

# SETTING VALVE LASH ON AN INLINE 6

## STEP 1:

Remove all valve covers from the engine.

## STEP 2:

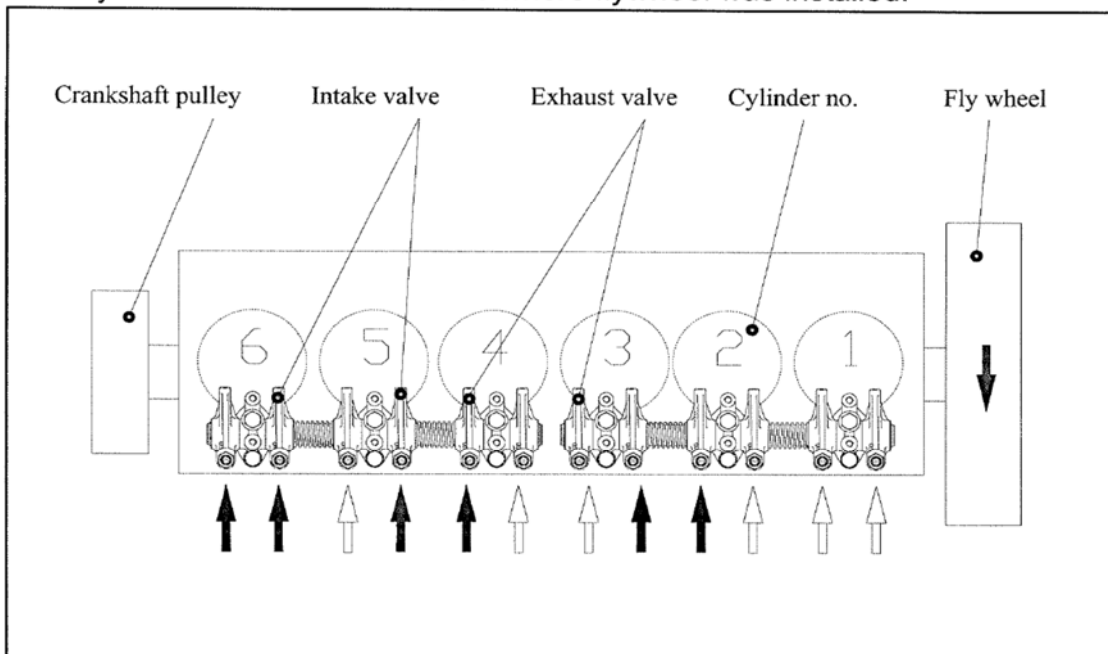
Rotate the crankshaft until the engine is at TDC #1. Use the markings on the flywheel to determine when the engine is at TDC. Check the rocker arms on cylinder #1, which is the cylinder closest to the **flywheel**. If the rocker arms are slightly loose and can be moved around a little, the camshaft is in the correct spot to begin checking and setting valve lash. If the rocker arms feel tight, rotate the crankshaft 360 degrees until it is at TDC #1 again, then check the rockers on cylinder #1 – they should now move slightly.



Another way to verify that the camshaft is in the correct position is to watch the rockers on cylinder #1 as the crankshaft is rotated. If the rockers are moving as the crankshaft approaches TDC #1, the crank will need to be rotated 360 degrees to set the engine for timing. If the rockers on cylinder #1 do not move as you approach TDC #1, the timing is correct and you may begin checking valve lash.

Start with the valves indicated on the picture below with a **WHITE ARROW**.

- No. 1 Cylinder is located at the side where flywheel was installed.



**STEP 3:**

Use a 17mm wrench to loosen the nut around the lash adjuster you are going to set. Use a screwdriver to set the valve lash adjuster so that the feeler gauge of your desired thickness fits into the gap between the rocker arm and the valve tip. The gauge should fit snugly, but should still slide in and out – don't clamp the rocker arm onto the feeler gauge.

