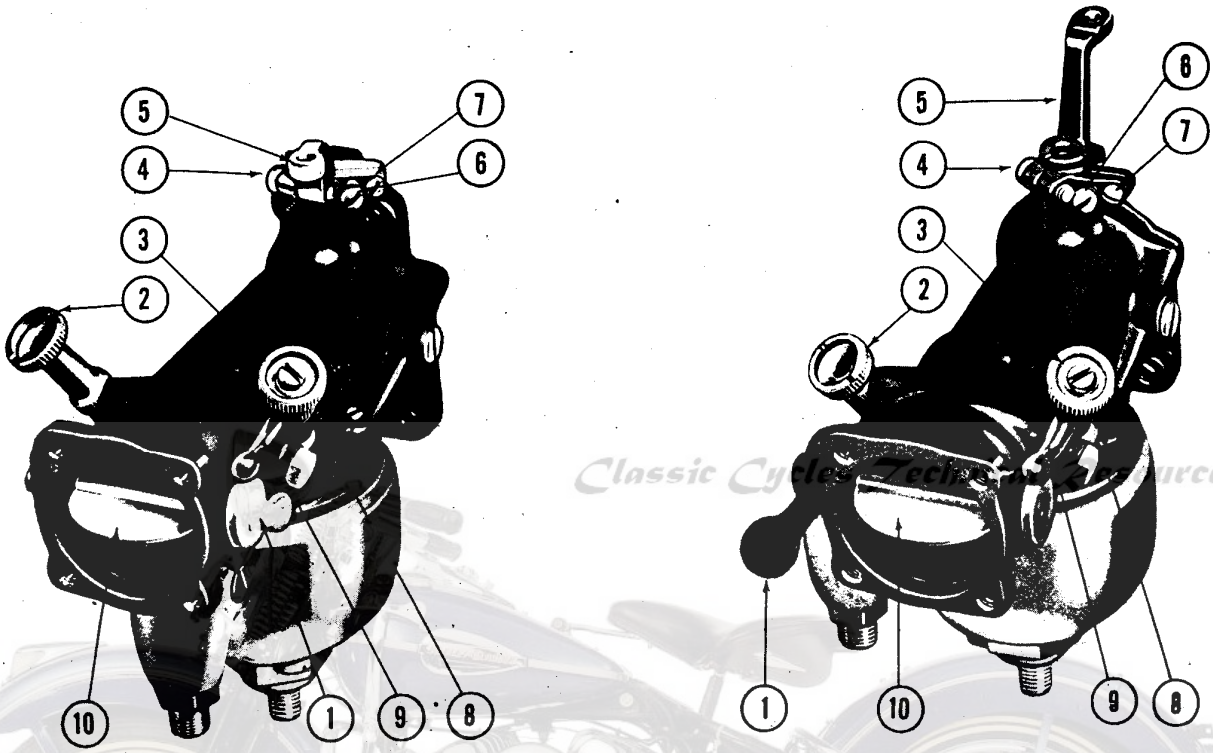
O. H. V. AND SIDE VALVE ENGINE CARBURETOR ASSEMBLIES

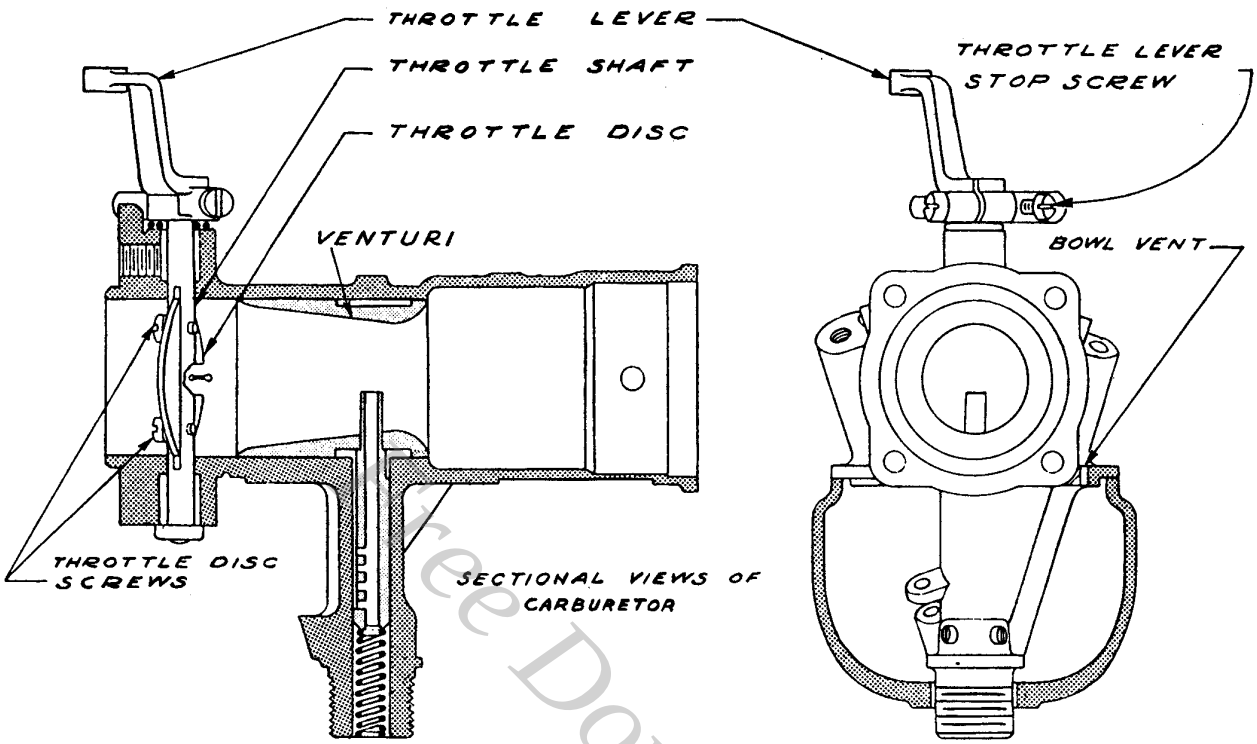
ITEM	NUMBER USED	PART NUMBER		NAME
		O.H.V. ENGINE	S.V. ENGINE	
1	1	1231-36	.....	Choke Lever (integral with choke shaft)
1	1	.....	1233-33A	Choke Lever (carburetor with air cleaner)
1	1	.....	1233-33	Choke Lever (carburetor without air cleaner)
2	1	1254-40	1254-27	High Speed Needle
3	1	1261-27A	1261-27A	Low Speed Needle
4	1	032	032	Throttle Lever Lock Screw
5	1	1238-40	1238-37	Throttle Lever
6	1	024	024	Throttle Stop Screw
7	1	011	011	Lock Screw (locks throttle stop screw)
8	..	.....	.....	Carburetor Bowl Vent (drilled in body casting)
9	1	1292-27	1292-27	Low Speed Needle Lift Lever
10	1	1232-24	1232-24	Choke Disc



ILLUS. 108
O.H.V. AND SIDE VALVE MODEL CARBURETOR ASSEMBLIES

SERVICING CARBURETOR

(To Identify Items, Refer to Illus. 108, 109, 110, 111 and 112)



ILLUS. 109

Effect of Crust Formation

These notes apply to carburetors which have been in service for some time and have become dirty, full of "crust" in the throttle barrel, and are found to be difficult to get adjusted properly. Usually the effect of excessive dirt or "crust" formation in the carburetor throttle barrel, around the throttle disc and in the fuel mixture passageways, is to cause the carburetor to have a lean spot off idle. This "crust" should be removed, particularly when a lean spot comes in at speeds off idle up to approximately 30 M.P.H. with the low speed (idle) adjustment set properly for idling. Idle adjustment should not be set to the very lean side when checking this point, but to a point about five to ten notches rich from the setting where the engine dies from leanness.

How to Remove Crust

1. Back off throttle lever stop screw (6) so throttle disc closes tightly. With a sharp pointed tool like a sharp pen knife or scriber, scratch a line deeply on closed throttle disc and also on wall of throttle barrel so lines on disc and on barrel meet. The lines scratched on disc and barrel must "line up" again when disc is replaced. Remove throttle lever (5), throttle disc and shaft, idle hole body plug next to idle holes in throttle barrel, body plugs in carburetor flange and carburetor body idle channels, and low speed (idle) lift lever (9) and needle valve assembly. Also remove venturi and nozzle.

2. Scrape out caking or "crust" in throttle barrel with a scraper or knife, being sure not to cut into the metal. This "crust" can easily be wiped out with a rag dipped in acetone.

