



TORMACH®

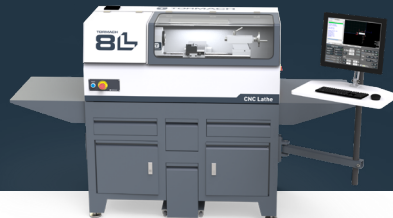


EMPOWERING PEOPLE WHO MAKE THINGS

MACHINE PACKAGES COMPARISON

TORMACH

8L CNC LATHE PACKAGES



8L CNC LATHE PRECONFIGURED PACKAGES		ENTRY PACKAGE	DELUXE PACKAGE	PREMIUM PACKAGE
MACHINE				
8L CNC Lathe with Enclosure		✓	✓	✓
8L CNC Lathe Stand			✓	✓
8L CNC Lathe Owner's Kit	Quick Change Tool Post and Stud (Size 0XA)	✓	✓	✓
	Operator's Manual			
	All Required Cables			
	Machine Lifting Hardware			
	USB 2.0 Hub			
	Coolant Tube			
SYSTEM CONTROL				
8L Lathe PathPilot Operator Console				✓
PathPilot Controller		✓	✓	
Standard LCD Monitor			✓	
Controller Arm (Adjustable Swing Arm) / Waterproof Mini Keyboard / Waterproof Mouse / Cable Kit / Wireless Network Adapter			✓	✓
Jog Shuttle Controller			✓	
Jog Pendant				✓
COOLANT SYSTEM				
8L Stand Coolant Kit (Includes One Gallon QualiChem XTREME CUT 251C)				✓
8L Desktop Coolant Kit (Includes One Gallon QualiChem XTREME CUT 251C)				Included in 8L Stand Coolant Kit
QualiChem XTREME CUT 251C				
Portable Coolant Tester Refractometer				
WORKHOLDING				
Available in 8L Machine Builder on tormach.com	• 4 in. Precision 3-Jaw Chuck (5C Mount) • 4 in. Precision 4-Jaw Chuck (5C Mount) • 5C Square Collet Set (11 Pieces) • 5C Round Collet Set (35 Pieces) • 5C Hex Collet Set (13 Pieces) • 5C Round Collet Set (18 Pieces) • Interchangeable Point Live Center Set			
LATHE TOOL HOLDING				
0XA Tool Holder Kit for 8L			✓	✓
TOOLING				
Deluxe Professional Lathe Tool Kit for RapidTurn and 8L			✓	✓
Available in 8L Machine Builder on tormach.com	• 3-Piece STFCR Boring Bar Set • 1/16 in. - 1/2 in. Machine Length Drill Set			
MEASUREMENTS AND OFFSETS				
Available in 8L Machine Builder on tormach.com	• Haimer CENTRO Precision Centering Device • Basic 3-Piece Indicator Set • Digital Micrometer • Digital Caliper			
CONSUMABLES				
Machine Way Oil (1 Gallon)				

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SPEC SHEET

8L CNC LATHE MACHINE

TORMACH.COM/8L

SPINDLE

Spindle Power	1.5 hp (1.11 kW)
Spindle Speed	Low: 180 to 2,500 rpm High: 350 to 5,000 rpm
Through Spindle Bore	1 in. (25.4 mm)
Maximum Workpiece Length	10 in. (254 mm) with tailstock
Maximum Stock Over Bed	8 in. (200 mm)
Maximum Stock Over Carriage	4 in. (100 mm)
Spindle Nose	5C

TAILSTOCK

Taper	MT2
Diameter	0.9 in. (22 mm)
Travel	2.2 in. (55 mm)

TRAVELS

X-Axis	4.5 in. (114 mm)
Z-Axis	10 in. (330 mm) with tailstock

MOTION

X- and Z-Axis Maximum Feed Rate	150 IPM (3.8 m/min)
Axis Drivers (X,Z)	High-Performance Polyphase Stepper Motors with Leadshine® Microstepping Drivers

POWER

Power Requirements	Single-Phase 115 Vac, 50/60 Hz, 15A breaker
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MACHINE SPECIFICATIONS

Carriage Length × Width	7.25 in. × 4 in. (185 mm × 102 mm)
Machine Footprint	50 in. × 26 in. (1.2 m × 0.7 m)
Typical System Weight	838 lbs. (380 kg)
Maximum Swing Over Bed	8 in. (200 mm)
Maximum Swing Over Carriage	4 in. (100 mm)
Maximum System Height with Door Open	66 in. (1.6 m)
Overall System Height	52 in. (1.3 m)

WARRANTY

1-Year Warranty against defects in material and workmanship. Extended Warranty available.

