Clausing
600Group

Standard Lathes

Equipped with the ACU-RITE® 300S DRO with Thread Assist Cycle...
Cut Metric Threads as Fast and Easy as Inch Threads on Clausing Lathes with an 'Inch' Leadscrew

TURNING

D:0 | T:2 | F: 0.0 | 0:00 | INCH | ABS |

THREAD CYCLE
START POINT
X   0.3935 ∅
Z   0.1870
END POINT
X   0.3170 ∅
Z   -1.0000

Enter the coordinates of the start point

TEACH   CALC   HELP

COLCHESTER

Encoder

Clausing
600Group

Professional Colchester 15"

Cutting metric threads on a lathe with an 'inch' leadscrew is difficult and time consuming, requiring a more experienced operator...
Cutting metric threads on Clausing Standard Lathes equipped with an Encoder and the ACU-RITE® 300S DRO with the Thread Cycle is as easy as cutting inch threads, just follow a few steps and you're ready to go.

# The Advantage of Clausing Standard Lathes with Thread Assist...

When cutting metric threads on an 'inch' leadscrew machine, the half nuts must remain engaged during the thread cutting sequence. This is because the standard 'inch' thread dial indicator can-not track the exact lead of a metric thread. The machinist must either reverse the spindle direction, or reverse the leadscrew on headstock (on Clausing/Colchester Lathes) in order to bring the threading tool back to the start position. This is a very awkward and somewhat confusing procedure as it requires more functions for the machinist to quickly execute than cutting inch threads. It is very time consuming as well because the return speed is at the same rate as the cutting feed rate. *The Clausing Standard Turning Machines equipped with Thread Assist allows the half nuts to be engaged and disengaged during the metric thread cutting cycle, which makes it as easy as cutting inch threads.*
Follow these easy steps and you're ready go... (The Clausing/Colchester Professional Variable Speed Lathe is used for this demonstration)
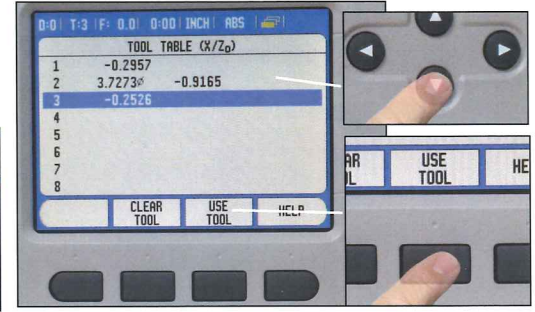
Step 1: Setting Headstock Gearbox and Selecting Cutting Tool

Set the gearbox as you normally would for the desired thread to be cut.
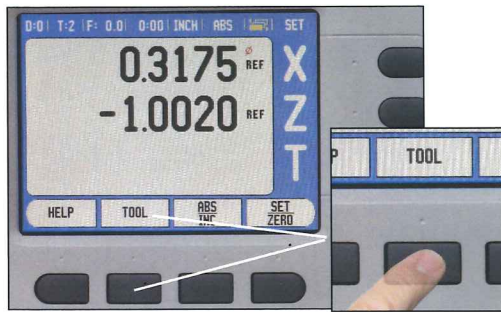
To select the threading tool, push soft key under **TOOL** on page one screen... This will take you to the **TOOL TABLE** screen.
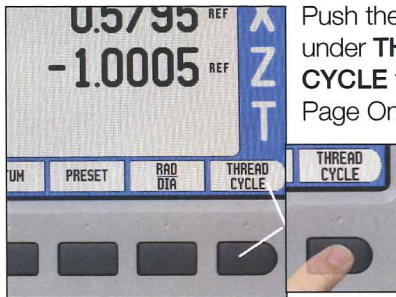
Use up/down arrows to highlight tool and push soft key under **USE TOOL.** You are now ready to start the THREAD CYCLE.
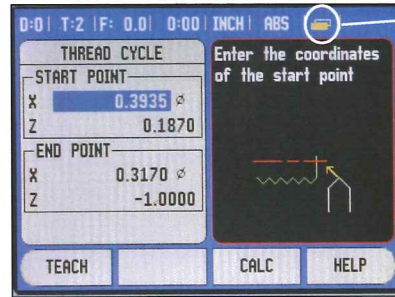
Step 2: Selecting Thread Cycle and Setting Thread Cycle Parameters

Using the right arrow key scroll to **THREAD CYCLE** function.

