FORM NO.
16-C-22

# CARBURETOR SERVICE PROCEDURE

## CARTER MODEL BBD (1 7/16" BORE)

Note: Some models of the Carter BBD carburetor may vary slightly in general design and appearance from others, but basic cleaning and adjustment procedure will remain the same.

### 1. DISASSEMBLY

Using the exploded view as a guide, disassemble carburetor only far enough to permit a thorough cleaning. Removal of choke or throttle valves is not necessary unless parts require special attention.

Note: Beginning 1966 C.A.P. (Cleaner Air Package) carburetors — identified by green tag, the idle adjusting screws (43) are not removable. They lock at a maximum of 3 to 3¼ turns open and will be broken if an attempt is made to remove them from carburetor. All other regular carburetor models contain removable idle adjusting screws.

### 2. CLEANING

Soak parts in a regular carburetor cleaning solution, as directed by manufacturer's instructions, long enough to remove all dirt, carbon or foreign matter. Do not soak any parts containing rubber, leather or plastic if they are to be reused. Use a small bristle brush to aid in cleaning of sharp corners or areas of excessive dirt build up. Rinse parts in hot water or a suitable solvent and thoroughly blow out all parts and passages with dry compressed air.

Caution: Do not soak dashpot or vacuum break diaphragm assemblies, in carburetor cleaner, when so equipped.

### 3. REASSEMBLY

Reassemble carburetor in the reverse order of disassembly, paying particular attention to the following:

A. When installing the idle adjusting screws (43) lightly bottom (do not force into seat), then back screws out 1 to 1½ turns for initial setting.
Note: C.A.P. carburetors, which contain non-removable idle adjusting screws, turn screws out 2 turns. Do not exceed 3 turns or screws will break. On all models, make final hot idle setting on engine as stated in adjustment section 4-G.

B. When installing the pump intake and discharge check balls (32 and 38), take note that the intake ball is always the larger of the two. Regroove seat for proper accelerator pump response by placing an old or extra check ball into seat and "lightly" tap ball using a thin punch and small hammer. Discard ball using only the new check ball supplied in kit.

C. When installing the step-up piston and rods (25 and 26), make certain piston moves freely in cylinder and rods correctly enter main metering jets. With engine not running, spring (27) will hold piston in upward position. With engine idling, vacuum must hold piston at downward position.

D. Check float level adjustment with carburetor casting inverted and following procedure as stated in adjustment section 4-A.

E. Make certain float pin retainer (21) has sufficient curvature to hold float pin and arm (22 and 23) at bottom of guide slot when air horn assembly (14) is installed. An incorrect fuel level within carburetor bowl will result if pin is free to move.

F. Beginning 1964 carburetors using a vacuum break diaphragm in place of the choke metal piston used earlier, test diaphragm for leakage as follows: Press diaphragm stem inward and hold at bottom of travel. Place finger over end of vacuum connector to seal passage, then release stem. If stem moves outward more than 1/16 inch in 10 seconds, leakage is excessive and unit should be replaced.

### 4. ADJUSTMENTS

**A. Float Level: (Fig. 1)**

1. Hold float pin retainer in place and invert main body.
2. Using gauge supplied, distance measured from casting surface to top center of each float (1955-56 outer end of floats) should be as listed in table.
3. To adjust, bend float lip that contacts needle valve. (Do not force resilient tip needle into seat when checking or bending.)

**B. Pump: (Fig. 2)**

Back off throttle stop screw until throttle valves are completely closed. With throttle connector rod in center hole of throttle lever and inner hole of pump arm (unless otherwise noted) determine proper type from table and proceed as follows:

**Type I**

1. Distance (A) measured from casting surface to top of pump plunger shaft, should be as listed.
2. To adjust, bend throttle connector rod.

**Type II**

(Pump travel is correct with specified vent valve opening. Pin spring, that supports vent valve, must be in center groove of pump plunger shaft.)

1. Distance (B) measured between vent valve and bushing, should be as listed.
2. To adjust, bend throttle connector rod.

**Note:** Standard setting for Type II is with throttle connector rod in center hole of throttle lever. If outer hole is used for greater fuel discharge, move pin spring to lower groove in plunger shaft. If inner hole is used for less fuel discharge, move pin spring to upper groove in plunger shaft.

**C. Fast Idle: Off Engine**

**Type I (Fig. 3)**

1. Close choke, then close throttle as far as possible without forcing.
2. Using drill for gauge, clearance measured between throttle valve and bore of carburetor (side opposite idle port) should be as listed in table under "throttle opening".
3. To adjust, bend choke connector rod.

