

HUDSON MOTOR CAR COMPANY

1935-1942

Carburetor Tune-up Manual

(for Hudson and Terraplane Models)

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HUDSON
Carburetors – 1935-1942

Car Model	Carburetor Make	Carburetor Model No.	Car Model	Carburetor Make	Carburetor Model No.
1935 GH Six	Carter	W1-309-S	1939 95, 97 Eight	Carter	WDO-430-S
1935 HT, HU, HHU Eight	Carter	W1-310-S	1940 40P, 40T Six	Carter	WA1-454-S
1936 63 Six	Carter	W1-329-B	1940 40, 48 Bus. Cars	Carter	WA1-454-S
1936 64, 65, 66, 67 Eight	Carter	W1-330-S	1940 Early - 41, 43 Six	Carter	WDO-430-SV
1937 73 Six	Carter	WDO-344-S, -377-S	1940 Late 41, 43 Six	Carter	WDO-461-S
1937 74, 75, 76, 77 Eight	Carter	WDO-344-S, -377-S	1940 44, 45, 47 Eight	Carter	WDO-455-S
1938 89 '112' Six	Carter	W1-411-S, -417-S	1941 10, 18 Bus. Cars	Carter	WA-1-454-S
1938 83 Six	Carter	WDO-402-S	1941 Early - 11, 12 Six	Carter	WDO-461-S
1938 84, 85, 87 Eight	Carter	WDO 402-S	1941 Late 11, 12 Six	Carter	WDO-501-S
1939 90 '112' Six	Carter	W1-437-S, -438-S	1941 Early 14, 15, 17 Eight	Carter	WDO-455-S
1939 90, 98 Business Cars	Carter	W1-437-S, -438-S	1941 Late 14, 15, 17 Eight	Carter	WDO-502-S
1939 91 Pacemaker Six	Carter	W1-437-S, 438-S	1942 20,28 Bus. Cars	Carter	WA1-454-S
1939 Early 92 Six	Carter	W1-437-S, -438-S	1942 21, 22 Six	Carter	WDO-501-S
1939 Late 92 Six	Carter	WDO-430-S	1942 24, 25, 27 Eight	Carter	WDO-502-S
1939 93 Country Club Six	Carter	WDO-430-S			

Carter W1 Downdraft Type

- 309-S – 1935 Hudson Six, Model GH;**
- 310-S – 1935 Hudson Eight, Models HT, HU, HHU;**
- 329-8 – 1936 Hudson Six, Model 63;**
- 330-S – 1936 Hudson Eight, Models 64,65,66,67;**
- ① **311-S – 1935 Terraplane Standard Six, Model G;**
- 309-S – 1935 Terraplane, Deluxe Six Model GU;**
- 329-S – 1936 Terraplane, Custom Model 62;**
- ① **331-S – 1936 Terraplane Deluxe Model 61;**
- ① **348-S – 1937 Terraplane Deluxe 71, Commercial 70.**
- ① - Climatic Control & Past Idle not used (Anti-percolators on some models).

NOTE: - All models fitted with Carter Climatic Control (automatic choke), Fast Idle, Unloader and Choke Valve Lock, and Anti-Percolator.

TYPE: - Same design as other Carter W1 carburetors except for Climatic Control, Fast Idle and Unloader mounted on carburetor air horn.

IDLE ADJUSTMENT: - Needle valve type controlling fuel mixture. Adjusting screws should be turned in for leaner mixture or out for richer mixture. Do not; adjust until engine warmed up so that choke valve wide open and idling at hot or slow idling speed with fast idle bar raised to clear throttle stop-screw. Adjust throttle stop-screw so that idling speed is approximately 350 R.P.M., turn idling screw in until engine begins to miss, then turn screw out slowly until engine fires evenly. Re-adjust throttle stop-screw if necessary. See tune up instructions on car model pages. Approximate idle screw settings shown in table below.

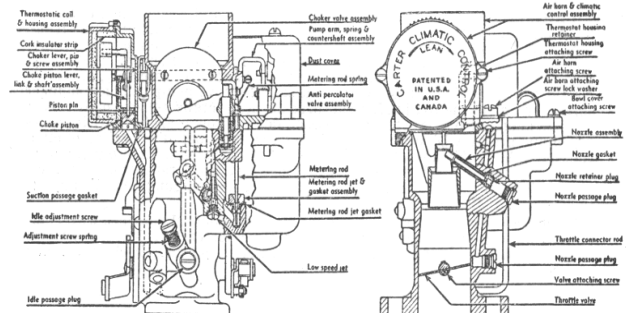
Car Model	Idle Screw Setting	Idle Speed
Hudson	1/2-1 turn open	350 RPM, 7 MPH.
Terraplane	1/2-1 turn open	350 RPM, 7 MPH.

ACCELERATING PUMP: - Low pressure type positively actuated by throttle lever. Fuel drawn into pump cylinder through intake check valve and strainer on upstroke of plunger and discharged through outlet disc check valve to pump jet in carburetor wall on down-stroke of plunger when throttle opened.

Adjustment - Pump arm on countershaft under dust cover at top of cylinder provided with three holes for engagement of pump plunger connecting link. Inner hole provides minimum stroke, outer hole medium stroke and upper hole maximum stroke. See tune-up data on car model pages for recommended settings and seasonal changes.

NOTE - Pump countershaft should be lubricated at 5000 mile intervals by removing dust cover screw at top of carburetor and filling screw hole with good grade of graphite grease before replacing screw.

PERFORMANCE: - Should be satisfactory if idle setting and accelerating pump setting correct.



METERING ROD (ECONOMIZER): - All fuel for main nozzle metered by three-step metering rod linked to pump arm so that rod is raised permitting increased fuel flow through metering jet as throttle is opened. No adjustment provided but metering jet may be changed to secure leaner-than-standard fuel mixtures to compensate for special fuel or high altitude

W1 (Downdraft) Carburetor (Cont'd)

operation (see Jet Specification table). Metering rod setting should be checked whenever rods are removed.

To Remove Metering Rod - Take out dust cover screw, lift off dust cover, take off pin spring, turn metering rod one-quarter turn to left to disengage it from arm, lift rod out being careful not to lose disc on rod.

To Check Metering Rod - See that choke valve opened and fast-idle block raised to clear throttle stop-screw, back off stop-screw so that throttle closes tightly. Disconnect throttle connector at pump arm. Use special gauge (see table below for type for each model), insert gauge in place of metering rod so that beveled end seats in metering jet and gauge is held vertically. Rotate pump arm so that metering rod pin rests lightly in lower end of notch in gauge, bend lower end of throttle connector so that upper end centers freely in hole in pump arm. Remove gauge and re-connect throttle connector.

Car Model	Carburetor	Gauge Part No.	Length
Hudson GH, HT, HU, HHU	309-S,310-S	T-109-20	2.795"
Hudson 63, 64, 65, 66, 67	329-S,330-S	T-109-25	2.795"
Terraplane 1935	309-S; 311-S	T-109-20	2.795"
Terraplane '36-37	329-S, 331-S, 348-S	T-109-25	2.795"

To Install Metering Rod-Insert rod (with disc in place) vertically so that lower end enters metering rod jet, turn rod one-quarter turn to engage pin on pump arm, replace pin spring. See that rod hangs freely, replace dust cover.

ANTI-PERCOLATOR: - Saxophone Key Type - This device consists of vent above the main jet well controlled by a cap linked to the accelerating pump rod so that the vent is opened when the throttle valve is closed to prevent any 'percolating' discharge of fuel through the main jet when the carburetor is hot. The cap must be closed when the throttle is opened.

Adjustment. Anti-percolating cap must be off seat when throttle closed to idling position. Adjust by bending anti-percolating cap up slightly to permit pump arm to depress bracket. Cap must be seated when throttle opened slightly beyond idling position. To adjust, open the throttle valve exactly .030" using a drill rod of the correct size inserted between the throttle edge and carburetor wall on side opposite idle ports to maintain opening, adjust rocker arm so that clearance between rocker arm lip and pump arm is .005-.015".

ANTI-PERCOLATOR: - Plunger Type. Consists of a spring-loaded plunger type valve which is opened by a lip on the pump arm when the throttle is closed to vent

the main jet well and prevent any 'percolating' discharge from the main jet when carburetor is hot. Valve must be closed when throttle is opened.

Adjustment. Take out dust cover screw and remove dust cover. Back off throttle stop-screw hold throttle valve tightly closed, adjust lip on pump arm so that anti-percolator valve is depressed so that indicator line on valve stem is flush with top of anti-percolator plug. This adjustment should be made after metering rod setting checked and care taken not to disturb metering rod.

Adjustment (Early Types without Indicator Line). On these models, use tool J-109-29 or drill rod of correct size inserted between throttle valve edge and carburetor wall on side opposite idle ports so that throttle valve opening is exactly .020", adjust lip on pump arm so that clearance between pump arm lip and anti-percolator valve stem is .005-.015".

FLOAT LEVEL: - To check float level, take off float bowl cover, remove gasket, invert cover, measure distance from gasket seat to nearest point on float (top when not inverted and at free end). Float level can be corrected by bending lip of float lever. Setting should be 3/8" for all models.

FAST IDLE: - **1937-38 Models** - Consists of fast idle cam pivoted directly above the throttle lever so as to serve as a stop for the throttle stop-screw. Fast idle cam is linked to Climatic Control and is rotated to the fast idle position when the carburetor is cold (choke valve closed).

Adjustment. Back off throttle stop-screw, rotate fast idle cam to normal (hot) idling position, turn stop-screw in so that it just contacts first step on fast idle cam with throttle valve seated, use tool T109-41 to bend offset portion of fast idle link so that clearance between inside wall of air horn and lower edge of choke valve is 5/8". Make certain that fast idle linkage does not bind.

CHOKE: - All choke valves are offset type.

Throttle Connector - Used on some models only. Consists of a link connecting the choke and throttle valves so that the throttle valve is opened slightly when the carburetor is choked for cold starting. This provides a 'fast idle' for as long as the choke valve is in use.

Car Model	Carburetor	Throttle Opening
Terraplane G (1935)	311-S	.036-.040"
Terraplane 61 (1936)	331-S	.036-.040"
Terraplane 70,71 (1937)	348-S	.036-1040"

TROUBLE SHOOTING: - **Poor Idling Performance** - If correct adjustment cannot be secured, engine stalls, or low speed performance is unsatisfactory, remove low speed idle tube, clean with compressed air, see that tube is tight in casting at top and bottom. Remove idle adjusting screw and clean idle passage with air.

Acceleration Unsatisfactory - Check pump setting,

W1 (Downdraft) Carburetor (Cont'd)

examine pump for damaged or worn plunger leather, bent pump arm or loose plunger, corrosion or sediment in pump cylinder. Use loading tool when replacing plunger in pump cylinder avoid damage to plunger leather. If increased resistance felt on throttle lever, remove pump jet and clean with compressed air. Examine ball check valves and see that they are free and seat gasoline tight.

Carburetor 'Loads Up' - If carburetor has been in use for some time, check float level and adjust if necessary.

THROTTLE VALVE SETTING: - 'Idle Port' opening is distance from lower edge of throttle valve to lower edge of port with valve closed. 'Vacuum Port' figure is distance from lower edge of port to top edge of valve.

Car Model	Carburetor	Idle Port
Hudson	309-S, 310-S, 329-S, 330-S.	.016-.020"
Terraplane	309-S, 311-S, 329	.016-.020"
Terraplane	331-S, 348-S	.016-020"

NOTE - Throttle valve shims furnished .002" thick (2-93), .005" thick (2-94) to correct throttle valve location.

SERVICING: - Disassembly. Remove dust cover, remove fast idle cam attaching screw and fast idle cam or take out two screws and remove fast Idle drop-bar, remove nozzle plug, retainer plug, nozzle and gasket (do not take nozzle assemblies apart). Remove air horn attaching screws and lockwashers (two above, one below), lift off air horn and Climatic Control assembly. Remove pin spring and connector link at top of accelerating pump stem, remove pin spring, unhook metering rod spring, take out metering rod and disc (do not lose disc which is free on metering rod). Remove

spring retainers and connector rod springs, remove throttle connector. Remove bowl cover retaining screws and lockwashers, lift off bowl cover, lift off cover gasket. Remove pump arm and countershaft on cover by revolving one-half turn. Remove float and lever assembly, pin and pump cylinder bushing gasket, needle and seat from bowl cover. Remove pump plunger and rod assembly and pump spring (remove nut on stem to disassemble pump plunger). Remove metering rod jet and gasket assembly Use special 13/32" socket wrench No. 15451 to remove Anti-Percolator valve plug assembly. Remove pump jet passage plug, gasket, and pump jet, loosen screw and remove throttle shaft arm, remove low speed jet, ball check passage plug, strainer, and intake and outlet ball check plug assemblies, throttle valve screws, valves, throttle shaft assembly, idle port plug, and idle adjustment screw. Do not lose copper washers used on low speed jet, ball check assemblies.

Servicing. Wash all parts in gasoline (do not immerse cork gaskets). Replace worn parts (replace metering rod and metering jet as an assembly). Blow out all passages in castings. Use all new gaskets when re-assembling.

Assembly. Reverse disassembly directions above. See that all jets and plugs tightened securely. When replacing throttle valves, install valve with trademark up, insert screws loosely, back off stop-screw so that valve closes tightly, tap valve lightly to centralize it in bore before tightening screws. Use loading tool to install pump plunger and lubricate plunger leather with castor oil. Check float level and metering rod setting as directed above and adjust carburetor.

W-1 Vacuometer Type Downdraft Carburetors

411-S - Hudson '112' 89 (1938) Before Eng. NO. 89-36571
417-S - Hudson '112' 89 (1938) After Eng. NO. 89-36572

437-S - Hudson Models 90,91,92,98 (1939) - See Note
438-S - Hudson, Models 90,91,92,98 (1939) - See Note
397S - 1938 Terraplane 6

These models equipped with Climatic Control and Fast Idle.

NOTE: - Hudson 1939. Model 437-S carburetor used on cars with Automatic Clutch, 438-S on other cars. Model 437-S has "slow-closing throttle."

CARBURETOR MODEL IDENTIFICATION: - Individual carburetor models may be identified by Body Casting Number stamped on face of carburetor flange as follows: 411-S - 359, 417-S - 362, 437-S - 339, 438-S - 383.

SPECIAL SERVICE NOTES: Hudson 112. To correct Lean Idle complaints on this model, enlarge vent hole in bowl cover by drilling out hole with #38 (.1015") or #39 (.0995") drill.

TYPE: - Design is similar to other Carter W-1 Carburetors (see preceding article) except for new "Vacuometer" type metering rod control as follows:

Vacuometer Metering Rod Control. Metering rod is linked to stem of spring loaded vacuum piston and is normally held against stop-pin on pump shaft by manifold vacuum (stop-pin insures correct metering rod position for any throttle opening and will lift metering rod out of metering jet mechanically in same manner as on other Carter Carburetors when throttle is opened). Whenever vacuum decreases due to throttle being opened for acceleration, or added load placed on engine, vacuum piston spring forces piston and metering rod up so that richer mixture is supplied for acceleration and power. As soon as vacuum builds up again, piston pulls metering rod against stop-pin so that correct maximum-economy mixture is supplied.

IDLE ADJUSTMENT: - Idle adjusting screw controls. Idle fuel mixture and should be turned in for leaner mixture, out for richer mixture. Approximate settings shown in table below. Idle speed controlled by throttle lever stop-screw.

