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S e r v i c e B u l l e t i n

Number: 0007

Title: Cabinet Cooling **Date:** June 9, 2006 (Addendum added March 9, 2007)

Product Identification: PCNC 1100 Milling Machine

Background:

Extended operation at high spindle speed and heavy cutting has been observed to result in the machine cabinet overheating. This has been observed on machines running in continuous operation, generally in excess of 10 hours. Cabinet overheating will normally result in spindle shutdown or axis motion shutdown. There may be a flashing fault LED on the spindle drive, but there will be no indications on the computer software or diagnostic messages. The telltale sign of this failure mode is a very warm cabinet and the machine restarting without problems after it cools off.

Resolution:

Tormach can provide a cooling kit (PN 30512) upgrade for user installation. This is a 120 mm (4.68") fan operating off the 115 VAC control circuit. The fan can provide 106 CFM (cubic feet per minute). The user must cut holes in the cabinet for the fan and an exit air vent. The steel cabinet is 2 mm (0.079") thick.

Installation:

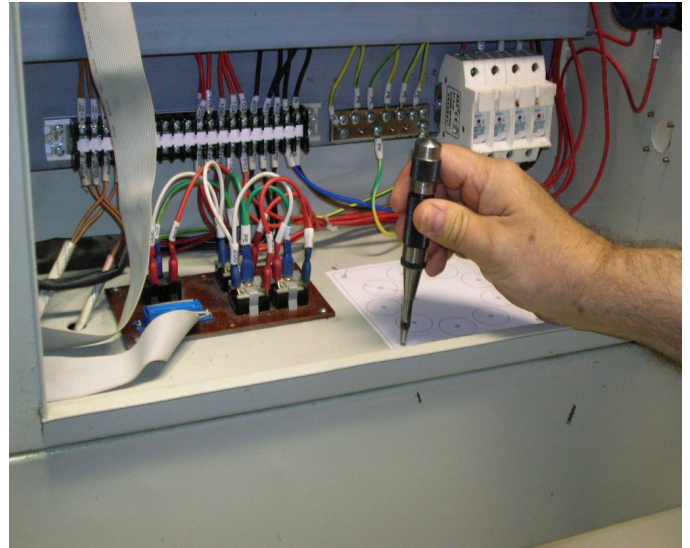
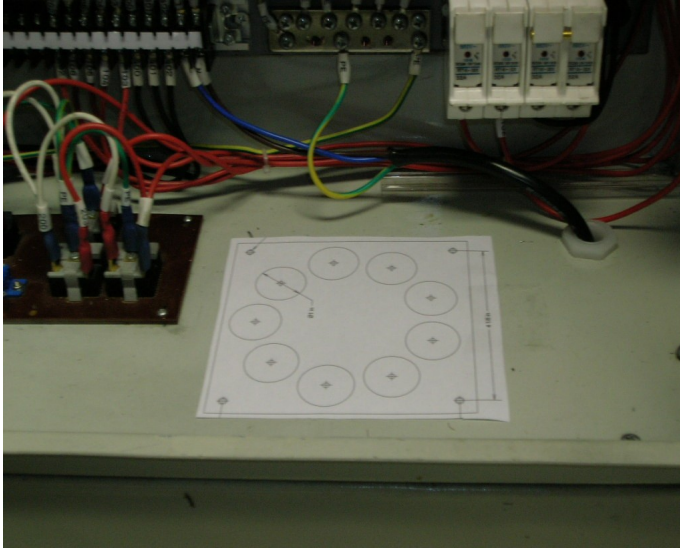
The fan should be mounted on the bottom of the cabinet. The fan blows in from the bottom, with the warm air venting out at the top.

A template is provided for placement of holes. If you receive this document as a PDF file you should confirm the print size using the dimensions on the drawing as some printers will scale a PDF file.



