



General Instructions

- Take lots of pictures as you take your carburetor apart. This will give you a reference of where things go.
- Using a cookie sheet with folded up sides will help keep parts from falling on the floor.
- We suggest not removing the throttle shaft, valves, or choke shaft unless they are corroded, or very dirty. These parts can be easily damaged and are difficult to re-assemble.
- Instruction sheets that come with our carburetor kits are somewhat generic. It may not match your parts exactly.
- Do NOT use WD-40 around your carburetor. It reacts with ethanol.
- Using Silicon Spray Lubricant on the gaskets will help with sticking in case you need to take the carburetor apart again.
- Be careful after taking the top of the carburetor off. Turning the carburetor upside down may cause parts to fall out and you won't know where they were.
- Screws and jets that are frozen can often be removed after heating outside the screw or jet.
- Stuck check balls can be removed by heating the outside of where the check ball resides and tapping the carburetor on the work bench.
- Do not discard any parts until complete done. You may have to refer for size, or matching.

Cleaning:

- Clean with carburetor dis-assembled.
- Soak all parts except rubber & electrical in Simple Green for 2 hours. Aluminum parts will get discolored if left longer.
- Wash parts with hot water if available to remove all chemicals.
- Blow out each passage way taking special notice of the smaller ones. Test each passage that air goes through the entire passage.
- Blow out the idle mixture hole.

- Check any hole above the idle mixture hole (inside the bore). This is the idle discharge and often becomes plugged.
- A tooth brush can facilitate cleaning parts.
- Soda blasting, then washing again will make the carburetor look good any will clean any minor deposits.
- Any corrosion, or deposits that are hard to remove may indicate the passages are also corroded and the carburetor should be replaced.
- If your engine has been sitting for 6 months or more, the gas has probably turned, and the gas tank will need to be cleaned as well as the fuel lines. Flushing new gas through the tank will not be enough.

Assembly:

- Do NOT apply any gasket sealant on any of the gaskets. Gas will break sealant part and the particles will clog the small passages.
- Test your float.
 - Brass floats should be immersed into hot water. As the air inside expands any leak will be noticeable with air bubbles.
 - Plastic, or Nitrophyl floats should be weighed. The weight is in grams. Check our technical pages for any weight specification that we may have.
- Most gaskets will fit as expected, but you may have to trim some, especially under the venturis.
- Your kit may include multiple gaskets in order to get better coverage out of the kit. Use the one that fits the best. Look for any opening the gasket may leave allowing air into the carburetor. Some holes may be casting holes that don't lead to anything and do not have to be covered.
- Mounting gaskets for multiple bore carburetors do not have to have matching holes. Example a four-barrel gasket can be open in the middle instead of 4 holes as long as the carburetor has some kind of passage between bores. The passage is between primary, or secondary, not both.
- When adjusting the float be careful not to put any pressure on the needle. The viton tip is easily damaged.
- Most idle mixture screws can be cleaned using a soft wire wheel. Inspect for any scoring, which would indicate over tightening. Screw with scoring should be replaced.

Accelerator Pumps:

