

## CARTER MODEL BBD 2-BARREL

| Application               | DODGE       |              |
|---------------------------|-------------|--------------|
|                           | Man. Trans. | Auto. Trans. |
| 1965                      |             |              |
| 273" V8 .....             | 3767S.....  | 3768S        |
| 1966                      |             |              |
| 273" V8 .....             | 4113S.....  | 4114S        |
| 273" V8 (W/C.A.P.).....   | 4115S.....  | 4116S        |
| 1967                      |             |              |
| 383" V8 .....             | 4296S.....  | 4297S        |
| 383" V8 (W/C.A.P.).....   | 4306S.....  | 4307S        |
| 1968                      |             |              |
| 318" V8 ("A" Models)..... | 4420S.....  | 4421S        |
| 383" V8 .....             | 4422S.....  | 4423S        |
| 1969                      |             |              |
| 318" V8 .....             | 4607S.....  | 4608S        |
| 383" V8 (Early) .....     | 4613S.....  | 4614S        |
| 383" V8 (Late).....       | 4613S.....  | 4774S        |
| 383" V8 (W/C.A.S.) .....  | 4748S.....  | N/A          |
| 1970                      |             |              |
| 318" V8                   |             |              |
| All .....                 | 4721S.....  | 4722S        |
| All (Calif.).....         | 4723S.....  | 4724S        |
| Heavy Duty.....           | 4823S.....  | 4824S        |
| Light Duty (Calif.).....  | 4819S.....  | 4820S        |
| W/E.C.S. ....             | 4821S.....  | 4822S        |
| W/N.O.X. ....             | 4957S.....  | 4958S        |
| 318-3 V8.....             | 4827S.....  | N/A          |
| 383" V8                   |             |              |
| All .....                 | 4725S.....  | 4726S        |
| Heavy Duty.....           | 4834S.....  | 4835S        |
| Calif. Only.....          | 4727S.....  | 4728S        |
| 1971                      |             |              |
| 318" V8                   |             |              |
| Heavy Duty.....           | 6031S.....  | 4824S        |
| W/E.C.S. ....             | 4957S.....  | 4958S        |
| 318-3 V8                  |             |              |
| Early.....                |             | 4827S        |
| Late.....                 |             | 6169S        |
| 383" V8                   |             |              |
| Heavy Duty.....           | 4835S.....  | 4834S        |
| W/E.C.S. ....             | 4961S.....  | 4962S        |
| 1972                      |             |              |
| 318" V8                   |             |              |
| Heavy Duty.....           | 6221S.....  | 6222S        |
| W/E.C.S. ....             | 6149S.....  | 6150S        |
| Calif. Only.....          | 6151S.....  | 6152S        |
| 318-3 V8.....             |             | 6225S        |
| 1973                      |             |              |
| 318" V8                   |             |              |
| Heavy Duty (Calif.).....  | 6363S.....  | 6364S        |
| Heavy Duty (Fed.).....    | 6221S.....  | 6222S        |
| Light Duty (Calif.).....  | 6343SA..... | 6344SA       |
| Light Duty (Fed.).....    | 6316SA..... | 6317SA       |
| 318-3 V8.....             |             | 6365S        |
| 1974                      |             |              |
| 318" V8                   |             |              |
| Heavy Duty.....           | 6536S.....  | 6537S        |
| Light Duty (Calif.).....  | 8008S.....  | 6613S        |
| Light Duty (Fed.).....    | 6610S.....  | 6611S        |

### CARBURETOR IDENTIFICATION

Carter number stamped on tag attached to carburetor by air horn screw. Suffix letter "S" denotes basic carburetor design. Additional letters in suffix designate a design change which may affect parts replacement, jet calibration or adjustment settings.

### DESCRIPTION

Two barrel downdraft type with separate well type choke. An externally mounted vacuum diaphragm provides initial choke valve opening when engine starts.

### ADJUSTMENT

#### HOT (SLOW) IDLE RPM

See appropriate article in TUNE-UP Section.

