



Getting the Most from Your Wintriss SmartPAC

This is the first of a series of articles designed to help users better understand the capabilities of the Wintriss SmartPAC system and put it to use.

The original SmartPAC and the newer SmartPAC2 both include a brake monitor as a standard feature. The brake monitor provides users vital information relative to press safety, die protection, and maintenance.

Wintriss Brake Monitor Features, Benefits & Function

- Measures stop time to continually check brake wear
- Allows users to properly establish and maintain safety distance for two hand controls and/or presence sensing devices as required by OSHA 1910.217, ANSI B11.1-2009, and ANSI B11.19 safety standards.
- Ensures safety distance is not compromised by brake decay – which is vital to operator safety.
- Ensures compliance with OSHA 1910.217(b)(14) brake system monitoring for hands in die operations.
- Eliminates the need for weekly clutch/brake inspection for other operations.
- The brake monitor stop time/distance display helps you set up your die protection system and determine what events can be stopped before die closure. When clutch/brake performance decays die protection systems may be compromised; especially, if down stroke occurring events are monitored.
- The brake monitor also measures press start time. Clutch engagement time is an indicator of clutch condition. Excessive start times are a predictive indicator of clutch/brake and/or valve maintenance problems.

Brake Monitor Operation

SmartPAC's built-in brake monitor constantly checks brake wear by measuring stop time every time the press stops and displays that value in milliseconds. SmartPAC also displays the number of degrees it took the press to stop. SmartPAC measures how long it takes from the time that the dual safety valve is de-energized to the actual stopping of the press crankshaft as determined by resolver input.

Setting the SmartPAC Brake Monitor

You set the brake monitor stop time limit to a certain value (in milliseconds), that is longer than the actual stopping time. This extra time compensates for normal brake wear. When the stop time reaches the stop time limit, the brake monitor disables the press from further usage. This tells you that your brake has been worn to a point where it needs servicing. The brake monitor also flashes a brake warning light when the stopping time of the press gets within 10 milliseconds of the stop time limit. This allows you to schedule maintenance on the brake before the situation gets to the point where the press will not run.

SmartPAC 2 checks the condition of the brake by measuring stopping time every time the press top-stops.

Determining the Press's Stopping Time & Safety Distance

First you need to determine the press's stopping time under normal stopping conditions, which is usually top stop. Therefore, the stop time limit must be calculated based upon stopping time at top stop.

The 90° stop-time test is required in order to set the proper safety distance for personnel guarding devices including light curtains, two-hand controls, and type-B movable barriers. This test is done at the press's most critical stopping point -- 90°. The worst case scenario occurs half-way through the down stroke at 90° while the press is running in continuous mode. Therefore, SmartPAC is designed to check stopping time at that critical crankshaft angle.

Both top stop and 90 degree tests should be done with the heaviest dies set in your press operating at the maximum intended run speed.

OSHA and ANSI standards differ with regard to calculating safety distance. We have information on our web site that provides more information on this topic:

[Reference Formulas & Technical Information](#)

[Guidelines for Safety Distance Calculations When Using Light Curtain Blanking Functions](#)

[Light Curtain Application Issues – "Walk Thru Hazards"](#)

Calculating the Press's Stop Time Limit

Once you know the press's actual stopping time, you need to add extra time to this number to compensate for normal wear in your brake. Otherwise, SmartPAC 2 would stop the press as soon as the stopping time increased just slightly (*nuisance stops*). This extra time is referred to as "T bm." The minimum value that you can set is 10 Ms. The stopping time plus T bm will be the stop time limit setting.

A rule of thumb for determining stop time limits: Add 20% to the stopping time of your press if your brakes are new. Add 10% for older brakes. The reasoning is that stop time should be less for a new brake.

Setting the Stop Time Limit

Stop and Start Time Limits are set in the SmartPAC Initialization mode.

Your SmartPAC manual has detailed instructions on how to set start and stop time limits and other details on using the brake monitor functions. Alternatively; your Production Resources Application Engineer can assist you.

We can provide onsite operator training classes to help you get the most from your investment in Wintriss Press Automation Controls.

Production Resources also offers in plant safety surveys to help you determine if your presses are OSHA/ANSI Compliant

Contact Production Resources for more information 800-863-3164 or e-mail lcp@pri-mailbox.com