



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.

Needle & Seat Assembly Installation Instructions

CAUTION

**Excessive Tightening Of The Needle Seat Locknut
Can Cause Thread Distortion And Damage
To The Fuel Bowl.**

Proper Installation Is As Follows:

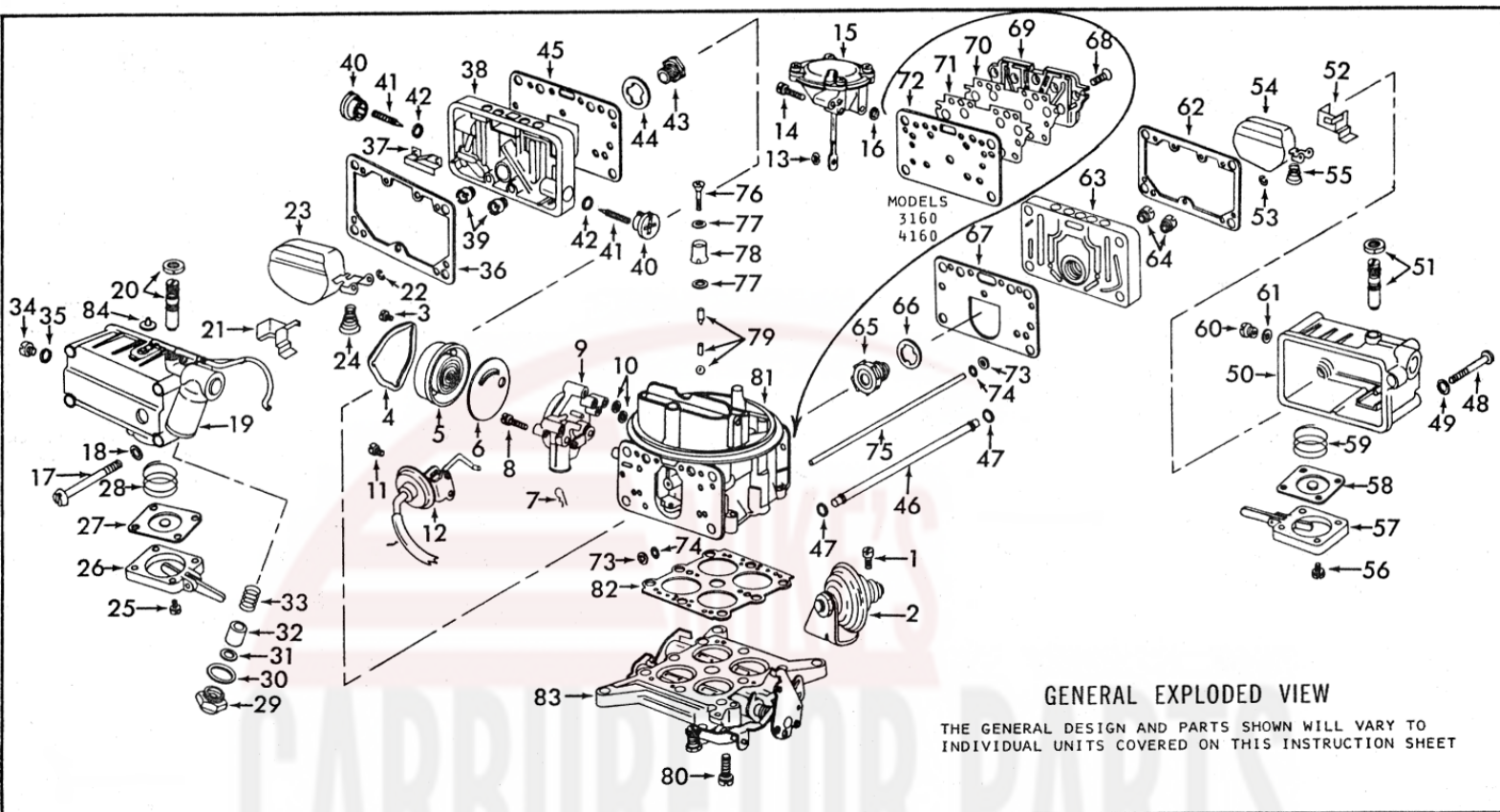
- 1. Install and Adjust Needle & Seat To Provide
Correct Fuel Level**
- 2. Tighten Locknut Until Nut Contacts The Fuel
Bowl Surface. Then Tighten An Additional 1/8 Turn,
Or To A Torque Value Of 15-20 Inch Pounds.**

