Applies to machines built from:
January, 1989

Lathe - Ballscrew - Backlash Test

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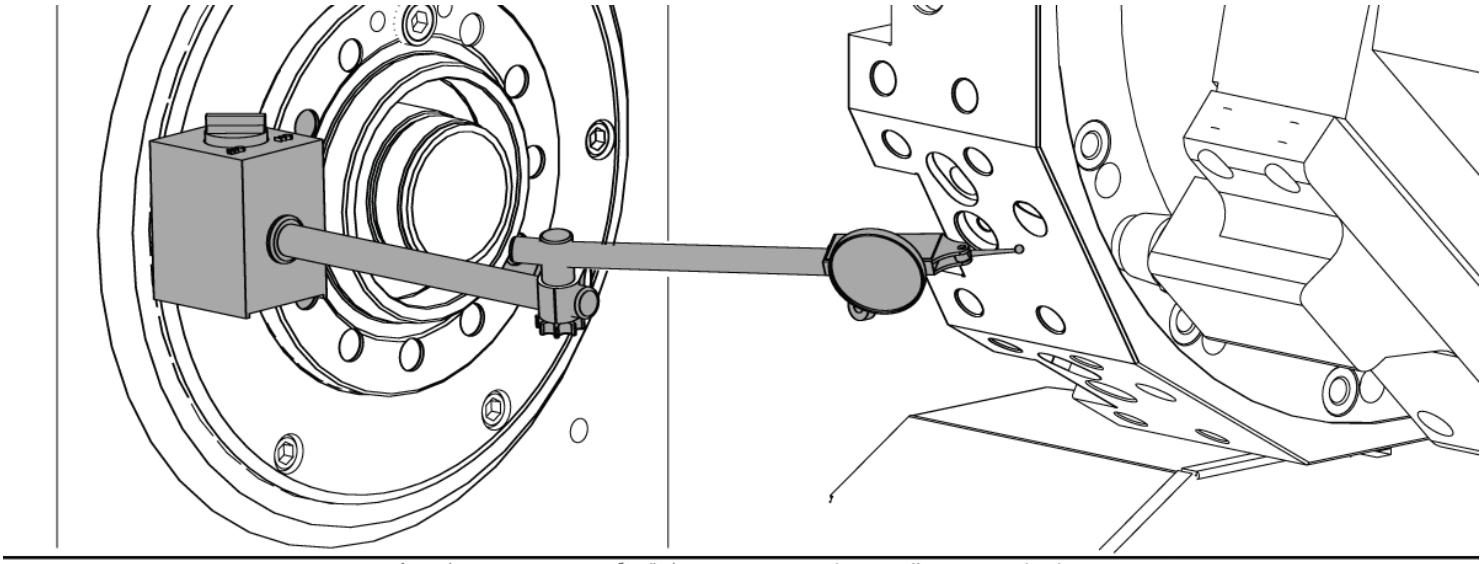
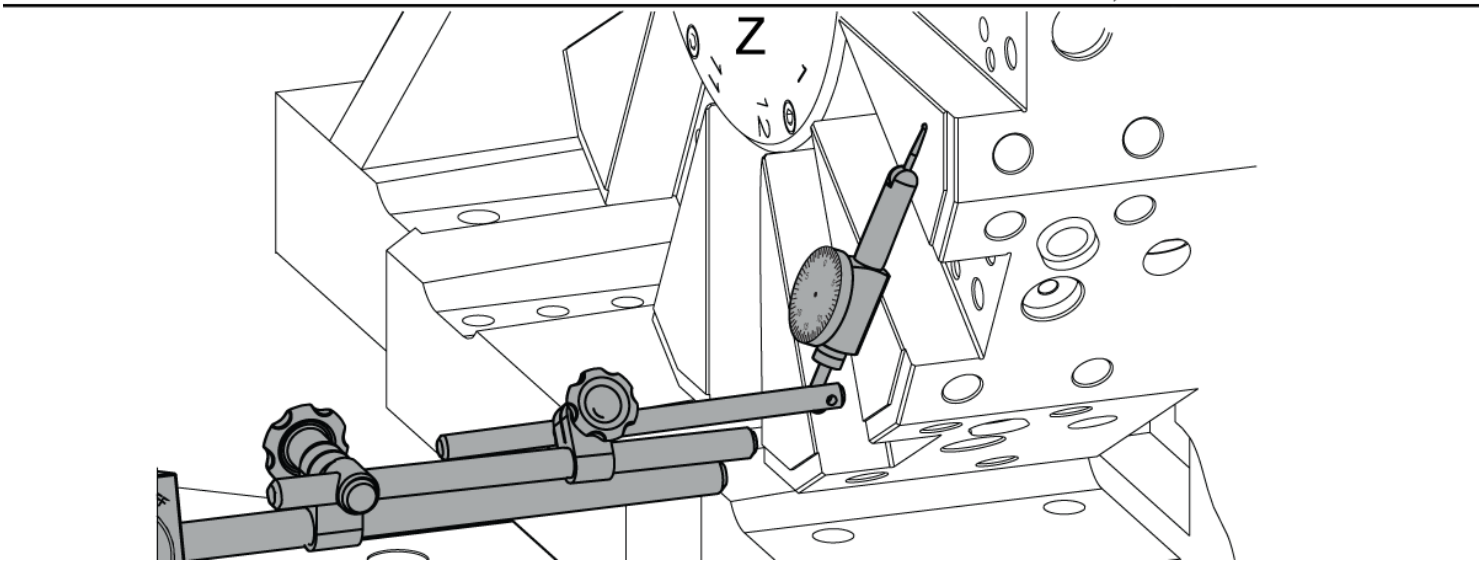
Translation Available