3. Clean up throttle disc by rubbing both sides on fine emery cloth on a flat plate and clean edge of disc all around, being careful not to round the corners or cut into the metal. Can be cleaned with acetone.

4. Clean out idle holes in throttle barrel next to the disc with correct size drills of Harley-Davidson clean-up tool kit Part No. 12012-38. Tool kit includes all drills and slot cleaners required for carburetors, but does not include tools for disassembling and assembling carburetors. Correct sizes for both holes are listed in "Carburetor Specifications", Page 125.

5. Clean the connecting slot between the large and small idle holes by inserting tool blade of correct thickness through slot. Tool with .009" blade (for M-51 and M-51L carburetors) has plain handle; tool with .0155" blade (for M-25 and M-35 carburetors) has two rings around its handle; tool with .020" blade (for M-75 carburetor) has three rings around its handle. Widths of slots are listed in "Carburetor Specifications," Page 125.

6. Clean out idle channels with the #42 drill. *When cleaning vertical idle channel do not com-*

pletely bottom drill as doing so may damage low speed needle seat.

7. Clean out low speed (idle) needle valve seat hole with correct size drill. The M-25, M-51 and M-51L carburetors are cleaned with the #53L drill. The M-35 and M-75 are cleaned with the #53L #2 drill which has a smaller handle. (This tool has two rings around its handle).

8. Blow out all channels and holes with compressed air and wash all parts in gasoline or solvent.

Attention to Carburetor Bowl

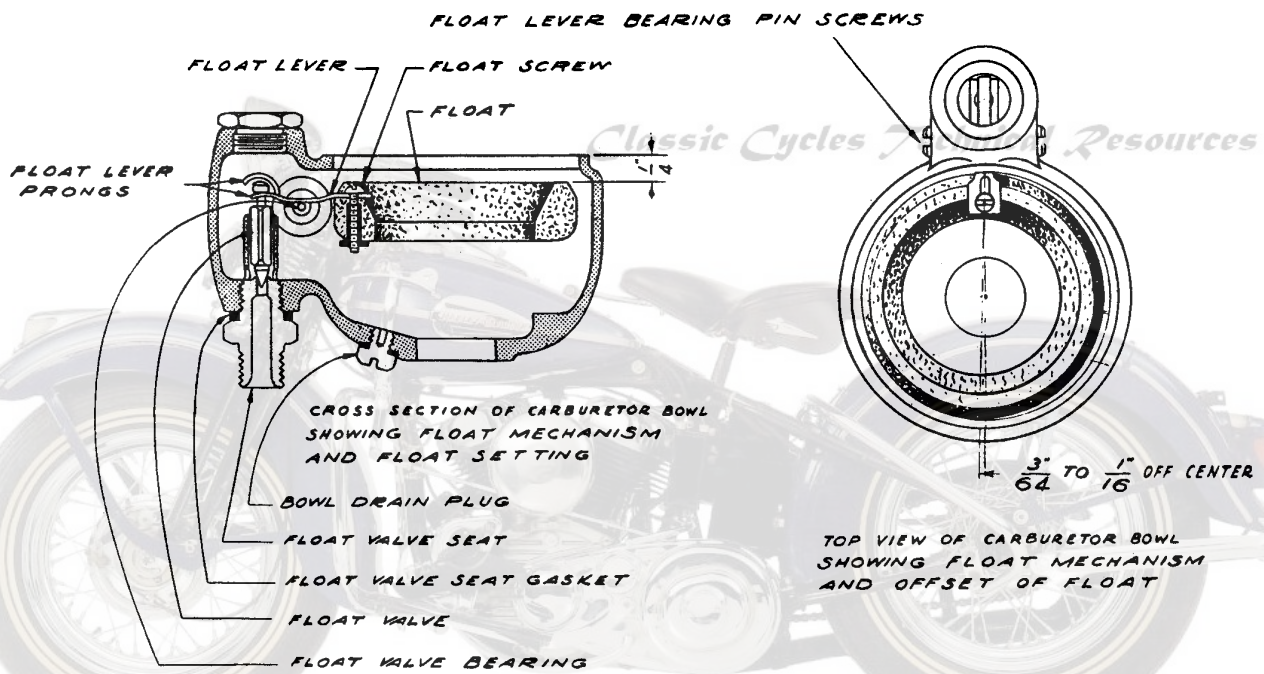
9. If carburetor bowl continually leaks, remove it from carburetor body, noting location of bowl fuel line nipple in relation to carburetor body. Remove all dirt with gasoline and compressed air. Hold bowl upsidedown so that float valve closes and suck on bottom of float valve seat. Valve and seat should hold this suction. If valve and seat leak after repeated testing, replace with new float valve and float valve seat.

