

Next month, and the one following, Orest Lazarowich has submitted a special column on mechanical brakes. We felt that it was important enough to present the brake column as soon as possible, so we have pushed his *Carburetor Doctor* column back until April to give him time to present the brake information.

Rather than begin the regularly scheduled *Stromberg Carburetor Doctor* Part I, and then have to wait until April for Part II, we will begin that series in our April issue. We are presenting information on the Stromberg U carburetors in this issue. These were used on many cars during the late 1920s and early 1930s.

The information on this page and the next comes from *Dykes Auto Encyclopedia*.

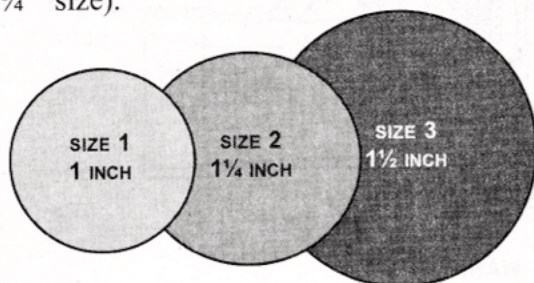
## STROMBERG TYPE "U" CARBURETORS

by SK Staff

The model U carburetor has a single venturi, a warming up control and a syringe for acceleration. It is made in the 1", 1 1/4", and 1 1/2" size and in the 1 3/4" size for the Chrysler 80 with double venturi; this last model is called the UX-4.

### Model Designation

The first letter indicates the type; the following letter indicates some special form. for example, UV-1 indicates a carburetor of the U series, and the V indicates that a vis-a-gas filter of the glass type is fitted, or it may be an X instead of a V, which indicates that the carburetor flange is turned different or something else special is incorporated into the carburetor. The numeral following the hyphen indicates the nominal rated size, the size starting from 1" which is 1, and increasing in 1/4" steps, for example, a 1 1/2" carburetor is a 3; a UX-2 type carburetor, would be of a U series type, X a special form and - 2 (1 1/4" size).



### Outstanding Features

A warming up control which gives improved starting ability and unusually smooth operation after starting while the engine is still cold. (See Fig. 7).

A positive acting accelerating device, consisting of a pump which delivers an accelerating charge immediately as the throttle is moved and meters and delivers this charge over a definite period of time. (See Figs. 1, 3, 4, 5).

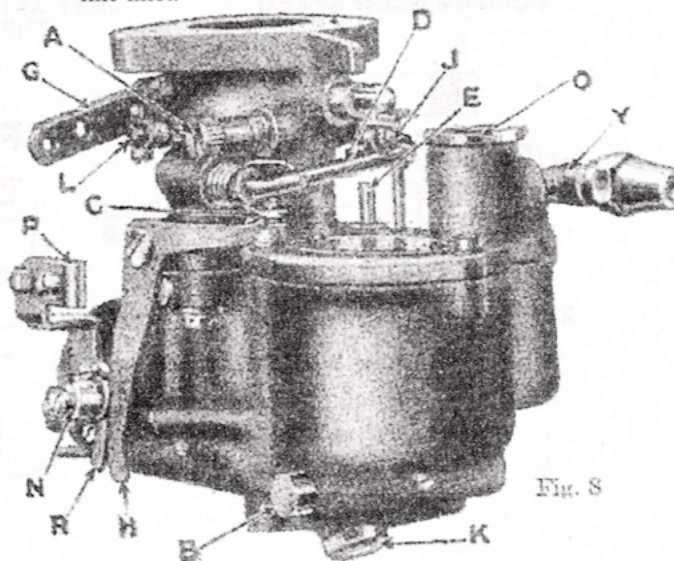
Idle and low speed jets above the throttle with separate idle adjustment for smooth low speed performance. (See Figs. 1 and 6).

An economizer, (E, Fig. 1) which permits the carburetor to operate on a very lean and economical mixture at the closed throttle positions of average driving, but automatically shifts to the needed richer setting when the full power of the engine is called for.

