DEWEY

TOOL COMPANY INC.

SEMI-CONDUCTOR TOOLING

959 Transport Way
Petaluma, CA. 94954 USA
800-821-8665 707-765-5779
707-765-0327 FAX

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Petaluma, CA. 94954 USA
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OUR COMMITMENT TO YOU

DeWeyl Tool Co, Inc. manufactures the finest quality bonding wedges for the microelectronic industry. These wedges are designed for the placing and bonding of fine aluminum and gold wires during the assembly of integrated circuits. Our product is used throughout the semiconductor, microwave, disk drive and hybrid electronic industries. We have been offering quality products and services since 1969. DeWeyl has always placed high priority on satisfying the customer's requirements. In fact, it is this dedication to customer satisfaction that allows us to stand apart from our competitors. DeWeyl offers application specific bonding wedges for both gold and aluminum wire. Our products are specifically designed for both thermo-compression and thermo-sonic wedge bonding applications. We also offer low or no heat bonding tool solutions. DeWeyl specializes in wedge technology and as a result we offer extensive product variation. Our product may be found worldwide in some of the most demanding applications. DeWeyl supports an extremely specialized field and takes great pride in offering very specialized solutions.

DeWeyl applies 30 years of manufacturing experience to insure customer satisfaction. Extensive efforts are made to insure our promise to you. Throughout the manufacturing process, a total of eighteen independent inspections are performed using laser digital micrometers, optical comparators at 250x magnification, optical inspection stations at 500x magnification and the latest in digital camera technology. Our last and final inspection is cosmetic to insure that the product placed in the shipping container is in perfect condition. The tool is encapsulated immediately following the final inspection and then no further handling happens to the tool. Our manufacturing results are constantly analyzed and evaluated to maintain the highest quality product. Bonding tools are our primary focus and customer satisfaction is our main goal.

Our commitment is to meet and exceed your application requirements.

TOOL COMPANY INC.

Contact Information:

Web Site: www.deweyl.com

959 Transport Way
Petaluma, CA. 94954
USA

TEL: (707) 765-5779 | Outside US
TOLL FREE:1-800-821-TOOL (8665) | US & Canada Only
FAX: (707) 765-0327

To contact DeWeyl Tool, Inc. please complete our online request information form or call us at the above numbers (Mon-Fri 8:00 a.m. - 4:30 p.m. PST).
We look forward to assisting you with your tool needs.

Sales/Customer Service:

E-mail: sales@deweyl.com

Everything we do at DeWeyl Tool is in loving memory of our founder Richard D. Cline, 1928-1999.

ISO 9001 CERTIFIED ORGANISATION

URS®

UKAS QUALITY MANAGEMENT 043-A

United Registrar of Systems Cert No.97230

Revised: April 24 2019

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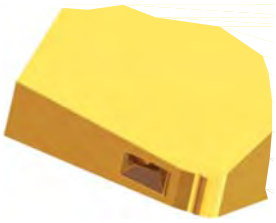

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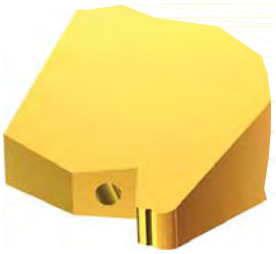

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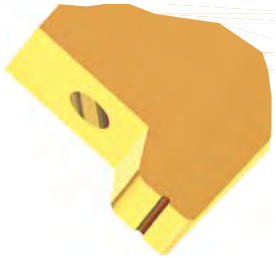

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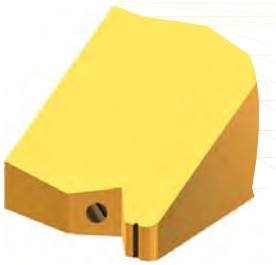

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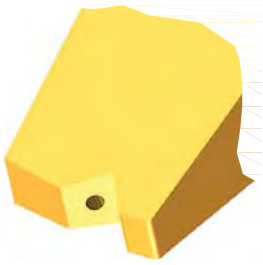

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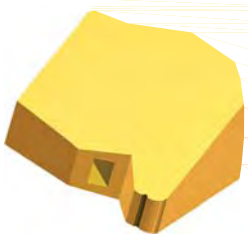

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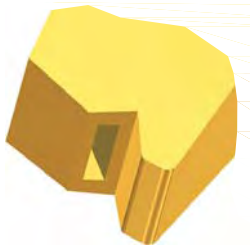

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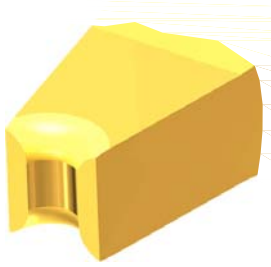

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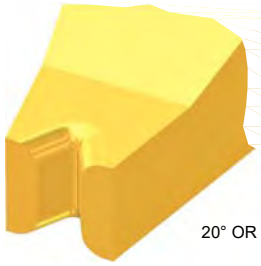

