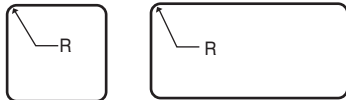
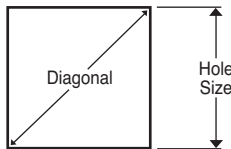


Shapes

Cleveland Steel Tool can supply you with any style of punch or die in most shapes. If you require a shape that is not shown, send your sketch, sample or blueprint for a quotation.

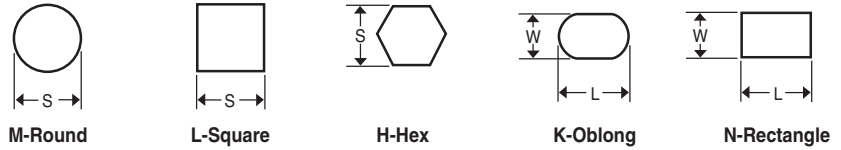


NOTE: Radius corners can be furnished upon request. Please specify shape and radius required.



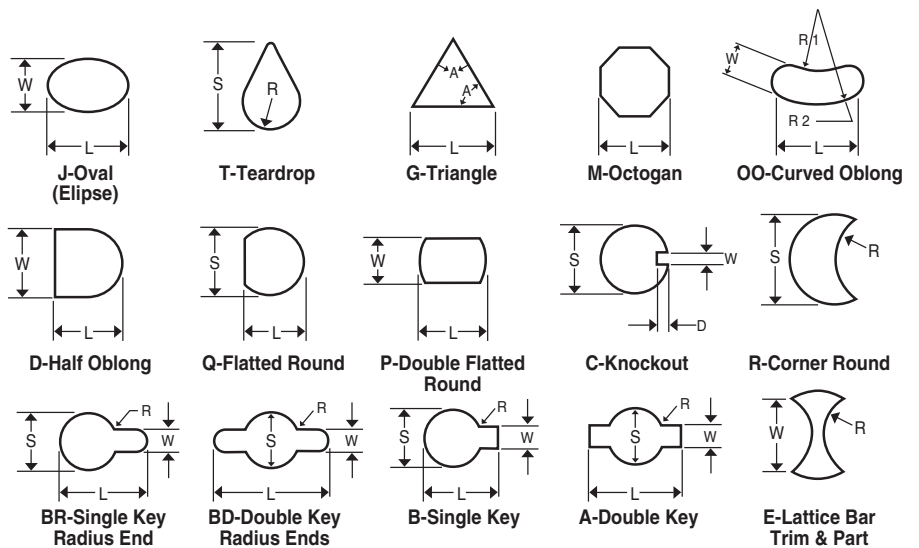
NOTE: For square, rectangle, hex and other shapes, use the diagonal dimension (corner to corner) and not the hole size to the maximum size that will fit the bore in your coupling nut and the slug hole of your machine.

STANDARD SHAPES



NOTE: Non-stock sizes of round, square, hexagonal, oblong and rectangular stock style tooling can be shipped in 48 hours.

