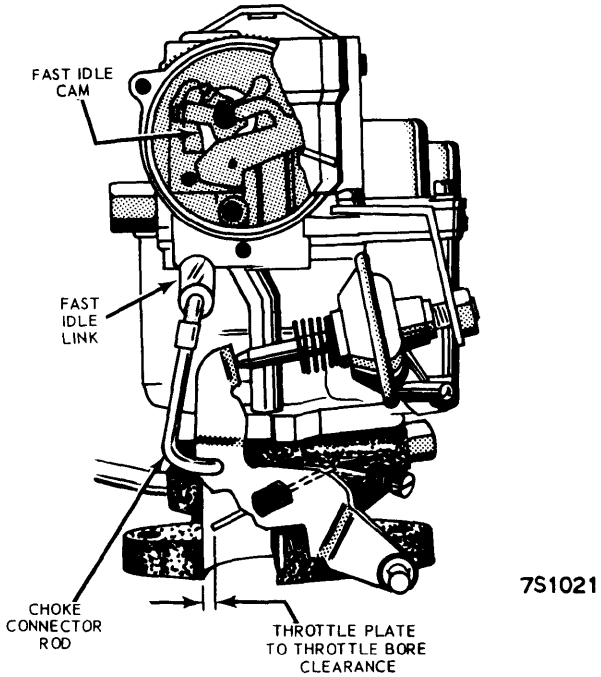
(Continued)



FAST IDLE LINKAGE CHECK (MANUAL CHOKE CARBURETORS)



FAST IDLE LINKAGE ADJUSTMENT (WITH SEPARATE AUTOMATIC CHOKE)

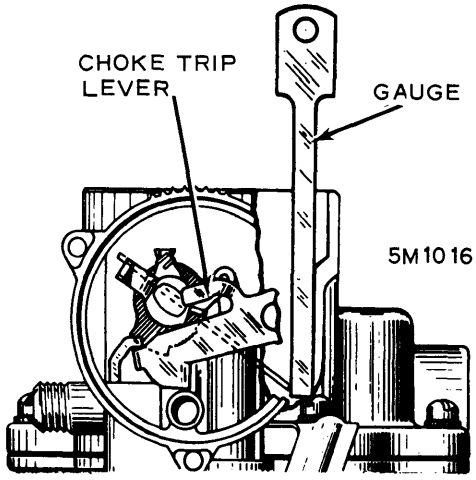


FAST IDLE SPEED ADJUSTMENT (OFF ENGINE) (WITH INTEGRAL AUTOMATIC CHOKE)

CARTER YF SINGLE BARREL (Continued)

Unloader (With Integral Automatic Choke)

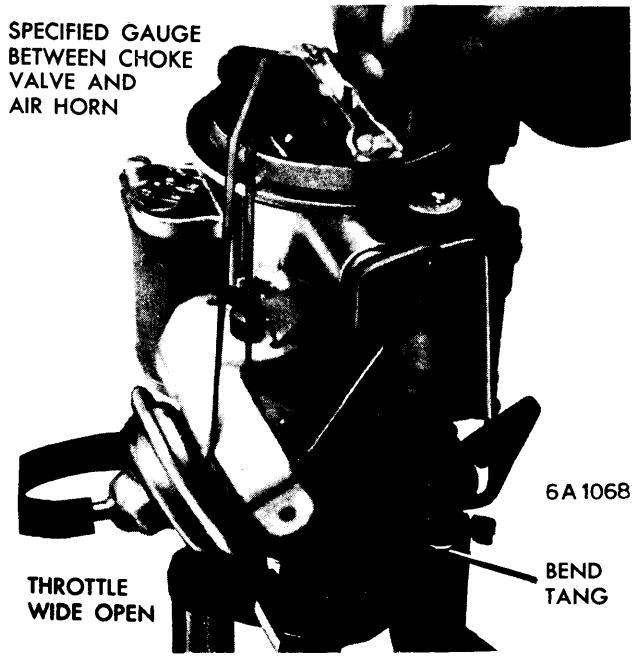
Make this adjustment after Fast Idle adjusted. Remove automatic choke cover and coil assembly, gasket, and baffle. Hold throttle valve in wide open position and close choke valve as far as possible without forcing. Use gauge or drill rod of correct size (see Specifications) to check clearance between lower edge of choke valve and air horn wall. If clearance not correct, adjust by bending choke trip lever on fast idle cam within choke housing. Reassemble automatic choke and set to specifications.



