1965

CORVAIR

CHASSIS SHOP MANUAL

ST-59

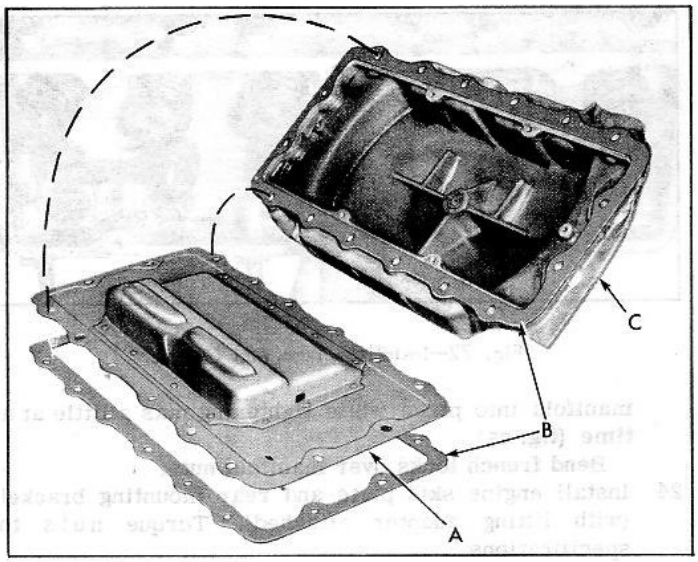

Fig. 66—Crankcase Cover and Vent

a. Crankcase Vent b. Gaskets c. Crankcase Cover

Install cylinder head over studs and carefully guide into place.

Install 6 cylinder head nuts (finger tight).

Lightly oil valve lifters and install in their proper bores.

NOTE: Whenever new valve lifters are installed, coat foot of lifter with Molykote or its equivalent.

Install new "O" ring seals, lightly coated with oil, on long end of push rod tubes; then install push rod tubes through bore in cylinder head and install new "O" ring seals, lightly coated with oil, on inner end of push rod tubes (fig.70).

Start push rod tubes into bores in cylinder head and crankcase, then seat the tubes with a 9/16" deep