**Fast Idle: Off Engine**

**Type II**

**Step A (Fig. 4)**

1. With choke valve closed and lip on inner choke shaft lever touching lug on outer lever, the fast idle screw should align with index mark on fast idle cam.
2. To adjust, bend lip on inner choke lever.

**Step B (Fig. 5)**

1. Holding fast idle screw against index mark (or top step of cam if no index mark), turn screw until clearance between throttle valve and bore of carburetor (side opposite idle port) is as listed.

**Fast Idle: Off Engine**

**Type III and IV**

**Step A (Fig. 6)**

1. Place fast idle screw on bottom step (against second step) of fast idle cam for Type III. Place fast idle screw on second step (against top step) for Type IV.
2. With choke closed as far as possible without forcing, use drill to measure for specified clearance upper edge of choke valve remains open.
3. To adjust, up to year 1966, bend stop tab on choke shaft lever; 1967 and later, bend fast idle connector rod.

**Step B (Fig. 5)**

1. Place fast idle screw on middle step of fast idle cam for Type III. Keep fast idle screw on second step of cam for Type IV.
2. Turn screw until clearance between throttle valve and bore of carburetor (side opposite idle port) is as listed.

**D. Unloader: (Fig. 7)**

1. Hold throttle wide open and close choke as far as possible without forcing.
2. The clearance measured that upper edge of choke valve remains open should be as listed.
3. To adjust carburetors year 1955, bend trip lever arm in choke housing; 1956 and later, bend unloader arm on throttle lever.

**E. Vacuum Kick: (Fig. 8)**

1. 1964 carburetors, press diaphragm "stem" inward until bottomed. 1965 and later, press diaphragm "plate" (not end of stem) inward until diaphragm is bottomed.
2. Lightly close choke valve as far as possible, without forcing.
3. The clearance measured that upper edge of choke valve remains open, should be as listed.
4. To adjust, bend choke operating link. (Remove link when bending to prevent damage to diaphragm.)

**Note:** Optional method of bottoming diaphragm is to apply a separate source of vacuum to diaphragm assembly. (Use a distributor tester with a minimum of 10" of vacuum or long length of hose from manifold of another engine.) Lightly close choke valve and measure for valve opening as stated above.

**F. Automatic Choke:**

With correct setting, choke valve will be completely closed when cold, but free to open with slight finger pressure.

**Integral Type (Housing on Carb.)**

1. Rotate cover against spring tension until mark on cover is aligned with center index mark on housing. (Tighten lock screws.

**Cross Over Type (Unit is Manifold)**

1. Remove unit from manifold at base of carburetor.
2. Loosen lock nut and turn mounting post with screw driver until index mark on disc is aligned with specified mark (between "L" and "R" scale marks) as listed in table.
3. Tighten locknut and reinstall unit. Check for proper closed choke valve tension.

**G. Idle Mixture and Speed: (Fig. 2)**

(Alternator equipped engines, turn headlights on when adjusting idle.)

1. With engine idling at normal operating temperature and choke wide open, turn idle adjusting screws in or out for highest speed and smoothest idle.
2. Turn throttle stop screw for specified RPM.
3. Readjust idle adjusting screws inward until lean mixture causes engine to run rough. Finally turn screws out to richen mixture just enough to regain lost speed and smoothest idle.
4. If idle speed has changed, readjust throttle stop screw and recheck idle adjusting screws for best and final setting.

**Note:** C.A.P. carburetors require special idle mixture and speed settings with use of an electric tachometer, vacuum gauges and exhaust analyzer. A 14.2 air/fuel idle mixture ratio should be maintained. Follow car model manufacturer's instructions.

**H. Fast Idle Speed: (On Engine)**

1. With engine running, position fast idle screw on specified step of fast idle cam.
2. Rotate screw until engine speed is as listed in table.

