

DynaPath 

TOOL ROOM MILLS

3-Axis CNC for Job Shops, Tool Rooms, and General Production

Featuring Automatic Tool Changer + Rigid Tapping + Versatile Programming



DynaPath 

VKT Knee Mill

The VK-T Knee Mill is a versatile CNC milling machine for manual and semi-automatic jobs, while also capable of fully automatic CNC operation. It operates quietly with fully direct drive X, Y, Z, and spindle, while saving space with its knee mill frame. It is the ideal machine for garage shops, tool rooms, design or prototyping operations, and light duty manufacturing.

- Featuring a 4-Way Tool Changer.
- Standard peck rigid tapping and peck drilling cycles.
- Standard 40-Taper, 6000 RPM direct-drive spindle with dual winding.
- Standard direct-drive XYZ axis.
- Standard automatic lubrication and automatic coolant systems.
- Standard table-top enclosure, splash guard, and drip pan.
- Standard MPG Handwheel.
- Optional X, Y, and Z axis digital handwheels.
- Optional 4th Axis rotary axis capable of simultaneous motion.



DynaPath WinDelta CNC



- 12.1" LCD touchscreen display
- USB and Networked File Transfer
- Remote Diagnostics and Support

The DynaPath WinDelta control system enables the machine to be operated manually in DRO Mode, by teaching positions and commands in the Semi-Auto Mode, or by running G-Code programs in full Auto Mode. Programs can be created with the built-in Conversational + DXF Editor, or by direct G-Code programming.

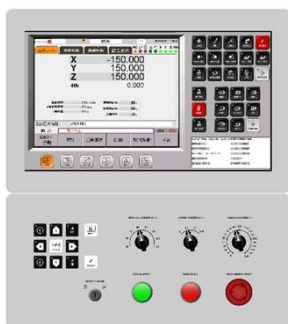
DMC Milling Center

The DMC Milling Center is a general CNC mill for parts production machining. It features linear ways, full enclosure, and an 8-tool ATC. It is the ideal machine for tool rooms, design prototyping shops, and small lot to full production operations that require more machining speed and automation.

- Featuring a 8-Way Tool Changer.
- Standard peck rigid tapping and peck drilling cycles.
- Standard 40-Taper, 8000 RPM belt-drive spindle with dual winding.
- Standard direct-drive XYZ axis.
- Standard automatic lubrication and automatic coolant systems.
- Standard full enclosure, with coolant system and washdown.
- Standard MPG Handwheel.
- Optional 10,000 RPM spindle with coolant through spindle.
- Optional chip auger system.
- Optional 4th Axis rotary axis capable of simultaneous motion.



