

MARVEL
CARBURETER

AND
HEAT CONTROL

As Used on 1929

Hudson Super-Six

“BOOKLET VB”

MARVEL CARBURETER CO.

FLINT, MICHIGAN

U. S. A.

Model “VB” Carbureter

Used on 1929 Essex Super-Six Cars

The carbureter measures the fuel charges for the engine and automatically mixes them with the proper amount of air to form a highly combustible gas. The Marvel model “vb” carbureter is of the automatic air valve, heat controlled type. Its outstanding advantages are:

1. Simplicity of adjustment and operation.
2. Quick starting in any weather.
3. Automatic and manually controlled heat application to insure complete vaporization of fuel and maximum quick warming-up in coldest weather, thereby reducing overuse of the choker and resultant crankcase dilution to the minimum.
4. Economy in fuel consumption.
5. Ease of adjustment of heat control to meet varied driving and climatic conditions.

CONSTRUCTION

The construction embodies a main body or mixing chamber and a conventional float chamber bowl with fuel strainer attached at point of entrance of fuel to bowl. Within the mixing chamber are three nozzles which proportion the amount of gasoline used in the mixture. These nozzles of the fixed opening non-adjustable type. One of these nozzles, called the “low speed” is situated in a fixed air opening, the venturi, The other two, called the “high speed” and “intermediate high speed” , are controlled by the automatic air valve, and located under same. An air screw is provided which regulates the pressure of the air valve spring enclosed therein. This constitutes the only mixture adjustment on the carbureter. Within this screw is also enclosed a plunger connected by a link to the air valve.

The function of this plunger is to provide a resistance in addition to that of the air valve spring to assist in acceleration. This arrangement of plunger and air valve screw is termed the dash pot.

A further control of the high speed jet is provided by the "economizer" which is a fuel metering valve operated by the carburetor throttle. This valve provides the maximum fuel feed to the "high speed" nozzle when the throttle is fully opened for high speeds, hill power and for quick "pick-up". During the ordinary driving ranges this valve controls the amount of fuel being used, thus providing all the economy possible. This valve is entirely automatic and requires no adjustment.

CHOKER AND BY-PASS

A choke button is provided on the instrument board to assist in starting. Pulling out this button does two things in the carburetor. First, it closes a butterfly choker valve in the air inlet of carburetor, which restricts the air opening and consequently produces a very rich mixture for starting. Second, thru inter-connection of the choker lever and by-pass valve (See cuts p. 4-5), this motion likewise opens a passage between mixing chamber, just above low speed nozzle, and the intake manifold passage, just above the throttle. (See sketch page 4). Due to the higher suction existing above the throttle, the over-rich starting mixture is therefore immediately drawn thru the fixed opening in by-pass valve, up past the throttle and on into the engine. Partial release of the choker button on instrument board after starting, releases choker valve so that it positions itself to the needs of the engine due to the action of the counterweights attached to this choker valve, which now becomes automatic in its action, the weights allowing the valve to open or close automatically, depending on the engine speed and the quantity

of air passing thru carbureter. This partial release of choker button does not, however, change position of by-pass valve opening, which remains open, and engine therefore runs at an increased idling speed during this period, same as would be obtained if the throttle were manually opened slightly and there was no by-pass valve. This gives the car a speed of approximately 14 to 15 miles per hour on the road automatically, without the necessity of opening throttle, and is of great assistance in getting under way after starting a cold engine.

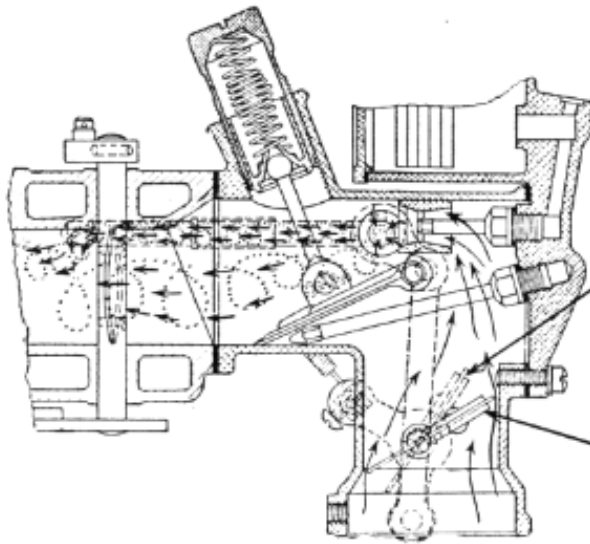
Reference to sketch on page 4 will show this action, and likewise the position of choker valve.

As soon as engine is sufficiently warmed up to drive with choker button completely released, by-pass valve returns to its normal position shown in sketch on page 5 and choker valve is automatically locked in wide open position.

HEAT CONTROL

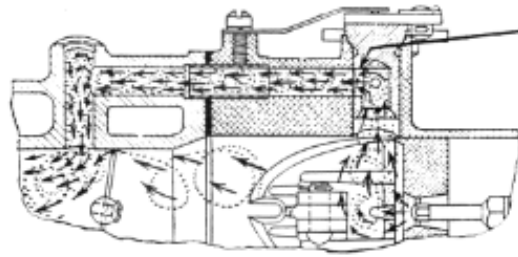
The carbureter and manifolds have been designed to utilize the exhaust gases of the engine to insure complete vaporization and a consequent minimum consumption of fuel. This is accomplished by an exhaust jacket in a double walled riser placed between the carbureter and the intake manifold. This riser is connected to the exhaust manifold in such a manner that the exhaust gases pass between the walls of the riser, through the heat jacket and the outlet to the exhaust pipe. The amount of heat thus furnished to the riser is controlled by two valves: one in the main exhaust above the exhaust outlet from the riser and one in the exhaust inlet and of riser heat jacket.

