DODGE SLOW-CLOSING THROTTLE
(STROMBERG CARBURETOR TYPE)
Used on following Models with Fluid Drive

Car Model	Carburetor
De Soto, Model S11S, S11C (1947-48)	Stromberg BXVD-3
Dodge, Custom & Deluxe Model D19 (1941)	Stromberg BXVD-3
Dodge, Deluxe Model D22S, Custom Model D22C (1942)	Stromberg BXVD-3
Dodge, Deluxe & Custom Model D24 (1946-48)	Stromberg BXVD-3
Dodge, All Models (1949-51) Std. Trans.	Stromberg BXVD-3
Dodge, All Models (1949-51) Auto. Trans.	Stromberg BXVES-3

►**Slow-Closing Throttle Note:** Two different types used. The type used on BXVD-3 carburetors does not have solenoid controlled check valve and operates whenever throttle is closed regardless of car speed. The solenoid controlled check valve on BXVES-3 type is controlled by the transmission governor and cuts out the slow-closing feature at higher car speeds as described below.

DESCRIPTION & OPERATION: (BXVD-3). Slow-closing throttle consists of a dashpot and piston assembly in the float bowl with the piston linked by a rod to a control lever which engages the throttle valve lever. When the throttle is opened, dashpot cylinder is filled with fuel which flows freely in through dashpot check valve. When the accelerator pedal is released (to close throttle), this fuel is trapped in the cylinder and is allowed to escape slowly through the relief hole in the dashpot piston stem above the piston. This action retards the movement of the piston and linkage toward the closed throttle position and the linkage prevents the throttle valve closing too rapidly.

(BXVES-3)—Operates similarly to BXVD-3 type (above) at low car speeds but has solenoid control of an outlet ball check valve (in addition to regular bleed passage with fixed orifice). At car speeds below 8 MPH. (Low Range), 15 MPH. (High Range), with governor contacts closed, solenoid is energized and holds check valve ball on its seat so that all fuel in dashpot cylinder is forced to escape through the fixed-orifice bleed passage to secure the slow-closing throttle feature. At speeds above 8 MPH. (Low Range) or 15 MPH. (High Range), with governor contacts open, solenoid is not energized and check valve is open. Fuel in dashpot cylinder is then free to escape through this check valve in addition to the regular bleed passage and no slow-closing throttle action results.

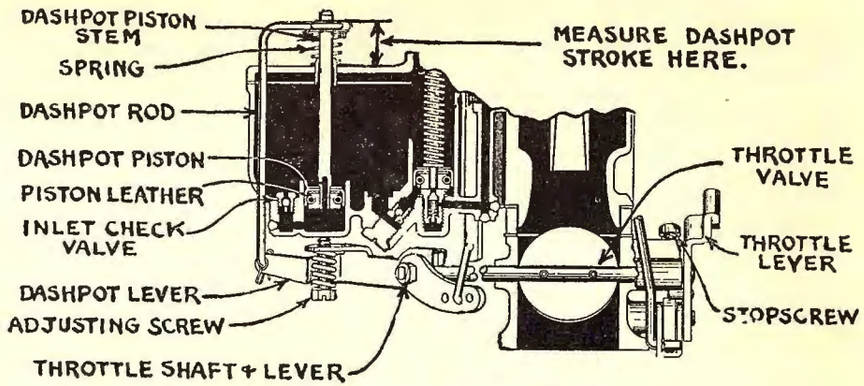
CHECKING & ADJUSTMENT: To check dashpot travel, place rule on float bowl cover at dashpot piston stem, measure distance from bowl cover to edge of retainer on stem with throttle valve closed. Open throttle wide, remove all slack from dashpot linkage, repeat measurement. Difference in these two readings is DASHPOT TRAVEL (see setting below).

DASHPOT PISTON TRAVEL SETTING

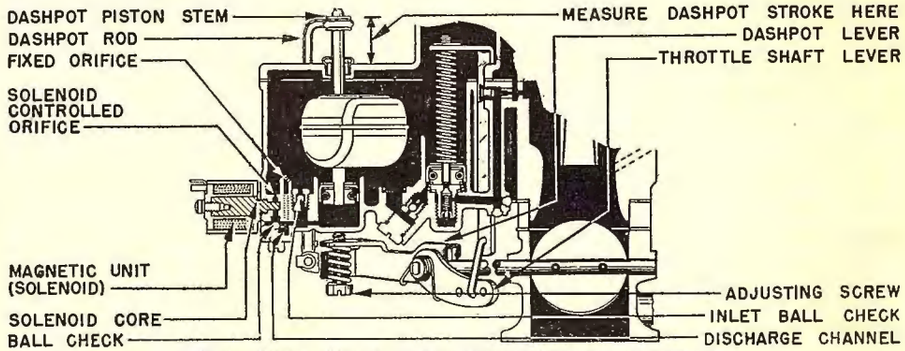
BXVD-3 Carburetors—5/16-11/32". **BXVES-3 Carburetor**—13/32-7/16".

Adjustment—Turn adjusting screw on dashpot control lever under float bowl IN to shorten travel setting or OUT to lengthen travel setting.

SERVICING: *No special service operations required. See "Stromberg BXV-3, BXVD-3, BXVES-3 Carburetor" in Carburetor Section for complete disassembly and overhaul data.*



STROMBERG BXVD TYPE SLOW-CLOSING THROTTLE



STROMBERG BXVES TYPE SLOW-CLOSING THROTTLE

PACKARD THROTTLE GUARD

Packard Clipper, Model 1951 (1941)
Packard '110' Six, 1700 (1939), 1800 (1940), 1900 (1941)
Packard '120' Eight, 1701,2 ('39), 1801,1A ('40), 1901,1A ('41)
Packard '160' Super 8, 1703,5 ('39), 1803,4,5 ('40), 1903,4,5 ('41)
Packard '180' Custom Super 8, 1806,7,8 (1940), 1906,7,8 (1941)

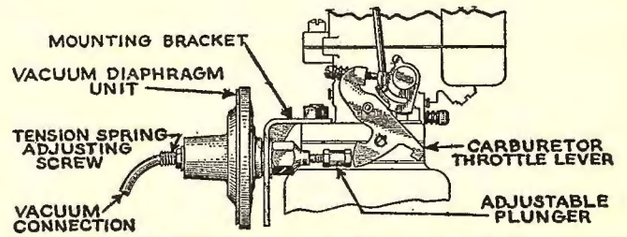
DESCRIPTION: Throttle Guard is designed to prevent engine stalling in the range from 0 to 20 M.P.H. It consists of a vacuum diaphragm unit, similar to those used on distributors for vacuum spark control, mounted on the carburetor so that the diaphragm plunger actuates the throttle valve fast idle lever.

OPERATION: Throttle guard cuts in at 4 MPH. as manifold vacuum decreases sufficiently so that spring within unit forces plunger out against throttle lever opening throttle and accelerating engine to prevent stalling. Throttle Guard kicks out at 9 MPH. when manifold vacuum increases sufficiently to retract plunger and allow throttle to close to regular 6 MPH hot or slow idle speed position.

ADJUSTMENT & TESTING: *CAUTION—Carburetor must be correctly adjusted and set for 6 MPH. hot or slow idle speed before adjusting Throttle Guard.*

Adjustment—Check clearance between outer end of throttle guard plunger and lug on throttle lever. This should be .060" (Six), .020" (Eight, Super Eight). Loosen locknut and turn tension spring and adjusting screw on outer face of throttle guard until distance from top of locknut to end of screw is 3/16" (Six, Eight), 7/32" (Super 8), tighten locknut. Check setting by road-testing car.

Road Testing—See that Overdrive Control knob pushed in (Overdrive operative), allow car to coast in high gear (accelerator pedal released) and decrease car speed slowly by applying brakes. Throttle guard should cut in at 4 MPH. (slight movement of accelerator pedal will be noted) and bring car speed up to 9 MPH. (with brakes released) at which speed it should kick out. If cut in speed is above 4 MPH., decrease spring tension by turning adjusting screw out slightly;



if cut in speed below 4 MPH., increase spring tension by turning screw in. If kick out speed is higher than 9 MPH., increase gap between diaphragm plunger and throttle lever (loosen locknut and turn plunger on rod); if kick out speed below 9 MPH., decrease gap.

LINCOLN & MERCURY AUTOMATIC CHOKE

Integrally Mtd. Automatic Choke

Car Model	①Carburetor
Lincoln & Cosmopiltan (1949)	OEL-9510
Mercury (1949-50)	8CM- 1CM-9510

Separately Mtd. Automatic Choke

Lincoln & Cosmopolitan (1950-51)	OEL-9510
Mercury (1950-51)	1CM-9510

①—Basic No. See carburetor data for various models used.

►**Erratic Engine Performance Correction (Erratic Idle Speed, Poor Gasoline mileage, Mis-firing due to automatic choke opening late or not opening fully):** May be caused by air leak in hot air tube between manifold and choke housing due to use of 5/16" fitting instead of ¼" type. See that correct type fittings used and that all connections are tight.

DESCRIPTION: ***Two types used (1) Integrally mtd. (on carburetor air horn), (2) Separately mtd. (on manifold and linked to choke valve lever by connector rod).***

(1) Integrally Mtd. Type—Assembly is mounted on carburetor and linked directly to the choke valve shaft. It consists of a thermostatic coil and vacuum piston assembly to control the choke valve, a fast idle linkage which opens the throttle valve to provide a faster engine idle speed when cold, and an unloading device to correct engine flooding.

(2) Separately Mtd. Type—Choke assembly is similar to first type except that the complete assembly is mounted on the intake manifold by three attaching screws with air and vacuum channels (for control) terminating in ports at the mounting gasket. Automatic choke shaft lever is linked to carburetor choke shaft lever by a connector rod.

OPERATION: Automatic Choke—Thermostatic coil is bi-metal type and tends to "wind-up" and close the choke valve when the engine is cold so that the choke valve is fully closed for cold starting. In this position, the vacuum piston is at the top of the cylinder. As soon as the engine begins to fire, manifold vacuum tends to pull the piston down in the cylinder which opens the choke valve partially (valve is offset and air flow through the air horn also tends to open the valve). As the engine warms up, the thermostatic coil "unwinds" lessening the tension on the choke valve and allowing it to open so that at normal operating temperatures the choke valve will be wide open. Warm air is introduced into the choke housing to effect this unwinding of the thermostatic coil (filtered air from air horn passes through stove in manifold and then flows to the housing). This air flow is controlled by the vacuum piston (slots in the cylinder are uncovered when piston moves down in cylinder and manifold suction draws warm air into the housing).

Fast Idle—Consists of a stepped fast idle cam linked to the choke valve shaft and serving as the stop for the throttle valve idle speed adjusting screw. Cam is rotated to the "fast idle" position (with the stopscrew resting on the highest step of the cam) when the choke valve is closed for cold starting. As the engine warms up and the choke valve opens, fast idle cam is rotated and stopscrew rests on progressively lower steps until at normal operating temperatures, throttle valve is closed to the normal hot or slow idle speed position.

Unloading Device—When the throttle valve is opened wide, the throttle lever opens the choke valve slightly through the fast idle linkage. This can be used to correct flooding caused by over-choking.

CHOKE SETTING: Centered (At Index). Reference mark on edge of thermostatic coil and cover assembly shound be aligned with center (longer) line of scale on housing. If a richer or leaner setting required, setting should be changed not more than one division on scale either way from this centered setting.