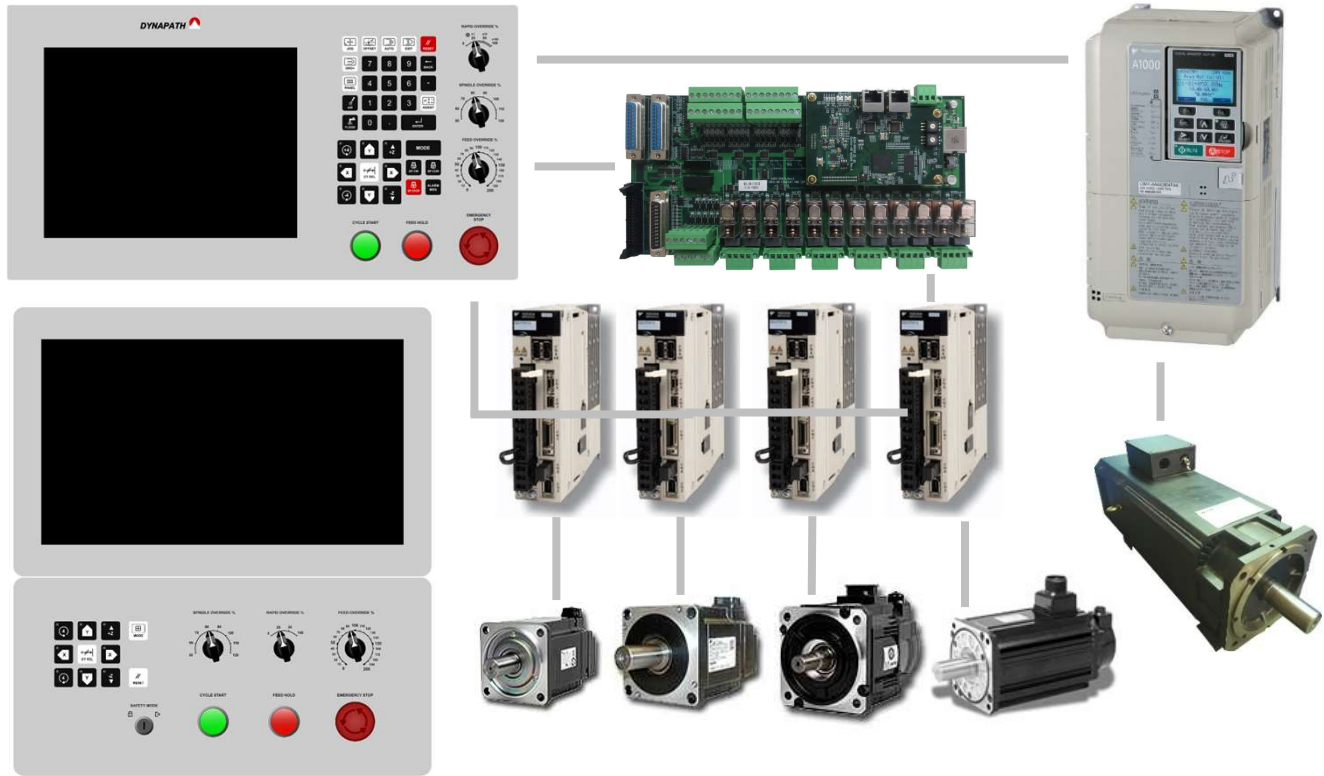
DynaPath WinDelta CNC



- 15.6" LCD touchscreen display
- USB and Networked File Transfer
- Remote Diagnostics and Support

The DynaPath WinDelta control system enables the machine to be operated manually in DRO Mode, by teaching positions and commands in the Semi-Auto Mode, or by running G-Code programs in full Auto Mode. Programs can be created with the built-in Conversational + DXF Editor, or by direct G-Code programming.

DynaPath WinDelta® Control System



CNC Hardware Specifications

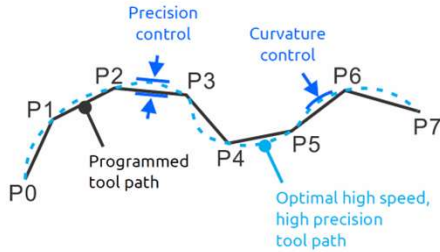
Control	• WinDelta-M CNC	Handwheel	• 8-Function Remote Jog Unit (MPG)
Storage	• 4 GB SSD	Axis Control	• 4-axis simultaneous
Serial Ports	• RS232, RS422/RS485	Standard I/O	• 32 DI/12RO/8SO
Networking	• T10/T100 Ethernet Port	Expansion I/O	• 8DI/20SO
Device Inputs	• 1x PS/2, 2x USB 2.0	Power Input	• 24 VDC
Display	• 12.1"/15.6" LCD Display		
Operating Panel	• Resistive Touch Display		
	• 400 cd/m ² Luminance		
	• D1, D10 Type Console		

Environmental Specifications

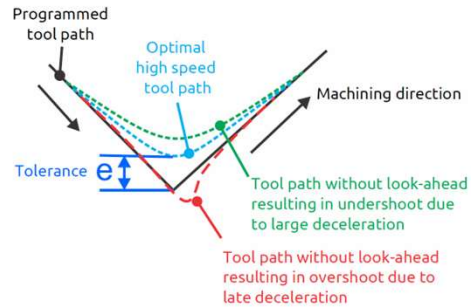
Operating Temp	• 0 to 50 °C (0 to 122 °F)	Vibration	• 16.7 Hz: acceleration of 1.5G
Storage Temp	• -20 to 60 °C (-4 to 140 °F)		• 10 to 57 Hz: amplitude of 0.075 mm
Operating Humidity	• 5% to 85% RH, non-condensing	EMI/EMS	• 57 to 150 Hz: acceleration of 1G
			• 1.5 kV CE certified

Advanced Path Planning with Look Ahead and Feed Forward

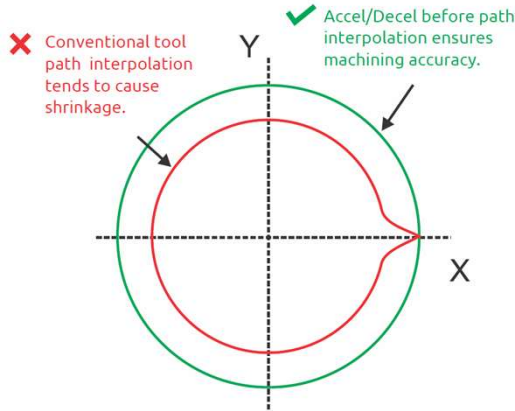
Path Smoothing algorithms provide precision control and curvature control. The result is the optimal tool path for speed and precision.