#### COLD (FAST) IDLE RPM

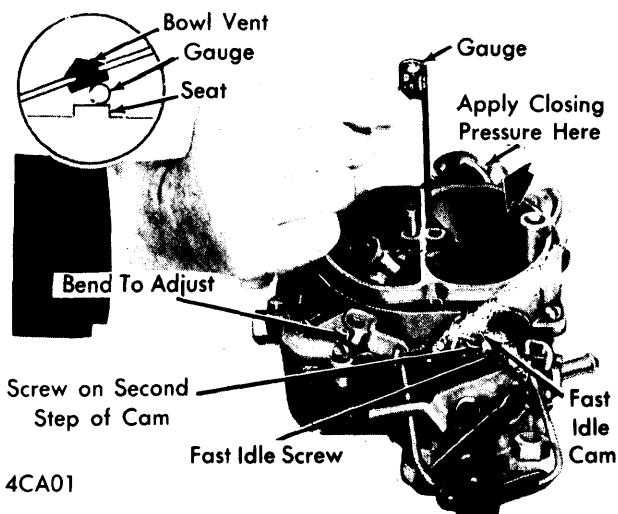
See appropriate article in TUNE-UP Section.

#### ACCELERATOR LINKAGE

See appropriate article in TUNE-UP Section.

#### FAST IDLE CAM POSITION

With fast idle adjusting screw on second step of fast idle cam, measure distance between top edge of choke valve and inner air horn wall. Adjust to specifications by bending fast idle connector rod at lower angle.



### FAST IDLE CAM LINKAGE ADJUSTMENT

#### FLOAT LEVEL

**NOTE** — Float level can be checked with carburetor on engine or on bench.

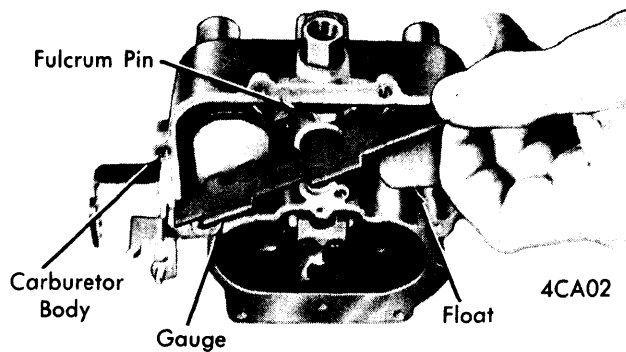
**On Engine** — Disconnect and remove: accelerator pump rod, choke rod, air horn and air horn gasket. With fuel bowl full such that float lever lip fully seats needle valve, measure distance from machined surface of fuel bowl to top of each float ridge. Bend lip of float lever to adjust to specifications.

**On Bench** — With bowl cover and gasket removed, invert carburetor so that weight of float fully seats needle valve. Measure distance from machined surface of fuel bowl to top of float ridge. Bend lip of float lever to adjust to specifications.

**CAUTION** — When making adjustment, do not allow lip to press against needle valve, as valve has rubber tip which could become damaged. Float must be perpendicular to needle valve or slanted not more than ten degrees away from needle when float is set correctly.

# Carter Carburetors

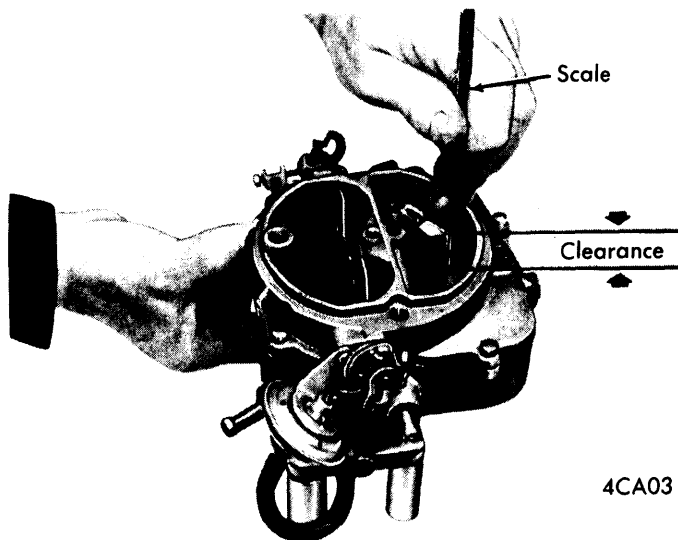
## CARTER MODEL BBD 2-BARREL (Cont.)