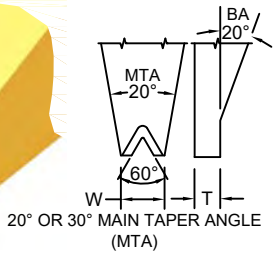

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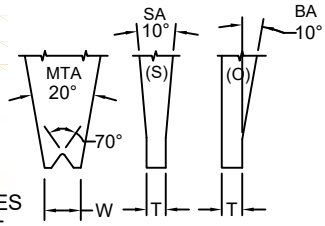

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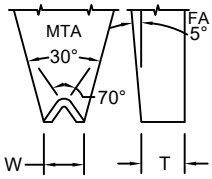

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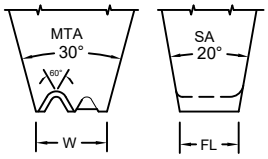

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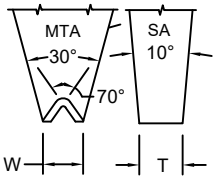

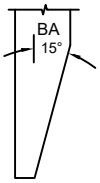

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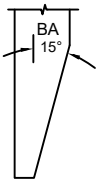

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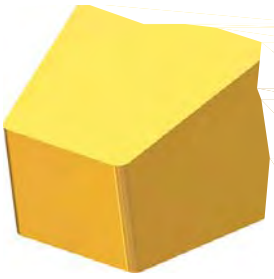

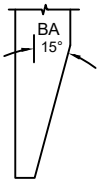

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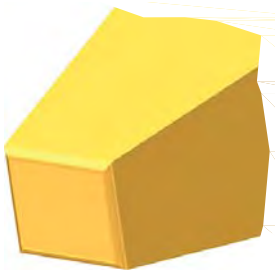
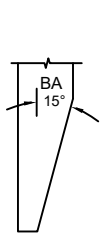

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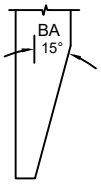

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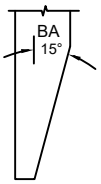

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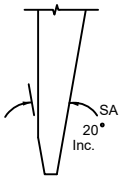

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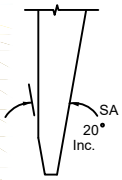

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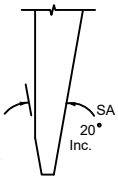

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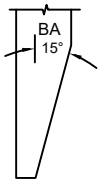

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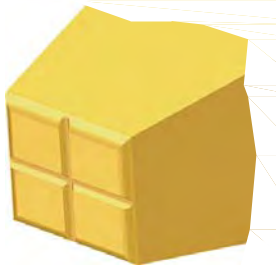
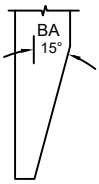

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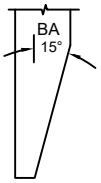

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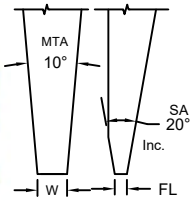

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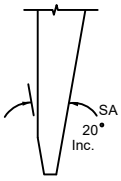

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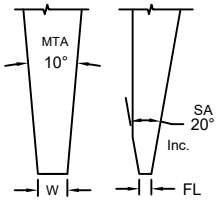

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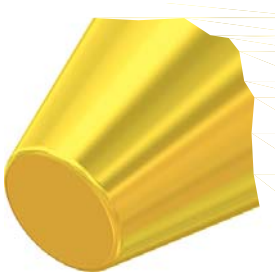

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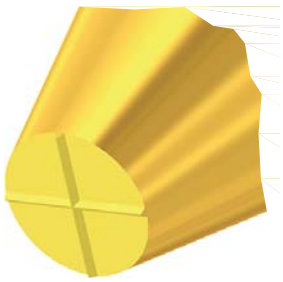

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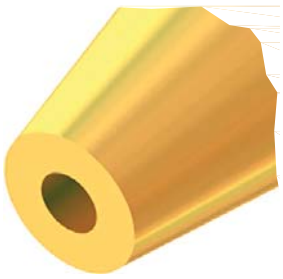

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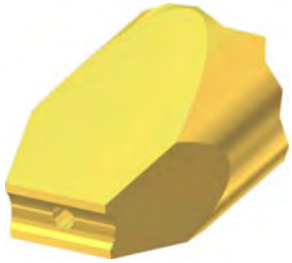

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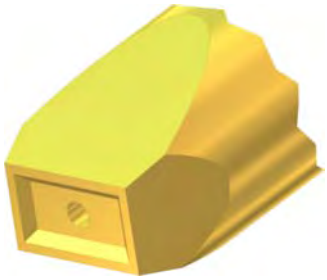

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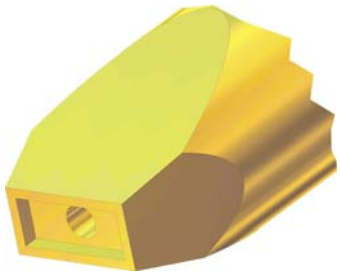