UNLOADER ADJUSTMENT (WITH INTEGRAL AUTOMATIC CHOKE)

Unloader (With Well Type Automatic Choke)

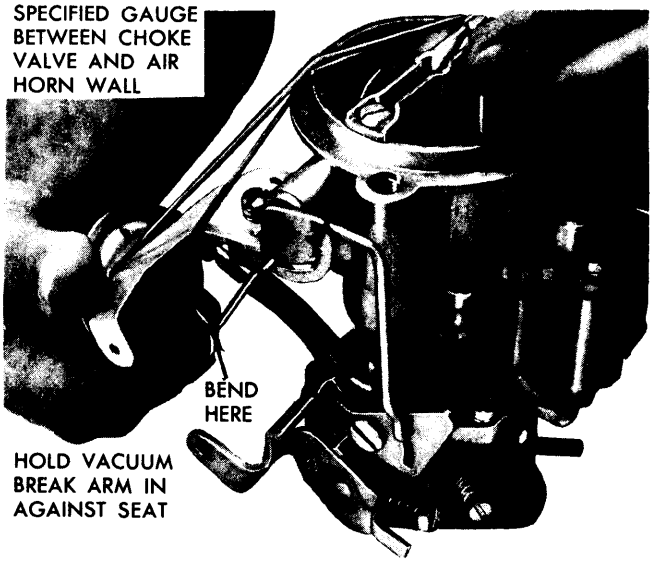
Hold throttle valve wide open, move choke valve toward closed position as far as possible (rubber bands can be used to hold valves in this position), check clearance between lower edge of choke valve and air horn wall. If clearance not correct (see Specifications), bend unloader tang on throttle lever as necessary (see illustration).



UNLOADER ADJUSTMENT (WITH SEPARATE AUTOMATIC CHOKE)

Vacuum Break Diaphragm (With Well Type Automatic Choke)

Depress vacuum break diaphragm plunger fully, move choke valve toward closed position as far as possible (rubber band can be used to hold valve in this position), measure clearance between lower edge of choke valve and air horn wall. If clearance not correct (see Specifications), bend vacuum break link as necessary.



VACUUM BREAK DIAPHRAGM ADJUSTMENT (WITH SEPARATE AUTOMATIC CHOKE)

Manual Choke

With air cleaner removed, pull choke knob on instrument panel out 1/8". Loosen choke cable clamp at carburetor bracket and adjust cable through clip until choke valve is wide open, then tighten cable clamp at carburetor bracket. Check choke operation for full closed and open positions. Install air cleaner.

Choke Valve Pull-down Clearance (With Integral Automatic Choke)

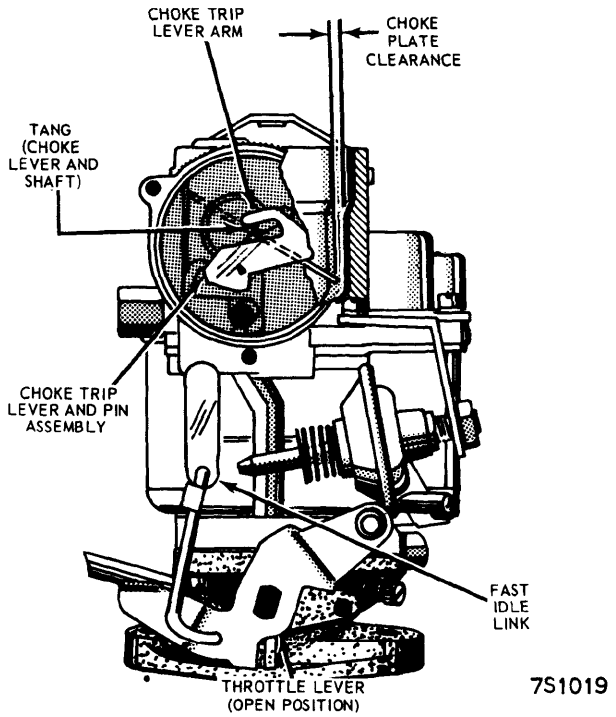
Comet, Cougar, Falcon, Fairlane, Mustang - *NOTE - Adjustment may be made with carburetor on engine or on bench.* Remove automatic choke thermostatic coil and housing, gasket, and baffle plate, Hold throttle valve fully open, close choke valve as far as possible without forcing, then check clearance between edge of choke valve and air horn wall (see illustration) with drill rod of correct size (see Specifications below). If clearance not correct, adjust by bending choke trip lever arm up to decrease clearance, or down to

CARTER YF SINGLE BARREL (Continued)

increase clearance as required. Recheck clearance after adjustment. Reinstall baffle plate, gasket, and thermostatic coil housing, adjust automatic choke setting.