The valve in the main exhaust is connected to the throttle lever of carbureter in such a manner that the greatest amount of heat is had in the jackets of riser when the throttle is only partly open, as in idling

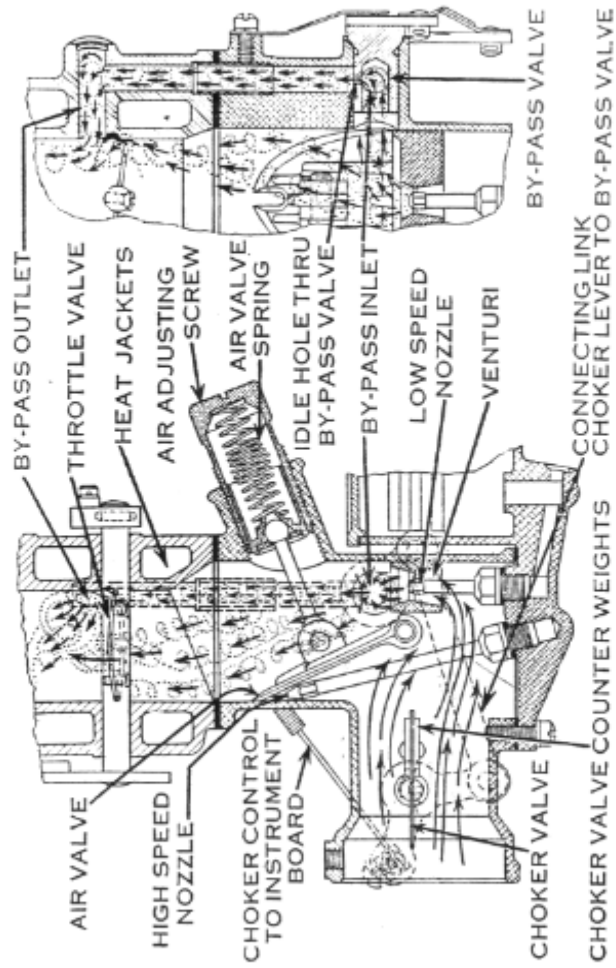


CHOKER-15 MPH CHOKER-30 MPH

Showing action of automatic choker, and showing action thru by-pass valve on starting and warming up



STARTING HOLE THRU BY-PASS VALVE



CHOKER VALVE COUNTER WEIGHTS
 CHOKER LEVER TO BY-PASS VALVE
 CHOKER VALVE
 CHOKER valve in normal open position and showing idle action thru by-pass valve in normal running position

and at low speeds, and a decreasing amount as the throttle is opened further for higher speeds. By means of the heat control lever below instrument board this automatic action of the heat valve may be varied to suit weather and driving conditions.

The valve described above in main exhaust line at rear end of engine is housed in a separate casting. On the front side of this casting will be noticed a boss acting as a locating stop for the damper valve lever. This stop indicates the closed position of the damper valve and is to be used in assembling control rod to carbureter, the normal position of damper valve lever being against this stop boss when heat control on instrument board is set at "Hot" position and throttle is closed.

The control lever below instrument board operates the valve in the exhaust inlet of the riser heat jacket simultaneously with the valve in the main exhaust and an adjustment by moving control lever to "Cold" may be had to the point where no exhaust gases pass thru the riser jacket thereby shutting off all the heat.

Gases from the main exhaust enter at opening "N" at back of riser (see cut on page 9) and pass through riser jackets, returning to exhaust pipe below valve "A".

It will be noted in cut that valve "A" is connected by means of connecting rod "H" to roller "E" operating in slot "D" of cam "C". The roller "E" is connected by means of a short, loose jointed, free lever, to lever "F" which in turn is attached in fixed position to throttle shaft "G". As throttle is opened, valve "A" is also opened due to the roller "E" at end of connecting rod "H" following the slot "D" in cam plate "C". Thus the volume of heat through heat jackets of riser will be lessened as the engine speed increases, depending upon the position of cam "C" controlled by lever "J". In the cut on

page 9 showing "Hot" or WARM UP POSITION, owing to action of slot "D" in cam "C" on position of valve "A" as throttle is opened, valve "A" is caused to remain closed (thus insuring most heat) until engine has attained a speed of approximately forty to forty-five miles per hour, after which at higher speed it opens automatically and rapidly to "wide open" thus insuring against back pressure and overheating.

The valve "B" in riser heat inlet is connected by a lever and link To the cam "C", the position of which is controlled by the lever "J" as stated. In the "Hot" or WARM UP POSITION it will be noted in cut this valve "B" is held wide open.

In the cut on page 10 showing "Medium" Driving Position, owing to the cam "C's" position having been changed from "Hot" by the control lever "J" below instrument board to half way down or "Medium," the valve "A" opens directly with the opening of the throttle, thus insuring less heat than in the "Hot" position but sufficient for normal driving. It will be noted in the cut that valve "B" in this setting is now partly closed.

The "Medium" setting of control lever should be used as soon as engine is warm and will give the best economy and performance under normal driving and weather conditions, and also when driving cross country in winter. If weather is very cold, after warming up in "Hot," drive with lever "J" further toward "Hot" from "Medium" or in the "Warm" position, especially if driving around town making frequent stops. If temperature of air is 85 or above, drive with lever "J" further toward "Cold" from "Medium" or on "Cool," and in extremely hot weather on "Cold."

For economy and best engine performance it is essential that driving be done with control lever "J" as near center at "Medium"

position as shown in cut on page 10 as driving and weather conditions permit.

In cut on page 11 showing "Cold" position owing to the cam "C's" position being still further changed by the control lever "J" below instrument board, the valve "A" at CLOSED THROTTLE POSITION is already open partially, and opens quickly with the throttle to full wide open position. At the same time it will be noted that valve "B" has been closed by cam "C," thus insuring in this setting no heat circulation through the system.