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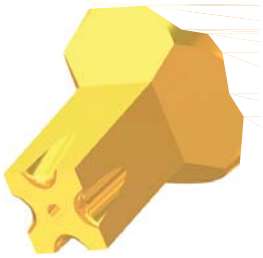

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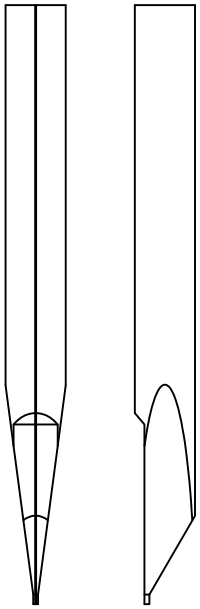

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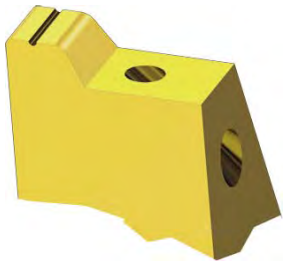

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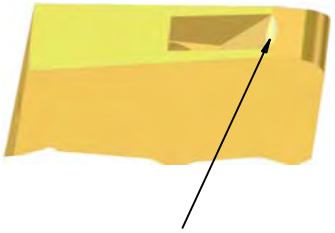

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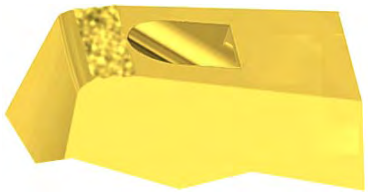

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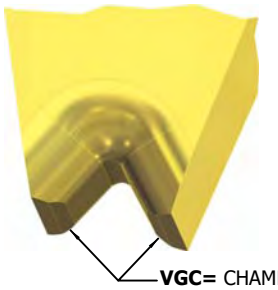


VGC= CHAMFER ON VG
EXTENDED TOOL LIFE
PAGE: 131

MATERIAL SELECTION GUIDE

ENTER MATERIAL CODE LETTER IN PART NUMBER

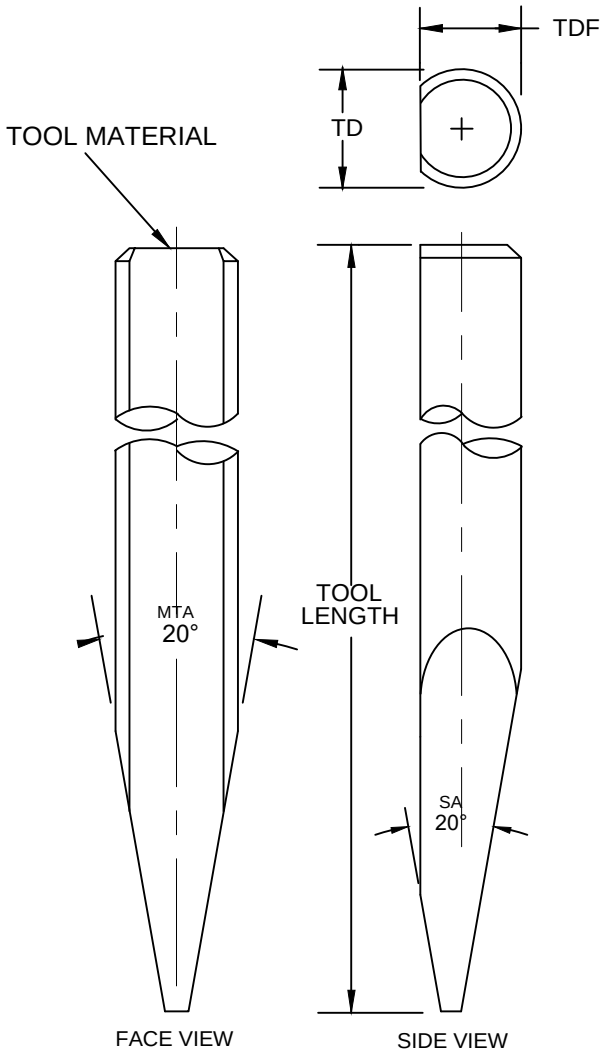
SOLID TOOLS

MATERIALS AVAILABLE:

C=TUNGSTEN CARBIDE WITH 6% COBALT (STANDARD)
Z=ZIRCONIA
N=TITANIUM NICKEL
R=ROCTEC
F=COBALT FREE TUNGSTEN CARBIDE
2=G02 2010 MATERIAL
TUNGSTEN CARBIDE WITH 10% COBALT (LESS WEIGHT)