Push the soft key under **THREAD CYCLE** to open Page One of the Thread Cycle function.

Icon on upper right of screen shows what page you're on

This is page one screen of the **THREAD CYCLE**, where the parameters are set-up. First setting is the **START POINT,** in the highlighted area input X-axis start point. (Major Diameter)
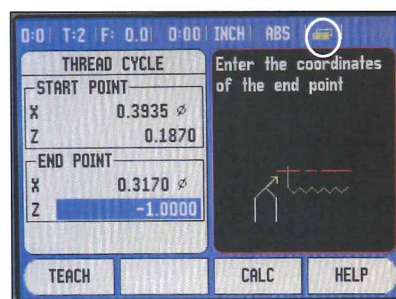
Use down arrow to highlight Z-axis and input start point.
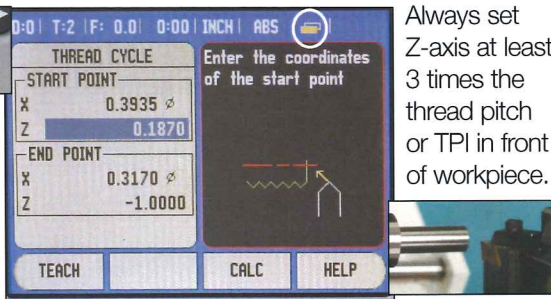
Always set Z-axis at least 3 times the thread pitch or TPI in front of workpiece.
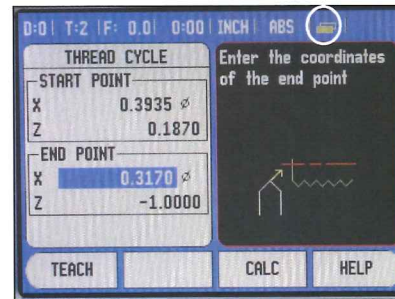
Again use down arrow to to get to **END POINT** parameters. In the highlighted area input X-axis end point. (Minor Diameter)
Note: On the right side of screen there is a prompt that indicates what to do.

Use down arrow again to highlight Z-axis and input Z-axis end point.

Now you're ready to move to the second screen of the first page of the **THREAD CYCLE**.

Push down arrow again.
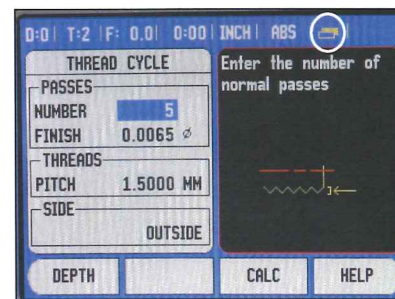
This is the second screen of page one in **THREAD CYCLE**. First, in the highlighted area enter the number of normal passes... this does NOT include the finish pass.
**Note:** The page icon has changed.
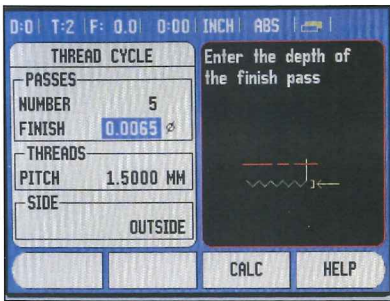
Use down arrow again to **FINISH**, in the highlighted area input the depth of the finish pass.

This is the 6th and final pass.