Automatic Choke Adjustment—Loosen 3 cover retaining screws, rotate cover and coil assembly in direction of arrow (clockwise on Lincoln, counterclockwise on Mercury) for Leaner setting or less choke action, and in opposite direction for Richer setting or more choke action.

FAST IDLE SETTING: Fast idle is set in production and should not require adjustment in the field.

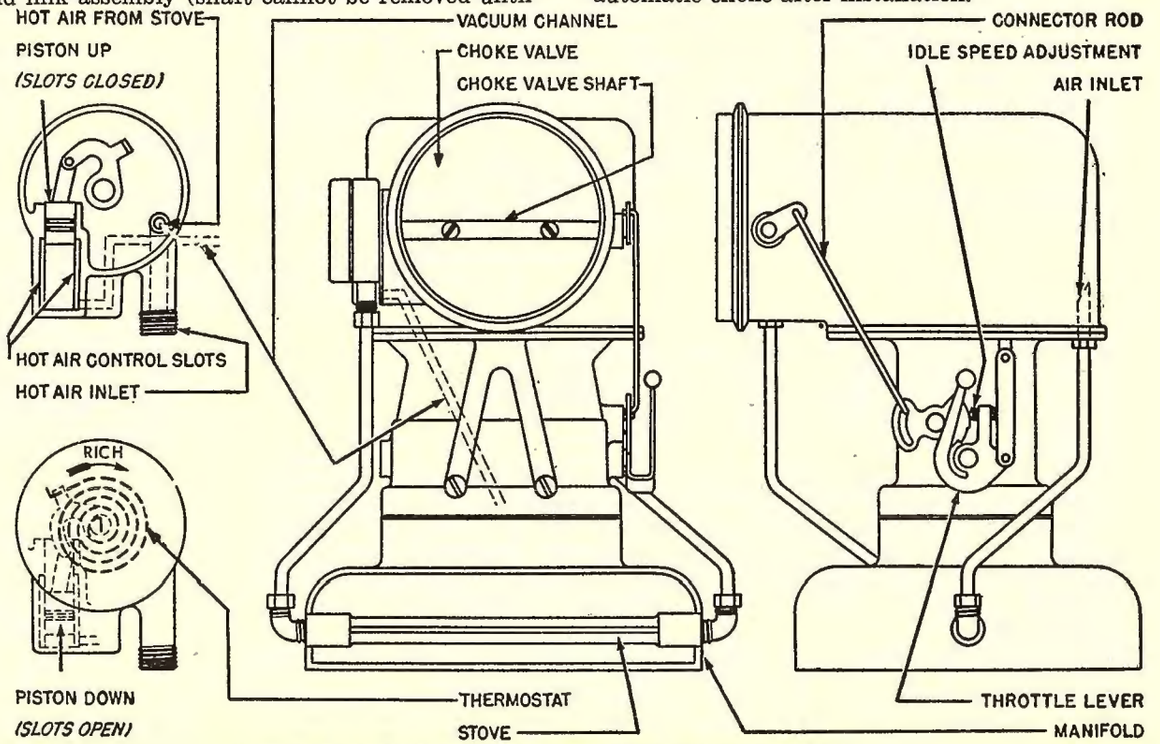
DISASSEMBLY: ***Each type disassembled as follows:***

Integrally Mtd. Type—Disconnect and remove connector rod linking choke lever and fast idle cam. On Mercury take out clampscrew and remove choke lever from shaft. Take out retaining screws and remove choke valve. Remove screws and retainers on cover, rotate cover and thermostatic coil assembly toward "lean" to disconnect coil hook, remove cover assembly and gasket. Take out attaching screw and remove housing plate. On Mercury, rotate shaft until vacuum piston is free from the cylinder, withdraw shaft and piston assembly from air horn. On Lincoln, remove nut, lockwasher, and spacer washer from end of shaft, rotate shaft and remove piston and link assembly (shaft cannot be removed until after choke housing removed). Remove choke housing attaching screws, remove housing and mounting gasket from air horn (On Lincoln, felt seal and shaft can then be removed from air horn).

Separately Mtd. Type—Disconnect and remove rod linking choke lever and carburetor choke valve lever. Take out three attaching screws and remove choke assembly and mounting gasket from air horn. Remove screws and retainers on cover, rotate cover and thermostatic coil assembly toward "lean" to disengage coil hook, remove cover assembly and gasket. Take out attaching screw and remove housing plate. Remove nut, lockwasher, and spacer washer on end of shaft, rotate shaft and remove vacuum piston and link assembly, withdraw choke shaft and lever through back of housing.

INSPECTION: See that all parts of choke mechanism are clean and that choke shaft and piston assembly operate freely. Replace all parts which are worn or distorted (replace vacuum piston as assembly with the link on Lincoln, or with the choke shaft on Mercury—piston not furnished separately). Blow out all passages in housing and carburetor with compressed air. Use new gaskets and seals when reassembling unit.

REASSEMBLY: Reverse disassembly directions (above). When installing cover and thermostatic coil assembly, see that coil hook is down, then rotate cover toward "rich" (opposite to direction of arrow) until hook is felt to engage choke shaft prong, install cover locking plates and screws. Readjust automatic choke after installation.



LINCOLN & MERCURY AUTOMATIC CHOKE (INTEGRAL TYPE)
(SEPARATE TYPE SIMILAR EXCEPT MOUNTED ON MANIFOLD)

ROCHESTER "AA" AUTOMATIC CHOKE

Car Model	Carburetor
Oldsmobile 8, 88 & 98 (1949)	7001570
Oldsmobile 8, 88 & 98 (1950)	7002570

DESCRIPTION: Automatic choke assembly is mounted on the side of the carburetor air horn and linked directly to the choke valve shaft lever. It consists of a thermostatic coil and vacuum piston assembly to control the choke valve and also operates the fast idle mechanism through a connector rod linked to the lever on the opposite end of the choke shaft.

OPERATION: Automatic Choke—Thermostatic coil is bi-metal type and tends to "wind up" and close the choke valve when the engine is cold so that the choke valve will be completely closed for cold starting. In this position, the vacuum piston is at the top of cylinder. As soon as the engine begins to fire, manifold vacuum tends to pull the piston down in the cylinder which opens the choke valve slightly to prevent stalling (valve is offset and air flow through intake also tends to open valve). As the engine warms up, coil unwinds, lessening tension on choke valve and allowing air flow to open the valve so that at normal operating temperatures the choke valve is wide open. Warm air is introduced into the coil housing through a pipe extending from the exhaust manifold to the coil housing cover to effect this unwinding of the coil.

Fast Idle—Consists of a stepped fast idle cam mounted so as to serve as a stop for the fast idle screw on the throttle lever and linked to the choke lever by a connector rod. Cam is rotated to the "fast idle" position (with stopscrew resting on high step of cam) when choke valve closed for cold starting, and is rotated to the hot or slow idle position (with stopscrew resting on progressively lower steps of the cam) as the engine warms up and the choke valve opens.

Unloader—When the throttle valves are opened wide, choke valve is opened slightly through the fast idle linkage. This will correct flooding caused by over-choking.

ADJUSTMENT: ***CAUTION—Three separate settings (Choke Setting, Fast Idle Setting, and Unloader Setting) are required. Adjust in order as follows:***

Choke Setting: Centered (At Index). With cover screws loosened, rotate cover until index mark on cover is aligned with mark cast on carburetor housing. With this setting, choke valve should be fully closed at 75°F.

►***CHOKE COIL HOUSING COVER GASKET CAUTION***—New wider housing gasket used on 1950 carburetors and **should be used for service replacement on all 1949-50 carburetors.** See that gasket seats evenly and correctly seals entire circumference of choke housing. Any air leak at this point will prolong choke operation, resulting in over-choking.

►***CHOKE HEAT PIPE CAUTION***—⅛" pipe plug is installed in right hand end of heat pipe in manifold and this pipe plug and all heat pipe connections must be securely tightened. Any air leaks in the heat pipe system will prolong choke operation and result in over-choking and poor economy.

Choke Rod Adjustment—Turn fast idle screw in until spring is slightly compressed, hold throttle valves in closed position and rotate fast idle cam until screw resting aaginst first step on cam. Check to see that trip lever is in contact with choke counterweight. Choke valve should be slightly open in this position. Check opening with gauge tool BT-17 (use .147" or "C" step of gauge) inserting gauge between lower edge of choke valve and air horn wall. If opening not correct, adjust by bending connector rod slightly, using tool BT-18. Make certain that choke valve does not rub on air horn wall in any position.

Unloader Setting: Thermostatic coil cover must be correctly set at INDEX when making this adjustment (see Choke Setting above). Open throttle valves to wide open position, making certain that choke trip lever is in contact with tang on choke counterweight. Check choke valve opening with special gauge (see table), inserting gauge between lower edge of valve and air horn wall. If opening not correct, adjust by bending tang on throttle lever slightly, using bending tool BT-18.

UNLOADER SETTING

Carburetor	Checking Tool	Choke Opening
7001570 (1949	BT-17	.238"①
7002570 (1950)	BT-35	.220"②

①—"D" step of BT-17 gauge.
②—"D" step of BT-35 gauge.

Fast Idle Setting: ***Can be adjusted on the bench or on engine (if set on bench, check setting after carburetor installed on engine).***

Setting (Carburetor on bench)—Check by moving connector rod so that choke valve fully closed, close throttle valve so that fast idle screw rests on fast idle step of fast idle cam. Check throttle valve opening or clearance between valve edge and carburetor wall, using correct gauge (see table). Adjust by turning fast idle screw in or out until throttle valve opening is correct.

Setting (Carburetor on engine)—Hold throttle partially open, rotate fast idle cam until fast idle screw is in line with lowest step on cam, hold cam in this position. Run engine and turn fast idle screw in or out until engine speed is exactly 500 RPM (all models) with engine warm.

FAST IDLE SETTING

Carburetor	Checking Tool	Throttle Opening
7001570 (1949)	BT-17	.020"③
7002570 (1950)	BT-35	.023"④

③—"E" step of BT-17 gauge.
④—"E" step of BT-35 gauge.

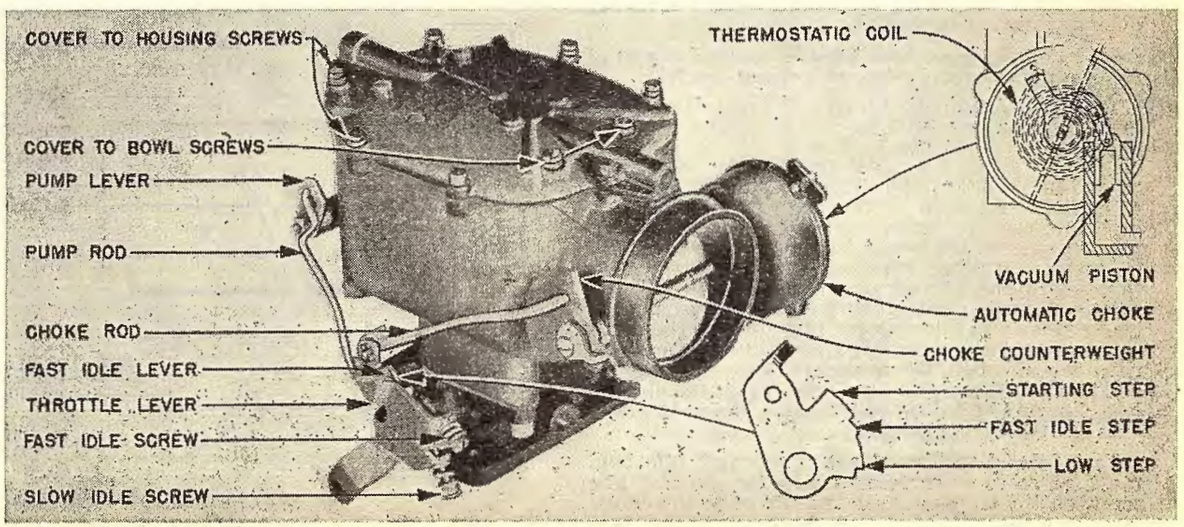
DISASSEMBLY: Remove float bowl balance tube from air horn. Take out three attaching screws and lugs on thermostatic coil cover, remove cover and coil assembly (CAUTION—use great care not to distort coil). Take out choke valve screws, remove choke valve. Remove pump rod and choke connector rod (CAUTION—use care not to bend or distort rods). Remove choke counterweight, collar and washer from choke shaft. Revolve choke shaft until vacuum piston is free from cylinder, remove shaft and piston as an assembly. If necessary to remove fast idle cam, take out cam attaching screws.