EXAMPLE: 2-GF-100-1-1/8-1-M

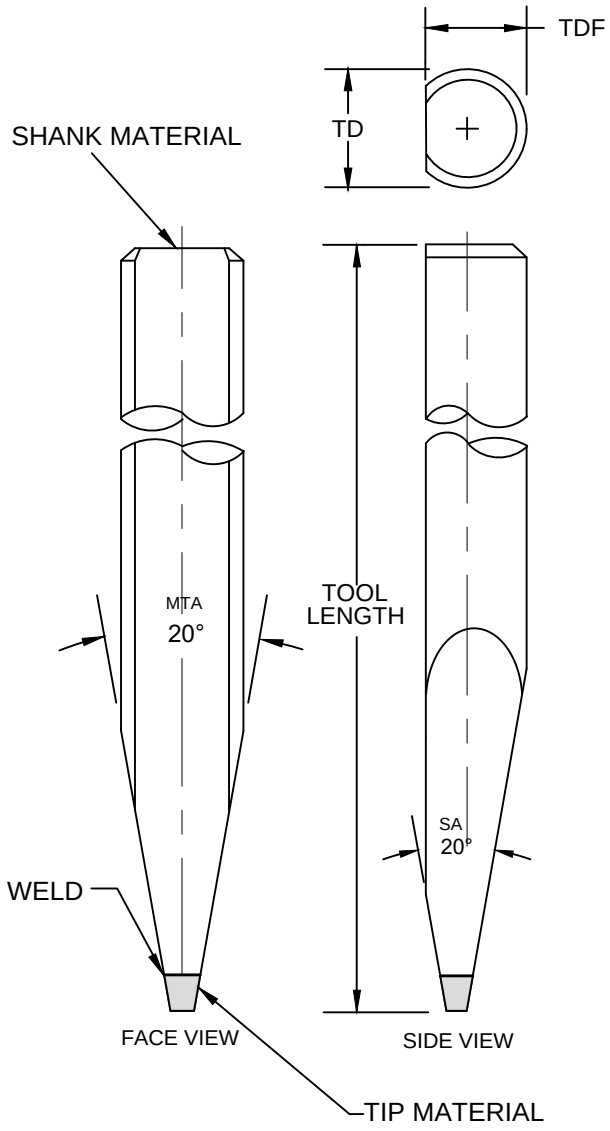
TS =SOLID TITANIUM CARBIDE
S =STAINLESS STEEL



WELDED TOOLS

MATERIALS AVAILABLE:

M =CERAMIC TIP ON TUNGSTEN CARBIDE SHANK
L =ZIRCONIA TIP ON TUNGSTEN CARBIDE SHANK
B=TITANIUM DIBORIDE TIP ON TUNGSTEN CARBIDE SHANK
Y=TUNGSTEN CARBIDE TIP ON ZIRCONIA SHANK
G=CERAMIC TIP ON ZIRCONIA SHANK
J =TITANIUM DIBORIDE TIP ON ZIRCONIA SHANK
I =CARBIDE SHANK, ZIRCONIA INSULATOR, CERAMIC TIP
E=CERAMIC TIP, NON-ELECTRICAL CERAMIC INSERT, CARBIDE SHANK
T =TITANIUM CARBIDE TIP, CARBIDE SHANK



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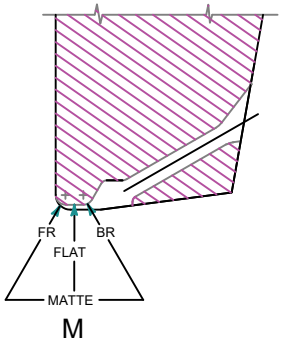
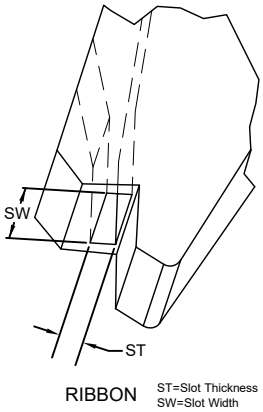
DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

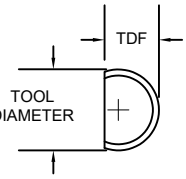
TOOL CONFIGURATIONS

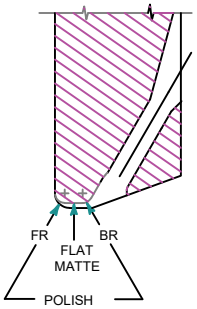
Note: All drawings and charts are not to scale and only representative of actual sizes

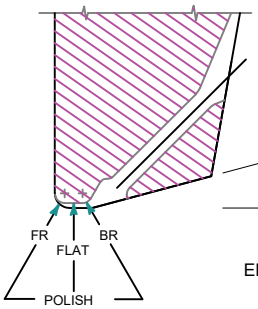
Shown below are diagrams of the standard tool configurations available. For a better understanding of how these configurations are utilized see Tool Option. Please contact customer service for special configurations or combinations not shown.