Adjustments - should be made only with engine warmed up and idling at hot or slow speed (choke valve wide open, fast idle inoperative).

Car Model	Idle Screw Setting	Idling Speed
Hudson 112	¾-1¾ turns open	350 R.P.M. 7 MPH.
Hudson 90, 91, 92, 98	½-1¼ turns open	7 MPH.
Terraplane 80, 81, 88	¼-1 turn open	350 R.P.M., 7 MPH

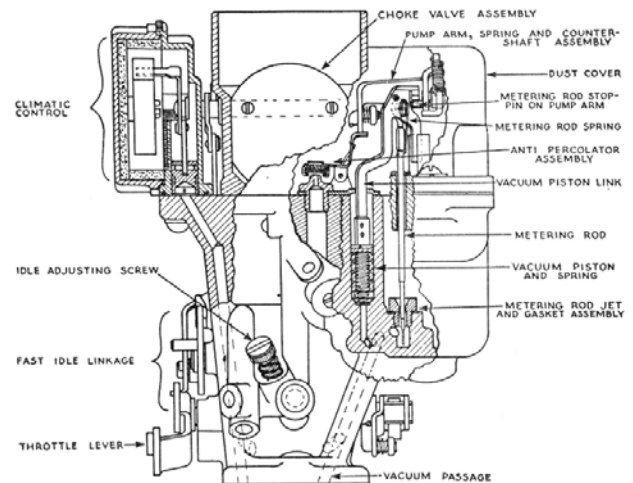
METERING ROD (ECONOMIZER): - All fuel for main nozzle metered by metering rod and jet. Metering rod operated by vacuum piston with throttle control (see Vacuometer Metering Rod Control description above). No adjustment provided but

metering rods may be changed to secure leaner-than-standard fuel mixture to compensate for special fuel or high-altitude conditions. Metering rod setting must be checked whenever metering rods removed or changed.

To Remove Metering Rod - Take out dust cover screw, remove dust cover, free metering rod spring, disengage metering rod from piston link and lift rod out being careful not to lose metering rod disc.

To Check Metering Rod - Install gauge (see table below for correct type) in place of metering rod making certain that beveled end is seated in metering jet and that gauge is vertical. Back off throttle stop-screw so that throttle valve is completely closed. Press down lightly on vacuum piston arm so that metering rod pin rests on shoulder of gauge. Bend lip of piston link so that it rests on pump arm pin.

Car Model	Carburetor	Gauge Part No.	Length
Hudson	411-S, 417-S, 337-S, 338-S	T109-25	2.795"
'38 Terra.	397-S	T109-25	2.7950



To Install Metering Rod - Make certain that piston moves freely, install metering rod being careful that lower end enters metering jet and that disc is in place on rod. Engage upper end of rod on piston link pin and install metering rod spring.

NOTE - Whenever vacuum piston removed, check piston spring and replace if weak or length not correct. Piston must be clean and dry and show no evidence of wear.

PERFORMANCE: - Should be satisfactory if idle adjustment and accelerating pump setting correct. See Trouble Shooting below.

ACCELERATING PUMP: - Low pressure type. Positively operated by throttle lever through counter-

W1 Vacuometer Type (Cont'd)

shaft and linkage under dust cover on float bowl cover. Fuel is drawn into pump cylinder through inlet strainer and ball check valve when throttle is closed and is discharged through outlet ball check valve and pump jet into mixing chamber when throttle is opened for acceleration.

Pump Adjustment - Three holes provided in pump arm on countershaft (under dust cover on float bowl cover) for pump link engagement. Inner hole provides minimum stroke, lower hole medium stroke, upper hole maximum stroke (adjustment accessible by removing dust cover). See tune-up data on car model pages for recommended settings.

Pump Stroke Setting - To check pump stroke, remove dust cover, back off throttle lever stop-screw, hold throttle valve tightly closed, install gauge (see table below for correct type for each model) on flat surface of bowl cover. Top of pump shaft (piston rod) should contact lower edge of gauge arm with pump link connected in lower (medium stroke) hole on arm. Adjust by bending throttle connecting rod at lower angle. If gauge not available, mark pump rod at edge of bowl cover with throttle closed and again with throttle wide open. Distance between marks (pump stroke) should agree with figure in table below.

Universal Pump Stroke Gauge Note - To check pump stroke, mount the gauge No. T109-117S on bowl cover so that projection on gauge rests on top of connector link at pump shaft. Back off throttle stop-screw so that throttle valve tightly closed, note gauge reading, open throttle wide and again note gauge reading. Difference between two readings is pump stroke (in sixty-fourths of an inch) and should agree with figure in table below. Adjust by bending throttle connector rod at lower angle near throttle lever.

CAUTION - Check metering rod adjustment (disturbed by this adjustment).

Car Model	Carburetor	Gauge No.	Pump Stroke
Hudson	All	T-109-112	7/32"
Terraplane	397-S	T-109-112	7/32"

Pump Countershaft Lubrication - Every 5000 miles, remove dust cover screw, fill screw hole with good grade of graphite grease, replace screw.

ANTI-PERCOLATOR: - 'Saxophone Type. Consists of vent above main jet well controlled by a cap linked to the accelerator pump rod so that the vent is opened with the throttle closed to prevent any 'percolating' discharge of fuel through the main jet when the carburetor is hot. The cap must close when the throttle is opened.

Adjustment - Remove dust cover, crack throttle valve open by inserting correct size tool or drill rod (see table below) between edge of valve and carburetor wall on side opposite idle port, bend anti-percolator arm so that clearance between it and pump arm is .005-.015" with anti-percolator cap seated.

Car Model	Carburetor Opening	Throttle
Terraplane 80, 81, 88	397-S	.025"
All Others		.030"

FLOAT LEVEL: - To check float level, remove float bowl cover, invert cover, measure from gasket seat (machined surface) of bowl cover to nearest point of float (top at free end). Should be 3/8" (all models). Adjust by bending lip of float lever.

Float Needle Valve & Seat - Furnished only in matched sets as follows:

Car Model	Carb.	Part No.	Intake Hole
Hudson	All	25-33S	#48
Terraplane 80, 81, 88	397-S	25-33S	#48

THROTTLE VALVE SETTING: - When installing throttle valves, tap valve lightly to centralize it in bore before tightening screws. Check throttle valve setting as shown in table below (idle ports are slotted type), opening for models marked by * is height of idle port above throttle valve. Vacuum port height is distance from lower edge of port to top of throttle valve. Shims furnished .002" thick (2-93), .005" thick (2-94) to correct valve.

Car Model	Carburetor	Idle Port Opening
Hudson 112	411-S, 417-S	115-.119"*
Hudson 90, 91, 92, 98	437-S, 438.-S	016-.020"
Terraplane 80, 81, 88	397-S	016-.020"

THROTTLE CRACKER: - Choke valve and throttle valve interconnected by lever which opens throttle valve .036-.040" when choke valve fully closed. Should not require adjustment.

TROUBLE SHOOTING: - Poor Idling Performance. If correct adjustment cannot be secured, engine stalls or low speed performance is unsatisfactory, remove low speed idle tube and clean with compressed air. See that idle tube seats air-tight in carburetor casting at top and bottom (always use new tube, do not use tube from any other carburetor). Remove idle adjusting screw and blow out idle channels with air. If idle is rich, see that vacuum piston is clean and moves freely in cylinder

W1 Vacuometer Type (Cont'd)

and that metering rod linkage is not binding.

Poor Acceleration - Check pump setting, examine pump for damaged or worn plunger leather, bent pump arm or loose plunger, corrosion or sediment in pump cylinder, sticking or leaking ball check valves, dirty intake strainer. If plunger removed from cylinder, use loading tool when installing to avoid damage to plunger leather. If increased resistance felt on throttle

lever, remove pump jet and clean with compressed air or replace jet. Make certain that vacuum piston is clean and not worn, that it is free in vacuum cylinder -and that spring under piston is in good condition.

Carburetor 'Loads Up - If carburetor has been in use for sometime, check for wear on float lever lip, reset float level. See that vacuum piston channel is open and that linkage is not binding

Carter WA-1 Vacuometer Type
 (1940) 454-S - HUDSON SIX, 40T TRAVELER, 40P DELUXE
 1940) HUDSON COMMERCIAL CARS, 40,48
 (1941) HUDSON SIX, MODELS 10, 18
 (1942) HUDSON SIX, MODELS 20T, 20P, 20C, 28C

SPECIAL SERVICE NOTES & PRODUCTION CHANGES:

Carburetors are installed with eight gaskets between carburetor and mounting pad on manifold. When installing carburetor, place four gaskets between manifold and heat deflector, four additional gaskets between deflector and carburetor. **NOTE** - Governor plate is installed between two top gaskets on new cars during breaking In period-when governor plate removed, gasket between plate and carburetor must be replaced so that total of four gaskets used between heat deflector and carburetor.

Hudson Model 454-S - This model has special 'Trip Lever' mounted on fast idle link which must be checked after fast idle and other adjustments are made. See Trip Lever Adjustment below.

TYPE: - New design single barrel downdraft type. Primary and secondary venturis are mounted in main body casting (not air horn) by two streamlined struts with nozzle directly above one strut on center-line of venturis and float bowl. Float bowl has been designed to eliminate clearance between sides of bowl and float. Bowl cover extends down in bowl to eliminate air space above fuel and float is larger than W1 type. Low speed jet is installed through top of float bowl (no external plug). Anti-percolator seat is cast in bowl cover and complete anti-percolator, pump arm, vacuometer arm (vacuometer types) is mounted on top of bowl cover. Air horn contains only choke valve assembly (choke valve sides not exactly parallel and ridge in air horn serves as stop for valve in wide open position). Lower throttle flange casting contains main (third) venturi and throttle assembly.

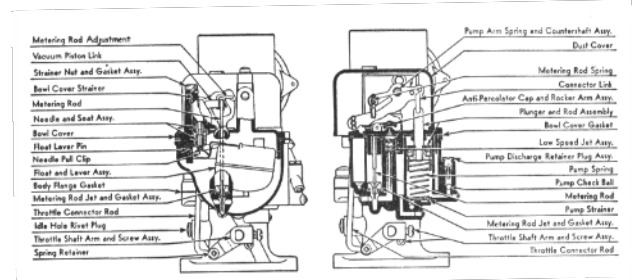
Fuel System - Same as for W1 models. Metering rod is controlled by pump arm (non-vacuometer type), separate vacuum piston with stop pin on pump arm to limit travel (vacuometer type). See special adjustment directions for each type below.

IDLING ADJUSTMENT: - Adjust carburetor only when engine warmed up and idling at hot or slow idling speed with choke valve wide open and fast idle inoperative. Idle adjusting screw controls fuel mixture and should be turned in for leaner mixture, out for richer mixture. Approximate settings are shown in table below. Idle speed is controlled by throttle stop-screw. See tune-up data on car model pages for tune-up data on each car model.

Car Model	Idle Screw Setting	Idle Speed
Hudson ('40)	¾-1½ turns open	7 MPH.
Hudson ('41-42)	½-1½ turns open	580-600 RPM*

* - 7½-8 MPH - 4 1/9-1 Axle; 6½-7 MPH - 4 5/9-1 Axle; 6-6½ MPH - 4 7/8-1 Axle)

ACCELERATING PUMP - Pump is low pressure type and is positively operated by throttle lever through arm and countershaft assembly on bowl cover. Countershaft arm has three holes for pump link engagement to provide varied pump stroke for seasonal requirements.



Pump Stroke Adjustment: - To check pump plunger travel, back off throttle lever stop-screw so that throttle valve closes tightly, adjust pump connector link for correct pump stroke as shown in 'Pump Setting' column of table below (see Pump Adjustment above for this connector link adjustment). Install Universal Pump Stroke Gauge T109-117S on ridged portion of bowl cover so that projecting portion of gauge rests on top surface on connector link at pump shaft. Hold gauge vertical and note reading, then open throttle wide and again note reading. Difference between these two readings is pump stroke (in sixty-fourths of an inch) and should agree with 'Pump Stroke' figure in table below. To adjust, bend throttle connector rod at lower angle near throttle lever. **CAUTION** - Check metering rod adjustment (disturbed by this adjustment).

Pump Gauge Change Note - All T109-117S pump gauges after Sept. 15, 1940, have new indicator arm with gauging lips on both ends. This new indicator arm, No. T109-153, can be installed on previous gauges to bring them up to date.

Car Model	Carburetor	Pump Stroke	Pump Setting
Hudson	454-S	12/64"	Short Stroke

Pump Seasonal Adjustment - Three holes provided in pump arm on countershaft for pump link connection. Inner hole provides minimum stroke, lower hole medium stroke, outer hole maximum stroke (adjustment accessible by removing dust cover). See tune-up data on car model pages for recommended settings and seasonal changes on each car model.

WA-1 Vacuometer Type (Cont'd)

METERING ROD (ECONOMIZER): - Metering rod and jet assembly meters all fuel for main nozzle (stepped and tapered rod is lifted out of jet as throttle is opened and provides greater fuel flow through jet to nozzle). Metering rods can be changed for special operating conditions such as high altitudes. See Carter Jet Specification Table for standard and leaner-than-standard metering rod calibrations. Check and adjust Metering Rod whenever rods removed and replaced or when pump stroke setting is changed.

Vacuometer Type Note - On these types, metering rod is linked to vacuum piston stem so that rod is controlled by vacuum piston within limits determined by throttle valve opening (lug on pump arm serves as stop for lip on piston link to prevent vacuum piston pulling metering rod down in jet beyond correct point for the particular throttle opening). These models adjusted in special manner (see instructions below).

Metering Rod Adjustment (Vacuometer Type) - Remove metering rod (hung on pin on upper end of vacuum piston link) being careful not to lose metering rod disk. Install gauge No. T109-102 (2.468") in place of metering rod making certain that gauge seats in metering rod jet and is held vertical. Back off throttle stop-screw so that throttle valve tightly closed. Press down lightly on vacuum piston link at point directly over piston. Clearance between pin on piston link and shoulder of notch in gauge should be less than .005" and gauge should not drag on pin. Adjust by bending lip on piston link so that it contacts lug on pump arm (use special tool T109-105). Remove gauge, install metering rod and disc, connect metering rod spring.

ANTI-PERCOLATOR: - Saxophone Key Type. Consists of a main nozzle vent in the bowl cover controlled by a leather-faced, felt-backed metal cap which opens the vent when the throttle is closed to prevent any percolating discharge from the nozzle. The cap must be seated to close the vent when the throttle is opened.

Adjustment - Crack throttle open by inserting special gauge (see table below for gauge for each model) between edge of valve and carburetor wall on side opposite idle port. Bend anti-percolator rocker arm (use special tool T109-105) so that clearance between lip on rocker arm and pump arm is .005-.0151, (use feeler gauge to check this clearance).

Car Model	Carburetor	Gauge No.	Throttle Opening
Hudson	454-S	T109-29	.030"

NOTE; No. T109-29 Gauge used for both .020" and .030" settings.

FLOAT LEVEL: - To check float level, remove float bowl cover, invert cover, measure from top edge of machined projection on cover at free end of float to top of soldered seam. See table below for float level on each model. Adjust by bending lip of float lever at valve needle.

