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◀ Product: GENERATOR SET
 Model: 3456 GENERATOR SET CCB
 Configuration: 3456 Generator Set CCB00001-UP

Testing and Adjusting 3406E and 3456 Generator Set Engines

Media Number -REN2303-04

Publication Date -01/10/2004

Date Updated -07/10/2004

i01215531

Engine Valve Lash - Inspect/Adjust

SMCS - 1102-025

WARNING

To prevent possible injury, do not use the starter to turn the flywheel.

Hot engine components can cause burns. Allow additional time for the engine to cool before measuring valve clearance.

WARNING

This engine uses high voltage to control the electronic unit injectors.

Disconnect electronic unit injector enable circuit connector to prevent personal injury.

Do not come in contact with the electronic unit injector terminals while the engine is running.

Note: Valve lash is measured between the rocker arm and the valve bridge. All measurements and adjustments must be made with the engine stopped and the valves fully closed.

Valve Lash Check

An adjustment is NOT NECESSARY if the measurement of the valve lash is in the acceptable range. Check the valve lash while the engine is stopped. The range is specified in Table 1.

Table 1

Valve Lash	
Valves	Acceptable Range for Valve Lash
Inlet	0.38 ± 0.08 mm (0.015 ± 0.003 inch)
Exhaust	$0.76 \pm .08$ mm (0.030 ± 0.003 inch)

If the measurement is not within this range adjustment is necessary. Refer to Testing And Adjusting, "Valve Lash Adjustment".

Valve Lash Adjustment

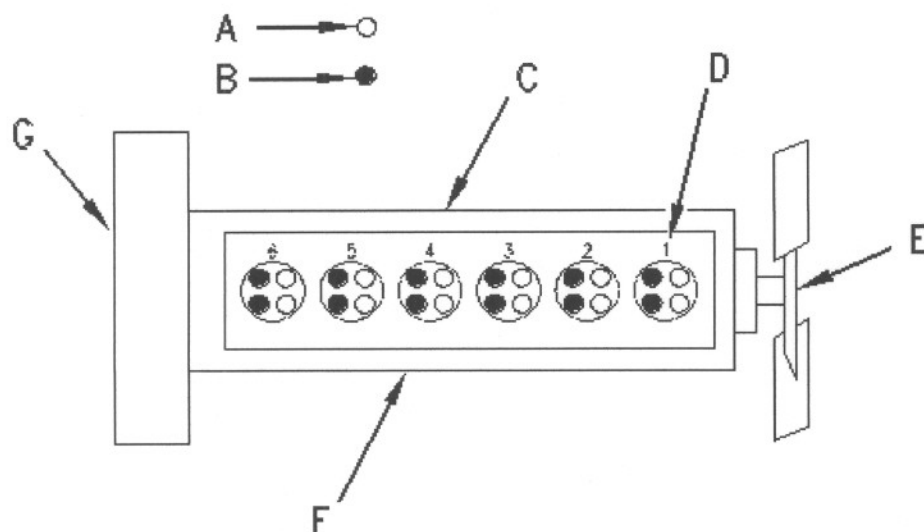


Illustration 1

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(A) Inlet valves

(B) Exhaust valves

(C) Left side of the engine

(D) Cylinder number

(E) Front of the engine

(F) Right side of the engine

(G) Flywheel end of the engine

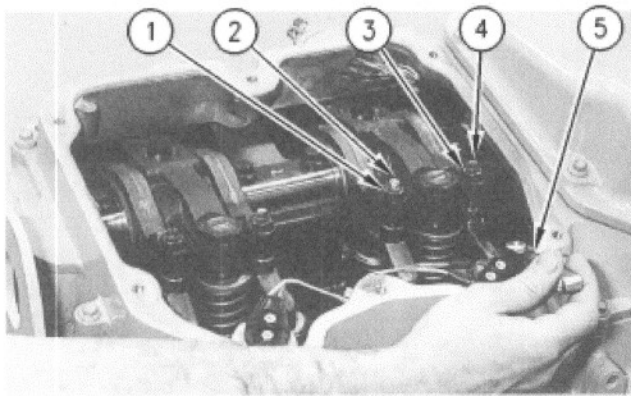


Illustration 2

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- (1) Valve adjustment locknut
- (2) Exhaust adjustment screw
- (3) Valve adjustment locknut
- (4) Inlet adjustment screw
- (5) Feeler gauge

