

CARTER BBD TYPE DUAL THROAT CARBURETTOR

SERVICING and MAINTENANCE

PART 1

by Michael Brinsden

These carburetors were fitted to the Electronic Lean Burn (ELB) models in the CL and CM range of Chrysler vehicles produced in Australia from 1978. The Carburetors have been matched to the ELB engines and should not be fitted to earlier model engines as the resulting air/fuel mixtures, under all driving conditions, will be too lean for safe and satisfactory performance.

1.0 Specifications

Note: The carburetor being serviced should be identified by the manufacturer's model code. This code is stamped on an identification tag under an air horn attaching screw. Ensure that the tag is reinstalled after servicing.

Engine Type	4.3Litre	5.2 Litre
Model Number	BBD8219s	BBD8184s
Identification Tag Number	209	204
Bore	36.5mm	36.5mm
Venturi	30.2mm	30.2mm
Main Metering Jet	120-386	120-386
Main Metering Rods	75-2143	75-2143
Float Setting (at centre)	6.4mm	6.4mm
Step-up Piston Gap (Nominal)	0.9mm	0.9mm
Accelerator Pump Setting (Idle)	12.7mm	12.7mm
Bowl Vent Valve (Idle)	2.0mm	2.0mm
Fast Idle Cam Position	1.53 to 2.03mm	1.53 to 2.03mm
Choke Vacuum Kick	2.54 to 3.04mm	2.54 to 3.04mm
Choke Unloader	8.25mm	8.25mm
Idle Speed RPM (Curb)	700 to 750	770 to 830 (auto)
Idle Speed RPM (Step 2 of Cam)	1390 to 1410	1390 to 1410
Maximum Emission at this RPM	0.2 to 0.8%	0.2 to 0.8% (auto)
Choke Type – Automatic	Stove	Electric Assist Well
Torque Specifications:		
Carburettor Retaining Nuts	11 Newton Metres	
Fuel line Union Nuts	14 Newton Metres	
Accelerator Cable Clamp Nut	5 Newton Metres	

2.0 General Information

The Carter Model BBD dual venturi carburettor utilizes three basic fuel metering systems. The Idle System provides a mixture for idle and low speed performance; the Accelerator Pump System provides additional fuel during acceleration; the Main Metering System provides an economical mixture for normal cruising conditions. Additional to these three systems there is a fuel inlet system that constantly supplies the fuel to the basic metering systems and a choke system which temporarily enriches the mixture to aid in the starting and running of a cold engine. The Carburettor Body, and its connections, is illustrated in Figure 1.

2.1 Cleaning Carburettor Parts

For gum deposits on the carburetor parts use Methylated Spirits. However do not clean the Choke Diaphragm in any solvent as it can be damaged beyond repair. Instead clean with a soft cloth or a soft wire brush. Never clean the jets with a wire, or a drill, as this may enlarge the jet and give a mixture that is too rich for correct performance. To remove any moisture on the cleaned parts rinse in Kerosene or Petrol and allow to dry before assembly.

3.0 Service Diagnosis

3.1 Poor Idling

Possible Causes

- a) *Idle Air Bleed carbonized or of incorrect size.*
Disassemble carburetor and using compressed air clear the idle bleed after soaking in solvent (Methylated Spirits)
- b) *Idle Discharge Holes plugged or gummed.*
Disassemble carburetor and use compressed air to clear the idle discharge holes after soaking the main and throttle bodies in solvent (Methylated Spirits).
- c) *Throttle Body carbonized or worn Throttle Shaft.*
Disassemble carburettor and check throttle valve for wear. If there is excessive wear replace throttle body assembly or sleeve the existing body.
- d) *Incorrect Float Level.*
Test fuel level in the carburetor and adjust to the correct float level.
- e) *Loose screws between the Main Body and the Throttle Body.*
Tighten to specification to prevent air leaks.
- f) *Worn or corroded Needle Valve and Seat.*
Clean and inspect the Needle Valve and Seat. If found to be questionable replace the assembly and reset the float. It is a good idea to test the fuel pump pressure to ensure that the fuel feed to the float chamber is at a satisfactory rate.

