SAFEGUARDED PART-REVOLUTION-CLUTCH PRESS

A Part-Revolution-Clutch Press With Clutch/Brake Control and a Presence-Sensing Device and Two-Hand Control as Safeguards
PART-REVOLUTION CLUTCH

The majority of part-revolution presses have an air-applied clutch and an air-released brake. They are designed to trap air in a chamber or tube. When compressed air is put into these chambers or tubes, the clutch is engaged and the brake is released. The press then starts a cycle. To stop the press, the opposite takes place. A part-revolution-clutch press can be engaged and disengaged at any position of crankshaft rotation or revolution.

Occasionally older mechanical-friction-clutch presses are found in plants and are still being used. Sometimes press brakes with mechanical-friction clutches are used as power presses. These press brakes and the older mechanical-friction-clutch presses can be updated by adding a properly sized air cylinder to the part-revolution control packages that are offered. See pages 172 and 173 for these air cylinders.

Due to the many detailed OSHA requirements on part-revolution-clutch presses, most existing clutch/brake control systems on presses do not meet safety standards and regulations if they were installed prior to 1971. Most of these presses do not have control reliability and brake monitoring.

The part-revolution-clutch/brake control-reliable systems in this catalog are designed to stop the press and render it inoperable if there is a single component failure in the control system. This is done by minimizing the use of static-condition components and using critical, redundant components that are checked. Microprocessors or relays of special construction are used in this type of reliable control system (see page 259). The clutch/brake control systems offered here are furnished with a built-in, two-hand control safeguarding device.

In addition to the clutch/brake control meeting the requirements of the safety standards, all part-revolution presses require a safeguarding device or guard (barrier) to protect people that operate, set up, and maintain these machines.

The following are OSHA- and ANSI-recognized methods for safeguarding the point of operation on part-revolution-clutch mechanical power presses:

1. Barrier guard (pp. 11-30)
2. Presence-sensing device (pp. 45-73)
3. Two-hand control (p. 74)
4. Pullback (p. 77)
5. Restraint (pp. 78-79)
6. Type A or B gate (pp. 80-86)

When safeguarding, please keep in mind that the sides and back of the point of operation must also be safeguarded to protect the operator and other employees.

PART-REVOLUTION CONTROL SYSTEMS

A part-revolution control system consists of:

1. A control box (pp. 104-113)
2a. Individual components (pp. 114-119) OR
2b. Component packages (pp. 120-121)

We offer a variety of control boxes that can be furnished to meet your specific requirements. The SSC-1500 solid-state control box version is available as follows:

1. Standard clutch/brake control
2. Custom clutch/brake control which includes a fused disconnect switch and magnetic motor starter
3. Special clutch/brake control
4. Remote operator style

SELECTING A CONTROL SYSTEM

1. To order a complete control system which includes control reliability and brake monitoring, determine which style control box is required.

A standard control box includes the clutch/brake control and transformer.
SELECTING A CONTROL SYSTEM (continued)

The clutch/brake control can also be furnished in a plain-door enclosure, as a subpanel, or as a module kit. The plain-door control requires a remote operator station. Subpanels and module kits are furnished without the enclosure; module kits include the primary internal components of the control only. Subpanels and module kits must be installed into an existing enclosure by qualified personnel. The subpanel or module kit also requires a remote operator station or a keypad/display kit.

A custom control box includes a main power disconnect switch and magnetic motor starter in the same enclosure as the clutch/brake control. A reversing ram-adjust motor starter may also be included.

Special control boxes can include either a standard or custom clutch/brake control that requires modification for any special requirements. This can be an interface of auxiliary equipment, such as a lube system, a light curtain interface for a non-Rockford light curtain, or components specified by the end user, such as NEMA starters and disconnects.

Remote operator-style control boxes include the clutch/brake control in a smaller enclosure so it can be mounted close to the operator. A control transformer must be supplied separately or the existing transformer must be reused.

2. The CMS-115 resolver/pulser assembly is always required with any of the SSC-1500 controls.

3. After determining the style of control box, determine the location of the operator controls, indicator lights, and the keypad/display. Please remember these components should be installed in a convenient location for the operator. These components can be supplied as follows:
   
   1. On the front of the enclosure
   2. In a remote operator station
   3. In a control bar
   4. In a console
   5. Loose for installation in an existing box

4. Determine which other components are required (dual-solenoid air valve, air pressure switches, etc.). If existing components comply with the safety requirements, they can be reused with the control box that is furnished. If the components do not comply, complete component packages are available. Please see pages 120 and 121.
SSC-1500 PRESS CONTROL

STANDARD SSC-1500 CONTROL BOX

The SSC-1500 control is designed for use on part-revolution-clutch power presses. It is designed and built to comply with OSHA 29 CFR 1910.217 and ANSI B11.1, B11.3, and B11.19. These controls can update or replace existing relay-based control systems, found in user’s plants; they can also be furnished for new or rebuilt presses.

This control includes control reliability (see page 259), motion detection with a time-based brake monitor, light curtain interface, and diagnostics (eight user-programmable inputs). It also includes batch and stroke counters with preset, a total counter, and a hard-wired emergency-stop master control relay.

The SSC-1500 is an economic, full-featured, dual-microprocessor-based control system. The system uses redundant inputs from devices such as palm buttons, foot switches, and a light curtain(s). The system output to the dual-solenoid air valve is provided by a safety relay with force-guided contacts and two solid-state relays. These output relays are independently controlled and cross-checked by the microprocessors. This allows control-reliable operation of the outputs in the event of a single control component failure. Each microprocessor also has its own logic power supply. This decreases the possibility of simultaneous control failure because of a fault within the power supply system. Timing and motion detection of the crankshaft is accomplished by the resolver/pulser assembly.

The standard control box is a 20” x 20” x 8” NEMA 12 enclosure with the operator controls and keypad/display mounted in the door, as illustrated above.

If a starter or disconnect is required in the same enclosure as the standard SSC-1500 control, see page 109. If a separate starter or disconnect, or combination starter disconnect is required, see pages 193 through 197.
SSC-1500 PRESS CONTROL (continued)

STANDARD MODES OF OPERATION
• Off
• Two-hand inch (regular, timed, or top-stop)
• Two-hand single stroke
• Foot single stroke
• Two-hand “walk-away” continuous
• Continuous-on-demand
• Automatic single stroke
• Two-hand-maintained continuous
• Foot-maintained continuous
• One-hand or foot trip single stroke (use with light curtain only)

FEATURES
• Meets and exceeds OSHA 29 CFR 1910.217 and ANSI B11.1, B11.3, and B11.19
• Provides two-hand control safeguarding device
• NEMA 12 enclosure
• Redundant/cross-checking microprocessors
• Redundant microprocessor logic power supplies
• Triple-redundant solid-state solenoid relays
• 4-line x 20-character LCD (liquid crystal display) with 20-key operator interface
• Wide range of input power supply—85 to 135 V AC
• Absolute resolver with sync switch for timing and motion detection
• Time-based brake monitor with programmable warning and fault set points
• 6 user-programmable 24-V DC static diagnostic or die protection inputs (1 can also be used as a part-in-place 24-V DC cyclic input)
• 2 user-programmable 24-V DC cyclic die protection inputs
• 7-digit stroke and batch counters with preset, and a 7-digit total counter
• Automatic variable-speed top-stop adjustment
• Light curtain interface(s) with off/on selector
• Light curtain mute during the nonhazardous portion of the stroke
• 1 auxiliary output with 2 contacts
• 2 PLS (programmable limit switch) outputs—each with two on and off angle settings
• RS-232 serial port for networking—Ethernet modem 10BaseT
• Display of text in English or Spanish
• Information displayed when the machine is in operation: angle, speed, batch counter, stroke counter, mode of operation, and stop time

KEYPAD/DISPLAY
The keypad/display is used to enter setup information, monitor machine operation, and display messages to the user. The keypad/display has a 4-line x 20-character LCD (liquid crystal display) with 20 keys for entering information and programming. As standard, this keypad/display is mounted in the control box. For operator convenience, it can be furnished in a remote enclosure up to a maximum of 150’ from the SSC-1500 control module (see page 112).

