

# FUEL SYSTEM

## SERVICE INSTRUCTION WORKSHEET

TO REPAIR

ROCHESTER CARBURETOR

4 BARREL • Model 4GC

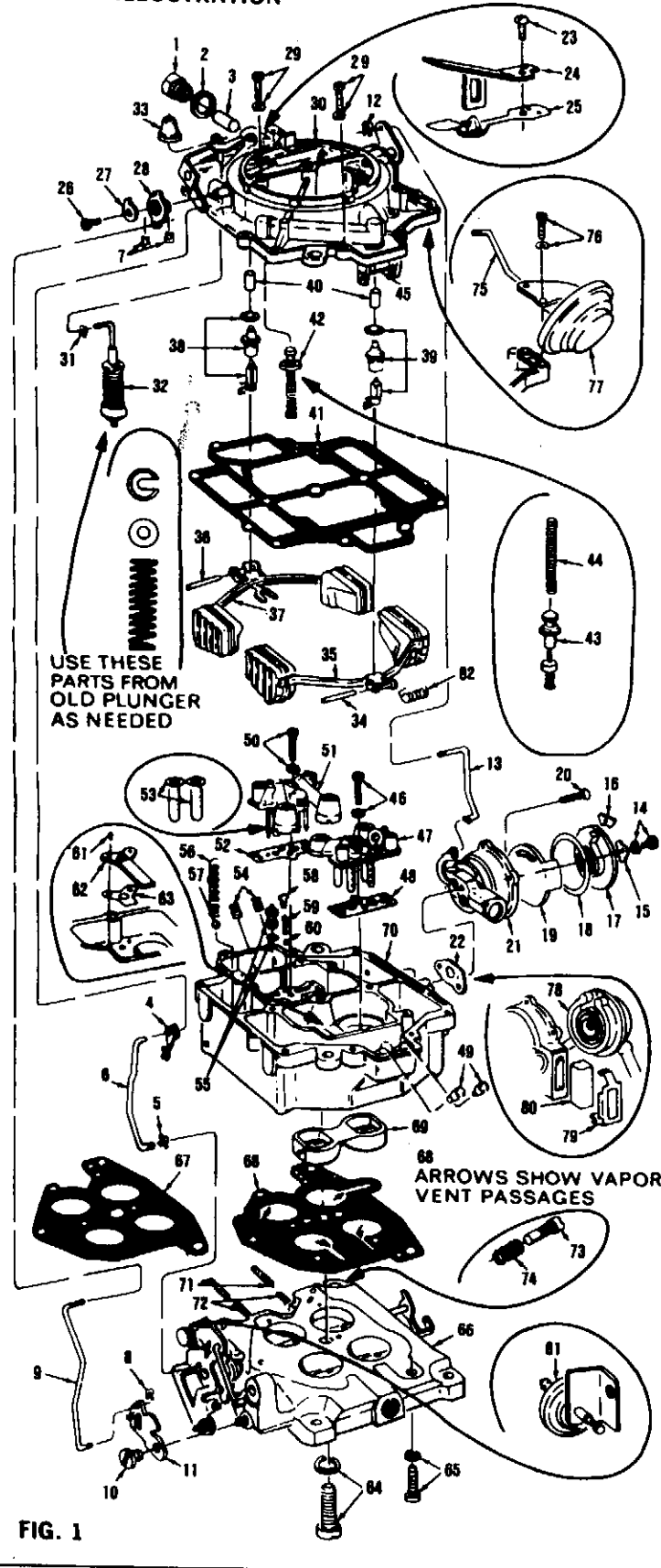
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Instructions

### TYPICAL ILLUSTRATION



1. Carefully read the text in the following pages to become familiar with the contents of this worksheet before performing carburetor overhaul.
2. The exploded view is typical of the model carburetor this kit will service. The view may differ slightly from the actual carburetor being overhauled.
3. Use the exploded view as a guide. The numerical sequence of the parts list may generally be followed to disassemble the carburetor far enough to permit cleaning and inspection.
4. Parts list shown DOES NOT reflect the contents of the kit.
5. Kit may contain extra parts intended for other carburetors within this group. Substitute identical replacement parts for original worn parts found in carburetor.