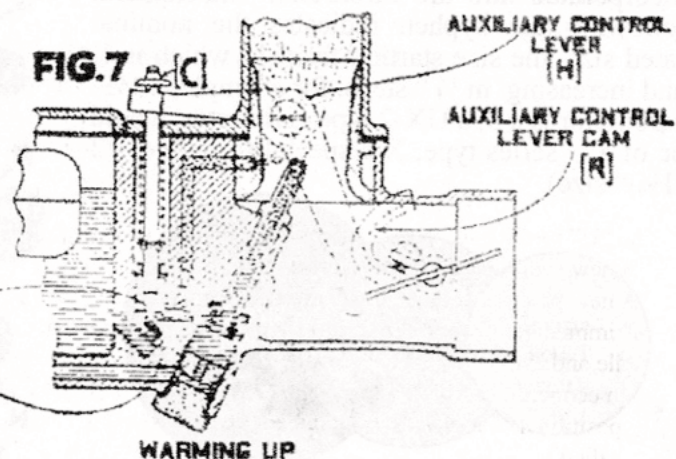
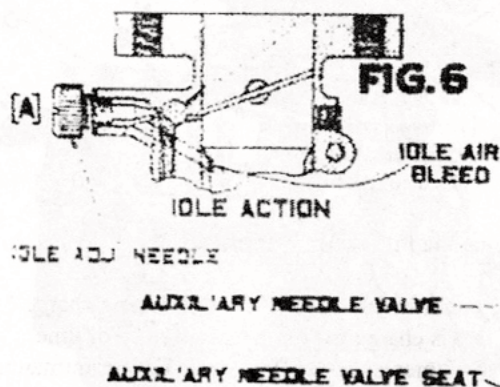
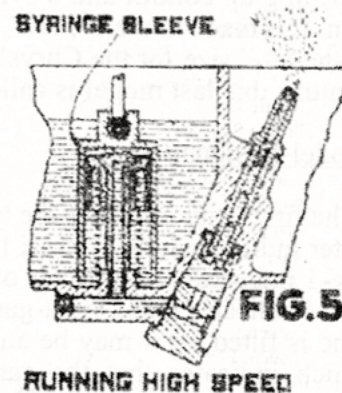
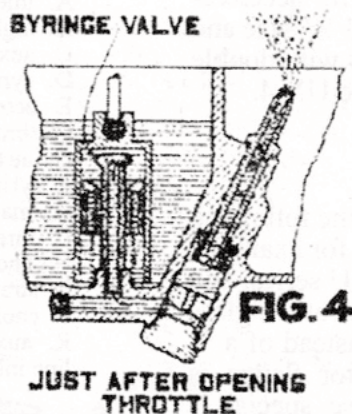
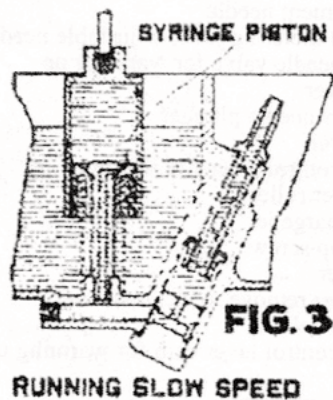
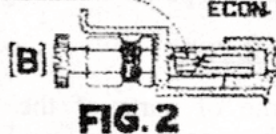
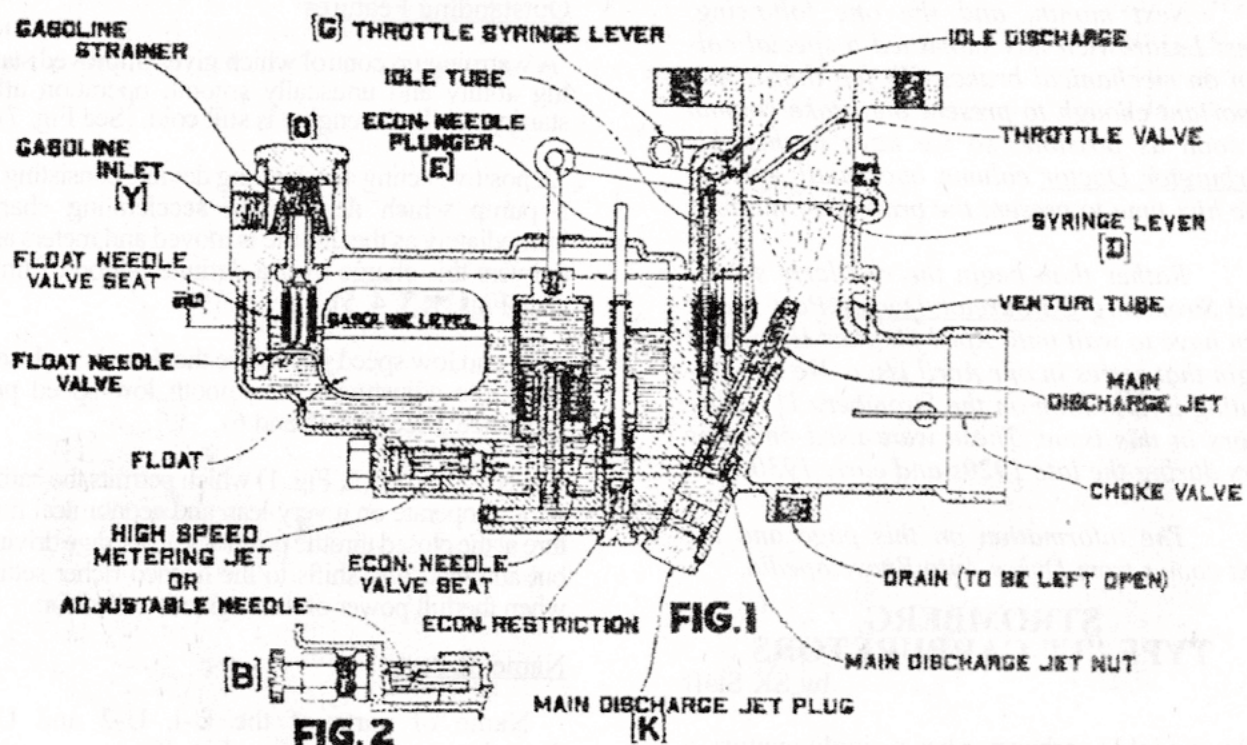
### Name of Parts