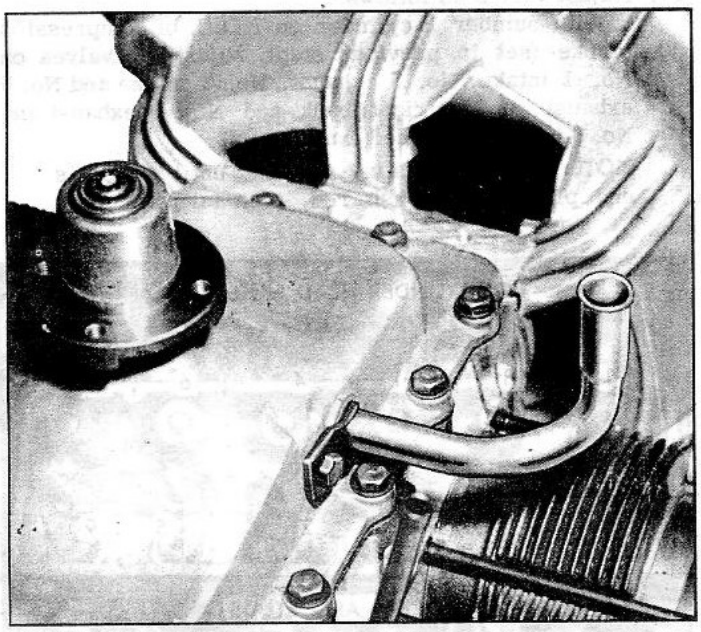

Fig. 67—Crankcase Vent Tube

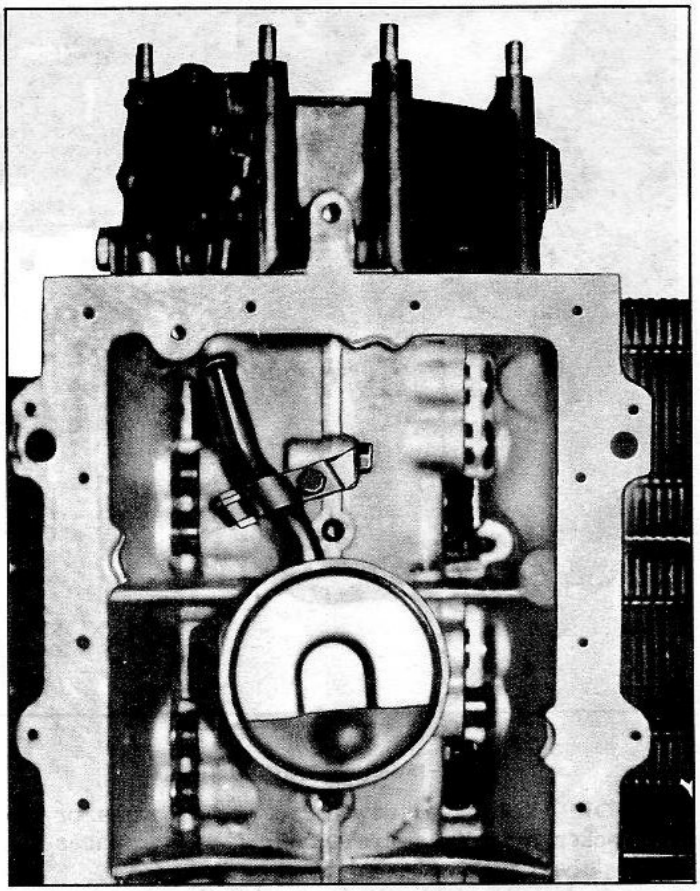

Fig. 68—Oil Pick-Up Screen Installed

socket (placed against the cylinder head end of the push rod tube and tapped lightly with a hammer) (fig. 71).

Install new "O" ring seals, lightly coated with oil into rocker arm stud bore in cylinder head.

Install push rod guides (fig. 72), then valve rocker arm studs (finger tight).

Torque cylinder head nuts and valve rocker arm studs, a little at a time, in the sequence shown (fig.73) until the specified torque is reached.

Install push rods with the side oil hole out (fig. 74).

Install valve rocker arms, rocker arm balls and rocker arms nuts. Tighten rocker arm nuts until push rod end play is taken up.