### CLEANING

Cleaning must be done with carburetor disassembled. Use spray cleaner and a stiff bristle brush to remove dirt and carbon deposits. Do not use abrasives and wires to clean parts and passageways. Wash off in suitable solvent, and clear all passageways with compressed air.

**Caution:** When cleaning with solvent do not soak or spray parts containing rubber, leather, plastic and electrical components.

### PARTS LIST

- |   |   |
|---|---|
| 1. Fuel inlet fitting                   | 45. Float balance spring                                      |
| 2. Fuel inlet fitting gasket            | 46. Secondary venturi screw & washer                          |
| 3. Fuel inlet screen                    | 47. Secondary venturi cluster                                 |
| 4. Pump rod retainer (upper)            | 48. Secondary venturi cluster gasket                          |
| 5. Pump rod retainer (lower)            | 49. Secondary main metering jets                              |
| 6. Pump rod                             | 50. Primary venturi screw & washer                            |
| 7. Choke rod retainer (upper)           | 51. Primary venturi cluster                                   |
| 8. Choke rod retainer (lower)           | 52. Primary venturi cluster gasket                            |
| 9. Choke rod                            | 53. Main well inserts   |
| 10. Fast idle cam screw                 | 54. Primary main metering jets                                |
| 11. Fast idle cam                       | 55. Power valve & gasket assembly                             |
| 12. Intermediate choke rod retainer     | 56. Pump return spring  |
| 13. Intermediate choke rod              | 57. Pump intake check ball                                    |
| 14. Thermostat retainer screw & washer  | (used where there is seat in casting [Alum.])                 |
| 15. Cover retainer (plain)              | 58. Pump discharge ball guide                                 |
| 16. Cover retainer (toothed)            | 59. Pump discharge check ball spring                          |
| 17. Thermostat spring & cover assy.     | 60. Pump discharge check ball (steel)                         |
| 18. Cover gasket                        | 61. Idle compensator valve screw                              |
| 19. Baffle plate                        | 62. Idle compensator valve                                    |
| 20. Choke housing screw                 | 63. Idle compensator valve gasket                             |
| 21. Choke piston housing assembly       | 64. Throttle body attaching screw & washer (center hole)      |
| 22. Choke housing gasket                | 65. Throttle body attaching screw & washer                    |
| 23. Idle vent valve screw               | 66. Throttle body assembly                                    |
| 24. Idle vent valve shield              | 67. Body flange gasket  |
| 25. Idle vent valve                     | 68. Body flange gasket (slotted type)                         |
| 26. Trip lever screw                    | 69. Auxiliary throttle valve assembly                         |
| 27. Trip lever                          | 70. Float bowl assembly                                       |
| 28. Choke lever and collar              | 71. Idle adjustment screws                                    |
| 29. Bowl cover screw & lock washer      | 72. Idle adjustment screw springs                             |
| 30. Bowl cover assembly                 | 73. Idle speed air adjustment screw (for by-pass system)      |
| 31. Pump plunger retainer               | 74. Idle speed adjustment (screw spring)                      |
| 32. Pump plunger                        | 75. Vacuum control rod  |
| 33. Pump plunger boot                   | 76. Vacuum control attaching screw                            |
| 34. Secondary float hinge pin           | 77. Vacuum control assembly                                   |
| 35. Secondary float assembly            | 78. Thermostat cover & spring assembly (hot water type choke) |
| 36. Primary float hinge pin             | 79. Filter retainer clip                                      |
| 37. Primary float assembly              | 80. Air intake filter pad                                     |
| 38. Primary needle & seat w/gasket      | 81. Dashpot assembly  |
| 39. Sec. needle & seat w/gasket         | 82. Float assembly torsion spring                             |
| 40. Needle & seat strainer screens      |   |
| 41. Bowl cover gasket                   |   |
| 42. Power piston assembly               |   |
| 43. Power piston w/float assist. spring |   |
| 44. Power piston spring                 |   |

FIG. 1

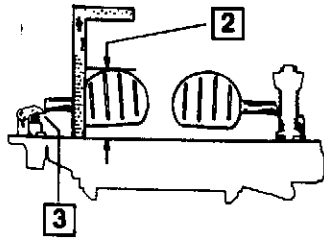
☐ PARTS LIST DOES NOT REFLECT THE CONTENTS OF THE KIT

## ADJUSTMENT DATA

**FIG. 1**  
**FLOAT LEVEL ADJUSTMENT**

For round or "D" type floats.

