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Service Bulletin

Title: Heat Related Control Faults

Number: SB0006 **Date:** March 30, 2006

Product Identification: PCNC 1100 Milling Machine – Serial Numbers 38 and Lower

Background:

A few machines have displayed a behavior of spindle speed variation or spindle shutdown after running for a period of time. When this occurs there are no yellow or flashing red LED fault indicators on the spindle driver. The problem may be associated with a clicking noise emanating from machine control board to the left of the spindle drive. When the machine is turned off and some time is allowed, normal operation can be restored on a restart.

The spindle drive, also known as a VFD (variable frequency drive), is part number 30163 and can be identified using the parts list in the operator manual appendix (section 10.2 of manual 30281 rev B2). The machine control board is PN 30162 and is mounted to the left of the spindle drive.

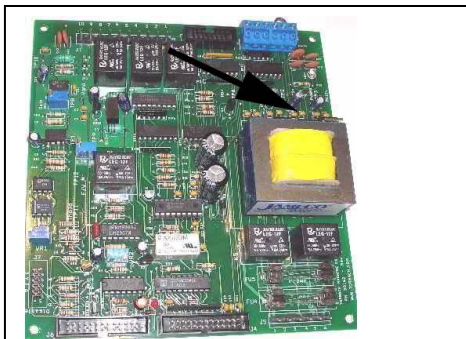
Resolution:

The issue has been traced to a thermal overload of a 5 volt regulator on the machine control board (PN 30162). The solution is the addition of a simple heat sink. The heat sink should be attached between components marked REG1 and REG2, as shown in the photographs on the following page. Heat sink compound is not necessary. It is important that the heat sink does not contact the metal tab of the adjacent regulator or the metal body of the nearby transformer. If your PCNC mill experiences this problem, please contact Tormach and request the controller heat sink kit.

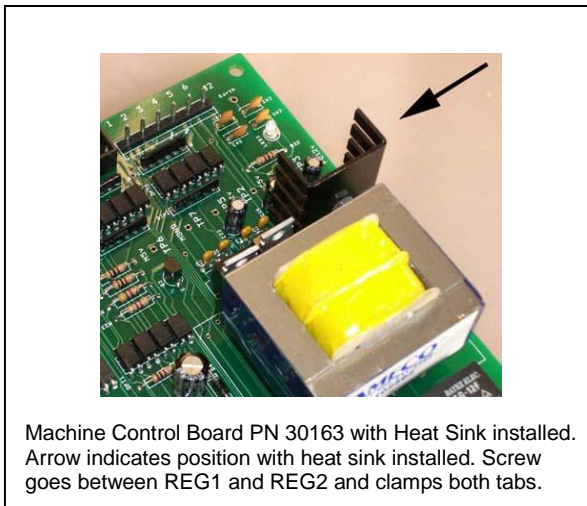


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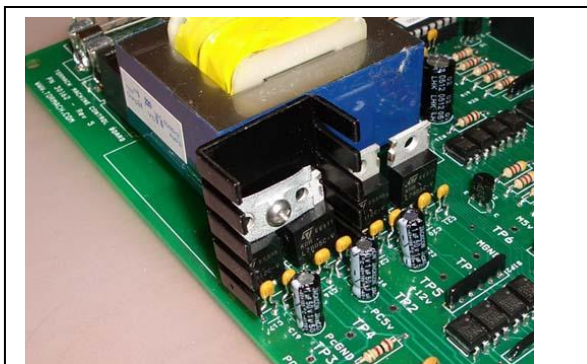
Machine Control Board PN 30163
Arrow indicates position of REG1 and REG2. This image is before heat sink has been added.



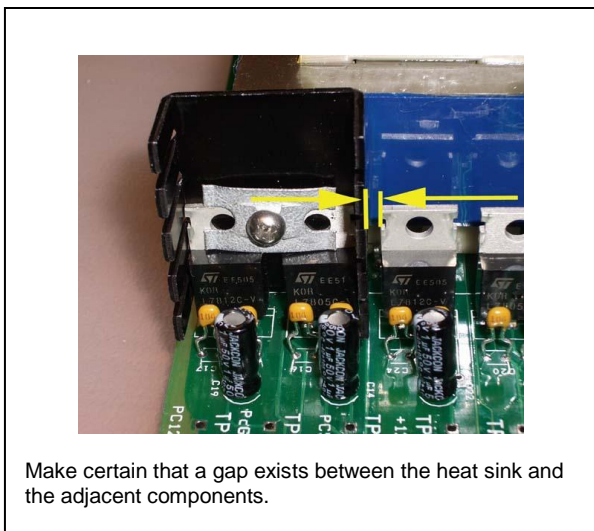
Machine Control Board PN 30163 with Heat Sink installed.
Arrow indicates position with heat sink installed. Screw goes between REG1 and REG2 and clamps both tabs.



This image is before heat sink has been added.



Here the heat sink is in place



Make certain that a gap exists between the heat sink and the adjacent components.