Information displayed during the machine run cycle includes:

- Angle
- Speed
- Batch Counter
- Stroke Counter
- Mode
- Stop Time

Example of the Main Run Screen on the Keypad/Display With Selector Switches
**SSC-1500 PRESS CONTROL (continued)**

**PROGRAMMING**

The SSC-1500 press control has eight (8) programmable user inputs (6 static-type and 2 static- or cyclic-type inputs) that can be programmed for equipment monitoring or other user-defined functions. All inputs are 24-V DC current-sinking (NPN) inputs.

There are three (3) parameters that can be programmed for the six static-type inputs, and five (5) parameters that can be programmed for the two static- or cyclic-type inputs. The three parameters are input logic, stop type, and fault message; the five parameters are input logic, stop type, fault message, open angle, and close angle. They can be assigned to each input from the list below. When a fault condition is detected, the machine will top stop or emergency stop, and the assigned message will be displayed. This feature helps when troubleshooting common fault conditions.

**FAULT MESSAGE LIST:**

<table>
<thead>
<tr>
<th>Clutch/Brake Air Fault</th>
<th>Lube Motor Overload</th>
<th>Variable Speed Drive Fault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counterbalance Air Fault</td>
<td>Auxiliary Motor Overload</td>
<td>Die Protection Fault**</td>
</tr>
<tr>
<td>Dual Solenoid Fault</td>
<td>Guard Interlock Open</td>
<td>Short Feed Fault**</td>
</tr>
<tr>
<td>Clutch Valve Fault*</td>
<td>Front Guard Open</td>
<td>Part Ejection Fault**</td>
</tr>
<tr>
<td>Brake Valve Fault*</td>
<td>Rear Guard Open</td>
<td>Stock Buckle Fault**</td>
</tr>
<tr>
<td>Lube Fault</td>
<td>Left Side Guard Open</td>
<td>End of Stock Fault**</td>
</tr>
<tr>
<td>High Lube Pressure</td>
<td>Right Side Guard Open</td>
<td>Pilot Pin Fault**</td>
</tr>
<tr>
<td>Low Lube Pressure</td>
<td>Feeder Fault</td>
<td>Part Input #1**</td>
</tr>
<tr>
<td>Low Lube Level</td>
<td>Load Monitor Fault</td>
<td>Part Input #2**</td>
</tr>
<tr>
<td>Main Motor Overload</td>
<td>Safety Block Interlock</td>
<td>Part Input #3**</td>
</tr>
<tr>
<td>Ram-Adjust Motor Overload</td>
<td>Shut Height Fault</td>
<td></td>
</tr>
</tbody>
</table>

*Only used on machines that have a split clutch and brake, and two dual valves have been furnished.

**NETWORKING**

**PART NO. FTL-314**

The networking option for the SSC-1500 control system consists of a TCP/IP (Transmission Control Protocol/Internet Protocol) modem card, a 5’ cable, and a CD with data collection program. The separate network modem card and cable plug into the P3 network port on the SSC-1500 control module. Use of the network modem will provide viewing of current data via a standard Web browser and will provide data collection. The current status of the press and what the control is doing can be monitored.

The data collection software that is furnished with this system will save data to a flat text file. Most any database, spreadsheet, or word processing program such as Microsoft Access, Microsoft Excel, dBASE, or Paradox, can import the information. This software program can accommodate up to 32 presses. Opening the program again will accommodate 32 more presses.

The following information is available for viewing and data collection, and can be arranged to accommodate your needs.

- Date and time
- Batch counter
- Batch preset
- Brake monitor status
- Stop time
- Stroke counter
- Current mode
- Brake monitor fault set point
- Total counter
- Stroke preset
- SPM
SSC-1500 CUSTOM CONTROL BOX

Part-revolution-clutch SSC-1500 custom control boxes are also available to house the clutch/brake controls, disconnect switch, motor starters, and any other electrical components to fit your press room needs. A custom control box contains the standard control module and components as described on pages 106-108 plus the following:

- main power disconnect switch
- main drive motor starter
- ram-adjust motor starter (if required)

These boxes are furnished with an IEC through-the-door main power fused disconnect switch and an IEC magnetic motor starter (with push buttons). A reversing ram-adjust motor starter with selector and push buttons may also be included. They are prewired and built into a NEMA 12 enclosure.

Operator controls and the keypad/display are located on the front of the door, or a plain-door control or subpanel can be furnished. If a plain-door custom control or a subpanel custom control is ordered, a remote operator station or keypad/display kit is required. See ordering information on page 112.

NEMA-style disconnect switches and motor starters, and brand-name components specified by our customers are also available.

To ensure the starter(s) and disconnect are sized properly, please check horsepower for the main drive motor and slide adjust motor (if furnished) on the press, as well as full-load amps, and primary voltage to the press. After obtaining this information, please go to the chart on page 113 to determine the proper custom control box part number. Make sure the proper suffix (F, P, S, K, C, X, Y, or Z) is in the part number. Follow directions 1-6 to determine the correct part number.

Example of part numbering system: The press requires a plain-door control and a 60-A disconnect switch (based on the full-load amp formula). It has a 10-HP motor, a reversing 24-A main motor starter without ram adjust, voltage is 230 V, and has a standard Rockford Systems light curtain. The part number to order is PRC-224-PA.
SSC-1500 REMOTE OPERATOR-STYLE
CONTROL BOXES

These remote operator-style clutch/brake control boxes include the same features and modes of operation as the standard SSC-1500 control boxes described on pages 106-108. However, they do not have a control transformer. These control boxes are designed in a smaller enclosure so they can be conveniently located on the front of the machine near the operator.

These controls are for applications where the machine’s existing magnetic motor starter, fused disconnect switch, and control transformer meet the safety requirements and can be reused. If the existing control transformer cannot be reused or a new control transformer is required, please contact the factory.

The three remote operator-style control boxes available have the keypad/display and all operators on the door of the 20” x 20” x 8” enclosure. Please see the next page for the three styles available. The keypad/display and all operator controls are located on the door (front) of the enclosure.
PART-REVOLUTION-CLUTCH PRESS CONTROL SYSTEMS

SSC-1500 REMOTE OPERATOR-STYLE CONTROL BOXES (continued)

Style X Includes:
- Keypad/display
- Program off/on selector switch
- Mode selector switch
- Actuating means selector switch
- Light curtain off/on selector switch
- Internal clutch/brake control module, master control relay, and terminals

Style Y Includes:
- Keypad/display
- Program off/on selector switch
- Mode selector switch
- Actuating means selector switch
- Light curtain off/on selector switch
- Internal clutch/brake control module, master control relay, and terminals
- Prior-action push button
- Self-latching emergency-stop button
- Top-stop button

Style Z Includes:
- Keypad/display
- Program off/on selector switch
- Mode selector switch
- Actuating means selector switch
- Light curtain off/on selector switch
- Internal clutch/brake control module, master control relay, and terminals
- Prior-action push button
- Self-latching emergency-stop button
- Top-stop button
- Two guarded run/inch buttons located on the sides of the enclosure
CONTROL MODULE KIT

A control module kit allows the end user to update the clutch/brake control of a press with minimum equipment costs. The kit is supplied without the control enclosure, panel, control transformer, control fuse, terminal strips, wire duct, and wiring.