### FLOAT LEVEL ADJUSTMENT

### ACCELERATOR PUMP

**NOTE** — Some carburetors have "concentric" type bowl vent located on pump plunger shaft which is adjusted as part of pump stroke adjustment. "Saxophone Key" type bowl vent is adjusted separately. Some early carburetors do not have a bowl vent.



### ACCELERATOR PUMP ADJUSTMENT (TYPICAL)

**Carburetors Without Bowl Vent** — With connector rod in center hole of both throttle lever and pump arm and with throttle valves tightly closed, measure distance from top surface of bowl cover to top of pump plunger shaft. Adjust to specifications by bending connector rod at angle.

**Carburetors With "Concentric" Bowl Vent** — With connector rod in center hole of both throttle lever and pump arm and with throttle valves tightly closed, measure clearance between bowl vent and top surface of bowl cover. Adjust to specifications by bending connector rod at lower angle. Correct bowl vent clearance will insure correct pump plunger height.

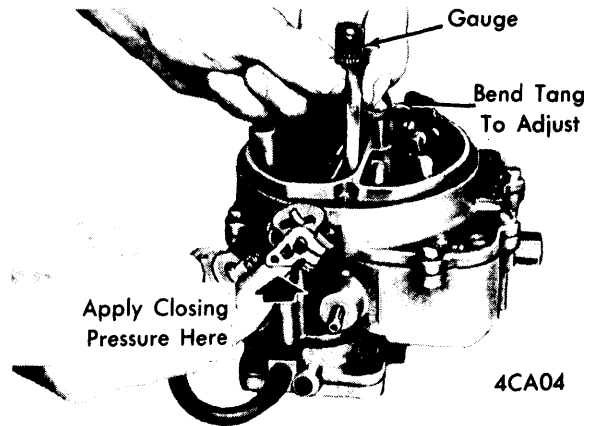
**Carburetors With "Saxophone Key" Type Bowl Vent** — With connector rod in center hole of throttle lever and pump arm and with throttle valve tightly closed, measure distance from top surface of bowl cover to top of pump plunger shaft. Adjust accelerator pump to specifications by bending connector rod at lower angle, then check and adjust bowl vent.

### BOWL VENT

**"Saxophone Key" Type** — With accelerator pump correctly adjusted and throttle valves tightly closed, measure clearance between rubber vent valve and seat on bowl cover. Adjust to specifications by bending vent valve operating arm.

### UNLOADER

With throttle valves in wide open position, measure clearance between upper edge of choke valve and inner wall of air horn. Adjust to specifications by bending unloader tang on throttle lever or on fast idle cam.

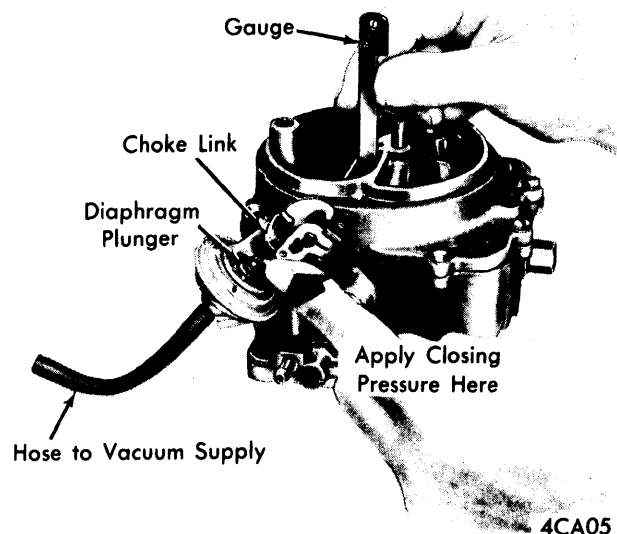


### UNLOADER ADJUSTMENT

### VACUUM KICK

**NOTE** — Adjustment can be made off vehicle using auxiliary vacuum source (minimum of 10" Hg) or on car with engine running. When using auxiliary vacuum source, remove vacuum kick hose from carburetor, NOT from vacuum kick diaphragm.