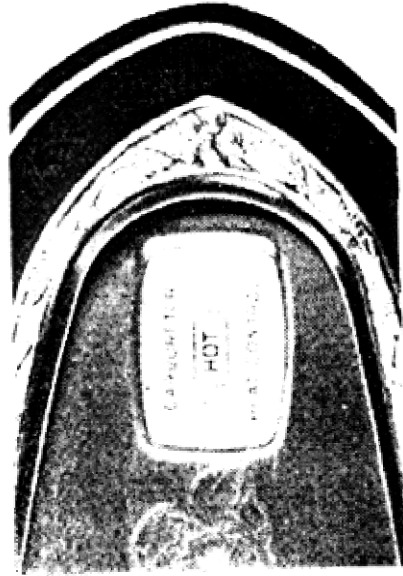
This, as stated, is the setting used only during hot weather or under certain constant heavy road conditions when the engine appears to lose power because of too much heat.

STARTING

To start engine, pull out choke button all the way. Advance spark lever about halfway and depress starter pedal.

The moment the engine fires the choke button should be pushed in very slightly and engine allowed to run at by-pass speed for a few minutes. If engine hesitates, pull out choke button slightly and push back in to a point where engine runs smoothly during this short period, the object being to secure momentarily a richer mixture to assist engine in warming up. Even in zero weather it is not necessary to run with choker out, except momentarily when just starting cold engine.

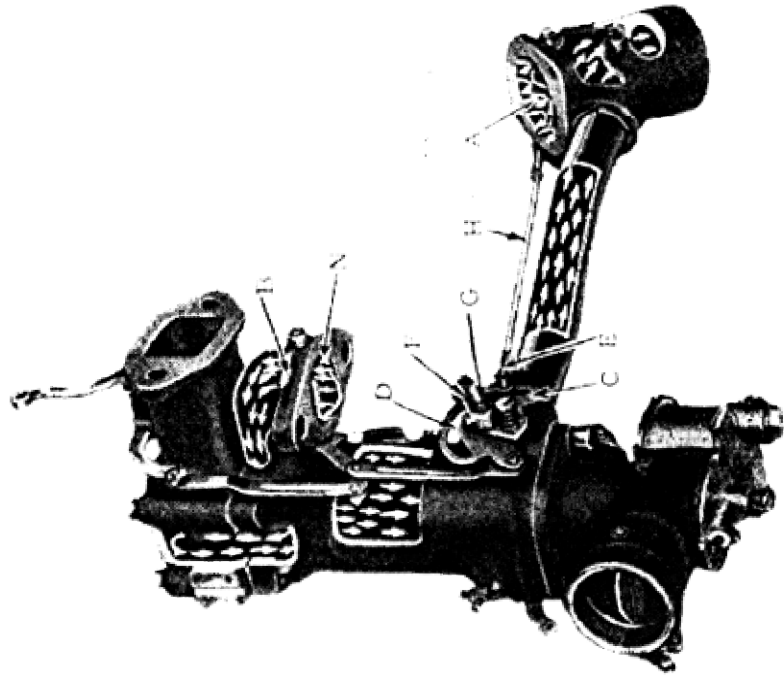
It should be remembered in cold weather, as stated above, that the setting of the heat control largely controls the performance.

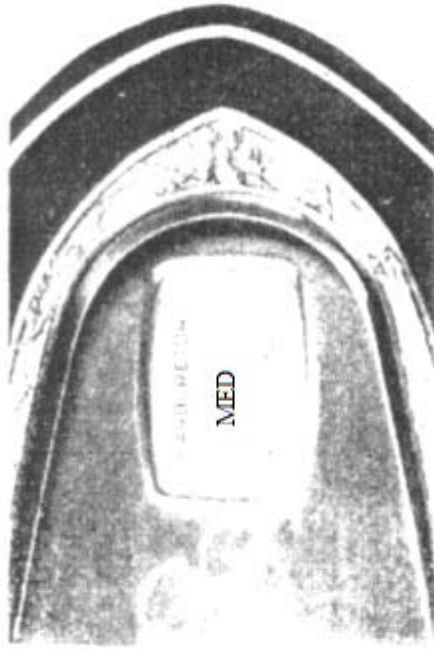


"HOT" OR WARM UP POSITION

Showing position of lever "J" below instrument board at "Hot" position and cam "C" on carburetor for supplying the most heat.

Valve "A" in main exhaust pipe closed and valve "B" inlet of riser body wide open, allowing maximum flow of heat. As throttle is opened valve "A" remains closed up to approximately 40-45 miles per hour, then opens wide with wide open position of throttle.