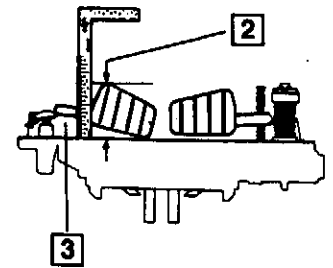
1. Invert air horn assembly with gasket in place.
2. Measure distance from gasket surface to top of each float, as shown.
3. To adjust, bend float arm.



**FIG. 2**  
**FLOAT LEVEL ADJUSTMENT**

For metal or plastic wedge type float.

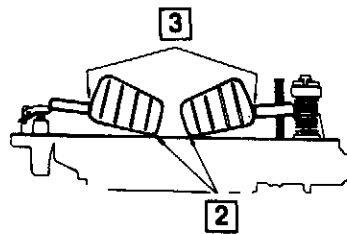
1. Invert air horn assembly with gasket in place.
2. Measure distance from gasket surface to top heel of each float as shown.
3. To adjust, bend float arm.



**FIG. 3**  
**FLOAT TOE ADJUSTMENT**

For wedge type floats without dimples.

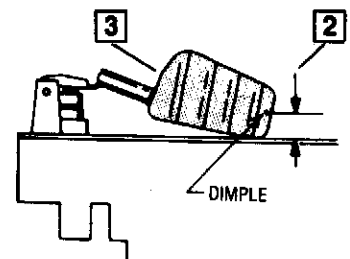
1. Invert air horn assembly with gasket in place.
2. Check that toe of each float is flush with gasket surface.
3. To adjust, bend pontoon lightly.



**FIG. 4**  
**FLOAT TOE ADJUSTMENT**

For wedge type floats with dimples.

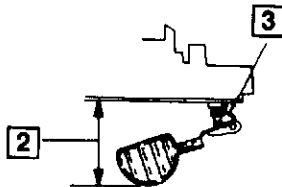
1. Invert air horn assembly with gasket in place.
2. Measure distance from gasket surface to center of dimple.
3. To adjust, bend pontoon lightly.



**FIG. 5**  
**FLOAT DROP ADJUSTMENT**

For round or "D" type floats.

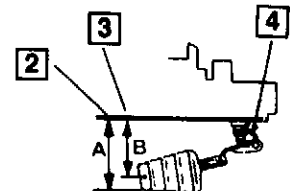
1. Hold air horn assembly right side up with gasket in place. Allow float to hang free.
  2. Measure distance from gasket surface to bottom of each float as shown.
  3. To adjust, bend float tang.
- NOTE:** Needle valve must not be tilted at maximum drop.



**FIG. 6**  
**FLOAT DROP ADJUSTMENT**

For metal wedge type float.

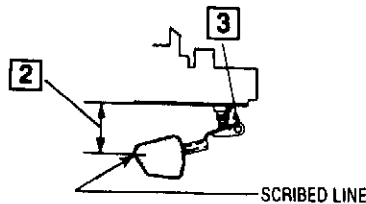
1. Hold air horn assembly right side up with gasket in place. Allow float to hang free.
  2. On floats without dimples, measure distance "A" from gasket surface to bottom of each float.
  3. On floats with dimples, measure distance "B" from gasket surface to dimple.
  4. To adjust, bend float tang.
- NOTE:** Needle valve must not be tilted at maximum drop.



**FIG. 7**  
**FLOAT DROP ADJUSTMENT**

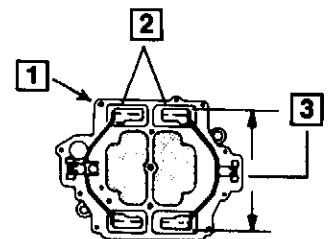
For plastic wedge type float.

1. Hold air horn assembly right side up with gasket in place. Allow float to hang free.
  2. Measure distance from gasket surface to bottom of scribed line as shown.
  3. To adjust, bend float tang.
- NOTE:** Needle valve must not be tilted at maximum drop.



