



## 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.

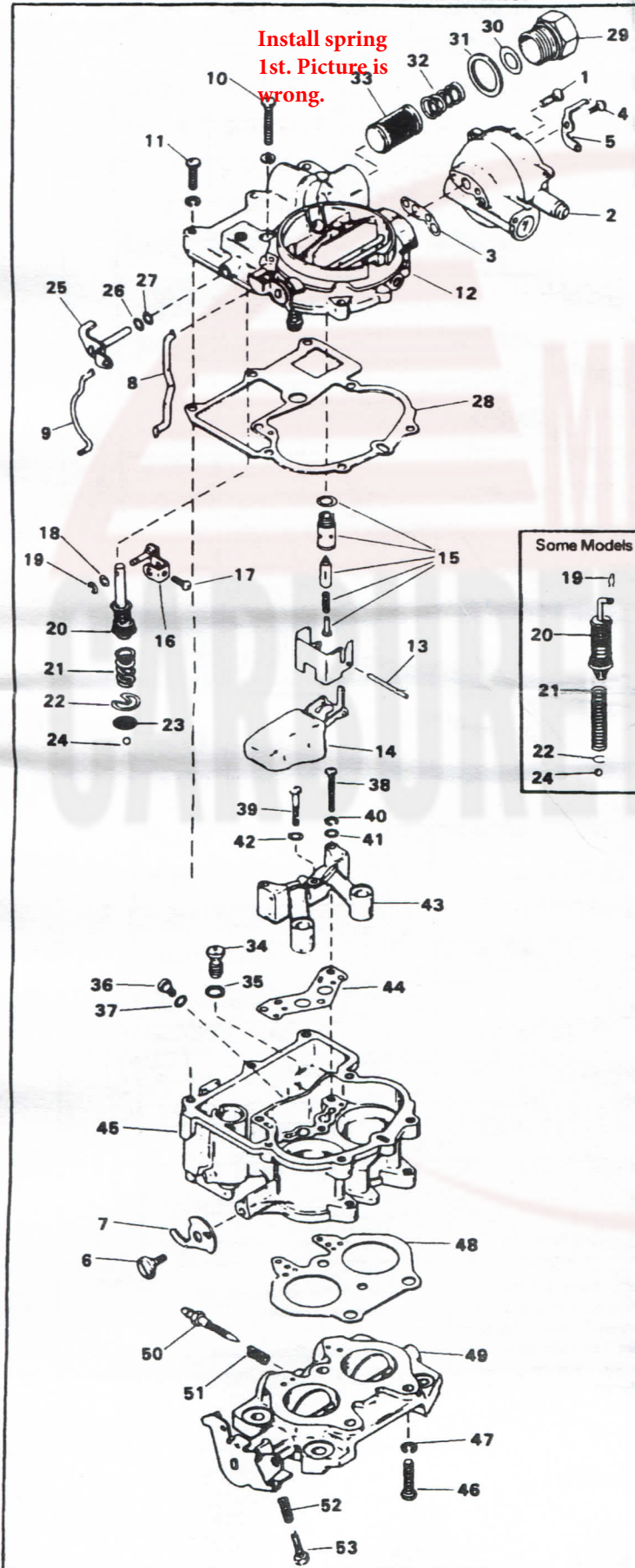
#### Accelerator Pumps:

- 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 MERCARB TWO-BARREL

## GENERAL EXPLODED VIEW

The general design and parts shown will vary to individual units covered on this instruction sheet



## DISASSEMBLY

Use exploded view as guide. The numerical sequence may generally be followed to disassemble unit far enough to permit cleaning and inspection.

