Multi Flute

> Use in a portable drill, drill press, or Bridgeport type machine
> Self centering, good for non-rigid machining setup
> Able to countersink a wide range of hole sizes with one tool size

Single Flute

> Countersink stainless steel & tough alloys
> For portable drills, drill press or Bridgeport machine
> 60 / 82 / 90 / 100 & 120º angles

Champion XL801

Three Flute

> Countersink / chamfer stainless many steels & alloys
> For portable drills & drill presses
> 60 / 82 / 90 / 100 & 120º angles

Champion 799

Four Flute

> Countersink / chamfer stainless many steels & alloys
> For screw machines and turret lathes
> 60 / 82 / 90º angles

Champion 800

Large Four Flute

> Countersink / chamfer stainless many steels & alloys
> For portable drills & drill presses
> 60 / 82 / 90º angles

Champion 799L

Zero Flute

> Cross-hole countersink, commonly referred to as a Weldon Style countersink.
> Cone shaped tool with a cutting edge provided by a hole that goes through the side of the cone.
> Intersection of the hole cone form the cutting edge of the tool.
> For deburring tools & countersinking softer materials: aluminum, wood or plastic to create a countersunk hole for a screw.
> 2 styles: Piloted and Pilotless.

82º Piloted or Pilotlesss

> De-bur metal, plastic, wood & aluminum
> For portable drills & drill presses

Champion CSK

82º Pilotless Hex Shank

> De-bur metal, plastic, wood & aluminum
> For impact drivers

Champion CSK-SH

100 / 90º Pilotless Hex Shank

> De-bur metal, plastic, wood & aluminum
> For portable drills & drill presses

Champion CSKA.DBK

Combined Drill & Countersink

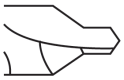
> Designed to produce accurate conical holes in components which require machining between centers
> Drill center holes in materials turned on lathes
> Commonly called “Center Drills”

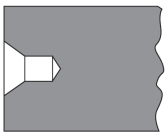
HSS

> Plain style
> 60º included angle

Solid Carbide

> Plain style
> 60º included angle





Champion 798

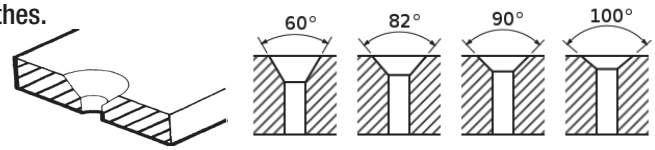
Champion 198

Increase Productivity • Work Efficiently • Optimize Tool Performance

A countersink is a cutting tool which puts a conical hole into an object. A common use is to allow the head of a countersunk bolt or screw, when placed in the hole, to sit flush with or below the surface. Countersinks may also be used to remove burrs left from drilling or tapping operations.

Applications & Materials

> Chatter free performance / smooth and fast chip removal
> Used in hand held drills or drill presses, milling machines and lathes.
> Cut many materials including metal, plastic and wood
> Ideal for the glass and window industry.
> Range of cutting angles available



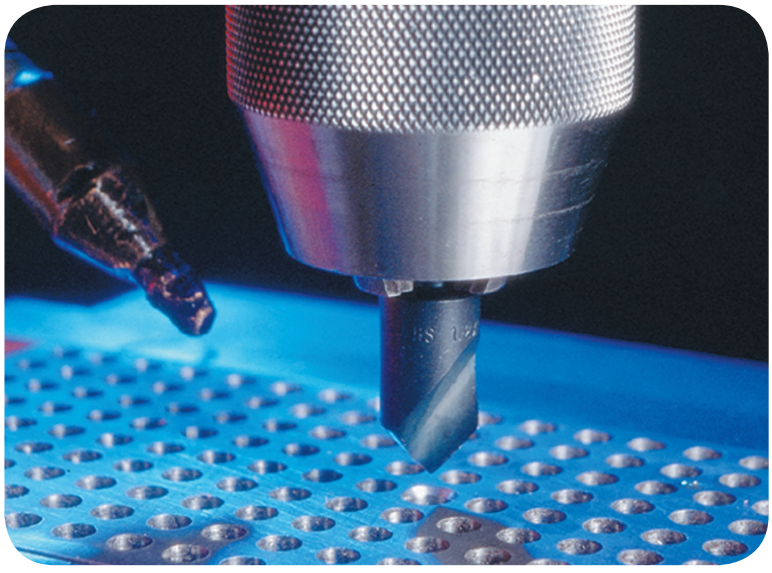
How To Choose The Right Size Counterink (Diameter)

> A simple rule of thumb is to choose a countersink which is 50% larger than the diameter of the hole.
> Countersink diameter = 1.5 x Bolt Size (hole) diameter.
> Example: For a 1/4-20 bolt, multiply the diameter (.250) x 1.5 = .375. This equates to a 3/8" countersink.

How To Calculate Countersink Speeds

> Countersinking is usually performed at 1/3 the RPM of drilling.
> First calculate drilling speed by using the formula below. Then simply divide by 3.
> Formula: SFM (surface feet/minute) x 3.82 / Countersink Diameter (decimal equivalent) / 3

Material	Surface Feet / Minute (SFM)	Sample Calculations for 1/4" Countersink Speed (RPM)
Aluminum	200 - 250	(225 (SFM) x 3.82 / .2500) /3 = 1,146 RPM
Mild Steel	100 - 110	(115 (SFM) x 3.82 / .2500) /3 = 586 RPM
Stainless Steel	30 - 100	(65 (SFM) x 3.82 / .2500) /3 = 381 RPM



BruteLube Cutting Fluid & Wax

By Enhancing Tool Heat Resistance, Operators Will Experience Smoother Cuts, Longer Tool Life, And Increased Production