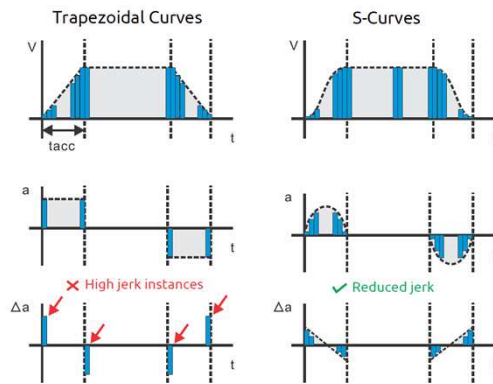
Look Ahead anticipates upcoming programmed motion, and plans the optimal trajectory in real time up to 1000 blocks.



Smart Interpolation ensures machining accuracy by performing acceleration and deceleration before path interpolation.

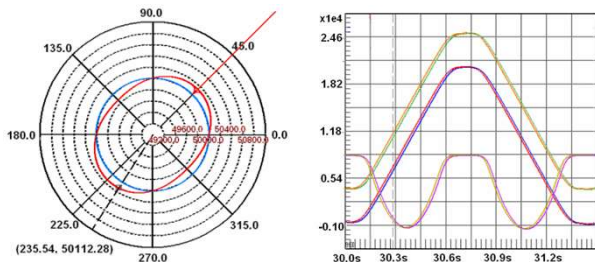


Jerk Reduction is performed by using trapezoidal or S-curve acceleration and deceleration, allowing smoother motion, higher machining speeds, and helps protect against machine wear.



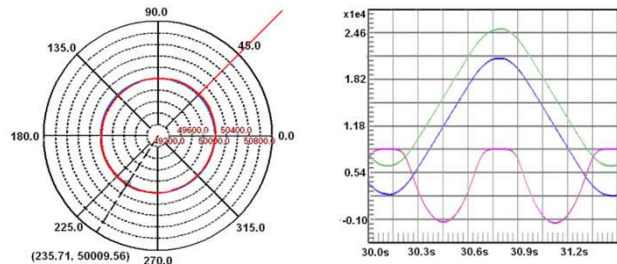
Without Feed Forward and Friction Compensation

XY and Z axes motion accuracy is prone to in correctable position errors, as demonstrated in the following plots on a circular tool path of 28.3mm diameter, at 8 m/min feed rate. In this case the final trajectory has a maximum position error exceeding 20 μm and more than 6 μm reversal spikes are presented.



With Feed Forward and Friction Compensation

XY and Z axes motion accuracy is greatly increased, as demonstrated in the following plots on a circular tool path of 28.3 mm diameter, at 8 m/min feed rate. The final trajectory has a maximum position error within 5 μm and the reversal spikes are less than 2 μm .



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

Semi-Automatic + Conversational Programming + G-Code

SEMI-AUTOMATIC OPERATION

For quick and simple jobs, or work requiring the skilled hands of an experienced machinist, **Semi-Automatic Operation** functionality offers operators the most **friendly and familiar** way to do the job.



DYNAPATH MPG MANUAL 2015-5-25 20:10:07

ABS	REL	MACHINE	
X	91.135	ZERO	+Z
Y	41.983	ZERO	+X
Z	99.669	ZERO	+Y
4th	0.000	ZERO	+Z
QUILL:	0.000		
Z SUM:	99.669	ZERO	
RAPID RATE:	0.0 mm/min	RAPID:	100 %
SPINDLE (S):	0.0 rpm	SPINDLE:	50 %
SPINDLE LOAD:	0.0 %		

Press the following button for manual operation

MESSAGE: Low Air Pressure

JOG MPG INC JOG SPINDLE PANEL BACK

CONVERSATIONAL PROGRAMMING

For general parts and jobs, the **Conversational Editor with DXF Import** enables any operator to generate part programs without writing G-Code, oftentimes faster than it takes to set up for the part.

DYNAPATH J09-AX75B.HNC [Chain Event] 14:35:22

Chain Event Flow > Choose Events > Choose Pattern > Configure Events > Insert Events

MOVE LEFT
MOVE RIGHT
INSERT
REMOVE

High Speed Peck Drill (G73) Drill Cycle (G81) Peck Drill (G83) Left Rigid Tap (G74) Right Tap (G84)

Dead Bore (G76) Counter Bore (G82) Bore (G85) Dead Bore Fixed Spindle (G87) Back Bore (G87)

Dead Spindle Bore and Dwa... Bore Cycle with Dwell (G88)

CHOOSE EVENTS CHOOSE PATTERN CONFIG EVENTS INSERT EVENTS CANCEL

DYNAPATH Demo.HNC [Event Configuration] 11:46:06

N062 [Irregular Pocket]

Parameters

"Item is 'Irregular Pocket'."