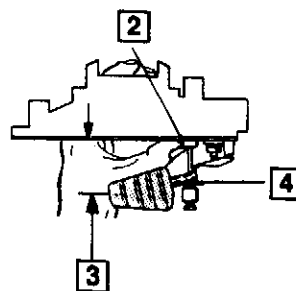
**FIG. 8**  
**FLOATS ALIGNMENT**

1. Invert air horn and align holes in gasket with holes in casting.
2. Center float pontoons in gasket cutout on both sides.
3. Check that floats are parallel with each other. Bend float arms to adjust. **DO NOT** bend arms where connected to plastic floats.



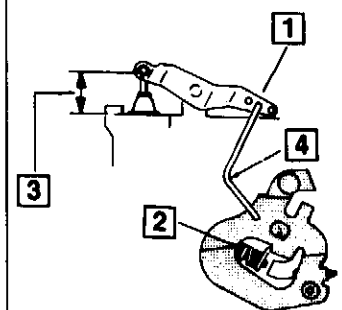
**FIG. 9**  
**VACUUM ASSIST SPRING ADJUSTMENT**

1. Hold air horn assembly right side up with gasket in place. Allow float to hang free.
2. Hold power piston in full up position with thumb. Lightly move float to ensure there is no bind.
3. Measure distance from gasket surface to center of float dimple or end of scribed line on plastic floats.
4. To adjust, bend forked tang.



**FIG. 10**  
**PUMP ROD ADJUSTMENT**

1. Check that pump rod is in specified hole.
2. Back out idle stop screw to fully close throttle valves.
3. Measure distance from top of air horn to bottom of plunger shaft.
4. To adjust, bend rod at elbow.

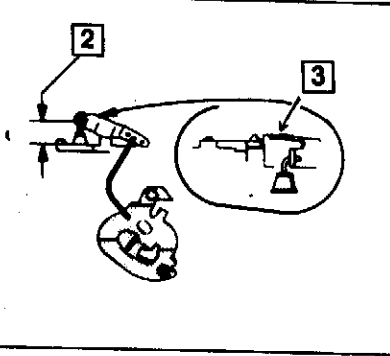


## ADJUSTMENT DATA (Cont'd)

**FIG. 11**  
**IDLE VENT ADJUSTMENT**

**NOTE:** Make pump rod adjustment first (see Fig. 10).

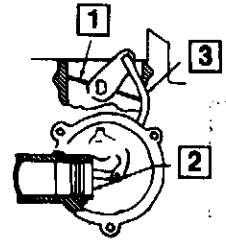
1. Open throttle valves until vent valve just closes.
  2. Measure distance from top air horn to bottom of plunger shaft.
  3. To adjust, bend tang where shown.
- NOTE:** On older models, adjust by bending tang that contacts face of valve under pump lever.



**FIG. 12**  
**INTERMEDIATE CHOKE ROD ADJUSTMENT**

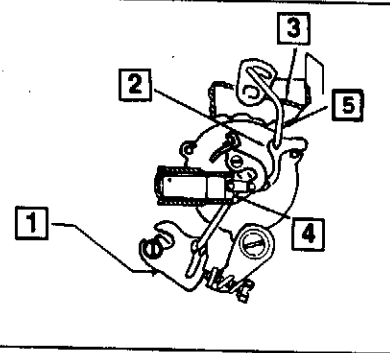
**NOTE:** This adjustment applies to models with choke on throttle or main body.

1. Hold choke valve closed.
2. Check that end of choke piston is flush with end of bore.
3. To adjust, bend rod at elbow.



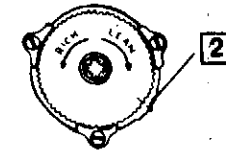
**FIG. 13**  
**INTERMEDIATE CHOKE ADJUSTMENT**

1. Place fast idle screw on high step of cam.
2. Raise intermediate choke lever to full up position (rods in end of slots).
3. Maintain choke valve fully closed.
4. Check that end of piston is flush with end of bore.
5. To adjust, bend rod at elbow.