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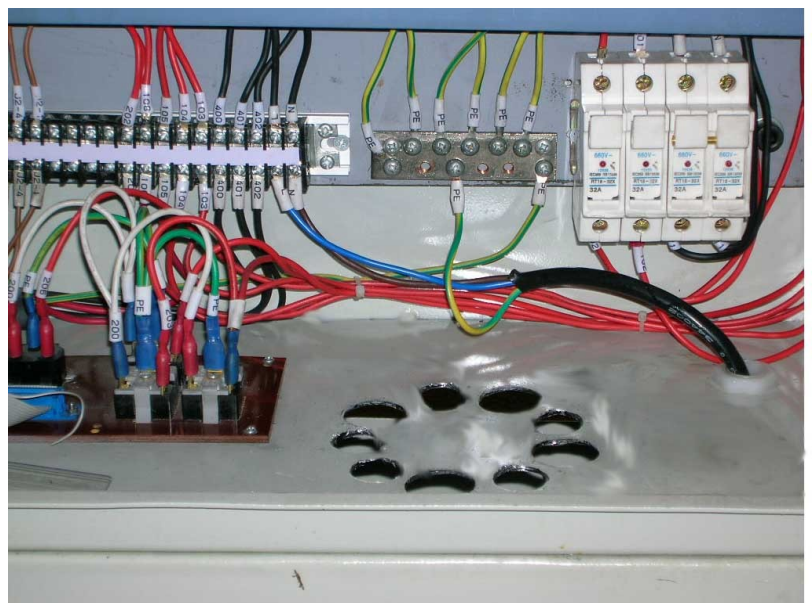


Using the template to center punch the holes

There is any number of ways to make the required holes, although the restricted access from the bottom can limit your options for cutting the fan holes.



Shield the electronics from chips when cutting



Holes drilled



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The vent holes on the upper right side of the cabinet are easier to access.



Upper vent cut out with die grinder



Upper vent screen mounted

In the photos for installation we have used a knockout punch (similar to Greenlee Slugbuster) to create a series of holes for the fan. While there is still some restriction using this method, the fan is oversized so there will still be far more cooling air than necessary.

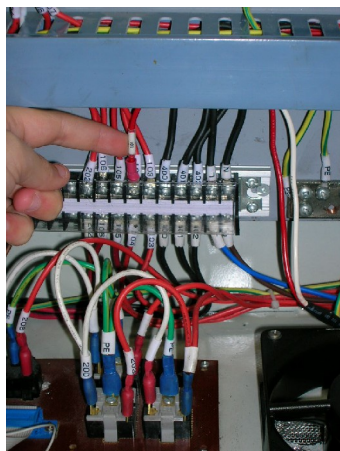


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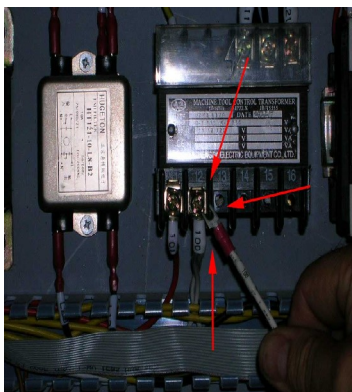
Personal CNC 1100



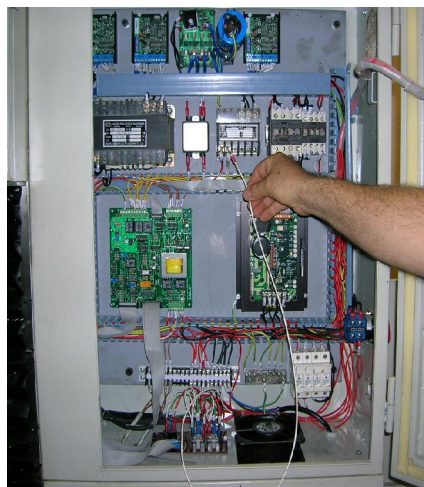
Location of wire number 104



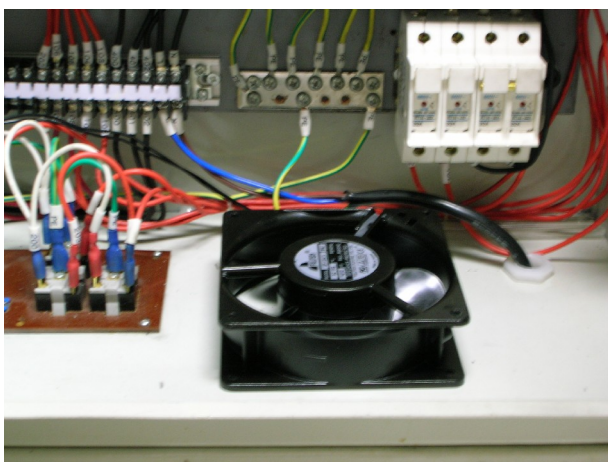
Wire 100 is connected on the control power transformer.
(See addendum, pg 5)



Location of wire number 100



Wire 104 can be connected on a terminal strip which is just above and to the left of the fan.