INSPECTION: Check choke shaft for wear in air horn, replace if clearance excessive. Clean all parts with carburetor cleaning solvent, blow out all passages with compressed air (CAUTION—make certain that vacuum piston cylinder vacuum passage is open and clean).

REASSEMBLY: Reverse the disassembly directions and also note the following important points:

Choke Valve Installation—Install valve with identifying letter "RP" outward. Check valve for free operation. Valve must not rub on air horn and should fall freely to wide-open position with thermostatic coil not engaged.

Adjustment—Adjust Choke Setting, Unloader Setting, and Fast Idle Setting. See Adjustment data above.



ROCHESTER "AA" AUTOMATIC CHOKE & FAST IDLE

ROCHESTER "BB" & "BC" AUTOMATIC CHOKE

Single Carburetor Type

Car Model	Carburetor Model & No.
Pontiac Six, 51-25 (1951)	BC No. 7002870

Dual Carburetor Type

Cadillac, V8 (1951)	BB No. 7003200
Oldsmobile 8, 88 & 98 (1951)	BB No. 7002900

►**CADILLAC SETTING CHANGES (to prevent possibility of engine stalling during warm-up):** Latest specifications should be used when making adjustments as follows:
Choke Setting—Should be CENTERED (supersedes previous setting of 2 Points Lean).
Fast Idle Setting—Engine should run at 1500 RPM. **at operating temperature** with fast idle screw resting on **high step** of fast idle cam.
Float Travel or Drop—Should be 1¾" (supersedes previous setting of 1⅝"). See Rochester BB Carburetor data in Carburetor Section for adjustment data.

►**CHOKE SUCTION TUBE SEAL CAUTION:** This tube extends from choke housing to throttle body and **must be tight** at both ends to insure correct choke operation. If tube seal disturbed by carburetor or choke assembly, ***see Suction Tube Seal Replacement data below.***

DESCRIPTION: The automatic choke assembly is mounted on the side of the carburetor air horn and is linked directly to the choke valve lever. It consists of a thermostatic coil and vacuum piston assembly to control the choke valve and also operates the fast idle mechanism through a connector rod linked to a lever on the choke valve shaft.

Cadillac "Choke Modifier"—Consists of a linkage between the thermostatic coil and throttle valve lever so that thermostatic coil tension is controlled by the throttle and is lessened as the throttle is opened to provide a continuously variable unloading action which improves performance and economy during warming-up period.

►***CAUTION—Choke modifier must be adjusted as part of automatic choke setting (see adjustment data).***

OPERATION: Automatic Choke—Thermostatic coil is bi-metal type and tends to "wind up" and close the choke valve when the engine is cold so that the choke valve will be completely closed for cold starting. In this position, the vacuum piston is at the top of cylinder. As soon as the engine begins to fire, manifold vacuum tends to pull the piston down in the cylinder which opens the choke valve slightly to prevent stalling (valve is offset and air flow through intake also tends to open valve). As the engine warms up, coil unwinds, lessening tension on choke valve and allowing air flow to open the valve so that at normal operating temperatures the choke valve is wide open. Warm air is introduced into the coil housing through a pipe extending from the exhaust manifold to the coil housing cover to effect this unwinding of the coil.

Fast Idle—Consists of a stepped fast idle cam mounted so as to serve as a stop for the fast idle screw on the throttle lever and linked to the choke lever by a connector rod. Cam is rotated to the "fast idle" position (with stopscrew resting on high step of cam) when choke valve closed for cold starting, and is rotated to the hot or slow idle position (with stopscrew resting on progressively lower steps of the cam) as the engine warms up and the choke valve opens.

Unloader—When the throttle valves are opened wide, choke valve is opened slightly through the fast idle linkage. This will correct flooding caused by over-choking.

ADJUSTMENT: ***CAUTION—Three separate settings are required (Choke Setting, Fast Idle Setting, and Unloader Setting) and EACH CARBURETOR MODEL IS ADJUSTED DIFFERENTLY:***

Choke Setting: Adjust each model as follows:
Cadillac Choke & Modifier Adjustment—Back off fast idle screw and throttle stopscrew so that throttle valves tightly closed. Loosen choke modifier lever retaining screw, rotate index pointer counterclockwise until pointer is aligned with long scribed line on cover (Centered Setting), tighten retainer screw. With this setting, choke valve should be almost closed at 75°F.

►***CAUTION—If choke valve does not close when pointer rotated (above), thermostatic coil is not engaging choke valve lever in choke housing.***

Oldsmobile Choke Adjustment—Loosen heat tube coupling on choke cover, loosen three cover retainer screws and **free the toothed retainer from the serrations on the cover,** rotate cover until index mark on cover is aligned with center graduation of scale on housing (centered setting), engage toothed retainer with serrations on cover, tighten all retainer screws, tighten heat tube coupling.

►***CAUTION—Use care not to rotate or distort choke cover when tightening the heat tube coupling.***
Pontiac Choke Adjustment—Loosen three cover retainer screws, rotate cover until scribed index mark on cover is aligned with long center graduation of scale on housing, tighten retainer screws. With this setting, choke valve should just be closed at 75°F. (check with throttle open so that fast idle mechanism does not prevent closing of choke valve).

Fast Idle Setting: Adjust each model as follows:

Cadillac Fast Idle Adjustment: ***Two adjustments must be made in folowing sequence:***

1) Fast Idle Adjustment—Carburetor on Engine. Hold throttle partly open and rotate fast idle cam until fast idle screw rests on high step of cam, adjust screw so that engine runs at 1500 RPM. (engine must be at normal operating temperature).

Carburetor off Engine—Rotate fast idle cam until choke valve is fully closed, hold throttle lever in closed position so that fast idle screw rests on highest step of fast idle cam. Adjust fast idle screw until throttle valve opening (clearance between edge of valve and carburetor bore on side opposite idle ports) is exactly .0295" (measure with wire gauge on Tool J-4716).

2) Choke Rod Adjustment—Hold choke valve open, close throttle valve, then move choke valve toward closed position until fast idle screw contacts edge of fast idle cam. With choke valve in this position, measure clearance between lower edge of choke valve and flat on inside of air horn using wide step of gauge J-4716 (.620"). If clearance not correct, adjust by bending choke rod.

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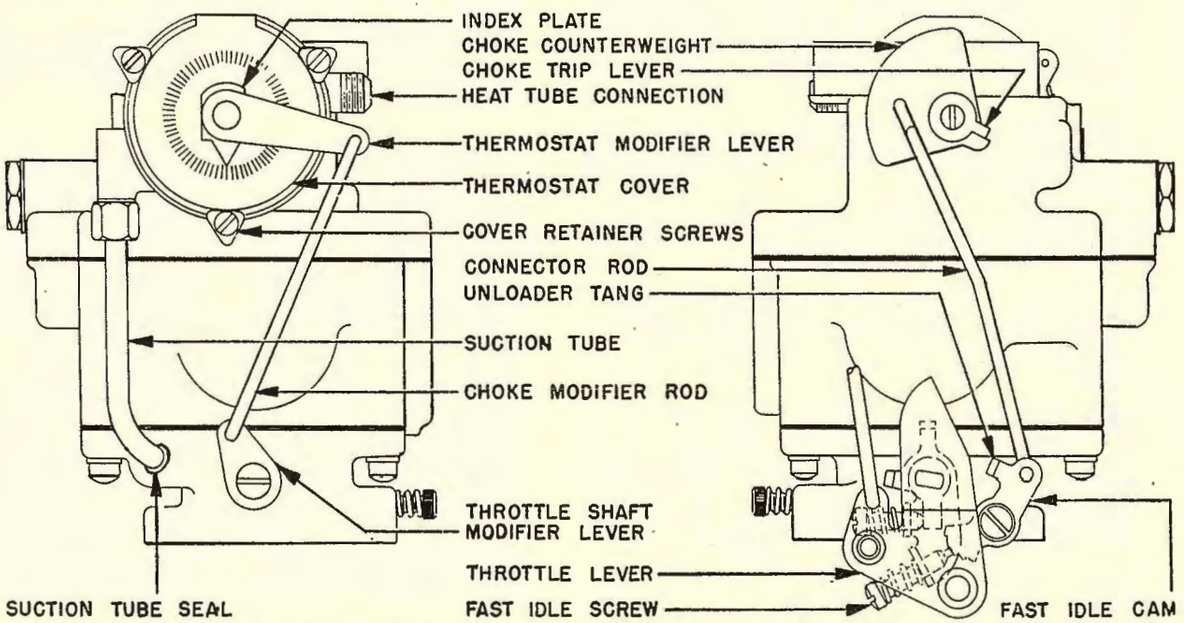


ROCHESTER "BB" (CADILLAC) AUTOMATIC CHOKE & FAST IDLE
(OLDSMOBILE "BB" & PONTIAC "BC" SIMILAR EXCEPT NO MODIFIER)

ROCHESTER "BB" & "BC" AUTOMATIC CHOKE (Continued)

Oldsmobile Fast Idle Adjustment: ***Two adjustments must be made in the following sequence:***

1) Choke Rod Adjustment—Rotate fast idle cam until intermediate step (short center step) is under fast idle screw. With choke cover set at center index mark and choke shaft trip lever in contact with choke counterweight, choke valve should be slightly open. Measure this opening (clearance between lower edge of valve and air horn wall) with smaller "A" end section of Gauge BT-49 (.177"). If clearance not correct, bend rod at lower bend near fast idle cam.

►***CAUTION—Choke rod must not rub against side of housing in any position.***

2) Fast Idle Adjustment—Carburetor on Engine. Rotate fast idle cam so that fast idle screw rests on extreme end of lowest step of fast idle cam, adjust screw so that engine runs at 500 RPM.

Carburetor off Engine—With choke cover set at center index mark, hold choke valve and throttle valves closed to that fast idle screw rests on highest step of fast idle cam, adjust screw for throttle valve opening (clearance between lower edge of valve and carburetor wall on side opposite idle ports) of .026" (measure with wire gauge on Tool BT-49).

Pontiac Fast Idle Adjustment: To check setting, rotate fast idle cam until throttle stopscrew rests on second (next to highest) step of cam. Check choke valve opening or clearance between lower edge of valve and air horn wall. This clearance should be equal to thickness of small end of Gauge J-4553 (.059"). If not correct, adjust by bending connector rod using tool J-4552.