10. If float is damaged or logged, replace with a new one. Remove old float after cutting cement seal around float screw which secures float to float lever. This seal can be cut with a pocket knife. Remove float screw and assemble new float to lever. This should be done with float valve, float valve lever, float hinge pin and screws, float valve seat and gasket assembled in bowl. Before tightening float screw securely, adjust as follows: Looking at bowl with gasoline inlet side away from you, pull float toward you to the limit of slot in float lever and about 1/16" to left of center line as shown in Illus. 110. This provides necessary body clearance. Tighten float screw and cement top of float screw to float with Dupont Household Cement, with mixture of celluloid dissolved in acetone, or with thick shellac. When cement has dried thoroughly, check float height and adjust as explained in paragraph 11.

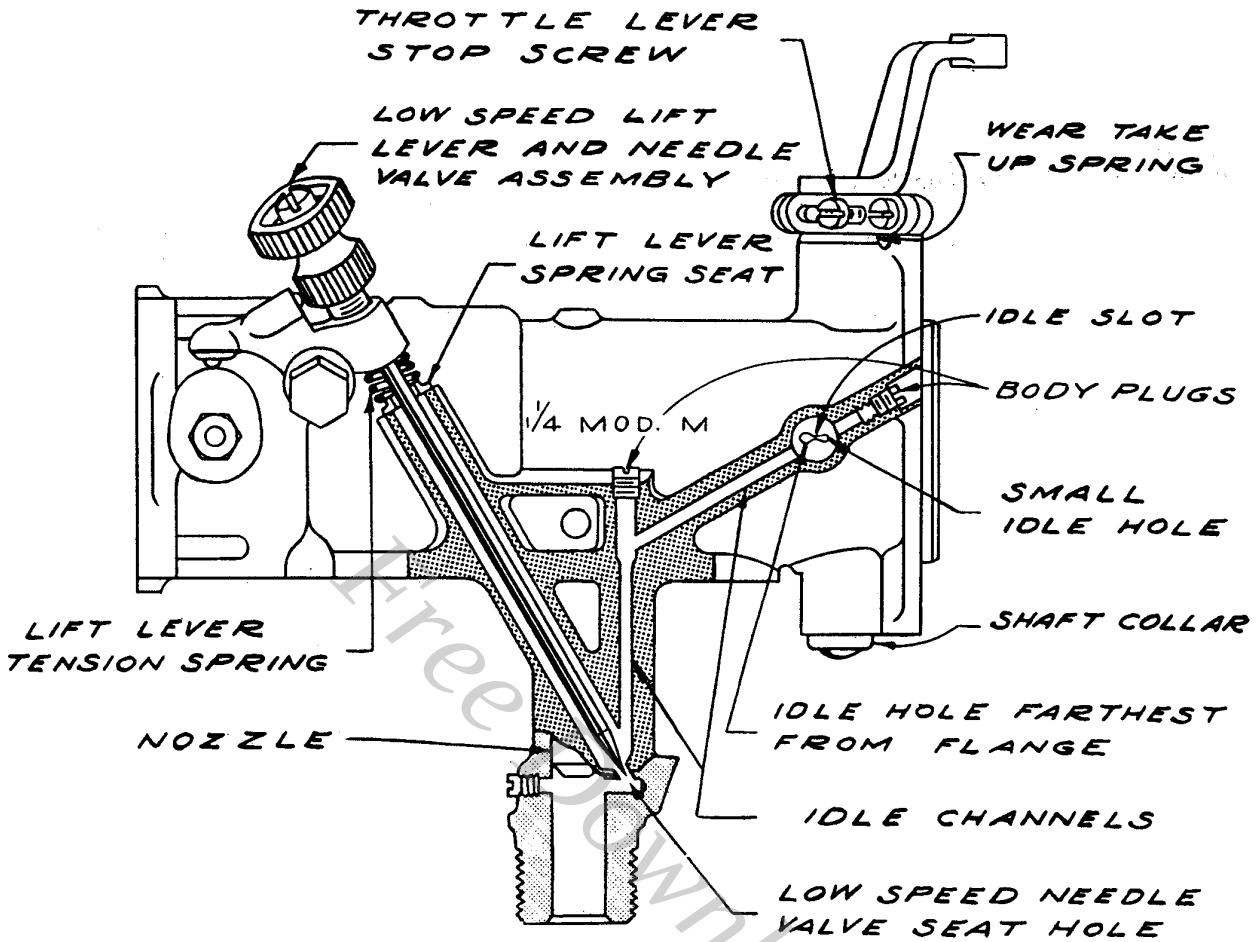
11. Check float level and, if necessary, reset to 1/4" (see Illus. 110). Measure directly opposite float lever with bowl held upsidedown (top of float to top of bowl). When readjusting carburetor float, do not attempt to do so by simply bending float lever upward in some manner, without disassembling from bowl. Adjusting in this manner bends and spreads fingers between which head of float needle fits, and thus develops lost motion between float and needle. Float and lever assembly should be removed from bowl, and lever then bent as required.