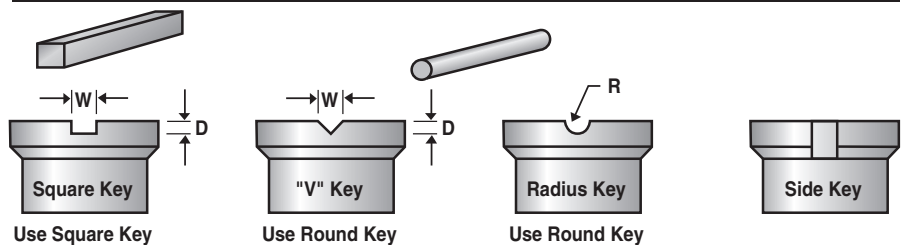
NON-STANDARD SHAPES



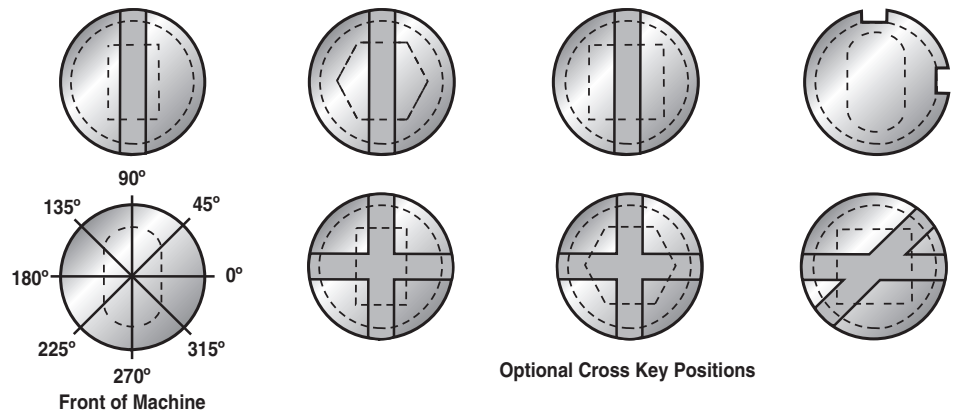
Choice of Keyways

Keyways are recommended for positive location of shaped punches using coupling nut mountings. Keyways are not standard on shaped punches due to numerous variations. The proper keyway can be added to punches upon request. The machine manufacturer is required. Standard keyway positions (see illustration) will be furnished unless otherwise specified. If ordering special keyway positions, please indicate the direction of the keyway in relation to the shape.

STANDARD KEYWAYS (SINGLE KEY FOR STEMS WITH CROSS KEYS)

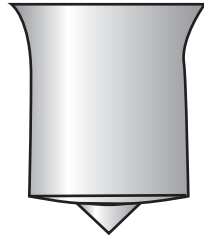


STANDARD KEY POSITIONS

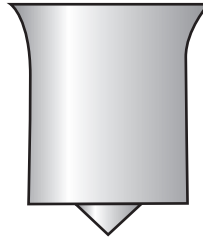


Choice of Punch Faces

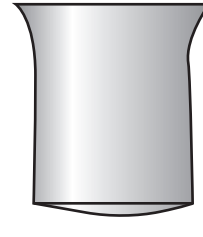
Unless otherwise specified, Cleveland Steel Tool furnishes punches with a "Crown Face Center Point." Other punch faces are available, as shown, upon request.



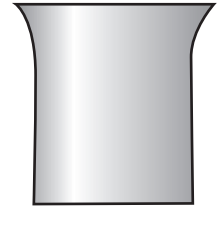
**Crown Face
Center Point
(Standard)**



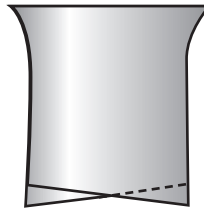
**Flat Face
Center**



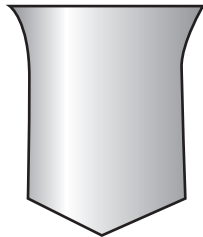
**Full Crown
(Used on Spring Steel)**



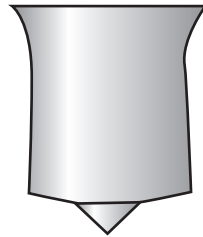
**Flat Face
(Reduces deformation
on slug and material)**



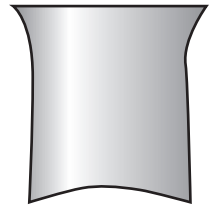
**"Z" Shear
(Used on 16 gauge or
lighter material to
reduce deformation)**



**"Y" Shear
(Reduces tonnage
and "bang")**



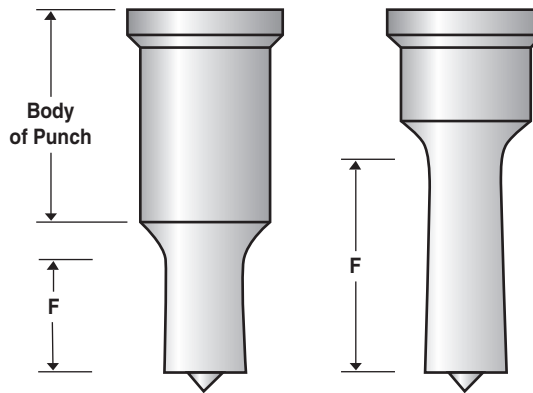
**"Y" Shear
with Center
(Reduces tonnage)**



**Concave Shear
(Reduces tonnage
and minimizes distortion
for material 3/16" or thinner)**

Extra Length Punches

Some applications require extra length to be added to the "F" dimension (working end of the punch) or the "Body" dimension. When ordering, please specify the length of the "F" dimension or "Body of Punch."



**Long Body
Short F**

Long F

Punch Styles

These punch styles can be made to your exact specifications. Please provide the punch number you require including all dimensions.