Use down arrow to **THREADS**. This screen is used to select the type of thread to be cut. Using the left soft key, choose either THREADS PER INCH (TPI) or PITCH IN MM. To cut a metric thread, press the soft key under PITCH IN MM. in the THREADS area the word PITCH appears. In the highlighted area input the thread pitch and press **ENTER**, this will bring up the opening page for cutting threads.
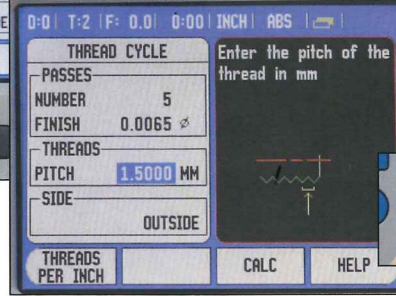
# Step 3: Executing the Thread Cycle
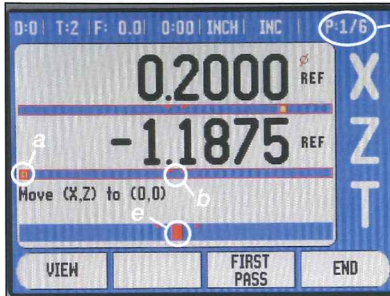
The P:1/6 indicates what pass you are executing. in this demo you have 6 passes, 5 normal passes and 1 finish pass.

At this point you will start the spindle. Now you will move X & Z axes to zero on DRO. First set 'Z' axis by using the Saddle Handwheel, move cursor 'a' between markers 'b'. Notice cursor 'e' will start to move from right to left when the spindle is engaged.
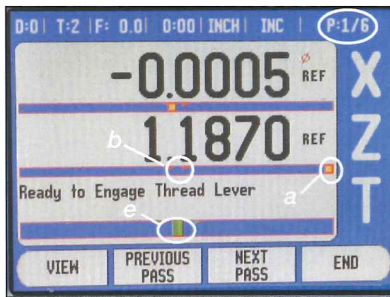
On the first pass only, you will engage the Half Nut (Thread Lever) either by using the thread dial on machine or applying upward pressure on the Half Nut lever until it engages. When you press **FIRST PASS**, cursor 'a' will move to the right; when the Half Nut is engaged, cursor 'a' will move to the left and cursor 'e' will change to green and remain between the markers.
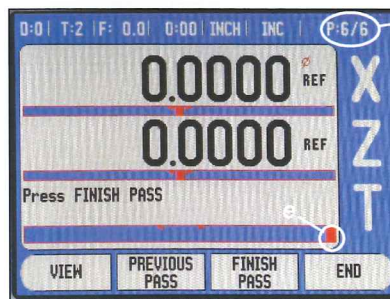
Notice P:1/6 changed to P:2/6 indicates you're on pass 2 Using the Saddle Handwheel, bring the 'Z' axis to zero. Then using the Cross Slide Handwheel move the 'X' axis to zero as you did in the first pass. Press the soft key under **START PASS**. Notice cursor 'e' passes between the markers, cursor 'e' and markers turn from RED to GREEN
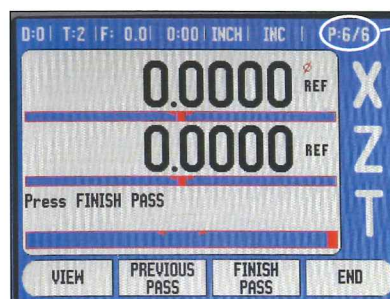
The P:6/6 means you have completed the 5 normal passes and ready to run the Finish and final pass.