Before reassembling, see that needle head is a good free fit between float lever fingers with not more than approximately .003" play. This clearance can also be checked after lever is assembled in bowl, by carefully placing a small screw driver or a small rod against the valve head in such a position that it will hold the valve firmly against the seat and yet not bind the lever. Moving the lever up and down will then show the amount of actual clearance between the valve head and fingers. If this clearance is excessive, the float mechanism will not feed properly. After assembling note that float is approximately square with top of bowl.

12. Bowl drain plug can be removed for quick flushing of bowl. Before removing this plug, turn off gasoline at tank. Be sure to pull this screw up tight when replacing.



ILLUS. 110



VIEW OF CARBURETOR SHOWING LOW SPEED NEEDLE VALVE, LIFT LEVER SPRING SEAT, LOW SPEED NEEDLE VALVE SEAT HOLE, IDLE HOLES AND SLOT, BODY PLUGS, AND IDLE CHANNELS

ILLUS. 111

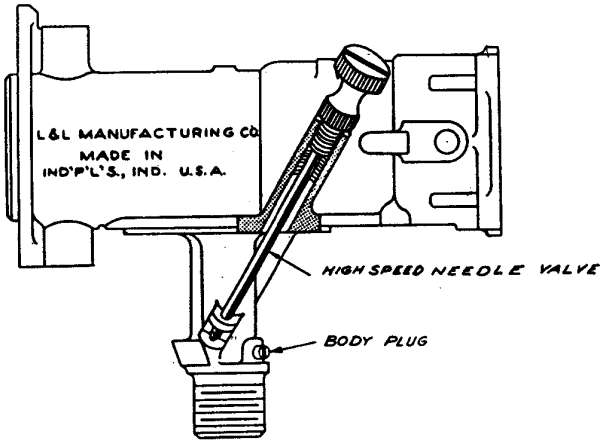
Assembling Carburetor

13. Install all channel opening plug screws. Install venturi with choke end (small end) facing air intake opening, and insert spray nozzle through body channel and venturi, as shown in Illus. 109. Spray nozzle is retained by spring and bowl nut.

14. Install spray nozzle retaining spring in body hole, locate bowl assembly on body, (*O.H.V. Model* carburetor only—install bowl gasket between bowl and body) install copper washer, and turn on bowl retaining nut. See that bowl fuel line nipple is in correct position and tighten bowl nut.

15. Install throttle shaft and pass throttle disc through shaft slot so that counterbored screw holes in shaft and the scribed mark on disc face the manifold end of carburetor body. Install throttle disc retaining screws but don't tighten them as yet. Close the throttle disc making sure scribed mark on disc lines up with scribed mark in barrel (if new disc is installed disregard this), and collar on lower end of throttle shaft is tight against carburetor body. Hold throttle shaft and disc snugly in this position and tighten disc retaining screws. Try opening and closing throttle disc to see that it does not bind, and also closes off the barrel hole completely. Install throttle shaft wear take-up spring on shaft and install throttle lever. Open throttle disc wide open in the barrel and clamp throttle lever on the shaft with wide open stop against body stop. Throttle lever and shaft should open and close with just slight drag.

Occasionally throttle shaft and throttle shaft bushings may need renewing. When renewing bush-



VIEW OF CARBURETOR SHOWING HIGH SPEED NEEDLE VALVE AND ONE BODY PLUG.

ILLUS. 112

ings, use Harley-Davidson special tool set, Part No. 12012-44D. Complete instructions for renewing bushings are included with tool set. See Illus. 113, 114, 115 and 116.