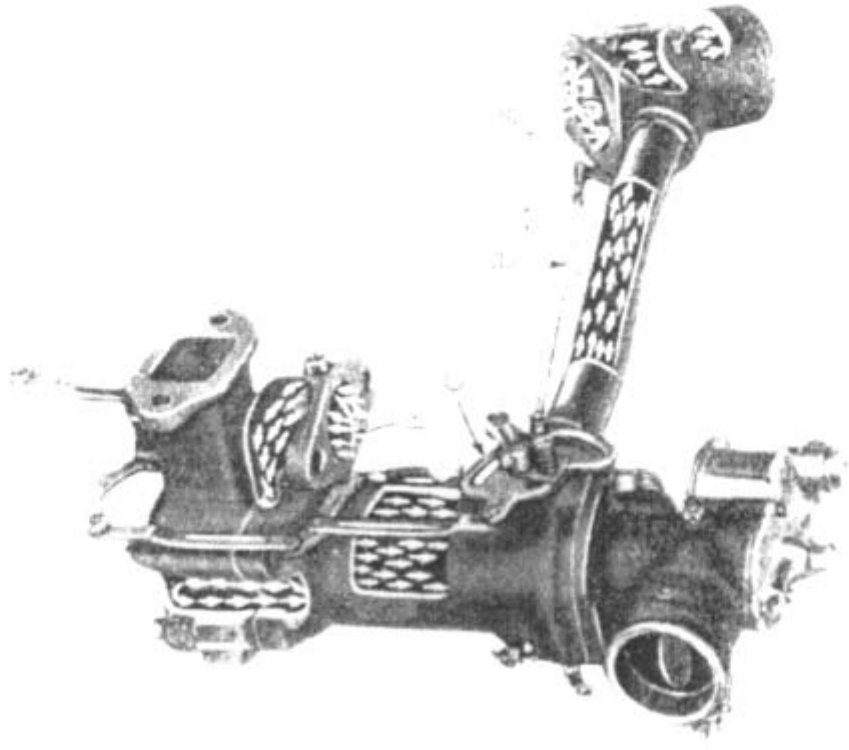


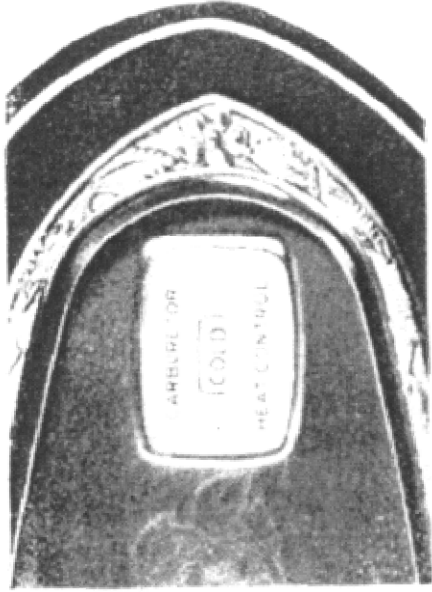


"MEDIUM OR NORMAL DRIVING POSITION

Control lever "J" below instrument board in Center at "Medium" position allowing sufficient flow of heat for normal driving and moderate weather conditions.

Valve "A" nearly closed at closed throttle position but opening quickly and promptly as throttle is opened. Valve "B" slightly closed.



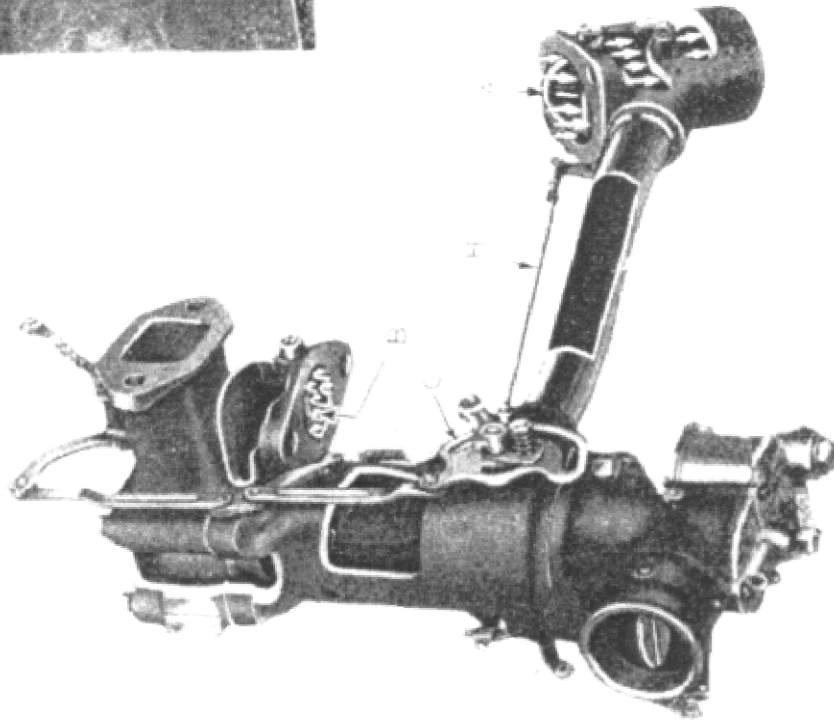


"COLD" OR HOT WEATHER DRIVING POSITION

Heat control lever "J" below instrument board at end of travel shutting off heat flow entirely.

Valve "A" half open and valve "B" fully closed.

In this setting for exhaust gasses pass through the riser jackets. As throttle is opened valve "A" will also open to wide open.



Therefore in cold weather, drive with heat enough to provide the same, which will not be obtained if control is in "Cool" position.

ADJUSTMENT

No change should be made in the carburetor adjustment until after an inspection has been made to determine if the trouble is in some other unit. It should be noted that the gasoline lines and strainer are clear, that there is gasoline in the vacuum tank, that there are no leaks at connections between carburetor and engine, that the ignition system is in proper condition, and that there is even compression in all cylinders.

If it is necessary to test adjustments or to make a readjustment proceed as follows:

Set air screw so that end is flush with the end of ratchet spring bearing against it.

Set heat control in "Warm" position, and leave in this position while making adjustment. Pull out choker to closed position and start engine in usual manner. As soon as engine has fired, release choker VERY SLIGHTLY. Run for a few moments until engine has warmed up, remembering never to use choker more than necessary, as when not needed it has a tendency to foul up engine and ruin the lubricating oil in the crankcase.

Next, set air screw for good idle by either turning in to the right a little or backing out to the left as the needs of the engine require.