Table 2

Valve Lash	
Valves	Gauge Dimension
Inlet	0.38 mm (0.015 inch)
Exhaust	0.76 mm (0.030 inch)

Adjust the valve lash while the engine is stopped. Use the following procedure in order to adjust the valves:

1. Put the No. 1 piston at the top center position.

Note: See Testing and Adjusting, "Finding Top Center Position for the No. 1 Piston" for further details.

2. With No. 1 piston at the top center position of the compression stroke, an adjustment can be made to the valves.

Before any adjustments are made, lightly tap each rocker arm at the top of the adjustment screw. Use a soft mallet to ensure that the lifter roller seats against the camshaft's base circle.

3. Make an adjustment to the valve lash on the inlet valves for cylinders 1, 2, and 4.
 - a. Loosen valve adjustment locknut (3) .
 - b. Place the appropriate feeler gauge (5) between the inlet rocker arm and the inlet valve bridge. Turn inlet adjustment screw (4) while valve adjustment locknut (3) is being held from turning. Adjust the valve lash until the correct specification is achieved. Refer to Table 2.
 - c. After each adjustment, tighten valve adjustment locknut (3) while valve adjustment screw (4) is being held from turning. Tighten to a torque of 30 ± 7 N·m (22 ± 5 lb ft). Recheck each adjustment.
4. Make an adjustment to the valve lash on the exhaust valves for cylinders 1, 3, and 5.
 - a. Loosen valve adjustment locknut (1) .
 - b. Place the appropriate feeler gauge (5) between the exhaust rocker arm and the exhaust valve bridge. Turn exhaust adjustment screw (2) while valve adjustment locknut (1) is being held from turning. Adjust the valve lash until the correct specification is achieved. Refer to Table 2.
 - c. After each adjustment, tighten valve adjustment locknut (1) while valve adjustment screw (2) is being held from turning. Tighten to a torque of 30 ± 7 N·m (22 ± 5 lb ft). Recheck each adjustment.
5. Remove the timing bolt, and turn the flywheel by 360 degrees in the direction of engine rotation. This will position the No. 6 piston at the top center on the compression stroke. Install the timing bolt in the flywheel.
6. Make an adjustment to the valve lash on the inlet valves 3, 5, and 6.
 - a. Loosen valve adjustment locknut (3) .
 - b. Place the appropriate feeler gauge (5) between the inlet rocker arm and the inlet valve bridge. Turn inlet adjustment screw (4) while valve adjustment locknut (3) is being held from turning. Adjust the valve lash until the correct specification is achieved. Refer to Table 2.
 - c. After each adjustment, tighten valve adjustment locknut (3) while valve adjustment screw (4) is being held from turning. Tighten to a torque of 30 ± 7 N·m (22 ± 5 lb ft). Recheck each adjustment.
7. Make an adjustment to the valve lash on the exhaust valves 2, 4, and 6.
 - a. Loosen valve adjustment locknut (1) .

- b. Place the appropriate feeler gauge (5) between the exhaust rocker arm and the exhaust valve bridge. Turn exhaust adjustment screw (2) while valve adjustment locknut (1) is being held from turning. Adjust the valve lash until the correct specification is achieved. Refer to Table 2.
 - c. After each adjustment, tighten valve adjustment locknut (1) while valve adjustment screw (2) is being held from turning. Tighten to a torque of 30 ± 7 N·m (22 ± 5 lb ft). Recheck each adjustment.
8. Remove the timing bolt from the flywheel after all valve lash adjustments have been made.

The lash must also be adjusted on the electronic unit injector. Refer to Testing and Adjusting, "Electronic Unit Injector - Adjust" for more information.
