

Fig. 19—Installing Valve, Cup Seals, Spring and Retainer

HYDRAULIC TAPPETS

Preliminary to Checking the Hydraulic Tappets

Before disassembling any part of the engine to correct tappet noise, read the oil pressure at the gauge (Install a reliable gauge at pressure sending unit if vehicle has no oil pressure gauge.) and check the oil level in the oil pan. The pressure should be between 45 and 65 pounds at 1000 R.P.M.

The oil level in the pan should never be above the "full" mark on dipstick, or below the "add oil" mark. Either of these two conditions could be responsible for noisy tappets.

Oil Level Too High

If oil level is above the "full" mark on dipstick, it is possible for the connecting rods to dip into the oil while engine is running and create foam. Foam in oil pan would be fed to the hydraulic tappets by the oil pump causing them to lose length and allow valves to seat noisily.

Oil Level Too Low

Low oil level may allow oil pump to take in air which, when fed to the tappets, causes them to lose length and allows valves to seat noisily. Any leaks on intake side of pump through which air can be drawn will create the same tappet action. When tappet noise is due to aeration, it may be intermittent or constant, and usually more than one tappet will be noisy. When oil level and leaks have been corrected, engine should be operated at fast idle for sufficient time to allow all of the air inside of the tappets to be bled out.

Tappet Noise Diagnosis

(1) To determine source of tappet noise, operate engine at idle with cylinder head covers removed.

(2) Feel each valve spring or rocker arm to detect noisy tappet. The noisy tappet will cause the affected spring and/or rocker arm to vibrate or feel rough in operation.

Worn valve guides or cocked springs are sometimes mistaken for noisy tappets. If such is the case, noise may be dampened by applying side thrust on the valve spring. If noise is not appreciably reduced, it can be assumed the noise is in the tappet. Inspect the rocker arm push rod sockets and push rod ends for wear.

(3) Valve tappet noise ranges from light noise to a heavy click. A light noise is usually caused by excessive leakdown around the unit plunger which will necessitate replacing the tappet, or by the plunger partially sticking in the tappet body cylinder. A heavy click is caused either by a tappet check valve not seating, or by foreign particles becoming wedged between the plunger and the tappet body, causing the plunger to stick in the down position. This heavy click will be accompanied by excessive clearance between the valve stem and rocker arm as valve closes. In either case, tappet assembly should be removed for inspection and cleaning.

Tappet Removal

(1) The tappets can be removed without removing cylinder heads by following this recommended procedure: Remove cylinder head covers.

(2) Remove rocker arms and shaft assembly.

(3) Remove push rods and identify to insure installation in original location.

(4) Slide magnetic pickup tool through opening in cylinder head and seat tool firmly in the head of tappet.

(5) Pull tappet out of bore with a twisting motion. If all tappets are to be removed, identify tappets to insure installation in original location.

CAUTION: The plunger and tappet bodies are not interchangeable. The plunger and valve must always be fitted to the original body. It is advisable to work on one tappet at a time to avoid mixing of parts. Mixed parts are not compatible. Do not disassemble a tappet on a dirty work bench.

Disassembly (Fig. 20)

(1) Pry out plunger retainer spring clip.

(2) Clean varnish deposits from inside of tappet body above plunger cap.

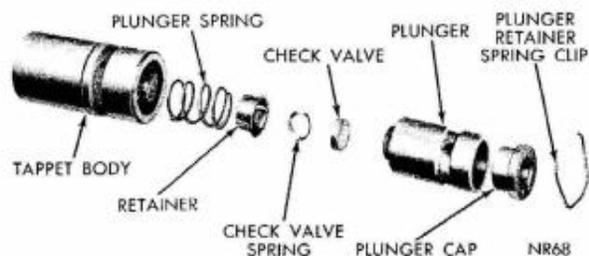


Fig. 20—Hydraulic Tappet Assembly (Disassembled View)