A set of electrical prints is supplied to show typical wiring and all mounting dimensions are provided in order for a qualified person to install the control module kit. The minimum area required on an existing control panel to install this kit is 14” H x 12” W x 6” D.

This control module kit includes the control module, master control relay, shock mounts, fasteners, suppressors, danger labels, and electrical prints.

The SSC-1500 control can be furnished as a subpanel that includes everything in the standard control as described on pages 106-108 except for the enclosure. The area needed to mount the subpanel inside an existing control box is 18¼” H x 18¾” W x 6” D. See page 113 to determine the part number for the module kit or subpanel. A keypad/display kit is required unless a remote operator station is used (see below).

If the continuous mode of operation is used, a prior-action station, Part No. LLD-1500, is required. See page 117.

KEYPAD/DISPLAY KIT—Part No. LLD-1513

The keypad/display kit can be used with any of the control boxes or the control module kit. This kit includes the keypad/display a screen label, a program off/on selector switch, a light curtain off/on selector switch, a hand/foot selector switch, an off/inch/single/continuous selector switch, and 25' of cable. Additional push buttons and nameplates for motor starters, etc., can be furnished depending on the features required. The area needed to mount the keypad/display kit is 10” H x 6¾” W x 3” D.

A resolver/pulser assembly and cable, Part No. CMS-115, is required with any of the control selections. See page 114 for further details on this component.

REMOTE OPERATOR STATIONS

For operator convenience, a remote operator station can be furnished for use with a plain-door control box, plain-door custom control box, or control module kit. The remote operator station contains the keypad/display, program off/on selector switch, and other selector switches and push buttons as required.

Remote operator stations are available in a standard format or can be customized to meet any requirements. Select from the following remote operator stations or contact the factory with your special requirements.

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>PART NO. LLD-1504</th>
<th>PART NO. LLD-1505</th>
<th>PART NO. LLD-1506</th>
<th>PART NO. LLD-1507</th>
<th>PART NO. LLD-1508</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keypad/Display</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Program Off/On Selector Switch</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Off/Inch/Single/Continuous Selector Switch</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Hand/Foot Selector Switch</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Light Curtain Off/On Selector Switch</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Main Motor Start and Stop Push Buttons</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Main Motor Forward/Reverse Selector Switch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Ram-Adjust Off/On Selector Switch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Ram Raise Push Button</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Ram Lower Push Button</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

If any of the above remote operator stations are required without the enclosure, please consult the factory.
SELECTING AN SSC-1500 PART-REVOLUTION PRESS CONTROL

To determine the 8- or 9-digit configured part number for the part-revolution control required, follow directions 1-6 below and use the information in the PART NUMBERING SYSTEM CHART below.

1. The first 3 digits for all SSC-1500 part-revolution controls are PRC.
2. The 4th digit determines the size of the disconnect switch, if provided, in the control enclosure. Zero (0) indicates no disconnect switch provided.
3. The 5th and 6th digits determine the size and type of motor starter(s), if provided, in the control enclosure. Zeros (00) in both positions indicate no motor starter(s) provided.
4. The 7th digit determines the location of the operator controls, or if it is a style X, Y, or Z control without the control transformer.
5. The 8th digit is for the type of light curtain interface provided.
6. The 9th digit (if required) will indicate the type of modifier provided: i.e., motor control operators remote.

<table>
<thead>
<tr>
<th>PART NUMBERING SYSTEM CHART</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SYSTEM TYPE PRODUCT CATEGORY</strong></td>
</tr>
<tr>
<td>PRC—SSC-1500 Press Control</td>
</tr>
<tr>
<td><strong>DISCONNECT SWITCH SIZE (Allen-Bradley—IEC)</strong></td>
</tr>
<tr>
<td>(PLUS MAXIMUM MAIN MOTOR FLA)</td>
</tr>
<tr>
<td><strong>REVERSING/NONREVERSING MAIN MOTOR STARTERS WITH OR WITHOUT RAM ADJUST</strong></td>
</tr>
<tr>
<td><strong>MAIN MOTOR STARTER SIZE (Allen-Bradley—IEC ‘C’ Series)</strong></td>
</tr>
<tr>
<td><strong>MODIFIER</strong></td>
</tr>
<tr>
<td><strong>LIGHT CURTAIN OPTIONS</strong></td>
</tr>
<tr>
<td><strong>CONFIGURATION &amp; OPERATOR LOCATION</strong></td>
</tr>
</tbody>
</table>

The sample shown, PRC-263-FA, indicates that the custom part-revolution control box will contain a PSD-400 light curtain interface, an IEC 60-A disconnect switch, an IEC 23-A reversing main drive motor starter, and an IEC 12-A reversing ram-adjust motor starter. The keypad/display and all operators will be located on the door of the enclosure.
SSC-1500 INDIVIDUAL COMPONENTS

RESOLVER/PULSER ASSEMBLY
Part No. CMS-115*—40' Cable
Part No. CMS-115-100—100' Cable

An absolute resolver/pulser timing device is required with the SSC-1500 control to provide the angular position and velocity/motion information of the machine crankshaft to the control. The resolver is a highly accurate and repeatable device which uses an internally mounted pulser cam and disk to verify the position of the crankshaft.

The resolver/pulser timing device is contained in a rugged, heavy-duty housing with a spring-compression base. The spring base helps isolate the resolver from shock load and vibration that are common occurrences on presses. This provides longer life for the components inside the enclosure. The spring base also functions as a drive chain tightener. This resolver/pulser assembly can also be furnished without the spring base when a direct-coupling drive is encountered. Please consult the factory.

The ¾” diameter steel drive shaft with keyway is mounted in sealed ball bearings. This results in a rugged transducer assembly for press applications. The resolver/pulser is furnished with a 40' cable (or optional 100' cable) that connects to the drive assembly and wires into the control box. The cable can be cut to length and wired to terminals.

SPROCKET ASSEMBLY
Part No. CML-000*

A sprocket set consists of two sprockets. One fits on the ¾” shaft of the CMS-115 resolver/pulser assembly; the other sprocket is for mounting to the end of the press crankshaft. These 48-tooth sprockets are designed to accept ANSI No. 35 roller chain.

ROLLER CHAIN
Part No. CMS-515*

ANSI No. 35 roller chain and master link; 10 feet long for driving the above sprockets.

*Included in a component package on page 120 or page 121.
MONITORED DUAL-SOLENOID AIR VALVE

1⁄2" Port—Part No. RCL-552 (for 10- to 25-ton presses)
3⁄4" Port—Part No. RCL-554* (for 26- to 100-ton presses)

This three-way cross flow, series/parallel air valve includes an air pressure electrical output monitor and muffler. Air is put into the clutch and brake when the dual-solenoid air valve is electrically energized. When it is de-energized, the air is dumped through the muffler from the clutch and brake.

This valve consists of two main parts: the piloted monitor assembly and the valve body assembly. The two main valve elements move simultaneously during normal operation. If these elements should fail to move simultaneously, the internal spool shifts; inhibiting further machine operation. The pressure switch will provide a signal to the control system to indicate a fault condition. A reset button on the side of the valve can be used to reset the valve if an accidental valve fault is detected.

### Average Cv (Flow Rate)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Ports 1 to 2</th>
<th>Ports 2 to 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCL-552</td>
<td>3.0</td>
<td>8.0</td>
</tr>
<tr>
<td>RCL-554</td>
<td>3.0</td>
<td>9.0</td>
</tr>
</tbody>
</table>

MONITORED DUAL-SOLENOID AIR VALVE WITH RESET BUTTON

1" Port—Part No. RCL-556 (for 101- to 300-ton presses)
11⁄2" Port—Part No. RCL-558 (for 301- to 1000-ton presses)

This cross flow, series/parallel air valve includes an air pressure electrical output and muffler. The separate reset button provides a remote reset at floor level if the valve latches out when an accidental air valve fault is detected. This valve is used for the clutch/brakes on large presses which require larger air volume capacity.

