BobCAD-CAM Technical Support
13528 Prestige Pl Suite 102
Tampa, FL 33635

Phone: (727) 489-0003
Fax: (727) 442-9264
Email: support@bobcad.com

Mill-Turn Post Request Form

Request Info

Date of Request:

BobCAD-CAM Version:

Company (Customer) Info

Name:

Customer ID:

Phone:

Email:

Machine Info

Make:

Model:

Year:

Serial No:

Machine Manufacturer Info (If Known)

Contact Person:

Contact Phone:

Controller Info

Make:

Model:

Acceptable NC file extension (i.e. txt, NC, MIN, etc.):

Additional Info

The following request form covers all Mill-Turn machines. In order to create a post that will work correctly for your machine, it is important to provide the following information:

1) A working sample program that has been run on the machine and has the following information (if applicable):
   a) Safety line
   b) Tool changes for turning
   c) Tool changes for milling
   d) Feeds and speeds
   e) Syncing codes
   f) Rapid and feed moves
   g) Arc moves
   h) Coolant
   i) Optional stops
   j) End of program
2) A list of drilling canned cycles, along with an example for each (if applicable)[1]
3) A list of G&M codes accepted by the machine, along with their descriptions for mill and lathe
4) Descriptions and sample code for additional functions such as part transfer, parts catcher, etc.
5) The electronic copy of the controller programming manual (if available)

Special Functions (non-standard features)

Non-standard features are any features in the controller that are not supported within the standard software interface and posting engine. Example of special functions for a mill-turn machine include high-speed machining, custom canned cycles, peck tapping, etc. If your machine has any non-standard feature that you would like integrated into your post processor, please contact **support@bobcad.com** for the scripted post request form. If you are not sure a feature is standard, please describe it in a separate page and attach it to your post request. One of our technicians will contact you if the custom scripted form is required.

[1] See Appendix A (page 7) for some examples of standard canned cycles

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Basic Machine Info

Machine Type: ☐ Horizontal ☐ Vertical (VTL)

Measurement Unit: ☐ Imperial ☐ Metric

Max. Spindle Speed (RPM):

Max. Feed-Rate:

Number of Workpiece Devices[3]:

Number of Tool Devices[2]:

Tool Device Info[4]

Device No.	Device Type	Device Location[5]		Axes Travel Limit[6]					
				X		Y		Z	
		Vertical	Horizontal	Min	Max	Min	Max	Min	Max
1									
2									
3									
4									
5									

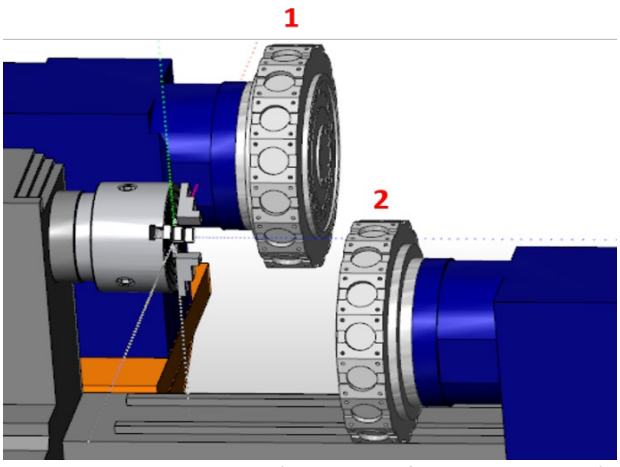

Figure 1: Turret Location (1=Upper-left, 2= Lower-Right)