Unloader Setting: To check setting, move throttle lever to wide open position, measure choke valve opening or clearance between lower edge of valve and air horn wall using gauge listed below. If opening not correct, adjust by bending tang on fast idle cam (Cadillac), tang on throttle lever (Oldsmobile & Pontiac).

Unloader Setting

Car & Carb.	Tool No.	Choke Opening
Cadillac "BB"	J-4176	.515"①
Oldsmobile "BB"	BT-49	.209"②
Pontiac "BC"	J-4553	.221"③

①—Use smaller step of gauge.
②—Use intermediate "B" step of gauge.
③—Use large end of gauge.

DISASSEMBLY: On Cadillac carburetors, first disconnect choke modifier rod from lever on choke cover and remove lever and pointer by taking out retainer screw in lever. On all models, disconnect choke suction tube by loosening coupling nut at choke housing (CAUTION—use care not to disturb seal at lower end of tube). Take out three cover screws and retainers and lift off choke cover and thermostatic coil assembly, lift out choke baffle plate. Remove choke valve from shaft. Disconnect choke rod from fast idle cam, then take out screw in end of choke shaft and pry trip lever, spacing washer, and choke counterweight and rod assembly off shaft. Rotate choke shaft until piston is free, then withdraw shaft and piston assembly (piston can be removed from shaft lever by removing piston pin). Remove choke housing and gasket by taking out two attaching screws within housing.

CLEANING & INSPECTION: Clean all metal parts except choke coil and housing with carburetor cleaning solvent. Blow out all passages with compressed air. Inspect all parts for wear and replace as necessary. Inspect tightness of suction tube seal in carburetor throttle body (seal can be tightened or renewed after choke and carburetor reassembled—see below) and condition of packing in coupling nut in upper end of tube (replace packing if tightly compressed or distorted).

REASSEMBLY: Install all parts in reverse order of disassembly procedure above using all new gaskets. Install choke valve with trademark "RP" up or outward, using new screws to attach valve. Install choke shaft counterweight with "RP" mark outward, then install spacing washer and trip lever with tang on lever on top of counterweight tang. Assemble connector rod with offset end of rod at counterweight (Cadillac & Oldsmobile), cotter pin end of rod at fast idle cam (Pontiac). Check entire choke system for free movement. *NOTE*—Choke valve should be closed at temperature of 75°F.

►**SUCTION TUBE SEAL SERVICING:** If tightening of seal at lower end of tube does not correct leaks at this point (check gasoline with engine idling—leak will cause engine to roll or stall), install new seal as directed below.

Tightening Tube Seal—Use installing tool and hammer to tap seal down evenly around tube, then recheck seal tightness.

Installing New Tube Seal—If new seal required due to loose seal or damaged tube, install seal **after carburetor completely assembled.** Loosen throttle body-to-bowl attaching screws, place new seal on lower end of suction tube and against the flared end of the tube, insert tube and seal in throttle body recess using tool J-4551 (Cadillac & Pontiac), BT-45 (Oldsmobile) to start seal evenly in throttle body (tap lightly on seal while rotating tool). Position tube and tighten coupling nut at upper end finger-tight. Then use tool and hammer to spread seal securely in throttle body (rotate tool to insure uniform spreading of seal). Tighten coupling nut at upper end of tube securely, tighten throttle body-to-bowl attaching screws.

CADILLAC & CHEVROLET THROTTLE RETURN CHECK

Car Model	Carburetor No.
Cadillac V8, 1951	7003200
Chevrolet, Powerglide Cars 1950-51	①7003060

①—Can also be installed on earlier No. 7002051 carburetors if new Throttle Body Assembly 7003235 also installed.

►**INSTALLATION OF THROTTLE RETURN CHECK ON EARLIER CHEVROLET CARS (To correct engine stalling while parking complaints):** ***See Installation data below.***

DESCRIPTION: Throttle Check unit consists of a spring-loaded diaphragm type dashpot mounted on the carburetor with an adjustable plunger which contacts an arm on the throttle lever and prevents throttle closing too rapidly when accelerator pedal released.

ADJUSTMENT: ***CAUTION—Each model adjusted differently as follows:***

Cadillac—First check alignment of adjusting screw on throttle return check plunger with contact arm on throttle lever and bend return check mounting bracket, as necessary, to center adjusting screw on radius of contact arm. Set throttle valve partly open by inserting 27/64" drill rod between pump rocker arm and return check mounting bracket on top of bowl cover, locating the drill against the head of the air horn screw. Hold return check plunger from turning (use wrench on plunger flats), turn adjusting screw with a ⅜" wrench until it just contacts throttle lever arm.

Chevrolet—Place transmission selector lever in "Park" position, run eninge at fast idle until warmed up. Connect tachometer, Adjust carburetor idle mixture and idle speed screws for smooth idle at 430-450 RPM. Insert .090" feeler gauge between carburetor choke lever cam and fast idle lever on air horn. Use 9/32" wrench to hold throttle return check shaft from turning, turn throttle return check adjusting screw in until it just contacts the throttle lever contact arm (NOTE—adjusting screw is self-locking type). Recheck carburetor settings.

INSTALLATION OF NO. 7003220 THROTTLE RETURN CHECK ON CHEVROLET NO. 7002051 CARBURETORS: Remove carburetor from engine, replace original Throttle Body Assy. with new type No. 7003235 which has contact arm on throttle shaft for return check operation. Install carburetor and Throttle Return Check Unit on manifold (return check held in place by one mounting stud nut), check alignment of return check plunger adjusting screw with contact arm on throttle lever and bend bracket or contact arm as necessary to center the adjusting screw on radius of contact arm. Make certain that latest type No. 3695705 Throttle Return Spring (with ½" loop at each end) is used. *CAUTION*—No. 3685718 Throttle Return Spring (with 1½" loop at each end) was used on first cars but is now used only on truck engines.

SISSON "AC-600" & "AC-700" SERIES

Car Model	Sisson Model
Chrysler Six, All Models (1939-50)	AC-758B
Chrysler Eight, All Models (1939-48)	AC-600
Chrysler Eight, All Models (1949-50)	AC-758B
DeSoto, All Models (1939-50)	AC-758B
Dodge, All Models (1939-51)	AC-758B
Lincoln, 16H & 168H (1941), 26H & 268H (1942)	Lincoln No. 16H-9850
Plymouth, All Models (1939-51)	AC-758B

►**LINCOLN NOTE:** Automatic Choke also used on 1941 models with "Selecto-matic' control which consists of a button on the instrument panel marked 'AM' (letters opposed so that one letter is upside-down in each position of the control button). Automatic Choke is operative with control button turned so that letter 'A' is uppermost. Automatic choke is inoperative (choke is then controlled manually in usual manner) with button turned so that letter 'M' is uppermost.

DESCRIPTION: The Sisson Automatic Choke is a separate unit mounted on exhaust manifold and connected to the carburetor choke valve lever by a connector rod. A solenoid within the choke case is connected to the starter side of the starting switch so that the solenoid is energized while the starter is operating. A thermostat is also mounted within the choke case and the solenoid and thermostat operate together to close the choke valve for cold starting and to control the choke valve during the warming up period. The AC-700 Series (AC-751, AC-751B, AC-758B) and AC-600 Series operate in the same manner.

OPERATION: When the starter is operated to crank the engine, automatic choke solenoid is energized, attracting the armature, and rotating the choke lever, which is attached to the choke valve lever through a control rod so that the choke valve is closed if the engine is cold. When the engine is warm this armature movement does not take place and no choking action results. When the engine begins to fire and the starting switch is opened, the solenoid circuit is broken. The choke lever is then controlled entirely by the thermostatic spring within the choke case which tends to rotate lever and open choke valve as engine warms up. At normal operating temperature, choke valve is wide open.

ADJUSTMENT: Model AC758B. Remove air cleaner, open throttle approximately ¼. Move choke lever until hole in automatic choke shaft (opposite end from lever) lines up with slot in bearings, insert special tool, Sisson No. C-723, through hole in shaft and push tool down so that lower end engages slot in choke base mounting flange. Loosen clampscrew on choke lever, press up on lever until choke valve is closed tight (sight down air horn), hold lever in this position and tighten clampscrew. Remove tool.

Model AC-600—Remove air cleaner, open throttle approximately ¼, take off automatic choke cover. Clamp special adjusting tool, Sisson No. AC-620, in place on choke so that end of tool enters and lines up hole in armature and hole in magnet core, move flat bar on tool so that armature is locked tightly against magnet core. Loosen clampscrew on choke lever, move lever until choke valve is closed tight (sight down air horn), hold lever in this position and tighten clampscrew. Remove tool and replace automatic choke cover.

Lincoln Model—Remove air cleaner. Rotate choke lever until hole in brass shaft lines up with slot in bearing, insert 5/64" rod through hole in shaft and engage rod in notch in base of choke unit. Loosen choke lever clampscrew, press upward on lever until choke valve is closed tight against .010" feeler inserted between edge of valve and air horn wall, hold lever in this position and tighten lever clampscrew, remove adjusting rod, replace air cleaner.

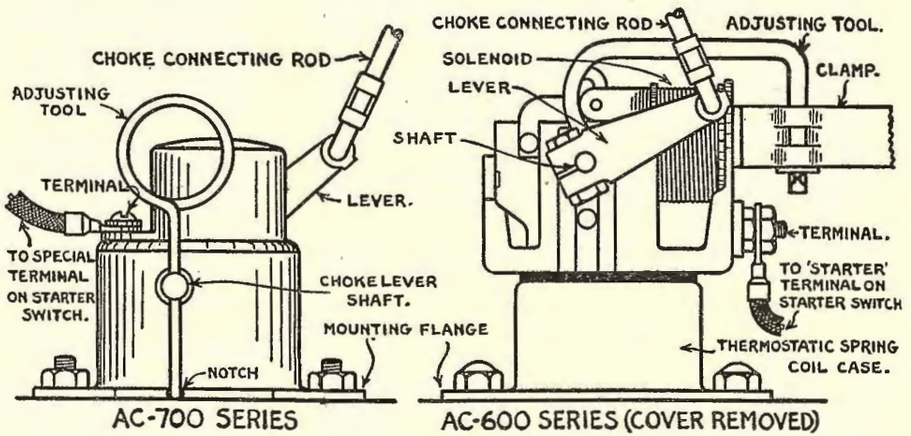
CAUTION—When replacing air cleaner, make certain that clamp not tightened excessively which may cause choke valve to bind. See that choke valve does not bind or stick and that entire choke mechanism and fast idle linkage operate freely with throttle partly open. See car model page for Throttle Cracker.

SERVICING: If Trouble Shooting data below does not correct faulty operation, remove Automatic Choke Unit and test operation on test fixture such as Sisson Model AC-753. Replace units which are defective. Do not oil any part of choke mechanism. When installing choke, make certain that heat insulating gasket is in place between exhaust manifold and choke case. Do not use a terminal screw on AC-758B models which is longer than original screw (Caution—a longer terminal screw will interefere with correct operation).