INSTRUCTION SHEET

OFF VEHICLE CARBURETOR SERVICE

HOLLEY - MODELS 3160, 4150 4160

50-312-1



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 & LOCKWASHER - DASHPOT	41. NEEDLE (2) - IDLE ADJ.
2. DASHPOT & BRACKET ASSY.	42. SEAL (2) - IDLE NEEDLE
3. SCREW (3) - COVER CLAMP	43. POWER VALVE - PRI.
4. CLAMP - CHOKE COVER	44. GASKET - POWER VALVE
5. CHOKE COVER & SPRING ASSY.	45. GASKET - PRI. METERING BODY
6. GASKET - CHOKE COVER	46. TUBE - FUEL LINE
7. RETAINER - CHOKE ROD	47. O-RING (2) - TUBE
8. SCREW & LOCKWASHER (3) - CHOKE HOUSING	48. SCREW (4) - SEC. FUEL BOWL
9. CHOKE HOUSING ASSY.	49. GASKET (4) - SEC. BOWL SCREW
10. GASKET - CHOKE HOUSING	50. BOWL - SEC. FUEL
11. SCREW & LOCKWASHER (2) - CHOKE DIAPHRAGM ASSY.	51. NEEDLE & SEAT ASSY. - SEC.
12. CHOKE DIAPHRAGM ASSY. (SOME MODELS)	52. BAFFLE PLATE - SEC. N/S
13. RETAINER - SEC. DIAPHRAGM LINK	53. RETAINER - SEC. FLOAT
14. SCREW & LOCKWASHER (3) - DIAPH. HOUSING ASSY.	54. FLOAT ASSY. - SEC.
15. DIAPH. HOUSING ASSY. - SECONDARY THROTTLE	55. SPRING - SEC. FLOAT
16. GASKET - SEC. DIAPH. HOUSING	56. SCREW & LOCKWASHER (4) - PUMP COVER
17. SCREW (4) - PRI. FUEL BOWL	57. PUMP COVER ASSY. - (HI. PERF. CARB.)
18. GASKET (4) - PRI. BOWL SCREW	58. PUMP DIAPHRAGM ASSY. - (HI. PERF.)
19. BOWL - PRI. FUEL	59. SPRING - PUMP
20. NEEDLE & SEAT ASSY. - PRI.	60. PLUG - SIGHT LEVEL
21. BAFFLE PLATE - PRI. N/S	61. GASKET - PLUG
22. RETAINER - PRI. FLOAT	62. GASKET - SEC. FUEL BOWL
23. FLOAT ASSY. - PRI.	63. METERING BODY - SEC.
24. SPRING - PRI. FLOAT	64. JET (2) - SEC. MAIN
25. SCREW & LOCKWASHER (4) - PUMP COVER	65. POWER VALVE - SEC. (SOME MODELS)
26. PUMP COVER ASSY.	66. GASKET - VALVE
27. PUMP DIAPHRAGM ASSY.	67. GASKET - SEC. METERING BODY
28. SPRING - PUMP	68. SCREW (6) - SEC. METERING BODY
29. FITTING - FUEL INLET	69. METERING BODY - SEC.
30. GASKET - FITTING	70. GASKET - SEC. METERING BODY PLATE
31. GASKET - FILTER	71. PLATE - SEC. METERING BODY
32. FILTER - FUEL	72. GASKET - SEC. METERING BODY
33. SPRING - FILTER	73. WASHER (2) - BALANCE TUBE (4160)(3160)
34. PLUG - SIGHT LEVEL	74. O-RING (2) - BALANCE TUBE (4160)(3160)
35. GASKET - PLUG	75. BALANCE TUBE (4160)(3160)
36. GASKET - PRI. FUEL BOWL	76. SCREW - PUMP DISC. NOZZLE
37. VENT BAFFLE - METERING BODY	77. GASKET (2) - PUMP DISC. NOZZLE
38. METERING BODY - PRI.	78. NOZZLE - PUMP DISC.
39. JET (2) - PRI. MAIN	79. NEEDLE VALVE - PUMP DISC. (OR BALL AND WEIGHT)
40. CAP (2) - IDLE LIMITER (SOME MODELS)	80. SCREW & LOCKWASHER (8) - THROTTLE BODY
	81. MAIN BODY ASSY.
	82. GASKET - THROTTLE BODY
	83. THROTTLE BODY ASSY.
	84. AIR VENT VALVE OR CAP