Car Model	Carburetor	Float Level
Hudson	454-S	3/8"

Float Travel - Should be 1/2" (all models). To check travel, hold float bowl cover in normal position, note drop or free travel of float at free end. To adjust travel, bend the two small float stop lips at the hinge end of the float. Float Needle Valve & Seat--Furnished only in matched sets as follows:

Car Model	Carburetor	Part No.	Intake Hole Size
Hudson	454-S	25-33S	#48

THROTTLE VALVE SETTING: - When installing valves, see that trademark is up and on idle port side, install screws loosely, tap valve lightly to centralize it in bore, tighten screws securely. See that throttle valve stop-screw is backed off so that valve closes tightly, check throttle valve setting as shown in table below (idle ports are slotted type). Vacuum port height is distance from top of valve to bottom of port. Shims furnished .002" thick (2-93), .005" thick (2-94) to correct throttle valve position.

Car Model	Carburetor	Idle Port Opening	Vacuum Port Hgt.
Hudson	454-S	.120-.124"	.021-.029"

FAST IDLE: - Consists of a fast idle cam pivoted directly above the throttle lever so as to serve as stop for throttle stop-screw and is linked to the choke valve

Adjustment - To check, turn fast idle cam to normal or slow idle speed position, tighten throttle lever stop-screw until it just seats against cam, rotate cam until stop-screw is against first step of cam (screw must not be on step) check clearance between lower edge of choke valve and air horn wall (use tool T109-85). Distance should be 5/8". To adjust, use tool T109-41 and bend offset portion of fast idle link.

TRIP LEVER: - Should be adjusted after all other choke linkage adjustments have been made.

Adjustment - Hold choke valve tightly closed with pin on fast idle cam resting at bottom of slot in fast idle link. Bend trip lever stop on fast idle link so that clearance between fast idle cam and lip on trip lever is .010".

CHOKE: - Plain type offset valve.

WA-1 Vacuometer Type – Choke (Cont'd)

Setting - Thermostatic coil housing should be set so that reference mark centered on scale on piston housing for all models except those listed in table below, and should be rotated counter-clockwise (Rich) or clockwise (Lean) for these special models as shown. To adjust, loosen two thermostatic coil housing attaching screws, rotate housing.

Car Model	Carburetor	Choke Setting
Hudson	454-S	Centered

Unloader - Consists of a cam on the throttle lever which opens choke valve (through fast idle linkage) when throttle is held wide open to correct flooding. To check, hold throttle wide open, check clearance between lower edge of choke valve and air horn wall. See table below for correct clearance and checking gauge on each model. To adjust, bend cam on throttle lever (use Tool T109-41).

Car Model	Carburetor	Gauge No.	Choke Valve
Hudson	454-S	T109-81	7/16"

Choke Valve Lock - Prevents choke valve closing when throttle valve held wide open. To adjust, hold choke and throttle valves wide open, bend lip at lower end of fast idle link for 1/32" clearance between lip and throttle lever lock.

TROUBLE SHOOTING: - Poor Idling Performance - If engine stalls while idling, low speed performance is unsatisfactory, or correct adjustment cannot be secured, remove idle tube (low speed jet) and clean with compressed air or install new tube. See that tube seats tightly at shoulder. Remove idle adjusting screw and clean low speed channels with air. If idle is rich, check metering rod linkage for binding and see that rod is not rubbing on dust cover. On Vacuometer types, see that vacuum piston is clean and operates freely.

Poor Acceleration - Check pump seasonal adjustment and pump stroke. Remove and clean or replace pump jet. Examine pump for damaged or worn plunger leather, loose plunger, corrosion or dirt in pump cylinder ball check valves sticking or leaking. If plunger removed from cylinder, use loading tool when re-installing to avoid damaging plunger leather. On vacuometer types, make certain that vacuum piston is clean and operates freely In cylinder, examine spring under piston.

Carburetor Loads Up or Performance is Poor - Check and adjust float level. See that correct type metering rod installed (replace metering rod and jet as an assembly – check metering rod setting when installed). On vacuometer types, see that vacuum piston operates freely and vacuum channel open and clean.

SERVICING: - Disassembly - Remove dust cover attaching screw and lockwasher, remove dust cover. Remove fast idle cam screw and fast idle cam. Take out air horn attaching screws (two screws on top, one beneath Climatic Control housing), remove air horn and gasket. Take out retainer screws, remove thermostatic coil and housing assembly, piston housing strainer. Take out choke valve screws and remove choke valve. Loosen screw on choke lever and link assembly 4 full turns, pry lip on lever away from shaft with screwdriver. Revolve choke shaft counter-clockwise to free piston from cylinder and remove assembly (**CAUTION** - Do not remove pin holding piston housing and air horn casting together - these parts line-reamed at factory and must be kept in alignment). Remove pin spring, spring retainer, and spring from throttle connector rod and remove rod. Remove pin spring and connector link from pump arm. Remove low speed passage plug and gasket assembly (located next to anti-percolator cap). Take out bowl cover screws and remove bowl cover assembly intact. **On Vacuometer types**, remove vacuum piston spring from cylinder in casting, disconnect piston from link by turning piston 1/4 turn, remove piston link and metering rod from bowl cover and disassemble rod and link, using care not to lose metering rod disc. **On non-Vacuometer types**, remove metering rod and disc, using care not to lose disc or damage spring, remove pump arm and collar assembly and pump operating lever and countershaft assembly by revolving 1/2 turn. On all models, remove float, needle and seat assembly, strainer nut and gasket, and strainer. Take out pin and remove anti-percolator cap and rocker arm assembly and spring. Remove pump plunger and rod assembly, take out strainer and check ball in lower end of pump cylinder. Remove low speed jet assembly, nozzle passage plug, nozzle retainer plug, and nozzle (use tool T109-55). **CAUTION** - Make certain that small nozzle gasket removed from nozzle passage. Remove metering rod jet and gasket assembly. Remove pump jet passage plug and pump jet. Remove pump discharge ball retainer and check ball. Remove body flange (lower casting) gaskets and insulator, idle adjusting screw and spring, and idle port rivet plug. Remove throttle shaft arm and shaft assembly, take out throttle valve screws, remove throttle valve and shaft and lever assembly.

Servicing - Wash all parts in clean gasoline (except thermostatic coil and housing assembly and cork parts), blow out all passages with compressed air, scrape carbon from casting bore, examine jets and metering rods and replace all worn parts.

Reassembly - Use all new gaskets, group all low speed circuit, high speed circuit, float, pump, and

WA-1 Vacumeter Type – Choke (Cont'd)

choke circuit parts together to insure correct re-installation. Install parts in reverse order of disassembly directions given above

and note following special instructions and cautions: When installing throttle valve, use new attaching screws, install valve with trademark up and on idle port side of bore, install screws loosely, tap valve lightly to centralize it in bore and then tighten attaching screws. Centralize choke valve in same manner and check operation by making certain that choke valve falls open freely of own

weight. When installing nozzle, make certain that new gasket used, install nozzle with flat side up. See that low speed jet seats firmly in casting at shoulder. Check and adjust metering rod, anti-percolator setting, pump stroke, float level, fast idle and choke setting, throttle valve setting as directed above. Pack dust cover attaching screw hole in bowl cover with graphite grease before installing dust cover and attaching screw (oil or grease must not be used at any other point on carburetor). Adjust carburetor when re-installed on engine.

CARTER DUAL TYPE WDO
344-S, 377-S
 1937 HUDSON SIX, MODEL 73
 1937 HUDSON EIGHT, MODELS 74,75,76,77
 1937 TERRAPLANE SUPER SIX, MODEL 72

402-S

1938 HUDSON SIX, MODEL 83
 1938 HUDSON EIGHT, MODELS 84,85,87
 1938 TERRAPLANE, SUPER MODEL 82

TYPE: - Dual barrel, plain tube, downdraft type. Similar in design to other Carter models except that carburetor has two barrels or mixing chambers and that main nozzles, accelerating pump discharge jets, throttle valves, and idling systems duplicated for each barrel. Anti-Percolator is used.

IDLE ADJUSTMENT: - Engine must be thoroughly warmed up so that choke valve is wide open and Fast Idle is inoperative. Idle adjusting screw provided for each carburetor barrel. Screws control fuel mixture and should be turned in for leaner mixture or out for richer mixture (adjust screws in succession, or start with same opening for each screw and turn both screws same amount simultaneously). See tune up instructions on car model page. Approximate idle settings as follows:

Car Model	Carburetor	Idle Screw Setting	Idle Speed
Hudson 6 & 8	All	1/4- 3/4 turn open	7 M.P.H.
Terra. 72, 82	All	1/4-3/4 turn open	7 M.P.H.

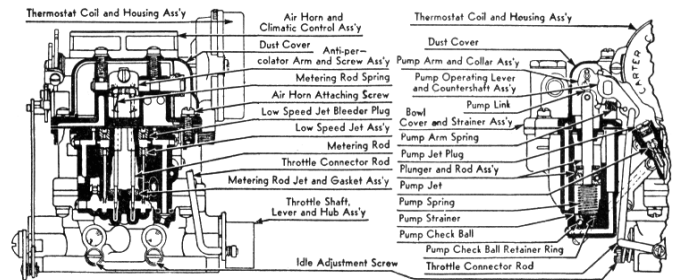
PERFORMANCE: - Should be satisfactory if Idling Adjustment and Accelerating Pump Setting correct. See Carter Jet Specification Table for standard jet calibrations and special lean metering rods (for special operating conditions). Both metering rods must be same size and adjusted alike. See Trouble Shooting below.

ACCELERATING PUMP: - Low pressure type
Adjustment - Some models provided with two holes in pump countershaft arm for pump stem link connection to provide seasonal adjustment. Lower hole (inner) provides short stroke and minimum pump discharge, upper hole (outer) provides long stroke and maximum pump discharge. Refer to tune up data on car model pages for recommended settings and seasonal changes.

NOTE - Pump must be properly connected for short or long stroke when pump stroke adjustment is being checked (see directions below).

Pump Stroke Setting - Whenever carburetor disassembled, check and adjust pump linkage for correct pump stroke. With pump connector link in place, and set for correct stroke (see table below), install Universal Pump Gauge T109-117S on the rim of the float bowl cover at the pump plunger so that projection on gauge rests on top surface of connector link at pump shaft. Note gauge reading with throttle closed, then open throttle wide and again note gauge

reading. Difference between two readings is pump stroke in 64ths of an inch. Adjust by bending throttle connector rod at lower angle near throttle lever with tool T-109-75. **CAUTION** - Check Metering Rod Setting and Anti-percolator Adjustment after adjusting pump stroke.



Car Model	Carburetor	Pump Stroke	Pump Setting
Hudson 6 & 8	All	15/64"	Short Stroke
Terraplane	All	15/64"	Short Stroke

METERING ROD (ECONOMIZER): - Fuel is metered by a stepped metering rod which is raised in the metering jet as the throttle is opened, allowing greater fuel flow to the nozzle. One metering rod used for each carburetor barrel (rods must be same size and must be changed as a unit). No adjustment provided but rods can be changed to secure leaner-than-standard fuel mixture to compensate for special fuel or operating conditions such as high altitude (See Carter Jet Specification Table). Metering rod setting must be checked whenever metering rods are removed or changed.

Metering Rod Removal - On models with integral air horn and dust cover, remove this assembly to expose pump countershaft and metering rods (on models with separate dustcover, take out two retaining screws and remove dust cover only). Remove pin spring from metering rod pin, slide pin out being careful not to lose metering rod springs, lift out metering rods and springs. Remove metering rod discs (on some models, discs held in place by retainer which must first be removed by taking out brass retainer screw). On models where retainer not used, use care not to lose discs.

Metering Rod Setting - Back off throttle lever stop-screw so that throttle valves tightly closed, loosen anti-percolator arm screw. Install metering rod gauge

WDO Dual Type (Cont'd)

(see table below for each model) In place of each metering rod, making certain that gauges seat in metering rod jets and are vertical. Install metering rod pin and pin spring in metering rod arm. Press down lightly on pump arm Pin must rest on shoulders of gauge notches (bend arm slightly to equalize if necessary) with clearance of less than .0051, between pin and each gauge. Tighten anti-percolator arm screw. Remove gauges and metering rod pin, install metering rods and disks, springs, pin, and pin spring.

CAUTION - Anti-percolator must be checked after this adjustment completed.

Make	Carburetor	Metering Rod	Length Gauge
Hudson 6 & 8	All	T109-27	2.359"
Terraplane	All	T109-27	2.359"

ANTI-PERCOLATOR: - Plunger Type. Consists of two spring-loaded plunger type valves (one for each main jet well) which are opened by anti-percolator arm (linked to metering rod arm) when throttle is closed to vent main nozzles and prevent any 'percolating' discharge when carburetor is hot. Valve must be closed when throttle is open (will cause 'flat spots' if not properly adjusted).

Adjustment - Make this adjustment after metering rod setting and pump stroke setting have been adjusted (use extreme care not to disturb these settings). On models with integral air horn and dust cover, remove this Assembly to expose anti-percolators (on models with separate dust cover, take out two retaining screws and remove dust cover only). Back off throttle lever stop-screw so that throttle valves tightly closed. On models listed in table below, insert special gauge (or feeler gauge of thickness listed) between anti-percolator stems and lips on anti-percolator arms-do not use any gauge on other models. Bend lips so that center of indicator line on each anti-percolator stem is flush with top of anti-percolator plug. Use extreme care to secure same adjustment on both anti-percolator units.

Car Model	Carburetor	Checking Gauge	Thickness
Hudson 6 & 8	All	T109-72	.015"
Terraplane	All	T109-72	.015"

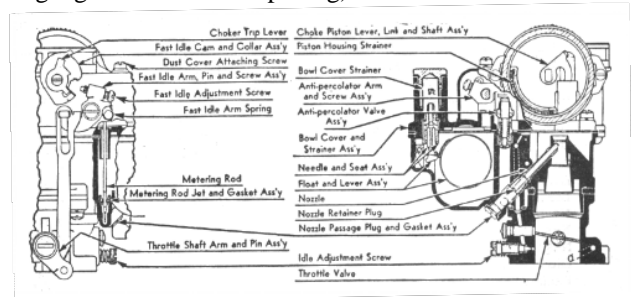
FLOAT LEVEL: - To check float level, remove bowl cover and air horn, invert cover, measure distance from top of float to gasket surface on cover at each side of soldered seam on float. Correct float level by bending lip of lever (do not bend float).

Car Model	Carburetor	Float Level	Checking Tool
Hudson 6 & 8	All	15/64"	T109-32
Terraplane	All	15/64"	T109-32

Float Needle Valve & Seat Assembly - Furnished only as matched sets.

Car Model	Carburetor	Part No.	Intake Hole Size
Hudson 6 & 8	All	25-59S	#38
Terraplane	All	25-598	#38

FAST IDLE:-Consists of a fast idle lever linked to the throttle valve lever and mounted directly below the fast idle cam on the choke valve shaft. Dashpot assembly (Hudson, Terraplane only) mounted on side of float bowl and linked to outer end of fast idle lever. To adjust, hold choke valve tightly closed, adjust fast idle arm screw so that distance from edge of throttle valve to carburetor wall on side opposite idle port is correct as shown in table below (use special checking gauge to gauge throttle valve opening).



Car Model	Carburetor	Throttle Opening	Checking Gauge
Hudson 6 & 8	All	.018"	T109-44
Terraplane	All	.018"	T109-44

NOTE - Gauge No. T109-44 used for both .015" and .018" settings.

CHOKE: - All choke valves are offset type.