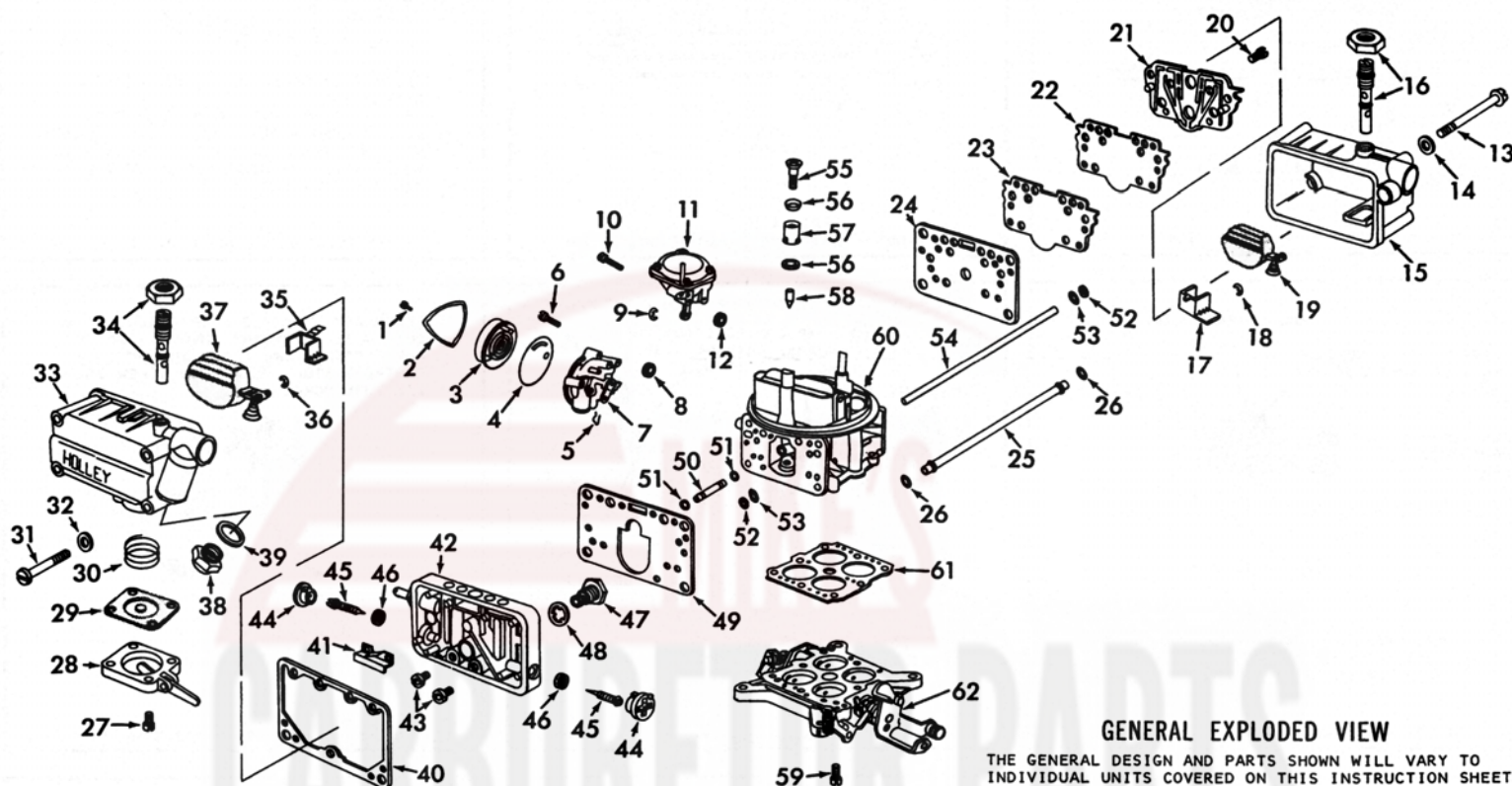
- On leather cups run your finger around the inside of the cup to break any manufacturer sealant.
- Apply 2 drops of oil to cups (leather, or rubber) before inserting into carburetor. Do not soak the cup in oil. The swelling of the cup needs to happen inside the carburetor. Allow the 2 drops of oil and the gas to do its job naturally.
- Twist the pump as you are inserting to help keep the cup from curling or folding over.
- Test your accelerator pump circuit before putting the top of the carburetor back on. Our technical pages have instructions on how to do this for most carburetor types.
- Pump wells are usually slight tapered, and the pump will not seal until it gets towards the bottom.

INSTRUCTION SHEET

HOLLEY CARBURETOR—MODEL 4160C

(ADJUSTABLE NEEDLE & SEAT)

IS-50-528



GENERAL EXPLODED VIEW

THE GENERAL DESIGN AND PARTS SHOWN WILL VARY TO INDIVIDUAL UNITS COVERED ON THIS INSTRUCTION SHEET.