DISASSEMBLY

USE EXPLODED VIEW AS A GUIDE. THE NUMERICAL SEQUENCE MAY GENERALLY BE FOLLOWED TO DISASSEMBLE UNIT FAR ENOUGH TO PERMIT CLEANING AND INSPECTION. NOTE: PRIMARY SIDE (CHOKE SIDE) AND SECONDARY SIDE PARTS ARE NOT ALWAYS IDENTICAL. BE SURE TO MARK PARTS TAKEN FROM PRIMARY SIDE. SECONDARY THROTTLE DIAPHRAGM ASSY. (15) - IF TAKEN APART BE CAREFUL NOT TO TEAR DIAPHRAGM WHEN TAKING OUT OR INSTALLING COVER SCREWS.

CLEANING

CLEANING MUST BE DONE WITH CARBURETOR DISASSEMBLED. SOAK PARTS LONG ENOUGH TO SOFTEN AND REMOVE ALL FOREIGN MATERIAL. USE A CARBURETOR CLEANING SOLVENT. 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 PARTS WITH ATTACHED PLASTIC PARTS FOR A LONG PERIOD OF TIME. DO NOT SOAK ANY PARTS CONTAINING RUBBER OR DIAPHRAGM ASSEMBLIES.

REASSEMBLY

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

SPECIAL INSTRUCTIONS

THROTTLE BODY GASKET (82) - BE SURE HOLES ARE PROPERLY MATCHED TO THROTTLE BODY

POWER VALVE INSTALLATION
SOME KIT APPLICATIONS - PRI. & SEC. VALVES ARE THE SAME.
SOME KIT APPLICATIONS - PRI. SIDE, USE THE VALVE WITH THE SMALLEST IDENTIFYING NUMBER. (STAMPED ON SIDE OF VALVE.)
SPECIAL NOTE: HI. PERF. CARB.
CARB. NO. R4778AAA PRI. 8.5 SEC. NONE
R4779AAA PRI. 8.5 SEC. NONE
R4780AAA PRI. 6.5 SEC. 8.5

IDLE ADJ. NEEDLES (41) - TURN IN UNTIL LIGHTLY SEATED THEN BACK OUT 1" TURN. (DO NOT INSTALL IDLE LIMITER CAPS AT THIS TIME WHEN USED.)
NOTE: SOME LATE CARBURETORS HAVE A "BACKWARDS" IDLE ADJUSTMENT, TURN NEEDLES IN TO RICHEN THE MIXTURE, BACK NEEDLES OUT TO LEAN THE MIXTURE.

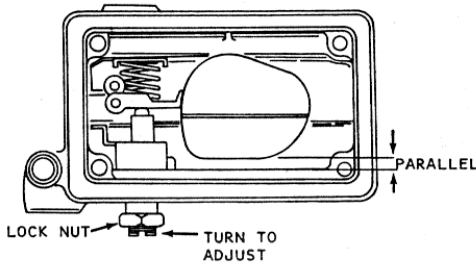
PRI. & SEC. FUEL BOWL - BEFORE INSTALLING MAKE DRY FLOAT LEVEL ADJUSTMENT.

O-RINGS - LUBRICATE LIGHTLY BEFORE INSTALLING.

ADJUSTMENTS

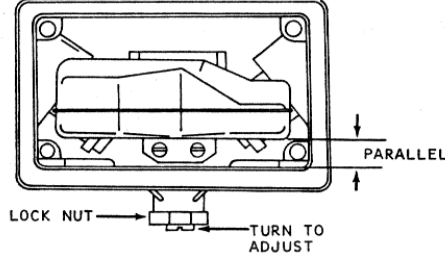
SIDE HUNG FLOAT

CENTER HUNG FLOAT



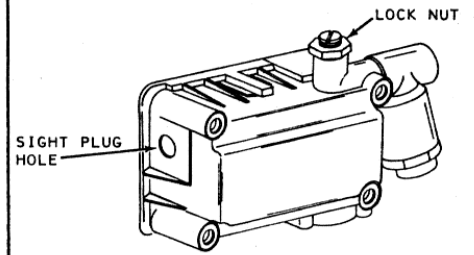
FLOAT BOWL INVERTED, TURN NEEDLE SEAT ASSY. UNTIL FLOAT SURFACE IS PARALLEL WITH THE SURFACE DIRECTLY BELOW THE FLOAT. TIGHTEN LOCK NUT.