Name of parts of the U-1, U-2 and U-3 Stromberg carburetor (see Fig. 8):

- A. idle adjustment needle
- B. high speed metering jet or adjustable needle
- C. auxiliary needle valve for warming up
- D. syringe lever
- E. economizer needle plunger
- G. throttle lever
- H. auxiliary control lever for. warming up
- J. syringe lever roller
- K. main discharge jet
- L. throttle stop screw
- N. choke lever
- O. strainer plug remove to clean strainer
- P. choke tube holder
- R. auxiliary control lever cam for warming up
- Y. gaso-line inlet.



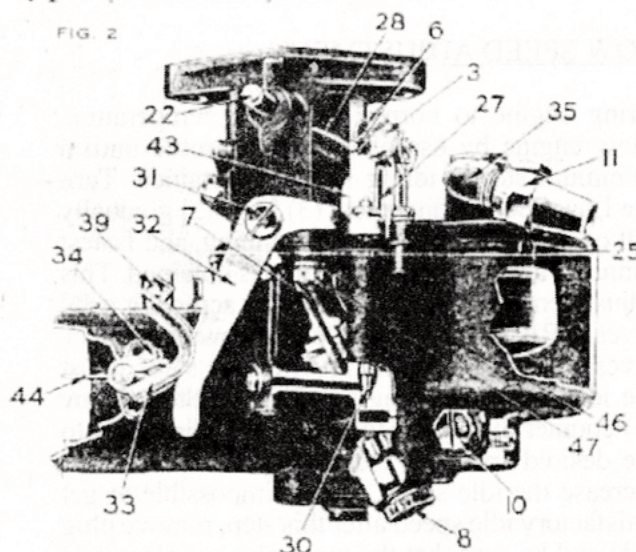
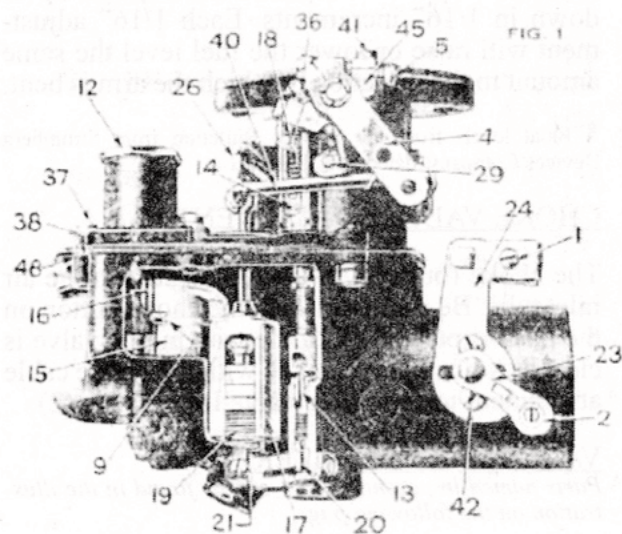






**WARNING:** The Stromberg U carburetors were produced in both die-cast and steel models. It is imperative that the die-cast models be extremely carefully examined for cracks and die-cast damage. A leaking carburetor body will be almost impossible to properly adjust and could present a serious fire hazard.