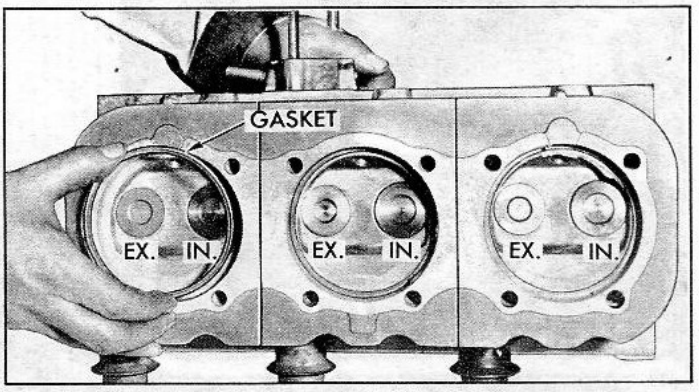

Fig. 69—Cylinder Head Gasket Installation

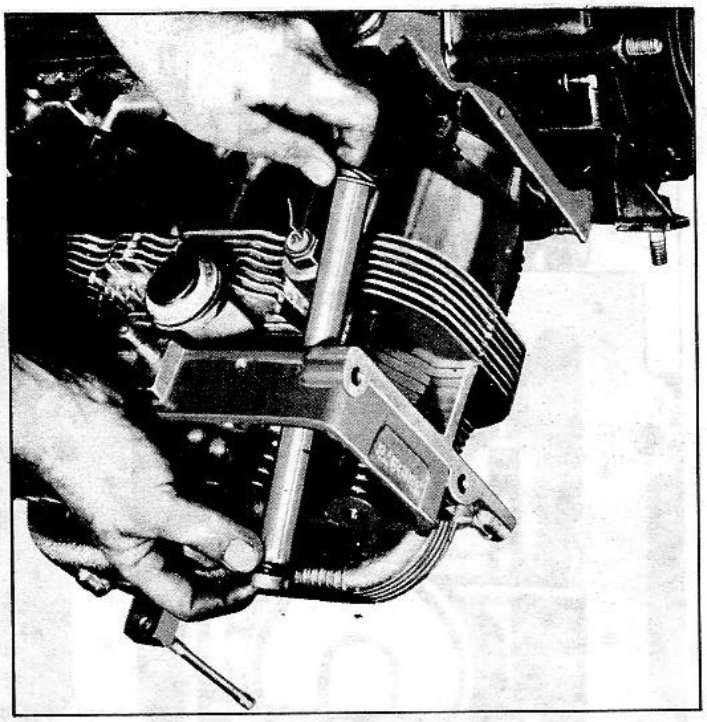

Fig. 70—Installing Push Rod Tubes

NOTE: Whenever new valve rocker arms or rocker arm balls are installed, coat surfaces lightly with Molykote or its equivalent.

Install the right cylinder head in the same manner.

21. Install muffler hanger and rear shrouds, then using new seals install oil cooler and torque to specifications.
22. Connect wire to cylinder head temperature sending unit and install front shrouds.
23. Install exhaust manifolds as follows:

Install new exhaust packings (steel flange on packing out) on exhaust port sleeves.

CAUTION: Exhaust port sleeves are a press fit in the cylinder head and exhaust manifold. The exhaust manifold must fit correctly to prevent leaks.

Install exhaust manifolds, exhaust manifold clamps, french locks and nuts. Using a plastic hammer, tap manifold into place while tightening nuts a little at a time (fig. 75).

Bend french locks over manifold nuts.

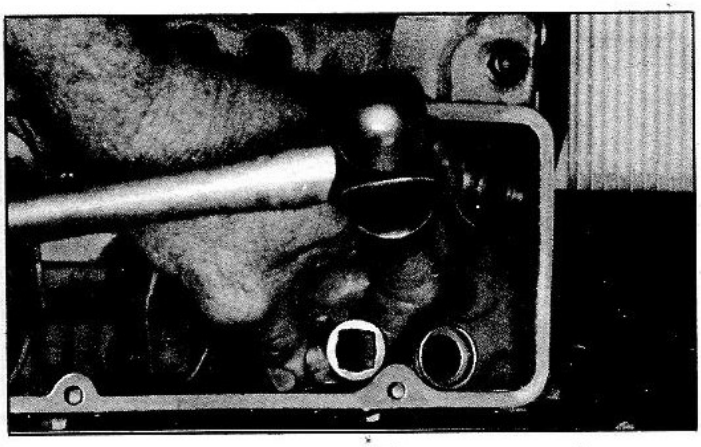

Fig. 71—Seating Push Rod Tubes

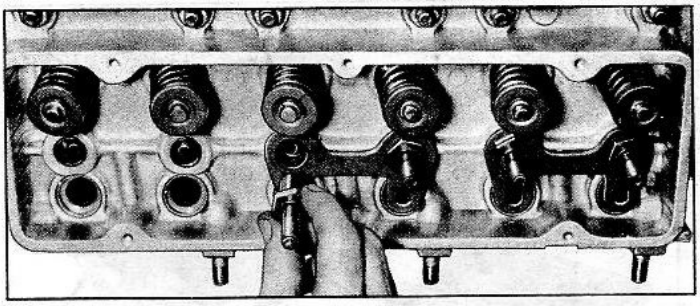

Fig. 72—Installing Push Rod Guides

24. Install engine skid plate and rear mounting bracket (with lifting adapter attached). Torque nuts to specifications.
25. Install exhaust ducts, lower shrouds, and tighten all bolts securely.

