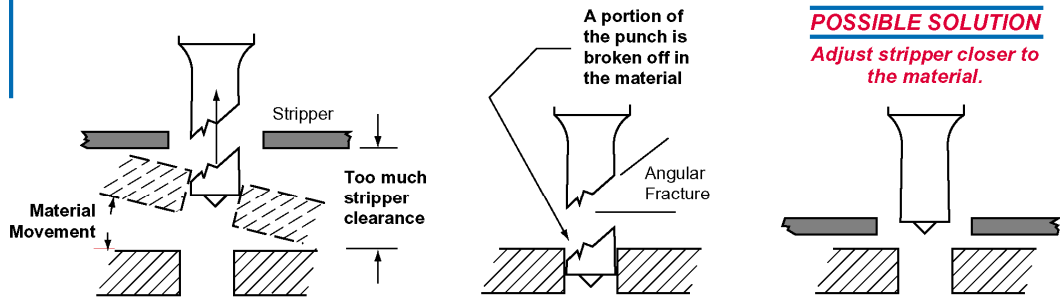
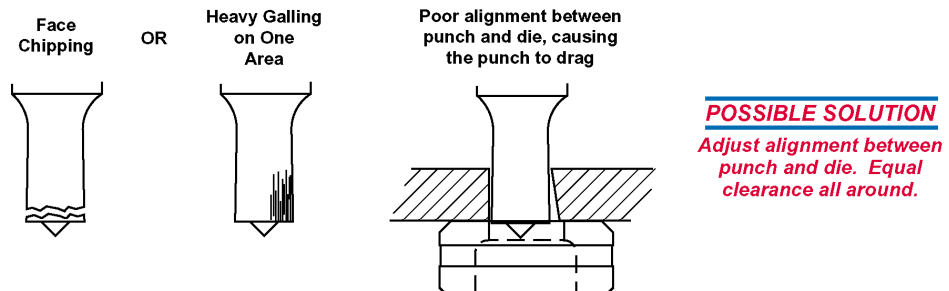


# Punch Tips

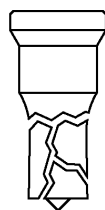
## STRIPPING FAILURE



## CHIPPING AND GALLING



## COMPRESSIVE FAILURE



"Compressive Failure" occurs when the compressive strength of the punch has been exceeded and the entire working end shatters. This is caused by attempting to punch extremely hard or thick materials, or complete misalignment of punch and die.

**POSSIBLE SOLUTION**  
Try an American Punch "ALPHA PUNCH".

## HEAD BREAKING OFF



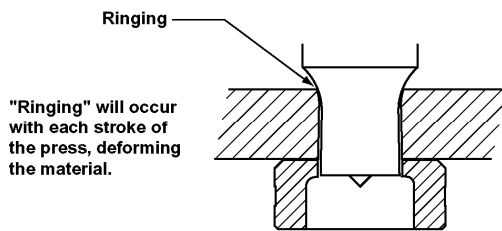
A loose coupling nut, worn punch stem or coupling nut will cause the head to fracture.

**POSSIBLE SOLUTION**  
Re-tighten coupling nut after the first several hits, and periodically throughout the day.

Check the face of the stem. Must be smooth and flat.

## Punch Tips

### RINGING

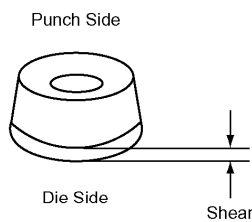


"Ringing" the punch occurs when the material is thicker than the working length of the punch or the punch is entering into the die too far.

#### **POSSIBLE SOLUTION**

*Adjust stroke length to enter into the die a maximum of 1/16".*

### CHECK THE SLUG



When punching mild steel 1/8" or thicker, the die side of the slug will be dished. The periphery of the slug will be shiny or sheared, for a distance of 10% to 20% of the material thickness.

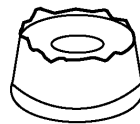
The punch side will have the center point indentation and a slight burr.



Double shear indicates not enough clearance between punch and die.

#### **POSSIBLE SOLUTION**

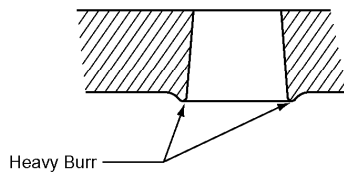
*Increase punch to die clearance.*



Uneven burr indicates worn tools or misalignment.

#### **POSSIBLE SOLUTION**

*Check alignment and condition of punch and die.*



Heavy burr on die side of material indicates too much clearance between punch and die.

#### **POSSIBLE SOLUTION**

*Decrease die clearance.*