Fan installed

Make certain that the fan blows into the cabinet. Heat rises allowing the natural convection current to assist the fan in moving the air out of the bottom and out through the top.



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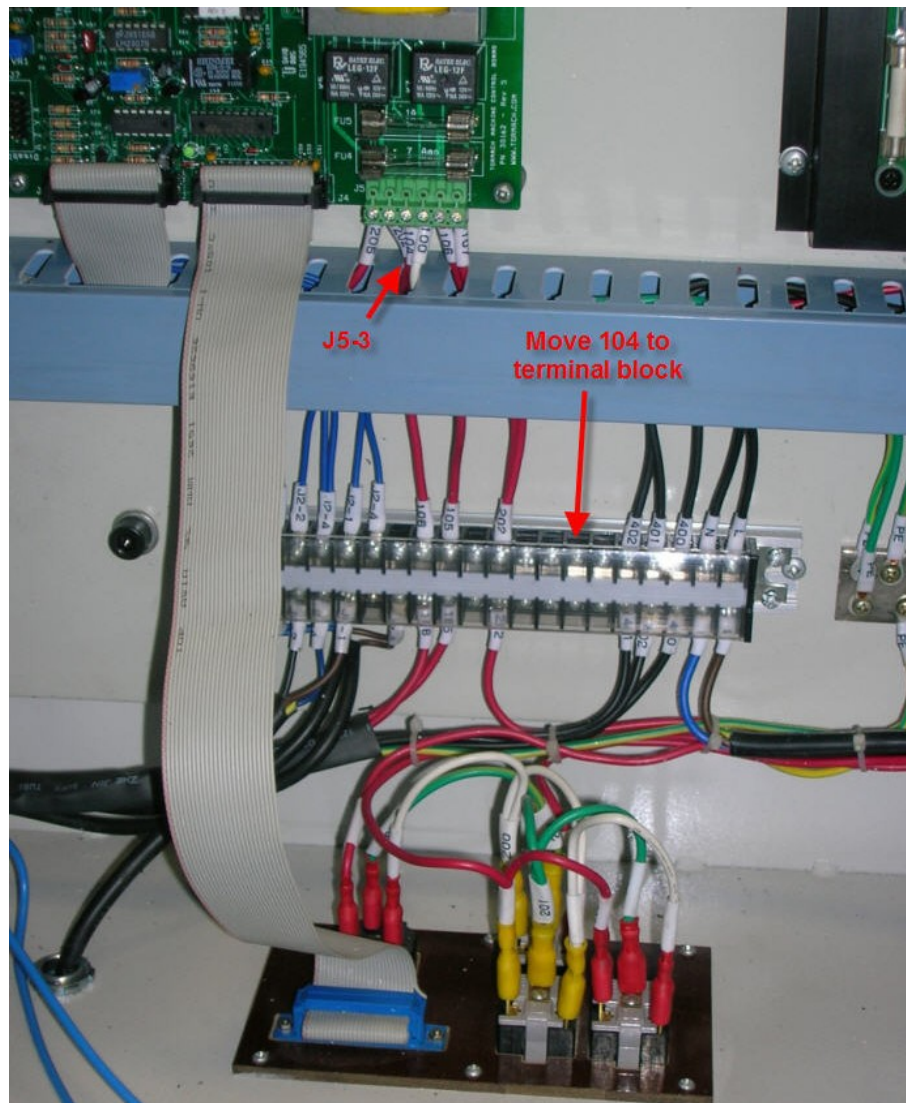
Personal CNC 1100

