TB011 (Rev1) - Parameter Setting for Rotary Tables

Steps:

*Set the Machine Configuration as below for the **4th axis only**.
*DO NOT CHANGE THE VALUES FOR 1, 2, 3 AXIS!

1. For systems with an RTK2 PLC place jumpers on the RTK2-B H1 between pins 1 and 2, and pins 3 and 4. Go to the proper screens as follows: **F1 - Setup**, **F3 - Config**, **Password = 137 - Enter**; then **F3 - Params** or **F2 - Machine** as instructed below. Always be sure to use **F10 - Save** before exiting.

2. In the F2 - Machine configuration, set the #4 Axis label to W (or a label that you prefer) and edit this same line as indicated below to replicate the proper configuration for the proper rotary table.
NOTE: The numbers in the HOME +/- field can vary from machine to machine. Refer to the schematic for the machine that you are working with for the proper input number.

Parameters are as follows:

Rotary Table	Gear Ratio	Slow Jog	Fast Jog	Max Rate	Rev/ deg.	Encode counts	Limit + -	Home + -	Dir
Troyke	180:1	360	720	1,200	0.5	8,000	0 0	* *	N
Yuasa SUDX 220 w/5.27	90:1	2,000	3,937	3,937	0.25	8,000	0 0	* *	N
Yuasa SUDX 220 w/6.00	90:1	2,000	12,000	12,000	0.25	8,000	0 0	* *	N
Yuasa SUDX 140 w/5.27	70:1	2,000	3,937	3,937	0.2	8,000	0 0	* *	N
Yuasa SUDX 140 w/6.00	70:1	2,000	12,000	12,000	0.2	8,000	0 0	* *	N
Centroid RT-100	90:1	2,000	9,000	Autotune	.25	8,000	0 0	* *	N
Centroid RT-150 DC	90:1	2,000	4,000	Autotune	.25	8,000	0 0	* *	N
Centroid RT-150 AC	90:1	2,000	4,000	Autotune	.25	8,192			
Centroid RT-200 DC	90:1	2,000	4,000	Autotune	.25	8,000	0 0	* *	N
Centroid RT-200 AC	90:1	2,000	4,000	Autotune	.25	8,192			
Centroid AC RT-250	180:1	1,500	4,000	Autotune	0.5	8,192	0 0	* *	
Centroid AC RT-320	180:1	1,500	4,000	Autotune	0.5	8,192	0 0	* *	N
Centroid RI-5C DC	90:1	2,000	4,000	Autotune	.25	8,000	0 0	0 0	N
Centroid RI-5C AC	90:1	2,000	4,000	Autotune	.25	8,192			

Note: The Max rate for the rotary tables is set by running **F5-Tune** from the PID menu, start with fast jog value to run autotune.

3. To figure your Revs/degree you need to divide the Gear ratio by 360. See table above.

4. In the **F3 - Params** screen, change parameter 94 to 1.0 (this will flag that axis as rotary). The conversational software will then display degrees, minutes, and seconds for that axis in linear moves. Also

change parameter 98 to 45.0 (the autotune move distance).

*To find feedrate for a rotary axis in degrees/min, you must do the following:

(Surface Velocity/Part Diameter) * (114.591559) = Deg/Min (The Deg/Min is the input required for the feedrate)

5. From the main screen of CNC10, press **F6 - Edit** and open the file "c:cnc10cnc10m.hom" (cnc10t.hom for lathe).

Add these lines at the end of the file for homing the rotary axis.
If you have a home/limit switch add these lines -

M92/W
M26/W

6. Some earlier Centroid Controls may require an updated RTK2 assembly if you find that H1 is not installed on the circuit board and/or a PLC Program modification in order to use the "Clamp" feature. Call Tech Support if this applies.

*Special Note For Centroid (Golden Sun) **with DC brush motor:**

The Kd parameter will need to be adjusted for the 17? lb. motor that is installed in the table.

Follow the instructions below.

Go to the proper screens as follows: **F1 - Setup**, **F3 - Config**, **Password = 137 - Enter**; then **F4 - PID**, **F1 - PID** Use the right arrow key to move over to the Kd column then the down arrow key to get to the correct row and axis, in this case W. Change the value in this field to 5.000. Always be sure to use **F10 - Save** before exiting.

Testing

- Check the clamp. * With proper air supply, press F3 - MDI and then isue an M10 (clamp on). Verify that the table is clamped, or locked, into position so that it cannot rotate. Then issue an M11 (clamp off) to unclamp the table.
- Jog the 4th axis in both directions to verify proper motor wiring. (Note: If the motor power leads are reversed, an axis will move the same direction a small amount no matter which jog key is pressed. If this is the case call Tech Support)
- Verify proper homing. * During homing sequence, the table will turn at the slow jog rate to the switch and then come off the switch at 24 deg/min a short amount before setting home. (Note: If the input is not connected, the table will turn at 24deg/min indefinitely.)
- Go into MDI. If the rotary table is labeled W, enter the following commands: W0 - cycle start, W360 - cycle start. Verify that the table completes one revolution.
- If the table is the 4th axis, set parameter 98 to 45. This will cause autotune to move 45 degrees on the rotary table. See chapter 10 in the manual. Run Autotune.
  * Note: Centroid RI-5C is not equipped with a clamp or home switch

Field upgrade checklist:

- A new PLC program for 4-axis system
- A new wiring diagram
- A 4th axis drive similar to the one in the machine (i.e.. is the 3 axis 12,12,15 brake? or a 12,12,12? etc.)
- A new limit switch cable that goes from the PLC to the drive.
- A wiring harness for the inside of the Magnetics cabinet and tools to install the connector in the bottom of the Magnetics cabinet. (If applicable)

Document History

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