

TOOL ROOM LATHES

2+1 Axis Flat Bed Lathe for Job Shops, Tool Rooms, and Prototyping

Featuring DRO + Semi-Auto, Conversational, and G-Code Operation



MDL-Series Introduction

The MDL series flat bed type lathe machines are designed for versatility. The X and Z axes run on precision ground box ways driven by ball screws. The spindle motor is housed in a rigid casing fixed to the frame for enhanced rigidity. A tailstock with quill allows set up for long cylindrical parts. An optional secondary spindle offers mill-turn functionality. The machine can perform turning, grooving, facing, drilling, threading, tapping, and cylindrical or face turning of precision parts.

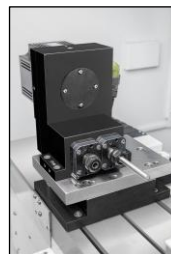


Machine Features

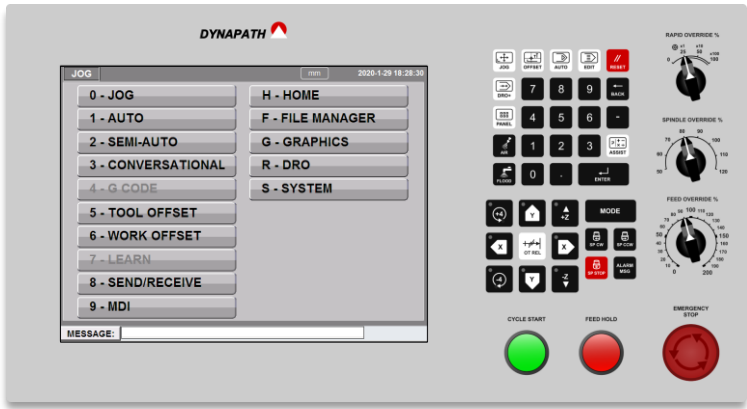
- Rigid Base Casting and Precision Ways
- Full Enclosure with Chuck Guard
- 8", 10" 3-Jaw, 4-Jaw Chucks
- Electric 4-way Tool Post
- Auto Lube, Air Blast, Flood Coolant
- Air-Ride Tailstock with Manual Quill
- Fixed and Travelling Steady Rests

Optional Features

- Quick Change Manual Tool Post
- 8-Tool Servo Hydraulic Turret
- C-Axis Disc Brake Clamp
- Milling Sub-Spindle for Fixed C-Axis Side or Face Mill, Drill, Bore, and Tap
- Half Enclosure
- 5C Collet Chuck



DynaPath WinDelta® Lathe CNC System



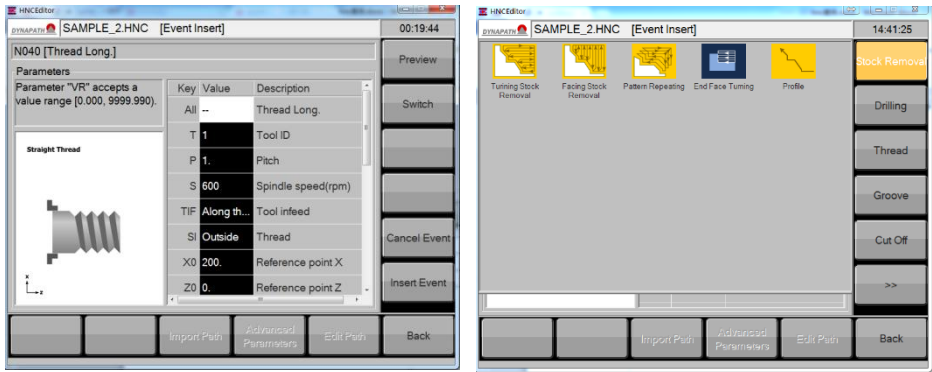
- DynaPath WinDelta® Lathe CNC System
- 12.1"/15.6" Touchscreen LCD
- 16 GB SSD Storage
- 2x USB / 2x LAN
- DRO+ Handwheel Mode
- Conversational + DXF Import + Standard G-Code Programming
- Teach/Learn Functions
- Macros & Canned Cycles
- Networked File Management
- Remote Support and Diagnostics