**8.1L Engines: .30mm (.012")**

**11L Engines: .40mm (.016")**

The same measurement is used on both intake and exhaust valves

**STEP 4:**

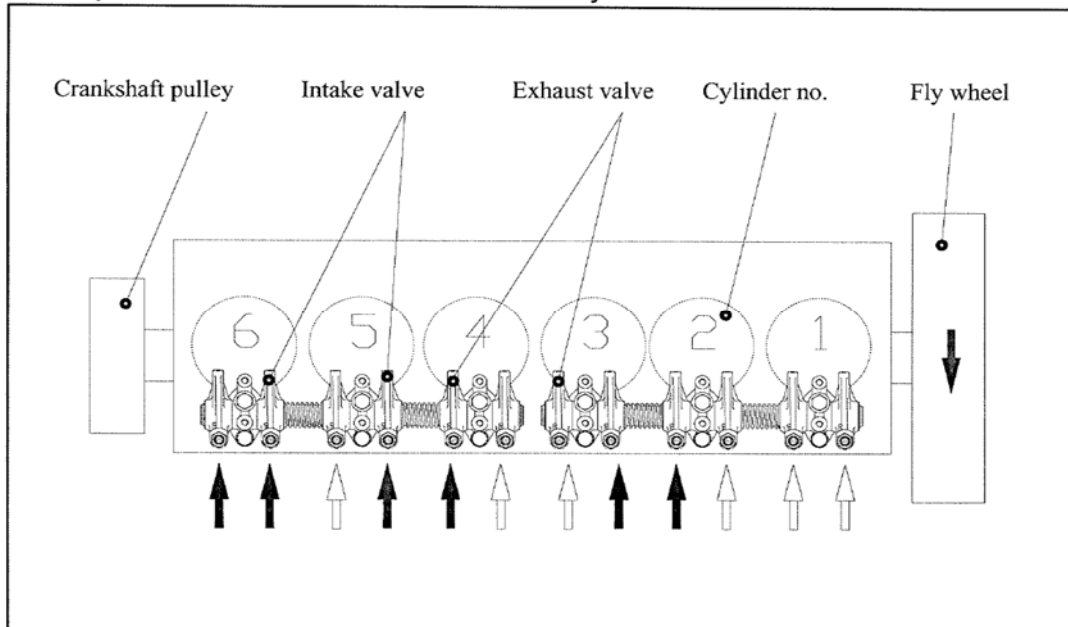
Once the proper angle is set, use the screwdriver to hold the adjuster in place while tightening the locking nut with a 17mm wrench.

Repeat this procedure on all the valves marked with a white arrow.

**STEP 5:**

Once all six valves have been measured, adjusted, and marked, rotate the crankshaft around once fully so that it comes back to the TDC#1 mark on the flywheel. The rockers on cylinder #6, which is the cylinder closest to the crank pulley, should now move slightly when you pull on them.

- No. 1 Cylinder is located at the side where flywheel was installed.



**STEP 6:**

Go back to step 3 and repeat the procedures for adjusting and marking the six valves indicated on the drawing above with a **black arrow**.

Check to make sure all valves have been adjusted to the proper clearance and all jamnuts have been tightened.

# SETTING VALVE LASH ON A 14L ENGINE

## STEP 1:

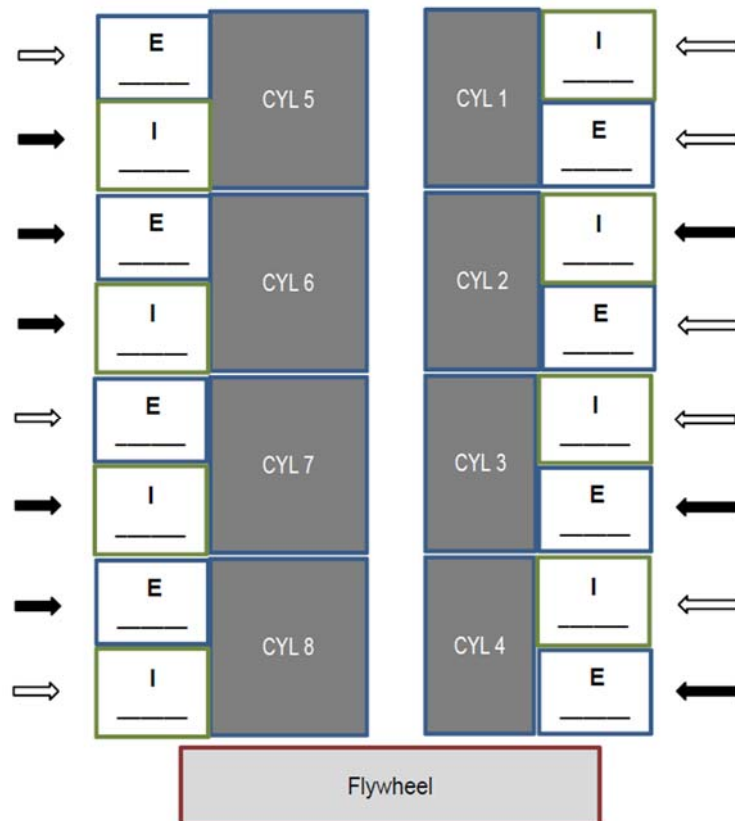
Remove all valve covers from the engine.