Throttle disc renewal is not usually necessary. If found worn or damaged to the extent of requiring renewal, be sure to install a new one with the same identification number stamped in face of disc. To identify disc see "Carburetor Specifications", Page 125. With disc correctly installed and in closed position, number will be seen through manifold end of carburetor and will be on the opposite side of carburetor from small idle holes.

16. Install choke shaft, with stop notch ball located on end of spring and hold ball in place with *choke lever* (bottom notch)—*Side Valve Model*, or *stop plate* (bottom notch—*O.H.V. Model*. While holding ball in position, pass choke shaft through body holes (with highest point of cam upward) and enter end of shaft in *choke lever*, or *stop plate*. Secure *choke lever* with lock screw, or *stop plate* with nut and washer. Install choke disc in shaft slot with hole at bottom of barrel. Close choke, line up screw holes and install and tighten disc retaining screws.

17. After installing low speed needle in lift lever, locate the tension spring and lift lever spring seat (washer with shoulder) on needle with washer shoulder toward spring. Engage needle in body channel and press on lifter lever assembly to compress spring so pivot screw can be installed. Be careful not to bend needle when compressing spring.

CAUTION: The lift lever spring seat hole is calibrated and limits the amount of air bleed to idle circuit and must be in place; otherwise carburetor cannot be adjusted for satisfactory engine idling.

18. Install high speed needle.

A few military and police motorcycles are equipped with a carburetor having a fixed high speed adjustment instead of an adjustable needle. One of the body screw plugs is replaced with a jet plug having an accurately calibrated hole. The "dummy" high speed needle is tightened against its seat and all fuel enters through hole in jet plug.

Carburetor Adjustments Provided

(To Identify Items, Refer to Illus. 108)

Carburetor is provided with three adjustments as follows:

1. Low speed needle (3) adjustment controls idling and low speed fuel mixture.

2. High speed needle (2) adjustment controls high speed fuel mixture.

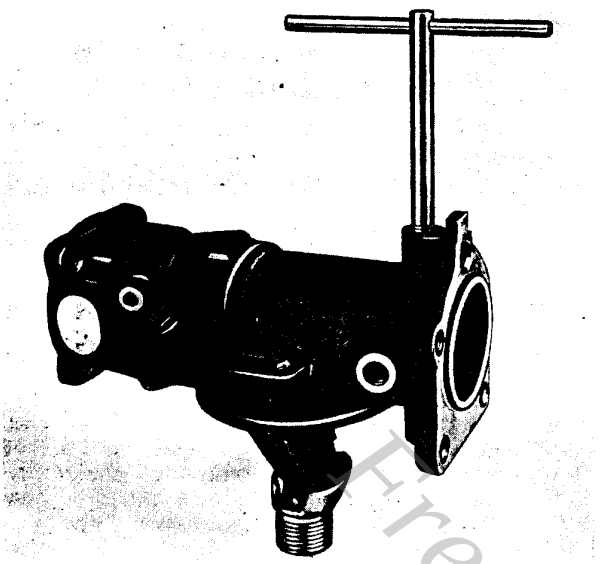
3. Throttle lever stop screw (6) adjustment controls idling speed.

Low speed needle (3) is mounted on a lever which is actuated by a cam on end of choke shaft. By means of this arrangement, when choke lever is in any position other than open, needle is lifted (degree of lift depends on position of choke lever) away from its seat enriching the mixture. When choke lever is in *open position*, needle is in normal running position.

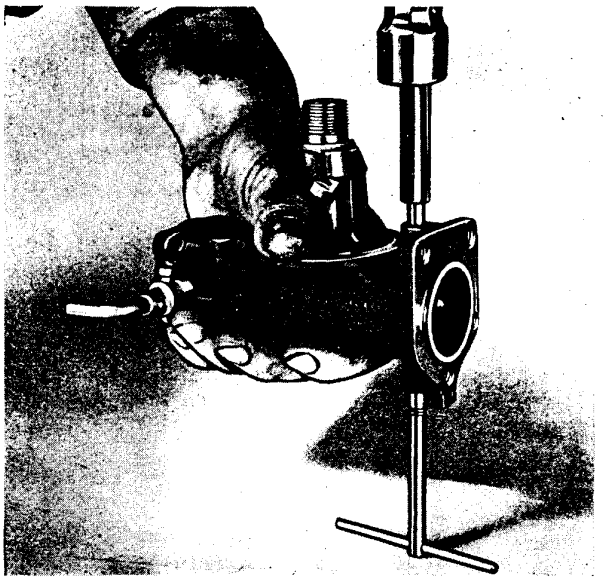
After a carburetor has been apart for clean-up service, readjust it according to instructions applying to carburetor that is badly out of adjustment (see "Adjusting Carburetor," Page 21).

