

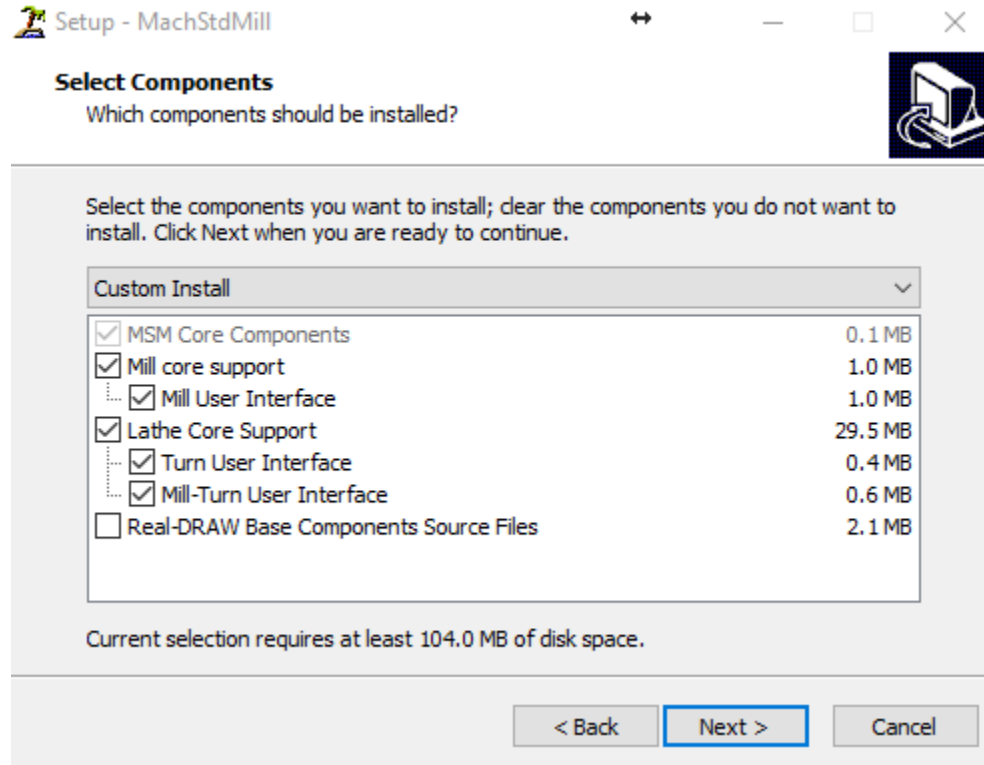
MachStdMill Mill Turn offset test

9-11-2017

Here are the steps I did for a simple test of whether mill turn offsets are begin applied.

MSM version 2.3.11 beta (a private non-released version with additional debug messages for tool change operations).

1) install MSM 2.3.11 beta, be sure to select the options as follows:



2) Start mach with your mill turn profile.

3) make sure the mill turn screen set is selected.

Settings page; load screen button; MachStdMillLathe-MillTurn-v3_10x7.lset

4) check that you are in lathe mode – the upper right corner of the screens will say “lathe mode” in yellow.

5) go to tooling page. Check that options are set as shown here:



6) Now I set up two tools:

T1 = the master tool. It's offsets will all be = 0 (as it is the master tool) as shown:

Please Enter/Edit Tool Parameters: [Help] [Close]

Tool Description:
[Text Field]

Tool Attributes

Empty Tool

Turn Tool Type
 Turning Center Boring

Tip Type: [0]

Tool Geometry (Setup Units)

X Offset: [0.000000] X Wear: [0.000000]
Z Offset: [0.000000] Z Wear: [0.000000]
MTurn Y / Turret: [0.000000]

Tool Post
 Front Rear

Tool Nose Radius (Tool Units)

Inch mm
Radius: [0.000000]

[OK] [Cancel]

Then I set up a working tool (#2) with simple offsets that would be easy to see when they are applied.

Please Enter/Edit Tool Parameters:

Tool Description:
test t1

Tool Attributes

Empty Tool

Turn Tool Type

Turning Center Boring

Tip Type: 0

Tool Geometry (Setup Units)

X Offset: 1.000000 X Wear: 0.000000

Z Offset: 1.000000 Z Wear: 0.000000

MTurn Y / Turret: 1.000000

Tool Post

Front Rear

Tool Nose Radius (Tool Units)

Inch mm

Radius: 0.000000

OK Cancel

7) now then I set up for an easy to follow set of coordinate offsets. This can be done in sim mode to make life simple....

Go to the offsets page, using MDI I did: G53 G0 X0 Y0 Z0

At this point the WC offset table looks like this:

	WC Curr Position		M Coords		WC Offset		Tool Blk Offset		Tool Offset		Wear
Zero X:	+0.0000	=	+0.0000	-	+0.0000	-	+0.0000	-	+0.0000	+	+0.0000
Zero Z:	+0.0000	=	+0.0000	-	+0.0000	-	+0.0000	-	+0.0000	+	+0.0000
Zero Y:	+0.0000	=	+0.0000	-	+0.0000	-	+0.0000	-	+0.0000		

Move Tool to Y Center

8) now I want the axes to be referenced as this is required for tool changes.

I accomplish this using the following script to force things to MCO and mark the axes as referenced:

(you can run this via the mach script editor if you want)

Option Explicit

```
code ("G40")
```

```
code("G90 G00 G53 X0 Y0 Z0")
```

```
DoOEMButton(1008) ' zero x
```

```
DoOEMButton(1009) ' zero y
```

```
DoOEMButton(1010) ' zero z
```

```
doOEMButton(246) ' force all to referenced state
```

```
While IsMoving()
```

```
wend
```

After running the script the offsets panel looks like this:

	WC Curr Position	M Coords	WC Offset	Tool Blk Offset	Tool Offset	Wear
Zero X:	+0.0000	= +0.0000	+0.0000	+0.0000	+0.0000	+0.0000
Zero Z:	+0.0000	= +0.0000	+0.0000	+0.0000	+0.0000	+0.0000
Zero Y:	+0.0000	= +0.0000	+0.0000	+0.0000	+0.0000	

Move Tool to Y Center

9) now make sure that to1 is mounted with T01 offsets, so I did t0101 via MDI, and after the tool change the table still looks the same (as T01 is the master and all offsets = 0).

10) Now I changed to T02 via mdi of T0202

...and now the offsets and current positions for the machine are:

	WC Curr Position	M Coords	WC Offset	Tool Blk Offset	Tool Offset	Wear
Zero X:	-1.0000	= +0.0000	+0.0000	+0.0000	+1.0000	+0.0000
Zero Z:	-1.0000	= +0.0000	+0.0000	+0.0000	+1.0000	+0.0000
Zero Y:	-0.9999	= -0.9999	+0.0000	+0.0000	+1.0000	

Move Tool to Y Center

Note the machine cords: it shows that the Y axis was moved by 1" to set the Y coord offset during the tool change. Also the X and Z offsets have been applied by Mach so that the WC is now reflecting the tool offsets for X and Z.

Please follow these steps and let's see where your system starts to differ from what I am seeing.