TROUBLE SHOOTING: If engine does not start or warm up properly, and for hard starting complants due to faulty choke operation, check following points

Hard Starting with Cold Engine:

1. Check fast idle mechanism to see that it is free and not binding at any point (fast idle connector rod usually connected to choke valve lever).
2. See that choke rod connecting Automatic Choke lever and choke valve lever does not bind in levers.
3. Examine carburetor choke lever, Automatic Choke lever, and fast idle mechanism and remove all paint, grease, or dirt which might cause binding.
4. Check carburetor choke valve, see that edges are smooth and that valve does not rub against air horn walls or bind in any position. See that air cleaner does not interfere with choke valve and that mounting screw is not tightened excessively which will distort air horn and bind choke valve (check choke valve operation with air cleaner in place).
5. Check electrical connections at Automatic Choke and starter switch. Examine wire for short-circuits and breaks.
6. Check Automatic Choke ground (unit grounded through case). See that mounting screws are tight and that manifold under mounting flange is clean.
7. Check throttle cracking linkage (see Tune up instructions on car model page). This is important to insure correct throttle opening for starting and to place automatic choke in operation (on some cars with fast idles, fast idle will prevent choke closing until throttle valve opened to free fast idle cam.
8. Check Automatic Choke adjustment (see instructions above). If Automatic Choke does not function after above points checked, replace the unit.



Hard Starting with Hot Engine:

1. Check for rich mixture or flooding caused by percolating discharge of carburetor when engine stopped. To check, remove air cleaner immediately after stopping engine, note whether gasoline dripping into manifold from carburetor nozzle (this overflow should show up within 3-5 minutes after engine is stopped). Correct by installing special size Float Valve Needle and Seat Assembly and checking float level. See Carburetor article in Carburetor Section.
2. Check carburetor for High Float Level. See Carburetor article in Carburetor Section for Float Level specifications and adjusting directions.

Engine Stalls while Cold:

1. Check Manifold Heat Control Valve. See Manifold Heat Control data on car model page for directions.
2. Check carburetor Fast Idle setting. See Carburetor article in Carburetor Section for directions.

INSTALLATION (PLYMOUTH): Mounting pad is provided on the exhaust manifold for the automatic choke. Position choke on mounting pad with operating lever pointing toward carburetor, drill two 3/16" holes in line with mounting holes in base flange, tap with ¼x20 USS. tap, use studs furnished to mount choke on manifold. Take off all hand choke linkage, replace with control rod linking choke valve lever and choke operating lever.

STROMBERG TYPE C

Car Model	Carburetor	Choke Type No.
Packard 12, All Models	EE-3	(See Note) A-17290
Pierce Arrow 8, All Models	EE-3	A-17630
Pierce Arrow 12, All Models	EX-32	A-16090

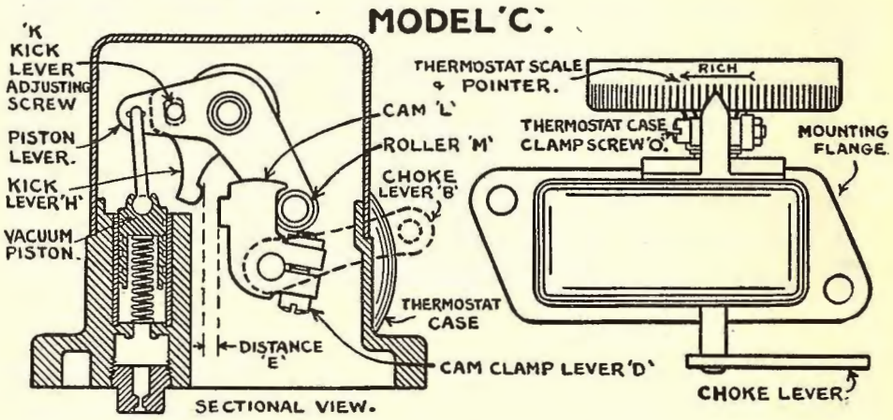
►**Packard Twelve Note:** New 10-9A choke used beginning late 1937 cars. This model may be installed on early '37 cars to improve choke action by removing asbestos between choke hot plate and manifold and installing 3/32" plain washer No. 239304 on each screw as spacer. Choke valve lever to fast idle cam lever rod must be replaced by new 5 9/32" rod (old rod 5 9/16" long).

NOTE—New 10-9A choke setting 16 Notches Rich, old 10-9 setting 28 notches.

DESCRIPTION: Stromberg automatic choke control is a device designed to automatically choke the carburetor when the engine is started cold and to automatically control the choke valve during the warming up period of the engine. It is designed to be mounted on the manifold and is operated by the engine heat and manifold vacuum.

ADJUSTMENT: When this type automatic choke requires adjustment, it should be removed from the engine by disconnecting the carburetor connecting rod and taking out the two mounting screws. The choke should then be allowed to cool off to 70° before any attempt is made at adjusting (this is particularly important if engine has been running and the Choke is heated). However, if temperature is under 70° choke should be taken into a room heated to 70° (this is normal room temperature) and allowed to come up to room temperature before adjustment is made. To adjust, first take off Choke case cover and see that all working parts operate freely. With roller 'M' in locked position against first notch of cam 'L' the distance between the center of the hole in the choke lever 'B' and the lower surface of the choke base plate should be measured (see Table No. 1). If not correct, loosen cam clamp lever 'D' and shift position of control lever until correct setting is secured. Measure the distance 'E' between the face of the cam 'L' and the surface of the kick lever 'H' (use a wire drill) with the cam in locked position (see Table No. 2). Adjust by loosening kick lever adjusting screw 'K'. Then unhook thermostat spring end 'A' from prong 'N' in thermostat case, loosen clamp screw 'O' and rotate thermostat case 'Q' until the zero mark of the scale on the rim of the case is directly under the pointer. In this position the hook of the thermostat should be flush with the prong in the case. Place the hook on the prong, revolve the thermostat case the correct number of divisions toward the 'rich' or 'lean' side of the scale (see Table #3 below for each car model), securely tighten clamp screw 'O'. See that piston operates freely and does not stick in any position, assemble Choke case cover, mount choke on manifold, making certain that gasket is in good condition and that mounting screws are pulled down evenly and securely. Then connect control rod to carburetor choke lever and see that there is only .006 inch backlash between levers. If it is necessary to adjust control rod to secure correct backlash, loosen the clamp screw on the carburetor choke lever and shift the carburetor choke lever on its shaft. See that the carburetor air cleaner does not interfere with the free movement of the control rod.

CALIBRATING THERMOSTATIC COIL:—If the hook on the thermostatic coil is not flush with the prong on the case at 70°F. with the pointer at '0' (see adjustment paragraph above), a new '0' location should be located as follows: loosen thermostat case clampscrew, revolve case until hook on thermostatic coil is flush with prong, tighten clampscrew and make a new '0' mark opposite the pointer. Obliterate the old '0' mark and use the new mark in setting the thermostatic coil (Table #3 above). This procedure may be necessary when installing a new thermostatic coil or when the old coil has taken on a permanent 'set'. Replace coils which have been deformed by rough handling.



AUTOMATIC CHOKE SETTING

Car Model	Table No. 1 Lever Height	Table No. 2 Distance 'E'	Table No. 3 Setting Notches
Packard Twelve①	1 15/64"	#12 Drill	②16 Rich
Pierce Arrow Eight	1 1/32"	#17 Drill	10 Rich
Pierce Arrow Twelve	41/64"	#17 Drill	12 Rich

①—New Code 10-9A Automatic Choke (See Production Change Note above).

②—Setting may be varied not more than 5 Notches Rich or Lean if engine tends to run Lean or Rich during warming up period.

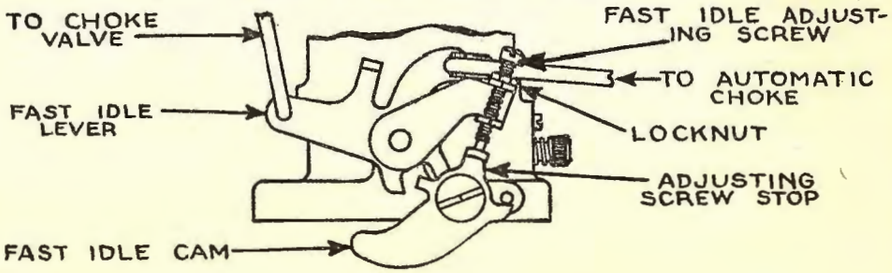
STROMBERG FAST IDLE

PACKARD 12 TYPE (USED WITH TYPE C AUTOMATIC CHOKE)

Packard 12, All Models (1937-39)

DESCRIPTION & OPERATION: Consists of fast idle cam on carburetor casting below the throttle shaft which serves as a stop for the special fast idle adjusting screw on the throttle lever. Fast idle cam is controlled by fast idle lever linked to choke valve and is rotated to fast idle position when the choke is closed for cold starting (throttle must be opened momentarily to allow choke to close and fast idle to operate). In the fast idle position (see illustration), the fast idle screw rests on the ear of the fast idle cam. When the choke valve opens with the engine warm, the fast idle cam is released by the fast idle lever and falls of its own weight so that the ear is rotated past the fast idle screw. The throttle valve then closes to the hot or slow idle position (controlled by the throttle stopscrew on the opposite end of the throttle shaft).

ADJUSTMENT: If adjustment made with engine hot, throttle should be opened momentarily and fast idle cam rotated so that fast idle screw is directly over ear on cam. Hold fast idle cam in this position while adjusting. Back off throttle stopscrew (slow idle speed adjusting screw) until throttle valve is completely closed, loosen locknut on fast idle adjusting screw, turn this screw in until it just contacts ear on fast idle cam, then turn screw in an additional 6¾ turns, tighten locknut. Readjust throttle stopscrew for correct hot or slow idle speed.



STROMBERG AAO-161 CARBURETOR TYPE

Car Model	Stromberg Carburetor
Studebaker President, 5C (1939), 6C (1940)	AAO-161

1940 PRODUCTION CHANGE: 1940 cars have choke with .076" reducer in thermostat heat suction pipe, new thinner thermostat spring, and #52 vacuum piston hole in throttle body (was #56 drill size). This new thermostat spring and cover assembly stamped '8' for identification.

DESCRIPTION & OPERATION: Automatic Choke. Thermostatic coil type. Thermostatic coil mounted in housing on air horn and linked directly to choke valve shaft without external linkage. Hot air tube for thermostatic coil operation is connected between choke housing and hot air stove on exhaust manifold. The vacuum piston is located in the main carburetor casting and is linked directly to the choke valve (see Fast Idle below). When the engine is cold, thermostatic coil winds up and tends to close the choke valve. As soon as the engine begins to fire, the vacuum piston is drawn down to the fast idle position which opens the choke valve slightly to prevent overchoking. As the engine warms up, the tension of the thermostatic coil decreases which allows the offset choke valve to open so that at normal operating temperatures the choke valve is wide open.

Fast Idle—Consists of a by-pass passage around the throttle valve controlled by a vacuum piston linked directly to the choke valve. The vacuum piston is slotted so that air (and fuel mixture from idle channel) is drawn down through piston and discharged below the throttle valve whenever the piston is far enough up in its cylinder to uncover the passage at the lower end of the cylinder which opens into the manifold below the throttle valve. With the choke valve closed for cold starting, the vacuum piston will be at the upper end of its stroke so that the piston slot registers with the cross-channel from the idle fuel mixture channel and fuel will be drawn through this channel and discharged below the throttle valve. When the engine begins to fire, manifold vacuum draws vacuum piston down slightly so that air is drawn through vacuum piston and discharged below the throttle. This air flow restricts the amount of air entering the idle cross-channel so that the idle mixture is enriched to compensate for the additional air entering below the throttle. With the engine warm and the vacuum piston at the bottom of its stroke (choke valve wide open), the passage around the throttle valve is cut off entirely and the idle cross-channel acts as an air bleed so that the idle discharge is of normal richness and engine idles at regular hot or slow idle speed.

