

Camshaft

	Intake	Exhaust
Cam Lift Amount [mm (in.)]	5.99 (0.236)	6.14 (0.241)
Cam Lobe Width [mm (in.)]	15.35 (0.604)	14.1 (0.555)

Valve

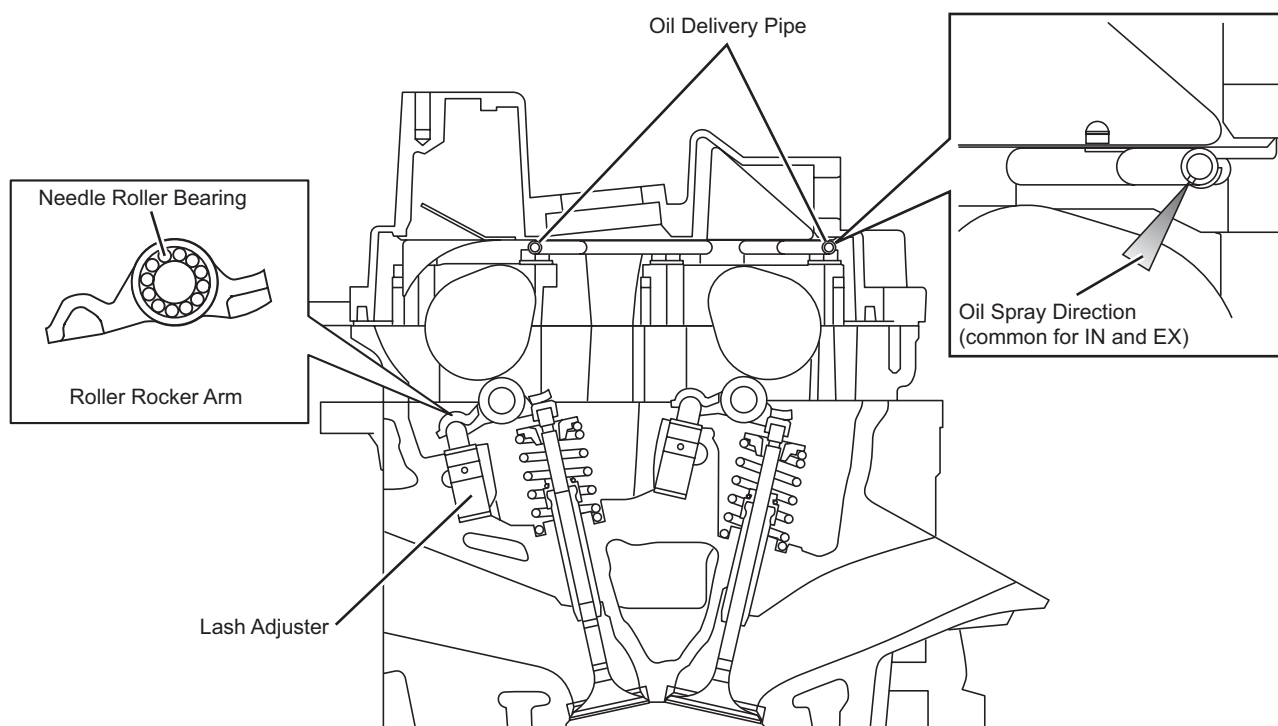
	Intake	Exhaust
Overall Length [mm (in.)]	105.65 (4.159)	111.5 (4.390)
Face Diameter [mm (in.)]	34.5 (1.358)	29.0 (1.142)
Stem Diameter [mm (in.)]	5.5 (0.217)	←

Valve Spring

Wire Diameter [mm (in.)]	3.3 (0.130)
Coil Inner Diamet [mm (in.)]	18.0±0.2 (0.709±0.008)
Free Length [mm (in.)]	46.51 (1.831)