## STEP 2:

Rotate the crankshaft until the engine is at TDC #1 using the reference marks on the flywheel. Check the rocker arms on cylinder #1, which is the cylinder at the front right corner of the engine. If the rocker arms are slightly loose and can be moved around a little, the camshaft is in the correct spot to begin checking and setting valve lash. If the rocker arms feel tight, rotate the crankshaft 360 degrees until it is at TDC #1 again, then check the rockers on cylinder #1 – they should now move slightly.

Another way to verify that the camshaft is in the correct position is to watch the rockers on cylinder #1 as the crankshaft is rotated. If the rockers are moving as the crankshaft approaches TDC #1, the crank will need to be rotated 360 degrees to set the engine for timing. If the rockers on cylinder #1 do not move as you approach TDC #1, the timing is correct and you may begin checking valve lash.

Start with the valves indicated on the picture below with a **WHITE ARROW**.



**STEP 3:**

Use a 17mm wrench to loosen the nut around the lash adjuster you are going to set. Use a screwdriver to set the valve lash adjuster so that the feeler gauge of your desired thickness fits into the gap between the rocker arm and the valve tip. The gauge should fit snugly, but should still slide in and out – don't clamp the rocker arm onto the feeler gauge.

Exhaust Valves: .40mm (.016")

Intake Valves: .30mm (.012")



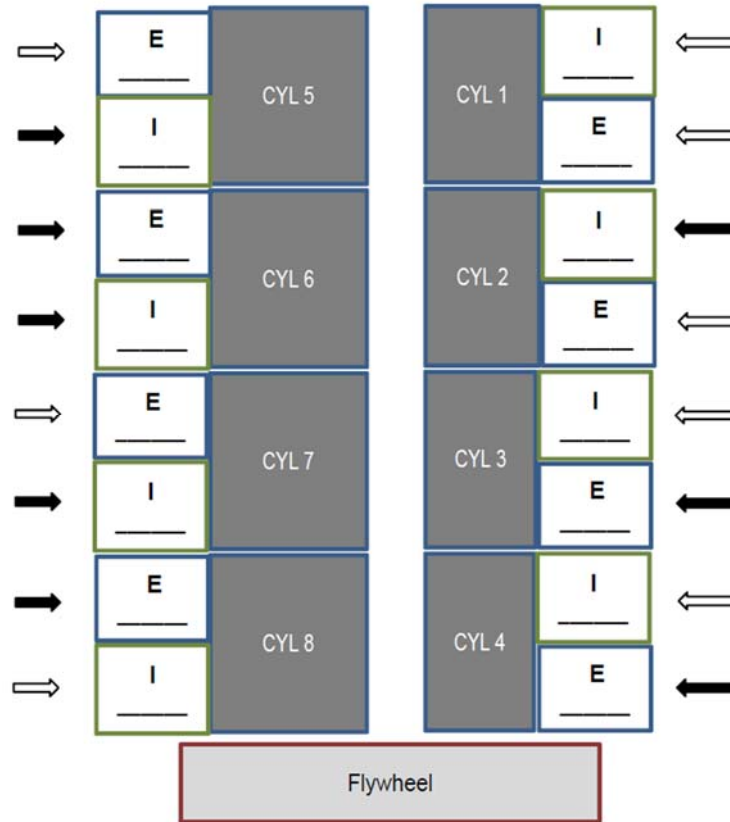
**STEP 4:**

Once the proper angle is set, use the screwdriver to hold the adjuster in place while tightening the locking nut with a 17mm wrench.