NOTE: Check exhaust damper door adjustment as outlined and adjust if necessary.

26. Turn engine right side up and install distributor as follows:

Rotate crankshaft counterclockwise until number 1 cylinder is at T.D.C. (timing mark at 0 on tab) of COMPRESSION stroke (fig. 76).

Set distributor with rotor pointing to number one cylinder position and note position of drive tang on distributor shaft.

Using a long screw driver, turn oil pump shaft (through distributor bore in engine rear housing) until slot in oil pump will match distributor tang.

Using a new gasket, install distributor and rotate until points are just opening (rotor pointing to number 1 position).

Install retaining clamp and nut and tighten securely.

27. Adjust valves as follows:

With number 1 cylinder on T.D.C. of compression stroke (set in previous step), adjust the valves on No. 1 intake, No. 1 exhaust, No. 3 intake and No. 5 exhaust on the right bank and No. 4 exhaust and No. 6 intake on the left bank.

NOTE: Turn adjusting nut out until there is end play in the push rod, then turn adjusting

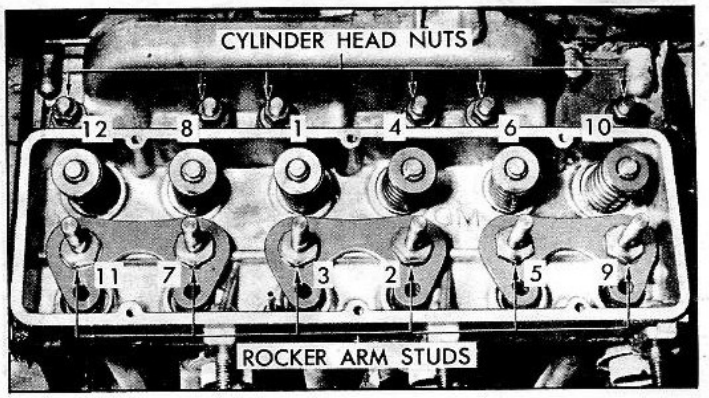

Fig. 73—Cylinder Head Torque Sequence

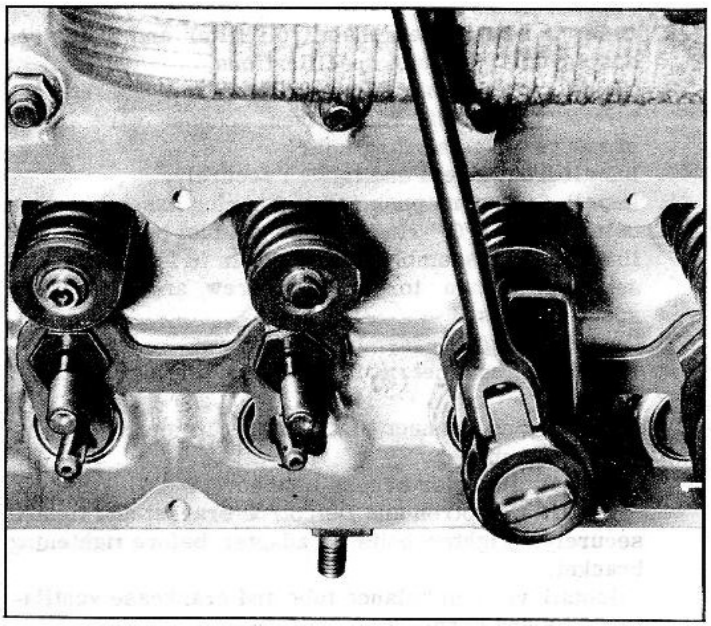

Fig. 74—Push Rods Installed

nut in until there is no end play at push rod (may be felt by twisting push rod) (fig. 77). Turn adjusting nut one additional turn in (to center plunger in hydraulic valve lifter).