Setting - Thermostatic coil housing reference mark should be centered on mark on piston housing (for all models except those shown in table below) or should be rotated counter-clockwise (Rich), clockwise (Lean), the correct number of points from the center mark as follows:

Car Model	Carburetor	Choke Setting
Hudson 6 & 8 ('37)	377-S only	2 points Rich
Terraplane ('37)	377-S only	2 points Rich

Unloader: - Consists of a lip on the throttle connector which engages the choke trip lever on the choke valve shaft so that the choke valve is opened when the throttle is opened wide. Check by opening throttle valve wide open, and checking distance between upper edge of choke valve and air horn wall (see table below for distance and checking tool for each model). Adjust by bending lip on fast idle connector link. With correct adjustment, choke valve will be locked open when moved to the wide open position (with throttle valve wide open) and will be released when throttle closed.

WDO Dual Type (Cont'd)

Car Model	Carburetor	Unloader Gauge No.	Distance
Hudson 6 & 8	All	T109-31	1/4"
Terraplane	All	T109-31	1/4"

Choke Valve Lock: - With Unloader properly adjusted (above) choke valve will be locked in wide open position with throttle valves wide open. Choke valve will be released when the throttle valves are closed.

THROTTLE VALVE SETTING: - Install valves with trademark 'C' on idle port side, back off throttle stop-screw so that valves close tightly and tap valves lightly to centralize them in carburetor bore before tightening valve screws. Check idle port and vacuum port openings. Shims furnished .0021, thick (2-93), .005" thick (2-94) to correct throttle valve locations. With throttle valves tightly closed, Idle Port Distance from top edge of valve to top of port (or idle port opening as indicated) and Vacuum Port height (to top or bottom of port as indicated) should be correct for each model as follows:

Car Model	Carburetor	Idle Port	Vacuum Spark Port
Hudson 6 & 8	All	*.013-.019"	None
Terraplane	All	*.013-.019"	None

* - Idle Port Opening.

TROUBLE SHOOTING: - Poor Idling Performance - If correct idling adjustment cannot be secured, or if engine stalls while idling, remove low speed jet tubes and clean with compressed air, clean out idling passages and ports, see that tube seats airtight at top and bottom.

Acceleration Unsatisfactory - Check pump setting, remove pump jets and check valves and clean with compressed air, examine pump for bent pump arm, loose plunger, damaged or worn plunger leather, corroded cylinder or sediment in cylinder. Use special loading tool to install pump plunger in cylinder to avoid damage to plunger leather.

Carburetor Loading - Check and adjust float level.

SERVICING: - To Disassemble Carburetor - Remove fast idle arm pin and screw assembly, cam and collar assembly, spring and connecting link. Take out two air horn attaching screws (outside), blank disc check (inside under choker valve), remove air horn and

automatic choke assembly. Take out pin spring, slide out pin, remove metering rods. Remove throttle connector rod and accelerator pump connecting link. Take out float bowl cover screws, remove cover. Take out float lever pin, remove float and lever assembly, remove float needle valve and seat. Take out pin spring on pump arm spring, loosen clamp screw on metering rod arm, remove pump arm and shaft. Remove body gasket, pump plunger assembly and plunger spring. Use tool J-511 and remove anti-percolator assemblies. Remove metering rod jet and gasket assemblies. Remove pump jet plugs, pump jets and gaskets. Remove body flange assembly, flange gasket, idle passage gaskets, idle adjustment screws and springs, idle passage plug. Take off throttle shaft arm, remove throttle centering screw in face of body flange and throttle valve screws, take out throttle valves and pull shaft out. Take out nozzle retaining plugs being careful not to lose washers, remove nozzles. Remove low speed jets, check valve passage plug and strainer, pump intake check valve plug and housing, pump discharge check valve plug.

NOTE: - On Hudson and Terraplane models, disconnect the dashpot connector link before removing air horn. If dashpot plunger removed from cylinder, use special loading tool Part No. T52-19 to install to avoid damage to plunger leather.

Servicing: - Wash all parts in gasoline, blow out all passages in carburetor body and dry with air, replace all worn and damaged parts.

Reassembling Carburetors - Reverse disassembly directions above. Use new gaskets, soaking needle seat gasket, blank check gasket, metering rod jet gasket in warm water for 15 minutes before installing. When assembling throttle valves, hold body flange assembly with Intake manifold side down, assemble throttle valves loosely (trademark 'C' on valves down and on idle port side), back off throttle stop-screw so that valves close tightly, tap valves lightly to centralize them in carburetor barrel, tighten valve screws securely, install throttle shaft centering screw and throttle arm. Use special loading tool (J-507) to install pump piston assembly in cylinder to avoid damaging plunger leather. Check float needle valve for tightness after installing. Set float level and adjust carburetor on engine (see above).

Carter Dual Type Vacuometer Type

430-S

1939 - Hudson Six, Model 92 – Later Cars;
Hudson Country Club 6, Model 93;
Hudson Country Club 8, Models 95,97

430-SV

1940 Hudson Six, Models 41,43 - First Cars (See Note);

461-S

1940 - Hudson Six, Models 41,43 - After No. 3136;
1941 - Hudson Six, Models 11,12 - First 2025 Cars

501-S

1941 - Hudson Six, Models 11, 12 - After First 2025 Cars
1942 - Hudson Six, Models 21,22

455-S

1940 - Hudson Eight, Models 44,45,47
1941 Hudson Eight, Models 14,15,17 - First Cars

502-S

Hudson Eight, Models 14,15,17 - After First Cars
Hudson Eight, Models 24,25,27

NOTE: Hudson Six Model 430-SV - This carburetor same type as used on 1939 cars (430-S) with Vacuum Spark Port added. Used on first cars only.

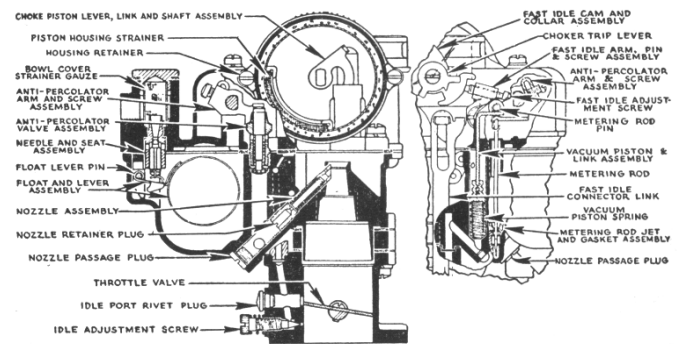
Hudson Throttle Sticking Correction - To correct complaints of sticking throttle caused by binding between throttle connector rod and throttle lever or pump arm, remove and discard original throttle connector rod (No. 115-52), install new Throttle Connector Rod No. 115-65 and Throttle Connector Rod Washer No. 136-37. NOTE-This washer must be used with the new rod.

Hudson (All Models) - Carburetors are installed with eight gaskets between carburetor and mounting pad on manifold. When installing carburetor, place four gaskets between manifold and heat deflector, four additional gaskets between deflector and carburetor. **NOTE**--Governor plate is installed between two top gaskets on new cars during breaking in period-when governor plate removed, gasket between plate and carburetor must be replaced so that total of four gaskets used between heat deflector and carburetor.

1941-42 SPECIAL SERVICE NOTES & PRODUCTION CHANGES: -Hudson Eight (502-S)

Metering Rod Change - All metering rods (Standard & Lean) changed in production as follows: **Standard** - No. 75-529 supersedes original No. 75-466. **1 Size Lean** - No. 75-480 supersedes original No. 75-478 (see note). **2 Sizes Lean** - No. 75-531 supersedes original No. 75-479. **3 Sizes Lean** - No. 75-532 supersedes original No. 75-480. **NOTE** - This new type No. 75-480 U Size Lean) Metering Rod is not the same as the old type No. 75-480 (3 Sizes Lean) Rod and can be identified by a raised boss next to trademark on flat portion of rod.

Hudson (All Models) - Carburetors are installed with eight gaskets between carburetor and mounting pad on manifold. Refer to 1940 Special Service Notes (above) for installation directions.



TYPE: - Same design as Single barrel Vacuometer type carburetors (see preceding article) except for dual feature. Carburetor has two independent mixing chambers, main nozzles, metering rods and jets, throttle valves, and Idling systems. One accelerating pump (with double discharge jets) and one economizer vacuum piston assembly used for both barrels.

IDLING ADJUSTMENT: - Adjust carburetor only with engine warmed up and idling at hot or slow idling speed (choke valve wide open, fast Idle inoperative). Idle adjusting screw provided for each carburetor barrel. Screws control fuel mixture and should be turned in for leaner mixture, out for richer mixture and both screws just be adjusted exactly alike, See table below for approximate settings on each car model. Idle speed controlled by throttle lever stop-screw and should be set for speed shown in table.

WDO Dual Vacuometer Type (Cont'd)

Car Model	Carburetor	Idle Screw	Idle Speed Setting
Hudson ('39)	430-S	¼-1 turns open	7-8 MPH.
Hudson 6 ('40)	430-SV, 461-S	¼-1¼ turns open	7 MPH.
Hudson 6 ('41-42)	461-S, 501-S	¼-1¼ turns open	600 PM*
Hudson 8 ('40)	455-S	½-1½ turns open	7 MPH.
Hudson 8 ('41-42)	455-S, 502-S	½-1½ turns open	600 PM*

* - 7½-8 MPH - (4 1/9-1 Axle); 6½-7 MPH - (4 5/9-1); 6-6½ MPH - (4 7/8-1).

PERFORMANCE: - Should be satisfactory if Idling Adjustment and Accelerating Pump Setting correct. See Carter Jet Specification Table for standard jet calibrations and special lean metering rods (for special operating conditions). Both metering rods must be same size and adjusted alike. See Trouble Shooting below.

ACCELERATING PUMP: - High pressure type (spring operated-pump operating lever and pump arm linked by small coil spring). Inlet ball check valve located in bottom of pump cylinder, outlet ball check valve under retainer plug in main body casting.

Pump Seasonal Adjustment - On some models, pump arm (under dust cover) has two or three holes for pump rod link connection to provide varied pump stroke for seasonal pump requirements. See tune-up data on car model pages for recommended settings and seasonal changes.

Pump Stroke Adjustment - On models with integral air horn and dust cover, remove this assembly to expose pump countershaft and connector link (on models with separate dust cover take out two retaining screws and remove dust cover only). Back off throttle lever stop-screw so that throttle valves tightly closed, check pump seasonal adjustment (connector link must be engaged in hole for correct stroke as shown in table below). Install Universal Pump Stroke Gauge T109-117S on rim of bowl cover at plunger shaft so that projection on gauge rests on top surface of connector link at pump shaft (see gauge note below). Note gauge reading with throttle closed, then open throttle wide and again note gauge reading. Difference between two readings is pump stroke (in sixty-fourths of an inch) and should agree with figure shown in table below. Adjust by bending throttle connector rod at lower angle near throttle lever (use bending tool T109-75).

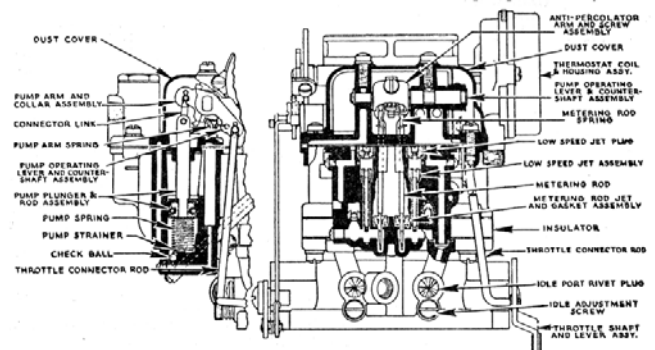
CAUTION - Check metering rod setting and anti-percolator adjustment after adjusting pump stroke.

NOTE - Pump Gauge Design Change. On first type pump stroke gauge T109117S design of indicator arm may make it difficult to check pump stroke on 1939

carburetors (later gauges have different design indicator arm). This new indicator arm No. T109-119 can be installed on old type gauges (or gauge can be returned to factory for arm installation). If arm installed in field, set notch in indicator nut at 18', check arm for projection beyond base of gauge (if arm projects, file flush with base).

Car Model	Carburetor	Pump Stroke	Pump Setting
Hudson 6	430-S,SV; 461-S, 501-S	18/64"	Long Stroke
Hudson 8	430-S, 455-S, 502-S	18/64"	Long Stroke

METERING ROD (ECONOMIZER): - Fuel for main nozzles metered by metering rod and jet (independent rod and jet for each nozzle). Metering rods operated by single vacuum piston with throttle control (stop pin on pump arm limits piston travel so that metering rod lifted in accordance with throttle opening). No adjustment provided but metering rods can be changed to secure leaner than standard fuel mixture to compensate for special fuel or high altitude conditions (both rods must be same size and should be changed as a unit). Check metering rod setting whenever rods removed or pump stroke adjusted.



To Remove Metering Rods - Take out screws and remove dust cover or remove air horn and dust cover assembly (where these parts Integral-see Service data for removal instructions). Remove pin spring from metering rod pin and slide pin from vacuum piston link being careful not to bend metering rod spring. Lift out metering rods, remove metering rod discs (on some models, discs held in place by retainer which must first be removed by taking out brass retainer screw). On models where retainer not used, use care not to lose discs.

To Check Metering Rods - Back off throttle lever stop-screw so that throttle valves are tightly closed. Install metering rod gauge (see table below) in place of

WDO Dual Vacumeter Type (Cont'd)

each metering rod making certain that tapered ends are seated in metering rod jets. Install metering rod pin in piston link. Push piston link down until metering rod pin rests lightly on shoulder of notch in each gauge. With throttle valves seated, and vacuum piston held down, bend lip on anti-percolator arm (which extends under metering rod pin) so that lip just touches pin (use adjusting tool T109-105).

To Install Metering Rods - Make certain that discs are in place under disc retainer and that pin spring and metering rod springs are properly connected.

Car Model	Carburetor	Metering Rod	Length
Hudson 6 & 8	All	T109-113	2.280"

ANTI-PERCOLATOR: - Plunger Type. Consists of a vent above each main let well controlled by spring-loaded plunger type valves. Valves are opened by anti-percolator arm connected to throttle when throttle valves are closed to vent nozzles and prevent any 'percolating' discharge when carburetor is hot. Valves must be closed with throttle open (wrong adjustment may cause flat spots).

Adjustment - Make this adjustment after metering rod setting and pump stroke setting have been adjusted (use extreme care not to disturb these settings). On models with integral air horn and dust cover, remove this assembly to expose anti-percolators (on models with separate dust cover, take out two retaining screws and remove dust cover only). Back off throttle lever stop-screw so that throttle valves tightly closed. On models listed in table below, insert special gauge (or feeler gauge of thickness listed) between anti-percolator stems and lips on anti-percolator arms-do not use any gauge on other models. Adjust by bending lips on anti-percolator arms so that center of indicator line on each anti-percolator stem is flush with top of anti-percolator plug. Use extreme care to secure same adjustment on both anti-percolator units.

FLOAT LEVEL: - To check float level (with bowl cover assembly removed), remove cover gasket, invert cover, measure from machined gasket seat on cover to top of float (check at both ends of float-settings must be alike). See table below for float level and special checking gauge for each model. To adjust, bend lip on float lever at point where it contacts valve needle (do not bend float or arm).

Car Model	Carburetor	Float Level	Checking Gauge
Hudson (39-41)	430-S,SV;455-S,461-S	3/32"	T109-125
Hudson ('41-42)	501-S,502-S	1/8"	None

Needle Valve & Seat - Furnished only in matched sets as shown in table below.