With the engine warmed up, the adjustment of the air screw for proper idling is easily accomplished by using a little care. If the air screw is turned in too tight, the motor will roll or appear sluggish. If the air screw is not tight enough, the motor will hesitate and stumble, and perhaps stop entirely. To make a nice clean adjustment for idle turn air screw back to the left until engine hesitates, indicating that mixture has too much air and is too lean; next turn air screw in to the right three or four notches at a time until engine

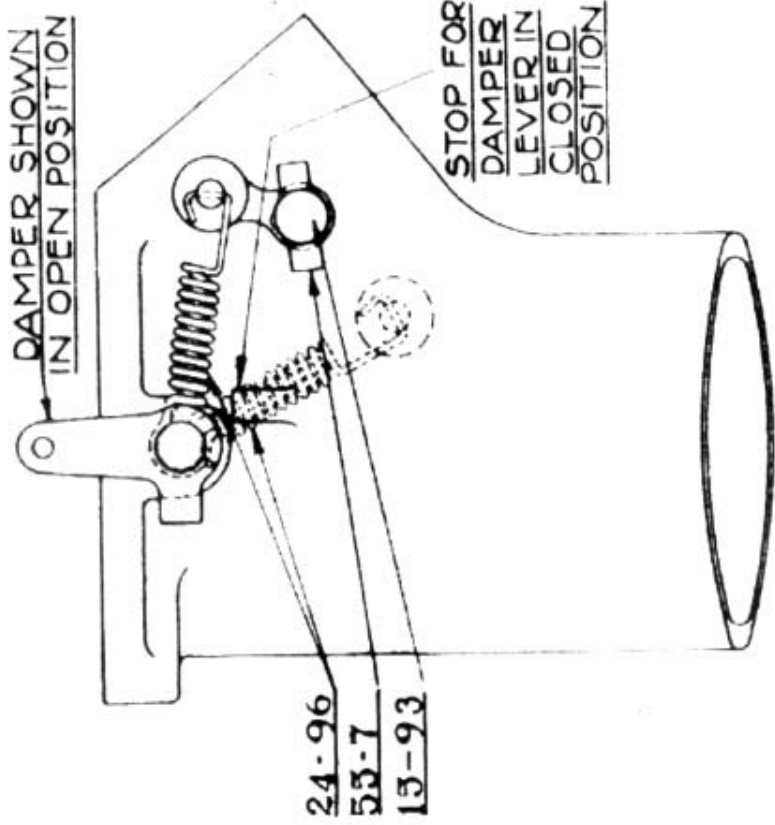
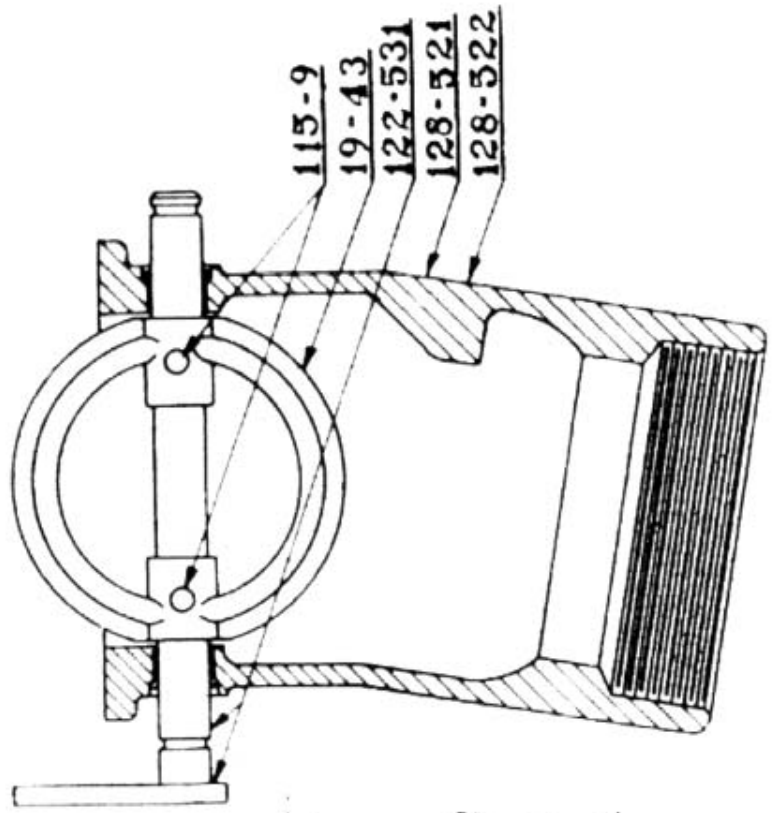
until engine runs smoothly. This idle setting accomplished, by proceeding as directed above, the proper carbureter adjustment for the entire range of the engine will have been attained.

If the engine idles too fast with throttle closed, the latter may be adjusted by means of the throttle lever adjusting screw.

ALTITUDE CHANGES

No change is necessary for touring through mountainous country but for cars operating permanently in territory of 4000 feet elevation or over we advise going to the nearest Hudson-Essex dealer or Marvel service, station and changing to 49-130- D-28 High Speed Jet and 49-170-E-24 Intermediate High Speed Jet for the best results in such altitude territory.

Do not, under any circumstances, make this change unless operating permanently above 4000 feet elevation.



DAMPER BODY ASSEMBLY for 1929 Hudson Super-Six

PARTS PRICE LIST

MARVEL CARBURETER

Model "VB"

For 1929 HUDSON SUPER-SIX

Part No.	Name	Price
10-168	Carbureter Body	6.00
10-724	Carbureter Assembly	\$22.00
10-725	Carbureter & Riser Assem.	32.00
12-614	Throttle Lever & Shaft. Assem.	1.00
14-24	Throttle Fly	.25
15-5	Bowl Cover Screw	.05
15-14	Ratchet Spring & By-pass Spring Screw	.05
15-17	Bowl to Body Screw	.05
15-23	Throttle & Choker Fly Screw	.05
15-32	Pilot Set Screw	.05
15-33	Throttle Adj. Screw Lock Screw	.05
15-35	Choker Swivel Screw	.05
15-42	Throttle Adjusting Screw	.05
15-60	Spacer Block Screw	.05
15-62	Carbureter to Riser Cap Screw	.05
15-95	Choker Sleeve & By-pass Valve Stop Screw	.05
15-96	Choker Stop Screw	.05
15-99	Channel Plug Screw 1/4"	.10
15-106	High Speed Channel Plug Screw	.10
16-41	Bowl to Body Gasket	.05
16-47	Float Valve Seat & Metering Pin Plug Gasket	.05
16-120	Channel Plug Screw Gasket 1/4"	.05
16-121	Strainer Gasket	.05.
16-125	Bowl Cover Gasket	05
16-128	Intermediate High Speed Standpipe, Low Speed Nozzle & High Speed Standpipe Gasket	.05
16-138	Low Speed Nozzle Nut Gasket	.05

