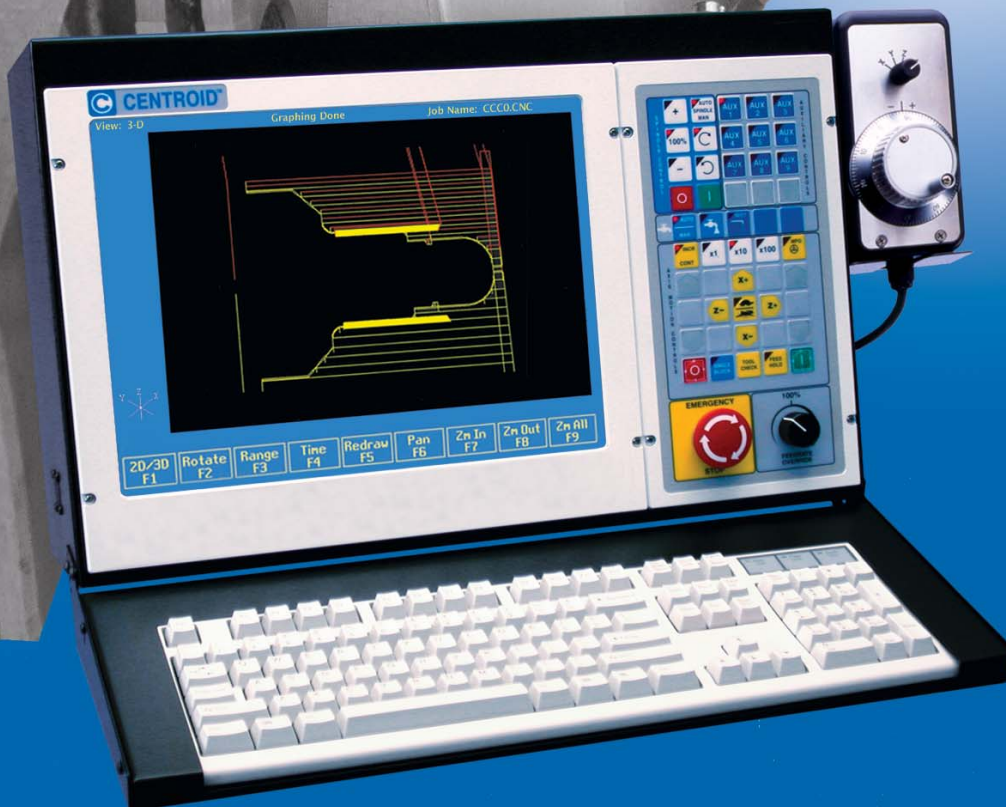# CENTROID™

T-400 — CNC Control for Lathes

Do More With a CENTROID!

