



# Tech Article

## TA0023: Crankshaft Rod Bearing

<b>Reference</b>	TA0023
<b>Last Modified</b>	2018-04-27
<b>Models</b>	
<b>Category</b>	Engine
<b>Markets</b>	All markets are affected.
<b>Affected Parts</b>	Flywheel assembly

### Reason for Revision

Refer to Table 1.

**Table 1. Document History**

<b>Date</b>	<b>Revision Description</b>
2017-12-06	Initial release
2017-12-14	Updated <b>Purpose for Tech Article, Action</b>
2018-04-27	Updated <b>Complete Tech Article</b>

### Purpose for Tech Article

Technicians have been falsely identifying connecting rod bearings as failed due to a perception of resistance as the rods are rotated. They report rods standing up and not falling under their own weight.

### Cause

The clearance of the Twin Cam and Milwaukee-Eight<sup>®</sup> crank pin bearings are maintained to a very tight range. This optimizes performance and maintains low mechanical noise in operation.

The connecting rod bore can also distort slightly in operation due to stress relaxation. As a result, bearing clearance decreases due to the contact zone broadening and the load being distributed over more rollers. The combination of a bore being slightly out of round and reduced bearing clearance can result in varying degrees of resistance through the range of motion. Axial clearance is also tightly controlled for proper alignment.

For these reasons, zones of resistance can be found when the connecting rods are rotated by hand through their range of motion.

## Motorcycles Affected

Refer to Table 2.

**Table 2. Motorcycles Affected**

<b>Years</b>	<b>Platform</b>
1999 - Present	Touring, Touring CVO, Touring Police
2000 - 2017	Dyna, Dyna CVO
2000 - Present	Softail, Softail CVO
2004 - Present	Sportster
2009 - Present	Trike

## Action

Resistance during rod motion, by itself, is not an indication of a performance or durability concern. Connecting rod bearing failures generally exhibit noise, visible clearance indications, piston to valve contact, and/or secondary damage in the form of a high levels of steel debris circulating through the engine. Verify that one or more of these symptoms is present and quantified prior to attempting to qualify the rod bearing condition.

### NOTE

- *Connecting rods when placed in limit conditions, defined as positions outside the normal rod operating position (pinched together or spread to the extent of separation), may exhibit areas of resistance.*
- *The induction heat treat operation on Twin Cam and Milwaukee-Eight connecting rods will "blue" the lower end of the rod and is considered a normal condition. Sportster connecting rods are not induction heat treated and will be uniform in color.*