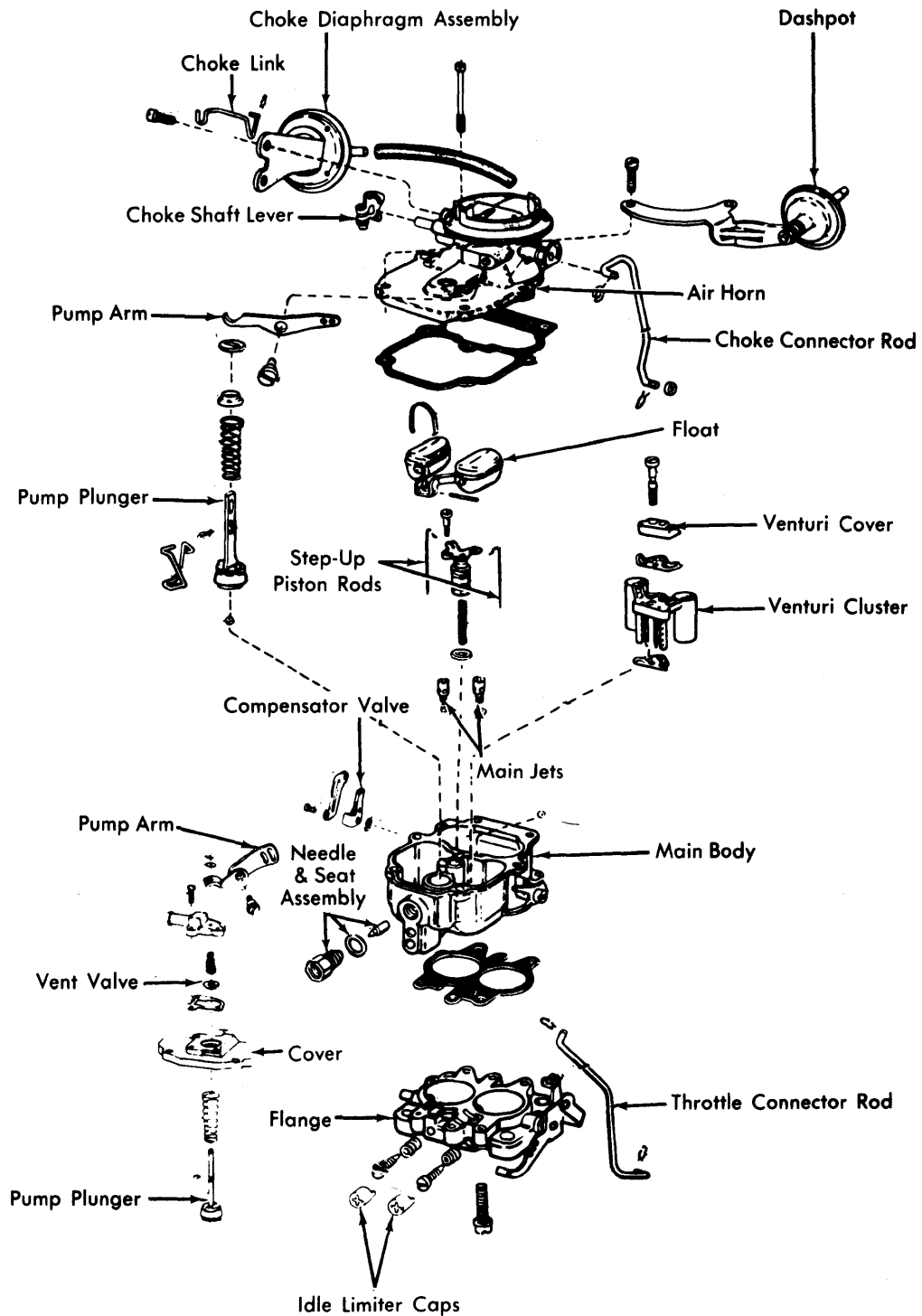
Disconnect fast idle linkage so choke can be closed to kick position with engine at hot (slow) idle. With choke diaphragm plate closed as far as possible without being forced, measure clearance between top edge of choke plate and inner air horn wall. Bend connector rod at "U" bend to adjust to specifications. **CAUTION** — Remove connector rod to adjust, in order to prevent damage to rod and diaphragm.



### VACUUM KICK ADJUSTMENT

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## CARTER MODEL BBD 2-BARREL (Cont.)