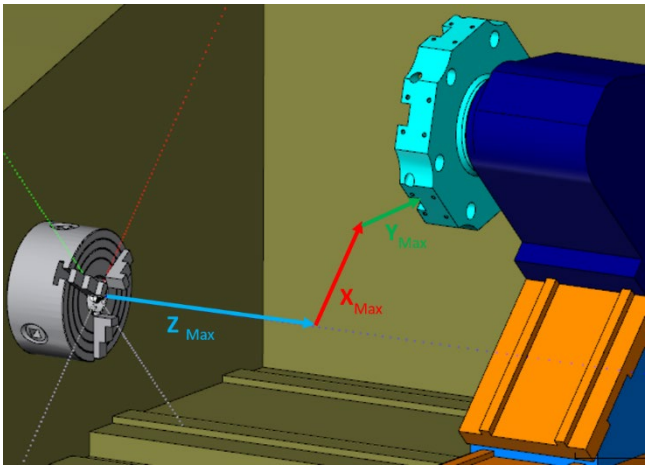

Figure 2: Travel Limits Measurement

[2] Turrets, Milling Spindles, and Ram Arms are considered tool devices.
[3] Turning spindles (C-axes) are considered workpiece devices (see page 5).
[4] For each tool device, fill out pages 3 and 4 based on the tool device type.
[5] Figure 1 shows a few examples of turret locations.
[6] Travel limits are measured from the center of the main spindle's chuck. See figure 2.

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Turret Info (If Applicable)

Fill out the table below for Turret-type tool devices based on the instructions and notes provided at the bottom of this page.

Device No.	Number of Stations	Direction of Rotation	Flat to Flat Diameter	Width	Rotation Axis

Instructions for Finding the Turret Info

Number of Stations: Number of stations include half-index positions. So, if the turret has 12 stations and 12 half-index position, please enter 24 (12+12) as the number of stations (see figure 3).

Direction of Rotation: Manually command the turret to go from station 1 to station 2. Note the direction of the rotation when you look at the front face of the turret (see figure 4).

Flat to Flat Diameter: Figure 5 shows what flat to flat measurement is. If the turret doesn't have flat sides, measure the diamter of the turret's circumference.

Width: Measure the width of the turret as it is shown in figure 6.

Rotation Axis: Rotation axis defines the orientation of the turret. See figure 7 for more info.

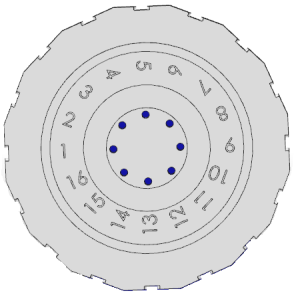

Figure 3: Turret Stations

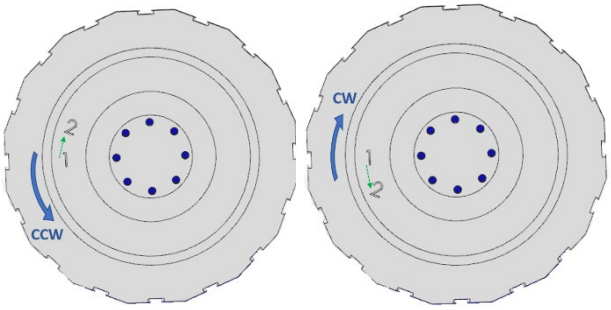

Figure 4: Turret Direction of Rotation

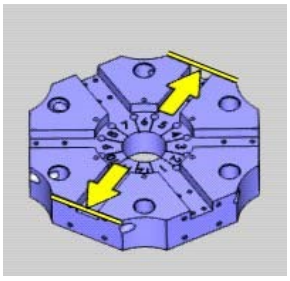

Figure 5:Turret Diameter

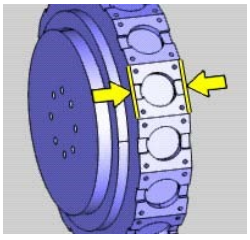

Figure 6: Turret Width

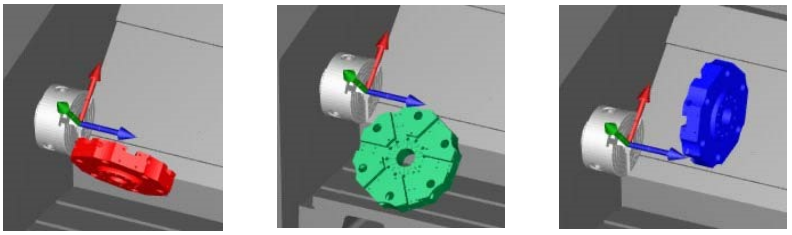

Figure 7: Turret Rotation Axis from Left to Right X, Y, and Z

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Milling Spindle Info (If Applicable)

Fill out the table below for milling spindle type tool devices based on the instructions and notes provided at the bottom of this page.