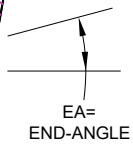


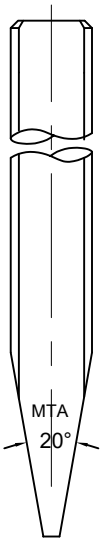


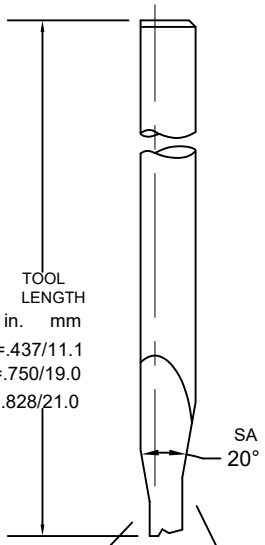






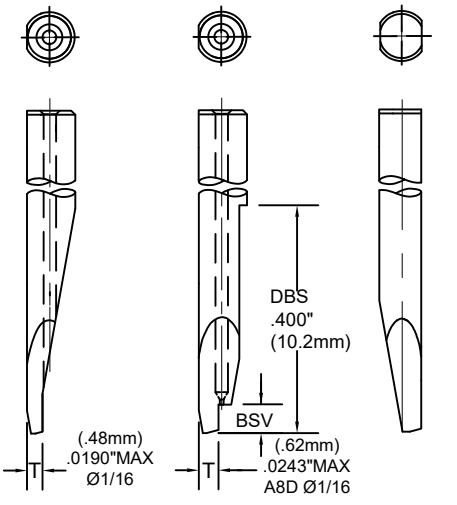


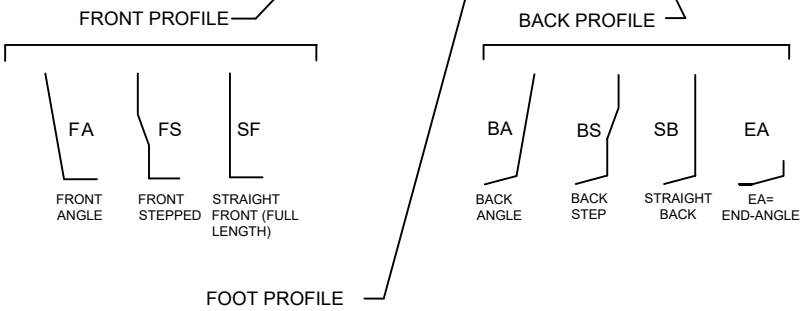


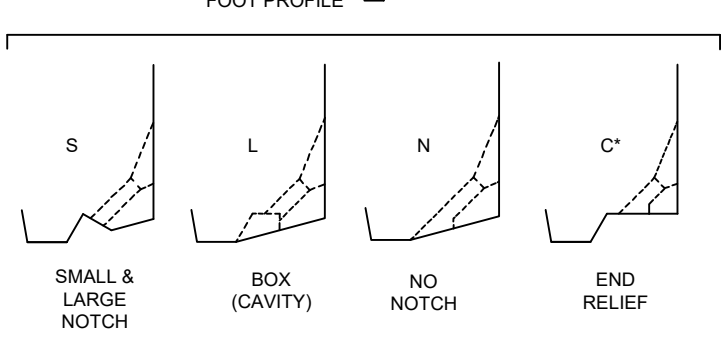


FOOT FINISH

VERTICAL FEED STYLES







GLOSSARY OF TOOL CONFIGURATIONS

Below is a listing of standard configurations for the tools shown in this catalog. This may be used as a quick reference in selecting the tool style to fit your particular bonding needs. Always review the actual tool diagrams from the following pages to ensure a correct choice. For assistance in choosing a tool to solve a particular problem refer to the option (see Tool Option) or contact customer service.

BA=Back Angle
BC=Back Chamfer
BF=Bond Flat
BL=Bond Length
BR=Back Radius
BS=Back Step
BSV=Back Step Vertical
C*=End Relief
C=Concave Foot
CBR=Chamfered Back Radius
C/CG= Concave Foot with Cross Groove
CG=Cross Groove
CM=Center of Mass
DBS=Double Back Step
DF=Double Flat
ECM=Extra Coarse Matte finish
ELG=Elongated Hole
EN=End Angle
F = Flat
FA=Front Angle
FR=Front Radius
FS=Front Step
GW=Groove in Wire Direction
L=Box (Cavity)
LR=Left Radius
M=Matte
MTA=Main Taper Angle
MP=FR & BR Polished, BF-Matte
N=No Notch
P=Polished
R=Regular Notch
RR=Right Radius
S=Small & Large Notch
SA=Side View Angle
SB=Straight Back
SC=Side Chamfer
SF=Straight Front
SS=Side Step
ST=Slot Thickness
SW=Slot Width
TD=Tool Diameter
TDF=Tool Diameter Flat
V=Vertical Feed
VG="V" Groove
VGC= Chamfer on VG
XPBR=Extra Polish Back Radius

SMALL WIRE & LARGE WIRE

TOOL SERIES	CONFIGURATION	TOOL SERIES	CONFIGURATION
AL	SF BA L	CV	FS BS C V
AN	SF BA N	CLV	FS BS L V
AS	SF BA S	CNV	FS BS N V
C	SF BS C	CSV	FS BS S V
CL	SF BS L	KNV	FA BS N V
CN	SF BS N	KNLV	FA BS L V
CS	SF BS S	KSV	FA BS S V
KN	FA BS N		
KNL	FA BS L		
KS	FA BS S		