4CA06

**BBD CARBURETOR ASSEMBLY (TYPICAL)**

# Carter Carburetors

## CARTER MODEL BBD 2-BARREL (Cont.)

### AUTOMATIC CHOKE

With choke coil removed from well, loosen lock nut and turn shaft so that index mark on disc is in alignment with specified mark on frame. Retain this position while tightening lock nut.

### DASHPOT

With throttle lever held at cold (fast) idle position, adjust dashpot so that plunger stem just contacts tang on throttle lever.

## OVERHAUL

### DISASSEMBLY

1) Remove hairpin clips and disengage fast idle connector rod from cam and choke lever. Remove hairpin clips and disengage accelerator rod from throttle lever and pump rocker arm. Remove vacuum hose between carburetor throttle body fitting and vacuum diaphragm.

2) Remove clip from choke operating link and disengage link from diaphragm plunger and choke lever. Remove vacuum diaphragm and bracket assembly and place aside for special cleaning. Remove screws attaching hot idle compensator valve cover to main body, remove cover and lift compensator valve and gasket out.

3) Remove air horn attaching screws, lift air horn straight up and away from main body, discard gasket. On 1½" carburetors, disengage accelerator pump plunger from pump arm by pushing up on bottom of plunger and sliding plunger shaft off hook, slide plunger from air horn and remove compression spring and seat, then remove bowl vent valve cover. On 1¼" carburetors, remove "E" clip and washer from plunger stem and slide accelerator pump plunger out of air horn, remove screws attaching bowl vent housing to air horn, and remove housing, vent valve spring and valve. If old plunger can be used again, or if new one to be installed, place plunger in a jar of clean gasoline or kerosene (to prevent drying out).

4) Remove fuel inlet needle valve, seat, and gasket from main body, lift out float pin retainer, floats and fulcrum pin. Remove step-up piston and retaining screw, slide piston and rods from well. Lift out step-up piston spring and remove step-up piston from bottom of well.

5) Remove main metering jets, then remove venturi cluster screws, lift venturi cluster and jackets up and away from main body and discard gaskets. *NOTE* — Do not remove idle orifice tubes or main vent tubes from cluster. They can be cleaned in a suitable solvent and dried with compressed air.

6) Invert carburetor and drop out accelerator pump discharge check ball and intake check ball (intake check ball is the larger); separate bodies and discard gasket. Remove plastic limiter caps from idle air mixture screws, being certain to count number of turns to seat screws, as the same number of turns (from the seat), must be maintained at reassembly. Remove screws and springs from throttle body.

### CLEANING & INSPECTION

Inspect all parts for excessive wear, replace as necessary. Wash all metal parts in a suitable solvent or cleaner, but do not place diaphragm assembly in any liquid.

### REASSEMBLY

Use all new gaskets and reverse disassembly procedures while noting the following.

**Idle Mixture Screw & Limiter Cap Installation** — Install idle mixture screws and springs in body, tapered portion must be straight and smooth; if tapered portion is grooved or ridged, a new screw should be used. DO NOT use a screwdriver for installation. Turn screws lightly against their seats with fingers, back off the number of turns counted at disassembly and install new plastic limiter caps with tab against stop.

**Accelerator Pump Assembly** — Check operation as follows: Pour clean gasoline into carburetor bowl (½" deep), operate plunger several times to fill cylinder and expel all air. Use a small brass rod and hold discharge check ball down on its seat. Raise plunger and press downward, no fuel should be emitted from either intake or discharge passage. Fuel emitted from either passage indicates either the presence of dirt or a damaged check ball seat.

**Step-Up Piston & Rod Assembly** — Be sure step-up rods move freely, each side of vertical position. Carefully guide step-up rods into main metering jets.

**Vacuum Kick Diaphragm** — Check for internal leakage by depressing diaphragm stem, then placing finger over fitting to seal opening. Release stem, if stem moves more than ¼" in ten seconds, leakage is excessive and assembly must be replaced.

