CENTROID™

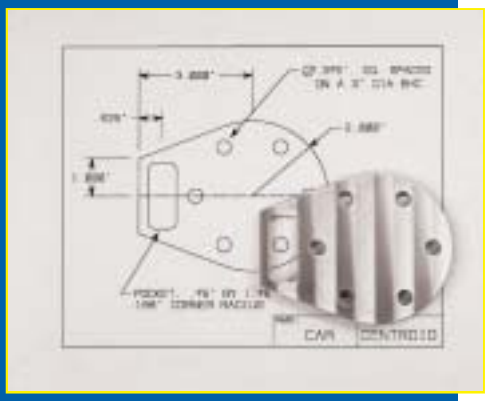
M-15 CNC Control For Mills

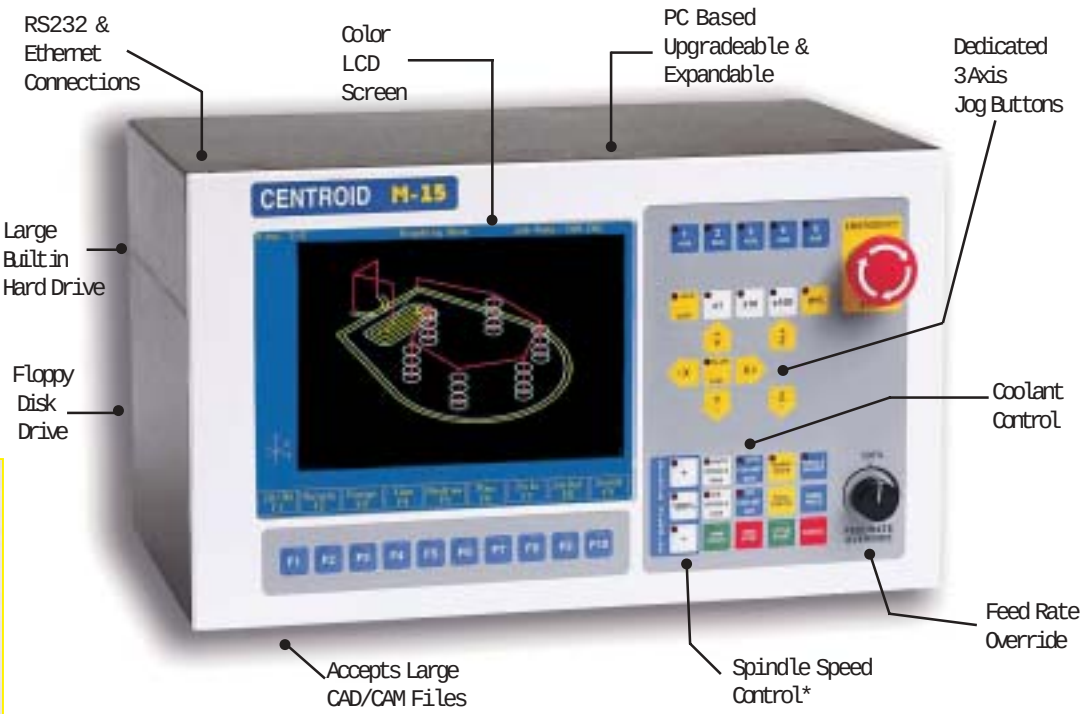
Do More With A Centroid!

3 Axis CNC Controls

Made In USA

So Easy, You'll Cut Parts The First Day...





Advanced Features

Program controlled spindle speed* and coolant*. Smart search to resume a job where it was cancelled

Intercon: Conversational Programming

The easy fill in the blank format generates industry standard G-code programs automatically. Lines, arcs, bolthole circles, and pockets can be programmed directly from the dimensions on your blueprint. Centroids Teach Mode easily creates programs from existing parts.

Canned Cycles

Canned cycles make everyday jobs a snap. Choose bolt patterns, threadmilling, rectanglular or circular pockets and frames, or facing. Use repeat to duplicate whole parts, make a matrix of holes, or repeat a contour to depth. Mirror, rotate, and scale your part.