Part No.	Name	Price
16-146	Carbureter to Riser Flange Gasket	.40
17-505	Damper Conn. Rod Assem. (Cam End)	.40
17-506	Damper Conn. Rod Assem. (Bell Crank End)	.40
18-539	Damper Lever, Shaft. Fly & Rivet Assem.	1.75 .60
23-15	Air Adjusting Screw	.15
24-28	Flusher Spring	.15
24-49	Cam Friction Spring	.15
24-51	Ratchet Spring	.15
24-74	Cam Roller Link Friction Spring	.15
24-96	Damper Spring	.15
24-102	Choker Spring	.15
24-106	By-pass Valve Spring	.15
14-115	Air Valve Spring	.35
15-571	Choker Lever & Clutch Sleeve Assembly	1.00
26-43	Choker Shaft	.30
27-501	Choker & Counterbalance Weight Assembly	.40
28-17	Choker Swivel	.25
30-518	Float & Lever Assembly	1.00
33-501	Float Lever Shaft & Head Assembly	.20
35-512	Float Valve Assembly	.75
36-41	Float Valve Seat	.55
37-1	Lead Shot	.05
44-3	Metering Pin Packing	.10
45-8	Low Speed Nozzle Packing Nut	.15
17-9	Low Speed Nozzle	.50
45-528	High Speed Standpipe Assem.	.50
48-535	Intermediate High Speed Standpipe Assem.	.50
49-140-D-28	High Speed Jet	.30
*49-160-D-28	High Speed Jet	.30
49-220-E-24	Intermediate High Speed Jet	.30
49-180-E-24	Intermediate High Speed Jet	.30

Part No.	Name	Price
51-523	Air Valve & Dash Pot Plunger Assembly	1.75
52-12	Air Valve Shaft	.20
55-8	Metering Pin Packing Re- tainer	.10
56-37	Bowl Cover	.50
56-520	Bowl Cover Assembly	1.00
58-5	Flush Plunger	.15
62-8	Cam Lever Pin	.10
62-10	Metering Pin Link Pin	.05
62-24	Dash Post Plunger Road Pin	.05
65-586	Bowl & Plug Assembly	2.50
65-587	Bowl Assembly (Complete)	11.00
69-3	5/16" Flared Tube Ell	.20
78-2	Carbureter to Riser Cap Screw Lock Washer	.05
78-5	Ratchet Spring Screw, Bowl To Body Screw & By-pass Valve Spring Screw Lock Washer	.05
78-37	Flusher Plunger Washer	.05
78-62	Choker Sleeve Screw & Choker Stop Screw Lock Washer	.05
80-9	Metering Pin Plug	.20
80-509	Strainer Plug & Gauze Assem.	.45
82-1	Air Fly Shaft Cotter Key 1/16" x 1/2"	.05
82-11	Flusher Plunger Cotter Key 1/64: x 3/8"	.05
82-14	Choker Swivel, Dash Pot Plunger Rod Pin, By-pass Link, Cam Roller Link Fric- tion Spring, Conn. Rod Cam End, Conn. Rod Bell Crank End. & Metering Pin Link Stud. Cotter Key	.05
83-7	Cam Friction Stud	.10
83-506	Cam Roller Stud & Link Assem.	.30
84-093-C	Metering Pin Jet	.30
*84-090	Metering Pin Jet	.30
111-10	Spacer Block	.40

Part No.	Name	Price
119-520	Dash Pot Plunger, Rod & Washer Assembly	.90
146-562	Riser, Lining, Bushing & Damper Assembly	5.50
146-563	Riser, Lining, & Bushing Assembly	4.50
146-564	Riser, Assembly (Complete)	11.00
156-24	Damper Control Cam	.50
160-16	Cam Lever	.50
160-509	Cam Lever, Link & Roller Assembly	1.24
168-70	Metering Pin Link	.20
168-502	By-pass Link Assembly	.40
173-528	Metering Pin Assembly	.50
173-544	Metering Pin & Link Assembly	.75
174-1	by	.20
214-502	Cam Friction Plate	
	By-pass Valve & Lever Assembly	.50

*NOTE: This change of calibration went into effect after carburetor serial number 9088214 and though not necessary to change on older models, this is advisable if owner complains of lack of driving "feel" or ruggedness in job below 25 miles per hour. Carburetors having this new calibration, have letter B stamped on outside of fuel bowl at bottom next to body.

HUDSON MAIN DAMPER PARTS

15-93	Heat Tube Stop Screw	.10
16-116	Damper Body Flange Gasket	.10
19-43	Damper Fly	1.00
24-96	Damper Spring	.15
55-7	Heat Tube Stop Screw Retainer	.05
115-9	Damper Fly Rivet	.05
122-531	Damper Lever & Shaft Assembly	1.00
124-11	Exhaust Tube Packing Collar	.20
126-40	Exhaust Outlet Tube	.20
127-7	Exhaust Pipe Packing	.05 Ft.
127-8	Exhaust Tube Packing	.05 Ft.
128-521	Damper Body Assembly Complete	4.00
128-522	Damper Body & Bushing Assembly	1.50

Marvel Distributors and Service Stations

*NOTE: Marvel Distributors in charge of service stations in this territory. Carries a complete stock of carbureters and parts. Overhauls and rebuilds carbureters in addition to giving service.

Aberdeen, Washington - Hood Automotive Service Company.

Akron, Ohio - The Maibohm Battery & Ignition Company.

Albany, N. Y. - 412 Hamilton Street - John F. Pierce Garage.

Allentown, Pa. - 1041 Hamilton Avenue - Motor Accessories Company.