**FIG. 14**  
**AUTO. CHOKE ADJUSTMENT**

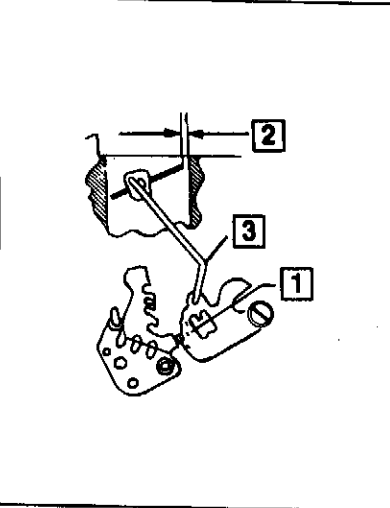
1. Loosen 3 retaining screws and rotate choke cover against coil tension toward closed choke.
2. Set mark on cover to specified mark on choke housing.



**FIG. 15**  
**HOT WATER CHOKE COIL ADJUSTMENT**

**NOTE:** This adjustment is necessary only if unit has been disassembled.

1. Align inside choke cover with index mark on outer cover.
2. With choke valve closed, rotate cover counter-clockwise to align index mark with specified mark on housing.



**FIG. 16**  
**CHOKE ROD ADJUSTMENT**

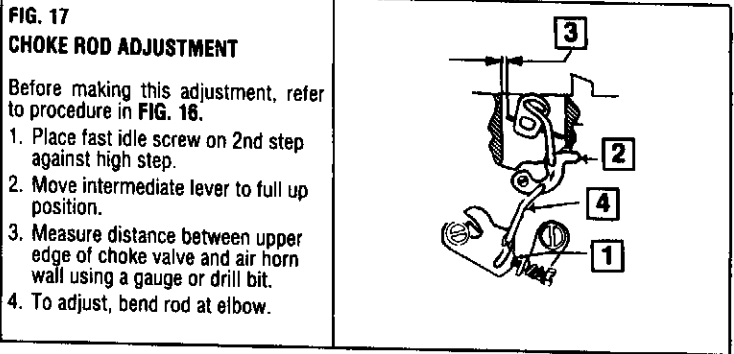
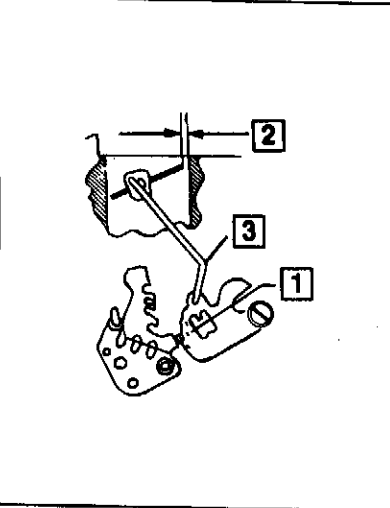
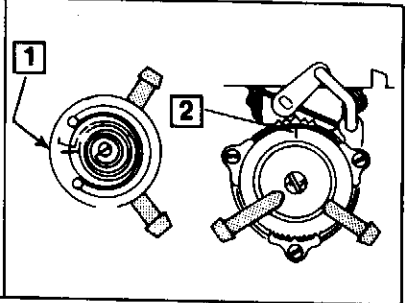
Before making choke rod adjustment, follow this procedure:  
Models using single idle stop screw:  
—turn stop screw in until it contacts bottom step of fast idle cam. Then, turn screw in one more turn.  
Models using separate fast idle screw:  
—turn slow idle stop screw in until it touches stop. Then, turn screw in one more turn. Turn fast idle screw in until it touches bottom step of fast idle cam.

1. Place fast idle screw on 2nd step against high step.
2. Measure distance between upper edge of choke valve and air horn wall using a gauge or drill bit.
3. To adjust, bend rod at elbow.

**FIG. 17**  
**CHOKE ROD ADJUSTMENT**

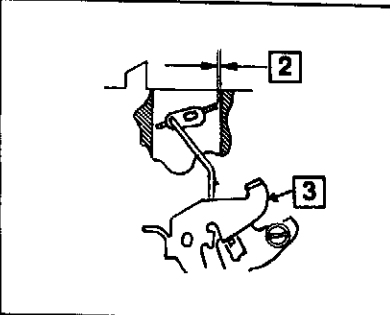
Before making this adjustment, refer to procedure in FIG. 16.

1. Place fast idle screw on 2nd step against high step.
2. Move intermediate lever to full up position.
3. Measure distance between upper edge of choke valve and air horn wall using a gauge or drill bit.
4. To adjust, bend rod at elbow.