## NOMENCLATURE

| Reference Number                | Reference Number                   |
|---------------------------------|------------------------------------|
| 1. Screw, Choke Housing         | 28. Gasket, Bowl Cover             |
| 2. Choke Housing Assembly       | 29. Fitting, Fuel Inlet            |
| 3. Gasket, Choke Housing        | 30. Gasket, Fuel Inlet             |
| 4. Screw, Choke Lever           | 31. Gasket, Fuel Inlet             |
| 5. Lever                        | 32. Spring, Fuel Filter            |
| 6. Screw, Fast Idle Cam         | 33. Filter                         |
| 7. Fast Idle Cam                | 34. Power Valve Assembly           |
| 8. Choke Rod                    | 35. Gasket, Power Valve            |
| 9. Pump Rod                     | 36. Jet                            |
| 10. Screw, Bowl Cover (Long)    | 37. Gasket, Jet                    |
| 11. Screw, Bowl Cover (Short)   | 38. Screw, Venturi Assembly        |
| 12. Bowl Cover Assembly         | 39. Screw, Venturi Center          |
| 13. Pin, Float                  | 40. Lockwasher                     |
| 14. Float                       | 41. Gasket                         |
| 15. Needle & Seat Assembly      | 42. Gasket                         |
| 16. Pump Shaft & Lever Assembly | 43. Venturi Cluster                |
| 17. Screw, Pump Shaft Assembly  | 44. Gasket, Venturi Cluster        |
| 18. Washer, Pump Shaft          | 45. Float Bowl Assembly            |
| 19. Retainer, Pump Shaft        | 46. Screw, Throttle Body           |
| 20. Accelerator Pump Assembly   | 47. Lockwasher                     |
| 21. Spring, Pump Assembly       | 48. Gasket, Throttle Body          |
| 22. Retainer, Spring            | 49. Throttle Body                  |
| 23. Strainer                    | 50. Needle, Idle Mixture Adjusting |
| 24. Check Ball                  | 51. Spring, Idle Mixture Screw     |
| 25. Accelerator Pump Lever      | 52. Screw, Idle Speed Adjusting    |
| 26. Washer, Inner               | 53. Spring, Idle Speed Screw       |
| 27. Washer, Outer               |                                    |

## CLEANING

Cleaning must be done with carburetor disassembled. Use a carburetor cleaning solvent to soak parts long enough to soften and remove all foreign material. 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 ensure thorough cleaning of obscure areas.

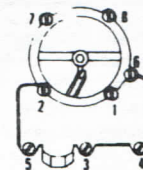
**CAUTION:** Do not soak float, solenoids, diaphragm units, plastic washers when used or rubber parts in cleaning solvents. Do not sand, wire brush or file on Teflon-coated shafts.

## REASSEMBLY

Reassemble in reverse order of disassembly. Note special instructions and follow numerical outline in making adjustments necessary for carburetor being serviced.

## SPECIAL INSTRUCTIONS

Idle adjusting needles: Turn each needle in lightly until seated, then back out two turns. (Do not install idle limiter caps at this time.)



Air Horn Tightening Sequence

The specifications in this chart replace the specifications found in the service manuals. See MerCruiser Service Bulletin 97-8.