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8L



ACCESSORIES

Quick Change Tool Post (Standard)
Full Enclosure (Standard)
Machine Stand (Optional)
Coolant (Optional)

MACHINE CONTROLLER

POWERED BY PathPilot® A Better User Experience	User-friendly design
	Intuitive conversational programming
PathPilot® HUB PathPilot HUB is a browser-based, full-featured PathPilot simulator, producing usable G-Code.	Features: • Rigid Tapping • Threading • Constant Surface Speed
	Usable G-Code Memory: PathPilot Controller: 80 GB PathPilot Operator Console: 40 GB
	Built-in Dropbox™ support for seamlessly transferring programs

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SPEC SHEET

15L CNC LATHE MACHINE

TORMACH.COM/15L

15L *Slant* PROTM CNC LATHE



SPINDLE

Spindle Power	3 hp (2.24 kW)
Spindle Speed	100 to 3500 RPM
Spindle Taper	5C (with removable insert)
Spindle Bore Diameter	1.53 in. (38.86 mm) (with 5C insert removed)
Spindle Nose	D1-4 Camlock Mount

MOTION

Max Feed Rate	100 IPM (2.54 m/min) (X) 100 IPM (2.54 m/min) (Z)
Axis Drivers (X,Z)	High-Performance Polyphase Stepper Motors with Leadshine® Microstepping Drivers

POWER

Power Required (Primary)	230 Vac single-phase, 20A breaker
Power Required (Secondary)	115 Vac single-phase, 20A breaker

MACHINE SPECIFICATIONS

Recommended Footprint	72 in. x 42 in. (1829 mm x 1067 mm)
Typical System Weight	1800 lbs.
Swing Over Bed	15 in. (381 mm) Diameter
Swing Over Carriage	6.2 in. (157.5 mm) Diameter
X-Axis Travel	10 in. (254 mm)
Z-Axis Travel	12 in. (305 mm)
Recommended Chuck Size	6 in. (152 mm)

WARRANTY

1 Year Warranty against defects in material and workmanship.
Extended Warranty available.

OPTIONAL ACCESSORIES

8-Station Turret
Gang Tooling System
Quick Change Tool Post
Full Enclosure
Automatic 5C Collet Closer

MACHINE CONTROLLER

POWERED BY PathPilot[®] A Better User Experience PathPilot[®] HUB PathPilot HUB is a browser-based, full-featured PathPilot simulator, producing usable G-Code.	User-friendly design
	Intuitive conversational programming
	Features: • Rigid Tapping • Threading • Constant Surface Speed
	Usable G-Code Memory: Brix Controller: 80 GB
	Built-in Dropbox [™] support for seamlessly transferring programs

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SPEC SHEET

xSTECH CNC ROUTER MILL

TORMACH.COM/XSTECH



**The ideal machine for
socially distant learning**



TRAVELS

X-Axis	8.6 in. (220 mm)
Y-Axis	6.3 in. (160 mm)
Z-Axis	2.4 in. (61 mm)

SPINDLE

Spindle Power	120 W (0.12 kW) Brushless DC
Maximum Speed	20,000 RPM
Spindle Taper	ER11
Noise Level (No Load Operation)	<66 db(A)
Repositioning Accuracy	0.004 in (0.10 mm)

POWER

Power Required	Single-Phase 230 Vac, 50/60 Hz
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MACHINE SPECIFICATIONS

Table Size	12.6 in. × 5.9 in. (320 mm × 150 mm)
Typical System Footprint	15.4 in. × 15.7 in. (391 mm × 399 mm)
Overall System Height	16.7 in. (424 mm)
Typical System Weight	33 lb (14.9 kg)
Maximum Table Load Weight	6.6 lb (3 kg)