2 & 3D Tool Path Graphics

See graphics as you work, even for partially completed programs. Compare your work to the blueprint with the touch of a button and get back to your program quickly.

Automatic Threadmilling

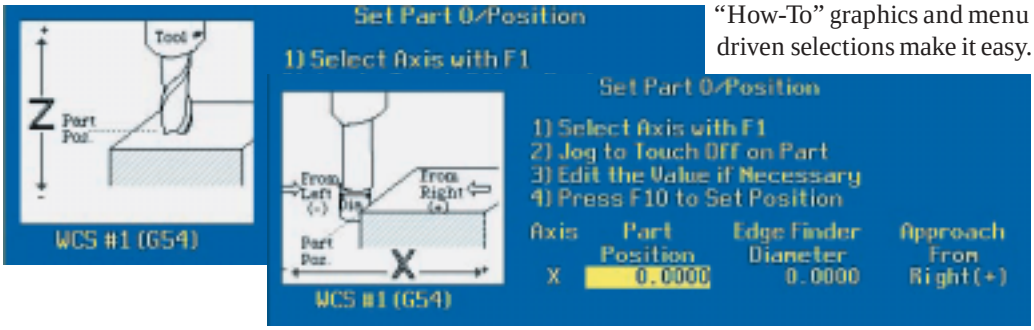
Auto Tool Measurement

Automatic Tool Measurement

Centroid's Touch Probe makes Measuring Tool length offsets automatic and quick. On screen prompts guide you through the process with simple push button operations.

Fast Part Set Up

Set up parts in seconds. On screen "How-To" graphics and menu driven selections make it easy.



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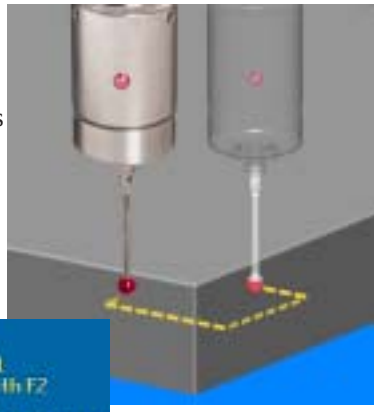
So Advanced, You'll Cut Parts The Competition Can't

Digitizing

Duplicate complex 3D surfaces with a DP series probe and Centroid's digitizing software. No extra computer needed. Digitizing automatically generates and stores industry standard G-code on the M-15 hard drive. You can cut the part right away or export the file to your off-line CAD/CAM system for editing. Run the file through Centroid's "MoldMagic" software, and be ready to cut the mold of the digitized surface in minutes.

Probing Cycles

Menu driven automatic probing cycles make finding Bore and Boss centers, fixture offsets, corners of vises fast and accurate. Decrease set up time even more with the DP series probe and Centroid's probing cycles software. Whether establishing fixture offsets, defining part zero, or finding an edge, probing cycles can do it faster and with greater precision.



High Speed Machining

High Speed Machining

Complex 3D CAD/CAM or engraving programs can be run at high speeds without hesitation. A high throughput block rate combined with 2000 block Accel/Decel look ahead allows fast cuts while holding tight tolerances.

M15 Solution for OEM's and Retrofitters

Centroid's M-15 kit is a complete CNC solution. Everything comes pre-assembled ready to install. Ideal for Knee and Bed mills. Centroid's product support, ease of use and superior design will generate profit for years to come.

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M-15 Options*

- **Programmable Spindle Speed**
- **Programmable Coolant Control**
- **Auto Tool Measurement**
- **Off-line Conversational Programming**
- **Probing Cycles: Automatic Part Setup**
- **Digitizing: Grid, Radial, and Cam Digitizing**
- **Tension \ CompressionTapping Cycles**
- **Multiple Work Coordinates**
- **Unlimited Part Program Size**
- **Subprograms (M98) and Macros (G85)**
- **Engraving Software**
- **MPG Hand Wheel**
- **Mirror and Scaling (G50, G51)**
- **Laser Compensation**