Repeat this procedure on all the valves marked in the drawing with a white arrow.

**STEP 5:**

Once all eight valves have been measured, adjusted, and marked, rotate the crankshaft around once fully so that it comes back to the TDC#1 mark on the flywheel. The rockers on cylinder #6, which is the second cylinder from the front on the left side of the engine, should now move slightly when you pull on them.



**STEP 6:**

Go back to step 3 and repeat the procedures for measuring, adjusting, and marking the eight valves marked on the drawing above with a **black arrow**.

Check to make sure all valves have been adjusted to the proper clearance, and all jamnuts are tight.

# SETTING VALVE LASH ON A 18L ENGINE

## STEP 1:

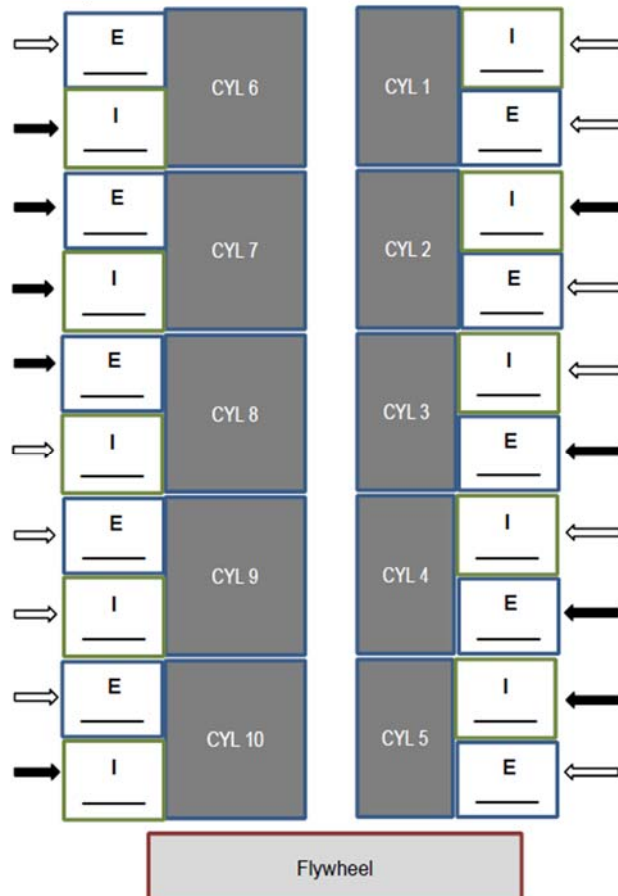
Remove all valve covers from the engine.

## STEP 2:

Rotate the crankshaft until the engine is at TDC #1 using the reference marks on the flywheel. Check the rocker arms on cylinder #1, which is the cylinder at the front right corner of the engine. If the rocker arms are slightly loose and can be moved around a little, the camshaft is in the correct spot to begin checking and setting valve lash. If the rocker arms feel tight, rotate the crankshaft 360 degrees until it is at TDC #1 again, then check the rockers on cylinder #1 – they should now move slightly.

Another way to verify that the camshaft is in the correct position is to watch the rockers on cylinder #1 as the crankshaft is rotated. If the rockers are moving as the crankshaft approaches TDC #1, the crank will need to be rotated 360 degrees to set the engine for timing. If the rockers on cylinder #1 do not move as you approach TDC #1, the timing is correct and you may begin checking valve lash.

Start with the valves indicated on the picture below with a **WHITE ARROW**.