Key	Value	Description
All	-	Irregular Pocket
T	↑	Tool ID
TH	0	Tool length comp.
TD	8.	Tool diameter
RP	1.	Plunge height
WP	0.	Start depth
D	1.	End depth
L	0.5	Peck increment

Complex Pocket

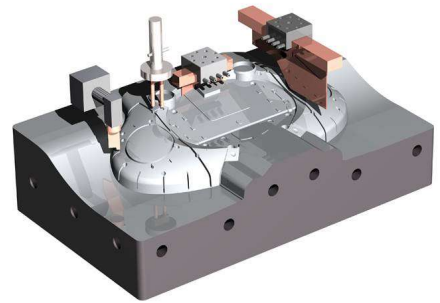
IMPORT PATH ADVANCED PARAMS EDIT PATH BACK

DYNAPATH Demo.HNC [Select Event Path] 11:42:17

OPEN DRAWING IMPORT BOLT HOLE IMPORT CONTOUR IMPORT POCKET BACK

CAD/CAM G-CODE

For CAD/CAM users, simply post-process to standard **ISO/EIA G-Code**, then send the program via **USB or networked file transfer** to the control, and fully leverage the power of CNC production.



DYNAPATH EDIT G-Code 2015-09-12 17:24:16

demo.HNC

```

11 N61 G80;
12 N62 M06 T01;
13 N63 G49;
14 N64 M03 S300;
15 N66 G00 X0.0095 Y0.0000 Z10.0000;
16 N67 G00 Z10.0000;
17 N102 G17;
18 N103 G00 X0.0095 Y0.0000 Z10.0000;
19 N105 G00 X0.0095 Y0.0000 Z1.0000;
20 N106 G01 X0.0095 Y0.0000 Z-1.0000 F200;
21 N107 G01 X0.0095 Y0.0000 Z-1.0000 F200;
22 N108 G01 X0.0095 Y0.0000 Z-1.0000 F200;
23 N109 G01 X0.5085 Y0.0000 Z-1.0000 F200;
24 N110 G00 X-0.5085 Y0.0000 Z-1.0000 I-0.5085 J0.0000;
25 N111 G00 X0.5085 Y0.0000 Z-1.0000 I0.5085 J0.0000;
26 N112 G01 X1.0075 Y0.0000 Z-1.0000 F200;
27 N113 G02 X-1.0075 Y0.0000 Z-1.0000 I-1.0075 J0.0000;
28 N114 G00 X1.0075 Y0.0000 Z-1.0000 I1.0075 J0.0000;
29 N115 G01 X1.5065 Y0.0000 Z-1.0000 F200;
30 N116 G02 X-1.5065 Y0.0000 Z-1.0000 I-1.5065 J0.0000;
31
    
```

FILE MANAGER REFRESH PREVIEW SAVE AS SAVE BACK

DYNAPATH MEM SIMULATION 2016-2-25 16:01:03

Program Name: J09-AX75B.HNC Cycle Time: 0 H 11 M 6 S

MACHINE: X 844.417 Y -172.270 Z 0.000 T Code: 0

ABSOLUTE: X -142.161 Y -37.886 Z 271.674

Feederate(F): 0.0 mm/min Spindle(S) 0.0 rpm

Line No: 0

J09-AX75B.HNC

Created time: 15:43:20 02/25/16

ToolID: 0, Diameter is 2.0000, Len N11 G80 S749#0;

N12 G90 G40 G49 G80 G17 G90;

IN010 [GroupName]Pocket 1.

IN020 [Irregular Pocket]TO TH1 TC

N60 G80 S749#0.0010;

N61 M03 S1500;

N63 G00 Z10.0000;

N64 G00 X57.8538 Y111.9636;

N103 G17;

View Size CLEAR

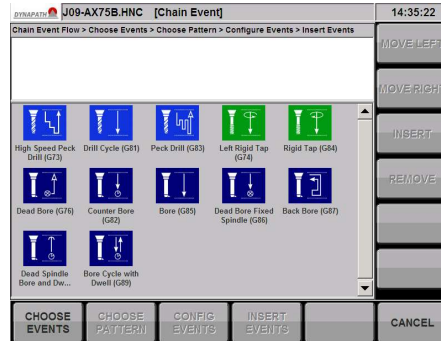
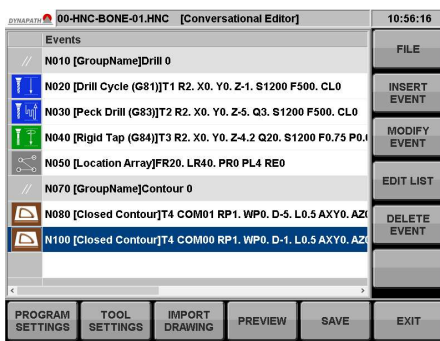
XOY KOZ YOZ ISO

MESSAGE:

BACK

DynaPath WinDelta® Programming

Conversational Programming + DXF Import + G-Code Editing

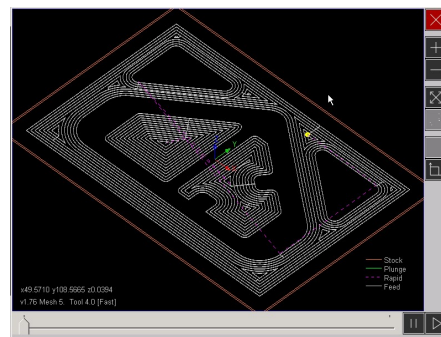
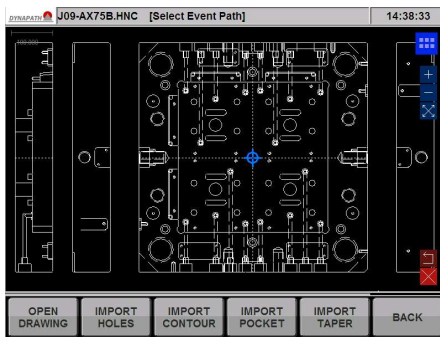
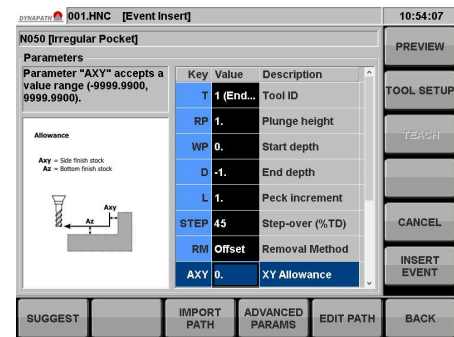
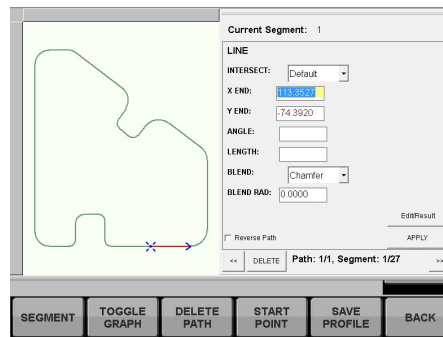


Conversational Event Based Programming allows making part programs by simply choosing machining events and configuring its parameters, without having to write G-Code.

Built-in Events include standard drill, bore, tap, contour, pocket, helix, pattern, setup, 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.

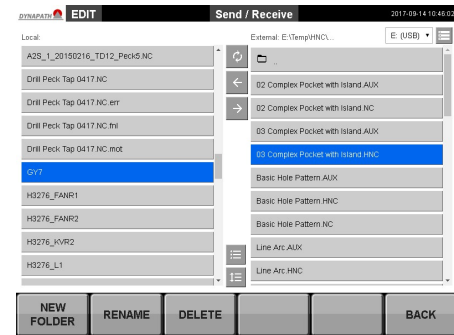
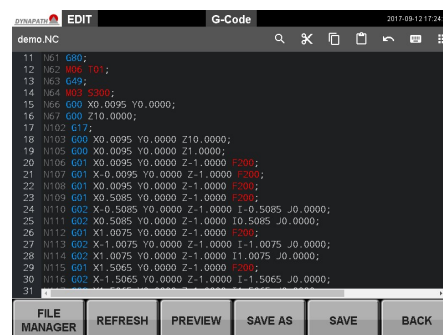


DXF Drawing Import allows direct geometry import from CAD drawings via an intuitive, touchscreen interface, saving programming time and reducing errors.

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

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

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



VKT KNEE MILL SPECIFICATIONS

SPECIFICATION		VKT-3T	VKT-4T
AXES	XYZ TRAVEL	700 x 310 x 150 mm (27.5" x 12.2" x 7.8")	900 x 340 x 150 mm (35.4" x 13.3" x 7.8")
	AXES TYPE X/Y/Z	Dove / Dove / Linear	Dove / Dove / Linear
	KNEE TRAVEL (Z)	350 mm (13.7")	
	SPINDLE NOSE TO TABLE	100-400 mm (3.9-15.7")	
	TOOL TO COLUMN	360 mm (14.2")	
	MOTORS X/Y/Z	0.85 / 0.85 / 0.85 kW Direct Drive	
SPINDLE	DIAMETER	120 mm (4.7")	120 mm (4.7")
	RPM	50-6000 RPM	50-6000 RPM
	DRIVE METHOD	Direct	Direct
	TAPER	BT40 / CAT40	
	MOTOR	5 HP (3.75kW) Direct Drive	
	RATED TORQUE	24 N-m (17.7 ft-lb")	
ATC	TOOL CHANGER	4-Stations	4-Stations
MOTION	MAX RAPID SPEED X/Y/Z	6000 mm/min (230 IPM)	6000 mm/min (230 IPM)
	POSITIONING ACCURACY	20 µm (0.000787")	
	REPEAT ACCURACY	10 µm (0.000394")	
TABLE	TABLE SIZE	1270 x 320 mm (50" x 12.6")	1470 x 320 mm (57.9" x 12.6")
	SLOTS x OFFSET x WIDTH	3 x 65 mm x 16 mm (3 x 2.9/16 x 5/8)	3 x 75 mm x 16 mm (3 x 2.9/16 x 5/8)
	MAX TABLE LOAD	220 kg (480 lbs)	
SIZE	MACHINE L x W x H	1800 x 1600 x 2300 mm (71" x 63" x 91")	2000 x 1800 x 2300 mm (79" x 71" x 91")
	FLOOR SPACE L x W x H	2400 x 1600 x 2650 mm (95" x 63" x 105")	2600 x 1800 x 2650 mm (103" x 71" x 105")
	MACHINE WEIGHT	1600 kg (3520 lbs)	1800 kg (3960 lbs)
INSTALL	COOLANT CAPACITY	20 L (5 gal)	
	AIR REQUIREMENTS	6 kg/cm ² (90 psi)	
	POWER REQUIREMENTS	8 kVA, 3 Phase, 220V	

