



UNITROL



A REVOLUTIONARY
PINCH-POINT SAFETY SYSTEM
FOR PNEUMATIC RIVETING AND RESISTANCE WELDING

UNITROL
SOFT TOUCH



ROCKFORD
SYSTEMS, LLC

Industrial Machine Safety Solutions

www.rockfordsystems.com



THE DANGER OF PINCH-POINT HAZARDS

Riveting and resistance (spot) welding are essential processes in the successful manufacturing of products in fast-paced industries including aerospace, marine, garments, railcar and automotive. Unfortunately, pinch point accidents involving these machines are all-too-common. These types of accidents occur when rivet heads or welding electrodes are driven together at forces up to 12,000 PSI while an operator's hands are pinched between them, leading to mangled, crushed or severed fingers.

According to OSHA, hand injuries account for nearly one-third of the thousands of disabling on-the-job accidents occurring each year. Most of these hand injuries are the result by pinch point accidents – 80 percent of them in fact. Since pinch points are the root of such a large number of hand injuries, it's best to install viable pinch-point safety on the two machines where these injuries commonly occur: resistance welders and riveters.



ACCORDING TO THE BUREAU OF LABOR STATISTICS,

5,000+

American manufacturing workers suffer injuries involving
amputation or limb loss
every single year

THE SOFT TOUCH PROMISE: REDUCE INJURIES WITHOUT SACRIFICING PRODUCTIVITY

The SOFT TOUCH Pinch-Point Safety System is the first and only fully passive safeguarding system designed to prevent a riveter, spot welder or other small machine from applying full force if it detects fingers in the machine's point-of-operation area. SOFT TOUCH prevents hand injuries and eliminates associated expenses such as hospitalization, lost days of work, higher insurance premiums and legal action. It does all this while not slowing down manufacturing operations. OSHA-compliant SOFT TOUCH technology will take you from pinch point to pinch-proof without losing a minute of productivity.



UNRIVALED PINCH-POINT SAFETY THROUGH SENSOR TECHNOLOGY

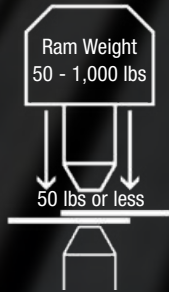
UNITROL's outstanding quality and reliability, combined with the SOFT TOUCH's advanced sensors and tamper-proof operation, come together to create a best-in-class pinch-point safety system.

Unique to the industry, the SOFT TOUCH measures electrical continuity between electrodes to verify they are actually touching the part to be welded — and not the operator's fingers. If anything other than metal is present between the electrodes, their sensors will not detect continuity and the electrodes will open automatically. This simple step prevents the machine from delivering high-pressure riveting or welding force onto the operator's fingers. In addition, a display instantly warns the operator of the danger. SOFT TOUCH has proven far more effective than traditional safeguarding methods such as ring guards or light curtains. In fact, thousands of SOFT TOUCH systems have been installed around the world with a 100 percent safety record.

Because time is money, SOFT TOUCH does not waste either. When continuity is detected between the electrodes – meaning only metal is present – full riveting or welding force is applied and operations proceed normally without delay. No time-consuming operator adjustments, such as replumbing the air system to change the pneumatics, are required. Also, SOFT TOUCH will automatically compensate for any changes in transformer tap switch position or line voltage shifts, preventing production from being abruptly stopped.

As with all safeguarding equipment, proper installation is critical. The experienced safeguarding professionals at Rockford Systems can install your SOFT TOUCH system and train your operators on its safe use.

HOW SOFT TOUCH WORKS



1. The welding electrodes close under **low force**. The unique pneumatic systems designed by UNITROL for the process can counter-balance the weights of the ram on large press welders. Even where the dead-weight of the welder ram is hundreds of pounds, the electrode force produced will be 50 pounds or less.



...Checking for Metal

2. The welding control checks to see if metal has been detected between the electrodes within a customer set maximum time limit.



No Weld,
Electrodes Open

3. If metal is **not** detected, the electrodes open automatically and do not go to welding force. A display tells the operator the problem.