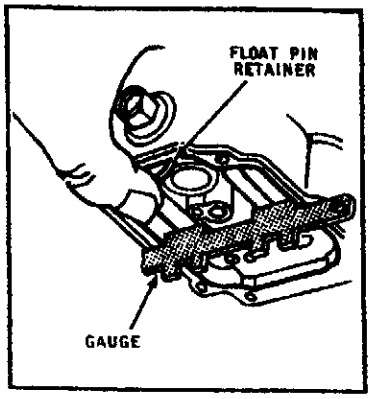



FIGURE 1

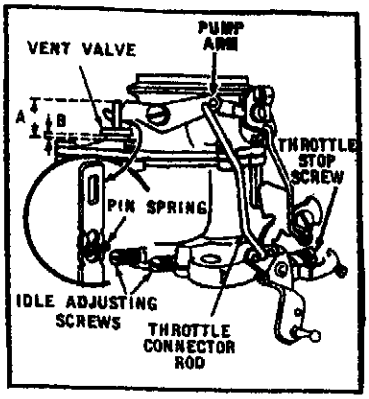



FIGURE 2

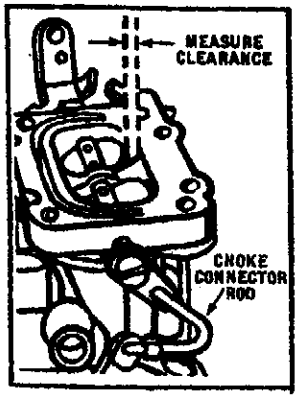



FIGURE 3

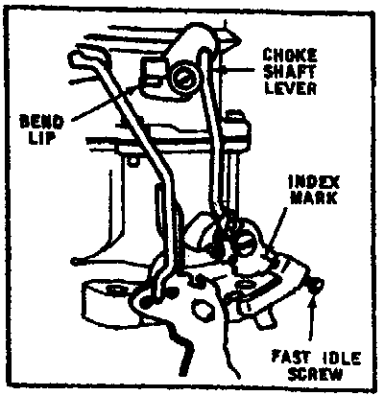



FIGURE 4

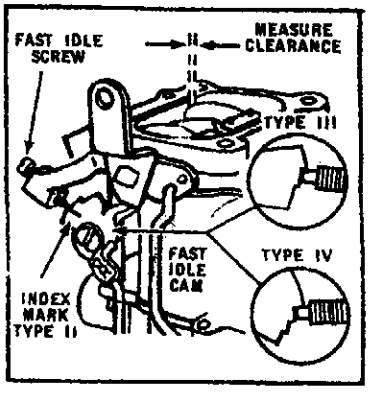



FIGURE 5

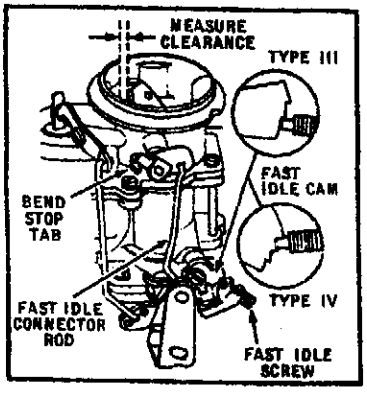



FIGURE 6

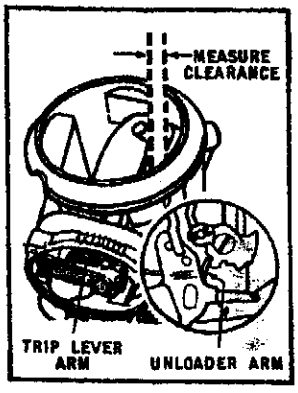



FIGURE 7

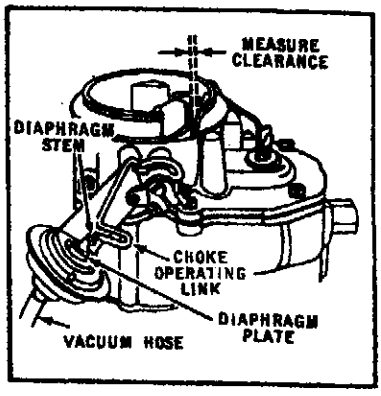



FIGURE 8

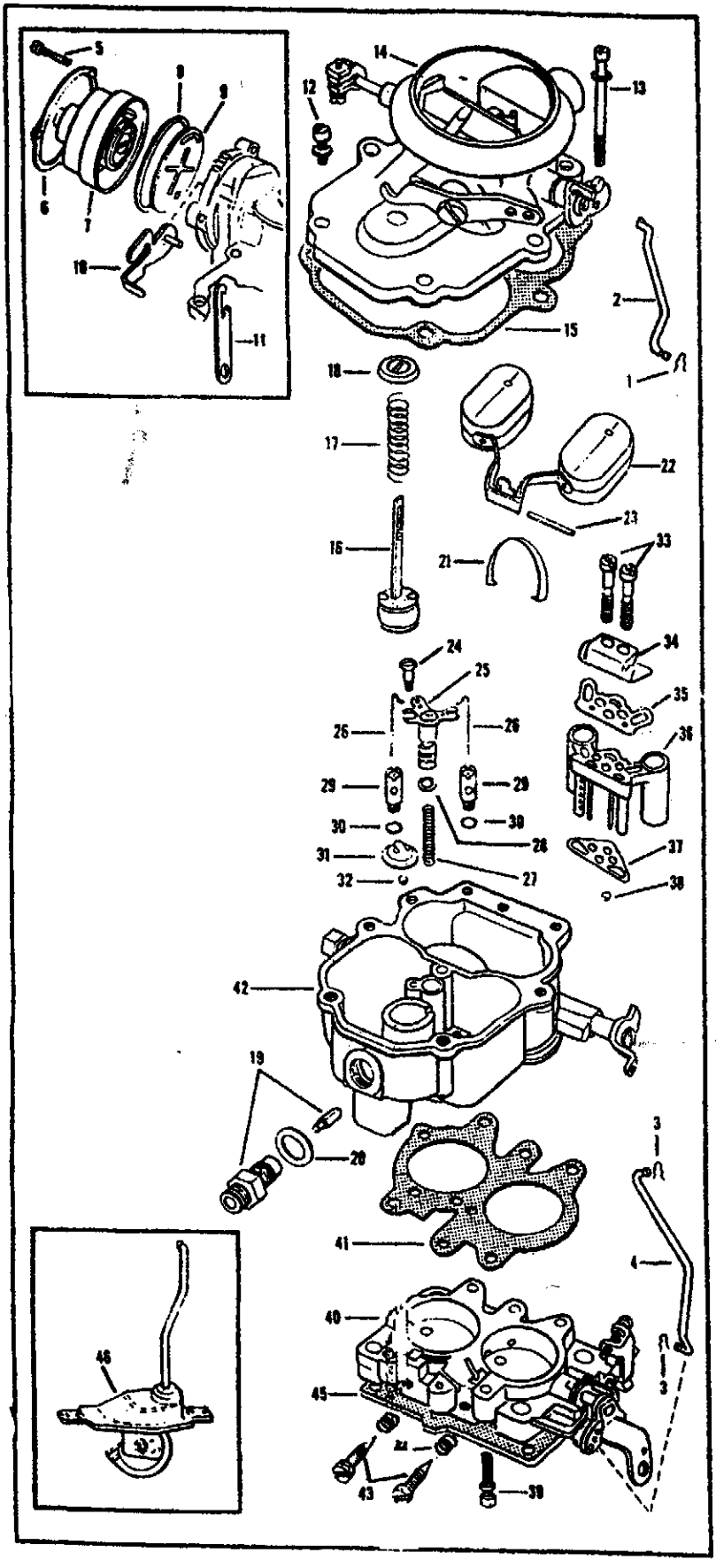
## SPECIFICATION AND ADJUSTMENT TABLE

| Application U.S. and Canada | Float Level | | Pump | | Fast Idle (Off Engine) | | | Unloader Setting | Vacuum Kick Setting | Auto. Choke Setting | Fast Idle Speed RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Type | Step A Choke Opening | Step B Throttle Opening | | | | |
| | Gauge | Setting | Type | Setting | | | | | | | |
| **CHRYSLER-DESOTO** | | | | | | | | | | | |
| 1955 | A | 7/32 | I | 27/32 [1] | I | – | .017 | 1/4 | – | Index | – |
| 1956 | D | 1/4 | I | 31/32 [2] | II | Index | .015 | 3/16 | – | Index | – |
| 1957-58 | B | 9/32 | I | 1 1/32 | II | Index | .020 | 1/4 | – | 1-N Rich | 1400 [3] |
| **DODGE - DART** | | | | | | | | | | | |
| **PLYMOUTH - VALIANT** | | | | | | | | | | | |
| 1955, 241" Eng. | A | 7/32 | I | 29/32 | I | – | .017 | 1/4 | – | Index | – |