NOMENCLATURE

REF. NO.	REF. NO.
1. SCREW (3)- RETAINER	32. GASKET (4)- PRI. BOWL SCREW
2. RETAINER- CHOKE COVER	33. BOWL- PRI. FUEL
3. CHOKE COVER ASSY.	34. NEEDLE & SEAT ASSY.- PRI.
4. GASKET- CHOKE COVER	35. BAFFLE- PRI. FUEL
5. RETAINER- CHOKE ROD	36. RETAINER- FLOAT
6. SCREW & LOCKWASHER (3)- CHOKE HOUSING	37. FLOAT & SPRING ASSY. PRI.
7. CHOKE HOUSING ASSY.	38. FITTING- FUEL INLET
8. GASKET- CHOKE HOUSING	39. GASKET- FITTING
9. RETAINER- SEC. DIAPHRAGM LINK	40. GASKET- PRI. FUEL BOWL
10. SCREW & LOCKWASHER (3)- SEC. DIAPH. HSG.	41. VENT BAFFLE- PRI. MET. BODY
11. SEC. DIAPHRAGM HSG. ASSY.	42. METERING BODY- PRI.
12. GASKET- SEC. DIAPH. HSG.	43. JETS (2)- MAIN
13. SCREW (4)- SEC. FLOAT BOWL	44. CAP (2)- IDLE LIMITER
14. GASKET (4)- SEC. BOWL SCREW	45. NEEDLE (2)- IDLE ADJ.
15. BOWL- SEC. FUEL	46. SEAL (2)- IDLE ADJ. NEEDLE
16. NEEDLE & SEAT ASSY.- SEC.	47. VALVE- PRI. ENRICHMENT (POWER)
17. BAFFLE- SEC. FUEL	48. GASKET- PRI. ENRICHMENT VALVE
18. RETAINER- FLOAT	49. GASKET- PRI. METERING BODY
19. FLOAT & SPRING ASSY.- SEC.	50. TUBE- PUMP PASSAGE
20. SCREW (6)- SEC. METERING BODY	51. O-RING (2)- TUBE
21. METERING BODY- SEC.	52. WASHER (2)- BALANCE TUBE
22. GASKET- METERING BODY	53. O-RING (2)- BALANCE TUBE
23. PLATE- METERING BODY	54. TUBE- BALANCE
24. GASKET- FUEL BOWL & MET. BODY	55. SCREW- PUMP NOZZLE
25. TUBE- FUEL LINE	56. GASKET (2)- PUMP NOZZLE
26. O-RING (2)- FUEL LINE TUBE	57. NOZZLE- PUMP DISC.
27. SCREW & LOCKWASHER (4)- PUMP COVER	58. NEEDLE- PUMP DISC. CHECK
28. COVER ASSY.- PUMP DIAPHRAGM	59. SCREW & LOCKWASHER (6)- THROTTLE BODY
29. PUMP DIAPHRAGM ASSY.	60. MAIN BODY ASSY.
30. SPRING- PUMP DIAPHRAGM	61. GASKET- THROTTLE BODY
31. SCREW (4)- PRI. FUEL BOWL	62. THROTTLE BODY ASSY.

DISASSEMBLY

USE EXPLODED VIEW AS A GUIDE. THE NUMERICAL SEQUENCE MAY GENERALLY BE FOLLOWED TO DISASSEMBLE UNIT FAR ENOUGH TO PERMIT CLEANING AND INSPECTION. SECONDARY THROTTLE DIAPHRAGM ASSY. IF TAKEN APART AND DIAPHRAGM USED OVER, BE CAREFUL NOT TO TEAR DIAPHRAGM WHEN REMOVING OR INSTALLING COVER SCREWS.

