

1.4. RIFF 71

VALVE CLEARANCE ADJUSTMENT

(250-330 SOHC)

Every 6,000 miles, check the valve lash clearances and if necessary, reset them to the recommended clearance.

REQUIRED MATERIAL:

- 10mm Wrench or Socket
- 11mm Box Wrench
- Small Adjustable Wrench
- .006" (.15mm) Feeler Gauge
- .008" (.20mm) Feeler Gauge
- Small Piece of Thin Sheet Metal
- Cam Cover Gaskets (if required)

CAM COVER REMOVAL:

1. Remove all acorn nuts from the cam covers.
2. Remove all flat washers from the studs.
3. Loosen, (at least half way) all nuts on the chain covers.
4. Remove the bolts ² that secure the distributor to the cam cover. *(w/lockwasher)*
5. Lift the ignition wire looms away from the cam covers.
6. Tap the chain covers to be sure they are loose.
7. Remove all carburetor linkages by snapping the clip from the ball joint on the rod.
- 7a. *Unhook carb return spring*
8. Remove the throttle cable connection at the cam cover. On 330s, remove the air cleaner.
9. Carefully lift the cam cover off of the head, lift upward by the black knobs on the cover (do not force).
10. If the cover hesitates, tap it with a rubber mallet to loosen.

ADJUSTMENT:

NOTE: The engine must be cold when adjusting clearances.

1. Crank the engine over until PM1/6 is indicated at the flywheel timing mark.

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VALVE CLEARANCE ADJUSTMENT (continued)

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2. Intake and exhaust valves on cylinder 1 and 6 should be closed, and can be checked or adjusted at this point.
3. Check the clearnace on a cold engine; the gaps for a 250 or 330 are:

.006" on intake
.008" on exhaust

4. The intake valves are the ones closest to the carburetors; the exhaust valves are the ones just above the exhaust pipes.
5. To adjust the clearances, loosen the 11mm jam nut on the top of the rocker arm, insert the correct feeler gauge between the valve stem and the adjuster. Turn the adjuster screw with a small adjustable wrench until the gauge can be removed with a slight pull (a small pressure on the feeler guage is o.k.
6. Tighten (securely) the jam nut - taking caution not to disturb the setting of the adjuster screw. Check the clearance again to determine if the adjuster screw had been moved, repeat if it is not correct. (Holding the adjuster screw while tightening the jam nut will prevent this problem). Adjust one valve at a time, but complete both adjustments on each cylinder before turning engine over.
7. With a flashlight, observe the position of the cam lobe on the next cylinder to be checked. Rotate the engine until the lobe is pointing away from the rocker arm; the valve is fully closed at this time. Each valve may be adjusted on each cylinder in this manner. (A pushbutton switch connected from the starter fuse box to battery will speed up cranking the engine over each time. Intake and exhaust valves have different clearances; do not mix the measurement up.
- 7a. Another method of determinating if the valves are closes is to crank the engine through the normal firing order and adjust each valve lifter when the piston is at TDC. Starting with cylinder #1 with PM 1/6 on the flywheel mark, crank the engine slightly to the next cylinder in the firing order, then check the clearance. The firing order on 250 and 330 cars is as follows: 1-7-5-11-3-9-6-12-2-8-4-10. (When a cylinder is at TDC in the firing cycle, both valves of that cylinder are closed and adjustments of the clearances on the intake and exhaust valves can be made at this time.)
8. With either method 7 or 7a, recheck each valve again to double check the clearances. Also, double check the tightness of the jam nuts.
9. The engine can be run with the cam covers off to check for any noisy adjustments. Do not run the engine at high RPM or oil may splash about the engine compartment.

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VALVE CLEARANCE ADJUSTMENT (continued)

- 10. If readjustment of a particular valve clearance is indicated, wait until the engine is cold before setting.

REASSEMBLY:

- 1. If the large cover gasket appears dry, cracked, decomposed, or broken in any way, replace it with a new one. Remove the chain covers and lift the old gasket off (avoid damaging the front oil gasket). Do not drop any pieces into the engine. Clean the area under the gasket and remove all adhesives if they were applied. Install a new gasket, cutting off (carefully) the small section of gasket over the distributor drive. The oil gasket between head and chain cover should be carefully inserted through the small punched squares in the gasket. Push the gasket down on the head, do not use adhesives to hold the gasket.
- 2. Clean the gasket area on the cam case (and chain cover if a new gasket is to be installed) removing all adhesives or traces of gasket material. Check the oil drain holes for blockages; clean them if it is required.
- 3. Install the chain cover if it was removed. Place a thin sheet metal piece against the oil ring, holding it against the chain cover.
- 4. Using the sheetmetal piece to hold the oil gasket against the chain cover, carefully slide the cam cover down on the head. Slowly remove the sheetmetal, apply oil from above if it is difficult to remove. (Do not use adhesives to hold gaskets in place.)
- 5. Place the flat washers on the studs, then place the four spacers on the longer studs. Fit the ignition wire harness over the proper studs.
- 6. Install the 6mm acorn nuts on all of the studs and run them down finger tight. Be sure the covers are down flat on the heads.
- 7. Torque each nut down to about 6 lb. ft. Tighten nuts in order from the center to the ends of each cover.
- 8. Install the distributor securing bolts and tighten down.
- 9. Install the carburetor linkages and ^{springs} throttle cable. Do not adjust the throttle cable taut, or it may change the idle setting. Install the air cleaner if it was removed.
- 9a. *Install oil fill tube thru oil filter mtg bracket*
- 10. Start the engine and check for oil leaks and loose cover nuts.