Choke Pull-down Setting

Carburetor	Choke Valve Clearance
4411S, SA	.250"



CHOKE VALVE PULL-DOWN ADJUSTMENT (WITH INTEGRAL AUTOMATIC CHOKE)

Automatic Choke (Well Type)

Check to see that choke lever and choke rod operate freely, then disconnect rod at choke lever. Hold choke valve closed and pull up on choke rod to limit of travel. In this position, top of rod end should be ½-1 rod diameter above top of hole in choke lever. Adjust by bending choke rod at the offset. *CAUTION - Rod end must be square and enter choke lever hole freely.*

Automatic Choke (Integral Type)

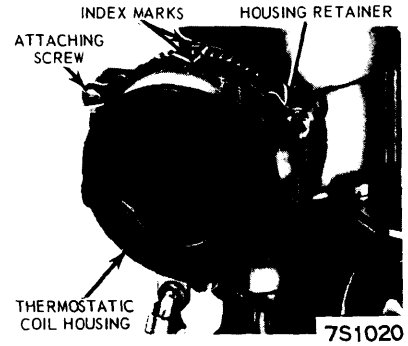
Loosen thermostatic coil housing clamp retaining screws, rotate housing and coil assembly to align index mark on cover with correct graduation of scale on housing (see Specifications), tighten clampscrews.

Fast Idle Speed (Off Engine)

NOTE - Carburetor must be off engine so that throttle valve opening can be checked.

Carburetors with Integral Automatic Choke - Automatic choke cover and coil assembly, gasket, and baffle must be removed for inspection of fast idle cam. Crack throttle valve to free fast idle cam, rotate choke valve to fully closed position to place fast idle cam in fast idle position, close throttle valve as far as possible. Use gauge or drill rod of correct size (see Specifications) to check clearance between edge of throttle valve and carburetor wall on side opposite idle ports. If clearance not correct, adjust by bending choke connector rod at the lower angle (see illustration).

Carburetors with Separate Automatic Choke - With choke valve fully closed and fast idle tang on throttle lever aligned with index mark on fast idle cam (see Fast Idle Linkage adjustment), use gauge or drill rod of correct size (see Specifications) to check clearance between edge of throttle valve and carburetor wall on side opposite idle ports. If clearance not correct, adjust by bending fast idle tang on throttle lever as required.



AUTOMATIC CHOKE SETTING (INTEGRAL TYPE)

OVERHAUL (WITH INTEGRAL AUTOMATIC CHOKE)

►*OVERHAUL NOTE:* These carburetors have complete automatic choke, vacuum piston, and fast idle mechanism mounted in housing on air horn which requires special disassembly and reassembly procedure as given below. *For other overhaul data, refer to "Well Type or Manual Choke Carburetors".*