Car Model	Carburetor	Part Number	Intake Hole Size
Hudson 6	430-S,SV;461-S,501S	25-59S	#38
Hudson 8	430-S,455-S,502-S	25-59S	#38

THROTTLE VALVE SETTING: - Install valves with trademark 'C' toward Idle port side, use new attaching screws, install screws loosely, tap valves lightly to centralize them in bore, then tighten screws securely. Check valve setting with throttle lever stop-screw backed out so that valves tightly closed. Idle port figure is distance from top edge of valve to top of idle port. Vacuum spark port figure is distance from top edge of valve to top (or bottom as noted) of vacuum spark port. Shims furnished .002" thick (2-93), .005" thick -94), valve setting adjustment.

Car Model	Carburetor	Idle Port Spark	Vacuum Port
Hudson 6 & 8 ('39)	430-S	.108-112"	None
Hudson 6 ('40-42)	430-SV, 461-S, 501-S	.108-112"	*.029-.033"
Hudson 8 (40-42)	455-S,502-S	.133-.137"	None

* - Top of port above top of valve.

FAST IDLE: - Consists of a fast idle lever linked to the throttle valve lever and mounted directly below the fast idle cam on the choke valve shaft. To adjust, hold choke valve tightly closed, adjust fast idle arm screw so that clearance between throttle valve and carburetor wall on side opposite idle port is correct as shown in table below (use special checking gauge inserted between throttle valve and wall to check opening).

Car Model	Carburetor	Throttle Opening	Checking Gauge
Hudson 6 & 8 ('39-40)	430-S,SV; 455-S, 461-S	.018"	T109-44
Hudson 6 ('41-42)	501S	.045"	None
Hudson 8 ('41-42)	502-S	.053"	None

Hudson 1941-42 Note - Manufacturer recommends that fast idle should be adjusted as follows: With throttle stop-screw set for correct slow idle speed of 600 RPM open throttle so that clearance between stop-screw and stop on carburetor casting is .030", hold in this position, close choke valve, turn fast idle adjusting screw in until it just contacts fast idle cam.

Note: Gauge and tool numbers are given for information purposes.

WDO Dual Vacumeter Type (Cont'd)

CHOKE: - Carter Climatic Control (automatic choke) is standard.

Setting - Thermostatic coil housing reference mark should be centered on mark on piston housing (for all models except those shown in table below) or should be rotated counter-clockwise (Rich), clockwise (Lean), the correct number of notches from the center mark as follows:

Car Model	Carburetor	Choke Setting
Hudson ('41-42)	501-S, 502-S	* 1 point Lean

* - Supersedes 'Centered' setting originally specified for these models.

Unloader: - Consists of a lip on the throttle connector which engages the choke trip lever on the choke valve shaft so that the choke valve is opened when the throttle is wide open. To adjust, hold throttle valve wide open, bend lip on fast idle connector link so that clearance between upper edge of choke valve and air horn wall is correct as shown in table below (use specified gauge to check this opening).

Car Model Clearance	Carburetor	Unloader	Gauge
Hudson 6 ('39-42)	430-S,SV; 61-S, 501-ST	T109-31	1/4"
Hudson 8 ('39-42)	430-S,55-S; 502-S	T109-31	1/4"

Choke Valve Lock: - With unloader properly adjusted, choke valve will be locked in wide open position with throttle valves wide open. Choke valve will be released when throttle valves closed.

TROUBLE SHOOTING: - Same as for other Carter models (see preceding article).

SERVICING: Disassembly - Remove dust cover attaching screw and lock-washer, remove dust cover (when dust cover is separate), remove fast idle arm and spring assemblies. Take out air horn attaching screws (two screws outside, one screw inside under choke valve) and remove air horn and Climatic Control assembly. Remove pin spring and pump connector link, spring retainers and springs to remove throttle connector

rod, take out four flange attaching screws and lift off flange, gasket and two idle passage gaskets taking care not to lose vacuum piston spring, Disconnect piston from piston link, lift out metering rod and piston link assembly, disconnect metering rods from link. Remove four bowl cover attaching screws, remove bowl cover and body gasket. Remove metering rod disc retainer and discs, pump plunger and rod assembly, pump spring, pump inlet ball check, metering rod jets and gaskets, anti-percolators (use 13/32" socket wrench T109-66), pump jet passage plugs, pump jets, nozzle plug and gasket assemblies, nozzle retainer plugs and nozzles (nozzles pressed in, use tool No. T109-55), nozzle gaskets, low speed jet and gasket assemblies, pump outlet ball retainer plug and ball (in center of casting next to air horn retaining screw hole), throttle valve attaching screws and throttle valves, throttle centering screw, arm attaching screw, washer, and arm. Remove fast idle spring retainer, spring, connector link, connector link spring, withdraw throttle shaft and lever assembly. Take out idle adjusting screws and springs, remove idle port rivet plugs.

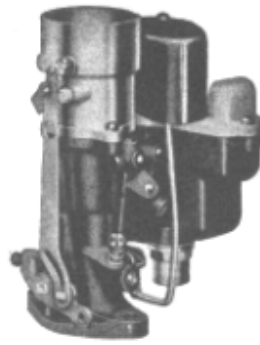
Servicing - Clean castings and all parts with gasoline (do not immerse cork parts in gasoline, blow all passages with compressed air, check all parts for correct specifications and replace all worn parts. Use all new gaskets when reassembling. Soak needle seat gasket, low speed jet gasket and metering rod jet gasket in 90 proof alcohol for 15 minutes, install and let dry on part before using.

Reassembly - Reassemble in reverse order. Check throttle valves (see Throttle Valves above), make certain that low speed jets seat at both ends and are tight, install nozzles with flat side facing up. Vacuum piston is offset from link and should be installed with large side of piston toward bores. When installing flange assembly on body casting, hold body casting upside down with vacuum piston vertical. place piston spring in piston, then place flange assembly on body casting, guiding piston and spring into cylinder in flange casting. Check metering rods, anti-percolator, pump, and fast idle as directed above.

331S—61101 and higher
348S—71101 and higher

MOTOR SERIAL NUMBERS

331S-157000 and higher
348S-250000 and higher



Casting No. 72 on face of flange

W1 Down-Draft Carburetor 331-348S—List Price \$15.00

A \$2.00 exchange allowance is deducted from the list price if buyer turns in old carburetor

TERRAPLANE SIX MODELS

331S "61" 1936

348S "71" 1937

(331S-348S Superseded by 437S)

CARBURETOR SPECIFICATIONS

For Terraplane Models "61" and "71" Six Cylinder Engine: 3 Inch Bore, 5 Inch Stroke

Dimensions: Flange size, 1¼ inch S. A. E.

- Primary venturi, 11/32 inch I. D.
- Secondary venturi, 11/16 inch I. D.
- Main venturi, 1¼ inch I. D.

Float Level: Distance from float (at free end) to float chamber cover to be 3/8 inch when needle is seated. (See cut.)

Outside Vent: No. 10 drill size. No inside vent.

Gasoline Intake: Square vertical needle. No. 48 drill in needle seat.

Gasoline Line Connection:

- Low Speed Jet Tube:** Jet, No. 70 drill size
- By-pass in body, No. 55 drill size.
- Economizer in body, No. 48 drill size.
- Idle bleed, No. 52 drill size.

Idle Port: Length, .200 inch; width, .030 inch.

Idle Port Opening: .016 to .020 inch with valve closed tight.

Idle Screw Seat: No. 46 drill.

Set Idle Adjustment Screw: ¼ to 1 turn open. For richer mixture, turn screw out. Do not attempt to idle engine below 350 r. p. m.

Main Nozzle: In primary venturi, angle 30°. Size No. 40 drill.

Metering Rod: (348S) Economy step, .066 inch diameter; power step, .052 inch diameter. (331S) Economy step .065 inch diameter; middle step .061 inch diameter; power step, .040 inch diameter. Length, 3-25/64 inches.

Metering Rod Jet: .09275 inch diameter drill

Metering Rod Setting: Use gauge (Part No. T109-25) 2.795 inches.

Accelerating Pump: Low pressure type, with adjustable stroke.

- Discharge Jet, No. 72 drill size.
- Intake ball check, No. 62 drill size.
- Discharge ball check, No. 45 drill size.
- Relief disk check, No. 65 drill size.

Choke: Manual. Butterfly type, with pressure relief poppet valve. Interconnected to open throttle valve .036 to .040 inch when fully choked.

Motor Tune-Up—Be Accurate! Always Use Feeler Gauges!

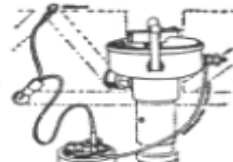
Caution: Change worn or leaky flange gaskets. Tighten manifold bolts and test compression before adjusting carburetor.



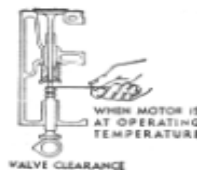
Spark Plug Gap .025"



Set Breaker Points .020"



Use Timing Light Breaker Points to Open at Top Dead Center



Set Valves Intake .006" Exhaust .008"



Correct Float Level (Remove Cork Gasket) 3/8 Inch



Idle Adjustment Screw Setting 1/2 to 1 Turn Open

CARBURETOR ADJUSTMENTS

If carburetor loads up after considerable service, float level should be checked. Wear on lip of float lever will raise float level. Float level may be reset by bending lip of float lever down to raise float level or bending lever up to lower float level. Only a very slight bend is needed.

If motor stalls while idling, reset idle adjustment screw and throttle adjusting screw. If these adjustments do not correct the trouble, remove low speed jet tube and clean thoroughly with compressed air. Examine and see that tube seats gasoline-tight in body casting, top and bottom. If not, replace with a new tube of identical specifications. Never change a low speed Jet tube from one carburetor to another.

Poor acceleration may be due to damaged or worn plunger leather in accelerating pump, loose plunger, corrosion or sediment in pump cylinder or bent pump arm (parts which may be replaced at small cost). Pump stroke is adjustable for high or low temperatures. Set to longest stroke for cold weather, medium stroke for moderate weather, short stroke for hot weather driving.

If plunger is removed from accelerating cylinder, always use loading tool in re-assembling to avoid

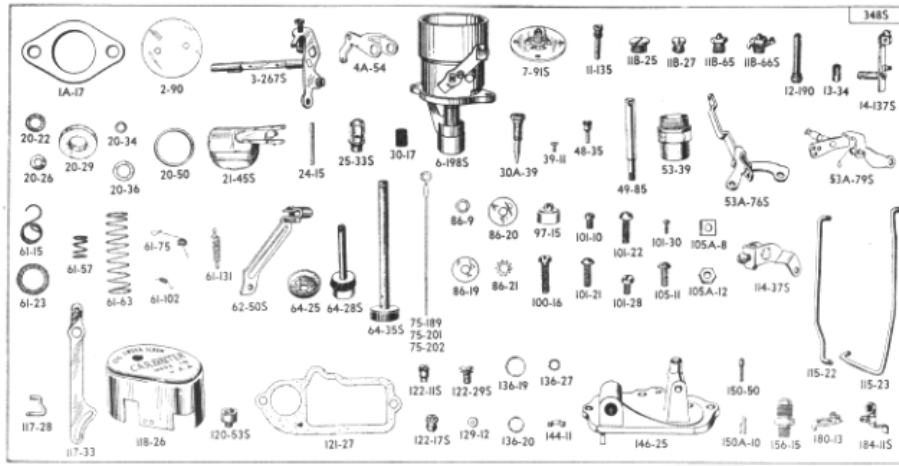
damage to plunger leather.

Increased resistance on foot throttle indicates a clogged pump jet. Pump jet should be removed and cleaned with compressed air, which, in many cases, will remove the dirt or lint. However, it is usually advisable to replace the pump jet, as its cost is nominal. All jets and ball checks must be seated gasoline tight.

Anti-Percolating cap should be off seat when throttle is closed to idling position. If cap does not open under above conditions, bend anti-percolating cap arm upward slightly to allow pump arm to depress bracket. Anti-Percolating cap must be on seat when throttle is opened slightly beyond idling position, or with .030 inch opening between edge of throttle valve and carburetor bore opposite port. Then adjust rocker arm for .005" to .015" clearance between rocker arm lip and pump arm (Do not adjust until after metering rod adjustment is made.)

Pump stroke adjustable for high or low temperatures. Set to longest stroke for cold weather, shorter stroke for hot weather driving

EFFECTIVE JANUARY 1, 1948, ADD 30% TO LIST PRICE OF CARBURETERS AND 5% TO ALL OTHER PRICES SHOWN WITH FRACTIONAL ADJUSTMENT TO NEAREST EVEN CENT.



Terraplane "61" Six 1936—No. 331S—List Price \$15.00
Terraplane "71" Six 1937—No. 348S—List Price \$15.00

USE GASKET ASSORTMENT No. 109—PRICE \$0.45; REPAIR PARTS PACKAGE FOR 331S, No. 1045A, PRICE \$3.60;
 No. 1051A, PRICE \$3.60, FOR 348S.

PART NAMES IN BOLD TYPE, LISTED BELOW, INDICATE CONTENTS OF REPAIR PACKAGE

Part No.	PARTS LIST	List Price	Part No.	PARTS LIST	List Price
1A-17	Flange gasket, graphited asbestos—1¼ S.A.E.	\$0.05	64-35S	Dash pot plunger and rod assembly (Identify by Shaft No. 49-98)	.90
2-90	Throttle valve	.10	75-100	Metering rod—leaner than standard—.068", .064", .043" (331S)	.30
3-267S	Throttle shaft and lever assy.	.90	75-119	Metering rod—standard—.065", .061", .040" (331)	.30
4A-54	Throttle shaft dog	.10	75-189	Metering rod—Standard—.066", .052" (348S)	.30
6-136S	Air horn assembly (331S)	2.20	75-201	Metering rod—1 size lean—.068", .067", .054" (348S)	.30
6-198S	Air horn assembly (348S)	2.20			
7-66S	Choke valve assembly (331S)	.50			
7-91S	Choke valve assembly (348S)	.50			
11-135	Low speed jet	.20			
11B-12	Rivet plug	.02	89-9	Dust cover attaching screw lock washer (Use with 101-22)	.01
11B-25	Check valve passage plug	.10	86-15	Flange stud lock washer	.01
11B-26	Rivet plug	.02	86-19	Plunger washer (Inner)	.03
11B-27	Nozzle and idle passage plug (331S) (Early production on 348S)	.10	86-19	Plunger washer (Outer)	.03
11B-65	Anti-percolating plug	.10	86-21	Plunger shaft lock washer	.01
11B-66S	Anti-percolating plug and gasket assembly	.25	97-15	Plunger cup	.15
11B-108	Idle hole rivet plug (Late production 348S)	.02	100-16	Throttle lever adjusting screw (Sup. by 101-121)	.05
12-190	Nozzle	.30			
13-34	Choke shaft stub	.15	101-10	Wire clamp screw	.05
14-137S	Choke assembly with clamp and screw	.40	101-21	Air horn attaching screw	.05
20-22	*Needle seat gasket	.05	101-22	Dust cover attaching screw and washer assy	.05
20-26	*Metering rod gasket	.05	105-11	Tube clamp screw (331S) (Supp. by 105-12 on 348S)	.05
20-29	Pump cylinder bushing gasket—upper	.05			
20-34	Nozzle gasket	.05	105-12	Tube clamp screw (348S)	.05
20-36	*Anti-percolator plug gasket (348S)	.05	105A-8	Tube clamp nut	.05
20-50	Dash pot cylinder gasket	.05	105A-12	Plunger shaft hex nut	.05
21-45S	Float and lever assembly	.80	105A-13	Flange stud nut	.05
24-15	Float lever pin	.05	114-23S	Throttle shaft arm and screw assembly (331S)	.20
25-33S	Needle and seat assembly (331S). (Superseded by 25-72S on 348S)	.80	114-37S	Throttle shaft arm and screw assembly (348S)	.20
25-72S	Needle and seat assembly (348S)	.80	115-22	Dash pot connector rod	.15
30-17	Ball check strainer (Sup. by 30-20)	.10	115-23	Throttle connector rod	.15
30-20	Ball check strainer	.10	117-28	Connector link	.05
30A-39	Idle adjustment screw	.30	117-33	Choke link	.10
39-11	Valve attaching screw	2 for .05	118-26	Dust cover	.50
48-35	Pump jet	.15	120-51S	Metering rod jet and gasket ass'y. (331S)	.30
53-39	Dash pot cylinder	.30	120-53S	Metering rod jet and gasket ass'y. (348S)	.30
53A-76S	Dash pot arm and bracket assembly	.30	121-27	Bowl cover gasket	.10
53A-79S	Pump arm, spring and countershaft assembly	.50	122-11S	Discharge ball check assembly	.25
61-15	Choke spring	.10	122-17S	Intake ball check assembly	.25
61-23	Plunger leather spring	.10	122-29S	Disk check assembly	.25
61-57	Adjustment screw spring	.05	129-12	Metering rod disk	.02
61-63	Pump spring	.10	136-19	†Plug washer (Conical) 136-50 (Flat)	.01
61-75	Metering rod spring	.10	136-20	†Plug washer (Conical) 136-49 (Flat)	.01
61-102	Rocker arm spring	.05	136-27	†Plug washer (Conical) 136-48 (Flat)	.01
61-131	Throttle shaft dog spring	.10	144-11	Throttle lever screw spring (Use only with 100-16)	.03
62-50S	Tube clamp assembly (331S) (Superseded by 62-91S on 348S)	.25	146-25	Bowl cover	1.00
62-91S	Tube clamp assembly (348S)	.25	150-50	Anti-percolator bracket pin	.05
64-25	Plunger leather	.25	150A-10	Pin spring	.01
64-28S	Pump plunger and rod assembly (Identify by shaft No. 49-85)	.90	156-15	Gas line nipple	.10
			180-13	Anti-percolator bracket	.10
			184-11S	Anti-percolating cap and rocker arm assembly	.25