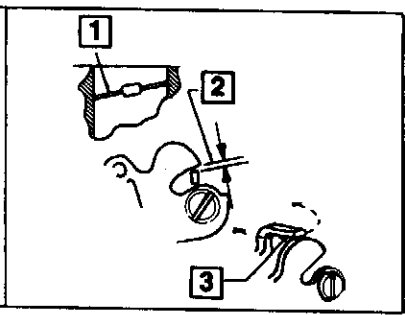
**FIG. 18**  
**UNLOADER ADJUSTMENT**

1. Maintain throttle valves wide open.
  2. Measure distance between upper edge of choke valve and air horn wall using a gauge or drill bit.
  3. To adjust, bend tang on fast idle cam.
- NOTE:** On some models, bend unloader tang on pump lever.



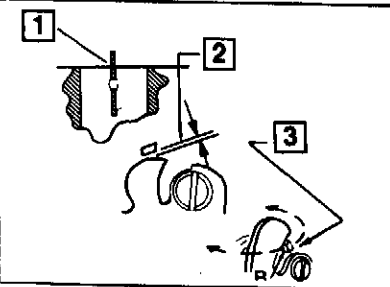
**FIG. 19**  
**SECONDARY LOCKOUT ADJUSTMENT**

1. Hold choke valve fully closed.
2. Measure distance between lockout lever and fast idle cam using a gauge or drill bit.
3. To adjust, bend tang as shown.



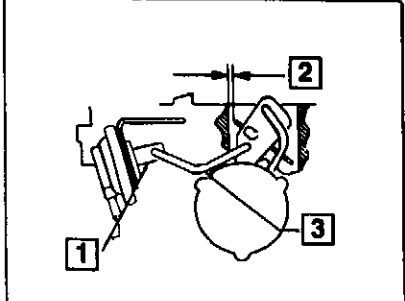
**FIG. 20**  
**SECONDARY CONTOUR ADJUSTMENT**

1. Hold choke valve wide open.
2. Measure distance between lockout lever and fast idle cam using a gauge or drill bit.
3. To adjust, bend tang as shown.



**FIG. 21**  
**VACUUM BREAK ADJUSTMENT**

1. Fully seat diaphragm plunger using an outside vacuum source.
2. Push choke valve toward closed position without pulling diaphragm and measure distance between upper edge of choke valve and air horn wall using a gauge or drill bit.
3. To adjust, bend rod at elbow.



## SPECIFICATION CHART

Year	Application	Float Level		Float Tee		Float Drop		Vac. Assist.	Pump Rod		Idle Vent	Auto. Choke	Choke Rod	Un-loader	Sec. Lockout	Sec. Contour	Vac. Break
		Pri.	Sec.	Pri.	Sec.	Pri.	Sec.		Loc.	Dim.							

### BUICK — SPECIFICATION I.D.-A

1963	215 Eng.	1-11/32	1-3/8	9/16	3/8	1-9/16	1-9/32	—	Outer	29/32	—	Index	3/64	1/8	1/64	1/32	—
1962-61	215 Eng.	1-11/32	1-3/8	9/16	3/8	1-7/16	1-5/16	—	Outer	29/32	—	Index	3/64	1/8	1/64	1/32	—

### SPECIFICATION I.D.-B

#### CHECKER

1965	327 Eng.	1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	Outer	1-1/16	31/32	Index	1/16	1/4	1/64	1/64	—
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#### CHEVROLET

1966-65	283, 327 Eng. - Exc. Carb. No. 7025127	1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	Outer	1-1/16	31/32	Index <sup>2</sup>	1/16 <sup>3</sup>	1/4 <sup>3</sup>	1/64 <sup>3</sup>	1/64 <sup>3</sup>	—
		1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	Inner	1-1/16	31/32	Index	1/16 <sup>3</sup>	13/64 <sup>3</sup>	1/64 <sup>3</sup>	1/64 <sup>3</sup>	—
1964-63	283, 327 Eng.	1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	'	1-1/16	31/32	Index	1/16	15/64	1/64	1/64	—
1962-59	265, 283, 348 Eng. - Exc. Carb. Nos. 7013004, 006, 010, 012	1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	'	1-1/16	31/32	Index	1/16	15/64	1/64	1/64	—
		1-5/8	1-11/16	—	—	2-1/4	2-1/4	—	'	1-1/16	31/32	1NL	3/64	15/64	1/64	1/64	—
1958-56	265, 283, 348 Eng. - Exc.	1-5/8	1-5/8	—	—	2-1/4	2-1/4	—	'	1-1/16	—	1NL	3/64	15/64	1/64	1/64	—
	Carb. Nos. 7011108, 7012128	1-5/8	1-11/16	—	—	2-1/4	2-1/4	—	'	1-1/16	—	1NL	3/64	15/64	1/64	1/64	—

