TB092 (Rev2) - Axis Home Too Close To Switch

Overview

This document describes how to correct the error message "_ axis home too close to switch."

Reason for message

In order for the unit to home to the same position at every startup, the control moves the motor until it hits the limit switch and then backs off the limit until it reaches an index pulse. There is only one index pulse per revolution of the motor. If the index pulse is reached while the limit is still registering that it is tripped, the motor will keep turning until the limit is cleared and the index pulse is reached.

If the index pulse comes immediately after the limit has cleared, there is a possibility that during the next homing sequence the limit will still be in tripped condition when that index pulse is reached. This would cause the home position to be one motor revolution off from the last home position, thereby causing the part zero to be off by that amount (if the turns per inch is 10, then part zero will be off by approximately .100"). The "_ axis home too close to switch" error informs the operator that the home position is close enough to the limit switch to possibly cause this situation.

Adjusting the motor

By adjusting the motor, the index pulse can be effectively moved further away from the limit switch to avoid this message and, more importantly, allow a consistent return point for the homing sequence. To adjust the motor

1. Unbelt the motor.
2. Rotate the shaft between 90 and 180 degrees.
3. Re-install the motor. See technical bulletin #076.

   - 1. Be sure to follow guidelines for proper belt tension and pulley alignment.
   - 2. DO NOT impact the motor shaft or pulley in any way.

Alternative Adjustment

The other option for adjustment, moving the dog which trips the limit, is not recommended because of the possibility of moving the dog such that the motor is one revolution off from its previous state. This would cause the problem to not be resolved. However, if the dog is moved .05", and this does not cause the motor to hit the hard stop, the error will be corrected. If this method is utilized, the software travel limits will have to be reset after the adjustment has been made.

Z-axis

If any of these adjustments are performed on the Z-axis of an automatic tool change unit, the alignment for the tool carousel position will be affected and the G30 parameters will have to be reset as outlined in technical bulletin #067.

Document History

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