of-flat is 305 X 0.00075 (12 X 0.00075) equals 0.23 mm (0.009 inch). This amount of out-of-flat is acceptable.

The cylinder head surface finish should be 1.78-3.00 microns (70-125 microinches).

Inspect push rods. Replace worn or bent rods.

INSTALLATION

(1) Apply Perfect Sealant No.5, or equivalent, to both sides of the gasket (Fig. 14),

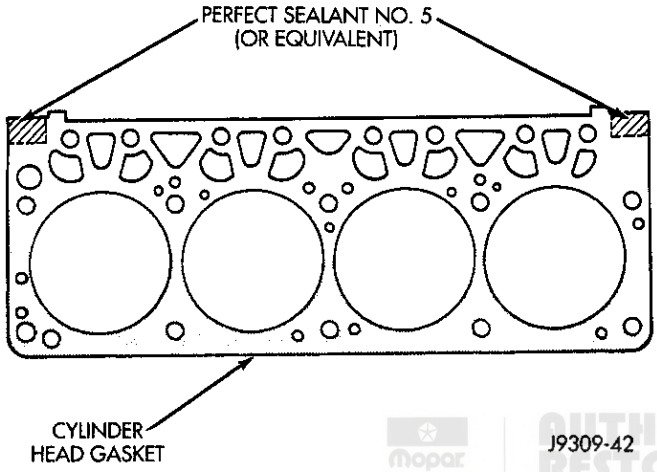

Fig. 14 Sealant Location on Cylinder Head Gasket

(2) Position the new cylinder head gaskets onto the cylinder block.

(3) Position the cylinder heads onto head gaskets and cylinder block.

(4) Starting at top center, tighten all cylinder head bolts, in sequence, to 68 N•m (50 ft. lbs.) torque (Fig. 15). Repeat procedure, tighten all cylinder head bolts to 143 N•m (105 ft. lbs.) torque. Repeat procedure to confirm that all bolts are at 143 N•m (105 ft. lbs.) torque.

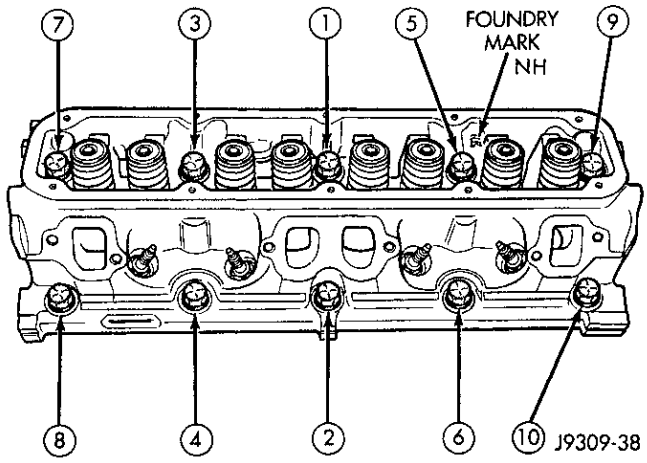

Fig. 15 Cylinder Head Bolt Tightening Sequence

CAUTION: When tightening the rocker arm bolts, make sure the piston in that cylinder is NOT at TDC. Contact between the valves and piston could occur.

(5) Install push rods and rocker arm assemblies in their original position. Tighten the bolts to 28 N•m (21 ft. lbs.) torque.

(6) Place the 4 plastic locator dowels into the holes in the block Fig. 16).

(7) Apply Mopar Silicone Rubber Adhesive Sealant, or equivalent, to the four corner joints. An excessive amount of sealant is not required to ensure a leak proof seal. However, an excessive amount of sealant may reduce the effectiveness of the flange gasket. The sealant should be slightly higher than the cross-over gaskets, approx. 5 mm (0.2 in).

(8) Install the front and rear cross-over gaskets onto the dowels (Fig. 16).

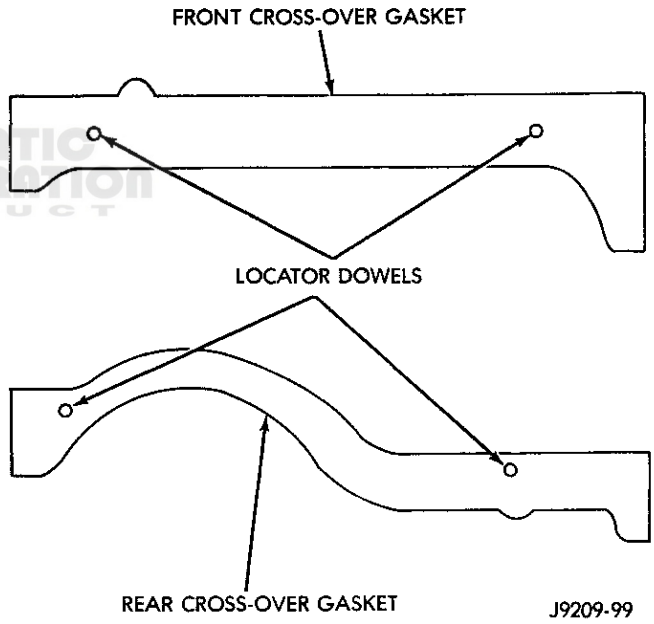

Fig. 16 Cross-Over Gaskets and Locator Dowels

(9) Install the flange gaskets. Be sure that the vertical port alignment tab is resting on the deck face of the block. Also the horizontal alignment tabs must be in position with the mating cylinder head gasket tabs (Fig. 17). The words MANIFOLD SIDE should be visible on the center of each flange gasket.