ADJUSTMENT: Thermostat case marked for 3 settings "H", "M", "R" on outer rim. To adjust, loosen mounting screws on edge of case, rotate case until mark 'R' lines up with highest projection on housing flange, tighten screws. This is standard setting for regular fuel. If engine tends to load up or over-choke, rotate case to 'M' position. Use 'H' setting only when highly volatile fuels used continuously.

Thermostat Checking—Must be checked on the carburetor. Immerse cover and thermostatic coil in water of 70°F. temperature for at least 10 minutes, see that air horn on carburetor is at 70°F., install thermostat on housing and see that hook engages choke valve lever, rotate cover until choke valve just closes. In this position, mark 'R' on cover should be approximately in line with projection on housing flange.

SERVICING: Disassembly. When removing air horn and float bowl cover, take off throttle valve body first and unhook vacuum piston so as to prevent damage to vacuum piston. When installing piston, make certain that slot on side of piston registers with idle cross-channel in carburetor (slot must be toward throttle valve).

STROMBERG BXO-26 CARBURETOR TYPE

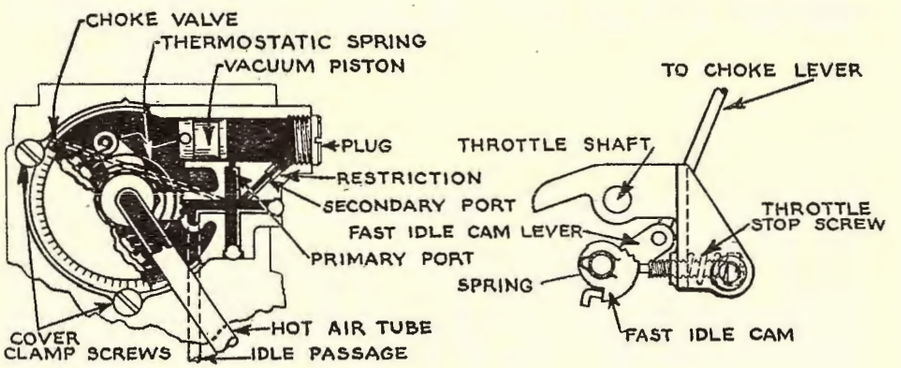
Car Model	Stromberg Carburetor
Studebaker Commander, 9A (1939), 10A (1940)	BXO-26

DESCRIPTION & OPERATION: Thermostatic type. Thermostatic coil and vacuum piston mounted in housing on carburetor air horn and linked directly to choke valve shaft without external linkage. Vacuum passage (for vacuum piston operation) drilled in carburetor casting and opens into manifold below throttle valve. Hot air tube (for thermosatic coil operation) is connected between choke housing and hot air stove on exhaust manifold. When engine is cold, thermosatic coil winds up and tends to close choke valve (on Model BXO-26, throttle must be opened momentarily to free fast idle cam before this choke valve closing can occur). As soon as engine begins to fire, vacuum piston is pulled into cylinder and choke valve is opened slightly to prevent overchoking (with choke valve fully closed, both primary and secondary vacuum ports are open, as soon as piston moves slightly, primary port is cut off and vacuum is regulated by restriction in secondary port passage). As the engine warms up, thermostatic coil unwinds allowing the offset choke valve to open so that at normal running temperature the valve is wide open.

Fast Idle (Model BXO-26):—Consists of a spring-loaded fast idle cam and lever linked to the choke valve shaft and serving as the stop for the throttle stopscrew. With choke valve fully closed, fast idle cam is rotated so that the highest step of the cam is under the stopscrew and the throttle is held open in the fast idle position. As the choke valve opens, the cam is rotated so that successively smaller steps on the cam pass under the stopscrew, providing less throttle opening. At normal running temperatures (with choke valve wide open) throttle stopscrew rests on lowest step of fast idle cam providing the normal hot or slow idle speed. No adjustment required.

ADJUSTMENT: Thermostat case marked for 3 settings "H," "M," "R" on outer rim. To adjust, loosen mounting screws on edge of case, rotate case until mark 'R' lines up with highest projection on housing flange, tighten screws (standard setting). If engine tends to load up or over-choke while warming up with this setting, use 'M' setting. Use 'H' setting only for highly volatile fuels.

Thermostat Checking (Model BXO-26):—With cover and thermostatic coil assembly removed, make certain that assembly is at exactly 70°F. (immerse assembly in pan of water at 70°F. for at least ten minutes), mark the cover flange in line with the center of the thermostatic coil hook. 'H' mark on cover should be two graduations, 'M' mark four graduations, 'R' mark six graduations from this reference mark.



STROMBERG EE-16, BXOV-26 CARBURETOR TYPE

Used On:

Car Model	Carburetor
Packard '110' Six, 1800 (1940), 1900 (1941)	BXOV-26
Packard '120' Eight, 1701,1A,2 ('39), 1801,1A ('40)	EE-16
Studebaker Commander, 11A (1941), 12A (1942)	BXOV-26
Studebaker Commander, all Models (1946-50)	BXOV-26

DESCRIPTION & OPERATION: Thermostatic coil and vacuum piston type. Thermostatic coil and vacuum piston are mounted on carburetor and linked directly to choke valve lever (no external linkage). Vacuum passage (for piston operation) is drilled in carburetor casting and opens into manifold below throttle valve. Hot air tube (for thermostatic coil operation) is connected between choke housing and hot air stove on exhaust manifold. When engine is cold, thermostatic coil winds up and tends to close choke valve (valve cannot close until throttle opened momentarily to release fast idle screw from cam, but is snapped closed as soon as throttle opened). When engine begins to fire, manifold vacuum causes vacuum piston to be drawn into cylinder which opens choke valve slightly against the thermostatic coil tension to provide proper air mixture for continued running. As engine warms up, thermostatic coil tends to unwind, releasing choke valve and allowing it to open (valves are offset).

Fast Idle (BXOV-26 Type):—Stepped valve linked to choke. When choke valve closed for cold starting, cam is revolved so that throttle stopscrew rests on highest step of cam and throttle is held open in fast idle position. As engine warms up and choke valve opens, cam is revolved and throttle allowed to close, until with the engine warm and choke valve wide open, throttle is closed to hot or slow idle position.

Fast Idle (EE-16 Type):—Similar to BXOV-26 type except that special fast idle screw is used. This screw is located on the throttle valve lever and contacts the fast idle cam. Fast Idle screw must be adjusted independently of throttle stopscrew which controls hot or slow idle speed. See adjustment directions below.

ADJUSTMENT: Thermostatic Coil Setting. Inverted "V" mark or "O" mark on thermostatic coil housing should line up with reference mark on choke housing. This standard setting may be varied not more than 2 graduations for use of high test fuel or with exceptional operating conditions. If warming up performance is not satisfactory with this setting, check choke valve and linkage for binding or replace thermostatic coil assembly. When installing thermostatic coil, place coil housing in position with coil hook down, then rotate housing in 'Rich' direction until correct setting secured (this will insure coil hook engaging prong properly).

Studebaker Models—Choke housing on these models marked by three letters 'H', 'M', 'R'. To adjust, loosen mounting screws, rotate housing until 'R' mark lines up with reference projection on housing flange. This is standard setting. If engine tends to load up or over-choke, change setting to 'M' position. Use 'H' setting only when highly volatile fuels used.

CAUTION—When connecting heat tube, use extreme care not to use excessive pressure in tightening connection which may rotate thermostatic coil housing and change setting.

Fast Idle Speed (EE-16 Only)—On this model, after throttle stopscrew set for correct slow idle speed of 6 MPH., adjust fast idle screw by turning screw in until it just contacts lowest step of fast idle cam (choke valve open), then turn screw out ½ turn which will provide correct clearance between fast idle screw and cam.

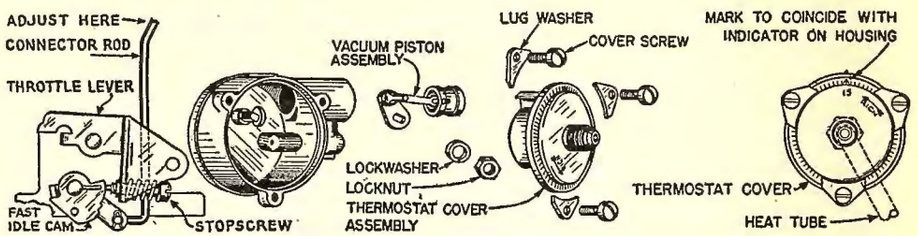
Fast Idle Setting—With choke valve open, close throttle so that stop-screw is on low lobe of fast idle cam and against step on cam. Move choke valve toward closed position as far as possible (do not force valve beyond point where all clearance is taken up). Check remaining choke valve opening by inserting 11/32" drill (BXOV-26), 35/64" drill (EE-16) between edge of choke valve and air horn wall. If choke valve opening not correct, adjust by bending fast idle connector rod slightly at bend near upper end.

CAUTION—Make certain that fast idle mechanism operates freely without binding.

Choke Release (EE-16 Only)—To check choke release or wide open throttle choke opening, open throttle valve wide by pressing on throttle lever (CAUTION—Do not press on fast idle lever). Measure choke valve opening by inserting 11/64" drill between edge of choke valve and air horn wall. If choke valve opening not correct (.156-.187"), adjust by bending ear on fast idle lever (which contacts ear on fast idle cam) slightly.

NOTE—No separate choke release adjustment required on BXOV-26 models.

DISASSEMBLY: Disconnect the heat tube from the thermostatic coil cover, remove carburetor from manifold. Remove thermostat coil cover attaching screws and lug washers, remove thermostat coil and cover assembly (rotate cover clockwise to disengage coil hook from lever prong). Remove cork insulator and baffle plate. Remove locknut on end of choke valve shaft (use wrench T-25047), remove lockwasher. Loosen housing attaching screws slightly (do not take screws out), take out vacuum piston assembly.



Servicing—Clean vacuum piston cylinder with clean cloth saturated with Acetone or alcohol. Clean vacuum piston (do not use abrasives). Blow out all channels with compressed air. Do not attempt to remove thermostatic coil from housing (service as an assembly).

REASSEMBLY: Do not lubricate the vacuum piston or cylinder when installing assembly. Install piston and engage slot in lever on flatted end of choke valve shaft (can only be installed in correct position), tighten housing attaching screws securely. Install lockwasher and and locknut, use wrench T-25047 to tighten locknut securely. Install baffle plate and cork insulator (CAUTION—if cork insulator buckled or does not fit properly, it will cause vacuum piston lever to bind and new insulator should be used). Install thermostat coil and cover assembly and adjust as directed above.

Thermostat Checking (Studebaker Models)—To calibrate a replacement thermostat, or to check a thermostat which may have been damaged or tampered with, proceed as follows: Submerge coil and cover assembly in water at exactly 70°F. (use thermometer to check water temperature) and allow assembly to remain in the water for several minutes. Remove assembly and mark edge of cover in line with center of thermostatic coil hook. The "H" mark should be two graduations, "M" mark four graduations, and "R" mark six graduations, from this reference mark. Thoroughly dry the thermostatic coil and cover assembly before installing it in the carburetor.