## Sectional Views of the "U" Type (Die Cast) Carburetor



- |  |   |
|--|---|
| 1. Choke Control Tube Clamp Screw          | 18. Vacuum Economizer Piston Spring       |
| 2. Choke Lever Wire Clamp Screw            | 19. Accelerating Pump Piston Spring       |
| 3. Idling Needle Valve                     | * 20. By-Pass Metering Jet Economizer     |
| 4. Throttle Lever                          | 21. Pump Discharge Jet                    |
| 5. Throttle Stop Set Screw                 | 22. Throttle Lever Stem                   |
| 6. Idle Discharge Holes                    | 23. Choke Lever and Stem                  |
| * 7. Main Discharge Jet                    | 24. Float Setting (see instructions)      |
| 8. Main Discharge Jet Plug                 | 25. Idle Discharge Channel Plug           |
| 9. Float Fulcrum Pin                       | 26. Idle Tube                             |
| * 10. Main Metering Jet                    | 27. Throttle Valve                        |
| 11. Gasoline Inlet Nut                     | 28. Accelerating Pump Control Lever and   |
| 12. Strainer Plug                          | 29. Roller                                |
| 13. Economizer Needle Valve                | 30. Auxiliary Needle Valve                |
| 14. Vacuum Economized Piston               | 31. Auxiliary Control Lever Fulcrum Screw |
| 15. Float                                  | 32. Auxiliary Control Lever               |
| ** 16. Float Needle Valve                  | 33. Auxiliary Cam                         |
| Float Needle Valve Seat                    |   |
| ** 17. Accelerating Pump Piston and Sleeve |   |

- |  |
|--|
| 34. Auxiliary Cam Clamp Screw                  |
| 35. Gasoline Union Elbow                       |
| 36. Throttle Lever Clamp Screw                 |
| 37. Main Body Attaching Screws                 |
| 38. Main Body Attaching Screw Washers          |
| 39. Choke Tube Holder Clamp Screw Nut          |
| 40. Accelerating Pump Lever                    |
| 41. Throttle Stop Clamp Screw                  |
| 42. Choke Tube Holder Attaching Screws         |
| * 43. Venturi Tube                             |
| 44. Choke Valve                                |
| 45. Throttle Stop                              |
| 46. Throttle Valve Body Attaching Screw Washer |
| 47. Throttle Valve Body Attaching Screw        |
| 48. Main Body Gasket                           |

**\* IMPORTANT:** When ordering venturi tubes, high speed bleeders, metering jets, pump discharge jets, or by-pass jets, specify the size number which is found stamped on each part, and always state type of carburetor and serial number as well as model and make of car for which the part is intended.

**\*\* NOTE:** These items must be ordered complete.

The "U" series of carburetors are of the vertical plain type, employing the following features:

A new semi-automatic device for starting.

A new positive acting accelerating device, consisting of a syringe pump which delivers an accelerating charge immediately when the throttle is moved, and meters and delivers this charge over a definite period of time.

Idle and low speed jets below the throttle, with the separate idle adjustments for smooth, low speed performance.

An economizer which permits the carburetor to operate on a very lean and economical mixture at the closed throttle position of average driving and automatically shifts to the needed richer setting when the full power of the engine is called for.



## ADJUSTMENTS

Carburetor adjustments should only be necessitated by changes in fuel or seasonal changes in weather. Ninety percent of 'carburetor problems' are actually caused by fouled spark plugs, burned or improperly adjusted breaker points, valve problems or intake manifold leaks.