Turn crankshaft one turn counter-clockwise (number 2 cylinder at T.D.C. of COMPRESSION stroke and timing mark at 0 on the tab) and adjust the valves on No. 3 exhaust and No. 5 intake on the right bank and No. 2 intake, No. 2 exhaust, No. 4 intake and No. 6 exhaust on the left bank

28. Using new gaskets, install valve rocker covers and spring reinforcements then torque to specifications (fig. 78).
29. Install muffler shield and tighten securely.
30. Install spark plugs (clean if necessary) with new gaskets and torque to specifications.
31. Install blower then blower pulley and torque to specifications.
32. Install left and right shields then top shroud and tighten securely.

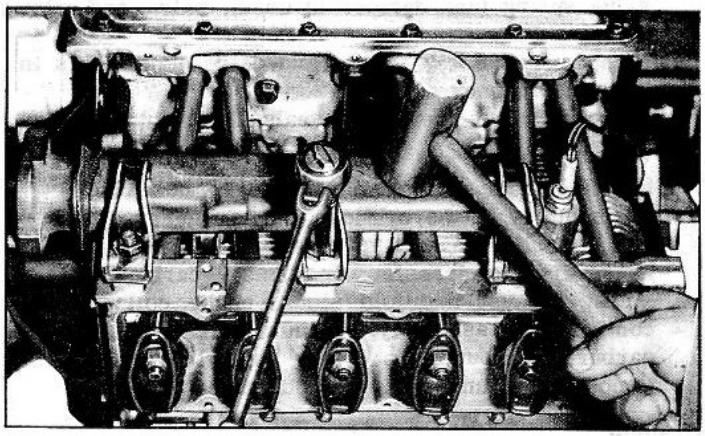

Fig. 75—Installing Exhaust Manifold

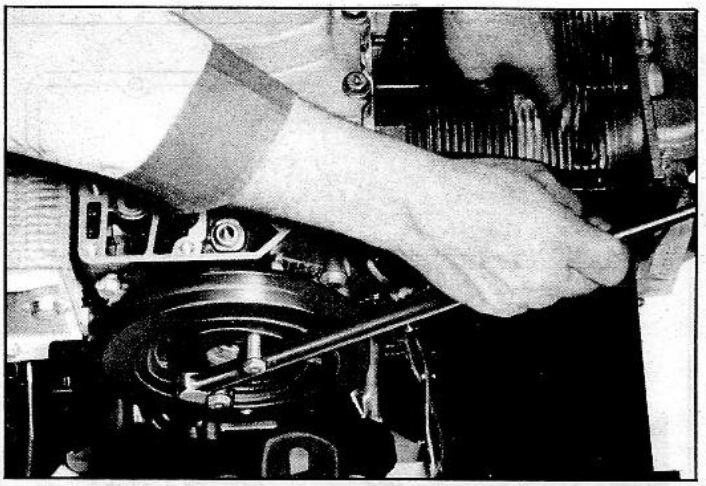

Fig. 76—Locating T.D.C. on Number Cylinder

NOTE: Rotate blower and check for sufficient clearance, while tightening top shroud.

33. Install coil and tighten securely then connect wire from distributor.
34. Attach a chain and shackle (from Tool J-4536-A) to lifting adapter and lifting eye at flywheel housing.
35. Using a chain fall or comparable lift, remove engine from engine stand and flywheel housing adapter, then install engine on lifting jack and adapter (Tool J-8280).
36. Remove chain and shackle and remove lifting adapter from rear mounting bracket.