RIBBON

TOOL SERIES	CONFIGURATION	TOOL SERIES	CONFIGURATION
R	SF BA S	RCSV	FA BS S V
RCS	SF BS S	RKNV	FA BS N V
RKN	FA BS N	RKSV	FA BS S V
RKS	FA BS S	RNV	SF BS N V
RN	SF BS N		

RIBBON - DOUBLE FLAT- VERTICAL FEED

TOOL SERIES	CONFIGURATION	TOOL SERIES	CONFIGURATION
RCSH	SF BS S	RKSH	FA BS S
RKNH	FA BS N	RNH	SF BS N

DOUBLE FLAT - VERTICAL FEED

TOOL SERIES	CONFIGURATION	TOOL SERIES	CONFIGURATION
CLH	SF SB L	KNH	FA SB N
CNH	SF SB N	KSH	FA SB S
CSH	SF SB S	KNLH	FA SB L

OLD SERIES

Large Series **A** is now Series **AS** and large Series **CR** now Series **CS**

For all existing **old** Tools, **still use old Serial Number**
For all new Tools, **please use new Serial Numbers**

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TOOL SELECTION

For every wire size there Is a series of tools available from DeWeyl with different bond lengths (BL). Unless the bond pad is the limiting factor, bond lengths of 2½ to 3 times wire diameter are recommended. The longer the bond length, the less critical the bond schedule.

BOND LENGTH & FOOT WIDTH

The correct bond length for a given job should be as large as the pad and adjacent obstacles will allow. The foot width is restrained by the distance between bonds, yet must be large enough to accommodate some degree of off-center wire flow as well as maximize the bonding area.

FRONT RADIUS AND BACK RADIUS

The **front radius** effects the rate of transition from the round wire to the flattened area of the bond. In general more gradual transition yields stronger and more consistent bonds, yet larger front radii either decrease the bond length or increase the tip size.
The **back radius** affects the “heel” of the bond. As the back radius is increased the heel is strengthened. The stronger heel aggravates the tail-pulling problem where the wire is broken too far away from the heel. Incorrect termination of the second bond leaves too much tail on the pad and not enough wire under the tool’s foot to successfully begin the next bonding sequence. Some back radius Is recommended, however, since a back radius of zero produces a “heel-crack” and an unreliable bond.

HOLE SIZE

Most bonding wedges Include a wire feed hole designed to lead the wire directly under the bonding foot. The diameter of the hole is normally about 250% of the wire diameter (apply's to small wire .00025 to .0015 only). In most cases this ratio is limiting enough to Insure proper wire centering, yet large enough to prevent excessive drag. As the width of the bond foot is decreased, however, a smaller hole (200% of wire diameter) may become necessary to satisfy the more critical wire centering problem.

WIRE FEED ANGLE

The wire feed angle is varied to accommodate obstacles near the pad which might foul the wire during the bonding operation. Larger wire feed angles increase the length of the hole and increase the drag potential. Two things are done to offset this effect. First, the entry of the hole is countersunk thus dramatically increasing the hole diameter through most of its length and incidentally creating a better target for manual threading. Second, the back edge of the shank near the tip is tapered or machined out. The latter solution implies a modification of the tool’s vibration characteristics discussed below. 30°, 45°, and 60° wire feed tools are available. 60° wedges are particularly applicable within high walled ceramic packages where pads are inaccessible to standard 30° and 45° wedges.

TIP-TO-SHANK RATIOS

Ultrasonic bonding wedges vibrate at ultrasonic frequencies effectively translating mechanical energy from the transducer and the transducer horn to the bonding environment. The amplitude of the tool’s vibration at its foot is a ratio of the input (shank) diameter to the output (foot) diameter. Therefore, bonding wedges are designed with varying tip-to-shank dimensional ratios.
A diminished tip dimension as in the case of the DeWeyl 60° Hi-Gain wedge vibrates at a high amplitude which rapidly dampens in contact with the bond surface.
A standard 30° wedge with the same input amplitude, will vibrate at a comparatively lower amplitude but dampens more slowly, presenting the hazard of over-working a delicate bond. In general, larger wire requires more energy to bond than small. Hence stiffer wedges work best as wire size increases.

The Wire Feed Hole

The Wire Feed Hole Is Important

The feed hole on the bonding wedge is likely the most critical aspect of the wedge configuration. The feed hole has the responsibility of guiding the wire accurately to the center of the bond foot. The feed hole's most significant contribution is how it defines the looping performance for our customers.

Looping Performance

What do we mean by looping performance? Our customers use our product to attach wires between two points. This wire needs to have an arc shape in order to prevent shorting on other circuitry within the electronic device. If a wire is laid flat, it would sag down and touch other electrical points in the customer's product. If the wire is shaped into an arc similar to the shape of a bridge spanning a stream, then the wire is stronger, just like the bridge is stronger. This wire shape is what we call the loop profile. The loop profile can be very low or it can very high for a variety of different reasons. The loop profile will be dictated by the length of the wire, the diameter of the wire and the height difference between the first and second bond. Our customers have to consider all these factors when deciding which wedge to utilize.