This valve assembly consists of a pilot, monitor, valve body, and junction box. It operates on the same principles as the 1⁄2" and 3⁄4" valves described above.

**NOTE:** If the clutch and brake are split, two valves may be required to provide good stopping times.

### Average Cv (Flow Rate)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Ports 1 to 2</th>
<th>Ports 2 to 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCL-556</td>
<td>8.5</td>
<td>19.0</td>
</tr>
<tr>
<td>RCL-558</td>
<td>21.0</td>
<td>43.0</td>
</tr>
</tbody>
</table>

FRL (FILTER-REGULATOR-LUBRICATOR)

This assembly is required to meet the OSHA and ANSI standards. This FRL assembly filters, regulates, and lubricates the air going through it. This filtered and lubricated air then goes to the dual-solenoid air valve assembly and clutch/brake. The regulator should be adjusted to meet the original equipment manufacturer's requirements. The assembly includes a gauge, coupling, and a steel mounting bracket. The FRL assembly can be used for any air-operated device on the press including the counterbalance or die cushion.

---

*Included in a component package on page 120 or page 121.*
SSC-1500 INDIVIDUAL COMPONENTS (continued)

AIR PRESSURE SWITCH
Part No. CTD-062*
This air pressure switch monitors low pressure to either the clutch/brake air supply or slide counterbalance systems. Each system requires an air pressure switch. The pressure switch must be set so if the air pressure operating the component goes below a predetermined amount, the press becomes inoperable.

Each air pressure switch’s low level setting is based on each application and the machine manufacturer’s recommendations. The contact arrangement is 1 NO and 1 NC.

CHECK VALVE FOR COUNTERBALANCE SYSTEM
(not included in any component package on page 120 or page 121)

Part No. RCD-061—1/4"
Part No. RCD-062—1/2"
Part No. RCD-063—1"
Part No. RCD-064—1 1/2"
Part No. RCD-065—2"

A check valve is required to meet the OSHA and ANSI standards. It maintains counterbalance surge tank pressure in the event of a sudden loss of air pressure. It is installed in the air line going to the tank. Please check the size of the air line going to the tank to determine the proper size valve.

Note: Press must have a counterbalance system with a surge tank to properly apply a check valve.

PALM BUTTON ASSEMBLY
To meet OSHA and ANSI safety standards, the two run/inch buttons must be protected against accidental operation (ring guards) and separated to require the use of both hands to operate them. They must also be mounted at the proper safety distance, if they will be used as a safeguard. The contact arrangement of these buttons is 1 NO and 1 NC.

Part No. CTL-502*
This palm button assembly consists of two black run/inch buttons (with ring guards), a red emergency-stop button, and a yellow top-stop button. Mounting boxes are furnished with each button. The red and yellow palm buttons each have 1 NO and 1 NC arrangement. The red button is on a yellow-covered mounting box and is equipped with a mechanical latch to meet NFPA 79.

Part No. CTL-507*
This palm button assembly consists of two black run/inch buttons (with ring guards), and a red emergency-stop button (for press applications without the continuous mode of operation). Mounting boxes are furnished with each button. The red palm button is on a yellow-covered mounting box and has 1 NO and 1 NC arrangement plus a mechanical latch to meet NFPA 79.

Palm buttons can also be furnished in a control bar along with push buttons and selector switches. Please see page 124 for control bars, and pages 187 and 188 for other palm button assembly options.

*Included in a component package on page 120 or page 121.
FOOT SWITCH
Part No. CTD-011*
This foot switch is protected from unintentional operation. A die-cast cover protects the top and both sides, and the front is protected by a hinged flap. The flap must be lifted with the toe before the foot may enter the switch. The electrical contact arrangement is 1 NO and 1 NC.

PRIOR-ACTION STATION
Part No. LLD-1500*
This prior-action station has a push button that must be depressed and released by the operator before depressing the actuating means in order to initiate the continuous mode of operation. This type of continuous mode of operation is sometimes referred to as “walk-away” continuous. This steel enclosure is 3½" x 3¼" x 3¼". This prior-action station is also required when using the continuous-on-demand, automatic single-stroke, two-hand-maintained continuous, or foot-maintained continuous mode of operation. These modes of operation are furnished as standard features in the SSC-1500 control.

SUPERVISORY CONTROL STATION
Part No. LLD-1501
Part No. LLD-283* (required when a USC-000 is used–see next page)
When two or more palm button or foot switch operating stations are required on one machine, one supervisory control station is required at each operator station. This remote control station consists of an off/on keyed selector switch and a station on indicator light. The on position allows the operator to use that station, and the off position deactivates only that station. The enclosure size is 5¼" x 3" x 3¼".

BAR/RUN STATION (not included in any component package on page 120 or page 121)
Part No. LLD-1502
This remote bar/run station can be used in conjunction with a manual turnover bar when setting dies in the press. The flywheel must have holes in the periphery for insertion of a spring-loaded turnover bar** (or the flywheel can be manually turned when the flywheel cover is removed). The remote station includes a three-position selector switch for bar, off, run, and one push button used for energizing the dual-solenoid air valve to engage the clutch and release the brake. The flywheel must be at rest (static) when engaging the clutch. After the clutch is engaged, the die setup person can manually turn the flywheel with a spring-loaded turnover bar. The enclosure size is 5¼" x 3" x 3¼".

*Included in a component package on page 120 or page 121.
**For a spring-loaded turnover bar, see page 220.
**CRANKSHAFT ANGLE DISPLAY**  
Part No. FTL-055  
The optional crankshaft angle display is a unit that shows the angular position of the crankshaft for mechanical power presses and press brakes. The crankshaft position is shown both graphically (with red LEDs in a circle) and numerically (with a large, red, three-digit LED). The large display can be easily seen which helps with setup, removal of stuck workpieces, or for assistance during emergency extractions procedures.

**FEATURES**
- Large LED numerical display and circular LED graphic display can be easily seen
- Mounts easily
- Supplied with 25’ of cable for connection to the control

---

*Included in a component package on page 120 or page 121.*
LOCKOUT VALVES (not included in any component packages on pages on page 120 or page 121)

SLIDE-OPERATED VALVE
This three-way valve is operated with the manual movement of a slide that opens and closes the valve. This valve shuts off air at the press and then bleeds off downstream air. It can be locked only in the off position.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>In-Out Exh.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCD-076</td>
<td>¼“ 1¼”</td>
</tr>
<tr>
<td>RCD-077</td>
<td>1” 1¼”</td>
</tr>
</tbody>
</table>

MANUAL VALVE
This manually operated valve shuts off air flow when a machine needs to be locked out. To shut off and exhaust air in the line, the handle is pushed in. This causes the pressurized supply of air to be blocked, and the downstream air in the line is exhausted through the exhaust port and muffler at the bottom of the valve. The valve can be padlocked in the off position. The valve is furnished with a muffler. Port sizes available for air flow are ½” and 1”.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>In-Out Exh.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCD-076</td>
<td>¾” 1¼”</td>
</tr>
<tr>
<td>RCD-077</td>
<td>1” 1¼”</td>
</tr>
</tbody>
</table>

MANUAL PILOT VALVE
This manually operated pilot valve is used in larger air systems. It is available for port sizes of 1½” and 2½”. It operates in a similar manner as the manual valve. By pushing the handle in or out, it controls pilot pressure to a piston which opens or closes the valve’s inlet poppet. It is designed to be locked only in the off position. This valve is furnished with a muffler.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>In-Out Exh.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCD-078</td>
<td>1¼” 1½”</td>
</tr>
<tr>
<td>RCD-079</td>
<td>2¼” 2½”</td>
</tr>
</tbody>
</table>

EEZ-ON VALVE
This valve shuts off air supply to the machine and bleeds downstream air when the valve is closed. When the valve is open, it gradually allows air into the air system to prevent damage to air components. It can be locked only in the off position. This valve is furnished with a muffler.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>In-Out Exh.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCD-121</td>
<td>¼” ¾”</td>
</tr>
<tr>
<td>RCD-122</td>
<td>½” ¾”</td>
</tr>
</tbody>
</table>
SELECTING AN SSC-1500 COMPONENT PACKAGE

To complete the SSC-1500 control system, component packages are available. Component packages are listed in the charts below and on the next page. These packages can be furnished with:

- **A STANDARD Control**
- **A CUSTOM Control**
- **A CONSOLE Control**
- **A SPECIAL Control**
- **A REMOTE OPERATOR-STYLE Control**
- **A SUBPANEL**
- **A CONTROL MODULE KIT**

To select the proper component package to go with your control box, determine your requirements below:

A Modes of operation and actuating means required.