CNC Controls X, Z & C Axis
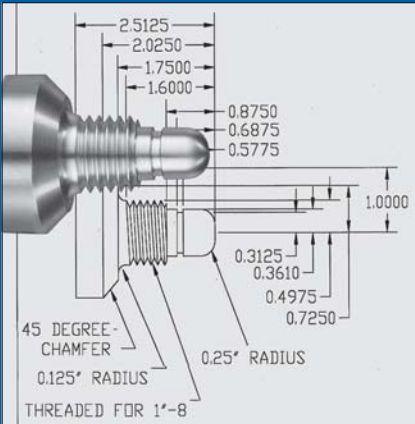
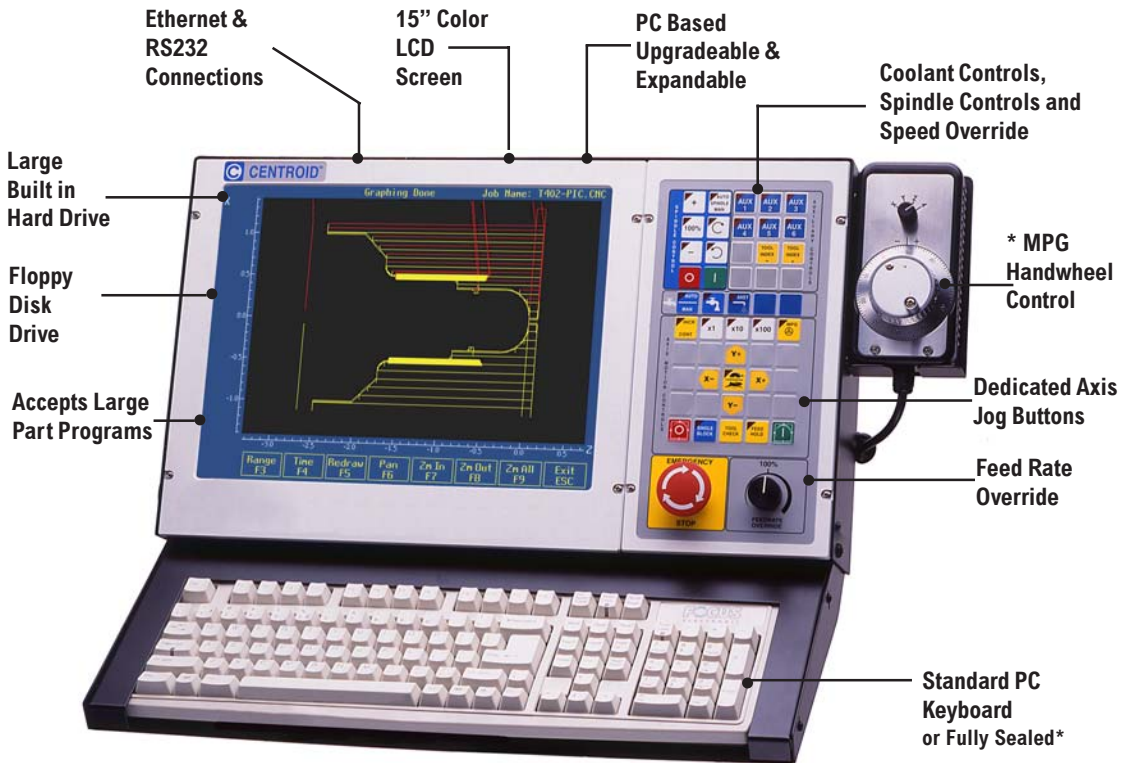Made in USA

So Easy, You'll Turn Parts The First Day…

Labels around the control unit image:

- Ethernet & RS232 Connections
- 15" Color LCD Screen
- PC Based Upgradeable & Expandable
- Coolant Controls, Spindle Controls and Speed Override
- Large Built in Hard Drive
- * MPG Handwheel Control
- Floppy Disk Drive
- Dedicated Axis Jog Buttons
- Accepts Large Part Programs
- Feed Rate Override
- Standard PC Keyboard or Fully Sealed*

Simple setup
Easy-to-use graphical menus guide you through part and tool setup. The T-400 remembers the zero position and the tool library even after you turn the machine off, so once you have set a tool or a part position, you'll never need to reset it.

Do More With a CENTROID…
- Cut parts the first day with CENTROID's user-friendly menus.
- Machine parts not possible with other controls.
- Produce more parts with smooth, accurate surface finish.
- Spend less time programming and more time making chips.
- Bring in more work and bid on higher paying jobs.

Graphics Dry Run
The T-400's Graphics Dry Run will graph all programmed tool movements. It then checks for overtravel in the program and will display the exact line number of the overtravel event, saving you time and materials. The dry run graphing speed is user adjustable with the feedrate override knob. You can start and stop the dry run at any point or display only a portion of the program, and it is scaled on both axes so you can determine the part size. Dry run displays the line of G-code being executed for easy reference when editing and it will accurately estimate the job run time.

Worldwide Service & Support
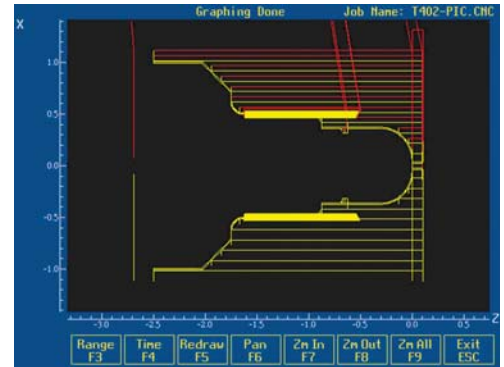
Stay up to Date
Software updates allow CENTROID users to stay up with current CNC technology. In just minutes, new CNC features can be added to the control.