WARRANTY

1 Year Warranty against defects in material and workmanship.

HIGHLIGHTED FEATURES

Fully-Enclosed with Safety Door Switch
Tormach PathPilot® Control System with Keyboard, Mouse, Touchscreen, and Tormach Jog Shuttle
ER11 Collet Uses Popular 1/8 inch, 1/4 inch, 4 mm, or 6 mm Tool Shanks
Starter Tooling Set with WER Collets and End Mills
Integrated Tool Setter
Laser Alignment System for XY Positioning
Clamp Kit

MACHINE CONTROLLER

POWERED BY PathPilot® A Better User Experience PathPilot® HUB PathPilot HUB is a browser-based, full-featured PathPilot simulator, producing usable G-Code.	User-friendly design
	Support for up to 4-axis continuous machining
	Intuitive conversational programming
	Usable G-Code Memory: Touchscreen Controller: 8 GB
Built-in Dropbox™ support for seamlessly transferring programs	

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SPEC SHEET

24R CNC ROUTER

TORMACH.COM/24R

TRAVELS

X-Axis	24.75 in. (625 mm)
Y-Axis	55.75 in. (1415 mm)
Z-Axis	6.70 in. (170 mm)

SPINDLE

Spindle Power	2 hp (1.5 kW)
Spindle Type	Electrospindle
Minimum Speed	10,000 RPM
Maximum Speed	24,000 RPM
Cooling	Water-Cooled (Chiller Included)
Spindle Taper	ER20
Thread Machining	Thread Mill

MAXIMUM FEED RATE

X-, Y-, and Z-Axis	200 in./min (5.0 m/min)
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POWER

Power Required	Single-Phase 115 Vac, 50/60 Hz, 15A breaker
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MACHINE SPECIFICATIONS

Table Type	Integrated Vacuum Table
Table Size	26.7 in. x 65 in. (680 mm x 1650 mm)
Gantry Clearance	6 in. (154 mm)
Machine Footprint	72 in. x 39 in. (1.8 m x 1 m)
Overall System Height	76.5 in. (1.9 m)
Typical System Weight	900 lb (408 kg)

LINEAR MOTION COMPONENTS

Axis Motion	Ballscrew and Stepper Driver
Guideways	Precision Linear Guideway

MACHINE CONSTRUCTION

Stand	Welded Steel (Included)
Machine Base	Cast Iron
Gantry	Aluminum

RESOLUTION AND ACCURACY

Resolution	0.00025 in. (0.006 mm)
Ball Screw Positional Accuracy	±0.002 in./ft. (±0.167 mm/m)
Repeatability	±0.001 in. (±0.02 mm)

WARRANTY

1 Year Warranty against defects in material and workmanship.
Extended Warranty available.

TORMACH®

24R



ACCESSORIES

Dust Shoe (Included)
Electronic Tool Setter (Optional)
Vacuum Pump (Optional)

MACHINE CONTROLLER

POWERED BY PathPilot® A Better User Experience	User-friendly visual interface
	3D toolpath preview
	Support for up to 4-axis continuous machining
	Automatic spindle speed control
PathPilot® HUB PathPilot HUB is a browser-based, full-featured PathPilot simulator, producing usable G-Code.	Compatible with standard G-Code Usable G-Code Memory: 80 GB
	Intuitive conversational programming
	Built-in Dropbox™ support for seamlessly transferring programs