| CYL          | MODEL/<br>ENGINE | CARBURETOR<br>NUMBER | FLOAT LEVEL  | FLOAT DROP   | PUMP ROD       | CHOKE<br>SETTING    | CHOKE<br>UNLOADER   | FLOAT<br>WEIGHT |         |
|--------------|------------------|----------------------|--|--|----------------|---------------------|---------------------|-----------------|---------|
| 4            | MCM 120/140      | 1389-8490A 2         | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 120/140      | 1389-9350A 2         | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 120/140      | 1389-9562A 1         | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 2.5L/3.0L    | 3310-806077A 2       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 2.5/3.0L     | 3310-860070A 2       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 3.0L         | 1389-815396A 2       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 3.0L         | 3310-806078A 2       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 3.0L         | 3310-807504A 1       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 3.0L         | 3310-864940A01       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 3.0L TKS     | 3310-866140A02       | 9/16" (14mm) Spring-Needle                               | 1-3/32" (27 mm)  |                |                     |                     | 9 Grams         |         |
|              | MCM 3.0LX        | 1389-815397A 2       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 3.0LX        | 3310-805924A 2       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27 mm)  | 1-5/32" (29mm) | 1 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 470          | 1389-8489A 5         | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm)   | 1-5/32" (29mm) | INDEX               | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 170/165      | 1389-9564A 1         | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm)   | 1-5/32" (29mm) | INDEX               | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 165/3.7L     | 3310-806079A 2       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm)   | 1-5/32" (29mm) | INDEX               | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 165/3.7L     | 3310-860071A 2       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm)   | 1-5/32" (29mm) | INDEX               | 5/64" (2mm)         | 9 Grams         |         |
|              | 6                | MCM 175/185          | 3304-9353A 2   | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm) | 1-5/32" (29mm)      | 2 Lean<br>clockwise | 5/64" (2mm)     | 9 Grams |
|              |                  | MCM 175/4.3L         | 3304-9565A 1   | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm) | 1-5/32" (29mm)      | 2 Lean<br>clockwise | 5/64" (2mm)     | 9 Grams |
|              |                  | MCM 4.3L             | 3304-9565A 7   | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm) | 1-5/32" (29mm)      | 2 Lean<br>clockwise | 5/64" (2mm)     | 9 Grams |
| MCM 4.3L     |                  | 3310-806080A 2       | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
| MCM 4.3L     |                  | 3310-806972A 1       | 9/16" (14mm) Spring-Needle                               | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
| MCM 4.3L     |                  | 3310-807764A 1       | 9/16" (14mm) Spring-Needle                               | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
| MCM 4.3L     |                  | 3310-864941A01       | 9/16" (14mm) Spring-Needle                               | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
| MCM 4.3L TKS |                  | 3310-866141A02       | 9/16" (14mm) Spring-Needle                               | 1-3/32" (27 mm)  |                |                     |                     | 9 Grams         |         |
| MCM 898/200  |                  | 1389-8488A 2         | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
| MCM 200      |                  | 1389-9563A 1         | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
| 8            | MCM 200/5.0L     | 1389-9670A 2         | 3/8" (10mm) Solid-Needle<br>* 9/16" (14mm) Spring-Needle | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 5.0L         | 3310-806081A 2       | 9/16" (14mm) Spring-Needle                               | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 5.0L         | 3310-861080A 1       | 9/16" (14mm) Spring-Needle                               | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 5.0L         | 3310-861448A 1       | 11/32" (9mm) Spring-Needle                               | 15/16" (24mm)  | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 5.0L         | 3310-864942A03       | 11/32" (9mm) Spring-Needle                               | 15/16" (24mm)  | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 5.0L TKS     | 3310-866142A03       | 11/32" (9mm) Spring-Needle                               | 15/16" (24mm)  |                |                     |                     | 9 Grams         |         |
|              | MCM 5.7L         | 3310-807312A 1       | 9/16" (14mm) Spring-Needle                               | 1-3/32" (27mm)   | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 5.7L         | 3310-861245A 1       | 11/32" (9mm) Spring-Needle                               | 15/16" (24mm)  | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 5.7L         | 3310-864943A01       | 11/32" (9mm) Spring-Needle                               | 15/16" (24mm)  | 1-5/32" (29mm) | 2 Lean<br>clockwise | 5/64" (2mm)         | 9 Grams         |         |
|              | MCM 5.7L TKS     | 3310-866143A03       | 11/32" (9mm) Spring-Needle                               | 15/16" (24mm)  |                |                     |                     | 9 Grams         |         |

\* Note: On engines experiencing flooding or rough idle, if all components and specifications are okay, it may be necessary to change to the spring-loaded needle & seat assembly. Installing a spring loaded needle and seat on a 4-cylinder engine can cause a lean out condition in extremely hard turns. (GM 153, 181 cid: Right turn.) (Mercury Marine 224 cid: Left turn.) Because of this potential lean out condition in extremely hard turns, you should make the boat owner aware of this condition before installing the spring-loaded needle and seat kit. The spring loaded needle and seat kit is the preferred one to use if you have a flooding problem at idle RPM. See MerCruiser Service Bulletin 97-8 for further information.

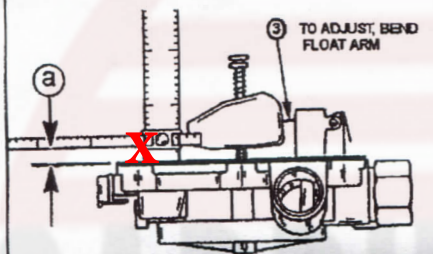
# ADJUSTMENTS

SEE DATA TABLE FOR MEASUREMENTS

① TURN AIR HORN UPSIDE DOWN. PIVOT FLOAT ASSEMBLY UP AND DOWN ON HINGE PIN TO ENSURE IT MOVES FREELY.

IMPORTANT: BEFORE CHECKING FLOAT LEVEL, RAISE FLOAT AND ALLOW IT TO FALL; HOWEVER DO NOT FORCE DOWNWARD BY HAND.

② WITH GASKET IN PLACE, MEASURE FLOAT LEVEL FROM THE GASKET TO THE TOE OF THE FLOAT.