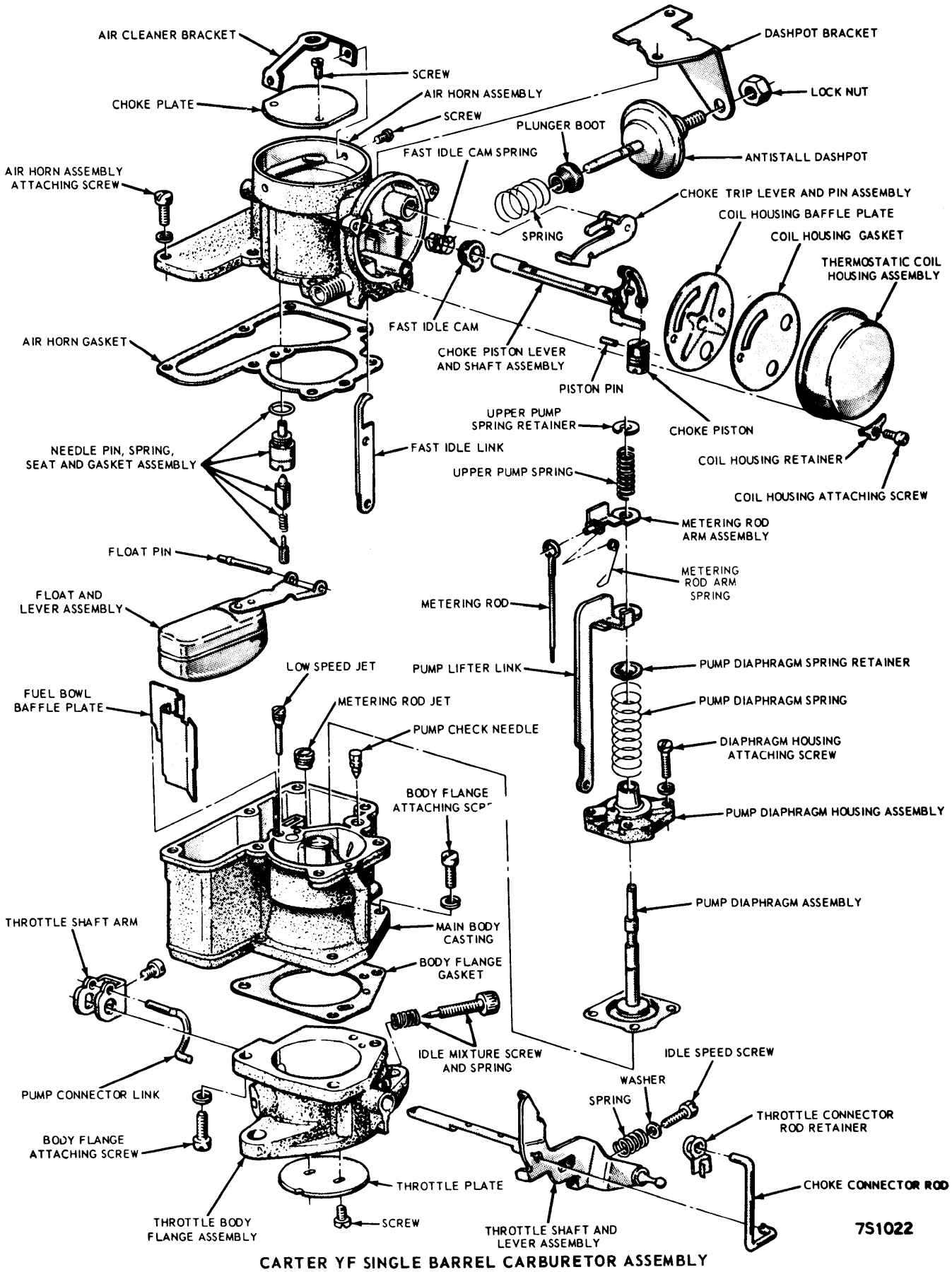
Disassembly (Automatic Choke)

1) Disengage choke connector rod from fast idle link. Remove thermostatic coil housing assembly, gasket, and baffle plate. Remove choke trip lever and pin assembly and fast idle link from choke housing.

2) Remove air horn assembly attaching screws and dashpot and bracket assembly, lift air horn assembly straight up and off, remove air horn gasket. Disassemble and remove float and lever assembly, intake needle, spring, and seat.

3) File staked ends of choke valve screws, remove screws, remove choke valve. Disengage fast idle cam spring from cam spring lever on choke piston lever and shaft assembly, rotate choke shaft and piston assembly counterclockwise to free choke piston from cylinder, withdraw assembly from air horn. Remove piston pin,

CARTER YF SINGLE BARREL (Continued)



CARTER YF SINGLE BARREL CARBURETOR ASSEMBLY (WITH INTEGRAL AUTOMATIC CHOKE)

CARTER YF SINGLE BARREL (Continued)

piston, fast idle cam and fast idle cam spring from choke piston lever and shaft assembly.

Reassembly (Automatic Choke)

1) With choke piston and pin assembled on choke piston lever and shaft assembly, disengage cam spring from cam spring lever, install choke shaft assembly in air horn and rotate assembly clockwise until piston pin is within piston cylinder. Position cam spring on cam spring lever so that tangs on cam and choke lever are aligned (in front of each other). Install choke valve and tighten screws just snug, check valve movement for free movement without binding, then tighten screws and peen or stake to prevent loosening.

(WELL TYPE OR MANUAL CHOKE CARBURETORS)

Disassembly

1) On automatic choke carburetors, disconnect vacuum break hose at bowl, take out vacuum break bracket mounting screws and remove vacuum break diaphragm (rotate assembly to disconnect link at choke lever). On all carburetors, remove fast idle connector rod, then remove inlet filter nut, filter, spring, and gaskets.