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MACHINE PACKAGES COMPARISON

TORMACH® 770M CNC MILL PACKAGES



770M PRECONFIGURED PACKAGES		ENTRY	STARTER	STANDARD	PREMIUM
MACHINE					
770M Mill		✓	✓	✓	✓
770M Stand / Chip Tray / Backsplash Kit / Lifting Bar Kit			✓	✓	✓
Oiler Style		Manual	Manual	Manual	Manual
ENCLOSURE					
770M Enclosure Kit				✓	✓
CONTROLLER					
PathPilot Operator Console (Includes Touchscreen and Hand-Held Jog Pendant)					
PathPilot Controller w/ Wi-Fi Network Adapter		✓	✓	✓	✓
Monitor	Touchscreen Monitor				✓
	Standard LCD Monitor		✓	✓	
Waterproof Mini Keyboard / Waterproof Mouse / Jog Shuttle Controller / Controller Arm			✓	✓	✓
TOOL CHANGING					
Automatic 10-Tool Changer Kit for 770M (Requires Power Drawbar)					✓
Power Drawbar Kit				✓	✓
4TH AXIS					
Available as an Option with 4 in., 6 in., and 8 in. diameters					
COOLANT SYSTEMS					
Flood Coolant Kit (1/8 hp)					
FogBuster® Coolant Kit (230 Vac)					✓
SmartCool™ Coolant Kit (Requires Flood Coolant Kit)					
WORK PROBE & TOOL SETTER					
Passive Probe					✓
Digitizing Probe					
Haimer 3D-Sensor New Generation Kit (Metric)					
Electronic Tool Setter					✓
WORKHOLDING/FIXTURING					
5 in. CNC Vise			✓	✓	✓
5 in. Machinist Vise					
Clamp Kit for 5/8 in. T-Slots				✓	
TOOL HOLDING					
TTST™ CNC Operator Set with Tormach Tool Assistant			✓	✓	✓
TTST™ Metric Tool Holder Set					
TOOLING					
End Mill Kit for Aluminum #1				✓	✓
End Mill Kit for Steel #1				✓	
1/16 in. - 1/2 in. Jobber Machine Drill Set					
CONSUMABLES					
Machine Way Oil (1 Gallon)			✓	✓	✓
QualiChem XTREME CUT 251C Semi-Synthetic Coolant					
DuraKut 9000B Mist Coolant					✓

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SPEC SHEET

770M CNC MILLING MACHINE

TORMACH.COM/770M

TRAVELS

X-Axis	14 in. [356 mm]
Y-Axis	7.5 in. [191 mm]
Z-Axis	13.25 in. [337 mm]

SPINDLE

Spindle Power	1.5 hp (1.12 kW)
Maximum Speed	10,000 RPM
Transmission	Poly-V Belt
Spindle Taper	R8
Thread Machining	• Tension/Compression • Auto-Reversing • Thread Mill

MAXIMUM FEED RATE

X- and Y-Axis	135 IPM [3.43 m/min]
Z-Axis	110 IPM [2.79 m/min]

POWER

Power Required	Single-Phase 115 Vac, 50/60 Hz, 15A breaker
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MACHINE SPECIFICATIONS

Table Size	26 in. × 8 in. [660 mm × 203 mm]
Table Slots	5/8 in. [15.9 mm] (three slots)
Spindle Nose to Table Max Clearance	13.25 in. [337 mm]
Spindle Centerline to Machine Column	8.6 in. [218 mm]
Typical System Footprint	56 in. × 48.5 in. [1422 mm × 1232 mm]
Overall System Height	88 in. [2235 mm]
Typical System Weight	950 lbs. [431 kg]
Maximum Weight on Table	500 lbs. [227 kg]

FRAME

Frame and Table	Cast iron frame and table, with hand-scraped hydrodynamic ways and tapered adjustment gibs
Way Surfaces	Low-friction PTFE-filled, Acetyl-bonded sliding surface. Similar to Rulon® and Turcite®.

WARRANTY

1 Year Warranty against defects in material and workmanship. Extended Warranty available.



OPTIONAL ACCESSORIES

Automatic Tool Changer
Power Drawbar
4th Axis
SmartCool™ Coolant System
RapidTurn™ Chucker Lathe Accessory
PathPilot® Operator Console
Full Enclosure
High-Speed Spindle

MACHINE CONTROLLER

POWERED BY PathPilot® A Better User Experience PathPilot® HUB PathPilot HUB is a browser-based, full-featured PathPilot simulator, producing usable G-Code.	User-friendly design
	Support for up to 4-axis continuous machining
	Intuitive conversational programming
	Usable G-Code Memory: Brix Controller: 80 GB PathPilot Operator Console: 40 GB
	Built-in Dropbox™ support for seamlessly transferring programs



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SPEC SHEET

770MX CNC MILLING MACHINE

TORMACH.COM/770MX

TRAVELS

X-Axis	14 in. (356 mm)
Y-Axis	7.5 in. (191 mm)
Z-Axis	13.25 in. (337 mm)