WinDelta® Control Features

Operation	• Mode Switch, Mode Select, Touchscreen, Mouse, Keyboard	Motion	• Backlash, pitch error compensation • Tool X, Z, and wear compensation • Canned cycle and macro support • Drill, Bore, and Rigid Tapping • Constant Surface Speed • Polar and Cylindrical Interpolation
MANUAL Mode	• JOG, INCREMENTAL JOG, MPG functions		
DRO+ Mode	• Individual axis or simultaneous movement • Line, Arc, Thread Feed • Constant surface speed		
EDIT Mode	• Save to, Load from USB • Built-in FTP server for remote part program management • Conversational Programming • DXF Import	System Functions	• Remote Support and Diagnostics • Alarm and Event History database
AUTO Mode	• MDI, Memory functions • Feed, Spindle, Rapid overrides • MPG Run, Retrace at any line • ISO G/M/S/T-Code support • Background edit	Tuning	• Online servo tuning for resonance, vibration, torque filter, velocity loop, position loop, and feed-forward
Tool and Fixture Offsets	• 6 Work Offsets • 100 Tool Offsets • External Offset • Smart Align Functions		

DynaPath WinDelta® Programming

Conversational Programming + DXF Import + G-Code Editing



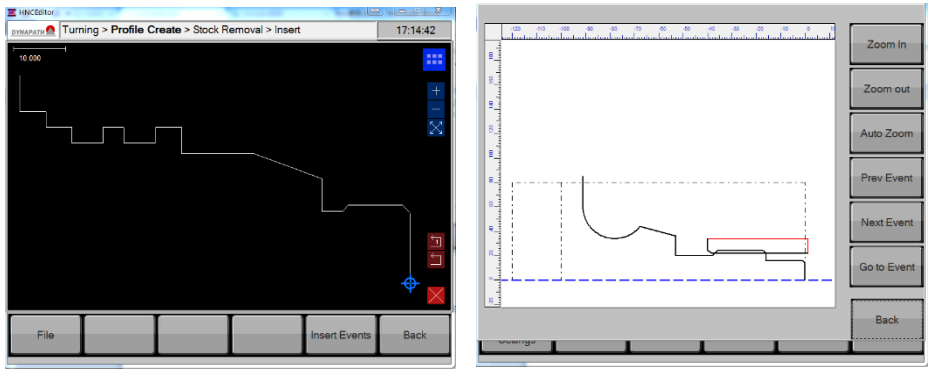
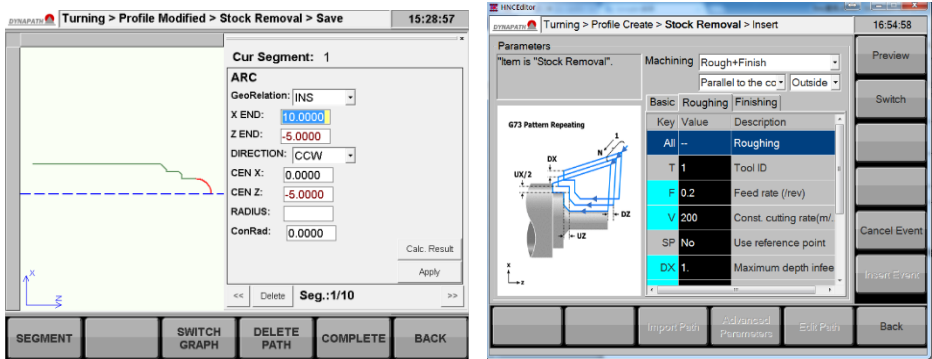
Conversational Event Based Programming

allows creation of part programs by choosing from machining events and configuring parameters, without having to write G-Code.

Built-in Events include standard contouring, grooving, threading, cutoff, drilling, boring, tapping, and auxiliary events.

Smart Profile Editor allows quick and easy path creation and assists with geometric calculations.

Conversational Graphics convey detailed information about event parameters using graphical illustrations to assist with data entry.

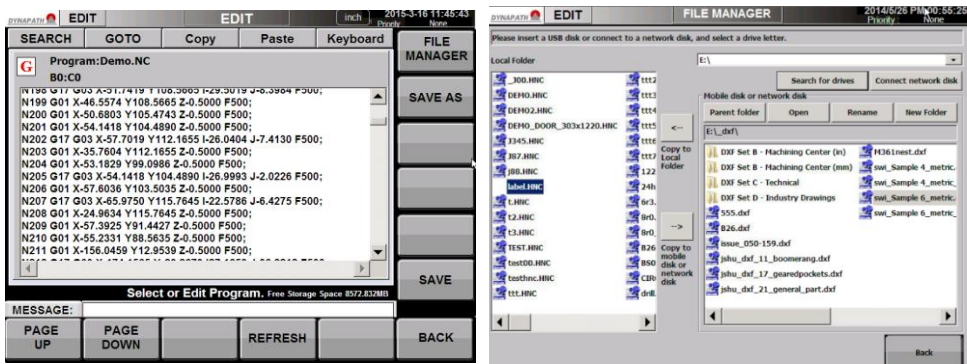


DXF Drawing Import allows the opening of DXF CAD drawings for geometry to be imported out via an intuitive, touch based interface, saving programming time and reducing errors.