### LOW SPEED ADJUSTMENT

Bring engine to normal operating temperature. Slow engine by use of the hand throttle until a minimum steady idling speed is obtained. Turn the Low Speed Adjustment (3) [page 12] gradually left or right until the steadiest running, and fastest running for that throttle position is obtained. This adjustment operates on air, so that screwing it IN gives a RICHER mixture, and screwing it OUT gives a LEANER mixture. After this step, adjust the idle speed by using the Throttle Stop Screw (5) counter-clockwise to reduce the idle speed to the desired speed. If the engine stalls or 'rolls', increase the idle speed. If it is impossible to get satisfactory idle speed after this step, remove plug (25) and be sure that the two holes are clean and open. Also remove the idle tube (26) and be sure that the small holes in the end are open and that air can pass through the tube.

### INTERMEDIATE SPEED

This is a fixed setting determined by jet size. The jet size is stamped on the outer face of the Main Metering Orifice jet.

### WIDE OPEN SPEED

With wide open throttle, an additional quantity of fuel is supplied by the By-Pass metering jet (20). Set hand throttle at a position that would yield 25 - 35 mph on level road. At speed, with the choke fully open, the engine should run smoothly. If it does not, slowly pull out the choke knob. If the engine speeds up, it indicates a lean condition. Check the main metering jet (I) for dirt or water obstruction.

### ACCELERATING PUMP

This, too, is a factory-set adjustment. Jet size is determined at the factory for optimum operation.

## FLOAT LEVEL ADJUSTMENT\*

After disassembly, check the float level to assure the correct level of gas in the fuel bowl. The level of the float for the U-1 should be  $1\frac{1}{64}$ " below the top of the float chamber. For the U-2, U-3 and UX-3 the distance should be  $\frac{3}{64}$ ". To adjust the float level, bend the float arm up or down in  $1/16$ " increments. Each  $1/16$ " adjustment will raise or lower the fuel level the same amount in the direction in which the arm is bent.

\* Float levels from the Service Bulletin from Stromberg Devices Company, dated Feb. 1, 1930

### CHOKE VALVE ADJUSTMENT

The choke (butterfly) valve is located in the air inlet tube. Be sure that when the choke button on the dash is pushed all of the way in, the valve is closed. Adjustment is made with the choke cable attachment to the choke valve lever (1) & (2).

### VACUUM ECONOMIZER

*Parts named in parenthesis ( ) can be found in the illustration on the following page.*

The Stromberg 'U' economizer insures a lean and economical mixture at normal driving speed and automatically supplies the richer mixture for acceleration.

The fuel enters through the gasoline inlet (E), through the strainer (D) and float needle seat (F) into the float chamber and the level is controlled by the float (H).

From the float chamber the gas flows through the main metering jet (I) to the idle discharge jet (M), depending how far the throttle valve (N) is open.

At speeds up to about 12 miles per hour the fuel is delivered through the idle discharge (M). At speeds from 12 to 20 miles per hour, the fuel is discharged through both the idle discharge jet (M) and the main discharge jet (I). Above 20 mph, practically all of the gas is delivered through the main discharge jet (I).

In the main air passage of the carburetor is located the venture tube (O), a specially shaped orifice which insures high air velocity at the main discharge jet (I) with the least possible restriction.

The correct air/gas mixture is maintained at all speeds and loads by the air bled principle. Air is



drawn into the center passage of the main discharge jet (P) through a series of small holes located below the fuel level; introducing air into the fuel stream eliminates the retarding action of surface tension at low suction and restricts the fuel flow at high suction, thus controlling the mixture ratio under all conditions.

The economizer is not an air bled style. At part throttle or speeds up to 45 or 50 miles per hour, all fuel is controlled by the main metering jet (I), which is usually of fixed size. When the throttle is opened, the vacuum controlled economizer piston (C) is forced down by the economizer spring and opens the by-pass needle valve allowing an additional amount of fuel to flow through the by-pass restriction (T).

The additional amount of fuel delivered through the by-pass restriction (T) together with the fuel delivered through the main metering jet (I) produces a mixture sufficiently rich to give maximum power at wide open throttle, irrespective of engine speed (whether low speed, 500 RPM, or high speed, 3000 RPM).

Supplying the fuel through two separate metering jets automatically controlled by the manifold vacuum and therefore in correct relation to engine speed and load insures an economical mixture in the normal driving range (10 to 45 miles per hour) and a sufficiently rich mixture at wide open throttle whether pulling on a hill or driving on level ground at high speed.

S.K.