| 1955-56, 260", 270" Eng. | D | 1/4 | I | 1 | I | – | .017 | 1/4 | – | Index | – |
| 1956, 277" Eng. | D | 1/4 | I | 1 1/32 | II | Index | .015 | 3/16 | – | Index | 1400 [3] |
| 1957-58 | B | 9/32 | I | 1 1/32 | II | Index | .015 | 1/4 | – | Index | 1400 [3] |
| 1959 | B | 9/32 | I | 1 1/8 | II | Index | .015 | 1/4 | – | Index | 1400 [3] |
| 1960-63 | D | 1/4 | II | 1/16 | II | Index | .015 | 1/4 | – | Index | 1400 [3] |
| 1964 | D | 1/4 | II | 1/16 [4] | III | 1/4 | .015 | 1/4 | 3/16 | Index | 700 [5] |
| 1965 | D | 1/4 | II | 1/16 [4] | IV | 7/64 | .015 [6] | 1/4 | [7] | Index | 700 [5] |
| 1966-67 without C.A.P. | D | 1/4 | II | 1/16 [8] | IV | 3/32 | .015 | 1/4 | [7] | 2-N Rich | 700 [5] |
| 1966-67 with C.A.P. | D | 1/4 | I | 1 1/32 | IV | 3/32 | .026 | 1/4 | [7] | Index | [9] |
| 1967, 6 cyl. 4300S, 4301S | D | 1/4 | II | 1/16 [10] | IV | 1/16 | .015 | 1/4 | – | 2-N Rich | 700 [5] |
| **DODGE TRUCK** | | | | | | | | | | | |
| 1957-59, 354" Eng. | B | 9/32 | I | 1 | – | – | – | – | – | – | – |
| 1958-62, 313" Eng. | D | 1/4 | I | 1 | – | – | – | – | – | – | – |
| 1966 without C.A.P. | D | 1/4 | II | 1/16 [8] | IV | 3/32 | .015 | 1/4 | [7] | 2-N Rich | 700 [5] |
| 1966 with C.A.P. | D | 1/4 | I | 1 1/32 | IV | 3/32 | .026 | 1/4 | [7] | Index | [9] |

