PRODUCTION RESOURCES INCORPORATED

NEWS

Volume 2 February 2005

SmartPAC 2 Ushers In The Paperless Shop

SmartPAC 2 Info Center

Many quality systems require setup sheets and procedures to be available for every die, at every press. Not only is this difficult to maintain, setup sheets are often damaged, misplaced, or not available when you really need them. When a setup sheet is modified, all existing copies must be tracked down and replaced. The new SmartPAC 2 Info Center option rids you of these headaches once and for all.

Central Storage for Easier Document Control

SmartPAC 2 uses your existing Ethernet network to retrieve information that is stored remotely. This eliminates the need to enter or store information at each press. You can create and manage setup information in one location that all of your SmartPAC 2 systems can access. It is much easier to implement changes since there's only one copy of each setup document.

Accurate Setup Information at Your Fingertips

The SmartPAC 2 Info Center allows you to display setup sheets, drawings, photographs, and other information right at the press. The platform's flexibility allows you to display as much or as little information as you wish; you can display a simple text-only setup sheet or a full set of part drawings, press schematics, maintenance records, and more. There is no limit to the amount of information that can be displayed on the SmartPAC 2's screen.

Benefits

- Eliminates paper setup sheets.
- More accurate setups.
- Setup information can be maintained in one location.
- Display as much or as little information as you want.
- Show detailed setup procedures including photographs and drawings.
- Uses your existing network infrastructure.
- Since there's only one copy of each document, changes are easier to manage.

Features

- No limit to the number of pages that can be shown.
- Display text, drawings, photos, or other information.
- The correct information for each job is automatically retrieved.
- Flexible format allows you to display as much or as little information as you need.
- Uses your existing SmartPAC 2 - No additional equipment is required.

The image to the left shows an example of an Info Center screen displaying a part drawing. The Function keys along the right side of the screen provide navigation to other Info Center screens.

By using a combination of function key and menu navigation, an unlimited number of pages can be accessed by the SmartPAC 2 Info Center.

Wintriss has developed templates with built-in scripts that allow you to customize the navigation to suit your needs.

BTM's Universal Hydraulic Press

BTM Corporation's Model H10U Universal Hydraulic Press provides the best solution for both production and prototyping applications. This unit is designed for short and long production runs when utilizing BTM's patented Tog-L-Loc sheet metal joining system. One advantage to the H10U is that it allows the operator to use both hands to hold the part(s) during the joining sequence while cycling the press with a foot pedal. The dual foot pedal allows the operator complete control over the machine when advancing the ram, making the joint, and returning the ram completely home. It also

provides a "peck" stroke for higher volume applications.

The H10U comes in two basic configurations—Fixed-Frame or Inclinable. The Fixed-Frame unit comes on a fabricated base with a 500mm throat depth, 150mm of stroke and a two-position anvil. The two-position anvil, used in conjunction with tool extensions, allows for easier manipulation of prototype or production parts in order to reach locations needing to be joined with Tog-L-Loc. The Inclinable Press comes with an adjustable machined base which allows the unit to be tilted and locked in any position between

0-90 degrees. This feature allows for the joining of oversized parts. The Inclinable Press comes with a 457.2mm throat depth and 150mm of stroke.

BTM's Model H10U Universal Hydraulic Press operates on 230V or 480V and features a programmable logic controller and adjustable pressure setting. It also features an internal ram guarding system that eliminates cumbersome ring guards and other exposed mechanisms. Options such a laser joint locator and a 68-piece tool kit are also available.

Point of Operation Guarding Made Simple — Part 2

In the October 2004 issue of our newsletter, we covered one of the acceptable Point of Operation Devices, namely Guards. In this issue, we will discuss Presence Sensing Devices, Pullouts & Restraints and Two-Hand Controls.

Presence Sensing Devices

Presence Sensing Devices prevent and/or stop the press if the operator's hands are inadvertently placed in the point of operation. Most often this will be a light curtain. RF presence sensing devices were common several years ago but have all but disappeared due to a NIOSH report questioning their safety. Safety Mats are also presence sensing devices but are not commonly used on power presses since the entire system is not control reliable.