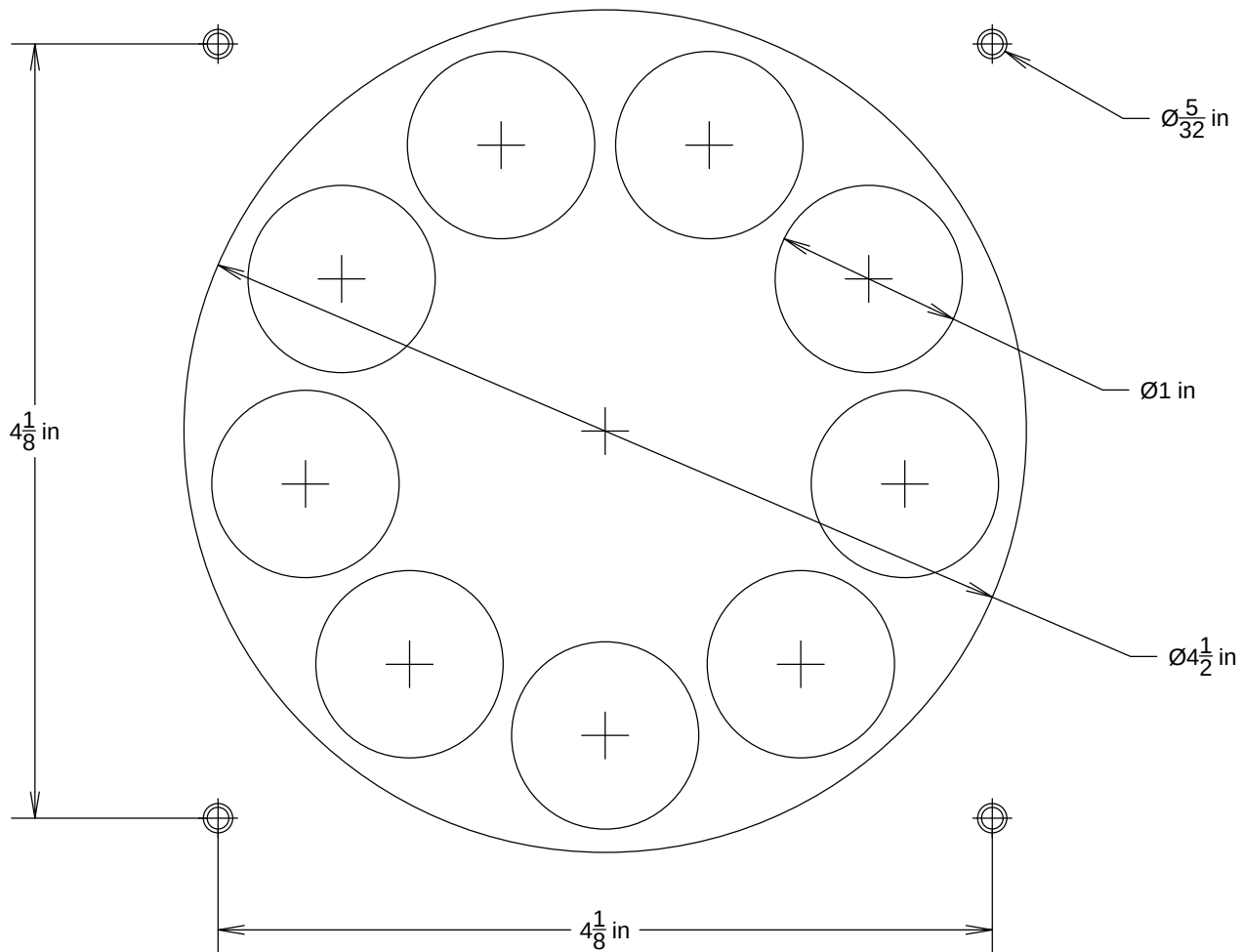
ADDENDUM

Certain machines do not have wire #104 available on the terminal strip.

All machines will have wire #104 available on the lower right corner of the machine control board (refer to arrow in photo). It will come in on the third terminal from the left. This is terminal J5-3. If #104 is not available on the terminal block then remove wire 104 from J5-3 and connect wire 104 to the terminal block. Use the extra wire enclosed in your kit to connect from the terminal block to J5-3. The end result will then have 3 wires joined at the terminal strip:

1. The 104 that was originally going to J5-3
2. A new 104 that now leads to J5-3
3. The 104 that leads to the cooling fan.





				TITLE	
				Fan Upgrade PN 30512 Sheet 1 - Fan Template	
SIZE		CAGE CODE	DWG NO	REV	
A			D40144	A	
SCALE			SHEET		1