Roller Rocker Arm

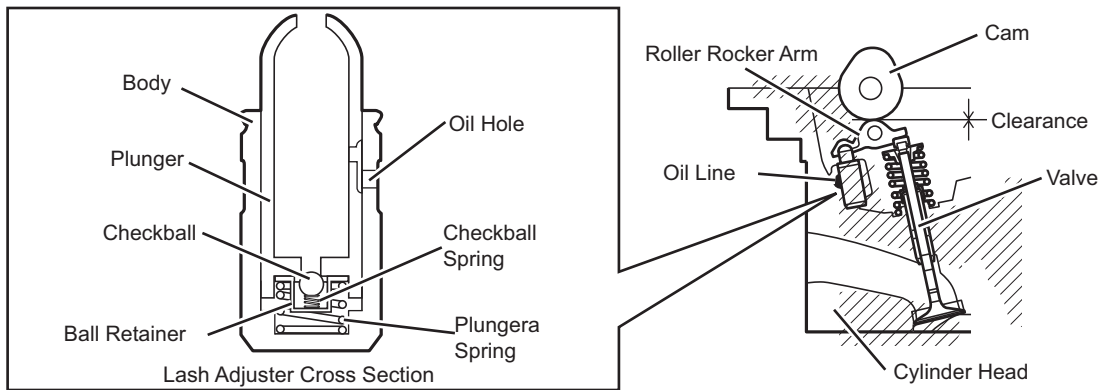
- The rocker arm is made compact and lightweight with a stamped steel arm with built-in needle bearings. The roller is supported by needle roller bearings that dramatically reduce friction at the sliding area, which contributes to fuel economy.
- An oil delivery pipe system is used for supplying oil to the roller rocker arms. This system positively supplies oil from above the camshaft to the lubrication area to ensure reliability.



Lash Adjuster

Lash Adjuster Construction

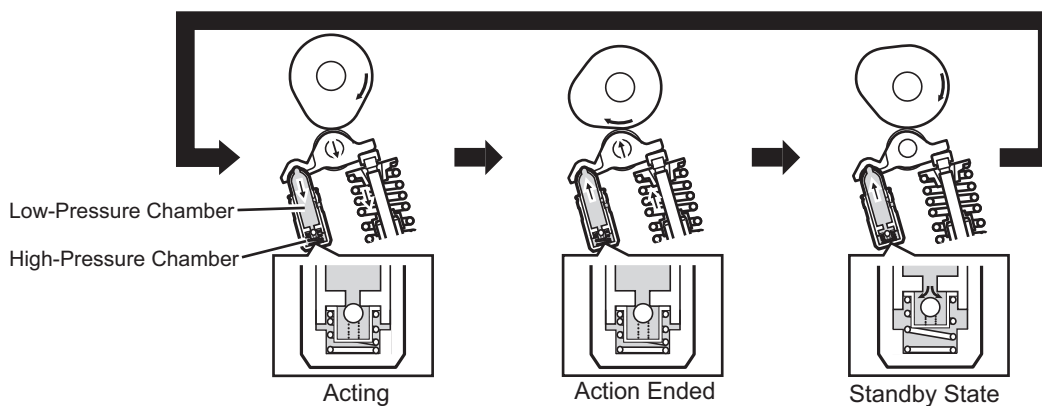
- Compact, hydraulic lash adjusters are used to constantly eliminate the gap (clearance) between the cams and rocker arms, thus enhancing the quiet performance of the engine.
- The lash adjuster is placed at the fulcrum of the rocker arm at the opposite end of the valve, and uses the oil that is supplied by the cylinder head as the operating fluid. The plunger in the lash adjuster body slides vertically due to the repulsion of the plunger spring or the hydraulic force in order to adjust the clearance.



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Lash Adjuster Operation

- The camshaft rotates clockwise, causing the cam to push on the rocker arm (acting), and a load is applied to both the valve and the plunger. At this time, the plunger almost gets pushed in, but because the check ball closes, the plunger stops. This allows the rocker arm to tilt in the clockwise direction, using the top of the plunger as the fulcrum, thus pushing the valve down.
- When the cam gets past the apex, the force of the valve spring causes the rocker arm to start ascending. However, because the force of the valve spring also acts on the lash adjuster, the high pressure chamber maintains its hydraulic pressure.
- When the valve closes (action ended), the oil in the high-pressure chamber is released from the pressurized state. At this time, a valve clearance is about to be created. However, the force of the plunger spring causes the plunger to push the rocker arm upward in order to maintain a constant zero valve clearance. At the same time, the capacity of the high-pressure chamber increases, creating a pressure difference between the high-pressure and low-pressure chambers. When this pressure difference becomes greater than the force of the check ball spring, the check ball moves downward to provide an oil passage. This allows the oil to flow from the low-pressure chamber to the high-pressure chamber in preparation for the next movement (standby state).



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