Preview Simulation allows visual inspection of generated tool paths and final dimensions.

G-Code Editor enables direct ISO/EIA G-Code editing for users to write standard G-Code or fine tune CAD/CAM part programs.

File Manager and Server allows USB file transfer and Networked FTP file management of part programs and drawings.



WinDelta® CNC is the most versatile control for all your operations:

Manual Operation + Conversational Programming + G-Code

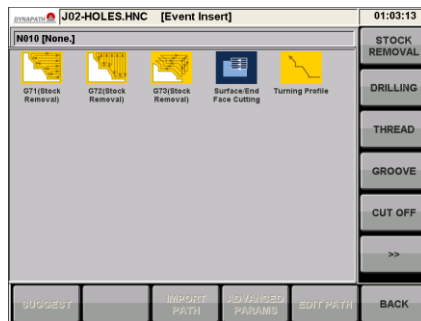
MANUAL + SEMI-AUTO OPERATION

For quick and simple jobs or work requiring the skill of an experienced machinist, **Manual Operation with DRO** using electronic precision handwheels offers operators the most efficient way to do the job. In addition, the **Semi-Auto Mode** enables manual operation mixed with CNC functions such as feed line, arc, or thread.



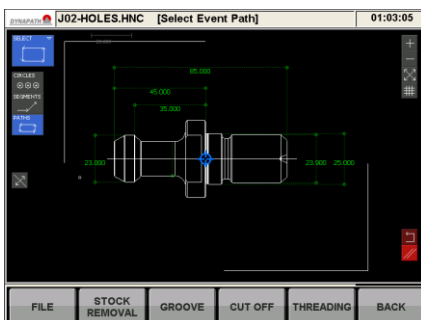
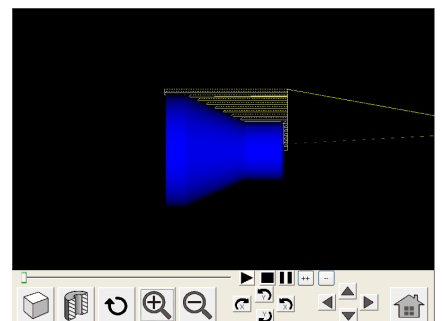
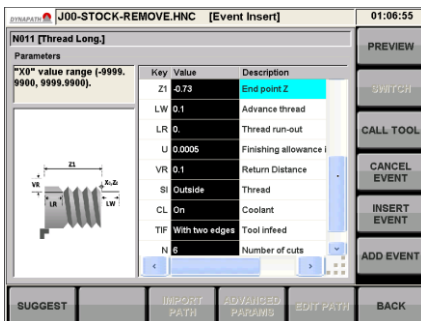
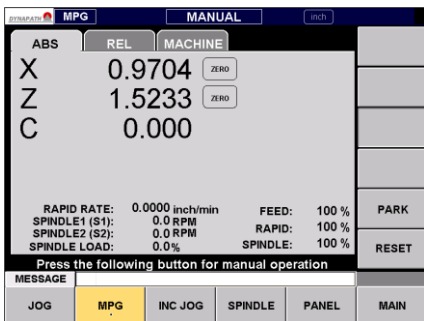
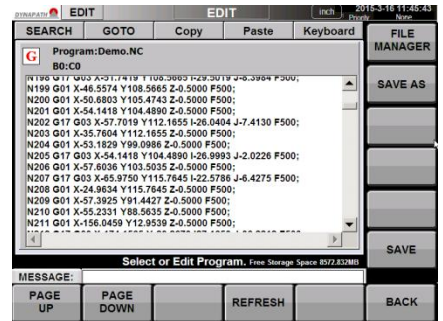
CONVERSATIONAL PROGRAMMING

The **Conversational Editor** enables an operator to create part programs without writing any G-Code, by choosing from turning, grooving, facing, threading, part off, and hole making events. It features a **DXF CAD Editor and DXF Import** function that allows opening, creating, or modifying DXF drawings, and selecting geometry as machining events.



STANDARD G-CODE

For operations with **CAD/CAM** systems to generate CNC machining programs or experienced G-Code programmers, simply output **Standard ISO/EIA G-Code** and transfer the program files into the control via **USB or FTP Networked File Transfer** to fully leverage the power of CNC production.