CLEANING

CLEANING MUST BE DONE WITH CARBURETOR DISASSEMBLED. SOAK PARTS LONG ENOUGH TO SOFTEN AND REMOVE ALL FOREIGN MATERIAL USING A COLD IMMERSION TYPE CARBURETOR CLEANER. MAKE CERTAIN THE THROTTLE BORES ARE FREE OF ALL CARBON AND VARNISH DEPOSITS. RINSE OFF IN SUITABLE SOLVENT. BLOW OUT ALL PASSAGES IN CASTINGS WITH COMPRESSED AIR AND CHECK CAREFULLY TO INSURE THOROUGH CLEANING OF OBSCURE AREAS. CAUTION: DO NOT SOAK ASSEMBLYS WITH ATTACHED PLASTIC PARTS FOR A LONG PERIOD OF TIME. DO NOT SOAK ANY PARTS CONTAINING RUBBER, FLOATS OR DIAPHRAGM ASSYS.

REASSEMBLY

REASSEMBLE IN REVERSE ORDER OF DISASSEMBLY. NOTE SPECIAL INSTRUCTIONS AND FOLLOW NUMERICAL OUTLINE IN MAKING ADJUSTMENTS NECESSARY FOR CARBURETOR BEING SERVICED.

SPECIAL INSTRUCTIONS

SCREWS LISTED BELOW MUST BE TIGHTENED IN THREE STAGES CROSSWISE, TO ARRIVE AT THE CORRECT TORQUE.

THROTTLE BODY GASKET (61)- BE SURE HOLES ARE PROPERLY MATCHED TO THROTTLE BODY. TORQUE THROTTLE BODY SCREWS TO 50 INCH LBS.

BALANCE TUBE (54)- INSTALLATION- SEE. FIG. 1

ENRICHMENT VALVE (47)- INSTALL AND TORQUE TO 100 INCH LBS.

PRI. & SEC. FUEL BOWL (33)(15)- BEFORE INSTALLING MAKE DRY FLOAT LEVEL ADJUSTMENT.

BOWL SCREW INSTALLATION (13)(31)- INSTALL GASKETS (14)(32) ON SCREWS BEFORE INSTALLING. THEN TORQUE EVENLY IN STAGES TO 40 INCH LBS.

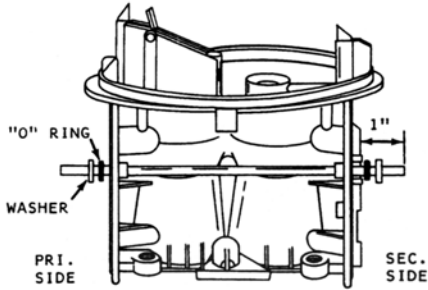
FUEL LINE TUBE (25)- INSTALL O-RINGS (26)- ON THE EXTREME ENDS OF THE TUBE, THEY WILL ROLL ON THE TUBE WHEN INSTALLING THE FUEL BOWL.

IDLE ADJUSTING NEEDLES (45)- TURN IN UNTIL LIGHTLY SEATED, THEN BACK OUT 1 1/2 TURNS. (DO NOT INSTALL IDLE LIMITER CAPS AT THIS TIME.)

O-RINGS- LUBRICATE LIGHTLY BEFORE INSTALLING.

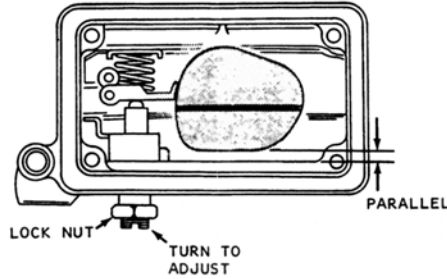
ADJUSTMENTS

ADJUST THE BALANCE TUBE SO THAT THE DISTANCE FROM THE METERING BODY TO END OF BALANCE TUBE IS 1" ON SEC. SIDE.

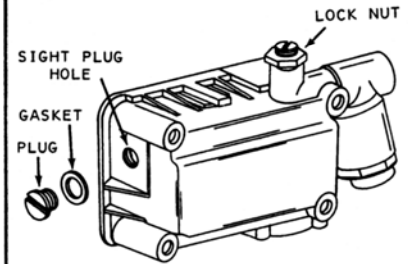


BALANCE TUBE POSITION FIG. 1.