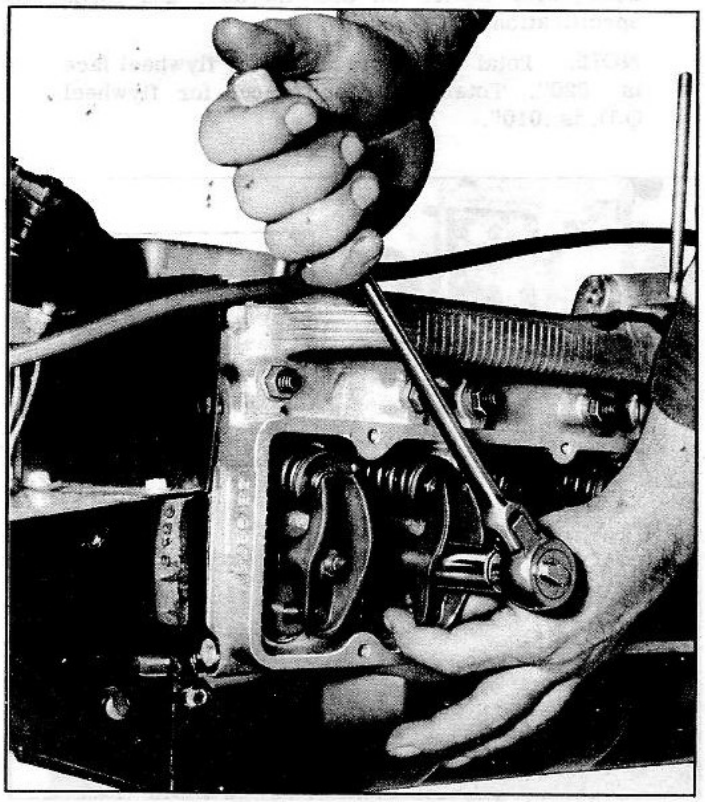

Fig. 77—Adjusting Valves

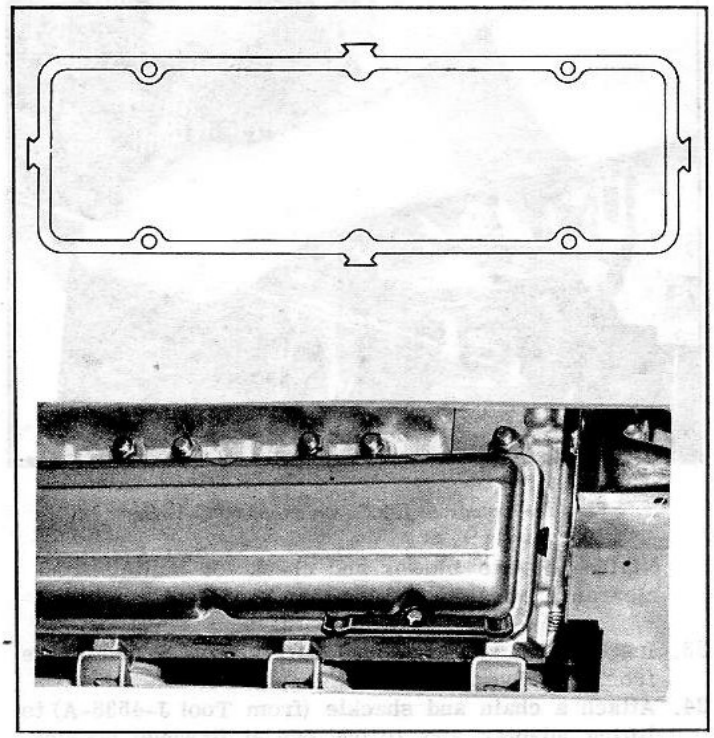

Fig. 78—Valve Cover and Gasket

37. Install flywheel (Synchromesh) or flex plate (Automatic) as follows:

    Apply sealer to end of crankshaft and install flywheel or flex plate as indexed during disassembly.

    Install spacer (on Synchromesh), then install bolts with sealer on bolt threads, and torque to specifications.