B Number of operator stations required.

C Number of air pressure switches required.

### Modes of operation: Inch, Single, and Continuous (Hand or Foot)

<table>
<thead>
<tr>
<th>MODES OF OPERATION TO BE USED</th>
<th>B ONE OPERATOR STATION</th>
<th>C TWO AIR PRESSURE SWITCHES</th>
<th>B TWO OPERATOR STATIONS</th>
<th>C TWO AIR PRESSURE SWITCHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSC-1500 Control Box</td>
<td>TNR-000-SSP Standard Component Package</td>
<td>TNR-001-SSP Component Package</td>
<td>TNR-002-SSP Component Package</td>
<td>TNR-003-SSP Component Package</td>
</tr>
<tr>
<td>• Two-Hand Inch</td>
<td>CMS-115 Resolver/Pulser Timing Device With 40' Cable and Plug</td>
<td>CTD-062 Air Pressure Switch (For Counterbalance)</td>
<td>CTL-062 Air Pressure Switch (For Counterbalance)</td>
<td>CTL-062 Air Pressure Switch (For Counterbalance)</td>
</tr>
<tr>
<td>• Two-Hand Single Stroke</td>
<td>CML-000 Sprockets (Set of 2)</td>
<td>CTL-502 Palm Button Assembly</td>
<td>CTL-502 Palm Button Assembly</td>
<td>CTL-502 Palm Button Assembly</td>
</tr>
<tr>
<td>• Foot Single Stroke</td>
<td>CMS-515 10&quot; ANSI No. 35 Roller Chain</td>
<td>CTD-011 Foot Switch</td>
<td>CTD-011 Foot Switch</td>
<td>CTD-011 Foot Switch</td>
</tr>
<tr>
<td>• Two-Hand Continuous</td>
<td>RCL-554 3/4&quot; Dual-Solenoid Air Valve</td>
<td>USC-000 Multiple Operator Junction Box</td>
<td>USC-000 Multiple Operator Junction Box</td>
<td>USC-000 Multiple Operator Junction Box</td>
</tr>
<tr>
<td></td>
<td>RCL-045 3/4&quot; Filter-Regulator-Lubricator Assembly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTD-062 Air Pressure Switch (For Clutch/Brake)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTL-502 Palm Button Assembly</td>
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<tr>
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<td>CTD-011 Foot Switch</td>
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<td></td>
<td>USC-000 Multiple Operator Junction Box</td>
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<tr>
<td></td>
<td>LLD-1500 Prior-Action Station</td>
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</tr>
</tbody>
</table>

### Modes of operation: Inch, Single, and Continuous (Hand Only)

<table>
<thead>
<tr>
<th>MODES OF OPERATION TO BE USED</th>
<th>B ONE OPERATOR STATION</th>
<th>C TWO AIR PRESSURE SWITCHES</th>
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<th>C TWO AIR PRESSURE SWITCHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSC-1500 Control Box</td>
<td>TNC-000-SSP Standard Component Package</td>
<td>TNC-001-SSP Component Package</td>
<td>TNC-002-SSP Component Package</td>
<td>TNC-003-SSP Component Package</td>
</tr>
<tr>
<td>• Two-Hand Inch</td>
<td>CMS-115 Resolver/Pulser Timing Device With 40' Cable and Plug</td>
<td>CTD-062 Air Pressure Switch (For Counterbalance)</td>
<td>CTL-062 Air Pressure Switch (For Counterbalance)</td>
<td>CTL-062 Air Pressure Switch (For Counterbalance)</td>
</tr>
<tr>
<td>• Two-Hand Single Stroke</td>
<td>CML-000 Sprockets (Set of 2)</td>
<td>CTL-502 Palm Button Assembly</td>
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<td>CTL-502 Palm Button Assembly</td>
</tr>
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<td>• Foot Single Stroke</td>
<td>CMS-515 10&quot; ANSI No. 35 Roller Chain</td>
<td>CTD-011 Foot Switch</td>
<td>CTD-011 Foot Switch</td>
<td>CTD-011 Foot Switch</td>
</tr>
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<td>• Two-Hand Continuous</td>
<td>RCL-554 3/4&quot; Dual-Solenoid Air Valve</td>
<td>USC-000 Multiple Operator Junction Box</td>
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<tr>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

For light curtains, mounting brackets, and barrier guards for the sides of the point of operation, see pages 45-73.
SELECTING AN SSC-1500 COMPONENT PACKAGE (continued)

A. Modes of operation: Inch and Single (Hand or Foot)

<table>
<thead>
<tr>
<th>MODES OF OPERATION TO BE USED</th>
<th>C. ONE AIR PRESSURE SWITCH</th>
<th>C. TWO AIR PRESSURE SWITCHES</th>
<th>B. TWO OPERATOR STATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSC-1500 Control Box</td>
<td>TNK-000-SSP</td>
<td>Standard Component Package</td>
<td>TNK-001-SSP Component Package</td>
</tr>
<tr>
<td>• Two-Hand Inch</td>
<td>CMS-115 Resolver/Pulser Timing Device with 40' Cable and Plug</td>
<td>CTL-062 Air Pressure Switch (For Counterbalance)</td>
<td></td>
</tr>
<tr>
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<td>CML-000 Sprockets (Set of 2)</td>
<td>CTL-507 Palm Button Assembly</td>
<td></td>
</tr>
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<td>• Foot Single Stroke</td>
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</tr>
<tr>
<td></td>
<td>RCL-554 3/4&quot; Dual-Solenoid Air Valve</td>
<td>LLD-283 Supervisory Control Station</td>
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</tr>
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<td></td>
<td>CTD-011 Foot Switch</td>
<td>USC-000 Multiple Operator Junction Box</td>
<td></td>
</tr>
</tbody>
</table>

B. Modes of operation: Inch and Single (Hand Only)

<table>
<thead>
<tr>
<th>MODES OF OPERATION TO BE USED</th>
<th>C. ONE AIR PRESSURE SWITCH</th>
<th>C. TWO AIR PRESSURE SWITCHES</th>
<th>B. TWO OPERATOR STATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSC-1500 Control Box</td>
<td>TNF-000-SSP</td>
<td>Standard Component Package</td>
<td>TNF-001-SSP Component Package</td>
</tr>
<tr>
<td>• Two-Hand Inch</td>
<td>CMS-115 Resolver/Pulser Timing Device with 40' Cable and Plug</td>
<td>CTL-062 Air Pressure Switch (For Counterbalance)</td>
<td></td>
</tr>
<tr>
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<td>CTD-062 Air Pressure Switch (For Counterbalance)</td>
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<td>CTL-507 Palm Button Assembly</td>
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<tr>
<td></td>
<td>CTD-011 Foot Switch</td>
<td>USC-000 Multiple Operator Junction Box</td>
<td></td>
</tr>
</tbody>
</table>