| CARBURETOR ADJUSTMENT SPECIFICATIONS |                         |        |                        |                     |                   |                     |                  |                     |                     |
|--------------------------------------|-------------------------|--------|------------------------|---------------------|-------------------|---------------------|------------------|---------------------|---------------------|
| Carter Carb. No.                     | Idle Speed (Engine RPM) |        | Fast Idle Cam Position | Float Level Setting | Bowl Vent Setting | Accel. Pump Setting | Unloader Setting | Vacuum Kick Setting | Auto. Choke Setting |
|                                      | Hot ①                   | Fast ② |                        |                     |                   |                     |                  |                     |                     |
| 3767S                                | .....                   | .....  | ¼"                     | ¼"                  | ⅛"                | .....               | ¼"               | ⅜"                  | Index               |
| 3768S                                | .....                   | .....  | ¼"                     | ¼"                  | ⅛"                | .....               | ¼"               | ⅜"                  | Index               |
| 4113S                                | .....                   | .....  | ⅜"                     | ¼"                  | ⅛"                | .....               | ¼"               | 11/64"              | 2 Rich              |
| 4114S                                | .....                   | .....  | ⅜"                     | ¼"                  | ⅛"                | .....               | ¼"               | ⅛"                  | 2 Rich              |
| 4115S                                | .....                   | .....  | ⅜"                     | ¼"                  | .....             | 11/64"              | ¼"               | 11/64"              | Index               |
| 4116S                                | .....                   | .....  | ⅜"                     | ¼"                  | .....             | 11/64"              | ¼"               | ⅛"                  | Index               |
| 4296S                                | .....                   | .....  | .025"                  | 11/32"              | ⅛"                | 29/32"              | ¼"               | ⅜"                  | 2 Rich              |
| 4297S                                | .....                   | .....  | .025"                  | 11/32"              | ⅛"                | 29/32"              | ¼"               | ⅜"                  | 2 Rich              |
| 4306S                                | .....                   | .....  | ⅜"                     | 11/32"              | ⅛"                | 1"                  | ¼"               | ⅜"                  | 2 Rich              |
| 4307S                                | .....                   | .....  | ⅜"                     | 11/32"              | ⅛"                | 1"                  | ¼"               | ⅛"                  | 2 Rich              |

① — See Hot (Slow) Idle in TUNE-UP Section.

② — See Cold (Fast) Idle in TUNE-UP Section.