*Gaskets so marked must be soaked in 90 proof denatured alcohol for 15 minutes, installed on the part and let dry before using.

†The use of flat or conical plug washers should be determined by shape of seat in casting.

List price of \$3.00 per 100 applies to parts listed at \$.05 each.

List price of \$1.75 per 100 applies to parts listed at \$0.03 each

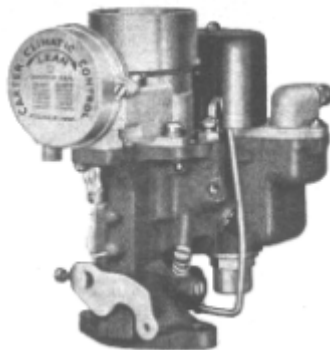
List price of \$1.25 per 100 applies to parts listed at \$0.02 each.

List price of \$0.50 per 100 applies to parts listed at \$0.01 each.

EFFECTIVE JANUARY 1, 1948, ADD 30% TO LIST PRICE OF CARBURETERS AND 5% TO ALL OTHER PRICES SHOWN WITH FRACTIONAL ADJUSTMENT TO NEAREST EVEN CENT.

CAR SERIAL NUMBER
62101
and higher

MOTOR SERIAL NUMBERS
157000
and higher



TERRAPLANE SIX MODEL "62" (Superseded by 454S)

Casting No. 73 on face of flange

W1 Down-Draft Carburetor 329S With Climatic Control - List Price \$21.00
A \$5.00 exchange allowance is deducted from the list price if buyer turns in old carburetor

CARBURETOR SPECIFICATIONS

For Terraplane Models "62" Six Cylinder Engine: 3 Inch Bore, 5 Inch Stroke

Dimensions: Flange size, 1¼ inch S. A. E.
Primary venturi, 11/32 inch I. D.
Secondary venturi, 11/16 inch I. D.
Main venturi, 1¼ inch I. D.

Float Level: Distance from float (at free end) to float chamber cover to be 3/8 inch when needle is seated. (See cut.)

Outside Vent: No. 10 drill size. No inside vent.

Gasoline Intake: Square vertical needle. No. 48 drill size hole in needle seat.

Low Speed Jet Tube: Jet, No. 70 drill size
By-pass in body, No. 55 drill.
Economizer in body, No. 48 drill.
Idle bleed, No. 52 drill.

Idle Port: Length, .200 inch; width, .030 inch.

Idle Port Opening: .016 to .020 inch with valve closed tight.

Idle Screw Seat: No. 46 drill.

Set Idle Adjustment Screw: ½ to 1 turn open. For richer mixture, turn screw out. Do not attempt to idle engine below 350 r. p. m.

Main Nozzle: In primary venturi, angle 30°. Size No. 40 drill.

Metering Rod: Economy step, .065 inch diameter; middle step, .060 inch diameter; power step, .040 inch diameter. Length, 3-25/64 inches.

Metering Rod Jet: .09275 inch diameter drill

Metering Rod Setting: Use gauge (Part No. T109-25) 2.795 inches.

Accelerating Pump: Low pressure type, with adjustable stroke.
Discharge Jet, No. 72 drill
Intake ball check, No. 62 drill
Discharge ball check, No. 45 drill.
Relief disk check, No. 65 drill

Choke: Carter climatic control, set at index. Butterfly type offset valve, with pressure relief poppet valve. Choke heat suction hole, in body, size No. 30 (.1285") drill.

Motor Tune-Up—Be Accurate! Always Use Feeler Gauges!

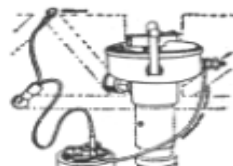
Caution: Change worn or leaky flange gaskets. Tighten manifold bolts and test compression before adjusting carburetor.



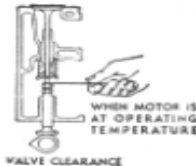
Spark
Plug Gap
.025"



Set
Breaker Points
.020"



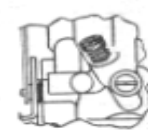
Use Timing Light
Breaker Points to Open
at Top Dead Center



Set Valves
Intake .006"
Exhaust .008"



Correct Float Level
(Remove Cork
Gasket)
3/8 Inch



Idle Adjustment
Screw Setting
½ to 1
Turn Open

CARBURETOR ADJUSTMENTS

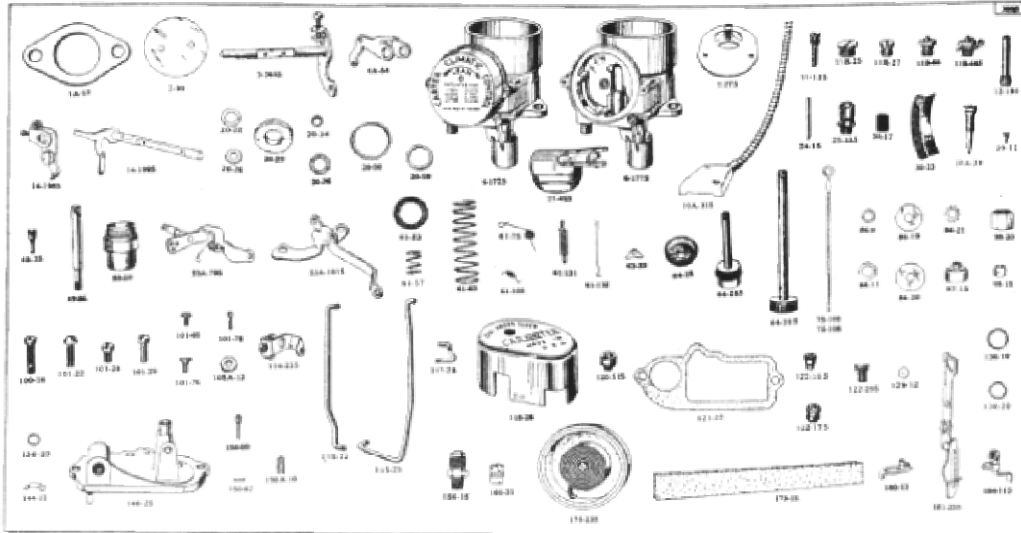
To adjust anti-percolator: Set throttle valve at .030" opening between edge of valve and bore of carburetor. Use a gauge .030" diameter and insert between valve and wall of bore on side opposite port. Adjust rocker arm for .005" to .015" clearance between rocker arm lip and pump arm.

To adjust unloader: With throttle wide open, adjust curved lip on fast idle block so lower edge of choke valve is 7/16" from inner wall of air horn.

With throttle wide open and choke valve wide open choke should lock in wide

open position. There should be 1/16-inch clearance between lip on choke lever and top end of fast idle link assembly with choke valve wide open and throttle wide open. Choke mechanism must not bind at any position. Adjustment can be made by removing fast idle link assembly from carburetor and filing not more than 1/32-inch from top of link. (See General Bulletin No. 115.) Care should be exercised to maintain the contour of original piece and in the removal of all burrs.

Pump stroke adjustable for high or low temperatures. Set to longest stroke for cold weather, shorter stroke for hot weather driving.



Terraplane Six—1936—No. 329S—List Price \$21.00

WHEN SERVICING, USE GASKET ASSORTMENT No. 122—PRICE \$0.60; REPAIR PARTS PKG. No. 1049A—PRICE \$3.95
PART NAMES IN BOLD TYPE, LISTED BELOW, INDICATE CONTENTS OF REPAIR PACKAGE

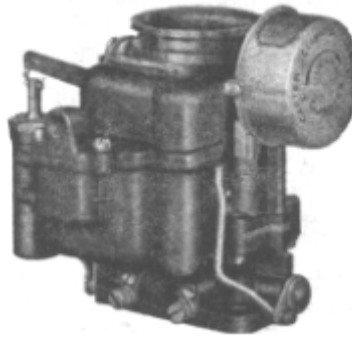
Part No.	PARTS LIST	List Price	Part No.	PARTS LIST	List Price
1A-17	Flange gasket, graphited asbestos—1¼ S.A.E.	\$0.05	75-100	Metering rod—leaner than standard—	
2-90	Throttle valve	.10		.068", .064", .043"	.10
3-258S	Throttle shaft and lever ass'y. (Sup. by 3-265S)	.80	75-104	Metering rod—standard—.065", .060", .040"	.30
3-265S	Throttle shaft and lever assembly	.80	89-9	Dust cover attaching screw lock washer	
4A-40	Throttle shaft dog (Superseded by 4A-54)	.10		(Use with 101-22)	.01
4A-54	Throttle shaft dog	.10	86-11	Air horn attaching screw lock washer	.01
60172S	Air horn and climatic control assembly	5.50	86-15	Flange stud lock washer	.01
6-177S	Air horn and piston housing assembly	2.00	86-19	Plunger washer (Inner)	.03
7-77S	Choke valve assembly	.50	86-20	Plunger washer (Outer)	.03
10A-315	Manifold stove connection and tubing ass'y	.50	86-21	Plunger shaft lock washer	.01
11-135	Low speed jet	.20	97-15	Plunger cup	.15
11B-12	Rivet plug	.02	98-20	Compression coupling nut	.10
11B-25	Check valve passage plug	.10	99-15	Compression coupling cone	.05
11B-26	Rivet plug	.02	100-16	Throttle lever adjusting screw (Sup. by 101-121)	.05
11B-27	Nozzle and idle passage plug	.10	101-22	Bowl cover attaching screw (Sup. by 101-143S)	.05
11B-65	Anti-percolating plug	.10	101-28	Throttle shaft arm clamp screw	.05
11B-66S	Anti-percolating plug and bracket assembly	.25	101-29	Air horn attaching screw	.05
12-190	Nozzle	.30	101-65	Thermostat housing attaching screw	2 for .05
14-198S	Choke lever, pin and screw assembly	.25	101-76	Fast idle block attaching screw	.05
14-199S	Choke piston lever, link and shaft assembly	.60	101-78	Choke lever clamp screw	.05
20-22	*Needle seat gasket	.05	101-121	Throttle lever adjusting screw	.05
20-26	*Metering rod gasket	.05	101-143S	Bowl cover attaching screw and washer ass'y.	.05
20-29	Pump cylinder bushing gasket—upper	.05	105A-12	Plunger shaft hex nut	.05
20-34	Nozzle gasket	.05	105A-13	Flange stud nut	.05
20-36	Anti-percolator plug gasket	.05	114-23S	Throttle shaft arm and screw assembly	.20
20-50	Dash pot cylinder gasket	.05	115-22	Dash pot connector rod	.15
20-59	Suction passage gasket	.10	115-23	Throttle connector rod	.15
21-45S	Float and lever assembly	.80	117-28	Connector link	.05
24-15	Float lever pin	.05	118-25	Dust cover	.50
25-33S	Needle and seat assembly	.80	120-51S	Metering rod jet and gasket ass'y, .09275"	.30
30-17	Strainer—ball check (Sup. by 30-20)	.10	121-27	Bowl cover gasket	.10
30-20	Strainer—ball check	.10	122-11S	Discharge ball check assembly	.25
30-23	Strainer—piston housing	.15	122-17S	Intake ball check assembly	.25
30A-39	Idle adjustment screw	.30	122-29S	Disk check assembly	.25
39-11	Valve attaching screw	2 for .05	129-12	Metering rod disk	.02
48-35	Pump jet .025"	.15	136-19	†Plug washer (Conical) 136-50 (Flat)	.01
53-39	Dash pot cylinder	.30	136-20	†Plug washer (Conical) 136-49 (Flat)	.01
53A-79S	Pump arm, spring and countershaft ass'y	.50	136-27	†Plug washer (Conical) 136-48 (Flat)	.01
53A-101S	Dash pot arm and bracket assembly	.30	144-11	Throttle lever screw spg. (Use only with 100-16)	.03
61-23	Plunger spring	.10	146-25	Bowl cover	1.00
61-57	Adjustment screw spring	.05	150-50	Pin—anti-percolator	.05
61-63	Pump spring	.10	150-62	Piston pin	.02
51-75	Metering rod spring	.10	150A-10	Pin spring	.01
61-102	Anti-percolator rocker arm spring	.05	156-15	Gas line nipple	.10
61-131	Throttle shaft dog spring	.10	160-31	Choke piston (Supp. by 160-35)	.20
61-132	Fast idle link spring	.05	160-35	Choke piston	.20
63-33	Thermostat housing retainer	.02	170-73S	Thermostatic housing and coil assembly	2.00
64-25	Plunger leader	.25	179-15	Cork insulator strip (Superseded by 189-18)	.10
64-28S	Pump plunger and rod assembly (Identify by shaft No. 49-85)	.90	179-18	Cork insulator strip	.10
64-35S	Dash pot plunger and rod assembly (Identify by Shaft No. 49-98)	.90	180-13	Anti-percolator bracket	.10
			181-23S	Fast Idle block and link ass'y. (Sup. by 181-29S)	.30
			181-29S	Fast idle block and link assembly	.30
			184-11S	Anti-percolating cap and rocker arm assembly	.25

*Gaskets so marked must be soaked in 90 proof denatured alcohol for 15 minutes, installed on the part and let dry before using.

†The use of flat or conical plug washers should be determined by shape of seat in casting.