*Baltimore, Md. - 25th Street and Homewood Ave. - Baltimore Automotive Corp.

Bellingham, Washington - Paul Tiffany

*Birmingham, Alabama - Ave. B and 23rd. St. - Birmingham Electric Battery Co.

*Boston, Mass - 335 Newbury Street - Marvel Carbureter Sales Company.

Brooklyn, N. Y. - 1061 Atlantic Avenue - E. A. Wildermuth.

Buffalo, N. Y. - 1557 Main St. - J. B. Clark

Canon City, Colorado - 708 - Main Street - Bliley-Walker Service Station.

Casper, Wyoming - 136 E. Midwest Avenue - Auto Electrical Company.

Centralia, Illinois - Motor Specialty Company.

*Charlotte, N. C. - Woodside Motor Company.

*Chattanooga, Tenn. - 318 Market Street - Hassler Brothers.

*Chicago, Illinois - 2427-31 S. Prairie Avenue - Marvel Carbureter Sales Company.

Cincinnati, Ohio - Carburetor Service Station

*Cleveland, Ohio - 2013 East 65th Street - Fred Crandall Company.

Cleveland, Ohio - 4310 Carnegie Avenue - Wright Carbureter & Ignition Co.

*Columbia, S. C - 1111 Taylor Street - Standard Parts Corp.

*Columbus, Ohio - Hughes Scott Co.

*Dallas, Texas - 1500 Young St. - The Beach-Wittmann Company.

Dallas, Texas - J. J. Gibson Company.

Davenport, Iowa - Emeis Electrical Service - 218 Iowa Street.

Dayton, Ohio - 339 S. Jefferson St. - Carbureter Sales & Service Co.

*Denver, Colorado - The Auto Electric Appliance Company - W. 13th & Acoma St.

*Des Moines, Iowa - 1309-19 Locust Street - Iowa Auto Market.

*Detroit, Michigan - 3127 Jefferson East - Greenleaf Incorporated.

*El Paso, Texas - 409 Montana Street. - Maloney Battery & Ignition Co.

Enid, Okla. - Silver's Electric Station & Garage.

Erie, Pa. - 216 W. 12th St. - F. W. Seemann
 Everett, Washington - 2817 Rucker Avenue - Proctor Motor Company.
 Glendale, California - 217 W. Colorado - Parker & Black
 Grand Rapids, Mich. - 53 Commerce Ave. N. W. Electric Service Station.
 Great Bend, Kans. - Scheufler Tire & Supply Co.
 Greeley, Colo. - 17 10th St. - The Mutual Battery & Electric Co.
 Hanford, Calif. - Cousins Tractor Co.
 Harrisburg, Pa. - 112-18 Cameron St. - E. Mather Co.
 Hoisington, Kans. - M. Bell Battery & Electric Co.
 Houston, Texas - 1507 Fannin St. - Westbrook Carbureter & Electric Co.
 Huntington, W. Va. - Rear 538 4th Ave. - Jack Warner's Garage.
 Indianapolis, Ind. - 733-35 N. Capital - Madden-Copple, Inc..
 Jamaica, L. I, N. Y. - 104 Smith St. - Fogarty Bros.
 Jamestown, N. Dak. - H. W. Lyons.
 Kankakee, Ill. - Fortin Brothers.
 *Kansas City, Mo. - 1820-22 McGee St. - The Beach Wittmann Co.
 *Knoxville, Tenn. - 307-11 N. Central St. - McNutt & Burks. Inc.
 Lansing, Mich. - 400 N. Washington - Capital Battery Shop.
 Lewiston, Idaho - Robinson Battery & Ignition Co.
 Liberal, Kans. - Motor Parts & Supply Co.
 *Lincoln, Nebr. - 1637 "P" St. - Parkhurst AUTO ELECTRIC Co.
 Long Beach, Calif. - 1009 Americari Ave. - Helme Brothers Co.
 Los Angeles, Calif. - 1837 S. Flower St. - Marvel Carbureter Sales Co.
 Louisville, Ky. - 917 S. 2nd St. Rear - Strader Electric & Carbureter Repair Co.
 Marshfield, Oregon - P. J. Rooney Co.
 *Memphis, Tenn. - Union and Marshall Aves. - McGregor's.
 *Milwaukee, Wis. - Van Buren St. - Wiscunsin Magneto Co.
 *Minneapolis, Minn. - 2nd Ave. N, 3rd St. - W. S Nott Co.
 Montgomery, Ala. - Auto Electric Service Co.
 Mt. Vernon, Wash. - Carl E. Lindberg Co.
 *Nashville, Tenn. - 1227 Broad St. - The Chapman Co.
 New Castle, Ind. - John W. Shopp.
 Newport News, Va. - H. & W. Motor Corp.
 New York City, N. Y. - 225 W. 64th St. - C. I. Barrows.
 *New York City, N. Y. - 242 W. 69th St. - Marvel Carbureter Sale's Co.