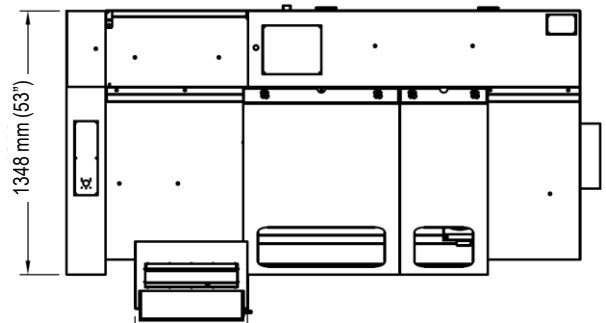
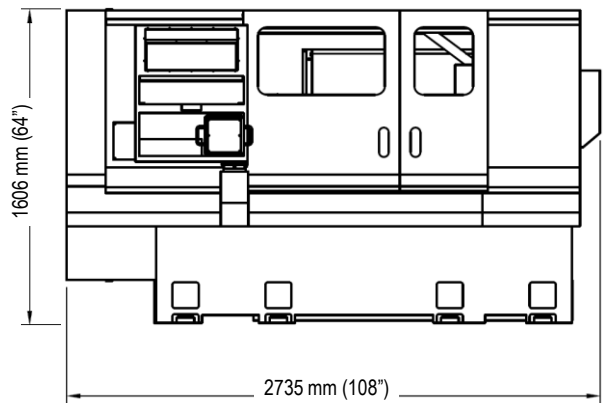
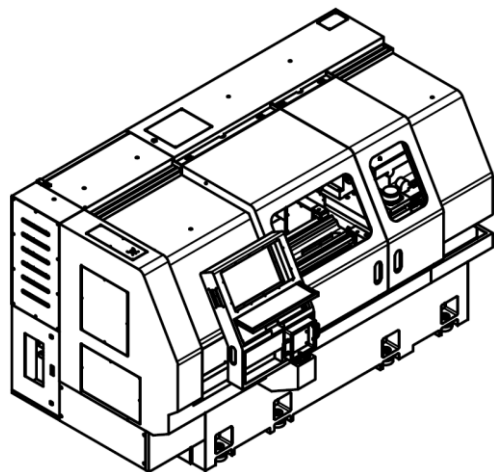
MDL SERIES MACHINE SPECIFICATIONS

MODEL		MDL-1600	MDL-1800
WORK ENVELOPE	SWING OVER BED	Φ410 mm (16.14")	Φ480 mm (18.89")
	SWING OVER CROSS SLIDE	Φ240 mm (9.44")	Φ265 mm (10.43")
	DISTANCE BETWEEN CENTERS	1050 mm (41.33")	1250 mm (49.21")
	WIDTH OF BED	300 mm (15")	380 mm (15")
SPINDLE	SPINDLE SPEED	50 - 3500 RPM	50 - 3500 RPM
	TAPER / BORE / NOSE	MT6 / Φ54 mm (2.125") / A2-6	MT6 / Φ79 mm (3.1") / A2-6
	MOTOR RATING	7.5 kW (10HP)	11 kW (15 HP)
CHUCK	CHUCK TYPE	Manual 8", 3-Jaw, Φ54mm Bore, 3500 RPM Manual 8", 4-Jaw, Φ54mm Bore, 3500 RPM	Manual 10", 3-Jaw, Φ54mm Bore, 2500 RPM Manual 10", 4-Jaw, Φ54mm Bore, 2500 RPM
AXES	XZ TRAVEL	230 x 820 mm (9.06" x 32.28")	250 x 1000 mm (9.84" x 39.37")
	XZ RAPID RATES	5 / 5 m/min (197 / 197 IPM)	
	XZ MAX TORQUE	9 / 12 N-m (6.64 / 8.85 ft-lb)	
TOOL CHANGER	ATC TYPE	4-Tool Turret (25mm), 8-Tool Turret (VDI), or Manual Quick-Change Tool Post	
	ATC DRIVE	Electric	
TAILSTOCK	QUILL SIZE	Φ52 mm (2.17") / MT4	Φ52 mm (2.17") / MT4
	QUILL TRAVEL	150 mm (5.91")	150 mm (5.91")
	QUILL	Manual	Manual
ACCURACY/ PRECISION	REPEAT ACCURACY X/Z	0.005 / 0.006 mm (0.00020" / 0.00024")	
	POSITION ACCURACY X/Z/C	0.010 mm / 0.016 mm / 0.1Deg (0.00039" / 0.00063")	
	TURNING ACCURACY	0.003 mm (0.00012")	
	TURNING UNIFORMITY	0.006 mm/100 mm (0.00024" / 3.94")	
MACHINE	FLOOR SPACE	265 x 160 x 165 cm (105" x 63" x 65")	300 x 175 x 165 cm (119" x 69" x 65")
	TOTAL WEIGHT	2000 kg (4400 lbs)	2800 kg (6160 lbs)
	AIR REQUIREMENTS	6 kgf/cm ² (85 PSI), 0.03 m ³ /min (1 CFM)	
	POWER REQUIREMENTS	3 Phase, 208 to 230 V, 50 A, 15 kVA	