Lathe - Axis Ballscrew - Backlash Test - Introduction

This procedure tells you how to test for axis backlash on the X and Z axes of a lathe.





Prerequisites

Push **[POWER ON]**.

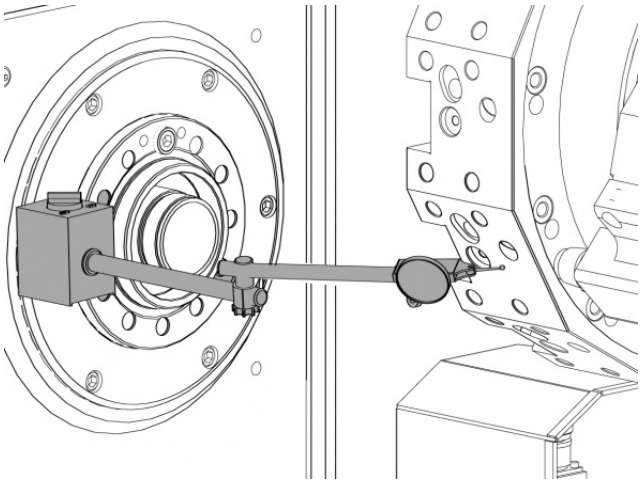
Jog each axis to the center of its range of travel.

Tools Required:

- Dial indicator that can measure 0.0001" (0.003 mm)

Lathe - X-Axis Ballscrew - Backlash Test

STEP 1



Attach the indicator to measure the X-Axis movement.

Push **[X]**.

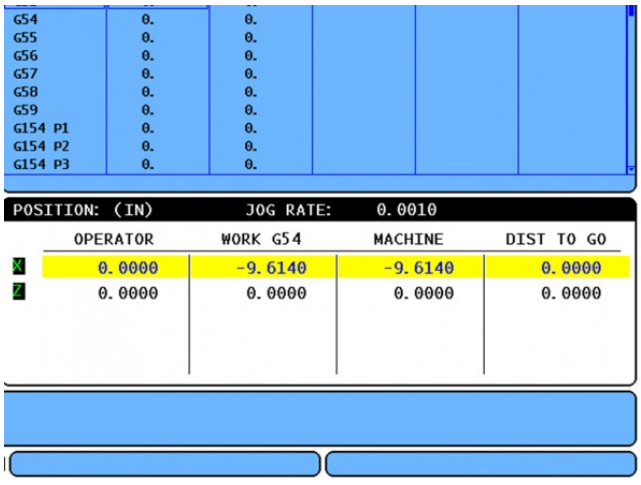
Push **[HAND JOG]**.

Push **[.001/1.]**.

Jog the X Axis until the dial shows approximately 0.015" (0.38 mm).

Set the indicator dial to 0.

STEP 2

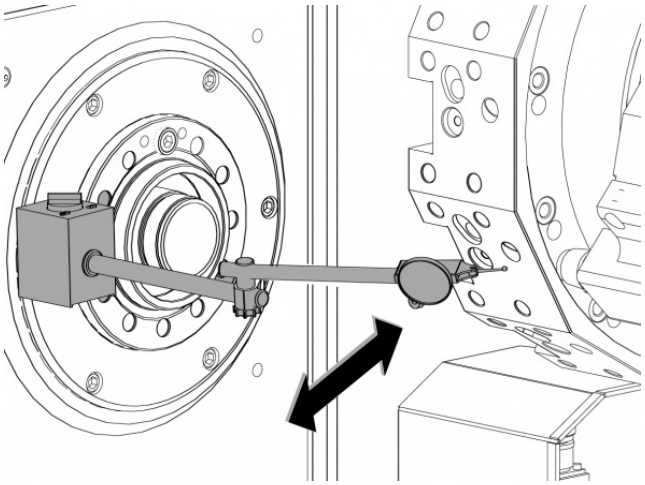


Push **[POSITION]**.

Push **[ORIGIN]**.

In the display, the **X** value for **OPERATOR** shows **0**.

STEP 3



Jog the X Axis 0.010" (0.25 mm) in the positive (+) direction.

Jog the X Axis 0.010" (0.25 mm) in the negative (-) direction.