IDLE SPEED (Approx.) 500 RPM C.A.P. MODELS S/T 700 RPM, A/T 650 RPM

[1] De Soto 1"
[2] De Soto 1 [illegible]"
[3] Fast idle screw on high step (or index mark) on cam
[4] 3767, 68 } Rod in outer hole
3843, 44 } of pump arm
[5] Fast idle screw on low step of cam
[6] 3848, 4011, 4012 } .026
[7] S/T 11/64, A/T 1/8, 4348 5/32
[8] S/T Outer hole of pump arm
A/T Inner hole of pump arm
[9] S/T 1400 } Fast idle screw on second
A/T 1500 } step, against top steo, of cam
[10] Rod in outer hole of pump arm

## EXPLODED VIEW OF TYPICAL CARTER CARBURETOR MODEL BBD



| Ref. No. | Nomenclature |
|---|---|
| 1 | Pin Spring |
| 2 | Choke Connector Rod |
| 3 | Pin Spring |
| 4 | Throttle Connector Rod |
| * 5 | Choke Cover Attaching Screw |
| * 6 | Thermostatic Coil Housing Retainer |
| * 7 | Thermostatic Coil Housing Assembly |
| * 8 | Coil Housing Gasket |
| * 9 | Choke Baffle Plate |
| *10 | Choke Trip Lever |
| *11 | Fast Idle Link |
| 12 | Air Horn Attaching Screw and Washer |
| 13 | Body Attaching Screw and Washer |
| 14 | Air Horn Assembly |
| 15 | Body Gasket |
| 16 | Pump Plunger Assembly |
| 17 | Pump Spring |
| 18 | Pump Spring Retainer Washer |
| 19 | Needle and Seat Assembly |
| 20 | Needle Seat Gasket |
| 21 | Float Pin Retainer |
| 22 | Float Assembly |
| 23 | Float Pin |
| 24 | Step-Up Piston Guide Screw |
| 25 | Step-Up Piston Assembly |
| 26 | Step-Up Rod |
| 27 | Step-Up Piston Spring |
| 28 | Step-Up Piston Gasket |
| 29 | Main Metering Jet |
| 30 | Main Metering Jet Gasket |
| 31 | Pump Intake Check Ball Retainer |
| 32 | Pump Intake Check Ball |
| 33 | Venturi Cluster Screw |
| 34 | Venturi Cover |
| 35 | Venturi Cover Gasket |
| 36 | Venturi Cluster Tube and Nozzle Assembly |
| 37 | Venturi Housing Gasket |
| 38 | Pump Discharge Check Ball |
| 39 | Body Flange Screw and Washer |
| 40 | Body Flange Assembly |
| 41 | Body Flange Gasket |
| 42 | Main Body |
| 43 | Idle Adjusting Screw |
| 44 | Idle Adjusting Screw Spring |
| 45 | Flange Gasket |
| *46 | Thermostatic Coil, Housing and Rod Assembly (Cross-over Type Choke Control) |

*Not used on all models