Certified Worldwide Support
Ccentroid's worldwide network of factory-trained and certified technicians provide fast and affordable CNC sales, training, service and support.

Over 25 Years of Experience
CENTROID is a U.S. owned and operated company with thousands of CNC controls in operation worldwide.

Designed To Last
Proven Made-in-the-USA reliability. Easy to maintain, with CENTROID's exclusive autotune, dragplot and self diagnostics. Centroid CNC controls have a proven reliable track record.

Job Stop & Restart

Tweak-in your part just like on a manual machine. Stop and measure a diameter at any point, make adjustments to the tool offset or the program and then restart right where you left off with the push of a single button.

Intercon Conversational Programming*

Ultimate Tool Room Lathe Conversational programming at the machine. With Intercon conversational programming, operators can program the machine right at the control for quick job shop and tool room lathe parts. Help screens guide you through programming your part.
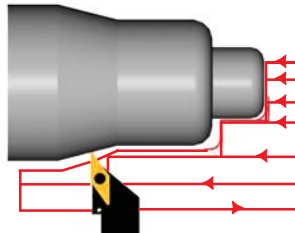

The T-400 canned **Threading Cycles*** include Inside, Outside, Compound and Tapered threads. Simply Select the type of thread needed and enter the pitch, the diameter and the length.

The **Grooving*** canned cycle can make Straight, Chamfered or Radiused Grooves, on the inside, outside, front or back of the part.

C Axis*

C-Axis is used for contour milling and spindle positioning for drilling and tapping. This allows you to produce special profiles, such as square sides, pockets, cams, and even lettering on the lathe - all with accurate positioning around the circumference, on the face, or the inside of a part.

With **Automatic Constant Surface Speed (CSS) Control**, the spindle automatically changes RPM to provide the correct surface speed that you have specified over the entire part. This ensures a better surface finish, superior turning, and longer tool life.

With **Profiling***, automatic material removal saves you time by generating all the commands to remove excess material from stock. Profiles are defined by simple lines and arcs. Then, the material around the profile   is automatically "roughed off."
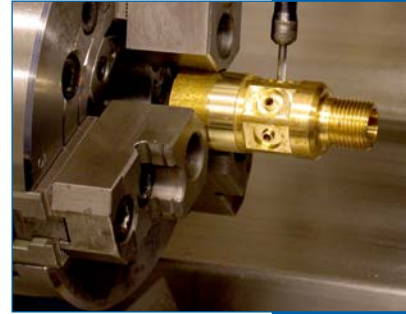

With **Tapering***, add any taper, at any angle, to your part by simply specifying a start point and an endpoint OR use the angle and length of the taper. Conversational will automatically calculate any unknown values.

Sealed Keyboard*

The coolant-proof, sealed, full-size alphanumeric keypad has tactile feedback for solid, confident operation.

Drill/Bore and Tapping*:
Canned drill/bore cycles include: Peck drill/bore (chip breaking), Deep Hole drill/bore (chip removal), and Drill/Bore. Use a tap to make threads with the canned Floating-tap or Rigid tap cycle. Specify the threads per inch, the spindle speed and the depth and the control does the rest.

With **Manual Run***, walk through the first part with the optional electronic handwheels. You "manually" step through the part program by turning the wheel. The other wheel is "slaved" to the one you turn, so you are in complete control of the cutting.

Intuitive Dual Handwheel control*. Makes part and tool setup fast and simple! Touch off tools and setup parts manually with Centroid dual hand wheel control, electronic wheels for each axis combine manual control with CNC machining.

Turn-key CNC Controls

* optional feature

CNC Computer
- Upgradeable Software
- 3.5" Floppy Disk Drive
- Internal Solid State Hard Drive
- 15" Color LCD Display
- LAN Ready*, RS232*, Mouse, Keyboard and Parallel Ports
- Digital Fiber Optics
- Full splash-proof QWERTY keyboard*

High Speed Machining*
- Unlimited Part Program Size
- Cuttercomp Lookahead
- High Block Throughout
- Accel / Decel Lookahead
- High Speed 3D Contouring

Display
- Current Position Display (DRO)
- Run Time & Parts Counter
- Program Display
- Real Time Alarm
- Message Display
- Feedrate Display
- English, French, Spanish, and Chinese Language Display
- Distance to Go
- Run Time Graphics