SPINDLE

Spindle Power	1.5 hp (1.12 kW)
Maximum Speed	10,000 RPM
Transmission	Poly-V Belt
Spindle Taper	BT30
Thread Machining	• Rigid Tapping • Tension/Compression • Thread Mill

MAXIMUM FEED RATE

X- and Y-Axis	300 IPM (7.62 m/min)
Z-Axis	250 IPM (6.35 m/min)

POWER

Power Required	Single-Phase 115 Vac, 50/60 Hz, 15A breaker
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MACHINE SPECIFICATIONS

Table Size	26 in. x 8 in. (660 mm x 203 mm)
Table Slots	5/8 in. (15.9 mm) (three slots)
Spindle Nose to Table Max Clearance	12.75 in. (324 mm)
Spindle Centerline to Machine Column	8.6 in. (218 mm)
Typical System Footprint	56 in. x 48.5 in. (1422 mm x 1232 mm)
Overall System Height	88 in. (2235 mm)
Typical System Weight	950 lbs. (431 kg)
Maximum Weight on Table	500 lbs. (227 kg)

FRAME

Frame and Table	Cast iron frame and table, with hand-scraped hydrodynamic ways and tapered adjustment gibs
Way Surfaces	Low-friction PTFE-filled, Acetyl-bonded sliding surface. Similar to Rulon® and Turcite®.

WARRANTY

1 Year Warranty against defects in material and workmanship. Extended Warranty available.



ACCESSORIES

Automatic Tool Changer
PathPilot Operator Console
4th Axis
SmartCool™ Coolant System
RapidTurn® Chuck Lathe Accessory

MACHINE CONTROLLER

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SPEC SHEET

1100M CNC MILLING MACHINE

TORMACH.COM/1100M

TRAVELS

X-Axis	18 in. (457 mm)
Y-Axis	11 in. (279 mm)
Z-Axis	16.25 in. (413 mm)

SPINDLE

Spindle Power	2 hp (1.49 kW)
Maximum Speed	7500 RPM
Transmission	Poly-V Belt
Spindle Taper	R8
Thread Machining	• Tension/Compression • Auto-Reversing • Thread Mill

MAXIMUM FEED RATE

X- and Y-Axis	110 IPM (2.79 m/min)
Z-Axis	90 IPM (2.29 m/min)

POWER

Power Required	Single-Phase 230 Vac, 50/60 Hz, 20A breaker
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MACHINE SPECIFICATIONS

Table Size	34 in. x 9.5 in. (863 mm x 241 mm)
Table Slots	5/8 in. (15.9 mm) (three slots)
Spindle Nose to Table Max Clearance	17 in. (432 mm)
Spindle Centerline to Machine Column	11 in. (279 mm)
Typical System Footprint	69 in. x 56.5 in. (1753 mm x 1435 mm)
Overall System Height	96 in. (2439 mm)
Typical System Weight	1600 lbs. (726 kg)
Maximum Weight on Table	500 lbs. (227 kg)

FRAME

Frame and Table	Cast iron frame and table, with hand-scraped hydrodynamic ways and tapered adjustment gibs
Way Surfaces	Low-friction PTFE-filled, Acetyl-bonded sliding surface. Similar to Rulon® and Turcite®.

WARRANTY

1 Year Warranty against defects in material and workmanship. Extended Warranty available.



OPTIONAL ACCESSORIES

Automatic Tool Changer
Power Drawbar
4th Axis
SmartCool™ Coolant System
RapidTurn™ Chucker Lathe Accessory
Full Enclosure
High-Speed Spindle

MACHINE CONTROLLER

POWERED BY PathPilot® A Better User Experience PathPilot® HUB PathPilot HUB is a browser-based, full-featured PathPilot simulator, producing usable G-Code.	User-friendly design
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	Intuitive conversational programming
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SPEC SHEET

1100MX CNC MILLING MACHINE

TORMACH.COM/1100MX

TRAVELS

X-Axis	18 in. (457 mm)
Y-Axis	11 in. (279 mm)
Z-Axis	16.25 in. (413 mm)