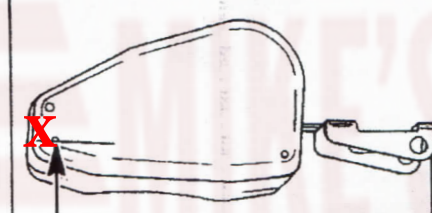
③ TO ADJUST, BEND FLOAT ARM

a - MEASURE FROM DOT ON FLOAT TO GASKET (SEE FIG. 2)

**Make the float level w/top. No measurement necessary.**

DRY FLOAT LEVEL ADJUSTMENT

FIG. 1



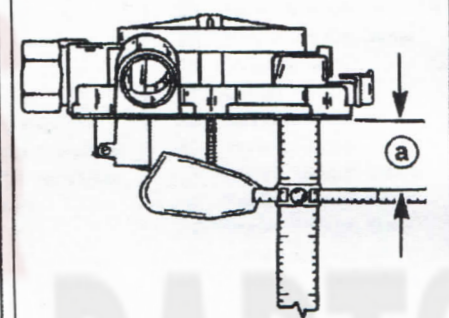
a - TOE OF FLOAT

FLOAT TOE LOCATION

FIG. 2

① HOLD AIR HORN RIGHT SIDE UP TO ALLOW FLOAT TO HANG FREE.

② WITH GASKET IN PLACE, MEASURE FLOAT DROP FROM THE GASKET TO THE TOE OF THE FLOAT.

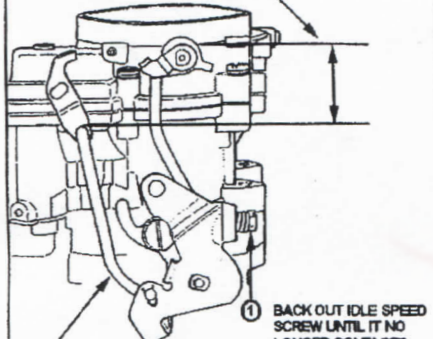


a - MEASURE FROM DOT ON FLOAT TO GASKET (SEE FIG. 2)

FLOAT DROP ADJUSTMENT

FIG. 3

② MEASURE DISTANCE BETWEEN FLAME ARRESTOR MOUNTING SURFACE TO TOP OF PUMP ROD.



③ TO ADJUST, BEND PUMP ROD

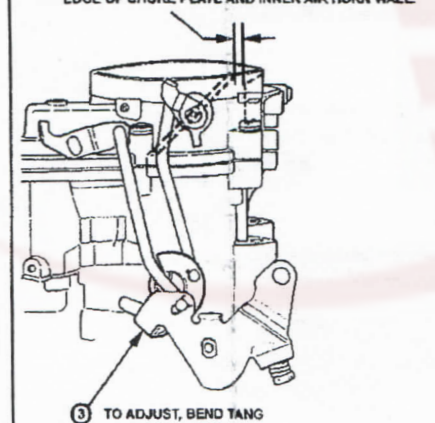
① BACK OUT IDLE SPEED SCREW UNTIL IT NO LONGER CONTACTS IDLE CAM. HOLD THROTTLE VALVES CLOSED TIGHTLY.

PUMP ROD ADJUSTMENT

FIG. 4

① HOLD THROTTLE VALVES COMPLETELY OPEN.

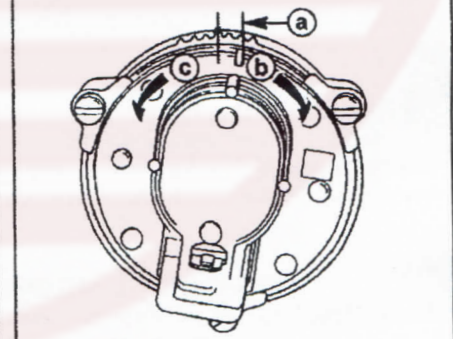
② GENTLY PRESS DOWN CHOKE PLATE TOWARD CLOSED POSITION. MEASURE BETWEEN UPPER EDGE OF CHOKE PLATE AND INNER AIR HORN WALL.



③ TO ADJUST, BEND TANG

CHOKE UNLOADER ADJUSTMENT

FIG. 5



a - SCRIBED MARK IN COVER ROTATED CLOCKWISE TWO POSITIONS FROM CENTER INDEX

b - CLOCKWISE = LEANER

c - COUNTER-CLOCKWISE = RICHER

CHOKE SETTING

FIG. 6