- Presence sensing devices need to be "control reliable." Simply stated, if any part of the device fails, it will stop the press and prevent additional stroking until it's fixed.
- Presence sensing devices need to be located at a "safe distance." Ds Safe distance is determined by this formula Ds=63″/second x Ts (63″/second is the hand speed while Ts is the press stop time measured at 90 degrees). For example press stop time of .2 seconds yield a safe distance of 12.6.″ (Brake monitor safety factor should be considered! Add the amount of time allowed for brake performance decay to the measured stop time.)
- When used with hands in die operations, presence sensing devices must be used with clutch brake control systems that are control reliable and incorporate a brake monitor ((b)(13) and (b)(14) of the OSHA standard).
- Presence sensing devices can't be used on full revolution clutch presses.
- The device can't be used to initiate the stroke (self tripping – presence sensing device initiation).
- Light curtains may be muted (bypassed) on the upstroke to allow part ejection, etc. The muting method must be control reliable.
- Guards and/or supplementary devices are required to protect any areas not protected by the light curtain.
- Walk through hazard should be considered although this is not technically part of the OSHA standard. A walk through hazard exists when the safety distance requirement is large enough to allow an operator/helper/passerby to stand undetected between the light curtain sensing field and the point of operation. The problem here is that another operator can stroke the press while someone else is in a danger zone. See our website—light curtain application issues "walk thru hazards" for solutions to this problem.

Advantages:

- Full visibility and accessibility.
- Light curtains are easy to understand and minimize impact on

GUARDING Continued on next page

PRI PRODUCTION RESOURCES INCORPORATED NEWS

GUARDING Continued

productivity.
- Light curtains protect all operators, helpers, and passersby.
- Light curtains are effective in all modes of operation.

Disadvantages:

- Presence sensing devices have a relatively high initial expense.
- Light curtains may be damaged by fork trucks during die setup.
- Light curtains are ineffective for presses with poor clutch/brakes that stop slowly.
- Light curtains will not protect the operator from flying fragments if a die "explodes."

Pullouts and restraints:

A restraint prevents the operator from inadvertently reaching into the point of operation (the rough equivalent of tying the operator to a post). A pullout withdraws the hands if they are located in the danger area during die closure. Pullouts are offered in a variety of models for different types of presses. They all involve some sort of mechanism that is attached to the press ram and cables with hand/wrist bands that the operator must wear.

These devices must be visually inspected and checked for proper adjustment at the beginning of each shift, each die change, and each operator change. Records of inspection and maintenance are required.

Advantages:
- One of the few options for full revolution clutch presses.

Disadvantages:
- Inspection and record keeping requirement.
- High maintenance.
- Operators don't like to be "tied up."
- Limits operator mobility.

Two-hand controls

Require the operator to have both hands on the machine controls to initiate a stroke and locating the controls at a safe distance. These devices keep the hands outside the die during the down stroke.
- Two-hand controls must be located and secured at a safe distance as determined by this formula Ds=63"/second x Ts (63"/second is the hand speed while Ts is the press stop time measured at 90 degrees). For example press stop time of .3 seconds yield a safety distance of 18.9." (Brake monitor safety factor should be considered!)
- When used in hands-in die operations, the control system must be "control reliable."
- The two-hand control shall require concurrent application of the palm buttons to start a stroke.
- Removal of a hand from a palm button during the down stroke shall cause the slide to stop.
- Each operator requires a separate set of two-hand controls.

Advantages:
- This feature is usually provided for free on new presses.
- Easy to use and understand.

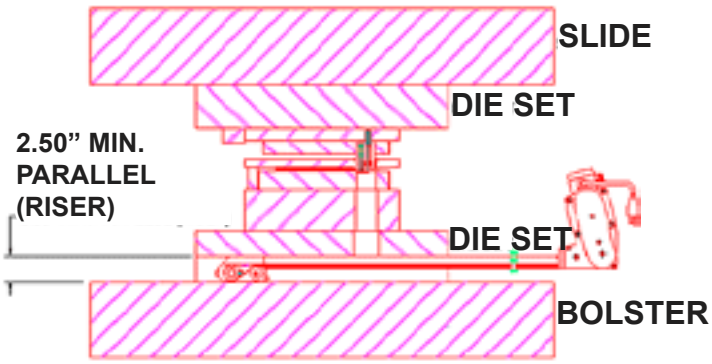
GUARDING Continued on next page

The Best Under Die Slug Conveyor Gets Better

The Pax conveyor is designed specifically to fit under a stamping die between the parallels and remove slugs, scrap, and parts. The following features set it apart from other conveyors used for this application:
- Low profile requires only 2.5" clearance between die and bolster.
- Light weight modular design with replaceable formed steel tray.
- Easy mounting with motor designed to set on the bolster.
- Large drive pulley with sealed needle bearings.
- Spur gear reducer with roller chain drive.
- Rugged woven polyester PVC belt with stainless lacing allowing five-minute belt change tolerant of most press lubricants.
- TEFC 115 vac motor.
- Unique stopped belt sensor ready to connect to most popular die protection systems.