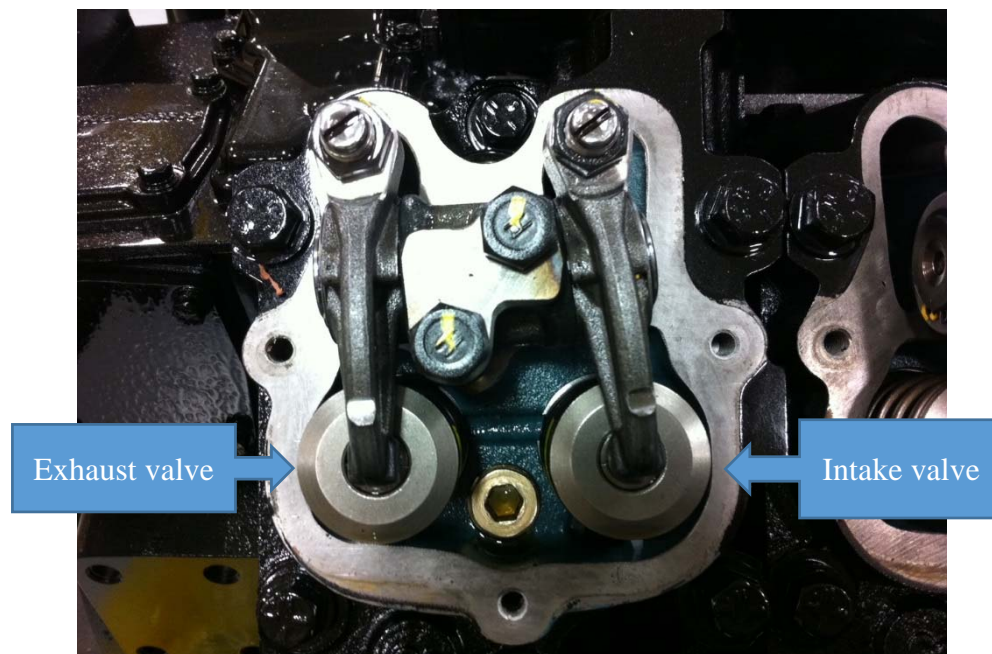


**STEP 3:**

Use a 17mm wrench to loosen the nut around the lash adjuster you are going to set. Use a screwdriver to set the valve lash adjuster so that the feeler gauge of your desired thickness fits into the gap between the rocker arm and the valve tip. The gauge should fit snugly, but should still slide in and out – don't clamp the rocker arm onto the feeler gauge.

Exhaust Valves: .40mm (.016")

Intake Valves: .30mm (.012")



**STEP 4:**

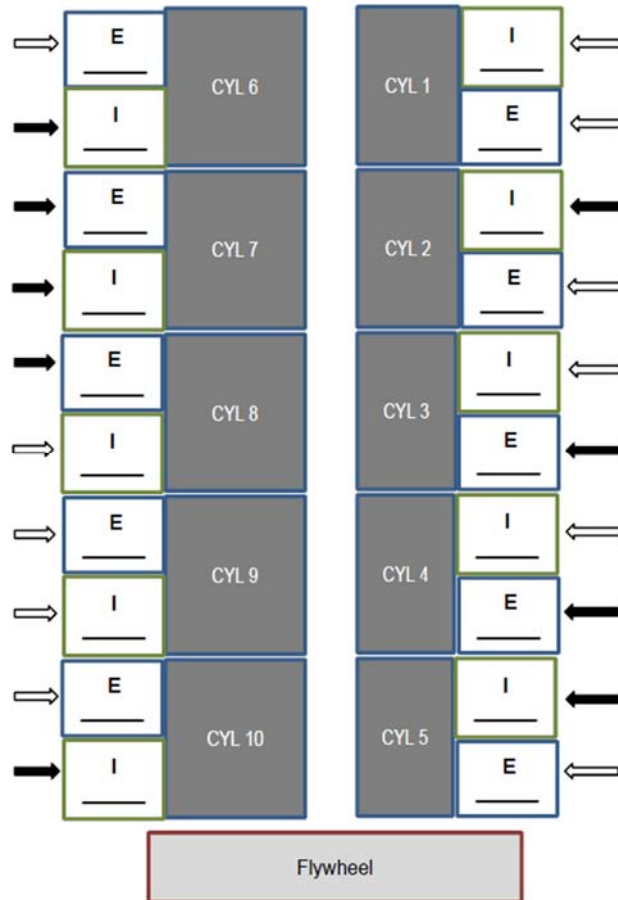
Once the proper angle is set, use the screwdriver to hold the adjuster in place while tightening the locking nut with a 17mm wrench.

Repeat this procedure on all the valves marked with a white arrow.



### STEP 5:

Once all 11 valves have been measured, adjusted, and marked, rotate the crankshaft around once fully so that it comes back to the TDC#1 mark on the flywheel. The rockers on cylinder #7, which is the second cylinder from the front on the left side of the engine, should now move slightly when you pull on them.