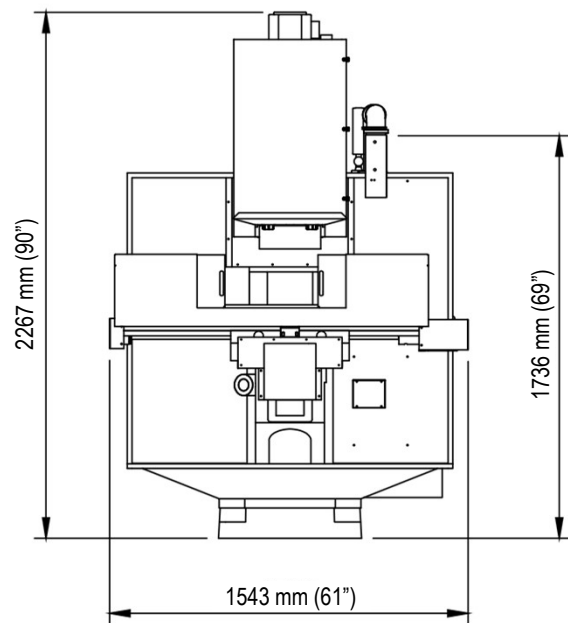
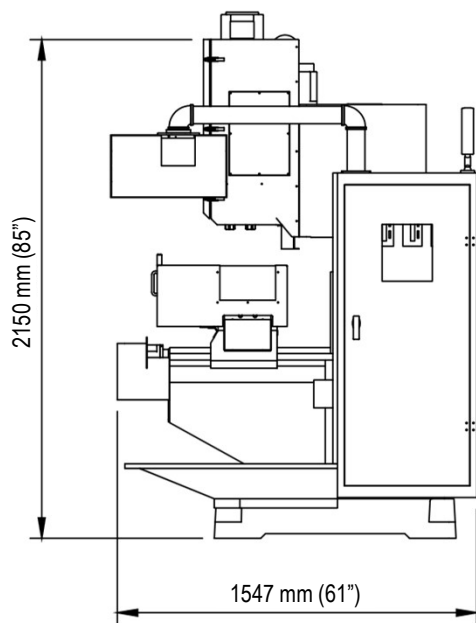
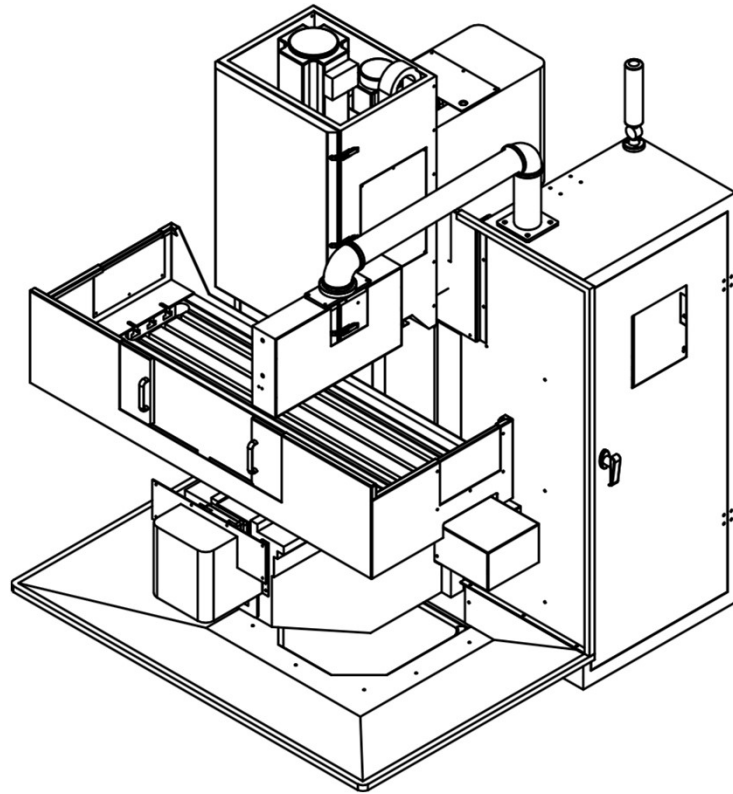
CONTROL SPECIFICATIONS	MACHINE FEATURES	ADDITIONAL OPTIONS
<ul style="list-style-type: none"> • 12.1" Touchscreen LCD Display • 4 GB Program Storage • 2 USB, 1 LAN • 4-Axis Synchronous • 4th Axis Rotary Table Optional • DRO Operation • ISO G-Code Motion Interpreter Core • Shop Floor Conversational Programming • DXF Drawing Import via Touch • File Send / Receive thru LAN / USB • FTP Networked File Transfer • Remote Diagnosis & Support • Remote Monitoring and Reporting • 500 Block Look Ahead • Program Retrace, MPG Run 	<ul style="list-style-type: none"> • Automatic 4-Way Tool Changer • CNC Rigid Tapping • Z-Axis CNC Controlled Quil • C3 Class Precision Ball Screws • Manual Table Height Crank • Auto Lubrication System • Air/Flood Coolant System • Table Top Enclosure • Splash Guard • Coolant Drip Pan • Way Covers • LED Work Light • Power Tool Clamp Draw Bar • Tools and Toolbox • One Year Warranty on All Parts 	<ul style="list-style-type: none"> • Power Table Height Elevator • 4th Axis Rotary Table • Independent X, Y axis digital handwheels