The Pax conveyor is available from 4" wide to 20" wide and lengths from 4' to 8'. Fixed belt speeds range from 29 fpm to 108 fpm. A new model with a variable speed motor and controller is also available.

The unique optional Pax stopped belt sensor minimizes belt damage and die damage as a result of conveyor belt jamming. This sensor generates pulses as the belt turns on the pulley. The pulse output is compatible with Wintriss or similar die protection systems and is used as a cyclic sensor input. If the die protection control fails to see a pulse during a sample period of the stroke "ready signal," the system signals the press to stop.



The new feature "side wipers" prevent very small slugs from working their way under the belt which would cause the conveyor to jam and/or tear the belt.

Magnetic Products' Slider Bed Magnetic Conveyors

MPI's Beltless Magnetic Conveyors are designed to provide positive control of ferrous metal materials. For 20 years, the MPI conveyors have been available in a wide range of configurations designed specifically to meet your application. Powerful permanent magnets are conveyed below a non-magnetic stainless steel slider bed to move and convey ferrous metal objects. Typical materials conveyed include metal; stampings, turnings, chips, fasteners and scrap. The liquid tight sealed conveyor housing can be completely submerged in machine reservoir tanks and the internal self-adjusting take up system eliminates the need for maintenance. MPI conveyors are offered with many design options and can also be supplied with other ancillary components such as feeders, hoppers, etc. to provide a complete material handling system.

- The perfect solution for moving parts or scrap from under a press to a dumpster.
- Eliminates replacement conveyor belts. Virtually maintenance free.
- Available in Z shape, L shape, or straight.
- Magnets run in an oil bath under a rugged stainless steel bed.
- Conveyor is bolted together without use of self tapping screws.

- MPI's engineering and laser cut construction allows all components to be replaced.
- Magnets are covered in UHMW jackets which allow them to ride against the slider bed surface for increased magnetic strength and durability.
- All stainless steel construction available.
- Optional manganese impact section through radius to improve conveyor life.
- No tension adjustments required automatic spring loaded takeup.
- Reverse flow designs available for chip/coolant separation.
- Liquid tite construction.
- Oil fill, drain to support internal oil bath for continuous lubrication.
- Premium quality torque limiter.

PRI Application Engineers

Terry Bolser—Southern Ohio, Northwest Ohio and Central Kentucky

Steve Connolly—Northern Ohio

Phil Haskins—West Tennessee, Southern Kentucky, Mississippi

Chris Jones—Central and East Tennessee, Georgia, Alabama

GUARDING Continued

- Compliant two hand controls exist on most presses built after 1974.

Disadvantages:

- Potential for repetitive motion injury.
- Safety distance needs to be established.
- Requires a brake monitor (A control reliable time based type is recommended).
- Useless for continuous/automatic operations.

FYI

Additional technical information is available at no charge on our website: www.production-resources.com. Just click on "Safety/OSHA" for information regarding:

- Application Guideline for Proper Use of Light Curtains
- Press Brake Alternative Guarding Method
- How to Determine if your Power Press Control Complies with OSHA Standards
- Light Curtain Application Issues—"Walk Thru Hazards"
- Safety Alternatives for Full Revolution Clutch Mechanical Power Presses
- Lockout—Tagout during Die Changes

Production Resources has Application Engineers available to help you at your facility. We can be reached at:

Phone: 800/863.3164
Fax: 615/371.3282
Email: lcp@pri-mailbox.com.

Published at our Main Office:
Production Resources Incorporated
118 Seaboard Lane, #106
Franklin, TN 37067-2819
Phone: 615/371.3888
Toll-Free: 800/863.3164
Fax: 615/371.3282