Memoranda

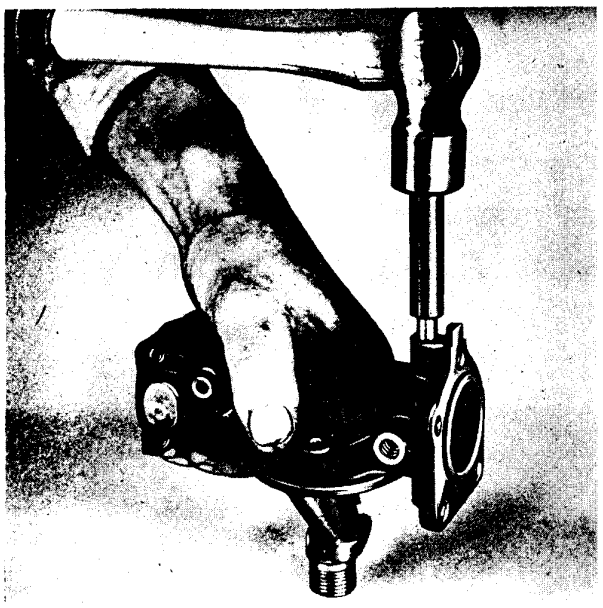
Replacing Throttle Shaft Bushings



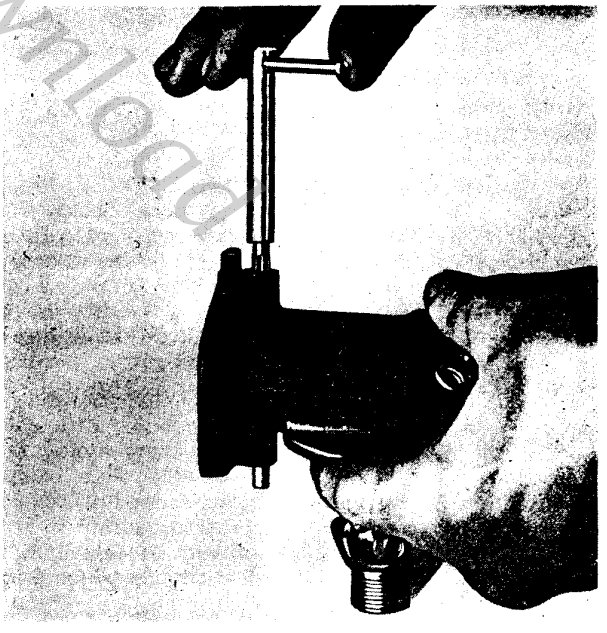
ILLUS. 113
DRIVE-OUT TAP TURNED INTO WORN THROTTLE SHAFT BUSHING



ILLUS. 114
DRIVING OUT WORN BUSHING



ILLUS. 115
DRIVING IN NEW BUSHING



ILLUS. 116
LINE REAMING BUSHINGS

Note: Instructions for renewing throttle shaft bushings are included with Harley-Davidson special tool set, Part No. 12012-44D.

CARBURETOR SPECIFICATIONS

Part No.	Model (Stamped in Top of Carb. Body)	Venturi Size	Small Idle Hole Nearest Manifold Flange (Drill Size)	Idle Hole Farthest From Manifold Flange (Drill Size)	Slot Width	Throttle Disc Angle	Where Used
1134-40	M-25	1 5/16"	#72	#55	.0155"	12°	1940 E and EL Models; 1941 F and FL Models; 1942 to 1947 F and FL models (optional) supersedes M-25
	M-75	1 5/16"	#72	#55	.020"	9°	
1134-40A	M-35	1 1/8"	#72	#55	.0155"	12°	1941 to 1947 E and EL models; 1942 to 1947 F and FL models—(standard)
1134-37	M-51	1 1/16"	#70	#55	.009"	13°	1937 to 1947 U and UL models
1134-37A	M-51L	1 1/8"	#70	#55	.009"	13°	1937 to 1941 UH and ULH models

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