SPINDLE

Spindle Power	2 hp (1.49 kW)
Maximum Speed	10,000 RPM
Transmission	Poly-V Belt
Spindle Taper	BT30
Thread Machining	• Rigid Tapping • Tension/Compression • Thread Mill

MAXIMUM FEED RATE

X- and Y-Axis	300 IPM (7.62 m/min)
Z-Axis	230 IPM (5.84 m/min)

POWER

Power Required	Single-Phase 230 Vac, 50/60 Hz, 20A breaker
----------------	---

MACHINE SPECIFICATIONS

Table Size	34 in. × 9.5 in. (863 mm × 241 mm)
Table Slots	5/8 in. (15.9 mm) (three slots)
Spindle Nose to Table Max Clearance	16.5 in. (419 mm)
Spindle Centerline to Machine Column	11 in. (279 mm)
Typical System Footprint	69 in. × 56.5 in. (1753 mm × 1435 mm)
Overall System Height	96 in. (2439 mm)
Typical System Weight	1600 lbs. (726 kg)
Maximum Weight on Table	500 lbs. (227 kg)

FRAME

Frame and Table	Cast iron frame and table, with hand-scraped hydrodynamic ways and tapered adjustment gibs
Way Surfaces	Low-friction PTFE-filled, Acetyl-bonded sliding surface. Similar to Rulon® and Turcite®.

WARRANTY

1 Year Warranty against defects in material and workmanship. Extended Warranty available.



OPTIONAL ACCESSORIES

- Automatic Tool Changer
- PathPilot Operator Console
- 4th Axis
- SmartCool™ Coolant System
- RapidTurn® Chuck Lathe Accessory

MACHINE CONTROLLER

POWERED BY PathPilot® A Better User Experience PathPilot® HUB PathPilot HUB is a browser-based, full-featured PathPilot simulator, producing usable G-Code.	User-friendly design
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	Usable G-Code Memory: Brix Controller: 80 GB PathPilot Operator Console: 40 GB
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SPEC SHEET

PCNC 440 CNC MILLING MACHINE

TORMACH.COM/440

TORMACH
PCNC
440



TRAVELS

X-Axis	10 in. (254 mm)
Y-Axis	6.25 in. (159 mm)
Z-Axis	10 in. (254 mm)

SPINDLE

Spindle Power	0.75 hp (0.56 kW)
Maximum Speed	10,000 RPM
Transmission	Poly-V Belt
Spindle Taper	R8
Thread Machining	Thread Mill

MAXIMUM FEED RATE

X- and Y-Axis	135 IPM (3.43 m/min)
Z-Axis	110 IPM (2.79 m/min)

POWER

Power Required	Single-Phase 115 Vac, 50/60 Hz, 15A breaker
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MACHINE SPECIFICATIONS

Table Size	18 in. x 6.3 in. (457 mm x 160 mm)
Table Slots	3/8 in. (9.5 mm) (three slots)
Spindle Nose to Table Max Clearance	11 in. (279 mm)
Spindle Centerline to Machine Column	6.5 in. (165 mm)
Typical System Footprint	42 in. x 36 in. (1067 mm x 914 mm)
Overall System Height	72 in. (1829 mm)
Typical System Weight	600 lbs. (272 kg)
Maximum Weight on Table	150 lbs. (68 kg)

FRAME

Frame and Table	Cast iron frame and table, with hand-scraped hydrodynamic ways and tapered adjustment gibs
Way Surfaces	Low-friction PTFE-filled, Acetyl-bonded sliding surface. Similar to Rulon® and Turcite®

WARRANTY

1 Year Warranty against defects in material and workmanship.
Extended Warranty available.

OPTIONAL ACCESSORIES

Automatic Tool Changer
Power Drawbar
4th Axis
SmartCool™ Coolant System
Full Enclosure
Flood Coolant

MACHINE CONTROLLER

POWERED BY PathPilot® A Better User Experience PathPilot® HUB PathPilot HUB is a browser-based, full-featured PathPilot simulator, producing usable G-Code.	User-friendly design
	Support for up to 4-axis continuous machining
	Intuitive conversational programming
	Usable G-Code Memory: 80 GB
	Built-in Dropbox™ support for seamlessly transferring programs

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TORMACH®



Tormach has developed an industrial robot arm to add to our line of CNC mills, lathes, plasma tables, and routers. The robot is controlled via PathPilot, Tormach's award-winning CNC user interface. The underlying trajectory planning and motion control is handled by ROS, an open-source robot operating system with tens of thousands of active developers worldwide. Access to the underlying code is provided to all customers, allowing participation in the range of research opportunities offered by the ROS ecosystem.

