Typical Indicator Set-Ups

Figure 1 Face Runout of Flywheel Housing

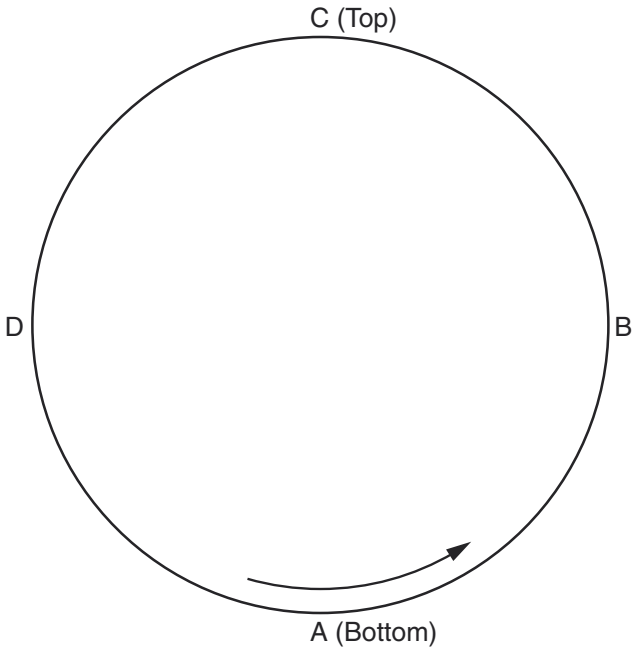

Figure 2 Flywheel Positions

Face Runout (Axial Eccentricity) of the Flywheel Housing

If you use any other method except the method that is given here, always remember that the bearing clearance must be removed in order to receive the correct measurements.

1. Fasten a dial indicator to the flywheel so the anvil of the dial indicator will contact the face of the flywheel housing. See Figure 1.
2. Use a rubber mallet and tap the crankshaft toward the rear before the dial indicator is read at each point.
3. Turn the flywheel while the dial indicator is set at 0.0 mm (0.00 inch) at location (A) (See Figure 2). Read the dial indicator at locations (B), (C), and (D) .
4. The difference between the lower measurements and the higher measurements that are performed at all four points must not be more than 0.38 mm (0.015 inch), which is the maximum permissible face runout (axial eccentricity) of the flywheel housing.

Figure 3 Bore Runout of the Flywheel Housing

Bore Runout (Radial Eccentricity) of the Flywheel Housing

1. Fasten a dial indicator to the flywheel so the anvil of the dial indicator will contact the bore of the flywheel housing. See Figure 3.
2. While the dial indicator is in the position at location (C) (See Figure 2), adjust the dial indicator to 0.0 mm (0.00 inch). Push the crankshaft upward against the top of the bearing. Write the measurement for bearing clearance on line 1 in column (C) (See Figure 4).

Note: Write the measurements for the dial indicator with the correct notations. This notation is necessary for making the calculations in the chart correctly.

3. Divide the measurement from Step 2 by two. Write this number on line 1 in columns (B) and (D).
4. Turn the flywheel in order to put the dial indicator at position (A). Adjust the dial indicator to 0.0 mm (0.00 inch).
5. Turn the flywheel counterclockwise in order to put the dial indicator at position (B). Write the measurements in the chart, line 2.
6. Turn the flywheel counterclockwise in order to put the dial indicator at position (C). Write the measurement in the chart, line 2.
7. Turn the flywheel counterclockwise in order to put the dial indicator at position (D). Write the measurement in the chart, line 2.
8. Add the lines together in each column and record on line 3.
9. Subtract the smaller number from the larger number in column B and column D. Place this number on line 4. The result is the horizontal eccentricity (out of round). Line 3 in column C is the vertical eccentricity.
10. Find the intersection of the eccentricity lines (vertical and horizontal) in Figure 5.
11. If the point of the intersection is in the “Acceptable” range, the bore is in alignment. If the point of intersection is in the “Not acceptable” range, the flywheel housing must be changed.

