

THERMWOOD

C O R P O R A T I O N

CNC Rental Program



Rental Program Name: RP-RR-LG0005

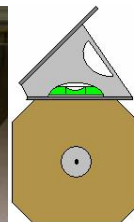
Rental Program Fee: \$3.50

Estimated Cycle Time: 1 hour 44 minutes

Carving Dimensions (L x D): 16.25" x 5.25"

Raw Stock Dimensions (L x W): 16.5" x 6" sq.

- * Please refer to the diagram below for setting the stock into position *
- * Head and Tailstock pins should be located center of the Raw Stock *
- * Cut corners at 45° as shown below to allow full rotation of part *



Tool Requirements:

*Tooling may be purchased from Thermwood by using the provided part numbers.

- T1 = .500" dia. ballnose cutter Part # VX02265
* min. tool length = 3" from covernut
- T2 = .1875" dia. ballnose cutter Part # RJB20306
min. tool length = 1.5" from covernut
- T3 = Oertli-detail tool Part # FSH0358
* min. tool length = 2.25" from covernut
- T4 = .250" dia. endmill cutter Part # VX01232
* min. tool length = 2.25" from covernut

Program Setup:

1. Tool numbers have already been chosen in the program. If you would like to change Tool numbers, simply edit the line of code(s) at the top of the program. Below is an example;

Change from: [TOOL_1 = 1]
to; [TOOL_1 = **14**]

2. Inside the Tool Table (F9, F2) be sure all daylight values are correct for the tool numbers used.
3. Set the **ZSHIFT** value. If the daylight values are set to the spoilboard, then the ZSHIFT value should equal the distance from the spoilboard to the center of the headstock pin. If the daylight values are set to the center of the headstock pin, then the ZSHIFT value should equal zero.
4. The fixture offset will need to be entered. This is the distance from HOME to the center (Y) and edge (X) of the headstock pin. Once you've found these values, enter them into the following line of code;
G51 X? Y?
5. Since ATH toolchangers do not have enough clearance above the rotary playback device to perform tool changes, [**XTCHANGEPOS = ?**] and [**YTCHANGEPOS = ?**] are used for positioning the head before and after tool changes. This value is the distance from Home to the tool change position. Be sure you can perform tool changes in this position!
6. If you would like to machine your rawstock down prior to running the program, you will need to set 3 values. [**ZROUND DIA=?**] refers to the rough diameter you would like to machine down to. Depending on how much larger your stock is, you may need to change this several times until you get the size you want to start with. [**STOCKLENGTH=?**] refers to the rawstock length. [**ROTARY_DEG_STEP=?**] refers to the degree of stepover while roughing down to size. These values may have been preset.
7. An optional setting you may adjust in the program is [**ZCLEARANCE = ??**]. This value determines the tool clearance from the center of the headstock pin for indexing moves. This value should be large enough to clear the rawstock and Rotary Playback Device. Defaults may have been set.

8. If you would like full control over Rapid Indexes using your FeedRate OverRide Knob, then leave [RAPOVERRIDE\$="YES"] alone. Setting this to "NO" will speed up your machine, and you will lose full control over indexes.
9. If your machine does NOT have an Automatic Tool Changer, and you must change tools manually, then you must change the following line to "YES";
[MAN_TCHANGE\$="NO"]

When this is set to "YES", the machine will return to the HOME position prompting you to manually change out the tools. To change out the tools, follow the directions below;

- Turn the Tool Lockout Switch to safety mode, which will put the machine into E-STOP.
- Change to the next tool manually.
- Turn the Tool Lockout Switch to run mode.
- Press NC-RESET **one** time.
- Press the green START button to resume machining.

endmill

Below is the tool used for rough cutting;

- [TOOL_1] (.50" dia. ballnose cutter)

Below is the order in which the tools are used during machining;

- [TOOL_1] (.50" dia. ballnose cutter)
- [TOOL_2] (.1875" dia. ballnose cutter)
- [TOOL_3] (Oertli-detail tool)
- [TOOL_4] (.25" dia. endmill cutter)

Program Operation:

After the Rental Program has been setup and the blank is secure, you may begin running the program. Press the green START button on the controller. A blue screen will appear with 3 options. Choose the start option to begin cutting. Choose Machine Stock Round option to rough your stock down to a workable size. Choose the EXIT option to Quit.

After choosing the START option, you will be prompted to enter a BroachPass value. This is the amount of rawstock material above the finished part. After entering this value in, you will be asked for the BroachPass Increment. This is the depth of cuts before it reaches the finished part.

Additional Comments:

- Due to the wide variety of tooling types, etc. you may need to adjust the FeedRate Override Knob as needed to help control cutting speeds. Optimal speeds have been preset.
- When scaling, be sure to scale the RawStock size accordingly.
- It is never a good idea to leave the machine running un-attended.

If you have any questions or concerns, feel free to contact us at (800) 533-6901.

Thank you for your interest.