KEY FEATURES

PathPilot user interface

- PathPilot is user-friendly, making programming easier and faster to learn. Learn how to create robot programs with minimal effort.
- Similar layout to PathPilot interface on other Tormach CNC machines. If you or your students are already familiar with PathPilot on a mill, lathe, router, or plasma, programming the robot will be a snap.

Powered by ROS (Robot Operating System)

- The most popular platform for robotics research (over 4,000 academic papers cite "ROS: an opensource Robot Operating System" (Quigley et al., 2009))
- Vibrant community development effort
(For detailed statistics, see <http://download.ros.org/downloads/metrics/metrics-report-2021-07.pdf>)

Robust industrial hardware

- The Tormach robot is an industrial tool that's been made exceptionally easy to use. It utilizes aluminum castings, servo motors and drives, and harmonic gear reducers.

Robot programs are written in Python

- Programs are easily created in "conversational" fashion via the user interface
- For users familiar with Python, robot programs are easy to understand and modify
- Python users can easily extend robot programs to interact with the file system or the outside world
- For example:
 - Import the twilio text messaging library to easily program the robot to send text or photo messages
 - Import csv, with open('eggs.csv', 'rb') as csv file to read in position values from a csv file, or write out values to a csv file
 - Import usb.core, usb.util, more complex python code here to read data from

Sample Robot Programs Repository

- Tormach maintains a community-contributed library of example programs here: https://github.com/tormach/example_robot_programs

TECHNICAL SUPPORT

Tormach offers remote technical support via email, phone, and video chat.

Support is limited to mechanical and software issues when the machine is controlled via the default software installation. Customers are free to modify the source code in a sandbox, but ROS research, code modifications, as well as specific application/system integration are all outside the scope of Tormach's technical support for the ZA6 Robot.



*Table not included.

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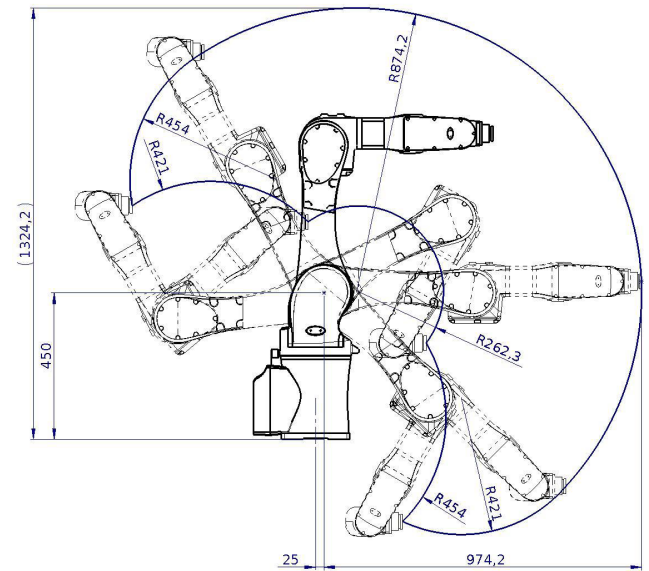
833-639-0125 <https://tes-labs.com>