CAR SERIAL NUMBERS
250000 and Higher

CAR SERIAL NUMBERS
344S-72-101 and Higher
377S-72-11023 and higher



Casting No. 148 on face of flange

TERRAPLANE

"72" Six

1937

Superseded by 461S)

WDO Dual Down-Draft Carburetors—Models 344 & 377S—List Price \$26.00
A \$6.00 exchange allowance is deducted from the list price if buyer turns in old carburetor

CARBURETOR SPECIFICATIONS

For Terraplane Six Cylinder Engine: 3 Inch Bore, 5 Inch Stroke

Dimensions: 1 inch Dual 4 bolt flange
Primary venturi, 11/32 inch.
Secondary venturi, 21/32 inch.
Main venturi, 1-1/6 inch I. D.

Float Level: Distance from float to bowl cover to be 15/64 inch when needle is seated. (Use T-109-32 Gauge).

Outside Vent: No. 20 drill size. No inside vent.

Gasoline Intake: Square vertical needle. No. 38 drill in needle seat.

Gasoline Line Connection: 5/16 inch S. A. E. nipple

Low Speed Jet Tube: Jet, No. 71 drill size
By-pass in body, No. 49 drill size.
Economizer in body, No. 48 drill size.
Idle bleed, No. 54 drill size.

Idle Port: Length, .145 inch; width, .030 inch.

Idle Port Opening: .013 to .019 inch with valve tightly closed

Idle Screw Seat: No. 52 drill.

Set Idle Adjustment Screw: 1/4 to 3/4 turn open. For richer mixture, turn

screw out. Do not attempt to idle engine below 350 r. p. m.

Main Nozzle: In primary venturi, angle 45° discharge.
Closed tip: Top hole No. 70 drill on 45° angle
Lower hole No 52 drill on 60° angle

Nozzle Retainer Plug: Jet size No. 30 drill.

Metering Rod: (348S) Economy step, .066 inch diameter; power step, .052 inch diameter. (331S) Economy step .065 inch diameter; middle step .061 inch diameter; power step, .040 inch diameter. Length, 3-25/64 inches.

Metering Rod Jet: .09275 inch diameter drill

Metering Rod Setting: Use gauge Part No. T109-27 (2.359 inches.)

Accelerating Pump: Low pressure type, with adjustable stroke.
Discharge Jet, No. 72 drill size.
Intake ball check, No. 62 drill size.
Discharge ball check, No. 45 drill size.

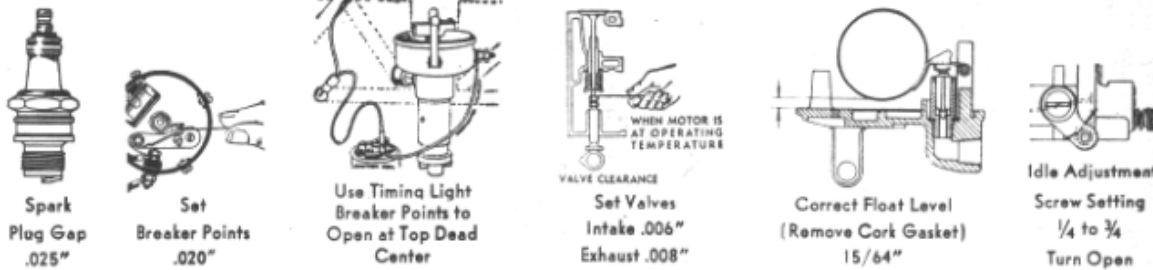
Pump Adjustment: 15/64 inch plunger travel. Use gauge No. T109-117S.

Choke: Carter Climatic Control (344S) set at index; (377S) set 2 points rich. Butterfly type, with pressure relief poppet valve.

Vacuum Spark Port: None

Motor Tune-Up—Be Accurate! Always Use Feeler Gauges!

CAUTION: Change worn or leaky flange gaskets. Tighten manifold bolts and test compression before adjusting carburetor.



CARBURETOR ADJUSTMENTS

PUMP ADJUSTMENT: With pump connector link in short stroke (lower hole) adjust throttle connector rod by bending to give 15/64" pump stroke (plunger travel). Full pump stroke is obtained by moving throttle from seated to wide open position. Travel can be checked by marking shaft at wide open position, and fully closed position, and gauging distance between marks. (Or use pump travel gauge No. T109-117S.)

METERING ROD ADJUSTMENT should be made when reassembling carburetor or when leaner than standard rods are installed. (Do not disturb pump adjustment.) Correct setting of metering rods is important. Procedure is as follows:

- A. Remove air horn and climatic control assembly.
- B. Back out throttle lever adjusting screw, so that throttle valves close tight, and loosen anti-percolator arm screw.
- C. Remove pin spring from metering rod pin and slide the pin from metering rod arm, taking care that pin spring and metering rod springs are not bent or lost. Lift out metering rods and remove brass metering rod disk retainer by loosening small brass screw. Remove, but do not lose the two small metering rod disks beneath this plate.

D. Insert two metering rod gauges, tool No. T109-27 in place of metering rods, seating tapered end in metering rod jet. Put metering rod pin in place in metering rod arm. Metering rod pin should now rest at bottom of notches in metering rod gauges allowing for .005 inch variation on either gauge. Tighten anti-percolator arm screw with metering rod arm in thin position.

E. Remove gauges and replace metering rod disks, retainer and screw. Install metering rods, spring and pin spring and connect metering rod spring. Graphite grease should be put in holes so that pump arm shaft operates freely. **ANTI-PERCOLATOR ADJUSTMENT:** Back out throttle lever adjusting screw. Anti-percolator should be checked after metering rods setting and installation of metering rods on carburetor.

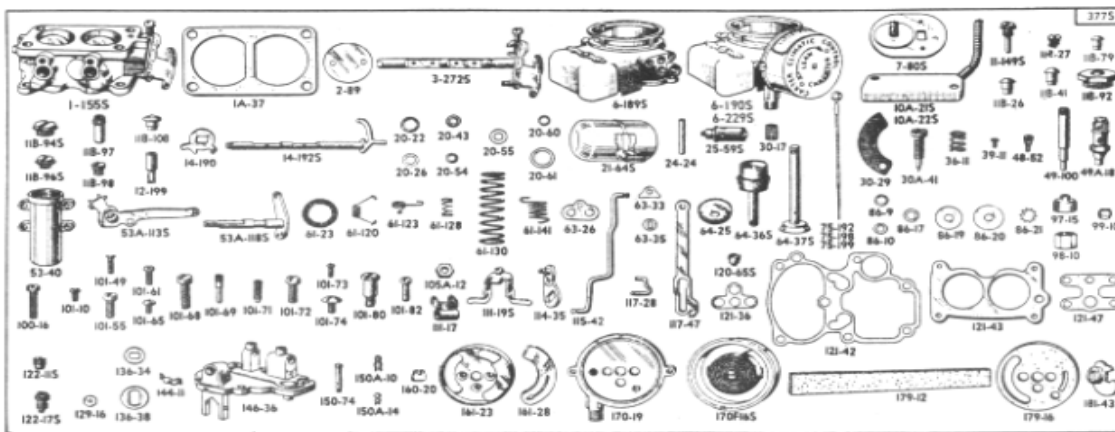
Do not disturb metering rods or pump adjustments.

With throttle valves tightly closed insert .015 inch feeler gauge between anti-percolator stem and lip on anti-percolator arm, and adjust lips on anti-percolator arm to depress anti-percolator stem so indicator line is flush with top of anti-percolator plug. Since there are two anti-percolator units on this carburetor,

EFFECTIVE JANUARY 1, 1948, ADD 30% TO LIST PRICE OF CARBURETERS AND 5% TO ALL OTHER PRICES SHOWN WITH FRACTIONAL ADJUSTMENT TO NEAREST EVEN CENT.

great care must be taken so that an even adjustment is made on both lips.
UNLOADER ADJUSTMENT: With throttle wide open, distance between upper edge of choke valve and wall of air horn should be ¼ inch. Check with T190-31 gauge. Adjustment can be made by bending lip on fast idle connector link. If unloader is adjusted properly, with throttle wide open move choke valve wide open and choke valve

will be locked in wide open position. Closing the throttle will release choke valve. Choke trip lever is notched out for this setting.
FAST IDLE ADJUSTMENT: Hold choke valve tightly closed and adjust fast idle arm screw to give .018 inch opening between edge of throttle valve and bore of carburetor side opposite port. (Use gauge T109-44).



Terraplane "72"—1937—Carburetor Nos. 344S-377S—List Price \$26.00

WHEN SERVICING, USE GASKET ASSORTMENT No. 125—PRICE \$1.20 REPAIR PARTS PKG. No. 1053A PRICE \$4.95

PART NAMES IN BOLD TYPE, LISTED BELOW, INDICATE CONTENTS OF REPAIR PACKAGE.

Part No.	PARTS LIST	List Price	Part No.	PARTS LIST	List Price
1-155S	Body flange assembly	\$4.00	86-12	Flange stud lock washer	.01
1A-37	Flange gasket —1" SAE	.10	86-17	†Air horn attaching screw lock washer	.01
2-89	Throttle valve	.10	86-19	Plunger washer (inner)	.03
3-272S	Throttle shaft and lever assembly	1.00	86-20	Plunger washer (outer)	.03
6-189S	Air horn and coverplate assembly	1.50	86-21	Plunger shaft lock washer	.01
6-190S	Air horn and climatic control ass'y (344S)	6.00	97-15	Plunger cup	.15
6-229S	Air horn and climatic control ass'y (377S)	6.00	98-10	Compression coupling nut	.15
7-80S	Choke valve assembly	.50	99-10	Compression coupling cone	.10
10A-21S	Manifold stove, connection and tubing ass'y	.50	100-16	Throttle lever adjusting screw (Sup. by 101-121)	.05
11-149S	Low speed jet and gasket assembly	.30	101-10	Metering rod arm clamp screw	.05
11B-12	Rivet plug (344S)	.02	101-49	Piston housing attaching screw	2 for .05
11B-26	Rivet plug (377S)	.02	101-55	Air horn attaching screw (inside) (377S) (Sup. by 101-146S)	.05
11B-27	Idle passage plug (early production)	.10	101-61	Bowl cover attaching screw (Sup. by 101-148S)	.05
11B-41	Rivet plug	.02	101-65	Thermostat housing attaching screw	2 for .05
11B-79	Rivet plug	.02	101-68	Body flange attaching screw (Sup. by 101-149S)	.05
11B-92	Dash pot cylinder plug	.30	101-69	Throttle centering screw	.05
11B-94S	Ball check passage plug and gasket assembly	.10	101-71	Fast idle adjustment screw	.05
11B-96S	Nozzle passage plug and gasket assembly	.10	101-72	Air horn attaching screw (Sup. by 101-150S)	.05
11B-97	Nozzle retainer plug	.10	101-73	Throttle valve attaching screw	2 for .05
11B-98	Pump jet passage plug	.10	101-74	Throttle shaft arm attaching screw	.05
11B-108	Idle hole rivet plug (late production)	.02	101-80	Dash pot cylinder attaching screw	.10-.05
12-199	Nozzle	.30	101-82	Dash pot cylinder attaching screw	.05
14-190	Choke trip lever	.10	101-121	Throttle lever adjusting screw	.05
14-192S	Choke piston lever and shaft assembly	.40	101-146S	Air horn attaching screw and washer assy. (inside) (377S)	.05
15-35S	Strainer nut and gasket assembly	.30	101-148S	Bow cover attaching screw and washer assembly	.05
20-22	*Needle seat gasket	.05	101-149S	Body flange attaching screw and washer assembly	.05
20-26	*Plug gasket	.05	101-150S	Air horn attaching screw and washer assembly	.05
20-35	Strainer nut gasket	.05	105A-11	Flange stud nut	.05
20-43	Suction passage gasket	.10	105A-12	Plunger shaft hex nut	.05
20-54	*Metering rod jet gasket	.05	111-17	Metering rod arm	.20
20-55	Idle passage gasket	.05	111-19S	Anti-percolator arm and screw assembly	.20
20-60	Nozzle gasket	.05	114-35	Throttle shaft arm	.06
20-61	Ball check plug gasket	.05	115-42	Throttle connector arm	.20
21-64S	Float and lever assembly	.80	117-28	Connector link	.05
24-24	Float lever pin	.05	117-47	Fast idle connector link	.10
25-59S	Needle and seat assembly	.80	120-.65S	Metering rod jet and gasket assembly .082"	.30
30-14	Strainer gauze	.10	121-36	Piston plate housing gasket	.05
30-17	Ball check strainer (Sup. by 30-20)	.10	121-42	Body gasket	.10
30-20	Ball check strainer	.10	121-43	Body flange gasket	.25
30-29	Piston plate strainer	.10	121-47	Dash pot cylinder gasket	.05
39A-41	Idle adjustment screw	.30	122-11S	Discharge ball check assembly	.25
36-11	Adjustment screw lock spring	.10	122-17S	Intake ball check assembly	.25
39-11	Valve attaching screw	2 for .05	122-55S	Blank relief check assembly (344S)	.10
48-52	Pump jet—.025"	.15	129-16	Metering rod disk	.02
49A-18S	Anti-percolating valve assembly	.50	136-34	Choke shaft washer	.02
53-40	Dash post cylinder	.50	136-38	Throttle shaft washer	.02
53A-113S	Dash pot arm and countershaft assembly	.40	144-11	Throttle lever screw spring (Use only with 100-16)	.03
53A-118S	Pump arm and countershaft assembly	.50	146-36	Bowl cover (Superceded by 146-52S)	.05
61-23	Plunger spring	.10	146-48	Bowl cover (Not sold separately—Part of 146-52S)	.05
61-120	Metering rod spring	.10	146-52S	Bowl cover and strainer assembly	1.30
61-123	Connector link spring	.10	150-74	Metering rod arm pin	.05
61-128	Connector rod spring	.05	150A-10	Pin spring	.01
61-130	Pump spring	.10	150A-14	Pin Spring	.01
61-141	Dash post arm spring	.10	160-20	Choke piston	.15
63-26	Metering rod disk retainer	.05	161-20	Port plate (344S)	.10
63-33	Thermostat housing retainer	.02	161-23	Piston plate	.25
63-35	Spring retainer	.05	161-28	Port plate ((377S)	.10
64-25	Plunger leather—Pump	.25	170-19	Piston plate housing	.50
64-36S	Pump plunger and rod ass'y (Identify by Shaft No 49-100)	.90	170F-16S	Thermostatic coil and housing assembly	2.25
64-37S	Dash post plunger and rod ass'y (Identify by Shaft No 49-102)	.90	179-12	Cork insulator strip	.10
75-192	Metering rod—Standard—.062"—.056"—.049"	.30	179-16	Cork insulator disk	.05
74-198	Metering rod—1 size lean—.063"—.063"—to .057"—.050"	.30	181-21S	Fast idle cam and collar assembly (344S)	.15
86-9	†Bowl cover attaching screw lock washer	.01	181-43S	Fast idle cam and collar assembly (377S)	.15
86-10	Dash pot attaching screw lock washer	.01			

EFFECTIVE JANUARY 1, 1948, ADD 30% TO LIST PRICE OF CARBURETERS AND 5% TO ALL OTHER PRICES SHOWN WITH FRACTIONAL ADJUSTMENT TO NEAREST EVEN CENT.

*Gaskets so marked must be soaked in 90 proof denatured alcohol for 15 minutes, installed on the part and let dry before using.