### STEP 6:

Go back to step 3 and repeat the procedures for measuring, adjusting, and marking the nine valves marked on the drawing above with a **black arrow**.

Check to make sure all valves have been adjusted to the proper clearance, and all jamnuts are tight.

# SETTING VALVE LASH ON A 22L ENGINE

## STEP 1:

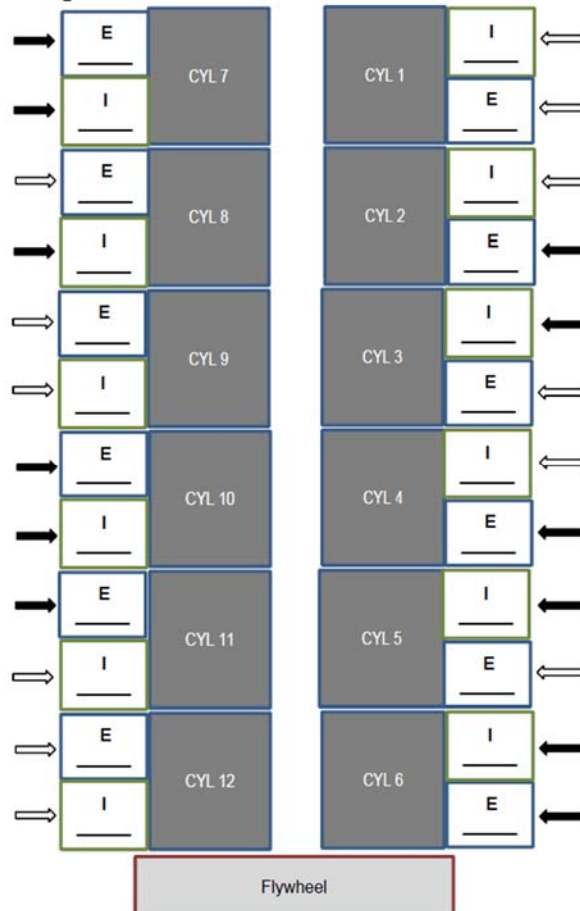
Remove all valve covers from the engine.

## STEP 2:

Rotate the crankshaft until the engine is at TDC #1 using the reference marks on the flywheel.. Check the rocker arms on cylinder #1, which is the cylinder at the front right corner of the engine. If the rocker arms are slightly loose and can be moved around a little, the camshaft is in the correct spot to begin checking and setting valve lash. If the rocker arms feel tight, rotate the crankshaft 360 degrees until it is at TDC #1 again, then check the rockers on cylinder #1 – they should now move slightly.

Another way to verify that the camshaft is in the correct position is to watch the rockers on cylinder #1 as the crankshaft is rotated. If the rockers are moving as the crankshaft approaches TDC #1, the crank will need to be rotated 360 degrees to set the engine for timing. If the rockers on cylinder #1 do not move as you approach TDC #1, the timing is correct and you may begin checking valve lash.

Start with the valves indicated on the picture below with a **WHITE ARROW**.

