

CENTROID M400 Control

CNC Controls 3 or 4 axis

Centroid M-400 CNC Control for milling machines

Control Computer Features:

- PC based 32bit DSP technology
- Updateable software
- 3.5" floppy disk
- 600 blocks/second processing
- 640k standard memory (unlimited size option)
- Unlimited file size eliminates DNC drip feed
- RS-232 mouse parallel and LAN connections
- Colour LCD screen
- "No pause" high speed 3D contouring
- Full alphanumeric splash proof keyboard
- Dedicated jog panels
- Digital DC and AC servo drives and motors

Axis Control:

- High speed 3D contouring
- 3 or 4 axis simultaneous control
- Quadrature encoder interface
- Least input increment of 0.001mm
- Emergency stop
- Hold tolerance on high speed moves
- Backlash compensation
- Smart search/restart program anywhere
- Automatic axis tuning
- Ballscrew compensation

Operation:

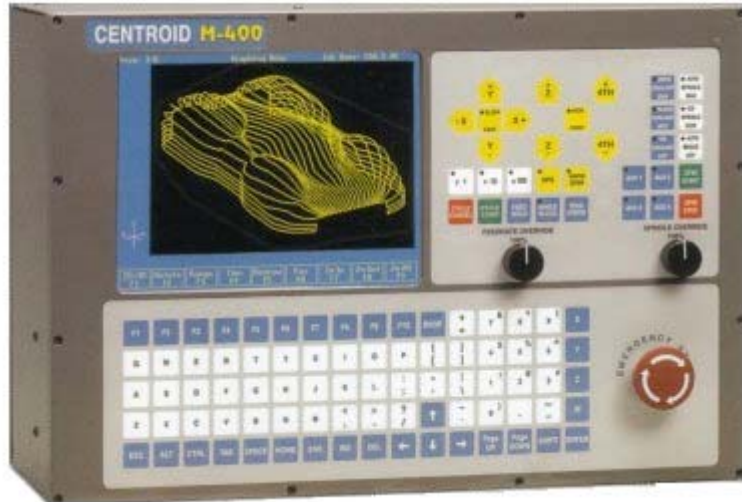
- Icon and soft key based operating system
- MDI
- Single block mode
- Manual feed mode (jog) incremental or continuous
- Sequence and N number search
- Program restart any line
- Manual pulse generator (MPG)

Interpolation:

- Positioning (G0)
- Linear interpolation (4 axis simultaneously) (G1)
- Circular interpolation (any plane) (G2 & G3)
- Helical interpolation (any plane) (G2 & G3)
- Exact stop (G09)
- Cutting mode (G64)
- Dwell (G04)

Programming:

- EIA Fanuc style G codes
- Conversational graphical G code editing
- 3D tool path graphics (G code backplot)
- program number = Dos legal file name
- Sequence number N with 9 digits
- Absolute/incremental programming (G90 & G91)
- Inch/metric conversion (G20 & G21)
- Circular interpolation planes (G17 – G19)
- Coordinate system setting (G92)
- Specifying the radius of an arc (R value)
- Data setting (G10)
- Canned drilling cycles (G73,80,81,82,83,85,89)
- Work coordinate shift (G54 – G59)
- Reference point return (G28)
- Return from reference point (G29)
- 2nd reference point return
- Local work coordinates (G52)
- Machine work coordinates (G53)
- G code standard
- Teach mode
- 4th axis degrees minutes seconds or decimal point



Graphical G Code Programming:

- Full 3D graphics (isometric & tri planar)
- Pocket cycles (circular & rectangular)
- Frame mill cycle (circular & rectangular)
- Ramped plunges on canned cycles (any angle)
- Position line arc events
- Automatic corner radius
- Subroutines for copy repeat rotate mirror with nesting
- Drilling cycles
- Tapping cycles
- Bolt hole cycles
- Boring cycles
- Automatic angle calculator
- Rapid position cycle
- Graphical math help for solving angles intersections tangents with past to event
- Linear and polar input on same event
- Run time estimate

Full M Function Control:

M functions are programmable for special considerations. The following is a list of the predefined M codes supplied with the M-400 control

M00	Stop	M91	Go to + home
M01	Optional stop	M92	Go to - home
M02	Restart	M93	Release power
M03	Spindle CW	M100	Wait for input
M04	Spindle CCW	M101	Wait for input
M05	Spindle stop	M102	Program start
M06	Tool change	M103	Start timer
M07	Mist on	M104	Cancel timer
M08	Coolant on	M105	Move to - limit
M09	Coolant off	M106	Move to + limit
M10	Clamp on	M107	Output BCD#
M11	Clamp off	M108	Enable override
M25	Z home	M109	Disable override



M26 Set Z home

Tool Functions and Tool Comp:

- Tool offset 200 pairs +/- 6 digits
- Tool length compensation (G43 & G44)
- Tool length compensation cancel (G49)
- Tool radius compensation (G41 & G42)
- Tool radius compensation cancel (G40)
- Tool functions T0 – T200

Part Program Storage and Editing:

- Program storage = available hard drive space
- Full screen unlimited file size G code editor
- Read/write to floppy drive
- Save programs off-line via coms port

Feed Function:

- Rapid traverse
- Rapid traverse feed rate override
- Rapid traverse automatic accel/decel
- Feedrate override 2 – 200% variable
- Feedrate per minute (G94)

Display:

- Current position display (DRO)
- Status display
- Program display
- Run time and parts counter
- Feedrate display
- Spindle speed display (RPM)
- Directory load function
- Self diagnostics
- Real time alarm message display
- Multilingual

Data Input/Output and Communication:

- 1.44MB floppy disk drive PC compatible
- RS-232 and mouse ports
- PC LAN compatible

Utilities:

- Format floppy command
- Backup data and system files (menu driven)
- Restore data and system files (menu driven)
- PLC and system diagnostics
- Motor temperature estimating

Control Physical Size:

- 480 x 330 x 162mm console