(10) Carefully lower intake manifold into position on the cylinder block and cylinder heads. Use the alignment dowels in the cross-over gaskets to position the intake manifold. After intake manifold is in place, inspect to make sure seals are in place.

(11) The following torque sequence duplicates the expected results of the automated assembly system (Fig. 18).

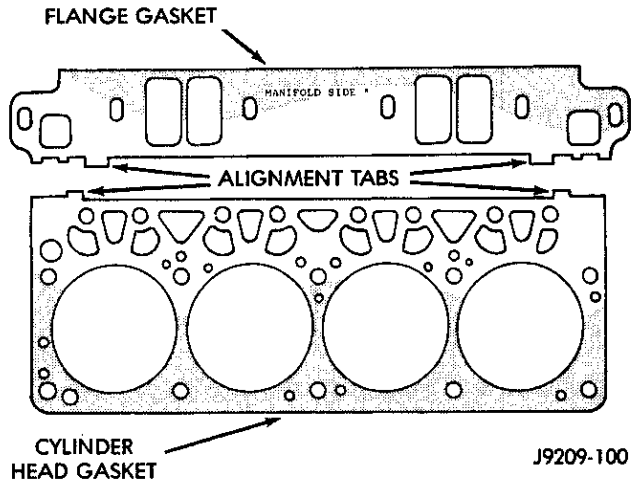

Fig. 17 Intake Manifold Flange Gasket Alignment

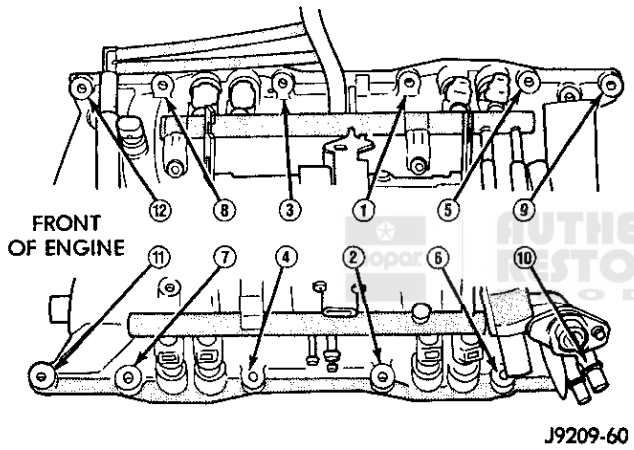

Fig. 18 Intake Manifold Bolt Tightening Sequence

- Step 1—Tighten bolts 1 through 4, in sequence, to 8 N•m (72 in. lbs.) torque. Tighten in alternating steps 1.4 N•m (12 in. lbs.) torque at a time.
- Step 2—Tighten bolts 5 through 12, in sequence, to 8 N•m (72 in. lbs.) torque.
- Step 3—Check that all bolts are tighten to 8 N•m (72 in. lbs.) torque.
- Step 4—Tighten all bolts, in sequence, to 16 N•m (12 ft. lbs.) torque.
- Step 5—Check that all bolts are tighten to 16 N•m (12 ft. lbs.) torque.

(12) Install exhaust manifolds. Tighten the bolts and nuts to 34 N•m (25 ft. lbs.) torque.

(13) Adjust spark plugs to specifications (refer to Group 8D, Ignition System). Install the plugs and tighten to 41 N•m (30 ft. lbs.) torque.

(14) Install coil wires.

(15) Connect heat indicator sending unit wire.

(16) Connect the heater hoses and bypass hose.

(17) Install distributor cap and wires.

(18) Hook up the return spring.

(19) Connect the accelerator linkage and if so equipped, the speed control and transmission kick-down cables.

(20) Install the fuel lines.

(21) Install the generator and drive belt. Tighten generator mounting bolt to 41 N•m (30 ft. lbs.) torque. Tighten the adjusting strap bolt to 23 N•m (200 in. lbs.) torque. Refer to Group 7, Cooling System for adjusting the belt tension.

(22) Place the cylinder head cover gaskets in position and install cylinder head covers. Tighten the bolts to 11 N•m (95 in. lbs.) torque.

(23) Install closed crankcase ventilation system.

(24) Connect the evaporation control system.

(25) Install the air cleaner.

(26) Fill cooling system (refer to Group 7, Cooling System for proper procedure).

(27) Connect the negative cable to the battery.

VALVES / VALVE SPRINGS

The valves are arranged in-line and inclined 18°. The rocker pivot support and the valve guides are cast integral with the heads.

This procedure requires the removal of the cylinder head.

REMOVAL

(1) Remove the cylinder head.

(2) Compress valve springs using Valve Spring Compressor Tool C-3422-B.

(3) Remove valve retaining locks, valve spring retainers, valve stem seals and valve springs.

(4) Before removing valves, remove any burrs from valve stem lock grooves to prevent damage to the valve guides. Identify valves to ensure installation in original location.

VALVE CLEANING

Clean valves thoroughly. Discard burned, warped and cracked valves.

Remove carbon and varnish deposits from inside of valve guides with a reliable guide cleaner.

VALVE INSPECTION

Measure valve stems for wear. If wear exceeds 0.051 mm (0.002 inch), replace the valve.

Measure valve stem guide clearance as follows:

(a) Install Valve Guide Sleeve Tool C-3973 over valve stem and install valve (Fig. 19). The special sleeve places the valve at the correct height for checking with a dial indicator.

(b) Attach Dial Indicator Tool C-3339 to cylinder head and set it at right angle of valve stem being measured (Fig. 20).

(c) Move valve to and from the indicator. The total dial indicator reading should not exceed 0.432 mm (0.017 inch). Ream the guides for valves with