Feed Hole Diameter

There is a very simple guideline to start with when selecting the diameter of the feed hole. Generally speaking, the feed hole diameter will be twice the diameter of the bonding wire. A .001" diameter wire will use a .002" diameter hole. Customers deviate from this general guideline for a variety of reasons.

Feed Hole Problems

The feed hole plays such a critical role that it can also be the cause of many performance problems. These problems can be very difficult for our customers to resolve quickly because the symptoms can be caused from several different sources. These problems include poor wire feeding, poor looping, wire damage, poor wire termination and difficulty threading the wire. This is why accuracy on the feed hole diameter, the feed hole length, and the funnel depth are extremely critical.

Feed Hole Wirelock

The feed hole gains control over the wire by producing "wire lock.” Wire lock is when the wire cannot slide through the feed hole. The wire is thus "locked" inside the feed hole. Wire lock takes place when the angle of the wire moves significantly away from the angle of the feed hole. In other words, the wire angle and the hole angle need to be at the same angle in order for the wire to freely pass through the feed hole. If the angles of the wire and hole are not the same, then there will be friction on the wire. The greater the angle differential the greater the friction. Eventually the friction is high enough to achieve wire lock. Then the tool is in control of the wire and in control of the loop profile. A couple of feed hole aspects can cause significant wire lock problems. The two primary aspects would be the hole diameter in relationship to the wire diameter, as well as the feed hole length.

Feed Hole Length

One of the other factors that contributes to wire lock performance is the length of the feed hole. The length of the feed hole is altered when the depth of the funnel is altered or if the "T" dimension of the tool is modified.

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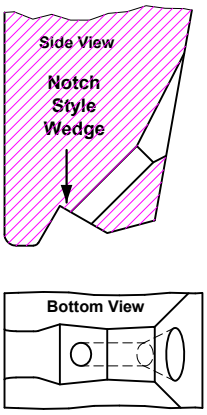
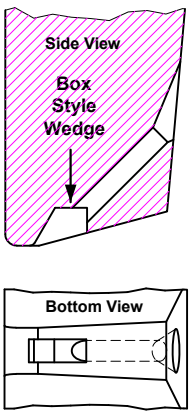
Wedge Tip Styles

Manual Wedge



Automatic Wedge



The DeWeyl product catalog offers a significant variety of tools. The general difference between "Automatic" bonding wedges and "Manual" bonding wedges hinges on the difference between "notch" and "box" style wedges.

The Notch Style Wedge

We make several variations of the notch style tool. The notch style wedge is designed for use on manual wire bonders. The notch style wedge can be modified with more aggression than the box style.

For example, we can offer a narrower "W" dimension on a notch style because the walls of the box are missing from a notch style tool. Our "CS" series is the best choice for manual wire bonders and is especially useful for our microwave technology customers.

Why is the notch style a poor choice for automatic wire bonding equipment? If you look closely at the sketch of the notch tool you will see how the wire is free to move side to side once it exits the feed through hole. It is this characteristic that prevents the notch tool from being selected for automatic bonding applications. When a manual bonding operator looks through the microscope to place the wire bond he/she will target the wire to the bond pad. Thus, if the wire shifts side to side it does not pose any significant problem with regards to placement accuracy.

However, automatic wire bonders cannot see when the wire shifts from side to side. The auto bonder can only assume knowledge of the center of the wedge and thus attempt to place that wedge center on the center of the bonding pad. Thus, excellent wire centering is needed when operating an automatic wire bonder.

Notch style wedges: AS, CS, KS, CSH, KSH, R, RCS, RCSH

The Box Style Wedge

This tool is best suited for automatic and semi-automatic wire bond equipment. Thanks to the tool design, the wire is contained from side to side movement until just before the bond foot area. This wire control helps keep the wire centered on the tool and offers enhancements to placement accuracy.

We offer many styles of boxed tools. Two examples would be the "CL" series and the other is the "CN" series. The "CL" series offers a bit more looping freedom than the "CN" style. Look closely at the "CN" catalog page and you will notice how the exit of the "CN" style is more restrictive than the "CL" style tool. This restriction can generate more drag on the wire during looping when compared to the "CL" series. Depending on the application, this extra wire drag will either be helpful or problematic.

Box style wedges: AL, AN, CL, CN, KN, KNL, CLH, CNH, KNH, KNLH, RKNH, RNH,

Please contact the DeWeyl factory for application specific recommendations.

Parameters

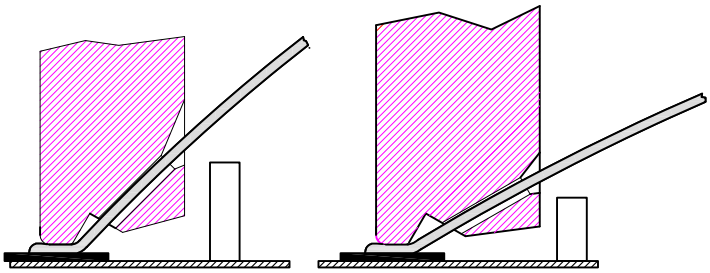
Ultrasonic bonding wedges are designed to carry high frequency mechanical vibrations together with the wire to discrete positions on a pad where pressure and ultrasonic "scrubbing" create a metallurgical bonding environment.