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Computer
- PC Based
- Upgradable Software
- 3.5" Floppy Disk Drive
- Internal Hard Drive
- LCD Display
- Lan Ready, RS232, Mouse, Keyboard and Parallel Ports

High Speed Machining
- Large File 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

Control Operator Panel
- Emergency Stop
- Feedrate Override
- Spindle Speed Override
- Spindle Start / Stop
- Spindle Auto / Manual
- Spindle Clockwise / Counter Cockwise
- Coolant Control
- Fast / Slow Jog Buttons
- Continuous Jog or Incremental Jog (X1, X10, X100)
- MPG Select Button
- Tool Check
- Cycle Start / Cycle Cancel
- Feed hold, Single Block
- Axis Jogs X, Y, Z

Operation
- Icon and Soft Key-Based Menus
- Alphanumeric Program Names
- On screen Operation Instructions
- Part Setup Menus
- Tool Length and Diameter Setup Menus
- 3D Tool Path Graphics (G-Code Back plot)
- Full Screen Unlimited File Size Text Editor

Conversational Programming
- Pocket Cycles (Circular and Rectangular)
- Frame Mill Cycle (Circular and Rectangular)
- Ramped Plunges on Canned Cycles
- Position, Line, Arc Events
- Automatic Corner Radius
- Copy, Repeat, Rotate, Mirror, with Nesting
- Drilling Cycles
- Tapping Cycles*
- Bolthole Circle
- Threadmilling Cycles
- Boring Cycles
- Automatic Angle Calculator
- Graphical Math Help For Solving Angles, Intersections, Tangents; with Paste to Event
- Linear and Polar Values on Same Event
- Single key Graphing Anytime During Programming
- Teach Mode

Tool Library Functions
- 200 Position Tool Library
- Tool Length and Radius Compensation
- Automatic Tool Length Measurement*
- Spindle Direction, Speed, and Coolant Control*

G-Code Programming
- EIA Fanuc Style G-Codes
- G1 Linear Interpolation (3 Axis Simultaneously)
- G2 & G3 Circular Interpolation (Any Plane)
- G2 & G3 Helical Interpolation (Any Plane)
- G4 Dwell
- G17, G18, & G19 Circular Interpolation Planes
- G20 & G21 Inch / Metric Conversion
- G28, G29, G30 Work Coordinate Reference Return Point
- G40, G41, G42 Tool Radius Compensation
- G43, G44, G49 Tool Length Compensation
- G52-G59 Work Coordinate Systems *
- G73, G80, G81, G82, G83, G85, G89 Canned Drilling Cycles
- G74 & G84 Tapping Cycles *
- G90 & G91 Absolute / Incremental Programming
- G92 Coodinate System Setting
- R Specifying the Radius of an Arc
- N Sequence Number up to 9 digits

M-Function Programming
- M0 Stop
- M01 Optional Stop
- M02 Home, Restart
- M03 Spindle CW
- M04 Spindle CCW
- M05 Spindle Stop
- M06 Tool Change
- M08 Coolant
- M09 Coolant Off
- M25 Z to Home
- M26 Set Home
- M91 Go to - Home
- M92 Go to + Home
- M93 Release Power
- M100 Wait for Input to Open
- M101 Wait for Input to Close
- M102 Program Restart
- M103 Start Timer
- M104 Cancel Timer
- M105 Move to - Limit Switch
- M106 Move to + Limit Switch
- M108 Enable Feed & Spindle Override
- M109 Disable Feed & Spindle Override

Utilities
- Backup and Restore System Files
- Backup and Restore Data Files
- Format Floppy Command
- PLC and System Diagnostics
- Import / Export Program

Physical Characteristics
- 9"x17"x13" Control Console
- Console weight 29 Lbs.
- Electrical Enclosure Weight 50 Lbs.

Specifications subject to change without notice.

* *Optional Feature*

CENTROID™
159 Gates Rd.
Howard, PA 16841
(814) 353-9256 Sales
(814) 353-9265 Fax
www.centroidcnc.com

Distributor:

Machines in Motion
993 Carbon Canyon Rd.
Chino Hills, CA 91709
714 528-7061
www.cnc-machine-controls.com