DRY FLOAT LEVEL ADJUSTMENTS
FIG. 1



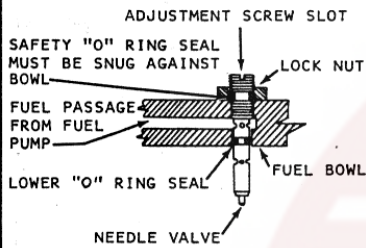
FLOAT BOWL INVERTED, TURN NEEDLE SEAT ASSY. UNTIL FLOAT SURFACE IS PARALLEL WITH THE SURFACE DIRECTLY BELOW THE FLOAT. TIGHTEN LOCK NUT.

FIG. 2



1. CAR SETTING ON LEVEL SURFACE & 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.

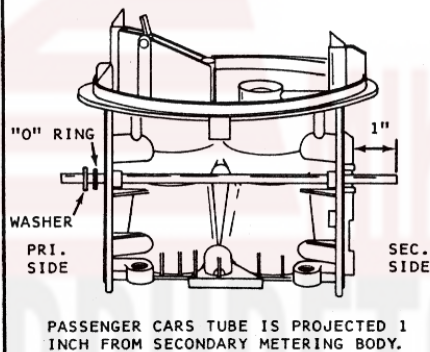
WET FLOAT LEVEL ADJUSTMENT FIG. 3



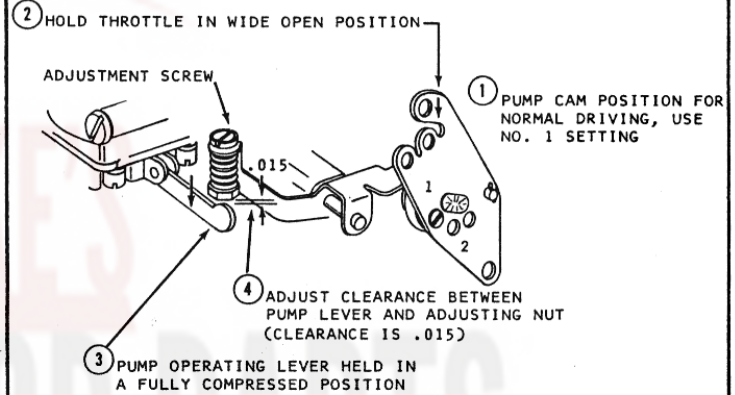
THE EXCLUSIVE SEALING FEATURES OF THIS ASSEMBLY PROVIDE SAFE ADJ. OF FUEL LEVEL WHILE ENGINE IS RUNNING.

SAFETY SEAL ADJUSTABLE FUEL VALVE
FIG. 4

TRUCK APPLICATIONS TUBE IS EQUALLY PROJECTED IN BOTH PRIMARY AND SECONDARY BOWLS.



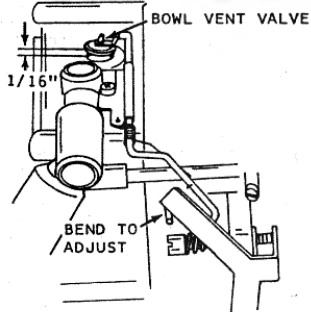
BALANCE TUBE POSITION FIG. 5



PRI. & SEC. PUMP ADJUSTMENT

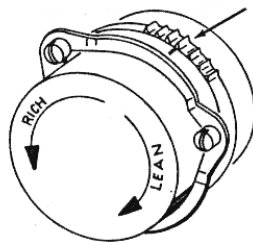
FIG. 6

THROTTLE VALVES FULLY CLOSED, MEASURE DISTANCE BETWEEN VENT VALVE AND SEAT.