Axis Control
- Constant surface speed control
- High speed contouring
- Backlash compensation
- Pitch error compensation
- Least input increment of .0001"   (.001mm)
- 2000 Line lookahead accel/decel
- Quadrature encoder interface
- Emergency stop

Operation
- Icon and Soft Key-Based Menus
- Alpha-numeric Program Names
- On screen Operation Instructions
- MDI
- Run Mode
- Single block mode
- Manual feed mode (jog) incremental or continuous feed
- BCD tool change output
- Manual pulse generator port
- Sequence and N number search

Conversational Programming*
- Tool path color graphics (with compensated path)
- Turning cycles (Straight and Taper)
- Grooving cycles (Straight, Chamfered or Radius Corners)
- Drilling cycles
- Tapping cycles
- Cutoff cycle (Straight, Chamfered or Radius Corner)
- Run time estimates
- Graphical math help for solving angles, intersections and tangents, with paste to event
- Automatic corner radius, chamfer or blended chamfer
- Threading cycles (Simple or Complex)
- Stock removal cycles (Diameter or Face)
- Position, line and arc events
- Integrated tool library

G-Code Programming
- EIA Fanuc Style G-Codes
- G1 Linear Interpolation (5 Axis Simultaneously)
- G2 & G3 Circular Interpolation (Any Plane)
- G2 & G3 Helical Interpolation (Any Plane)
- G4 Dwell
- G10 Parameter Setting
- G20 & G21 Inch / Metric Conversion
- G28, G29, G30 Work Coordinate Reference Return Point
- G32 Constant Lead Thread Cutting
- G40, G41, G42 Tool Radius Compensation
- G50 Coordinate System, Max. Spindle Speed
- G52 Offset Local Coordinate
- G53 Rapid Position in Machine Coordinates
- G54-G59 Work Coordinate Systems and 12 extended work coordinate systems*
- G65 Call Macro
- G70 Finishing Cycle
- G71 Stock Removal in Turning
- G72 Stock Removal in Facing
- G74 End Face Peck Cutting
- G75 Outer/Inner Diameter Peck Cutting Cycle
- G76 Multi-Pass Threading Cycle
- G90 Outer/Inner Diameter Cutting Cycle
- G92 One-Pass Threading Cycle
- G94 End Face Cutting Cycle
- G96 Constant Surface Speed
- G97 Constant Surface Speed Cancel
- G98 Per Minute Feed
- G99 Per Revolution Feed

M-Function Programming
- M00 Stop
- M01 Optional stop
- M02 Restart
- M03 Spindle CW
- M04 Spindle CCW
- M05 Spindle stop
- M07 Mist on
- M08 Flood on
- M09 Coolant off
- M26 Set home
- M91 Go to – home
- M92 Go to + home
- M93 Release power
- M102 Program restart
- M103 Start timer
- M104 Cancel timer
- M105 Move to switch –
- M106 Move to switch +
- M107 Output BCD tool #
- M108 Enable override
- M109 Disable override

Advanced Programming Features*
- In line math computation
- User defined Variables
- Conditional statements (If/Then/Goto)
- Custom M-Codes
- Operator Prompts
- M Function Data Recording

Physical Characteristics
- 20.5" x 13.25" x 7.25" Control   Console
- Net Weight 45 Lbs.

T-400 Options*

* Dual Handwheels

* C Axis

* Interactive "Intercon" Conversational Programming

* Multiple Work Coordinates

* Auto Tool Turret

* Laser Compensation

* Spindle Orientation

* User Definable Macros and Advanced Programming features

* RS232 File Transfer

* LAN Capable

* Ethernet Interface

* Auto Tool Measure

* Rigid Tapping

* Engraving Letters, Numbers and Symbols

* AC Brushless

* MPG Handwheel

* Fully Sealed Keyboard

Specifications and prices subject to change without notice.

Utilities
- Format floppy command
- Backup data & system files (menu driven)
- Restore data & system files (menu driven)
- Import/Export
- Drag Plot (Patent Pending)
- PLC and system diagnostics
- Motor temperature estimating

Made with Pride in the USA

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Distributor:

* Optional Feature