#### DAYTONA MARINE

	283 Eng.	1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	Center	1-1/16	—	—	—	—	—	—	—
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#### GM TRUCKS

1967-65	327 Eng. -w/V.G. Eng. Carb. No. 7025127 Carb. Nos. 7023006, 012	1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	Outer	1-1/16	31/32	Index <sup>2</sup>	1/16 <sup>3</sup>	1/4 <sup>3</sup>	1/64 <sup>3</sup>	1/64 <sup>3</sup>	—
		1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	Inner	1-1/16	31/32	Index	1/16 <sup>3</sup>	13/64 <sup>3</sup>	1/64 <sup>3</sup>	1/64 <sup>3</sup>	—
		1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	'	1-1/16	31/32	Index	1/16	15/64	1/64	1/64	—
1965-57	283, 328, 409 Eng. -w/V.G. Exc. Carb. Nos. 7009661, 7011161	1-5/8	1-11/16	—	—	2-1/4	2-1/4	—	'	1-1/16	31/32	—	—	—	—	—	—
		1-5/8 <sup>4</sup>	1-5/8 <sup>4</sup>	—	—	2-1/4	2-1/4	—	'	1-1/16	—	—	—	—	—	—	—

#### KIEKHAEFER MARINE

	283 Eng.	1-1/2	1-9/16	—	—	2-1/4	2-1/4	—	Outer	1-3/32	—	Index	—	15/64	1/64	1/64	—
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#### OLDSMOBILE

1956-54	All	1-5/8	1-5/8	—	—	2-1/4	2-1/4	—	'	1-1/16	15/16	1NL <sup>5</sup>	3/64	1/8	1/64	1/32	—
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#### OWENS YACHT

	283, 327 Eng.	1-17/32	1-19/32	—	—	2"	2"	—	Outer	1-3/32	—	Index	1/16	15/64	1/64	1/64	—
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#### STUDEBAKER

1965	283 Eng.	1-17/32	1-19/32	—	—	2-1/4	2-1/4	—	Outer	1-1/16	31/32	Index	1/16	1/4	1/64	1/64	—
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### OLDSMOBILE — SPECIFICATION I.D.-C

1965	330 Eng.	1-7/16	1-7/16	—	—	1-1/4	1-1/4	—	Outer	16/16	29/32	1NR	3/64	1/8	1/64	1/32	—
1964-63	215, 330 Eng. - Exc. Carb. Nos. 7024054, 055	1-7/16	1-3/8	17/32	3/8	1-3/8	1-1/8	—	Outer	16/16	29/32	2NR	3/64	3/16	1/64	1/32	—
		1-15/32	1-3/8	17/32	3/8	1-3/8	1-1/8	—	'	16/16	29/32	Index	3/64	3/16	1/64	1/32	—
1962-61	215, 330 Eng. - Exc. Carb. Nos. 7020985; 7022752	1-13/32	1-3/8	5/8	3/8	1-1/2	1-3/8	29/32	Outer	1-1/32	15/16	Index	3/64	3/16	1/64	1/32	—
		1-15/32	1-3/8	11/16	3/8	1-1/2	1-1/8	1-1/8	Outer	1-1/32	15/16	Index	3/64	3/16	1/64	1/32	—