C. Modes of operation: Inch, Single, and Continuous (Hand Only)

<table>
<thead>
<tr>
<th>MODES OF OPERATION TO BE USED</th>
<th>C. ONE AIR PRESSURE SWITCH</th>
<th>C. TWO AIR PRESSURE SWITCHES</th>
<th>B. TWO OPERATOR STATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSC-1500 Control Box</td>
<td>TNX-000-SSP</td>
<td>Standard Component Package</td>
<td>TNX-001-SSP Component Package</td>
</tr>
<tr>
<td>• Two-Hand Inch</td>
<td>CMS-115 Resolver/Pulser Timing Device with 40' Cable and Plug</td>
<td>CTL-062 Air Pressure Switch (For Counterbalance)</td>
<td></td>
</tr>
<tr>
<td>• Two-Hand Single Stroke</td>
<td>CML-000 Sprockets (Set of 2)</td>
<td>CTL-507 Palm Button Assembly</td>
<td></td>
</tr>
<tr>
<td>• Two-Hand Continuous</td>
<td>CMS-515 10' ANSI No. 35 Roller Chain</td>
<td>CTD-062 Foot Switch (For Counterbalance)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RCL-554 3/4&quot; Dual-Solenoid Air Valve</td>
<td>LLD-283 Supervisory Control Station</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RCL-045 3/4&quot; Dual-Solenoid Air Valve Assembly</td>
<td>USC-000 Multiple Operator Junction Box</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTD-062 Air Pressure Switch (For Counterbalance)</td>
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<td></td>
<td>CTL-507 Palm Button Assembly</td>
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<tr>
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<td>USC-000 Multiple Operator Junction Box</td>
<td></td>
</tr>
</tbody>
</table>

For light curtains, mounting brackets, and barrier guards for the sides of the point of operation, see pages 45-73.

Rockford Systems, Inc.
www.rockfordsystems.com
sales@rockfordsystems.com
CONTROL CONSOLES

All of the previously mentioned part-revolution-clutch controls can be furnished as special control systems engineered to your specifications. Please consult the factory for further details on your requirements. These next pages illustrate some examples of special controls that can be designed.

A floor-standing console contains the clutch/brake or hydraulic controls and motor controls mounted inside on subpanels. These are typically used on high-speed or large presses. Consoles are used in place of controls mounted to the machine to avoid extreme press shock vibration. Isolating the press controls in the console gives electrical components a longer life. Control consoles are usually furnished in oil-tight enclosures which have a sloped top for operator convenience. Casters are optionally available to provide mobility of the console. The enclosure door has a lockable handle so that unauthorized personnel cannot tamper with the controls.

These consoles may be furnished with IEC or NEMA disconnect switches and magnetic motor starters. The disconnect handle is located on the enclosure door (lockable in the off position). The starter push buttons (and selector, when a reversing starter is furnished) are located on the sloped front. These consoles are available in the configuration shown or any other way that meets your requirements. User-supplied or user-specified components can also be incorporated into these control consoles.

Please furnish exact motor horsepower, voltage, and full-load amps when ordering disconnect switches and motor starters.
SPECIAL CONTROLS

Have you ever been in a position where you required a unique control, but lacked the time or expertise to design one? If so, we can help you. We have the knowledge and experience to design, manufacture, and install a control panel or an entire control system to meet your specific requirements.

At your request, our safety control specialists can visit your plant to determine exactly what is required or you can mail us your existing prints. A proposal will be submitted to you detailing the exact specifications and costs involved.

Our engineering personnel will design the circuit for the control system. Every control is designed to the applicable OSHA and ANSI standards. The final stage of design results in a complete set of control circuit schematics, connection and layout diagrams.

Next, the control design is sent to our production department. Control panel assembly begins here with the layout and wiring of the control. After the manufacture of the control is complete, it is subject to a rigorous testing procedure which ensures proper operation.

If you require installation of the special control, we have highly skilled installation crews that are available to install the control system or to instruct your own maintenance personnel.

Each special machine control we design can be unique. You have our commitment to quality.

FLOOR STANDS FOR CONTROL BARS

The control bars described on the next page and any palm button assembly can be furnished with either of these floor stands.

Part No. KCL-000
Floor Stand With Base and Top Plate
This 37” nonadjustable heavy-duty floor stand includes a top plate and a 4” x 4” column. The base has four holes for permanent attachment to the floor; bolts are not furnished.

Part No. KCL-017
Adjustable Floor Stand With Base and Top Plate
The adjustable column (28” to 47”) on this floor stand can easily be moved up and down for operator comfort. A hand tool is required to make adjustments. The base has four holes for permanent attachment to the floor; bolts are not furnished. Custom heights are available. Please consult the factory.
CONTROL BARS

Control bars of various configurations can be provided to mount either to the machine or on a pedestal-type floor stand. The standard control bars can have various guarded run/inch palm buttons, emergency-stop and top-stop palm buttons, a multiple operator supervisory station selector switch with indicator light, and either of two types of prior-action push buttons. Please refer to the CONTROL BAR PART NUMBERING SYSTEM CHART below to obtain the part number of the standard control bar required.

Special control bars can be provided with other required selector switches and indicator lights, depending on the individual requirements. Consult the factory for pricing and delivery when a special control bar is required.

SELECTING A CONTROL BAR

To determine the 7- or 8-digit configured part number for a standard control bar, follow directions 1-6 below and use the information in the CONTROL BAR PART NUMBERING SYSTEM CHART below.

1. The first 3 digits for all control bars are MCB or USC.
2. The 4th digit determines the size of the bar enclosure.
3. The 5th digit determines the type of run/inch button provided.
4. The 6th digit determines the type of emergency-stop button provided.
5. The 7th digit determines the type of top-stop or return button provided.
6. The 8th digit will indicate the type of modifier provided; e.g., supervisory selector switch, indicator light, and prior-action push button.

CONTROL BAR PART NUMBERING SYSTEM CHART

<table>
<thead>
<tr>
<th>CONTROL BAR</th>
<th>MODIFIER</th>
<th>TOP-STOP OR RETURN TYPE</th>
<th>EMERGENCY-STOP TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCB—Universal Control Bar</td>
<td>0—None</td>
<td>0—None</td>
<td>1—Rees Red Palm Button—Latch-Out Type</td>
</tr>
<tr>
<td>USC—Control Bar for Use With USC-000 Multiple-Operator Junction Box Only</td>
<td>1—Includes Station Off/On Selector Switch and Indicator</td>
<td>1—Rees Yellow Top-Stop Palm Button (1 NO and 1 NC)</td>
<td>2—A-B Yellow Top-Stop 40 mm Mushroom Palm Button (1 NO and 1 NC)</td>
</tr>
<tr>
<td>ENCLOSURE SIZE (4” x 4” x X)</td>
<td>2—Includes Prior-Action Push Button</td>
<td>2—A-B Yellow Return 40 mm Mushroom Palm Button (1 NO and 1 NC)</td>
<td></td>
</tr>
<tr>
<td>1—18”—Run Buttons on Ends of Enclosure</td>
<td>3—Includes Station Off/On Selector Switch, Indicator, and Prior-Action Push Button</td>
<td>3—Rees Yellow Return Palm Button (1 NO and 1 NC)</td>
<td>4—Includes Lighted Prior-Action Push Button</td>
</tr>
<tr>
<td>2—24”—Run Buttons on Ends of Enclosure</td>
<td>4—Includes Lighted Prior-Action Push Button</td>
<td>4—A-B Yellow Return 40 mm Mushroom Palm Button (1 NO and 1 NC)</td>
<td>5—Includes Station Off/On Selector Switch, Indicator, and Lighted Prior-Action Push Button</td>
</tr>
<tr>
<td>3—30”—All Operators on Front of Enclosure</td>
<td>5—Includes Station Off/On Selector Switch, Indicator, and Lighted Prior-Action Push Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4—36”—All Operators on Front of Enclosure</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RUN BUTTON OPERATOR TYPE