FLOAT BOWL INVERTED, TURN NEEDLE SEAT ASSY. UNTIL FLOAT SURFACE IS PARALLEL WITH THE SURFACE DIRECTLY BELOW THE FLOAT. TIGHTEN LOCK NUT.

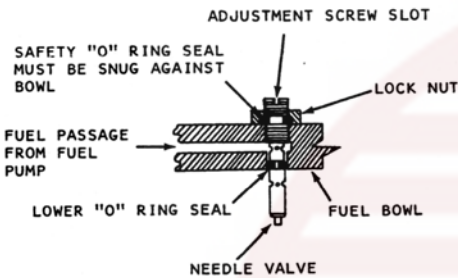


PRI. & SEC. DRY FLOAT LEVEL ADJUSTMENTS FIG. 2.



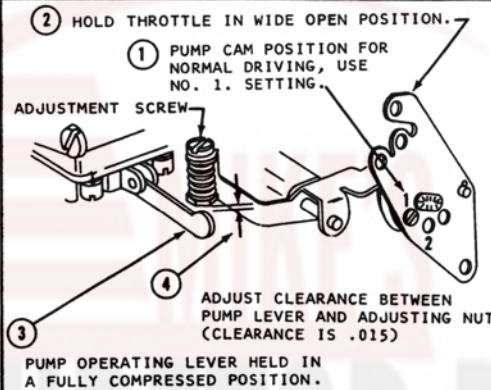
1. TRUCK SETTING ON LEVEL SURFACE AND ENGINE RUNNING.
2. REMOVE SIGHT LEVEL PLUG FROM BOWL.
3. ADJUST NEEDLE SEAT ASSY. SO FUEL LEVEL WILL BE AT BOTTOM EDGE OF SIGHT PLUG HOLE. (PLUS OR MINUS 1/32" TOLERANCE.)
4. TIGHTEN LOCK NUT.

PRI. & SEC. WET FLOAT LEVEL ADJUSTMENT FIG. 3.



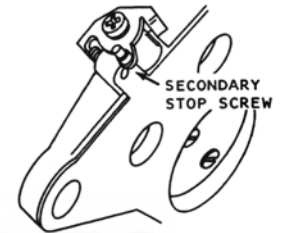
THE EXCLUSIVE SEALING FEATURES OF THIS ASSEMBLY PROVIDE SAFE ADJ. OF FUEL LEVEL WHILE ENGINE IS RUNNING.

SAFETY SEAL ADJUSTABLE FUEL VALVE FIG. 4.



PUMP ADJUSTMENT FIG. 5.

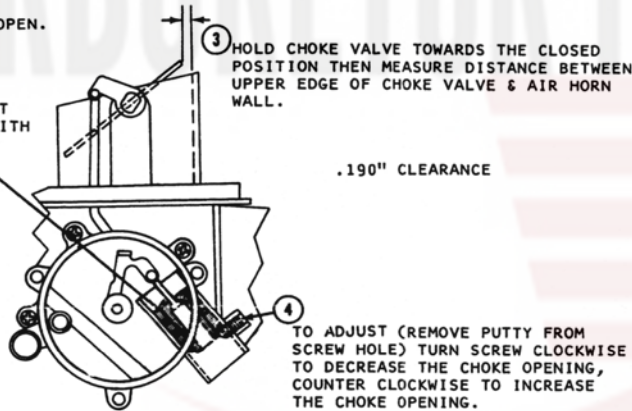
SECONDARY THROTTLE STOP SCREW, BACK OUT UNTIL SECONDARY THROTTLE PLATES ARE CLOSED. TURN SCREW IN UNTIL IT CONTACTS STOP, THEN TURN SCREW IN 1/2 TURN MORE.



SECONDARY THROTTLE STOP ADJUSTMENT FIG. 6.

1. BLOCK PRI. THROTTLE ABOUT HALF OPEN.

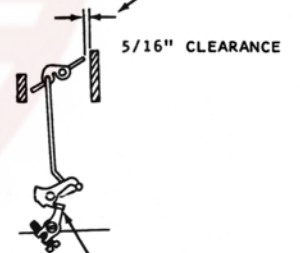
2. PUSH CHOKE PISTON DOWNWARD AGAINST ADJUSTMENT SCREW. (USING A WIRE WITH AN 1/8" BEND AT THE END.)