Record the difference between these two values:

- the indicator value
- the X-Axis position on the control

If the difference is more than 0.0002" (0.005 mm), the backlash is too large.

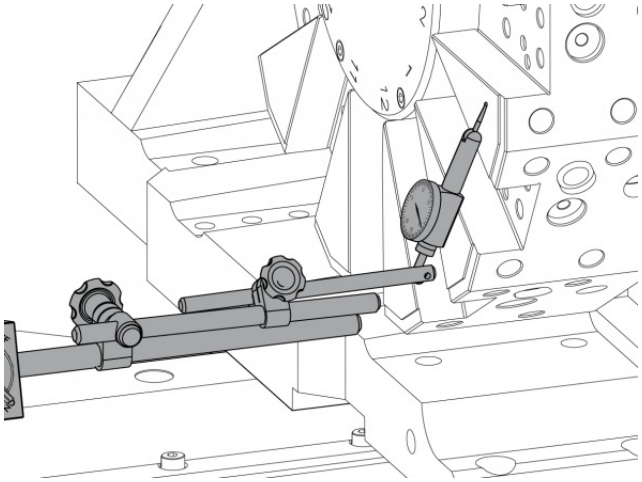
Caution: Before you do the manual backlash test, make sure the machine is not in an alarm condition: Release **[EMERGENCY STOP]**, and push **[RESET]** to stop each alarm.

Do a manual test of the backlash as follows: With your hands, push the turret up in the direction of travel, while you look at the indicator.

If the indicator shows more than 0.0002" (0.005 mm), the backlash is too large.

Lathe - Z-Axis Ballscrew - Backlash Test

STEP 1



Put the dial indicator so that it touches the turret face.

Push **[Z]**.

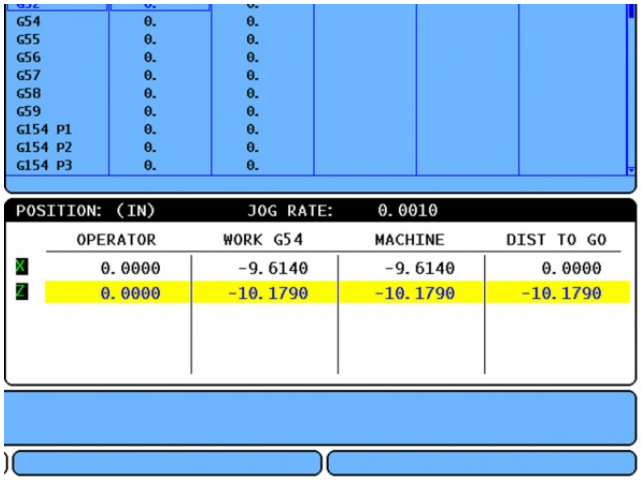
Push **[HAND JOG]**.

Push **[.001/1.]**.

Jog the Z Axis until the dial shows approximately 0.015" (0.38 mm).

Set the indicator dial to 0.

STEP 2

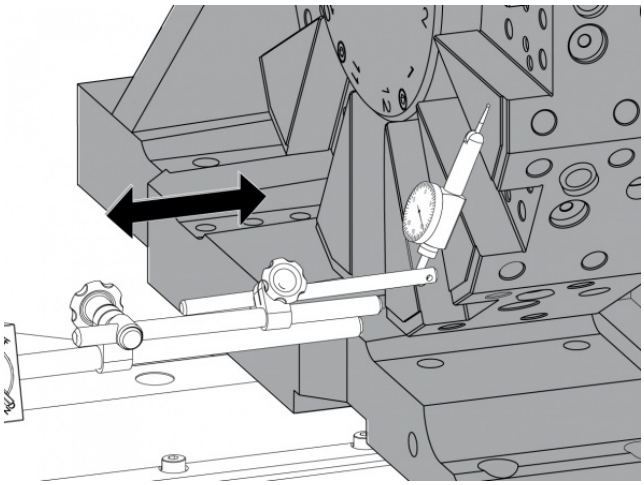


Push **[POSITION]**.

Push **[ORIGIN]**.

In the display, the **Z** value for **OPERATOR** shows **0**.

STEP 3



Push **[.001/1.]**.

Jog the Z Axis 0.010" (0.25 mm) in the positive (+) direction.

Jog the Z Axis 0.010" (0.25 mm) in the negative (-) direction.

Record the difference between these two values:

- the indicator value
- the Z-Axis position on the control

If the difference is more than 0.0002" (0.005 mm), the backlash is too large.

Caution: Before you do the manual backlash test, make sure the machine is not in an alarm condition: Release **[EMERGENCY STOP]**, and push **[RESET]** to stop each alarm.

Do a manual test of the backlash as follows:

1. With your hands, push on the right side turret in the direction of travel.
2. Set the indicator to 0.
3. With your hands, push on the left side of the turret in the direction of travel.

If the indicator shows more than 0.0002" (0.005 mm), the backlash is too large.