Device No.	0-degree Orientation	Direction of Rotation	Rotation Limits (Tilt Degrees of Rotation)		Rotation Axis Prefix	Center of Rotation
			Min	Max		

Instructions for Finding the Milling Spindle Info

0-Degree Orientation: Figure 8 shows the two most common ways that a milling spindle is oriented when set to zero degrees on the physical machine.

Direction of Rotation: Looking at the milling spindle, if you command it to rotate +10 degrees from the controller, note if it rotates CW or CCW.

Rotation Limits: Based on the 0- degree orientation, note the rotation limits of the spindle head in positive and negative directions.

Rotation Axis Prefix: The letter that is used in the NC (G-Code) program to address the rotation of the milling spindle.

Center of Rotation: This is the distance from the face of the spindle to the location of the pivot axis (see figure 9). Click on the matching machine configuration on figure 8 to learn how to find the center of rotation.

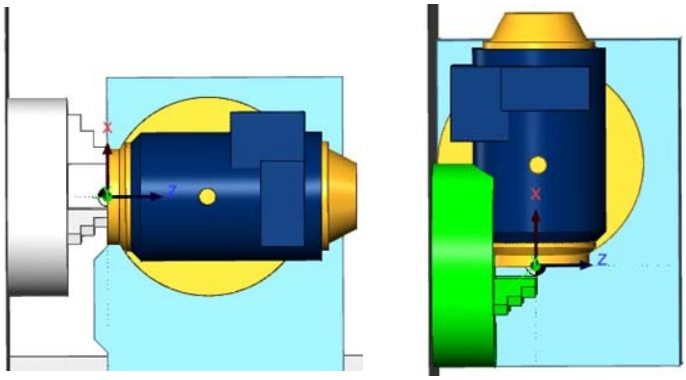

Figure 8: Z-Axis Orientation (Left) and X-Axis Orientation (Right)

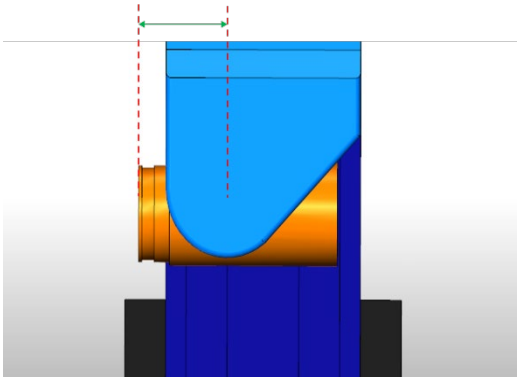

Figure 9: Milling Spindle Center of Rotation

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Workpiece Device (Turning Spindle/Milling C-Axis) Info

Fill out the table below for the workpiece devices (main spindle, sub spindle, etc.) on the machine based on the instructions and notes provided at the bottom of this page.

Device #	C-Axis Prefix	C-Axis Direction of Rotation	Device Linear Travel Limits								
			Z-Axis Travel			X-Axis Travel			Y-Axis Travel		
			Axis Prefix	Min	Max	Axis Prefix	Min	Max	Axis Prefix	Min	Max
1											
2											
3											
4											
5											

Instructions for Finding the Workpiece Device Info

C-Axis Prefix: The letter that is used in the NC (G-Code) program to address the C-Axis in milling mode.

C-Axis Direction of Rotation: Looking at the turning spindle (chuck), if you command C-Axis to rotate +90 degrees from the controller, note if the spindle rotates CW or CCW (see figure 10).

Linear Travel Limits: Most secondary turning spindles can move along Z-Axis to do tasks such as part transfer (see figure 11). Some spindles also can travel along X-Axis or even Y-Axis on machines with stationary tool devices. If any of workpiece devices on the machine has any linear travel axes, please note what that axes are called in the NC program and also note their travel limits. For taistocks, please fill out the table on page 6.