DMC MILLING CENTER SPECIFICATIONS

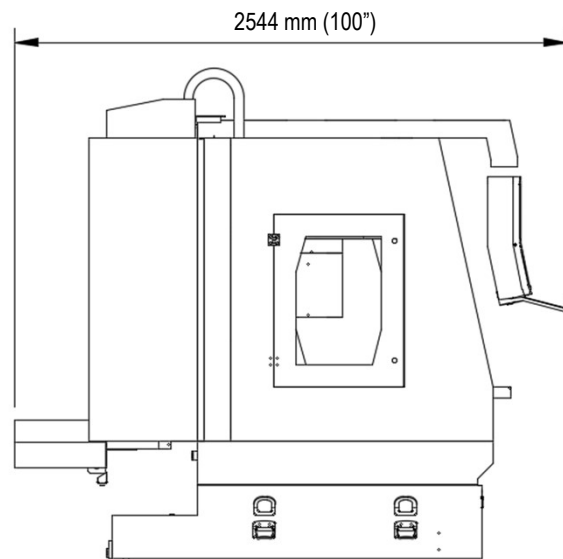
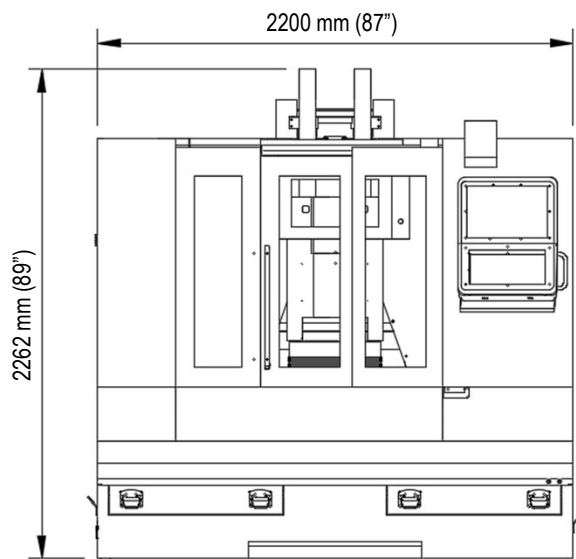
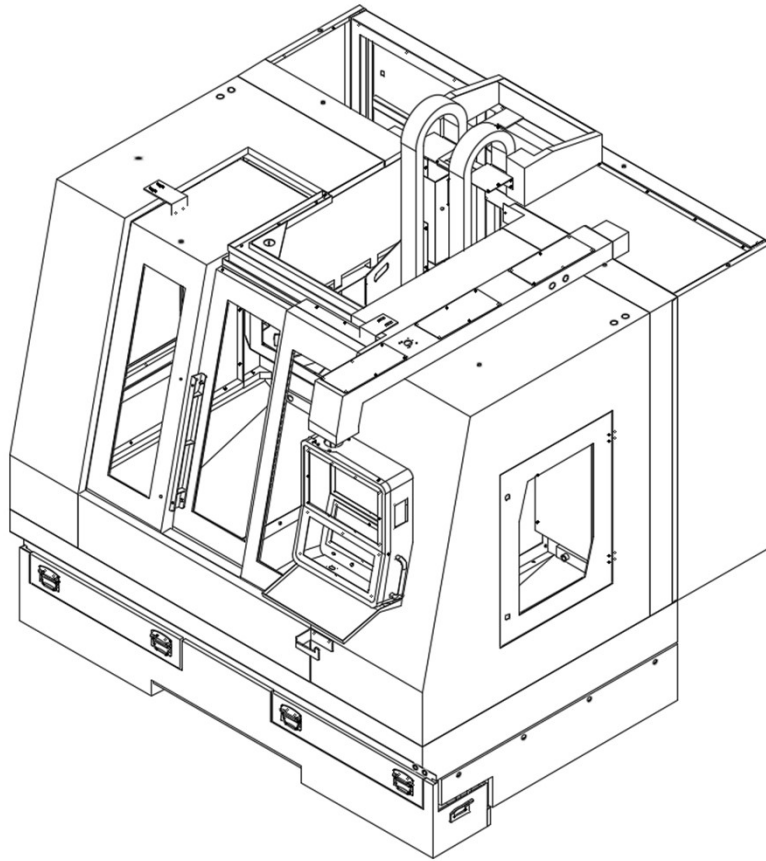
SPECIFICATION		DMC-845L	DMC-845LS
AXES	XYZ TRAVEL	800 x 400 x 500 mm (31.4" x 15.7" x 19.6")	
	AXES TYPE X/Y/Z	Linear Roller / Linear Roller / Linear Roller	
	SPINDLE NOSE TO TABLE	110 - 535 mm (4.3-21.0")	
	TOOL CENTER TO COLUMN	435 mm (17.1")	
	MOTORS X/Y/Z	0.85 / 0.85 / 1.3 kW Direct Drive	
SPINDLE	DIAMETER	127 mm (5.0")	
	TAPER	BT40 / CAT40	
	RPM	50-8000 RPM	50-12,000 RPM
	TYPE	Belt Drive	Direct Drive + Thru-Spindle Coolant
	POWER	5.5 kW (7 HP)	7.5 kW (10 HP)
	MAX TORQUE	36 N-m (26 ft-lbf)	48 N-m (35 ft-lbf)
	COOLING	Air	Oil Chiller
ATC	TOOL CHANGER	8-Station Independent Arm	
	MAX TOOL DIA / WEIGHT	Ø63 mm (Ø2.4") / 5 kg (11.0 lbs)	
MOTION	MAX RAPID SPEED X/Y/Z	20 m/min (787 IPM)	
	MAX CUTTING FEED X/Y/Z	10 m/min (393 IPM)	
	POSITIONING ACCURACY	0.012 mm (0.00020")	
	REPEAT ACCURACY	0.006 mm (0.00012")	
TABLE	TABLE SIZE	850 x 420 mm (33.5" x 16.5")	
	SLOTS x OFFSET x WIDTH	4 x 85 mm x 18 mm (4 x 3"11 x 45/64)	
	MAX TABLE LOAD	200kg (440 lbs)	
INSTALL	FLOOR SPACE W x L x H	2200 x 2200 x 2310 mm (87" x 87" x 91")	