2) Remove bowl cover from main body and place cover upside down on a flat surface. Remove hinge pin, float and float needle, then remove needle seat.

3) Hold finger over pump discharge passage on main body (to retain discharge needle) and operate pump plunger a few times to check operation of diaphragm, ball check, needle, and passage restriction.

4) Empty gas from fuel bowl of main body and remove pump discharge needle. Loosen throttle shaft pump arm lock screw and remove arm and pump connector link, then remove diaphragm housing screws and lift out entire pump, metering rod, and idle vent assembly.

5) Remove metering rod from arm, then compress upper pump springs and remove retainer, springs, metering rod arm, and pump lifter link assembly. If necessary, remove idle vent screw assembly from lifter link. Compress lower spring and remove spring retainer, then remove lower spring.

6) Remove pump housing screws from housing and diaphragm, then remove diaphragm shaft retaining ring and slide diaphragm assembly out of housing. Remove main metering jet and low speed (idle) jet. *CAUTION - Do not remove pressed-in parts.*

7) Remove idle mixture screw and remaining body-flange attaching screws and remove body and gasket from throttle flange. *NOTE - Do not remove throttle valve and shaft unless to correct a binding condition or install new parts.*

8) If necessary to remove throttle valve and shaft, file staked ends of throttle valve screws flush with throttle shaft. Remove screws and throttle plate, then slide shaft out of flange and remove fast idle arm.

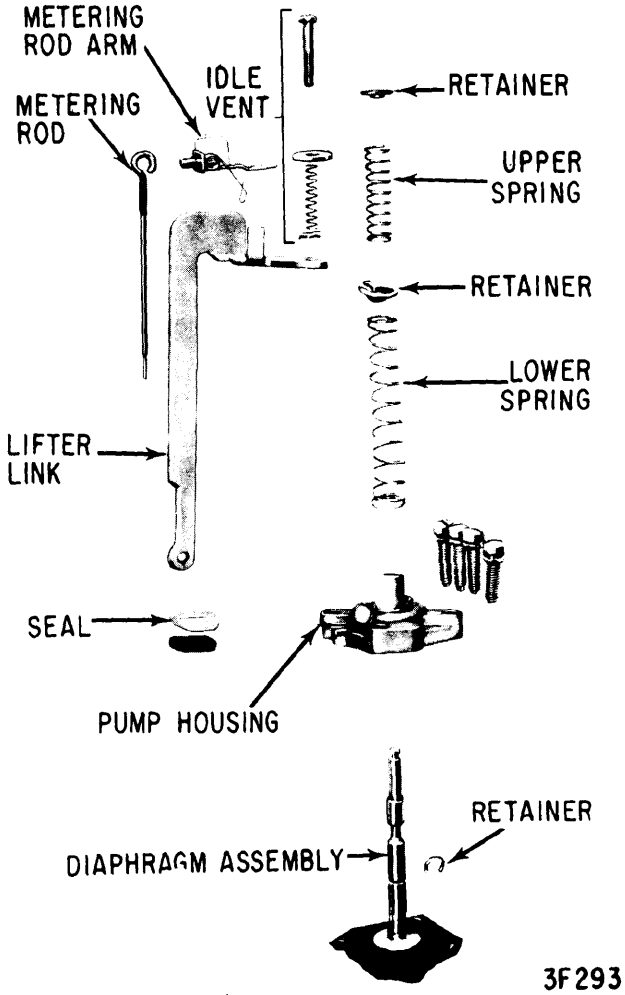
9) Remove choke valve, if necessary, in same manner as for throttle valve. To remove choke cam lever, pry off retaining ring, then slide lever and spring from mounting boss.

Cleaning & Inspection

Wash all parts in carburetor cleaning solution. *CAUTION - Do not immerse diaphragm assembly, pump check disc, or seals in solution.* Inspect all parts for wear or damage and replace if necessary. Blow out all passages with air.

Reassembly

Reverse disassembly procedure and note the following: Install new gaskets. Install throttle valve with lettering toward manifold side of flange and part number opposite idle port. Make sure pump connector link and pump lifter link do not bind in any throttle position. If necessary, loosen lock screw and adjust slightly.



CARTER YF PUMP & METERING ROD ASSEMBLY (CARBURETORS WITH IDLE VENT)