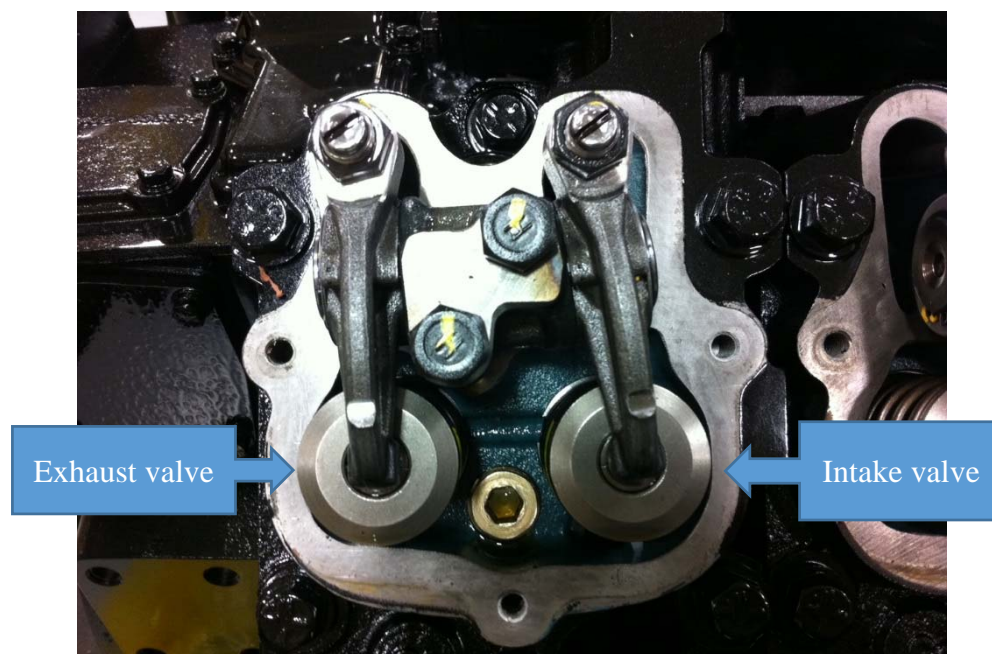


**STEP 3:**

Use a 17mm wrench to loosen the nut around the lash adjuster you are going to set. Use a screwdriver to set the valve lash adjuster so that the feeler gauge of your desired thickness fits into the gap between the rocker arm and the valve tip. The gauge should fit snugly, but should still slide in and out – don't clamp the rocker arm onto the feeler gauge.

Exhaust Valves: .40mm (.016")

Intake Valves: .30mm (.012")



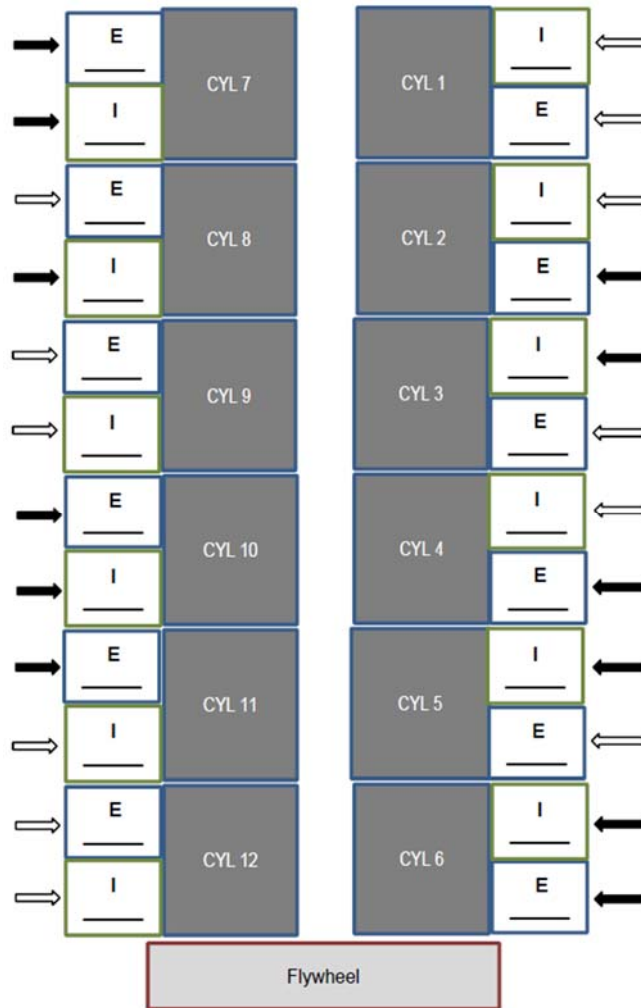
**STEP 4:**

Once the proper angle is set, use the screwdriver to hold the adjuster in place while tightening the locking nut with a 17mm wrench.

Repeat this procedure on all the valves marked with a white arrow.

**STEP 5:**

Once all 12 valves have been measured, adjusted, and marked, rotate the crankshaft around once fully so that it comes back to the TDC#1 mark on the flywheel. The rockers on cylinder #6, which is the **cylinder closest to the flywheel on the right side of the engine**, should now move slightly when you pull on them.



**STEP 6:**

Go back to step 3 and repeat the procedures for measuring, adjusting, and marking the 12 valves marked on the drawing above with a **black arrow**.

Check to make sure all valves have been adjusted to the proper clearance, and all jamnuts are tight.