CHOKE PLATE PULLDOWN ADJUSTMENT FIG. 7.

1. HOLD THROTTLE PLATE IN WIDE OPEN POSITION

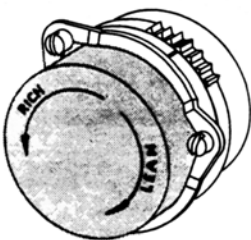
HOLD CHOKE TOWARDS THE CLOSED POSITION THEN MEASURE DISTANCE BETWEEN UPPER EDGE OF CHOKE VALVE & AIR HORN WALL.



2. TO ADJUST BEND PAWL ON FAST IDLE SPEED LEVER.

UNLOADER ADJUSTMENT FIG. 8.

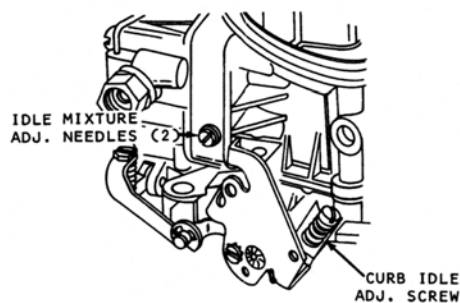
ALIGN MARK ON STAT COIL WITH PROPER INDEX MARK ON CHOKE HOUSING.



2 LEAN

AUTOMATIC CHOKE SETTING FIG. 9.

ENGINE AT OPERATING TEMP. REFER TO ENGINE DECAL FOR PROPER IDLE ADJUSTING PROCEDURE & SPECIFICATIONS.



SLOW IDLE ADJUSTMENT FIG. 10.

ADJUSTMENT DATA TABLE

IS-50-568

Motorcraft Carburetor Number	Holley Carburetor Number	Float Level Pri. Sec.	Fuel Level Pri. Sec.	Pump Cam Position	Pump Lever Setting	Choke Pulldown Setting	Choke Unloader Setting	Auto Choke Setting
SPECIFICATIONS - MODEL 2300, 2V CARBURETOR								
D1FF-LA	R-6150A	Fig. 1	Fig. 2	No. 2	.015	5/32"	5/16"	INDEX
D1JJ-B	R-6317-1A	Fig. 1	Fig. 2	No. 1	.015	5/32"	5/16"	3 LEAN
D3JL-S	R-7036A	Fig. 1	Fig. 2	No. 1	.015	5/32"	5/16"	3 LEAN
SPECIFICATIONS - MODEL 4150, 4V CARBURETOR								
D1FF-TA	R-6361A	Fig. 1	Fig. 2	No. 2	.015	9/64"	5/16"	INDEX
SPECIFICATIONS - MODEL 4160, 4V CARBURETOR								
C9FF-D	R-4473A	Fig. 1	Fig. 2	No. 1	.015	---	---	INDEX
C9FF-E	R-4608A	Fig. 1	Fig. 2	No. 2	.015	---	---	INDEX
D1FF-MA	R-6151A	Fig. 1	Fig. 2	No. 2	.015	9/64"	5/16"	INDEX
D1FF-NA	R-6152A	Fig. 1	Fig. 2	No. 2	.015	9/64"	5/16"	INDEX
D2JL-C	R-6407A	Fig. 1	Fig. 2	No. 2	.015	9/64"	5/16"	3 LEAN
D2JL-E	R-6576A	Fig. 1	Fig. 2	No. 1	.015	9/64"	5/16"	3 LEAN
SPECIFICATIONS - MODEL 4160, 4V CARBURETOR (Internal Needle & Seat)								
D4JL-J	R-7128A	*	---	No. 2	.015	9/64"	5/16"	*
D4JL-F	R-7169A	*	---	No. 2	.015	9/64"	5/16"	*
D4JL-G	R-7163A	*	---	No. 2	.015	9/64"	5/16"	*

*Check Boat Manufacturers Service Manual For Settings.