3.2 Poor Acceleration

Possible Causes

- a) *Accelerator Pump Piston Plunger or Diaphragm faulty.*
Disassemble carburettor and replace the Accelerator Pump Assembly if the seal is hard, cracked or worn. Test the follow up spring for compression.
- b) *Incorrect Fuel or Float level.*
Test the fuel and float level in the carburettor. Adjust to the specified level.
- c) *Worn Accelerator Pump and Throttle linkage.*
Disassemble the carburetor and replace the worn accelerator pump and throttle linkage. Measure for the correct position.
- d) *Manifold Heat Valve sticking.*
Free up the Manifold Heat Valve using a suitable solvent.

3.3 Carburettor Floods or Leaks

Possible Causes

- a) *Cracked Body.*
Disassemble the carburettor and replace the cracked body. Make sure that the main to throttle body screws are tight and use new gaskets if possible.
- b) *Faulty Body Gaskets.*
Disassemble the carburettor and replace the defective gaskets. Test for leakage and ensure the screws are tightened to specification.
- c) *High Float Level.*
Test the fuel level in the carburetor. Make any necessary adjustment to ensure the correct float level.
- d) *Worn Needle Valve and Seat.*
Clean and inspect the needle valve and seat and reset the float. If in doubtful condition replace the complete assembly and then test the fuel pump pressure.
- e) *Excessive Fuel Pump Pressure.*
Test the fuel pump pressure. If the pressure exceeds the specified level replace the fuel pump.
- f) *Ruptured Accelerator Pump Diaphragm.*
Replace the diaphragm.

3.4 Poor Performance – Mixture too Rich

- Possible Causes
- a) *Restricted Air Cleaner.*
Replace the air cleaner element.
 - b) *Leaking Float.*
Disassemble the carburettor and replace the float. Test for the correct float level and adjust if necessary.
 - c) *High Float Level.*
Adjust the float level to specification.
 - d) *Excessive Fuel Pump Pressure.*
Test the fuel pump pressure and if the pressure is in excess of the specification replace the fuel pump.
 - e) *Worn Metering Jet.*
Disassemble the carburettor and replace the metering jet with a new jet of the correct size and type.
 - f) *Choke not Operating.*
Clean the choke parts and replace if necessary.

3.5 Carburettor Mixture too Lean

- Possible Causes
- a) *Air Leak bypassing the Carburettor.*
Source the cause of the air leak and repair. Note that the most common cause for air leaks is perished or cracked vacuum air hoses that go to the Power Brakes, Air Conditioner Controls or the Vacuum Advance System.