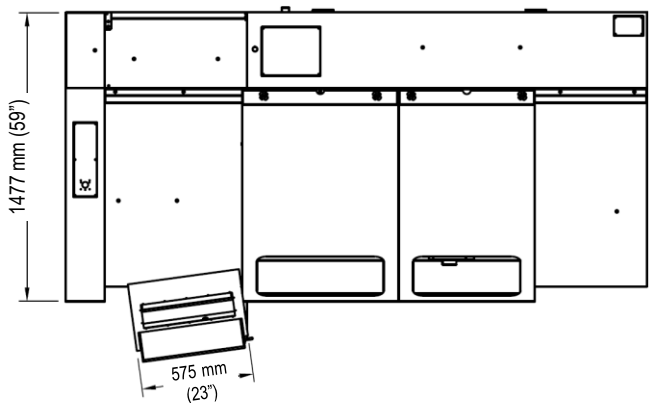
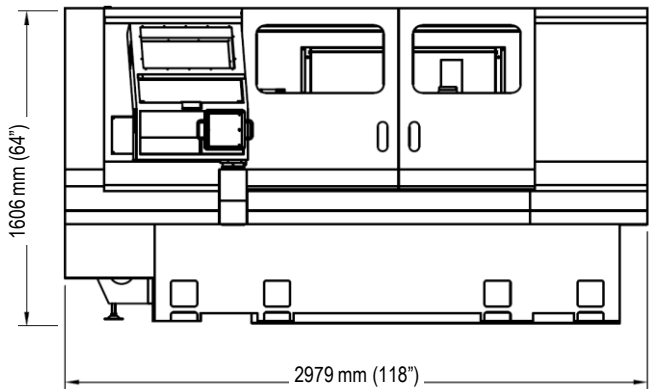
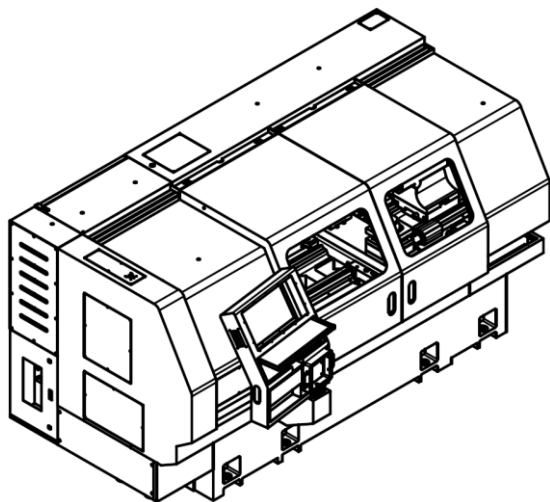
CONTROL SPECIFICATIONS	MACHINE FEATURES	ADDITIONAL OPTIONS
• 12.1"/15.6" Touchscreen LCD Display • 16 GB Program Storage • 2 USB, 1 LAN • EtherCAT Digital Link Interface • MPG Handwheel Operation • ISO G-Code Motion Interpreter Core • Shop Floor Conversational Programming • DXF Drawing Import via Touch • File Send / Receive thru LAN / USB • FTP Networked File Management • Remote Diagnosis & Support • Remote Monitoring and Reporting • Program Retrace, MPG Run • Real Time Tool Path Graphics	• Dual Electronic Handwheel Station • Automatic 4-Way Tool Turret • Air Driven Hydraulic Spindle Disc Brake • Auto Lubrication System • Manual 8", 10", 3-Jaw, 4-Jaw Chuck • Manual Tailstock with Air Float • Fixed and Traveling Steadies • Semi-Auto/Teach-in/Learning Mode • Work Light • Tri-Color Light Post • Flood Coolant System	• Spindle C-Axis Mode with Disc Brake Clamp for fixed C-Axis machining • Synchronous Servo Driven C-Axis for simultaneous C-Axis machining • Secondary Spindle for C-Axis side Drill, Bore, Tap, and Milling. • Hydraulic Chuck • Manual Quick-Change Tool Post • Servo Driven 8-Way Turret VDI-20 • Servo Driven 12-Way Turret VDI-30 / BMT-45



MDL-1600 Dimensions



MDL-1800 Dimensions





MACH

MACHINE TOOLS

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