



## **WHY YOUR LATHE NEEDS A DRO.**

EFFICIENCY. ACCURACY. PRODUCTIVITY.



# **NEWALL**

# Without a DRO:



## Cross-Slides Have Backlash

Lathes utilize a cross-slide to machine critical O.D. and I.D. dimensions.

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## Tool Pressure Is Exerted On The Cross-Slide

The turning work piece exerts pressure on the tool, which shifts the cross-slide back against the screw. With backlash always a consideration, each lathe requires its own "feel."

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## Vernier Dials Are Hard To Read

The lines of the dial are hard to see and can be obscured by oil and debris. Hand wheel revolutions must be counted. Misreading of the dial and scraping the part is easily done if not extremely careful.

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## Stop And Check Time is Non-Productive

Since the operator cannot rely on the cross-slide dial for finish dimensions, frequent stops to check the part with a scale, caliper, micrometer and dial indicators are required.

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## I.D. Work Is Even More Difficult To Measure "Blind"

Difficult set-ups of indicators and magnetic base holders are time consuming, and always run the danger of being bumped or moved.

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## Step Lengths

Since reading the carriage travel is even more difficult with the lathe's vernier dial, due to its location (some lathes do not even have a dial on this axis), stop-and-measure is a must. Travel-type dial indicators are a small improvement, but are hard to read. They can jump and skip due to chips getting caught under the friction wheel, which must be held under compression against the lathe carriage way to spin the dial.

# Why Your Lathe Needs a DRO:

## Vastly Reduced Positioning Time

- Digital Readouts (DRO's) utilize linear scales mounted to the cross-slide and carriage axes of the lathe. The scale reads position independent of the lead screw and shows the true tool position, regardless of mechanical wear and backlash. **Reading lines on vernier dials, counting hand wheel revolutions and lead screw backlash compensation are eliminated.**
- The accuracy and repeatability of precision linear scales allow the operator to **position the tool to the print dimensions – just like the print reads. Stop-check-measure steps are all but eliminated**, save for final cuts. Features like Direct Diameter Reading greatly **reduce mathematics, calculations and scrap** due to operator error. **Less time checking and measuring means more time making chips.**

**Productivity improvement of 20-40% typically reported using DRO on lathes.**



## Why Your Lathe DRO Should be Newall

- **Lathework Is A Harsh Environment**  
Most lathe work is exposed to a high volume of chips, coolant and other potentially hazardous conditions, more so than other machining operations, such as milling.
- **If The Scale Doesn't Work, Neither Does The DRO**  
DRO display features are helpful, but the main DRO benefit is derived from independence of lead screw wear and backlash, which the linear scales provide.
- **Glass or Magnetic (Wire or Tape) Scales Can Fail In the Lathe Environment**
  - Glass Scales can scratch, break or misread due to condensation and contamination from chips, coolants and lubricants.
  - Magnetic wire and tape scales fail due to chip build up or loss of polarity.
- **If the Scale has an Enclosure and Lip Seal – It Needs to Be Protected and is Prone to Damage or Failure**



## Newall Spherosyn/Microsyn Scales are Unaffected by Chips, Coolant, Lubricants, Shock and Vibration

- **Field Proven as the Most Reliable Linear Scale** for over 30 years
- **Unique Ball Bearing/Tube Design** requires no enclosure or seals
- **Easier and Faster to Install** than any other linear scale for lathes
- **Shock and Vibration Resistant** Holds up to the most extreme conditions
- **Accuracy to 5 micron**



## Others Claim to be Reliable – Newall Proves it with the Industries Best Warranty

- **5 Year Warranty / 3 Year No-Fault** • **Lifetime Scale Warranty** • **30 Day Money-Back Guarantee**

## Newall – The DRO of Choice For Lathes

**Ask about our Free 30-day Trial.**

## Quotes from actual lathe DRO owners and operators:

“I don’t want to use a lathe without my Newall DRO. The DRO is much more efficient and accurate. I am always having to check and be sure I read the dial correctly, or that my indicator did not bump, without an operational DRO. I believe all lathes should have a DRO - it’s too difficult without it. And I know my Newall DRO will keep working. I don’t have to worry about keeping the scales clean. With Newall it’s just a walk in the park.”  
 - Bill Frontiera /Operations Manager – Stapels Manufacturing/Troy, MI

“I have seen our lathe operators be much more productive with a DRO on their lathe vs. without. We first bought our most recent engine lathe without a DRO on it, and you could easily see the difference in operator efficiency vs. those operators on lathes with a DRO. We soon purchased a Newall DRO for the new lathe. We have tried several DRO brands on our lathes and found Newall to be the most reliable, by far.”  
 - Bee Amphlett / Shop Supervisor – Dyna-Drill Technologies/Houston, TX

## Productivity improvement of 20-40% typically reported using DRO on lathes.

### DRO Cost Justification (Typical Example)

(\*Cost of DRO varies based on size of machine, make and model of DRO.)

Lathe Use/Hours per Week      20 hrs.  
 Shop Rate/Hour                      \$55.00  
 DRO Productivity Improvement    25%

Lathe Use/Hours per Week      20 hrs. X DRO Productivity Improvement 25%      = 5 Hours /Week  
 DRO Productivity Improvement    5 Hours/Week X Shop Rate/Hour \$55.00      = \$275 Savings/Week  
 Cost of DRO\*                      \$2,055/\$275 Savings/Week                      = Return on Investment 7.5 Weeks

### DRO Cost Justification Worksheet

Lathe Use/Hours per Week      \_\_\_\_\_  
 Shop Rate/Hour                      \$\_\_\_\_.  
 DRO Productivity Improvement    \_\_\_\_\_ %

Lathe Use/Hours per Week      \_\_\_\_ hrs. X DRO Productivity Improvement \_\_\_\_% = \_\_\_\_\_ Hours /Week

DRO Productivity Improvement    \_\_\_\_\_ X Shop Rate/Hour \$\_\_\_\_.      = \_\_\_\_\_ Savings/Week

Cost of DRO\*                      \_\_\_\_\_ / \_\_\_\_\_ Savings/Week                      = Return on Investment \_\_\_\_\_



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