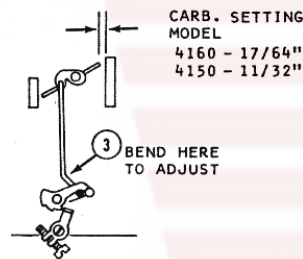
BOWL VENT ADJUSTMENT FIG. 7

ALIGN MARK ON STAT COIL WITH INDEX ON CHOKE HOUSING. ALLOWABLE VARIATIONS, 2 MARKS EITHER WAY FROM INDEX.



AUTOMATIC CHOKE SETTING FIG. 8

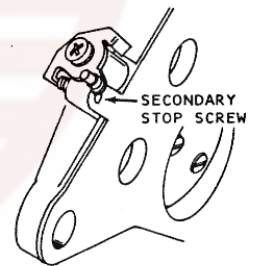
- 2 CHOKE HELD TOWARD CLOSED POSITION, MEASURE BETWEEN UPPER EDGE OF CHOKE VALVE AND AIR HORN WALL.



○ THROTTLE HELD WIDE OPEN

UNLOADER ADJUSTMENT FIG. 9

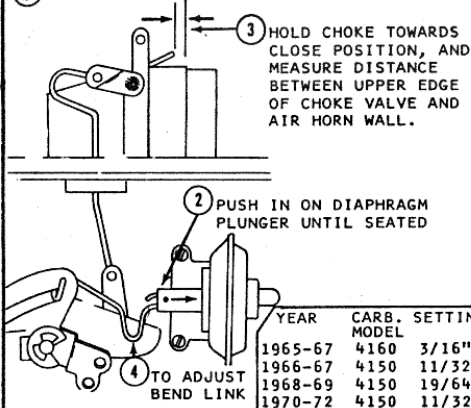
SECONDARY THROTTLE STOP SCREW, BACK OUT UNTIL SECONDARY THROTTLE PLATES ARE CLOSED. TURN SCREW IN UNTIL IT CONTACTS STOP, THEN TURN SCREW IN 1/2 - 3/4 TURNS MORE.



SECONDARY THROTTLE STOP ADJUSTMENT

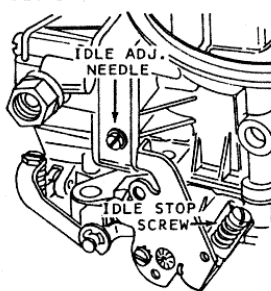
FIG. 10

- 1 OPEN THROTTLE TO CLEAR FAST IDLE CAM.



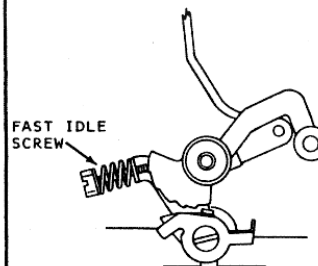
VACUUM BREAK ADJUSTMENT. FIG. 11

ENGINE AT OPERATING TEMP. AND CHOKE WIDE OPEN, ADJUST IDLE MIXTURE NEEDLES TO A SMOOTH IDLE. ADJUST IDLE STOP SCREW TO 500-550 R.P.M. OR FOLLOW SETTING ON ENGINE DECAL.



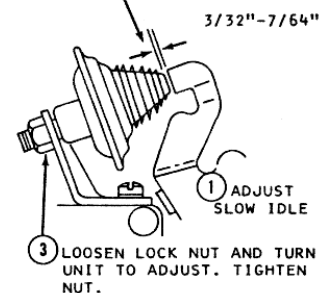
SLOW IDLE ADJUSTMENT FIG. 12

PLACE FAST IDLE SCREW ON HIGH STEP OF FAST IDLE CAM AND SET TO 1600-1800 R.P.M. OR FOLLOW SETTING ON ENGINE DECAL.



FAST IDLE ADJUSTMENT FIG. 13

- 2 DEPRESS PLUNGER STEM AND MEASURE DISTANCE BETWEEN END OF STEM AND THROTTLE ARM.



(DASHPOT)
SLOW CLOSING THROTTLE ADJ.
FIG. 14

YEAR	CARB. SETTING MODEL
1965-67	4160 3/16"
1966-67	4150 11/32"
1968-69	4150 19/64"
1970-72	4150 11/32"