| RUN BUTTON OPERATOR TYPE | | |
|-------------------------|--------------------------|
| 1—Rees Black Palm Button With Rockford Systems Guards—Front Only | | |
| 2—A-B Articulated Palm Button With A-B Guards—Front Only | | |
| 3—Touchdown™ With Rockford Systems Guards (115 V AC)—Front Only | | |
| 4—IDEC Green Push Button With IDEC Guard | | |
| 5—A-B Zero-Force Touch Buttons With Guards (90-264 V AC) | | |
| 6—Banner Opto-Touch Buttons With Guards (20-30 V AC/DC) | | |
| 7—Mushroom Push Buttons With Guards (SQ-D) | | |
| 8—Rees Chrome Light-Push Button With Rockford Systems Guards—Front Only | | |

Rockford Systems, Inc.
Call Toll-Free 1-800-922-7533
Fax 815-874-6144
PART-REVOLUTION-CLUTCH PRESS CONTROL SYSTEMS

OPERATOR AND EMERGENCY-STOP TYPE BUTTONS FOR CONTROL BARS

- Rees Black Palm Button With RSI Guard
  - 1 NO and 1 NC contacts

- Opto-Touch Button With Guard
  - 1 NO and 1 NC contacts

- A-B Articulated Palm Button With A-B Guard
  - 1 NO and 1 NC contacts

- Mushroom Push Button With Guard (SQ-D)
  - 1 NO and 1 NC contacts

- Touchdown!™ With RSI Guard
  - 1 NO and 1 NC contacts

- Rees Chrome Light-Push Button With RSI Guard
  - 1 NO and 1 NC contacts

- IDEC Green Push Button With Guard
  - 1 NO and 1 NC contacts

- Rees Red E-Stop Button—Latch-Out
  - 1 NO and 1 NC contacts

- A-B Zero-Force Touch Button With Guard
  - 1 NO and 1 NC contacts

- A-B Red Two-Position E-Stop—Twist-to-Return
  - 1 NO and 1 NC contacts
**SURVEY FOR PART-REVOLUTION PRESS**

Company _____________________________
City _____________________________ State __________
Surveyed By _____________________________ Date __________

**INSTALLATION**

☐ N ☐ Y If Y: ☐ Standard ☐ Stripdown
Is special lift for large press required for installation? ☐ N ☐ Y

When filling out this form, be sure the information is filled in for satisfying the basic areas of safety.

Basic Areas—1. Safeguarding 4. Starter
2. Control 5. Cover
3. Disconnect 6. Other Considerations

For identification and reference, please fill in this area first.

Machine No. _____________________________ Manufacturer _____________________________
Model No. __________________ Serial No. __________________

Tonnage (always required) ____________________________

Clutch: ☐ Air ☐ Mechanical Friction ☐ Hydraulic ☐ Other
Type: ☐ OBI ☐ OBS ☐ Gap ☐ Gap DC ☐ Horn ☐ Toggle
☐ SSSC ☐ SSDC: R to L Bed Size ________ ☐ Other ___________

Is machine out of service? ☐ N ☐ Y

What are methods of feeding material?

☐ Hand, From: ☐ Front ☐ Sides: ☐ Right ☐ Left;
☐ Automatic: ☐ Coil ☐ Strip; ☐ Magazine;
☐ Shuttle; ☐ Sliding Bolster; ☐ Other ___________

**1. Safeguarding:**

<table>
<thead>
<tr>
<th>Has</th>
<th>Safeguard</th>
<th>Provide</th>
<th>Type, Series, or Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pullback</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restraint</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barrier Guard</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When providing, please attach completed measurement data form. Sides and rear must be guarded.

Type A or B Gate

When providing, please attach completed measurement data form on guards for the sides of the point of operation.

Two-Hand Control

If press has two-hand control, are they at the proper safety distance? ☐ N ☐ Y
If we are to provide, what is the proper safety distance? ________" (See page 74 in FAB catalog for details)

<table>
<thead>
<tr>
<th>Presence Sensing</th>
<th>Light Curtain</th>
<th>Cable Length</th>
</tr>
</thead>
</table>

If press has a presence-sensing device, is it at the proper safety distance? ☐ N ☐ Y
If we are to provide light curtain, what is the proper safety distance?

Are Mounting Brackets required? ☐ N ☐ CTF (Customer to Furnish) ☐ Y
If Y: EX-AL™ Swing-Away ☐ N ☐ Y If Y, please complete and attach SAB Measurement Form
EX-AL™ Stationary ☐ N ☐ Y If Y, please complete and attach SLCMB Measurement Form

Are Floor Stands required? ☐ N ☐ Y
Are Mirrors required? ☐ N ☐ Y If Y: ☐ 1 ☐ 2
If Yes, what size? ________"

When providing any of the above safeguarding devices, the sides and rear of the point of operation must be safeguarded. If light curtain swing-away brackets are not furnished, are side & rear guards required? ☐ N ☐ CTF (Customer to Furnish) ☐ Y
If Y, please complete and attach measurement form.
### 2. Control: (for clutch/brake)—continued

| A. Does press control have control reliability? | N | Y |
| B. Does press have brake monitor? | N | Y |

#### 3. Modes
- Inch
- Single
- Continuous
- Auto Single
- Other

#### 5. Operator Controls:
- On Control Box
- N
- Y
- Remote
- N
- Y

#### 6. Counterbalance Check Valve?
- N
- Y

#### 7. Modes Required:
- Inch
- Single
- Continuous
- Auto Single
- Other

#### 8. Options Required:
- Hour Meter
- Bar/Run Station
- None

#### 9. Brake Monitor:
- Time-Based

#### C. Information about press:

| 1. Hand Actuating | N | Y |
| 2. Foot Actuating | N | Y |
| 3. Modes | Inch | Single | Continuous |
| 4. Control Box Location | On Press |
| 5. Operator Controls | On Control Box |
| 6. If control reliability existence is questionable, please provide the following information:
  - Solid-State
  - Relay Logic
  - If relay logic, Control relays |
| 7. Are any components jumpered out? | N | Y |

