

M91893

Results:

- If the slow idle rpm is not according to specifications, loosen the nut (A) and turn the slow idle stop screw (B) clockwise to increase the engine speed, or counterclockwise to decrease the engine speed until the slow idle speed is correct. After adjustment, tighten the nut.

VALVE CLEARANCE ADJUSTMENT**Reason:**

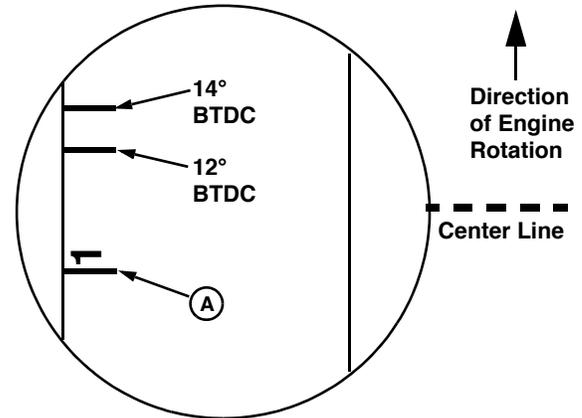
To be sure the valves are fully opening and closing at the correct time, and not wearing the valve train unnecessarily.

Equipment:

- Feeler Gauge
- 10 mm End Wrench
- Flat Blade Screwdriver
- 17 mm Wrench

Procedure:

1. The engine must be cool (room temperature) before the valve clearance is checked.
2. Be sure ignition key is OFF before attempting to turn engine by hand.
3. Open the hood and remove the engine side covers.
4. Remove the rocker arm cover. (See "ROCKER ARM COVER REMOVAL AND INSTALLATION").



Flywheel Timing Marks

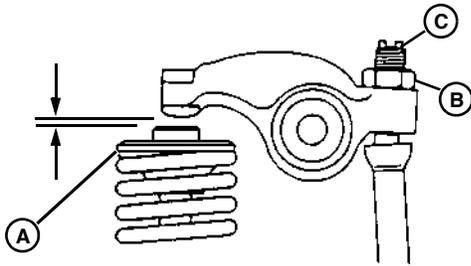
5. Locate the inspection hole in right side of the transmission tunnel. The flywheel can be seen inside the inspection hole.

NOTE: "Top Dead Center (TDC)" is when the piston is at it's highest point of travel in the cylinder on the compression stroke. Number one cylinder is located at rear of engine (flywheel side).

6. Turn the crankshaft pulley while watching the flywheel inside the inspection hole. Align the number one TDC mark (A) on the flywheel with the pointer on the tunnel.

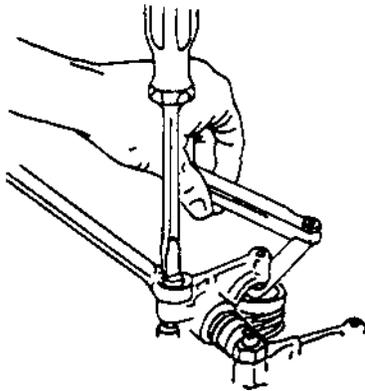
NOTE: When top dead center is reached, the rocker arms for that cylinder will be motionless as the crankshaft is rotated. If rocker arms are still moving when TDC is approached, rotate crankshaft one full revolution and try again.

7. Try to move rocker arms and/or push rods for No. 1 cylinder:
 - If the rocker arms and push rods are loose, the piston is at TDC on the compression stroke. Go to step 8.
 - If the rocker arms and/or push rods are not loose, rotate the flywheel one revolution (360°), and recheck the rocker arms and push rods.



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8. Slide a feeler gauge between the valve cap (A) and rocker arm to measure the clearance.



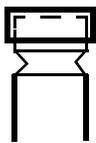
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9. To adjust the valves, loosen the lock nut (B) and turn the adjusting screw (C) until the blade of the feeler gauge can be inserted between the rocker arm and valve cap. Hold the adjusting screw while tightening the lock nut.

10. Recheck the valve clearance after tightening the lock nut.

Specification:

Valve Clearance . 0.15 – 0.25 mm (0.006 – 0.010 in.)



Normal



Not Normal

11. Check that the valve cap on the valve stem remained seated on the valve and inside the valve spring retainer.
12. Turn the crankshaft pulley counter clockwise (as viewed from operator's seat or flywheel end) approximately 2/3 of a revolution (240°) while watching the observation hole for the number three timing mark.

13. Check that the rocker arms and push rods for cylinder number three are loose.
14. Repeat steps 7 – 13 for number three cylinder.
15. Repeat steps 7 – 11 for number two cylinder.
16. Replace the rocker arm cover, air cleaner bracket and housing, and the muffler.
17. Replace the engine side covers and hood.

CONNECTING ROD SIDE PLAY CHECK**Reason:**

To determine proper side clearance between the crankshaft and the connecting rod.

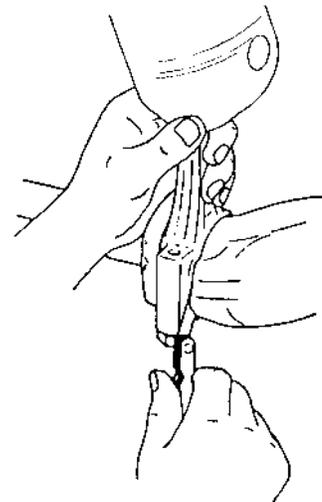
Equipment:

- Feeler Gauge

NOTE: The engine must be removed from the tractor to perform this test.

Procedure:

1. Remove the oil pan, crankcase extension, oil pick-up, and balancer assembly.
2. Insert a feeler gauge, according to specifications, between the connecting rod cap and the crankshaft.



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3. Connecting rod side play is **0.2 - 0.4 mm (0.008 - 0.016 in.)**.

Results:

- If the side play exceeds specification, replace the bearing inserts or the connecting rod.