

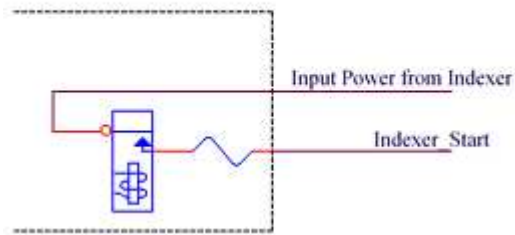
TB060 (Rev2) - Installing and Setting Up a Haas Indexer

Overview

This document describes the procedures for connecting a Haas (or similar) indexer to a CNC7/CNC10/CNC11 M39/M400 control. It will cover the connections to the indexer and modifying the M10(Rotary Clamp) macro. M10, which typically controls the rotary clamp output, will now signal the indexer to start its program, which will be output 11, and it will look at input 9 to know that the indexer has finished its program. A different input and output can be used depending on its availability but all relevant locations where that input and output are used in the following procedures will need to be adjusted accordingly. This document will also describe how to program an auxiliary button on the jog panel to perform the indexing function.

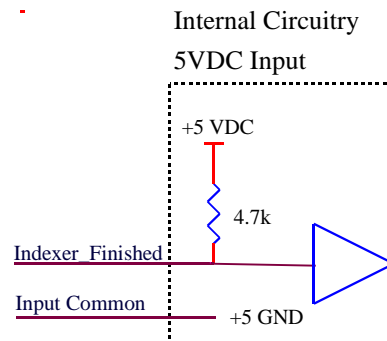
Connecting the Indexer

There are two signals that will need to be connected from the indexer to the Centroid control, Indexer_Start and Indexer_Finished. Each signal will have two wires associated with it. The Indexer_Start signal will be a relayed output controlled by the Centroid PLC. That means that whatever voltage, e.g. +5VDC, +12VDC, +24VDC, etc. will need to be connected from the indexer to the one side, COM, of the relay on the Centroid PLC while the other side of the relay is connected to the Indexer_Start input as shown below.

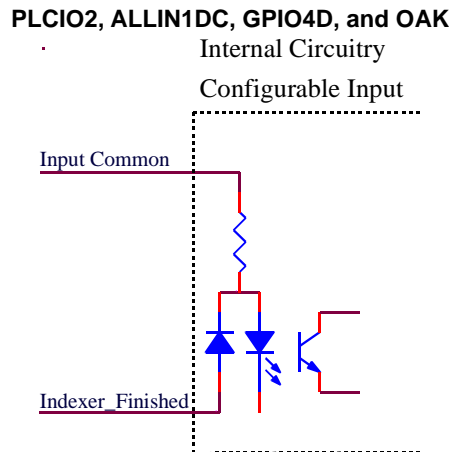


Centroid has developed lots of various PLC boards. Some of them have a defined voltage for the inputs while others have the capability of the retrofitter choosing the desired input voltage. The following PLC boards have a defined input voltage circuit as shown below.

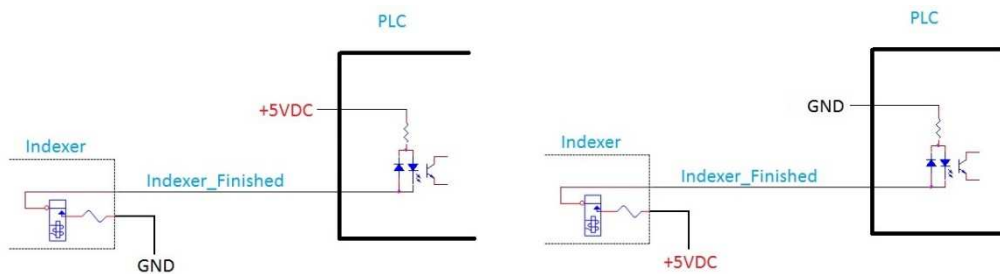
PLC15/15, RTK2, RTK3, RTK4, SERVO3IO, and DC3IO(B)



The following PLC boards have a configurable input circuit as shown below.



The Indexer_Finished signal coming from the indexer is typically a relayed input. If the PLC has a defined input voltage, the wire that is connected to the one side of the indexer's relayed output is connected to the Input Common on the PLC while the wire that is connected to the other side of the relayed output is connected to Indexer_Finished input. If the PLC has a configurable input circuit and the +VDC is connected to the Input Common on the PLC, then one side of the indexer's relayed output is connected to the Indexer_Finished input and the other side of the relayed output is connected to power supply's GND. If the PLC has a configurable input circuit and the power supply's GND is connected to the Input Common on the PLC, then one side of the indexer's relayed output is connected to the Indexer_Finished input and the other side of the relayed output is connected to +VDC.



Creating/Modifying the Indexer Macro

The Centroid control already utilizes an M10 to clamp a rotary table. This document will explain how to modify or create a custom M10 to be able to run an indexer. The M101/x macro tells the Centroid control to wait until input x is closed. Once input x is closed, the Centroid software will then continue with the remainder of the code. The value of the delay timer can also be adjusted. If that value is too small, the indexer program may accidentally be canceled before it completes.

CNC7

1. From the main screen, press CTRL+ALT+X at the same time to exit out of CNC7 and go into the DOS prompt.
2. Type **edit cnc7.m10** and press ENTER.
3. Make sure the macro only contains the following lines:

```
M94/4      ; Request INP36 to turn on
M103/10    ; Start program action timer with a ten second delay
M101/9     ; Wait for INP9(Indexer_Finished) to close
M104       ; Cancel program action timer
M95/4      ; Request INP36 to turn off
```

4. Press ALT+F to bring down the File menu. Highlight Save and press ENTER.
5. Press ALT+F to bring down the File menu. Highlight Exit or Quit and press ENTER.

CNC10

1. Press ALT+F6 at the same time to bring up a Linux command window.
2. Type **edit cnc10.m10** and press ENTER.
3. Make sure the macro only contains the following lines:

```
M94/4      ; Request INP36 to turn on
M103/10    ; Start program action timer with a ten second delay
M101/9     ; Wait for INP9(Indexer_Finished) to close
M104      ; Cancel program action timer
M95/4      ; Request INP36 to turn off
```

4. Press ALT+F to bring down the File menu. Highlight Save and press ENTER or press F8(Save).
5. Press ALT+F to bring down the File menu. Highlight Exit or Quit and press ENTER or press F10(Quit).

CNC11

1. From the main screen press F7(Utility)->F5(File Ops).
2. By default, it should be in the ncfiles directory. Highlight [Up] and press ENTER.
3. It should now be in the cncm directory. Highlight mfunc10.mac and press F6(Edit).
4. Make sure the macro only contains the following lines:

```
M94/4      ; Turn on M10 system variable
M103/10    ; Start program action timer with a ten second delay
M101/9     ; Wait for INP9(Indexer_Finished) to close
M104      ; Cancel program action timer
M95/4      ; Turn off M10 system variable
```

5. Press ALT+F to bring down the File menu. Highlight Save and press ENTER.
6. Press ALT+F to bring down the File menu. Highlight Exit or Quit and press ENTER.

Auxiliary Key Setup

If running CNC7 v8.22 or higher, parameters 188-199 can be used to assign one of the auxiliary buttons on the jog panel to run the M10 macro once the auxiliary button is pressed. For this example, it is desired that the Aux1 button calls the M10 macro. Parameter 188, Aux1 parameter, would be set to 1011. Please refer to the operator's manual for a more detailed explanation of those parameters.

Document History

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