



Here we are showing a swing arm type drill checker with a NSK AstroE-400 drill. The swing arm checker checks the drill after every cycle. If the drill is broken the swing arm over travels and then stops the cycle from continuing.

The drill checker

We found the drill checker easy to install and configure for use with the OmniTurn. The tubular body of the checker is easy to mount. Setting the rotation of the swing arm was also easy with the sensor's adjustable stroke and CW or CCW direction switch. The probe comes with a controller that easily mounts inside our control panel and can be interfaced with the OmniTurn control easily.

Installation

The probe can be mounted in any orientation. It can be used for drills mounted horizontally, vertically, or in line. If you have any questions or need a mounting bracket

manufactured for you, please contact us. The probe comes with a cable that is long enough so it can easily be routed down to the control box. The checker is supplied with its own control box. This looks for a cycle start to initiate the probe and two types of outputs.

Basic installation

The drill checker can be used with the basic OmniTurn kit or GT. To do this the M25/M26 must be available. The M25 would be wired in to start the drill checking cycle. If the probe does not touch the drill then the OmniTurn can be dumped from the program or put into a feed hold state.

If the probe detects a broken drill and faults it is reset by changing drills and cycling the probe checker again. This is facilitated by adding a manual probe cycle start momentary push button.

Advanced installation

With the basic installation the OmniTurn's only course of action is to shut down if the drill breaks.. With the additional I/O kit added there are many options available. First off the I/O kit frees up the M25/26 function. An M function can be created to start the checker. The confirmation that the cycle was completed successfully can be handled with variable results by a conditional M97 statement:

M97 Pn In Cn

Where Pn (n = 1 - 9) directs the program to jump to a subroutine if the condition of inputs In (n = 0 - 7) matches Cn (n = 1 for on, n = 0 for off). In simple speak this means you can set the program to jump to a special subroutine if the drill breaks. The subroutine could turn off all M functions and park the machine at a home location before shutting down. The subroutine can even end with an M30. Variations on this could include diverting to a second drill or ejecting the bad part into a special "bad part" container.

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...
T7      (cross drill)
X.5Z1
M17     (turn drill on)
Z-.4
X.2F7
X.5F300
Z1
M32     ( M function to start checker)
M97P1I3C1 (if input 3 is on, jump to P1)
M30
}1
M18     (turn drill off)
T0
X0Z0
M30
    
```

If you have any questions on using or purchasing these options please contact Jeff Richlin at jrichlin@omni-turn.com.