First set the 'Z' axis then the 'X' axis to zero, the same as the first 5 normal passes, then press the Soft Key under 'FINISH PASS'
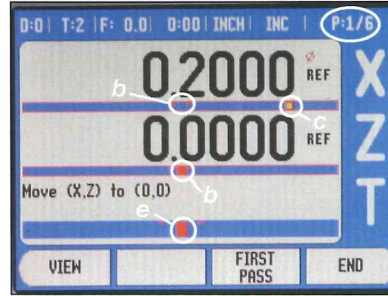
Next set 'X' axis by using Cross Slide Handwheel to move cursor 'c' between markers 'd'. Press the soft key under **FIRST PASS** to start first pass. On the FIRST PASS cursor 'e' remains RED as it passes between the markers, on future passes, cursor 'e' changes to green when passing between markers, indicating when to engage Half Nut.
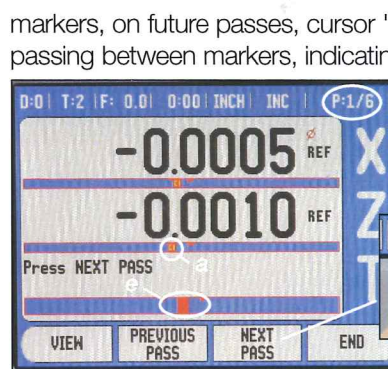
When the 'Z' axis on the DRO reads all zeros, cursor 'a' centers between markers 'b', and cursor 'e' returns to red and starts moving to the left, you are at the **TARGET ZONE**; disengage the Half Nut, back 'X' axis 'cutting tool' off workpiece, and press the soft key under **NEXT PASS**.
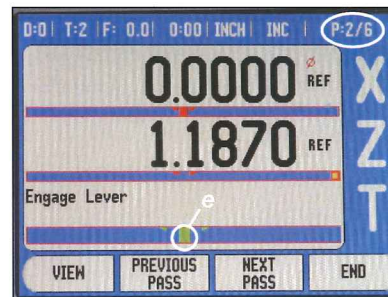
When cursor 'e' centers between the two markers and turns green, engage the Half Nut. For the rest of the passes cursor 'e' will be used to engage the Half Nut. When the **TARGET ZONE** is reached, disengage the Half Nut. Repeat the instructions from the 1st and 2nd passes to complete the final three normal passes.
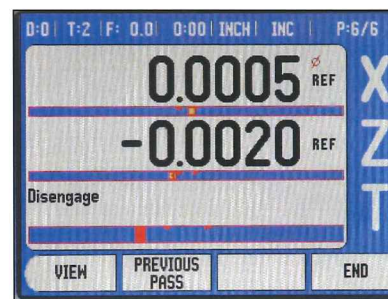
As in passes 2-5 when the red cursor 'e' turns to green engage the Half Nut. Disengage Half Nut when 'Z' axis reaches **TARGET ZONE** and back off cutting tool. Press Soft Key under **END** and you are finished.

Clausing

600 Group

Your Single Source for Machine Tools

Clausing Precision Drills
- Clausing Belt-drive Drills
- Clausing Geared-head Drills
- Clausing Radial Drills

Clausing Precision Mills
- Clausing Bed Mills
- Clausing CNC Bed Mills
- Clausing Knee Mills
- Clausing EVS Knee Mills
- Clausing Universal Mills

Clausing Precision Lathes
- Clausing/Colchester Geared Head Lathes
- Clausing/Colchester Professional V.S. Lathes
- Clausing/Metosa Geared Head & V.S. Lathes
- Clausing/Metosa CNC Lathes
- Clausing Large Swing Standard and CNC Lathes

Clausing Precision Grinders
- Clausing Manual Grinders
- Clausing 2 Axes Hydraulic Grinders
- Clausing 3 Axes Hydraulic Grinders
- Clausing ASDIII Automatic Grinders

Clausing Precision Cutting Machines
- Clausing/Kalamazoo Horizontal Bandsaws
- Clausing/Kalamazoo Vertical Bandsaws
- Clausing/Kalamazoo Tilt Frame Miter Bandsaws
- Clausing/Kalamazoo Cold Saws

For detailed catalogs of the full line of Clausing Machine Tools visit our Web Site:

www.clausing-industrial.com

or e-mail us and request an electronic (pdf) catalog at:

info@clausing-industrial.com

Your Authorized Clausing Precision Machine Tools Distributor

Clausing

600 Group

Clausing Industrial, Inc.
1819 North Pitcher Street
Kalamazoo, Michigan 49007-1886
Phone: 269-345-7155
Fax: 269-345-5945
Information: info@clausing-industrial.com

**Call Toll Free: 800-323-0972
or visit our website
www.clausing-industrial.com**

Issued 8-12