### SPECIFICATION I.D.-E

#### BUICK

1966-65	401 Eng. - Exc. Carb. No. 7026040	1-13/32	1-13/32	—	—	1-1/16	1-1/4	—	Center	16/16	—	Index	1/16	1/8	1/64	1/32	—
		1-7/16	1-7/16	—	—	1-1/16	1-1/16	—	Center	16/16	—	Index	1/16	1/8	1/64	1/32	—
1964	Carb. No. 7024040	1-11/32	1-3/8	17/32	13/32	1-7/16	1-3/16	—	Center	1-1/32	—	Index	1/32	1/8	1/64	1/32	—
1963	Carb. No. 7023040, 143	1-11/32	1-3/8	9/16	3/8	1-7/16	1-1/4	—	Center	16/16	—	Index	3/64	1/8	1/64	1/32	—
1962-60	Carb. No. 7015040; 7019040; 7020040, 041	1-11/32	1-3/8	9/16	3/8	1-7/16	1-5/16	—	Center	1-1/32	—	Index	1/16	1/8	1/64	1/32	—
1959	Carb. No. 7013044 <sup>6</sup>	1-15/32	1-3/8	11/16	3/8	1-1/2	1-5/16	1-1/16	Center	1-1/32	—	Index	5/32	1/8	1/64	1/32	—
	Carb. No. 7013044 <sup>7</sup>	1-3/8	1-3/8	1/2	3/8	1-7/16	1-5/16	—	Center	1-1/32	—	Index	5/32	1/8	1/64	1/32	—
1958	Carb. No. 7013100	1-13/32	1-3/8	7/16	3/8	1-11/32	1-11/32	—	Center	1-1/32	—	Index	5/32	1/8	1/64	1/32	—

#### CHRIS-CRAFT MARINE

	Carb. No. 7013071	1-15/32	1-3/8	11/16	3/8	1-1/2	1-5/16	1-1/16	Outer	1-1/32	—	3NL	3/64	1/8	1/64	1/8	—
	Carb. No. 7015091	1-15/32	1-1/2	11/16	3/8	1-1/2	1-5/16	1-1/16	Center	1-1/32	—	—	—	—	—	—	—

#### CRUSADER MARINE

	326, 409, 427 Eng.	1-3/8	1-11/32	11/16	9/16	1-3/8	1-3/8	—	Outer	1-1/32	—	3NL	3/64	1/8	1/64	1/8	—
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#### DAYTONA MARINE

	327, 409 Eng.	1-3/8	1-11/32	—	—	1-3/8	1-3/8	—	Outer	8/8	—	—	—	—	—	—	—
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#### OLDSMOBILE

1965	400, 425 Eng. - Exc. Carb. Nos. 7025050, 051	1-15/32	1-3/8	—	—	1-1/16	1-1/16	13/16 <sup>8</sup>	Outer	16/16	29/32	1NR	3/64	1/8	1/64	1/32	—
		1-15/32	1-3/8	3/4 <sup>11</sup>	3/8	1-1/2	1-3/16	1-3/32	Outer	16/16	29/32	1NR	3/64	1/8	1/64	1/32	—
1964	394, 400, 425 Eng.	1-15/32	1-3/8	11/16	3/8	1-1/2	1-3/16	1-1/32	Inner	16/16	29/32	Index	3/64	7/64	1/64	1/32	—
1963	394, 400, 425 Eng.	1-15/32	1-3/8	11/16	3/8	1-1/2	1-3/16	1-1/16	Inner	16/16	29/32	Index	3/64	1/8	1/64	1/32	—
1962-58	394, 400, 425 Eng.	1-15/32	1-3/8	11/16	3/8	1-1/2	1-5/16	1-1/16 <sup>9</sup>	'	1-1/32	29/32	Index	3/64 <sup>10</sup>	1/8	1/64	1/32	—

**FOOTNOTES:**

- <sup>1</sup> Install pump rod in original location.
- <sup>2</sup> Carb. Nos. 7036118, 119, 120, 121 set 1NL.
- <sup>3</sup> Applies to carb. model 4GC only.
- <sup>4</sup> 322 Eng. set 1-9/16.
- <sup>5</sup> 1954-5 models with A/T set index.
- <sup>6</sup> With VAC assist float system.
- <sup>7</sup> Without VAC assist float system.
- <sup>8</sup> Models with A/C set 11/16.
- <sup>9</sup> 1958 models set 1-5/32.
- <sup>10</sup> 1958 models use **FIG. 16** ; 1959-62 models use **FIG. 17**.
- <sup>11</sup> Carb. no. 7025051 set 5/8.

**ABBREVIATIONS:**

A/C	Air Conditioning
A/T	Automatic Transmission
Exc.	Except
V.G.	Vacuum Governor