STROMBERG AAV-16, 167, 26, 267; AAUVB, AAVB TYPE

BUICK	Carburetor Model
1939-40 60, 70, 80, 90	AAV-26
1941-42 40, 50①	AAV-16
1941-42 All②	AAV-16
1942 Late 40, 50①	AAV-16
1942 Late 60, 70, 90①	AAV-26
1946-47 40, 50	AAV-16
1946-47 70	AAV-26
1948-49 40, 50	AAV-167
1948-49 70	AAV-267
1950-51 40, 50③	AAUVB-267
1950-51 70③	AAVB-267

CADILLAC	Carburetor Model
1939-48 V8③	AAV-26

PACKARD	Carburetor Model
1940-41 Super 8③	AAV-26
1940-41 Cust. 8③	AAV-26

STUDEBAKER	Carburetor Model
1941-42 Pres.	AAV-26
1951 V8 Comm.③	AAUVB-26

①—Single Carburetor.
②—Front carburetor of Compound Carburetor installation.
③—See Production Changes below.

►CHANGES, CAUTIONS, CORRECTIONS

►**Buick Compound Carburetion Note:** Front carburetor only (AAV-16) on these two-carburetor installations has Automatic Choke & Fast Idle. Rear carburetor (AA-1) does not have choke valve or fast idle mechanism.

►**Buick AAUVB-267 & AAVB-267 Carburetor Service Tools:** Automatic choke design (housing cast integral with air horn) require use of new setting gauges and tools, or modification of previous type gauges, as follows:

Tool Number

T-25360—Clip removal on Fuel Inlet Strainer, Pump Inlet Strainer and Pump Check Valve.

T-25367—Choke Setting Gauge (see modification data on old T-25046).

Choke Setting Gauge T-25046 Modification for use on AAUVB-267 & AAVB-267): Remove stock on smaller diameter (1.775″) end of gauge to new diameter of 1 15/32″ for depth of ¼″. This will leave small shoulder 1/32″ deep of original 1.775″ diameter.

►**Buick 1950-51 AAUVB-267 & AAVB-267 Carburetor Production Changes:** These carburetors changed in production but changes do not affect automatic choke and fast idle adjustment procedure. *See "Stromberg AAV-16, 26, 167, 267, AAUVB-26, AAUVB-267, AAVB-267 Carburetor" in Carburetor Section for changes and various types used.*

►**Cadillac 1942 Thermostatic Coil Assy. & Choke Setting Production Change:** *Two carburetors used with DIFFERENT coil assemblies and choke settings:*
First Code 205-10 Carburetors—Thermostatic coil cover stamped "19." Choke setting should be 2 Notches Rich.

Later Code 205-10A Carburetors—Thermostatic coil cover stamped "13." Choke setting should be Centered (at index).

►**Packard 1940 Thermostatic Coil Assembly Change:** On first cars with carburetors of Code No. 10-40C and earlier, it is recommended that original Thermostatic Coil & Cover Assembly (with figure "3" stamped on cover) be replaced by later type assembly No. 382001 (with figure "10" stamped on cover).

►**Studebaker Early 1951 Carburetor Recommended Changes (First Code 6-107 Carburetors):** When servicing these carburetors, manufacturer recommends that following new type parts be installed (or old parts reworked as indicated) and that new settings be used as listed below.

Part:	Original Code 6-107	Later Code 6-107A
Main Metering Jet	P-24473 (.044″)	P-24473 (.045″)
Power By-Pass Jet	P-21657 (#56)	P-24674 (#60)
Vacuum Piston, Link, Lever	385580	①385579
Thermostat Cover Assy	385638	①385778
Fast Idle Cam	385593	②385593
Fuel Inlet Strainer & Clip		385360 & 385355

①—First type part can be reworked—see below.
②—Marked by "1" stamped on end of highest step on cam.

Vacuum Piston Change—Rework first type piston by drilling #54 hole in center of piston head. When re-installing piston, make certain that piston and cylinder are thoroughly clean and that piston moves freely in cylinder **without any type of lubrication.**

Thermostat Cover Assy.—Thermostat cover plate (behind thermostatic coil) must be removed (not used on later 385778 assy.). To remove plate, break staking on center of hub retaining thermostatic coil end, remove thermostatic coil, remove and discard cover plate. Replace thermostatic coil making certain that hook on end of coil is adjacent to inverted "V" mark on edge of cover, restake end of hub with small punch to retain coil.

Fast Idle Cam—Install new fast idle cam (same part number as original type) identified by figure "1" stamped on highest step of cam. This new cam provides faster idle speed during warm-up period.

Fuel Inlet Strainer & Clip—Install these parts at the fuel inlet (same parts as used for accelerating pump inlet).

Carburetor Code Marking—After above parts installed, add letter "A" to 6-107 code number on float chamber cover.

Automatic Choke Setting—Set all Code 6-107A carburetors **2 Notches Lean.**

►**Studebaker 1951 Code 6-107A Carburetor Note**—These carburetors have all changes recommended for early 6-107 models incorporated in production and should be set to latest specifications.

►**Studebaker Late 1951 Carburetor Production Change**—Carburetor No. 380313 (Code No. 6-111) used on later cars. This carburetor not interchangeable with earlier Code 6-107 & 6-107A carburetors and requires special settings as given below.

DESCRIPTION

DESCRIPTION & OPERATION: Thermostatic coil and vacuum piston type. **Thermostatic coil and vacuum piston are mounted on carburetor and linked directly to choke valve lever (no external linkage). Vacuum passage (for piston operation) is drilled in carburetor casting and opens into manifold below throttle valve. Hot air tube (for thermostatic coil operation) is connected between choke housing and hot air stove on exhaust manifold. When engine is cold, thermostatic coil winds up and tends to close choke valve (valve cannot close until throttle opened momentarily to release fast idle screw from cam, but is snapped closed as soon as throttle opened). When engine begins to fire, manifold vacuum causes vacuum piston to be drawn into cylinder which opens choke valve slightly against the thermostatic coil tension to provide proper air mixture for continued running. As engine warms up, thermostatic coil tends to unwind, releasing choke valve and allowing it to open (valves are offset).**

Fast Idle:—Consists of a stepped cam linked to the choke valve. When choke valve closed by thermostatic coil for cold starting, cam is revolved so that the throttle stopscrew rests on highest step of the cam and throttle is held open in fast idle position. As engine warms up and choke valve opens, cam is revolved and throttle allowed to close, until with the engine warm and choke valve wide open, throttle is closed to hot or slow idle position.

►***ADJUSTMENT CAUTION: Three separate adjustments (Choke Setting, Fast Idle Setting, and Unloader or Choke Release Setting) are required:***

AUTOMATIC CHOKE SETTING (Thermostatic Coil): Inverted 'V' or 'O' mark on thermostatic coil housing should line up with reference mark on choke housing on all models ("Centered" setting) except as noted in table and Notes below. These specified settings may be varied not more than 2 graduations for use of high test fuel or with exceptional operating conditions. If warming up performance is not satisfactory with this setting, check choke valve and linkage for binding or replace thermostatic coil assembly. When installing thermostatic coil, place coil housing in position with coil hook down, then rotate housing in 'Rich' direction until correct setting secured (this will insure coil hook engaging prong properly).

AUTOMATIC CHOKE SETTING

Car Model	Carburetor	Choke Setting
Buick 40, 50 ('40-49)	AAV-16, AAV-167	1 Notch Lean
Buick Others ('39-49)	AAV-16, 26; AAV-267	①Centered
Buick All ('50-51)	AAUVB-267, AAVB-267	Centered
Cadillac ('39-41)	AAV-26	Centered
Cadillac ('42)	AAV-26 (Code 205-10) ②	2 Notches Rich
Cadillac ('42)	AAV-26 (Code 205-10A) ③	Centered
Cadillac ('46-48)	AAV-26	Centered
Packard ('40-41)	AAV-26	Centered
Studebaker ('41-42)	AAV-26	See Note below
Studebaker ('51)	AAUVB-26 (Code 6-107) ④	①Centered
Studebaker ('51)	AAUVB-26 (Code 6-107A)	①2 Notches Lean
Studebaker ('51)	AAUVB-26 (Code 6-111)	①Centered

①—Reference point is **left end** of boss on housing.
②—Thermostatic coil cover stamped "19."
③—Thermostatic coil cover stamped "13."
④—These carburetors should be modified to Code 6-107A (see Changes, Cautions, Corrections).

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STROMBERG AAV-16, 167, 26, 267; AAUVB, AAVB TYPE (Continued)

►**Studebaker 1941-42 Note**—Housing on these models marked by three letters 'H', 'M', 'R'. To adjust, loosen mounting screws, rotate housing until 'R' mark lines up with reference projection on housing flange. This is standard setting. If engine tends to load up or over-choke, change setting to 'M' position. Use 'H' setting only when highly volatile fuels used.

►*CAUTION*—When connecting heat tube on thermostatic coil cover, use great care not to use excessive pressure which might rotate cover and change choke setting.

THERMOSTATIC COIL IDENTIFICATION

Thermostatic Coil & Cover Assy. may be identified by figure on cover:

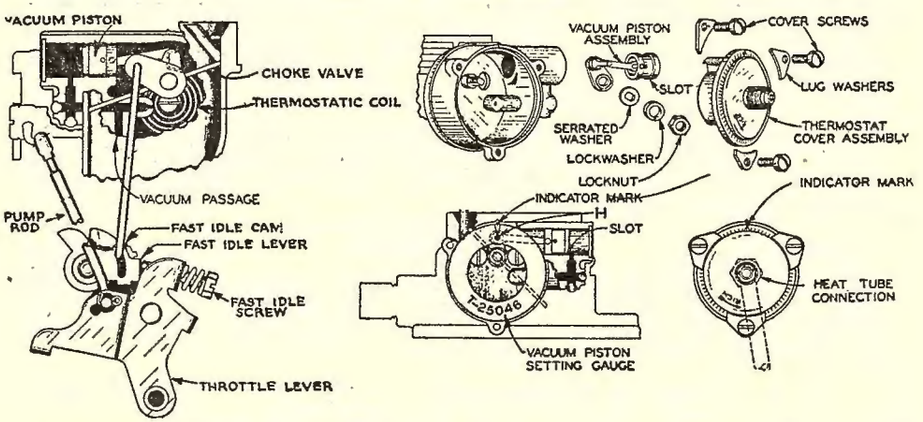
Buick—6 (All Series 1940-49), 23 (All Series 1950-51).

Cadillac—19 (1942—First Code 205-10 Carb.), 13 (1942—Later Code 205-10A Carb.), 20 (1946-48—Code 205-14A & 205-14B Carb.).

Packard—10 (1940—Std. on Code 10-40D Carb. and used to replace "11" and "3" units on Code 10-40C and earlier Carb.), 14 (1941).

FAST IDLE SETTING: ***CAUTION—All cars not adjusted alike. Adjust each model exactly as follows:***

Buick (1939): To check fast idle setting on these cars, close throttle valve with choke valve wide open so that stopscrew is against low step on fast idle cam, move choke valve toward closed position as far as possible (do not force valve beyond point where stopscrew comes up against step on fast idle cam). Measure choke valve opening by inserting 5/16" drill rod between edge of valve and air horn wall. If choke valve opening not correct, adjust by bending fast idle connector rod slightly, using great care not to distort fast idle cam return spring or to cause a bind between rod and slot in cam.



Buick (1940-47): To check fast idle setting on these cars, close choke valve against #53 drill (between valve and wall), open and close throttle and note clearance between locking lever on throttle valve lever and lug on loose lever mounted on fast idle cam shaft. Lever should just clear lug. Adjust by bending fast idle connector rod slightly.