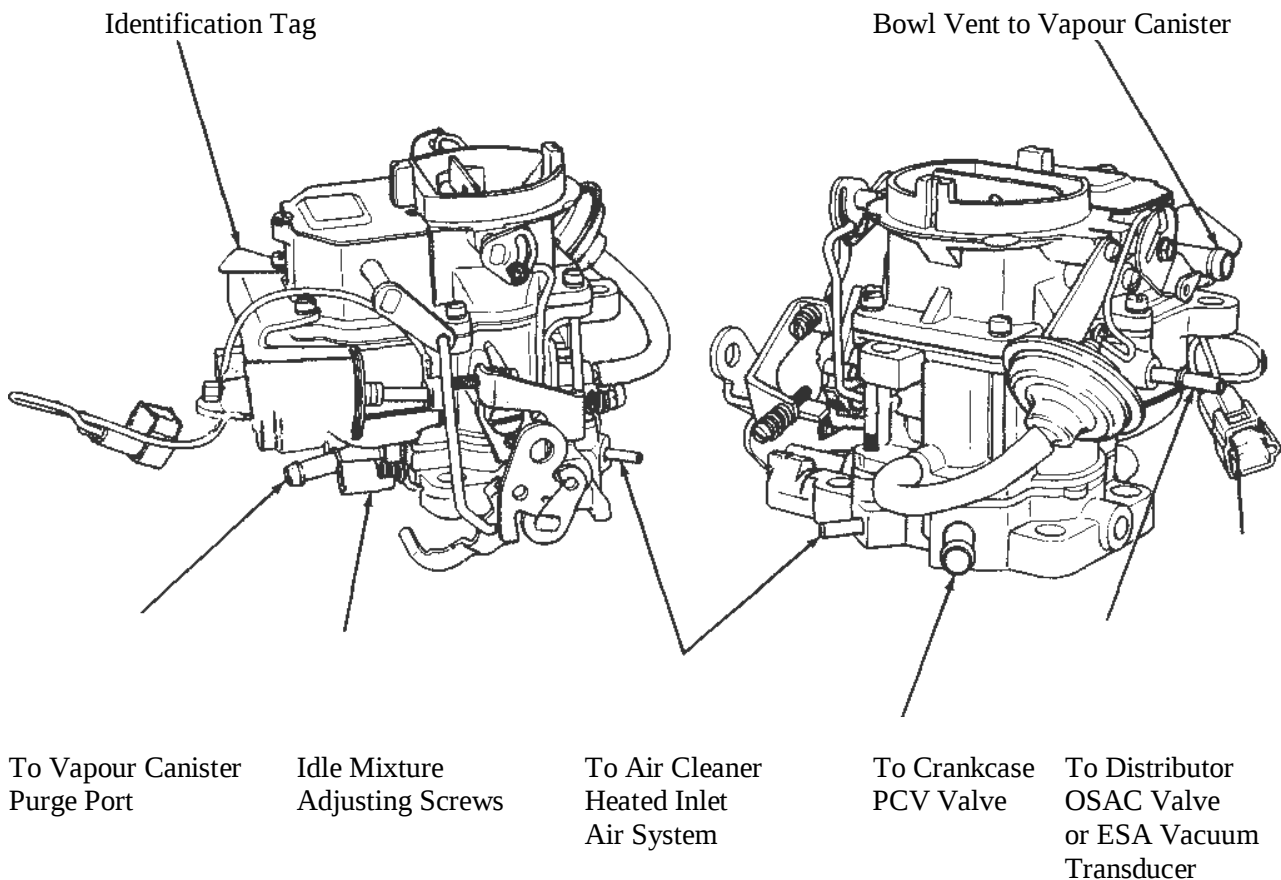


Figure 1

3.6 Engine runs excessively Rich after a Cold Start

- Possible Causes
- a) *Carburettor Rich.*
Incorrect gasket or the gasket installation between the carburettor and the intake manifold is faulty.
 - b) *Choke System is too Rich.*
Choke vacuum diaphragm is inoperative or misadjusted. Choke vacuum passage is blocked or leaking.

3.7 Engine Stalls after a Cold Start

- Possible Causes
- a) *Incorrect Starting Procedure* (check Operation Manual).
 - b) *Choke System Faulty.*
 - c) *Choke Vacuum Diaphragm adjustment is too lean.*
 - d) *Vacuum Hoses leaking or disconnected.*
 - e) *Carburettor too Lean* (Check vacuum kick adjustment).

3.8 Engine RPM Output Low after Cold Start

- Possible Causes
- a) *Fast Idle Speed set too low.*
 - b) *Fast Idle Cam position Adjustment is incorrect.*
 - c) *Engine Oil of incorrect viscosity.*

3.9 Carburettor Running Lean after Cold Start

- Possible Causes
- a) *Curb Idle set too lean.*
 - b) *Air leak bypassing the carburettor.*

3.10 Poor Cold Engine Starting

- Possible Causes
- a) *Incorrect Starting Procedure.*
Throttle must be opened as described in the Operation & Maintenance Manual.
 - b) *Choke valve is failing to close.*
One of the following-
 - Choke adjustment too lean
 - Choke thermostat corroded
 - Choke linkage bent or dirty
 - Choke valve improperly seated
 - Air cleaner interfering with choke linkage
 - Insufficient clearance between choke lever & air cleaner base
 - Vacuum kick diaphragm leaking
 - Sticky fast idle cam

3.11 Poor Drivability during and after Warm-up

- Possible Causes
- a) *Incorrect Vacuum Kick setting.*
 - b) *Incorrect Cam Index and Fast Idle setting.*
 - c) *Faulty Ignition System.*
 - d) *Incorrect vacuum advance hose connection.*
 - e) *Dirty Carburettor passages*
 - f) *Heated Air Inlet System malfunction..*

3.12 Backfires, Stalls or Variable Engine RPM

- Possible Causes
- a) *Choke Settings incorrect*
 - b) *Incorrect Idle Mixture.*
 - c) *Metering Rods not correctly set.*

3.13 Fast Idle does not reset after Choke Resets

- Possible causes
- a) *Fast Idle Cam Link fouling the Air Cleaner hoses.*

Part 2 of this Article will be included in a future issue of The Pentashield.

Editors Note: Article based on the Chrysler Australia M Series Service Manual.