		Position of Dial Indicator			
		A	B	C	D
1	Correction of Bearing Clearance	0			
2	Dial Indicator Reading	0			
3	Total of Line 1 & 2	0			
4	Total Horizontal Eccentricity				

Figure 4 Chart for Dial Indicator Measurements

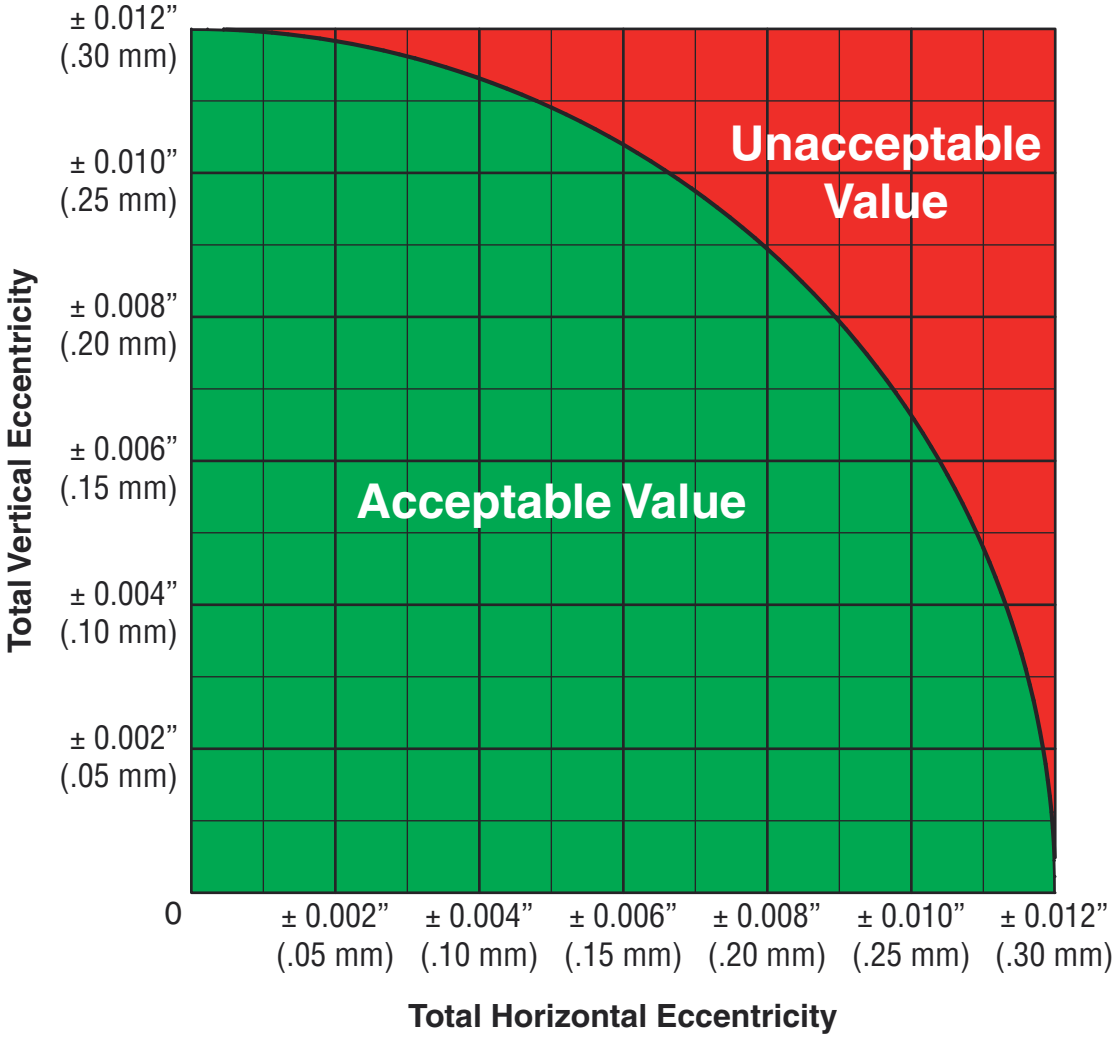

Figure 5 Graph for Total Eccentricity

Face Runout (Axial Eccentricity) of the Flywheel

1. Refer to Figure 6 and install the dial indicator. Always put a force on the crankshaft in the same direction before the dial indicator is read to remove any crankshaft end clearance.
2. Set the dial indicator to read 0.0 mm (0.00 inch).
3. Turn the flywheel at intervals of 90 degrees and read the dial indicator.
4. Take the measurements at all four points. The difference between the lower measurements and the higher measurements that are performed at all four points must not be more than 2.5 mm (0.1 inch).

Figure 6 Face Runout of the Flywheel