ZA6 INDUSTRIAL ROBOT

TORMACH.COM/ZA6

SPECIFICATIONS

WEIGHT	145 lbs. (65 kg)		
PAYLOAD	13 lbs. (6 kg) (combined weight of payload + end effector)		
REACH	38 in. (975 mm)		
JOINT RANGES		JOINT SPEEDS	
JOINT 1	± 170°	JOINT 1	150° s-1
JOINT 2	+135° to -100°	JOINT 2	112.5° s-1
JOINT 3	+155° to -120°	JOINT 3	150° s-1
JOINT 4	± 150°	JOINT 4	204.5° s-1
JOINT 5	± 120°	JOINT 5	225° s-1
JOINT 6	± 360°	JOINT 6	360° s-1
REPEATABILITY	± 0.020 in. / 0.5 mm		
FLANGE BOLT	6 bolts (M4)		
CONTROL BOX SIZE (W × H × D)	26 in. × 32 in. × 14 in. (650 mm × 820 mm × 360 mm)		
DIGITAL INPUTS	16 (14 user inputs, 2 dedicated safety inputs)		
DIGITAL OUTPUTS	16		
I/O POWER SUPPLY	24 Volt 2 Amp		
PROGRAMMING	Teachmode programming through PathPilot GUI, Python		
NOISE	Comparatively noiseless		
IP CLASSIFICATION	IP65 Dust tight and protected against jets of water		
POWER SUPPLY	200 - 240 Vac, 50 - 60 Hz, Single-Phase Power		



PRODUCT ROADMAP

Tormach has historically offered software upgrades at no cost when they become available. While there is not a formal completion date on the calendar, Tormach is currently working on developing the following items and will make them available after the initial product release:



- Computer vision/visual servoing
- Integration with Mimic/Maya/Blender animation software for robot programming
- ZA2, a small trainer robot for under \$5,000 that will work on the same user interface/operating system
- Web-based user interface simulator (like hub.pathpilot.com, but for the robot user interface)

VIDEOS

ZA6 Robot Overview:

youtu.be/42qdxQjIMg

ZA6 Robot Video Playlist:

https://youtube.com/playlist?list=PLrWhN_9rAUJ7c7usu7E2JeRU6QmnF4gBU



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tormach.com | ZA6 Spec Sheet (0222)



SPEC SHEET

AF50 AUTOFEED BANDSAW

TORMACH.COM/AF50

**AUTOFEED
BANDSAW**

**AF
50**



MACHINE REQUIREMENTS

Minimum Width	60 in. (1.53 m)
Minimum Depth	36 in. (0.91 m) plus the length of stock
Minimum Height	67 in. (1.71 m)
Power	Single-Phase 115 Vac, 15A breaker
Compressed Air Source	90 psi to 120 psi (620 kPa to 827 kPa)

MAXIMUM CAPACITY

Rectangular Stock: 6 in. tall x 8 in. wide (152 mm tall x 203 mm wide)

Round Stock: 7 in. (178 mm) diameter

BLADE SPEEDS

60 Hz: 135, 161, 226, 394 ft/min (41-49-69-120 m/min)

50 Hz: 112, 135, 194, 322 ft/min (34-41-59-98 m/min)

BLADE SIZE

Length	93 in. (2362 mm)
Width	0.75 in. (19 mm)
Thickness	0.035 in. (0.9 mm)

WARRANTY

1 Year Warranty against defects in material and workmanship.
Extended Warranty available.

FEATURES

Pneumatic Clamping System

Hydraulic Feed Control

- | | |
|--|--|
| Programmable Automatic Workpiece Positioning | <ul style="list-style-type: none"> • Cut lengths between 0.157 in. to 50 in. (4 mm to 1270 mm) • Up to 10 in. (254 mm) per stroke • Maximum 5 strokes per part • Maximum 999 parts per program • Part countdown display |
|--|--|

Integrated Coolant System — 2.3 gal (8.7 L) capacity

Movable

Blade tension indicator for fast and easy tension adjustment after a blade change

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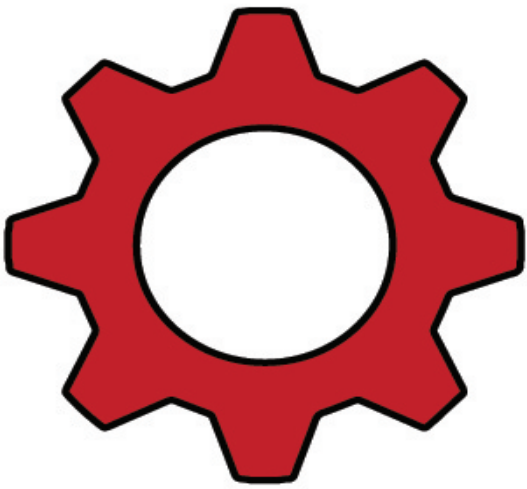
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