# Carter Carburetors

## CARTER MODEL BBD 2-BARREL (Cont.)

| CARBURETOR ADJUSTMENT SPECIFICATIONS (Cont.) |                         |        |                        |                     |                   |                     |                  |                     |                     |
|--|-------------------------|--------|------------------------|---------------------|-------------------|---------------------|------------------|---------------------|---------------------|
| Carter Carb. No.                             | Idle Speed (Engine RPM) |        | Fast Idle Cam Position | Float Level Setting | Bowl Vent Setting | Accel. Pump Setting | Unloader Setting | Vacuum Kick Setting | Auto. Choke Setting |
|  | Hot ①                   | Fast ② |                        |                     |                   |                     |                  |                     |                     |
| 4420S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/16"             | 1 1/32"             | 1/4"             | 13/64"              | 2 Rich              |
| 4421S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/16"             | 1 1/32"             | 1/4"             | 9/64"               | 2 Rich              |
| 4422S  | .....                   | .....  | 1/8"                   | 5/16"               | .050"             | 2 9/32"             | 1/4"             | 7/32"               | 2 Rich              |
| 4423S  | .....                   | .....  | 1/8"                   | 5/16"               | .050"             | 2 9/32"             | 1/4"             | 11/64"              | 2 Rich              |
| 4607S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/16"             | .....               | 1/4"             | 5/32"               | Index               |
| 4608S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/16"             | .....               | 1/4"             | 9/64"               | Index               |
| 4721S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/32"             | .....               | 1/4"             | 5/32"               | Index               |
| 4722S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/32"             | .....               | 1/4"             | 5/32"               | Index               |
| 4723S  | .....                   | .....  | 3/32"                  | 1/4"                | 9/16"             | .....               | 1/4"             | 5/32"               | Index               |
| 4724S  | .....                   | .....  | 3/32"                  | 1/4"                | 9/16"             | .....               | 1/4"             | 5/32"               | Index               |
| 4725S  | .....                   | .....  | 9/64"                  | 5/16"               | 1/16"             | 1"                  | 1/4"             | 5/32"               | 2 Rich              |
| 4726S  | .....                   | .....  | 9/64"                  | 5/16"               | 1/16"             | 1"                  | 1/4"             | 9/64"               | 2 Rich              |
| 4727S  | .....                   | .....  | 9/64"                  | 5/16"               | 5/32"             | 1"                  | 1/4"             | 5/32"               | 2 Rich              |
| 4728S  | .....                   | .....  | 9/64"                  | 5/16"               | 5/32"             | 1"                  | 1/4"             | 9/64"               | 2 Rich              |
| 4748S  | .....                   | .....  | 1/8"                   | 1 1/32"             | 3/64"             | 1"                  | 1/4"             | 5/32"               | 2 Rich              |
| 4774S  | .....                   | .....  | 1/8"                   | 1 1/32"             | 3/64"             | 1"                  | 1/4"             | 5/32"               | 2 Rich              |
| 4819S  | .....                   | .....  | Closed                 | 1/4"                | .....             | 13/64"              | 1/4"             | .....               | .....               |
| 4820S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 13/64"              | 1/4"             | 5/32"               | Index               |
| 4821S  | .....                   | .....  | Closed                 | 1/4"                | .....             | 1/32"               | 1/4"             | .....               | .....               |
| 4822S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 1/32"               | 1/4"             | 5/32"               | Index               |
| 4823S  | .....                   | .....  | Closed                 | 1/4"                | .....             | 1/32"               | 1/4"             | .....               | .....               |
| 4824S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 1/32"               | 1/4"             | 5/32"               | Index               |
| 4827S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 1/32"               | 1/4"             | .....               | 2 Rich              |
| 4834S  | .....                   | .....  | 9/64"                  | 1 1/32"             | 1/32"             | 1"                  | 1/4"             | 5/32"               | Index               |
| 4835S  | .....                   | .....  | 9/64"                  | 1 1/32"             | 1/32"             | 1"                  | 1/4"             | 5/32"               | Index               |
| 4957S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 13/64"              | 1/4"             | 5/32"               | Index               |
| 4958S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 13/64"              | 1/4"             | 5/32"               | Index               |
| 4961S  | .....                   | .....  | 5/32"                  | 5/16"               | 3/16"             | 1"                  | 1/4"             | 5/32"               | 2 Rich              |
| 4962S  | .....                   | .....  | 5/32"                  | 5/16"               | 3/16"             | 1"                  | 1/4"             | 9/64"               | 2 Rich              |
| 6149S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 15/64"              | 1/4"             | 5/32"               | .....               |
| 6150S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 15/64"              | 1/4"             | 5/32"               | .....               |
| 6151S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 15/64"              | 1/4"             | 5/32"               | .....               |
| 6152S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 15/64"              | 1/4"             | 5/32"               | .....               |
| 6169S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/32"             | .....               | 1/4"             | .....               | 2 Rich              |
| 6221S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/32"             | .....               | 1/4"             | 5/32"               | .....               |
| 6222S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/32"             | .....               | 1/4"             | 5/32"               | .....               |
| 6225S  | .....                   | .....  | 3/32"                  | 1/4"                | 1/32"             | .....               | 1/4"             | .....               | 2 Rich              |
| 6316SA                                       | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 15/64"              | 1/4"             | 5/32"               | .....               |
| 6317SA                                       | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 15/64"              | 1/4"             | 5/32"               | .....               |
| 6343SA                                       | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 15/64"              | 1/4"             | 5/32"               | .....               |
| 6344SA                                       | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 15/64"              | 1/4"             | 5/32"               | .....               |
| 6363S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 13/64"              | 1/4"             | 5/32"               | .....               |
| 6364S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 13/64"              | 1/4"             | 5/32"               | .....               |
| 6365S  | .....                   | .....  | Closed                 | 1/4"                | .....             | 13/64"              | .....            | .....               | .....               |
| 6536S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 1/2"                | 9/32"            | 5/32"               | .....               |
| 6537S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 1/2"                | 9/32"            | 7/64"               | .....               |
| 6610S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 1/2"                | 9/32"            | 5/32"               | .....               |
| 6611S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 1/2"                | 9/32"            | 7/64"               | .....               |
| 6613S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 1/2"                | 9/32"            | 5/32"               | .....               |
| 8008S  | .....                   | .....  | 3/32"                  | 1/4"                | .....             | 1/2"                | 9/32"            | 5/32"               | .....               |

① - See Hot (Slow) Idle in TUNE-UP Section.

② - See Cold (Fast) Idle in TUNE-UP Section.