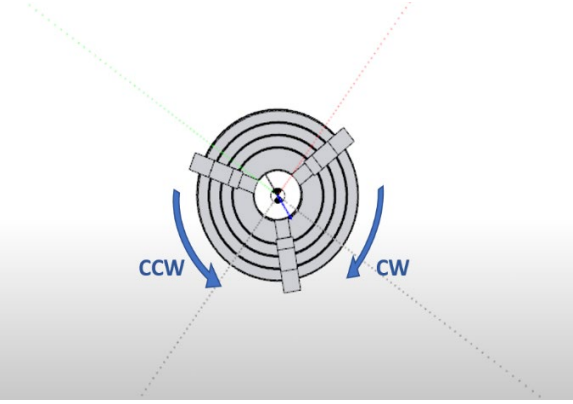

Figure 10: C-Axis Direction of Rotation

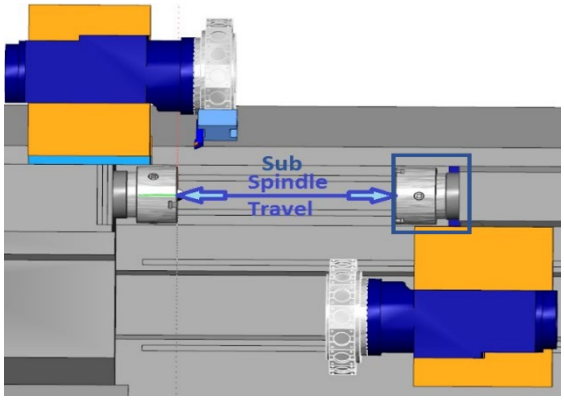

Figure 11: Sub Spindle Z-Axis Travel

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Submachines

A submachine (work zone) is a combination of one workpiece device and one tool device. You define the submachines based on how many potential device combinations exist on the physical machine. Each color in figure 12 (total of four submachines) shows a different submachine (work zone) for this machine.

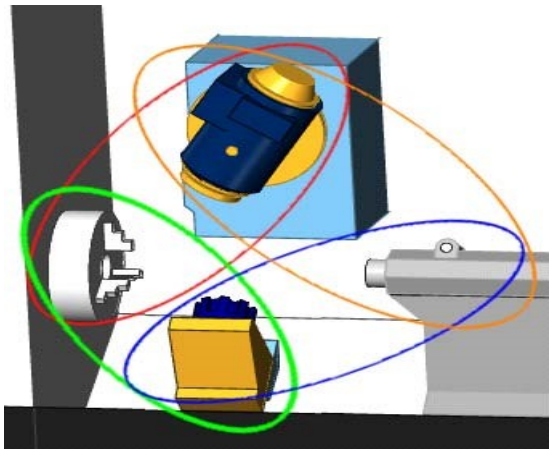

Figure 12: Four Submachines (Work Zones) on a Machine with two Tool Devices and two Workpiece Devices

Sub machine No.	Workpiece Device – Tool Device Combination

Additional Devices / Accessories

We can add your part catcher, tail stock and other accessories. If the additional accessory can move, we will need the axis it travels along (X, Y, Z) and the accessory's limits of movement.

Accessory Type	Z-Axis Travel			X-Axis Travel			Y-Axis Travel		
	Axis Prefix	Min	Max	Axis Prefix	Min	Max	Axis Prefix	Min	Max
Tailstock ☐									
Parts Catcher ☐									
Steady Rest ☐									

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Appendix A: List of Supported Mill and Lathe Standard Canned Cycles

Turning Cycles

Lathe Rough Turning Cycle
Lathe Finish Turning Cycle
Lathe Rough Facing Cycle
Lathe Finish Facing Cycle
Lathe Rough Groove Cycle
Lathe Finish Groove Cycle
Lathe Threading Cycle
Lathe Cutoff Cycle
Lathe Drill Canned Cycle
Lathe Left-Handed Tapping Canned Cycle
Lathe Fine Boring Canned Cycle
Lathe Tapping Canned Cycle
Lathe Boring Cycle
Lathe Back Boring Cycle

Milling Cycles:

Face - High Speed Peck Drill Canned Cycle
Face - Right/Left-Handed Tapping Canned Cycle
Face - Standard Drill Canned Cycle
Face - Boring Cycle
Face - Back Boring Cycle

Mill Turn Cycles:

Cross - Drill Canned Cycle
Cross - High Speed Peck Drill Canned Cycle
Cross - Left Handed Tapping Canned Cycle
Cross - Tapping Canned Cycle
Cross - Boring Cycle
Cross - Back Boring Cycle