	SHIPPING / MACHINE WEIGHTS	3800 kg (8360 lbs) / 3050 kg (6710 lbs)	
	COOLANT CAPACITY	200 L (52 gal)	
	AIR REQUIREMENTS	6 kg/cm ² (90 psi)	
	POWER REQUIREMENTS	15 kVA, 3 Phase, 220V	

CONTROL SPECIFICATIONS	MACHINE FEATURES	ADDITIONAL OPTIONS
<ul style="list-style-type: none"> • 15.6" Touchscreen LCD Display • 4 GB Program Storage • 2 USB, 1 LAN • 4-Axis Synchronous • 4th Axis Rotary Table Optional • DRO 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 Transfer • Remote Diagnosis & Support • Remote Monitoring and Reporting • 500 Block Look Ahead • Program Retrace, MPG Run 	<ul style="list-style-type: none"> • Automatic 8-Way Tool Changer • CNC Rigid Tapping • C3 Class Precision Ball Screws • Auto Lubrication System • Full Enclosure • Flood Coolant System & Chip Recovery Tray • LED Work Light • Tri-color Light Post • Tools and Toolbox • One Year Warranty on All Parts 	<ul style="list-style-type: none"> • 12,000 RPM Direct Drive Spindle with Through Spindle Coolant (TSC) • 4th Axis Rotary Table • Tool Setter System • Spindle Probe System • Chip Auger System

VKT Dimensions



DMC Dimensions





Your Representative

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2022-08

