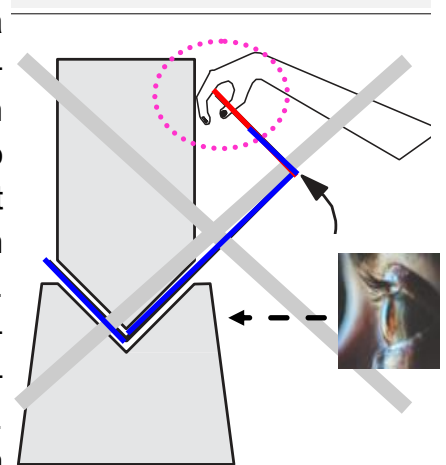


Reverse Flange Crush Zone

When forming reverse flanges that fold into the ram face, a secondary safety system mounted to the ram front face, protects the operator by monitoring that “crush zone” area. Shown



in red, these accidents occur due to the operator focusing on the part bending in the tooling and not on the part edge folding into the ram. By using the part drawings the reverse flange should be clearly identified in both shape and dimension. The area of the ram face is chosen



based on how and where the part folds into the ram. The light curtains are adjusted to scan that area. The adjustment of the light curtains to properly monitor the “crush zone” is another part of the press brake setup that is required by the operator.

Should the part be held where fingers or a hand would be between an edge and the ram face it would trigger the system to stop ram movement, preventing an accident.

The **BRIGHT YELLOW** warning light remains solidly lit until the operator releases the foot pedal, or by moving finger(s) or hand(s) to an alternate safer location. Depress the foot pedal to finish forming the part. With the obstruction removed, the light remains off as the ram continues the stroke.

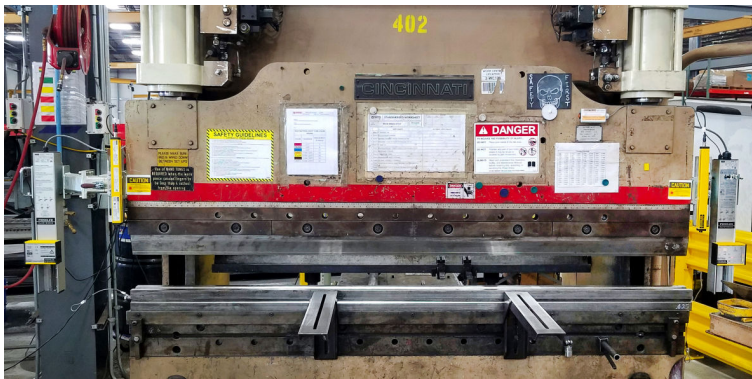
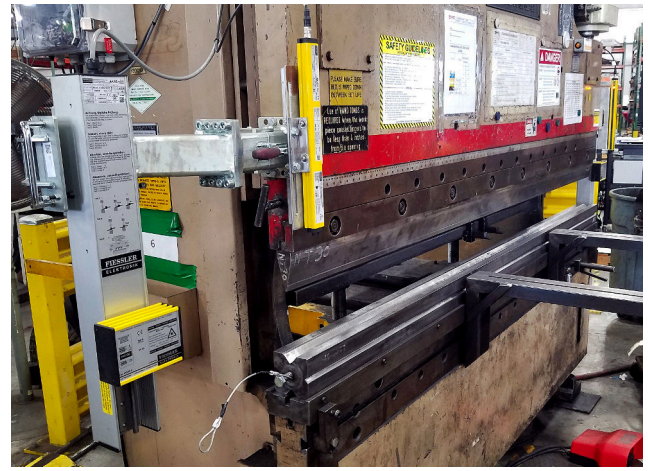


OVERRIDING

If the system is overridden by again depressing the foot pedal, without removing the triggering mechanism, the warning light will stay lit but flash rapidly throughout the stroke as a DANGER alert. This is similar to the Wavy Material override but in the Crush Zone area.

FALSE CRUSH ZONE ALERTS

It is possible that a part profile be of such configuration that the Crush Zone intrusion detection is triggered, the warning light is lit and ram movement is stopped when no danger condition exists. It has been observed that some odd part designs, very thick sheets and rods can cause the ram to stop and present as though a finger or hand were in the wrong position. This may be due to exceeding the resolution of the scanning device. In these cases, you may choose that after verifying no dangerous safety condition exists depress the foot pedal, *and with the warning light flashing* proceed with extreme caution to finish the part.



⚠ **DANGER**

CLOSING RAM AND DIE

NEVER operate this machine until you thoroughly understand all the operating instructions including the hazards and dangers present during normal use.

NEVER place any part of your body including your hands or fingers in or around areas of the machine where moving parts could dismember, crush or cause death.

NEVER operate this machine without point of operation guarding that would stop tooling closure or other pinch point hazards from causing injury or harm.

BE WATCHFUL that during die closure other less obvious hazards and dangers can be created from part movement or the way the part is being held.

✘

You are exposed to moving machine parts that can crush, dismember, and cause death.

✘

✘

The “Crush Zone” is defined as the area of the ram face where, by holding the part incorrectly, a hand or finger can be pinched between the part edge and the ram as it folds upward. Crush Zone monitoring capability is limited by the beam resolution of the light curtain used for this task. The light curtain selected is dependent upon the design criteria that is defined by the profile of the part being formed as it passes through the scanned area. The operational technology used is not 100% fool proof and must be used with through understanding, caution and operator’s involvement. The ability for this device to help prevent pinch point accidents is also dependent upon the way in which the Crush Zone scanning devices are adjusted or set by the operator to meet the design of the parts being formed.