    NOTE: Total indicator runout for flywheel face is .020". Total indicator runout for flywheel O.D. is .010".

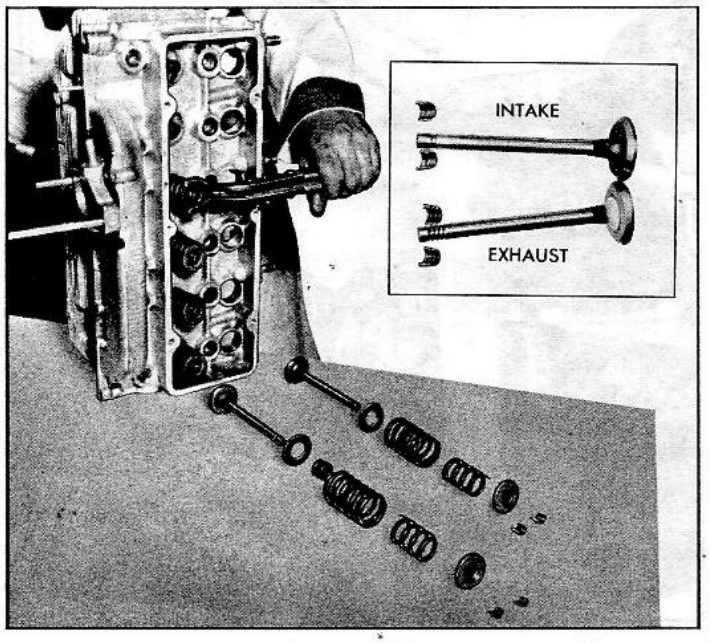

Fig. 79—Compressing Valve Springs

38. Using a new gasket, install oil filter and Delcotron adapter and torque to specifications.
39. Install a new oil filter (with a new gasket) and torque to specifications then connect wire to oil pressure gauge sending unit.
40. Install front shield and tighten securely.
41. Install fuel pump push rod and spring assembly, then using a new "O" ring seal install fuel pump and fuel lines as an assembly. Locate hole in fuel pump with set screw then torque set screw and locknut to specifications.
42. Complete engine assembly as follows:

    Install grommet (with starter wiring in front shield).

    Install and connect distributor cap and spark plug wire assembly.

    Install oil cooler access hole cover.

    Install Delcotron and Delcotron bracket and tighten securely. Tighten bolts to adapter before tightening bracket.

    Install vacuum balance tube and crankcase ventilation tube and hoses.

    Install carburetors and cross shaft as an assembly.

    Install and connect vacuum advance hose at right carburetor and distributor.

    Install upper choke control rods and adjust and connect as outlined in Section 6M.

    Install and connect fuel lines.

    Install and adjust blower belt as outlined.

    Install oil level gauge.

    Install air cleaner assembly.

    Fill with engine oil.

CYLINDER HEAD ASSEMBLIES

CAUTION: Use extreme care in handling cylinder heads to avoid damaging cooling fins.

Disassembly

1. Place cylinder head assembly on end and using Tool J-8062, with off-set jaws, compress valve spring, then remove valve locks (fig. 79).

   NOTE: It may be necessary to tap valve spring caps lightly with a hammer to loosen valve locks in valve caps.

2. Release Tool J-8062 and remove valve spring cap, valve spring (and damper is used), valve, and valve spring shims.
3. Remove remaining valves and valve components in the same manner.
4. Remove valve stem oil seals from intake valve guides.

   NOTE: Under normal circumstances, no further disassembly of the cylinder head is necessary. If a cylinder head is to be replaced, it will be necessary to transfer or install carburetor studs, exhaust manifold studs, choke coil and control rod assembly, vacuum balance tube, carburetor mounting pad plug and cylinder head temperature unit as outlined under Repairs.

Cleaning

1. Clean carbon from combustion chambers and ports using Tool J-8358 (fig. 80).