ADJUSTMENT

FLOAT BOWL INVERTED, TURN NEEDLE SEAT ASSY. UNTIL FLOAT SURFACE IS PARALLEL WITH THE SURFACE DIRECTLY BELOW THE FLOAT. TIGHTEN LOCK NUT.

LOCK NUT
TURN TO ADJUST
PARALLEL

PRI. & SEC.
DRY FLOAT LEVEL ADJUSTMENTS FIG. 1

LOCK NUT
SIGHT PLUG HOLE
GASKET PLUG

1. ENGINE RUNNING.
2. REMOVE SIGHT LEVEL PLUG FROM BOWL.
3. ADJUST NEEDLE SEAT ASSY. SO FUEL LEVEL WILL BE AT BOTTOM EDGE OF SIGHT PLUG HOLE. (PLUS OR MINUS 1/32" TOLERANCE.)
4. TIGHTEN LOCK NUT.

PRI. & SEC.
WET FLOAT LEVEL ADJUSTMENT FIG. 2

ADJUSTMENT SCREW SLOT
SAFETY "O" RING SEAL MUST BE SNUG AGAINST BOWL
LOCK NUT
FUEL PASSAGE FROM FUEL PUMP
LOWER "O" RING SEAL
FUEL BOWL
NEEDLE VALVE

THE EXCLUSIVE SEALING FEATURES OF THIS ASSEMBLY PROVIDE SAFE ADJ. OF FUEL LEVEL WHILE ENGINE IS RUNNING.

SAFETY SEAL ADJUSTABLE FUEL VALVE FIG. 3

CAUTION
DO NOT EXERT PRESSURE ON RESILIENT NEEDLE VALVE.

TO ADJUST BEND TAB.
PRIMARY FLOAT SETTING MEASURE AT TOE END OF FLOAT.
SECONDARY FLOAT SETTING MEASURE AT HEEL END OF FLOAT.

FUEL BOWL INVERTED, WEIGH OF FLOAT RESTING ON SEATED NEEDLE, MEASURE DISTANCE BETWEEN FLOAT AND INSIDE SURFACE OF FUEL BOWL.

INTERNAL NEEDLE & SEAT
DRY FLOAT LEVEL ADJUSTMENT FIG. 4

① PUMP CAM IN PROPER POSITION.
② HOLD THROTTLE IN WIDE OPEN POSITION
ADJUSTMENT SCREW
④ ADJUST CLEARANCE BETWEEN PUMP LEVER AND ADJUSTING NUT (CLEARANCE IS .015)
③ PUMP OPERATING LEVER HELD IN A FULLY COMPRESSED POSITION.

PUMP ADJUSTMENT FIG. 5

① HOLD THROTTLE PLATE IN WIDE OPEN POSITION
② HOLD CHOKE TOWARDS THE CLOSED POSITION THEN MEASURE DISTANCE BETWEEN UPPER EDGE OF CHOKE VALVE & AIR HORN WALL.
5/16" CLEARANCE
③ TO ADJUST BEND PAWL ON FAST IDLE SPEED LEVER.

UNLOADER ADJUSTMENT FIG. 6

PAPER CLIP .030-.036 DIA.
3/8"
1/8"
① INSERT BENT EDGE OF GAUGE INTO PISTON BORE UNTIL THE END OF THE BORE SLOT IS HOOKED.
② MOVE CHOKE VALVE TOWARD THE CLOSED POSITION UNTIL BOTTOM EDGE OF PISTON SLOT ENGAGES THE GAUGE.
③ MEASURE DISTANCE BETWEEN UPPER EDGE OF CHOKE VALVE AND AIR HORN WALL.
④ TO ADJUST BEND TANG ON PISTON LEVER.

CHOKE PLATE PULDOWN ADJUSTMENT FIG. 7.

ALIGN MARK ON STAT COIL WITH PROPER INDEX MARK ON CHOKE HOUSING.

LEAN

AUTOMATIC CHOKE SETTING FIG. 8