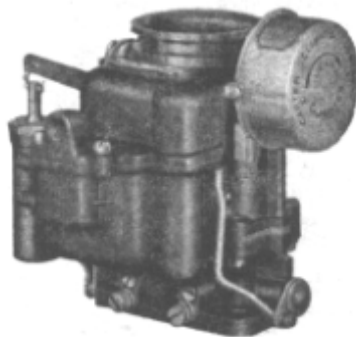
†Use with 101-55, 101-68 and 101-72

‡Use with 101-61

CAR SERIAL NUMBERS
*360000 and Higher

CAR SERIAL NUMBERS
82-101 and Higher

*After motor number 371630 motor
number same as car number



Casting No. 148 on face of flange

TERRAPLANE "82" Six 1938 (Superseded by 461S)

WDO Dual Down-Draft Climatic Control Carburetors—Models 402S—List Price \$26.00

A \$6.00 exchange allowance is deducted from the list price if buyer turns in old carburetor

CARBURETOR SPECIFICATIONS

For Hudson-Terraplane Six Cylinder Engine: 3 Inch Bore, 5 Inch Stroke

Dimensions: 1 inch Dual 4 bolt flange

- Primary venturi, 11/32 inch.
- Secondary venturi, 21/32 inch.
- Main venturi, 1-1/6 inch I. D.

Float Level: Distance from float to bowl cover to be 15/64 inch when needle is seated. (Use T-109-32 Gauge).

Outside Vent: No. 20 drill size. No inside vent.

Gasoline Intake: Square vertical needle. No. 38 drill in needle seat.

Gasoline Line Connection: 5/16 inch Weatherhead nipple

Low Speed Jet Tube: Jet, No. 71 drill size
By-pass in body, No. 49 drill size.
Economizer in body, No. 48 drill size.
Idle bleed, No. 54 drill size.

Idle Port: Length, .145 inch; width, .030 inch.

Idle Port Opening: .013 to .019 inch with valve tightly closed

Idle Screw Seat: No. 52 drill.

Set Idle Adjustment Screw: 1/4 to 3/4 turn open. For richer mixture, turn

screw out. Do not attempt to idle engine below 350 r. p. m.

Main Nozzle: In primary venturi, angle 45° discharge.
Closed tip: Top hole No. 70 drill on 45° angle
Lower hole No 52 drill on 60° angle

Nozzle Retainer Plug: Jet size No. 30 drill.

Metering Rod: Economy step, .062 inch diameter; middle step tapers to .056 inch diameter; power step, .049 inch diameter. Length, 2-59/64 inches.

Metering Rod Jet: .082 inch drill

Metering Rod Setting: Use gauge Part No. T109-27 (2.359 inches.)

Accelerating Pump: Low pressure type, with adjustable stroke.

- Discharge Jet, No. 72 drill.
- Intake ball check, No. 62 drill.
- Discharge ball check, No. 45 drill.
- Relief passage (to outside), No. 42.

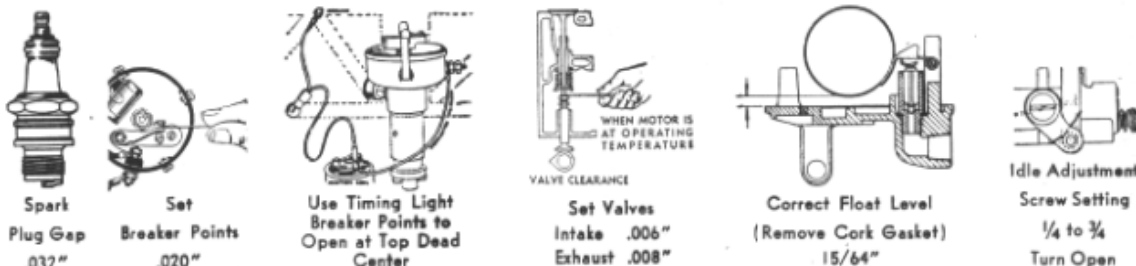
Pump Adjustment: 15/64 inch plunger travel. Use gauge No. T109-117S

Choke: Carter Climatic Control set at index. Butterfly type, offset valve. Choke heat suction hole, in air horn, size No. 20 (.147" drill. Slow Closing Throttle.

Vacuum Spark Port: None

Motor Tune-Up—Be Accurate! Always Use Feeler Gauges!

CAUTION: Change worn or leaky flange gaskets. Tighten manifold bolts and test compression before adjusting carburetor.



CARBURETOR ADJUSTMENTS

PUMP ADJUSTMENT: With pump connector link in outer hole (short stroke), throttle adjustment screw backed out, pump plunger should travel 14/64 inch from closed to wide open position. Use gauge T109-117S. Adjustment can be made by bending throttle connector rod at lower angle.

METERING ROD ADJUSTMENT should be made when reassembling carburetor or when leaner than standard rods are installed. (Do not disturb pump adjustment.) Correct setting of metering rods is important. Procedure is as follows:

- Remove air horn and climatic control assembly.
- Back out throttle lever adjusting screw, so that throttle valves close tight, and loosen anti-percolator arm screw.
- Remove pin spring from metering rod pin and slide the pin from metering rod arm, taking care that pin spring and metering rod springs are not bent or lost. Lift out metering rods and remove brass metering rod disk retainer by loosening small brass screw. Remove, but do

not lose the two small metering rod disks beneath this plate.

D. Insert two metering rod gauges, tool No. T109-27 in place of metering rods, seating tapered end in metering rod jet. Put metering rod pin in place in metering rod arm. Metering rod pin should now rest at bottom of notches in metering rod gauges allowing for .005 inch variation on either gauge. Tighten anti-percolator arm screw with metering rod arm in thin position.

E. Remove gauges and replace metering rod disks, retainer and screw. Install metering rods, spring and pin spring and connect metering rod spring. Graphite grease should be put in holes so that pump arm shaft operates freely.

ANTI-PERCOLATOR ADJUSTMENT: Back out throttle lever adjusting screw. Anti-percolator should be checked after metering rods setting and installation of metering rods on carburetor.

Do not disturb metering rods or pump adjustments.

With throttle valves tightly closed insert .015 inch feeler gauge between anti-percolator stem and lip on anti-percolator arm, and adjust lips on anti-percolator arm to depress anti-percolator stem so indicator

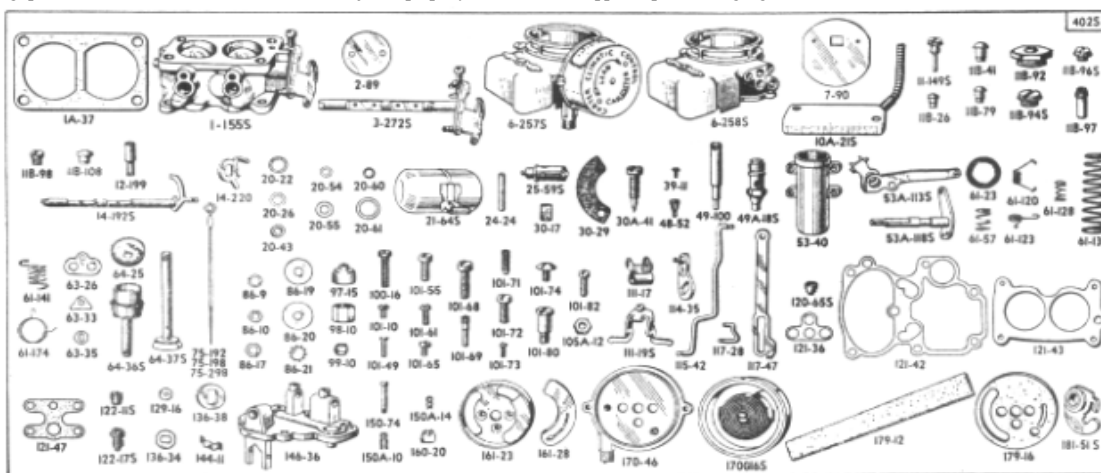
EFFECTIVE JANUARY 1, 1947, ADD 20% TO LIST PRICE OF CARBURETERS AND 5% TO ALL OTHER PRICES SHOWN WITH FRACTIONAL ADJUSTMENT TO NEAREST EVEN CENT.

line is flush with top of anti-percolator plug. Since there are two anti-percolator units on this carburetor, great care must be taken so that an even adjustment is made on both lips.

UNLOADER ADJUSTMENT: With throttle wide open, distance between upper edge of choke valve and wall of air horn should be ¼ inch. Check with T190-31 gauge. Adjustment can be made by bending lip on fast idle connector link. If unloader is adjusted properly, with throttle

wide open move choke valve wide open and choke valve will be locked in wide open position. Closing the throttle will release choke valve. Choke trip lever is notched out for this setting.

FAST IDLE ADJUSTMENT: Hold choke valve tightly closed and adjust fast idle arm screw to give .018 inch opening between edge of throttle valve and bore of carburetor side opposite port. (Use gauge T109-44).



Hudson-Terraplane—1938—Carburetor No. 402S—List Price \$26.00

WHEN SERVICING, USE GASKET ASSORTMENT No. 125—PRICE \$1.20; REPAIR PARTS PACKAGE No. 1053A, PRICE \$4.95

Part No.	PARTS LIST	List Price	Part No.	PARTS LIST	List Price
1A-37	Flange gasket —(1" dual special)	\$4.00	86-12	Flange stud lock washer	.01
1-155S	Body flange assembly	.10	86-17	†Air horn attaching screw lock washer	.01
2-89	Throttle valve	.10	86-19	Plunger washer (inner)	.03
3-272S	Throttle shaft and lever assembly	1.00	86-20	Plunger washer (outer)	.03
6-257S	Air horn and climatic control assembly	6.00	86-21	Plunger shaft lock washer	.01
6-258S	Air horn and cover plate assembly	1.50	97-15	Plunger cup	.15
7-90	Choke valve	.20	98-10	Compression coupling nut	.15
10A-21S	Manifold stove, connection and tubing ass'y	.50	99-10	Compression coupling cone	.10
11-149S	Low speed jet and gasket assembly	.50	100-16	Throttle lever adjusting screw (Sup. by 101-121)	.05
11B-26	Rivet plug	.02	101-10	Metering rod arm clamp screw	.05
11B-41	Rivet plug	.02	101-49	Piston housing attaching screw	2 for .05
11B-79	Rivet plug	.02	101-55	Air horn attaching screw (inside) (377S) (Sup. by 101-146S)	.05
11B-92	Dash pot cylinder plug	.02	101-61	Bowl cover attaching screw (Sup. by 101-148S)	.05
11B-94S	Ball check passage plug and gasket assembly	.10	101-65	Thermostat housing attaching screw	2 for .05
11B-96S	Nozzle passage plug and gasket assembly	.10	101-68	Body flange attaching screw (Sup. by 101-149S)	.05
11B-97	Nozzle retainer plug	.10	101-69	Throttle centering screw	.05
11B-98	Pump jet passage plug	.10	101-71	Fast idle adjustment screw	.05
11B-108	Idle hole rivet plug	.02	101-72	Air horn attaching screw (Sup. by 101-150S)	.05
12-199	Nozzle	.10	101-73	Throttle valve attaching screw	2 for .05
14-192S	Choke piston lever and shaft assembly	.40	101-74	Throttle shaft arm attaching screw	.05
14-220	Strainer nut and gasket assembly	.30	101-80	Dash pot arm attaching screw	.10
20-22	*Needle seat gasket	.05	101-82	Dash pot cylinder attaching screw	.05
20-26	*Plug gasket	.05	101-121	Throttle lever adjusting screw	.05
20-43	Hot air passage gasket	.10	101-146S	Air horn attaching screw and washer assy. (inside)	.05
20-54	*Metering rod jet gasket	.05	101-148S	Bow cover attaching screw and washer assembly	.05
20-55	Idle passage gasket	.05	101-149S	Body flange attaching screw and washer assembly	.05
20-60	Nozzle gasket	.05	101-150S	Air horn attaching screw and washer assembly	.05
20-61	Ball check plug gasket	.05	105A-11	Flange stud nut	.05
21-64S	Float and lever assembly	.80	105A-12	Plunger shaft hex nut	.05
24-24	Float lever pin	.05	111-17	Metering rod arm	.20
25-59S	Needle and seat assembly	.80	111-19S	Anti-percolator arm and screw assembly	.20
30-17	Ball check strainer (Sup. by 30-20)	.10	114-35	Throttle shaft arm	.06
30-20	Ball check strainer	.10	115-42	Throttle connector arm	.20
30-29	*Piston plate strainer	.10	117-28	Connector link	.05
30A-41	Idle adjustment screw	.30	117-47	Fast idle connector link	.10
39-11	Valve attaching screw	2 for .05	120-.65S	Metering rod jet and gasket assembly .082"	.30
48-52	Pump jet—.025"	.10	121-36	Piston plate housing gasket	.05
49A-18S	Anti-percolating valve assembly	.50	121-42	Body gasket	.10
53-40	Dash post cylinder	.50	121-43	Body flange gasket	.25
53A-113S	Dash pot arm and countershaft assembly	.40	121-47	Dash pot cylinder gasket	.05
53A-118S	Pump arm and countershaft assembly	.50	122-11S	Discharge ball check assembly	.25
61-23	Plunger spring	.10	122-17S	Intake ball check assembly	.25
61-57	Adjustment screw lock spring	.05	129-16	Metering rod disk	.02
61-120	Metering rod spring	.10	136-34	Choke shaft washer	.02
61-123	Connector link spring	.10	136-38	Throttle shaft washer	.02
61-128	Connector rod spring	.05	144-11	Throttle lever screw spring (Use only with 100-16)	.03
61-130	Pump spring	.10	146-36	Bowl cover	1.00
61-141	*Dash post arm spring	.10	150-74	Metering rod arm pin	.05
63-26	Metering rod disk retainer	.05	150A-10	Pin spring	.01
63-33	Thermostat housing retainer	.02	150A-14	Pin Spring	.01
63-35	Spring retainer	.05	160-20	Choke piston	.15
64-25	Plunger leather—Pump	.25	161-23	Piston plate	.25
64-36S	Pump plunger and rod ass'y (Identify by Shaft No 49-100)	.90	161-28	Port plate	.10
64-37S	Dash post plunger and rod ass'y	.90	170-46	Piston plate housing	.50
75-192	Metering rod—Standard—.062"-.062" to .056"-.049"	.30	170G-16S	Thermostatic coil and housing assembly	2.25
74-198	Metering rod—1 size lean—.063"-.063" to .057"-.050"	.30	179-12	Cork insulator strip	.10
75-298	*Metering rod—2 sizes lean—.06"-.064" to .058"-.051"	.01	179-16	Cork insulator disk	.05
86-9	†Bowl cover attaching screw lock washer	.01	181-51S	Fast idle cam and collar assembly	.20
86-10	Dash pot attaching screw lock washer	.01			

List price of \$300 per 100 applies to parts listed at \$0.05 each
 List price of \$1.75 per 100 applies to parts listed at \$0.03 each

List price of \$1.25 per 100 applies to parts listed at \$0.02 each
 List price of \$0.05 per 100 applies to parts listed at \$0.01 each

*Gaskets so marked must be soaked in 90 proof denatured alcohol for 15 minutes, installed on the part and let dry before using.

*For altitude use only

†Use with 101-55, 101-68 and 101-72

‡Use with 101-61

EFFECTIVE JANUARY 1, 1947, ADD 20% TO LIST PRICE OF CARBURETERS AND 5% TO ALL OTHER PRICES SHOWN WITH FRACTIONAL ADJUSTMENT TO NEAREST EVEN CENT.