#### D. Is Control Box to be furnished? | N | Y |

#### E. Control Box:
- Standard
- Custom
- Other

#### 1. Solid-State: 1500 |
- N | Y |

#### 2. Box:
- Standard
- Custom
- Other
- Remote Operator Style (X, Y, Z)
- N
- Y

#### 3. If custom or special, is remote push-button station for motor controls required? | N | Y |

#### 4. Location of Box on Press:
- Left
- Right
- Other

#### 5. Location of Operators:
- (circle one) 1. Remote
- 2. Loose
- 3. Door
- 4. Console
- 5. Kit

#### 6. 1500: Subpanel
- N | Y |

#### 1. Space requirements: 18'/H x 18'/W x 6'/D

#### Module Kit
- N | Y |

#### 2. Space requirements: 14'/H x 12'/W x 6'/D

#### KeyPad/Display
- N | Y |

#### 3. Space requirements: 10'/H x 6'/W x 3'/D

#### 7. Modes Required:
- Inch
- Single
- Continuous
- Auto Single
- Other

#### 8. Options Required:
- Hour Meter
- Bar/Run Station
- None

#### 9. Brake Monitor:
- Time-Based

#### F. Cycle Timing Device?:
- N | Y |

#### 1. Resolver with 40' cable is standard with 1500

#### 2. Resolver with 100' cable

#### G. Timing Device Drive?:
- N | Y |

#### 1. Reuse Existing Sprockets and Chain

#### Sprocket Set
- N | Y |

#### Chain
- N | Y |

#### Existing Direct Coupling Drive to be Reused? | N | Y |

#### H. If press ever operates at less than 20 SPM, what is the exact speed? | SPM |

#### I. Actuating Means:
- How many operating stations: 1 2 3 4 |

#### 1. Hand (Push Button)
- N | Y |

#### Hand (other)
- N | Y |

#### On Machine
- N | Y |

#### Control Bar
- N | Y |

#### Floor Stand
- N | Y |

#### E-Stop Button
- N | Y |

#### Top-Stop Button
- N | Y |

#### 2. Foot Switch
- N | Y |

#### Is Special Plug and Receptacle Required? | N | Y |

#### J. Monitored Dual Valve?
- N | Y |

#### (circle one):
- ½ | ⅜ | 1 | 1⅛

#### How many? 1 or 2 |

#### K. Air Pressure Switch?
- N | Y |

#### Clutch/Brake
- N | Y |

#### Counterbalance
- N | Y |

(continued on top right column)
### SURVEY FOR PART-REVOLUTION PRESS (continued)

#### 3. Disconnect:

**A. Present** Location of Disconnect:

1. ☐ On Press or ☐ Off Press
2. ☐ With Clutch/Brake Control
   - ☐ Separate From Clutch/Brake Control
   - ☐ With Starter Only
   - ☐ Not Furnished

**B. Is electrical disconnect** switch required?

- ☐ N ☐ Reuse Existing
  - ☐ Customer to Furnish
- ☐ Y If Y, furnish HP, FLA, and voltage in 4C.

**C. How is disconnect to be furnished?**

- ☐ Separate Box
- ☐ Combination With Starter Box
- ☐ Custom Box

#### 4. Starter:

**A. Present** Location of Starter:

1. ☐ On Press or ☐ Off Press
2. ☐ With Clutch/Brake Control
   - ☐ Separate From Clutch/Brake Control
   - ☐ Not Furnished
3. Is present starter?
   - ☐ Line Voltage 230/460 V (most common)
   - ☐ Reduced Voltage (used on larger presses)
   - ☐ Two-Speed (large press)

**B. Is magnetic starter** required for main drive?

- ☐ N ☐ Reuse Existing
  - ☐ Customer to Furnish

If N, existing starter must have 115-V coil and one normally open auxiliary contact.

- ☐ Y

**C. If Y, provide:**
   - Horsepower ______
   - Full-Load Amps ______
   - Voltage ______

**D. Reversing **

- ☐ N ☐ Y

**E. How is starter to be furnished?**

- ☐ Separate Box
- ☐ Combination W/Disconnect Box
- ☐ In Custom Box

**F. Is remote push-button** station required?

- ☐ N ☐ Y

**G. Does press have variable-speed drive?**

- ☐ Y

If Y, ☐ Mechanical Adjust ☐ Electromechanical
   - Eddy Current: Make________ Model________ send schematics

   - Electronic: AC or DC (circle one)—send schematics

   **Provide:**
   - Horsepower ______
   - Voltage ______

**Provide:** Speed Range ______ to ______ SPM

*Note: If existing variable-speed components are going to be installed in new control, please provide dimensions of area needed for panel inside box and surface required outside the control box or console.*

#### H. Are other starters required?

**Ram Adjust:**

- ☐ N ☐ Reuse Existing
  - ☐ Customer to Furnish

- ☐ Y

**Lube System**

- ☐ N ☐ Y (See also 6A.)

**Estimate**

<table>
<thead>
<tr>
<th>Horsepower</th>
<th>Full-Load Amps</th>
<th>Voltage</th>
</tr>
</thead>
</table>

**Actual**

**Estimate**

<table>
<thead>
<tr>
<th>Horsepower</th>
<th>Full-Load Amps</th>
<th>Voltage</th>
</tr>
</thead>
</table>

*Note: If other motor starters are required, please provide appropriate information.*
## SURVEY FOR PART-REVOLUTION PRESS (continued)

### 5. Covers: (Customer to Furnish)

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flywheel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connection Rod</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gears</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turnover Bar Slot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaft End</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprockets &amp; Chain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional brackets required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6. Other Considerations:

#### A. Does press have lube system? [ ] N [ ] Y
- If Y, what kind of system?:
  - Manual or mechanical pump  [ ] N  [ ] Y
  - Motorized  [ ] N  [ ] Y
  - *Be sure to furnish lube schematics and/or instructions with this form. If only control schematics are supplied, be sure lube system is indicated. Also provide sensor information such as pressure and level.

#### B. Does air cushion require lubrication? [ ] N [ ] Y

#### C. Is safety block to be furnished? [ ] N [ ] Y
- If Y, what size is needed? ______" (Height)
- How many? ______  S  M  L (circle size required)
- 2-Contact Interlock  [ ] N  [ ] Y
- Holder  [ ] N  [ ] Y

#### D. Is spring-loaded turnover bar required? [ ] N [ ] Y
- If Y, what diameter? ______"

#### E. Tie in of existing equipment? [ ] N [ ] Y:
- Die clamping:_________________________  [ ] N  [ ] Y
- Hydraulic overload in ram:_________________________  [ ] N  [ ] Y
- Interlocked guard:_________________________  [ ] N  [ ] Y
- Light curtain*:_________________________  [ ] N  [ ] Y
- Radio frequency*:_________________________  [ ] N  [ ] Y
- Gate*:_________________________________  [ ] N  [ ] Y
- Air blowoff:_________________________  [ ] N  [ ] Y
- Counter:_________________________  [ ] N  [ ] Y
- Indexing table*:_________________________  [ ] N  [ ] Y
- Sliding bolster*:_________________________  [ ] N  [ ] Y
- Die protection*:_________________________  [ ] N  [ ] Y
- Bar/run station:_________________________  [ ] N  [ ] Y
- Bumping pin:_________________________  [ ] N  [ ] Y
- Flywheel brake:_________________________  [ ] N  [ ] Y
- If Y: [ ] Mechanical  [ ] Pneumatic with valve
- Tachometer*:_________________________  [ ] N  [ ] Y
- Digital shut height indicator:_________________________  [ ] N  [ ] Y
- Brake monitor*:_________________________  [ ] N  [ ] Y
- Hour meter:_________________________  [ ] N  [ ] Y
- Material feeding equipment*:_________________________  [ ] N  [ ] Y
- Straightener:_________________________  [ ] N  [ ] Y
- Reel:_________________________  [ ] N  [ ] Y
- Cradle:_________________________  [ ] N  [ ] Y
- Die light:_________________________  [ ] N  [ ] Y
- Conveyor:_________________________  [ ] N  [ ] Y
- Motion detector*:_________________________  [ ] N  [ ] Y
- Bearing heat sensors*:_________________________  [ ] N  [ ] Y
- Overload protection*:_________________________  [ ] N  [ ] Y
- Robot*:_________________________  [ ] N  [ ] Y
- Programmable limit switch (PLS)*:_________________________  [ ] N  [ ] Y
- Safety block electrical interlock system:_________________________  [ ] N  [ ] Y
- *Individual component electrical or electronic schematic required.  [ ] Sending  [ ] Enclosed

#### F. If questionable about any information furnished, please enclose photos of entire front, sides (left and right), and rear of press. Include close-up photos of the inside of the existing control box, clutch/brake, and shaft end which would drive the timing device.
- [ ] Sending  [ ] Enclosed

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For identification and reference, please fill in this area.

Machine No.  ____________________________  Manufacturer  ____________________________
Model No.  ____________________________  Serial No.  ____________________________

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