Oklahoma City, Okla. - 6 E. 5th - Herman Reuter Service.
*Oklahoma City, Okla. - 706 Broadway - The Beach-Wittmann Co.
Oakland, Calif. - 23rd and Veldex - G. E. S. Co.
Ontario, Calif. - Cochran & Nichols.
Pasadena, Calif. - 165 S. Fair Oaks - Kay & Burbank Co.
Philadelphia, Pa. - 1625 N. Syclyenham St. - Marvel Carbureter Sales Co.
Phoenix, Ariz. - 315 N. Central Ave. - Motor Supply, Co.
Pittsburgh, Pa. - 5157 Liberty Ave. - Electrical Equipment Service Co.
Pittsburgh, Pa. - 5209 Baum Blvd. - Carbureter & Ignition Co.
Pomona, Calif. - Garey Ave. & Holt - C. R. May.
Porterville, Calif. - Hayden & Ilayden.
Portland, Oregon - L. H. Buntzel Co.
Portland, Oregon - 111 13th St. - Henry Ward & Co.
*Raleigh, N. C. - 215 E. Davie St. - Motor & Equipment Co.
*Richmond, Va. - 501-11 W. Broad St. - Lane Bowles Co.
Richmond, Va. - McKinnin Motor Co.
Rochester, N. Y. - 335 Court St. - Standalrd Battery Service
Rockford, Ill. - Phillips Battery & Electric Co.
*Salt Lake City, Utah - 475 S. Main St. - Automotive Electric Service Co.
*San Antonio, Texas - Westbrook Carbureter & Electric Co.
San Diego, Calif. - 929 Columbus St. - San Diego Garage.
San Francisco, Calif. - 1726 California St. - Hanni Auto Repair.
San Jose, Calif. - 580 1st St. - Lehmann Brothers.
San Luis Obispo, Calif. - 1009 Monterey St. - C. H. Kamm & Co.
Santa Barbara, Calif. - 514-522 State St. - Harry A. Thayer.
Santa Monica, Calif. - 1452 Second St. - G. R. Payne.
*Seattle, Wash. - 12th Ave. & Pine St. - McAlpin-Schreinev, Co.
Spokane, Wash. - W. 610 Third Ave. - The Carbureter Service Co.
Stockton, Calif. - Miner Ave. & California St. - J. M. McGillivray.
*St. Louis, Mo. - 2827 Locust Blvd.- R. A. MacGuire Inc.
St. Paul, Minn. - 179 W. 69th St. - Mayer Battery Electric Service.
Tacoma, Wash. W. 610-112 South Eighth St. - McAlpin-Schreiner Co.

*Tampa, Fla. - 708 Twiggs St. - Motive Parts Co. of Florida.
Terre Haute, Ind. - The Terre Haute Battery & Electric Co.
Tucson, Ariz. - 49 No. 6th Ave. - Motor Supply Co
*Tulsa, Okla. - 210 10th St. East - The Beach-Wittmann Co.
Union City, N. J.-S86 Summit Ave. - Charlie's Auto Repair%.
Victoria, B. C., Canada - Auto Electric & Battery Co., Ltd.
Visalis. Calif. - 500 E. Main St. - Christie & Henry.
*Washington, D. C. - 1019 17th St. N. W. - Tompkins Sales & Service Co.
Wenatchee. Wash. - 326 S. Wenatchee - Hayes Auto Repair Shop.
*Wichita, Kansas - 225 N. Market St. - The Beach-Wittmann Co
Wichita Falls, Texas - Ruby Howard Battery Co.
Yakima, Wash. - Wm. C. Wright Co.
Youngstown, Ohio 28 W. Madison St. - Exide Milburn Service Co.

CANADIAN LIST

Calgary, Alberta - Dyson Battery Service
Courtney. B. C. - Blunt & Ewart.
Halifax, Nova Scotia - Halifax Ignition Company.
Montreal. Qubec - Battery & Electric Service Co.
Ottawa, Ontario - Welch & Johnson.
Regina, Saskatchewan - Magneto Service Station.
Toronto, Ont. - 350 Danforth Ave. - Barnes Battery & Ignition Company.
*Toronto. Ont. 252 Victoria St. - Auto Electric Service Co.. Ltd.
Vancouver, B. C. - Roy Howard, Ltd.
Victoria, B. C. - Auto Electric & Battery Co., Ltd.
*Winnipeg. Manitoba - Beattie Auto Electric. Ltd.

Marvel Carbureter' Export Distributors,

NOTE: Refer all. export business to Marvel Carbureter Co. Export office, 30 Water St., New York. N. Y.

Australia, Brisbane - Perry St. - Motor Supplies, Ltd.
Australia, Melbourne- 149 163 Lit. Lansdale St. - Brooklands Accessorie's Ltd.
Australia West, Perth - Messrs. Armstrong Cycle' & Motor Agency.
Australia, Sydney - 177-185 William' St. - Larke Hoskins & Co.
Burma, Rangoon - 4-5 Shafraz Road - Messrs. Muller & Phipps (Asia) Ltd.
Ceylon, Colombo - Kevzer St. - Messrs. Muller & Phipps (Asia) Ltd
China, Hongkong - 5 Queens Road, Central - Messrs. Muller & Phipps (Asia) Ltd. ,
China, Shanghai - 24. The Bund - Messrs. Muller & Phipps, (China) Ltd.
Denmark, Copenhagen - Pilealle 5-7, Hans Lystrup.
Dutch East Indies, Weltevreden - Care of the Consulate of the U. S. A., - Mr. C. Guidon.
India, Bombay - New York Building, Hornby Rd. Fort - Messrs. Muller & Phipps (India) Ltd.
India, Calcutta - 21 Old Court House St. - Messrs. Muller & Phipps (India) Ltd.
India, Delhi - Sadar Bazaar - Messrs. Muller & Phipps (India) Ltd.
India, Karachi - 726 Napier Road - Messrs. Muller & Phipps (India) Ltd.
India, Lahore Bazaar Rang Mahal - Messrs. Muller & Phipps (India) Ltd.
India, Madrars, - 21 Sunkuraina Chetty - Messrs. Muller & Phipps (India) Ltd.
Japan, Osaka - P. 0. Box 61, Goshō Bldg. - Messrs. Muller, Phipps & Sellers, Ltd.
Japan, Tokyo - P. 0. Box,98, Marunouchi Bldg. - Messrs. Muller, Phipps & Sellers Ltd
New Zealand, Wellington - E. Reynolds & Co.
Norway, Oslo - Handelsbygningen Drammensveien 20-24 - Messrs. Sorensen og Balchen.
South Africa, East London - P. 0. Box 57 Malcomess Ltd.
South Africa, Johannesburg - P. 0. Box 2767 - Messrs. Connock's S. A. Motor Co., Ltd.
Straits Settlement, Singapore - Union Building - Messrs. Muller & Phipps (Malaya) Ltd.