Buick (1948-51): ***Two separate settings required as follows:***

Fast Idle Cam Setting—Close choke valve against #26 drill (insert drill between air horn wall and center of upper edge of choke valve), hold valve against drill, see that fast idle cam spring holds cam up against end of fast idle connector rod. Close throttle valve until stopscrew contacts fast idle cam. Screw should clear edge of highest step of cam and rest on second step. Adjust by bending fast idle connector rod at large curve for correct screw contact.

Lock Lever & Loose Lever Clearance—Close choke valve against #53 drill (insert drill between air horn wall and center of upper edge of choke valve), hold valve against drill. Slowly open and close throttle valve and check clearance between lock lever on throttle shaft and loose lever behind fast idle cam. If clearance not just enough to permit lock lever to pass loose lever, bend end of lock lever up or down as required for this clearance.

FAST IDLE SETTING (BUICK)

Car Model	Carburetor	Choke Valve Opening
Buick ('39)	AAV-26	5/16" drill
Buick ('40-47)	AAV-16, AAV-26	#53 drill
Buick ('48-49)	AAV-167, AAV-267	#26 & #53 drill
Buick ('50-51)	AAUVB-267, AAVB-267	#26 & #53 drill

Cadillac, Packard, & Studebaker (1941-42): Open throttle, rotate fast idle cam to fast idle position, then close the throttle valve so that throttle lever stopscrew is on highest step of fast idle cam, move choke valve toward closed position as far as possible (do not force valve beyond point where fast idle cam lever contacts stopscrew); measure remaining choke valve opening by inserting special gauge or drill rod of correct size (see table below) between edge of valve and air horn wall. If choke valve opening not correct, adjust by bending connector rod slightly at point near choke valve lever, using great care not to cause a bind in the fast idle mechanism.

Studebaker (1951) AAUVB-26: Hold throttle valve stopscrew against lowest lobe of fast idle cam. Move choke valve as far as possible toward closed position (CAUTION—do not force valve past point at which stopscrew comes up against step on fast idle cam). Measure choke valve opening by inserting 11/32" drill rod (Tool T-25085) between edge of choke valve and air horn wall. If opening not correct, adjust by bending connector rod at horizontal bend below choke valve lever.

FAST IDLE SETTING (EXCEPT BUICK)

Car Model	Carburetor	Choke Valve Opening
Cadillac ('39-40)	AAV-26	#38 (.102") Drill
Cadillac ('41-42)	AAV-26	#32 (.116") Drill
Cadillac ('46-48)	AAV-26	#40 (.098") Drill
Packard ('40)	AAV-26	3/32" Drill
Packard ('41)	AAV-26	7/64" Drill
Studebaker ('41-42)	AAV-26	7/64" drill
Studebaker ('51)	AAUVB-26	11/32" drill

UNLOADER SETTING (Choke Release): Open throttle valve wide open, hold throttle in this position and check choke valve opening by inserting drill rod (or special tool) of correct size (see table below) between edge of choke valve and air horn wall. If choke valve opening not correct, adjust by bending ear on throttle lever slightly, using care not to cause binding of fast idle rod or to distort fast idle cam spring.

UNLOADER SETTING

Car Model	Carburetor	Drill Size	Tool No.
Buick ('39-49)	AAV-16, 167; AAV-26, 267	11/64"	T-25057
Buick ('50-51)	AAUVB-267, AAVB-267	.140"	T-25086
Cadillac ('39-41)	AAV-26	11/64"	T-25056
Cadillac ('42-48)	AAV-26	11/64"	T-25057
Packard	AAV-26	11/64"	T-25056
Studebaker ('41-42)	AAV-26	11/64"	T-25056
Studebaker ('51)	AAUVB-26	9/64"	T-25086

ADJUSTMENT & OVERHAUL

►***CAUTION—When reassembling all models except Studebaker AAV-26 & AAUVB-26, special ring gauge must be used to adjust vacuum piston assembly position on choke shaft (see Reassembly data below).***

DISASSEMBLY: Disconnect heat tube from thermostat housing cover, remove carburetor from manifold. Remove thermostat cover retaining screws and lug washers, remove thermostat cover assembly by rotating it clockwise to disengage coil hook from lever prong and then lifting it off the housing. Remove locknut on end of choke valve shaft (use socket wrench T-25047), remove lockwasher and serrated washer (serrated washer not used on Studebaker models). Remove vacuum piston assembly from the housing.

CLEANING & INSPECTION: Clean vacuum cylinder and piston with a clean cloth saturated with acetone or alcohol (CAUTION—do not use abrasives to clean cylinder or piston). Blow out all channels with compressed air. Clean the screen on the inside of the cover by blowing through heat tube connection and around inside cover (CAUTION—when using compressed air, use care not to distort screen or thermostatic coil). Do not attempt to remove thermostatic coil from cover (these parts furnished as an assembly).

REASSEMBLY: ***Do not lubricate piston or cylinder.*** Install vacuum piston assembly in cylinder, assemble lever on choke valve shaft. Install serrated washer (not used on Studebaker), lockwasher, and locknut. On all models except Studebaker, adjust vacuum piston assembly before tightening locknut (see Adjustment

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STROMBERG AAV-16, 167, 26, 267; AAUVB, AAVB TYPE (Continued)

below). Tighten locknut securely, recheck choke valve opening to make certain setting not disturbed by tightening the nut. Install thermostat cover assembly with coil hook at the bottom, then rotate cover in "Rich" direction (counter-clockwise) until inverted "V" mark on cover is in line with center graduation of scale on housing. Install lug washers and tighten retainer screws securely. NOTE—This procedure will provide "Centered" setting. See Choke Setting data for special settings used on some models.

Vacuum Piston Assembly Adjustment (not required on Studebaker AAV-26 & AAUVB-26). With locknut tightened loosely (do not tighten fully until piston adjusted), install ring gauge (see Note below) with hole in tool fitting over pin on choke lever and indicator line on rim of tool in line with reference mark on choke housing. Hold choke valve closed against drill or gauge (see table), tighten locknut lightly with wrench T-25047, remove the gauge ring and then tighten the locknut securely. Recheck the choke valve to make certain that setting not changed by tightening of locknut. See that choke valve operates freely. This adjustment is extremely important to properly position vacuum piston and thermostatic coil prong.

►**Gauge Ring Tool Note**—Gauge No. T-25046 used on all models except for Buick AAUVB-267 & AAVB-267 carburetors which require use of new No. T-25367 gauge or modification of T-25046 gauge to permit it to be used on these models. *See Buick Service Tool Note for T-25046 modification instructions.*

CHOKE ASSEMBLY SETTING

Car Model	Carburetor	Drill — Valve Opening — Gauge
Buick ('39)	AAV-26	1/4" — T-25057
Buick 40, 50 ('40)	AAV-16	15/64" — T-25085
Buick 60, 70, 80, 90 ('40)	AAV-26	#3 (.213")
Buick 40 ('41-42)	AAV-16	15/64" — T-25085
Buick All Compd. Carb. ('41-42)	AAV-16	#5
Buick 40, 50 (Late '42-47)	AAV-16	15/64" — T-25085
Buick 40, 50 ('48-49)	AAV-167	15/64" — T-25085
Buick 40, 50 ('50-51)	AAUVB-267	.101" — T-25056
Buick 60, 70, 90 (Late '42)	AAV-26	#3 (.213") — T-25086
Buick 70 ('46-47)	AAV-26	#3 (.213") — T-25086
Buick 70 ('48-49)	AAV-267	#3 (.213") — T-25086
Buick 70 ('50-51)	AAVB-267	#29
Cadillac ('39-40)	AAV-26	#70 (.028")
Cadillac ('41)	AAV-26	#3 (.213")
Cadillac ('42)	AAV-26	#1
Cadillac ('46-48)	AAV-26	#2 (.221")
Packard ('40)	AAV-26	#70 (.028")
Packard ('41)	AAV-26	#4 (15/64")

Fast Idle Connector Rod Installation—When assembling the fast idle connector rod, install bushing (washer—Buick), on lower end of rod after rod has been assembled to lever. See that fast idle cam torsional spring is assembled with end of spring hook against ear of lever. See that cam operates freely and make certain that rod does not bind in slot in cam. This is very important.

STROMBERG EX-23, EE-23 CARBURETOR TYPE

Car Model	Stromberg Carburetor
Packard Super 8, All Models (1939)	EE-23

DESCRIPTION: This automatic choke and fast idle consists of a thermostatic spring coil in housing on exhaust manifold linked to fast idle cam and lever assembly on the carburetor. A vacuum piston assembly within the carburetor prevents over-choking.

Choke Opening to Correct Flooding—The choke valve can be opened manually to correct a flooded carburetor by opening the throttle valve wide open. In this position the cam on the end of the throttle lever contacts the ear on the fast idle lever, rotating the lever and opening the choke valve.

ADJUSTMENT: Slow Idle Screw. The hot or slow idle speed is controlled by the throttle stopscrew (see Carburetor Adjustment). This adjustment should be made only when the engine is warm with the fast idle screw resting on the low or slow idle portion of the fast idle cam. Standard settings for these models are given below. Setting indicates number of turns of the screw past the closed throttle position.

IDLE (SLOW SPEED) SETTING

Car Model	Carburetor	Slow Idle Screw Setting
Packard (all models)	EE-23	½ turn

Fast Idle Screw (Packard Models). Back off throttle stopscrew (hot or slow idle speed adjustment) so that throttle closes tightly, hold choke valve closed so that fast idle cam is rotated to fast idle position (open throttle momentarily to permit this rotation), turn fast idle screw in until it just contacts the fast idle cam, then turn screw in additional 2½-3 turns. This will provide throttle opening of .016-.020".

Choke Rod Linkage. The rod connecting the thermostatic spring coil lever and the choke valve lever should be adjusted so the choke valve is fully closed with approximately 1/32" clearance between thermostat lever and stop lug (T).

Fast Idle Linkage. The rod connecting the choke valve lever and the fast idle lever should be adjusted so that the choke valve is open 29/64" (EX-23), 5/16" (EE-23) with the vacuum piston down at the end of its stroke so that the fast idle screw rests on the middle step or intermediate idle position of the fast idle cam (see Vacuum Piston Servicing below). Choke valve opening should be checked on the long side of the valve (offset mounting) and can be measured by passing a drill rod of the correct size between the edge of the valve and the carburetor wall.

THERMOSTATIC SPRING: To check the thermostatic spring, remove unit from manifold, allow unit to stand until it has cooled off or warmed up to room temperature (70°F). Temperature can be checked with an accurate thermometer held near the thermostat. Tests should be made at 70° as thermostat spring changes one notch for each 5° above or below 70°. Unhook end of thermostat coil from prong on pointer plate, loosen pointer plate lockscrew (T), revolve pointer until it is opposite '0' on scale, see that lever is against stop lug (T), note position of thermostat spring hook. If hook is flush with prong, thermostatic spring tension is correct and can be reset as directed below. Thermostatic coils which have been deformed by rough handling should be replaced.

AUTOMATIC CHOKE SETTING

Car Model	CarburetorModel	Thermostat Setting
Packard (All Models)	EE-23	10 Notches Rich

NOTE—Packard Models. Setting may be varied 3 notches in either direction from the '0' mark which indicates the standard setting if the engine runs rich or lean during the warming up period. Replace thermostatic coil if this variation does not give satisfactory performance.