Instructions for 81623 Cam Checking Fixture

Thank you for purchasing the Jegs Cam Checking Fixture. Please note that there are instructions for using it with the cylinder heads on or off. Please choose the appropriate instructions for your application. Please contact our tech department with any questions at 1-800-345-4545.

Instructions for applications with the cylinder heads on

Mounting the dial indicator:

1. When using the cam checking fixture with the heads on, the dial indicator will mount into a valve cover bolt hole. Remove any obstructions that would hinder this mounting. Be absolutely certain that you use the correct type of lifter for the camshaft that is being checked. This means a flat tappet for a mechanical or hydraulic cam (do not use a hydraulic lifter, as the plunger can move), or a mechanical roller tappet for a roller camshaft. You should also take particular care to clean off any excessive oil, grease, or lubricant from the cam lobe that you are checking. Even the slightest interference of such foreign matter can alter the readings that your dial indicator will show.

FIGURE 1

2a. If you will be checking your cam with the rocker arms off a pushrod with an oil hole is needed to be used as an extension of the dial indicator. The indicator will center in the oil hole of the pushrod tip. (**Figure 1**) On engines with pushrods that don't have oil holes such as FE Series Ford and Chrysler, you can follow step 2b. Install the pushrod in the intake lifter of cylinder No. 1 and mount the dial indicator. It is important that the indicator plunger be aligned as closely as possible with the lifter being measured. Any substantial angle between the axis of the plunger and the lifter will introduce geometrical errors into the lift readings.

2b. If you will be checking your cam with the rockers arms on. Set the valve lash for both the intake and exhaust to exactly zero (you should still be able to spin both push rods freely with your fingers). Mount the dial indicator so that the tip of the dial indicator is touching the tip of the retainer. It is important that the indicator plunger be aligned as closely as possible with the retainer being measured. Any substantial angle between the axis of the plunger and the retainer will introduce geometrical errors into the lift readings. (**Figure 2**)

FIGURE 2

CAUTION: Be sure that the indicator is mounted securely. Any looseness will introduce major errors in measurement.

3. With the Dial Indicator solidly in place, rotate the crankshaft until the cam's base circle is under the lifter for the cam lobe being measured (usually starting with Number One intake). Set the dial indicator to zero at this point. Be sure the Dial Indicator is pre-loaded about .300" to insure that it will not run out of travel while on the base circle. Rotate the crankshaft to raise and lower the lifter several times to verify that the dial always returns to zero when the lifter is on the base circle. If it doesn't return to zero, there are several possible causes: (1) The dial indicator may not be mounted rigidly (2) The lifter may not be contacting the base circle solidly (3) The lifter could be sticking slightly in its bore. Find the trouble and correct it before proceeding. It may be necessary to apply slight finger pressure against the lifter when rotating the engine if you are checking your cam with the rocker arms off. Be careful not to bump the pushrod. Any of these camshaft checks that may be performed (base circle runout, cam timing, etc.) are also very dependent on your cam bearings being in good condition and providing the proper radial clearance for the type and size of bearing. Excessive radial clearance will distort your figures taken of tappet movement, resulting in incorrect conclusions regarding the camshaft installation and its condition.

Instructions for applications with the cylinder heads off

Mounting the dial indicator:

1. When checking your cam with the heads off, the dial indicator will mount into a head bolt hole. Remove any obstructions that would hinder this mounting. Be absolutely certain that you use the correct type of lifter for the camshaft that is being checked. This means a flat tappet for a mechanical or hydraulic cam (do not use a hydraulic lifter, as the plunger can move), or a mechanical roller tappet for a roller camshaft. You should also take particular care to clean off any excessive oil, grease, or lubricant from the cam lobe that you are checking. Even the slightest interference of such foreign matter can alter the readings that your dial indicator will show.

CAUTION: Be sure that the indicator is mounted securely. Any looseness will introduce major errors in measurement.

FIGURE 3

2. When checking your cam with the cylinder heads off, use the 5" dial indicator extension. Mount the dial indicator so that the tip of the dial indicator extension is seated firmly in the lifter. It is important that the dial indicator plunger be aligned as closely as possible with the lifter being measured. Any substantial angle between the axis of the plunger and the retainer will introduce geometrical errors into the lift readings. (**Figure 3**)

3. With the Dial Indicator solidly in place, rotate the crankshaft until the cam's base circle is under the lifter for the cam lobe being measured (usually starting with Number One intake). Set the dial indicator to zero at this point. Be sure the Dial Indicator is pre-loaded about .300" to insure that it will not run out of travel while on the base circle. Rotate the crankshaft to raise and lower the lifter several times to verify that the dial always returns to zero when the lifter is on the base circle. If it doesn't return to zero, there are several possible causes: (1) The dial indicator may not be mounted rigidly (2) The lifter may not be contacting the base circle solidly (3) The lifter could be sticking slightly in its bore. Find the trouble and correct it before proceeding. It may be necessary to apply slight finger pressure against the lifter when rotating the engine. Be careful not to bump the dial indicator extension or the dial indicator mount. Any of these camshaft checks that may be performed (base circle runout, cam timing, etc.) are also very dependent on your cam bearings being in good condition and providing the proper radial clearance for the type and size of bearing. Excessive radial clearance will distort your figures taken of tappet movement, resulting in incorrect conclusions regarding the camshaft installation and its condition.