Weld Complete

4. If metal **is** detected, full welding force is applied and the weld proceeds normally.

KEY BENEFITS:

1. Fail Safe Operation:

- If any of the system sensor wires become shortened or disconnected, the SOFT TOUCH system will lock out and not let the electrodes close, or the riveting or welding sequence to continue
- If the SOFT TOUCH sensor board detects electrode continuity before the foot switch or hand switches are closed, the system will lock out and not allow any electrode movement

2. No Operator Adjustments:

- Workers cannot remove, circumvent or tamper with any part of the system
- No operator set components
- Does not require any adjustments when new setups are made
- No user calibration, just install and turn power ON

3. No Operator Bypassing:

- The continuity system cannot be overridden and is in place at all times that the welding machine is under power

4. Primary System:

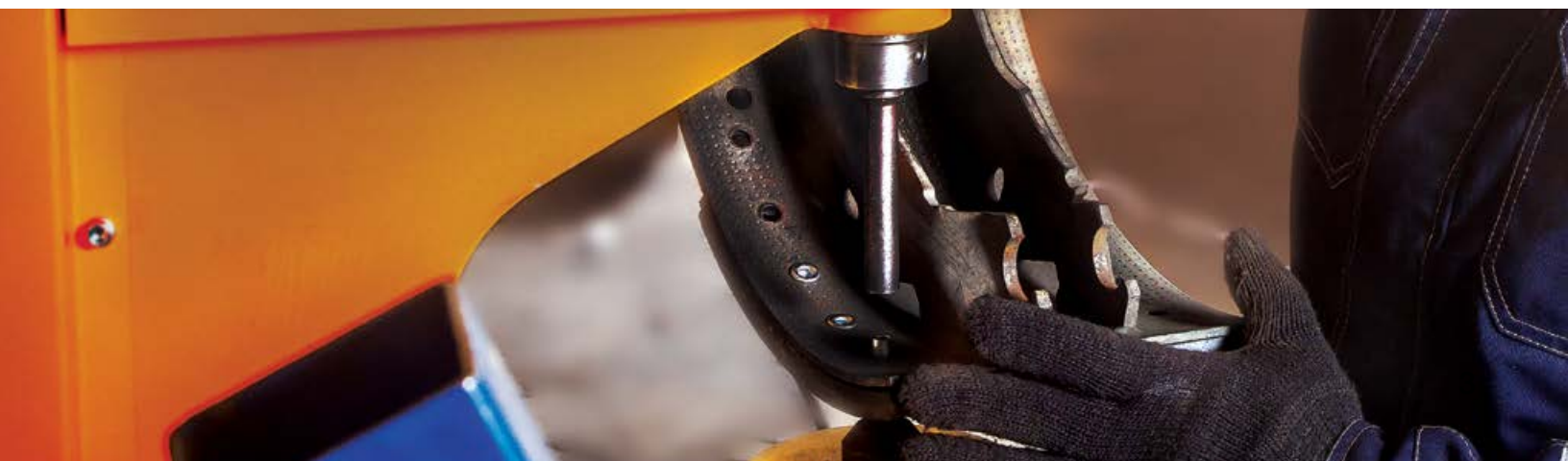
- Can be used as the primary pinch-point safety system because it is fully passive

5. Full-Electrical Redundancy:

- All inputs and outputs require closure of both electro-mechanical and solid-state redundant components for fail safe operation. Self-monitors output relay to prevent any operation if a fault in the output contacts is detected
- When welding a C-shaped part that is not fully closed and requires electrode force to push the parts together, a limit switch can be added to the riveter or welder, and be adjusted to close when the space between the electrodes is less an $\frac{1}{4}$ inch. In this case, two actions are required before the electrode force increases and the rivet or weld sequence starts

6. Does Not Stop Production:

- Automatically compensates for changes in transformer tap switch position or line voltage shifts



TYPES OF MACHINES:

Works with All Types of Welders:

- SOFT TOUCH systems are available for all resistance welders, including spot welders, projection welders, seam welders and transgun welders; 1Ø AC, 1Ø DC secondary, 3Ø frequency converters, 3Ø DC rectified secondary, and MFDC (inverters)

Works with All Types of Riveters:

- SOFT TOUCH systems are available for pneumatic riveters

Other Machine Types:

- Pneumatic clinching machines, Eyeletters, Stakers, Crimpers, Fastening and Assembly Machines

Complete System:

- SOFT TOUCH replaces the existing solenoid valves and is supplied in a single NEMA-4 enclosure that is factory prewired and pre-plumbed

Options:

- All options shown below can be ordered with the SOFT TOUCH system. They can also be easily added later in the field without modification of the control.
 1. Retract Kit to be used on all resistance welders that have a RETRACT (Hi-Lift) function
 2. Timed Bypass Switch for use with poor-conductive material
 3. Limit Switch for use with poor-conductive material or for redundant sensors
 4. Pressure Regulator Kit



COMPLIANCE:

- OSHA 1910.212(a) – General Machinery
- OSHA 1910.255(b)(4) – Resistance Welding Machines
- OSHA 1910.217(c)(3)(iii) – Presence Sensing Point of Operation Device
- ANSI B11.19-2010 (8.7) (Safeguarding Methods Standard)
- ANSI B154.1-1995 (Rivet Setting Equipment)

WARRANTY:

All UNITROL products include a 5-year prorated warranty. The warranty periods are determined using the date of the new control from original ship date. Please refer to the product manual for more information on the warranty.



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