The satisfaction of all these requirement simultaneously for a full range of applications implies a wide variety of wedge configurations, which vary primarily to allow tool and wire clearance of obstacles on or near the pad. Wedge configurations possess three main design elements: the bonding foot; the hole and wire feed angle; and the tlp·to-shank ratio.
No definite values for the parameters of force, time, and power can be given for an optimum bonding schedule because of different wire bonding surfaces, semiconductor die, and package characteristics.
The general guideline for establishing optimum bonding is that the bonding parameters be adjusted so that reducibility is maximum yet high bond pull strength is maintained.

Dimensional Variables

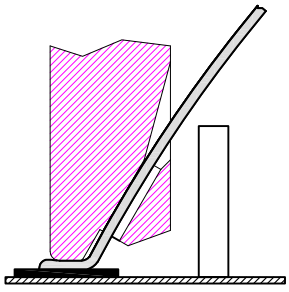
Bonding wedge dimensions vary primarily to permit access of the tool and wire to tightly confined points on the pad.

The overall tip length and width, and the tip clearance dimensions are important considerations In the selection of a wedge for a given task .



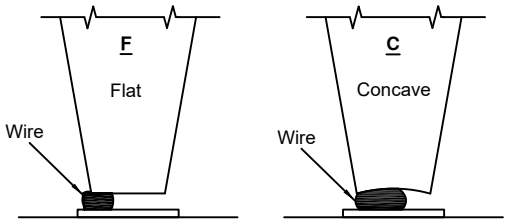
45° Hole Angle

30° Hole Angle



60° Hole Angle

Profile



-- FIG. 5 --

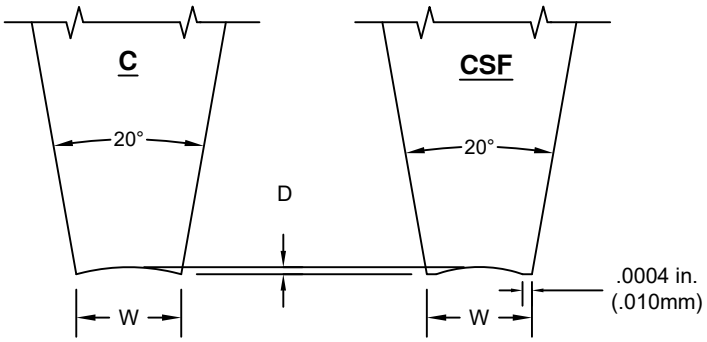
The face of the bonding foot may be flat concave, the latter being the most widely accepted configuration. The concave face creates an Inward force component which keeps the wire toward the center of the foot. Flat faced wedges present the possibility of off-center bonds In which wire material Is squeezed off to the side.

Wire Diameter:
Wire size is selected on the basis of device requirements and bonding pad size. One mil AL, 1 % Si wire is used In most devices; however, usage of 1¼ mil diameter Is growing.

Elongation: Low elongation (½ - 1 ½) is normally required so the wire may be broken after the second bond. Too great elongation results in excessive rebonding.

Tensile Strength: Relatively hard wire is needed for small diameter wire (< 2 mil) with tensile strength ranging from 15-19 grams for 1 mil and 19-21 for ¼ mil. Higher tensile strength (harder) may fracture silicon (cratering), under the bond. Lower tensile strength (softer) wire reduces the range of bonding schedules.

Concave Bonding Wedges



The Concave Bonding Wedge is offered for customers using small diameter aluminum bonding wire. Small diameter wire is generally viewed as wire that runs between .001" dia. Up to .002". Aluminum wire (small) is offered in the following diameters. .001", .00125", .0015" and .002". Anything over .002" diameter is usually considered a large wire application.

Additionally, the Concave Bonding Wedge is used for bonding aluminum wire, because the arch at the back of the bond foot offers additional material thickness, and thus strength for the wire. Aluminum wire is very brittle and needs this additional thickness to minimize the chance that the aluminum wire could easily break at the heel of the bond foot.

Concave With Side Flats

This tool is identical to the "Concave" tool and is used for the same reasons. However, occasionally we will have a customer using gold wire with the concave style tip. As a result, the outside edges of the wedge may contact the bonding surface when the bonding wire is deformed. To prevent the tool contact on the edges, we offer side flats to give extra clearance, thus eliminating the tool contact to the bonding surface.

THE CSF BONDING TOOL

Greatly extended tool life and improved “pull strength” are the principal attributes of the newly developed CSF Bonding Tool. Extensive testing at numerous semiconductor plants indicate an expected tool life 300% to 500% above that experienced using concave tools. Comparative pull test data show an increase in average bond strength with an accompanying decrease in standard deviation.

Photograph No. 1 illustrates the highly polished side flats which minimize edge erosion and protect both tool and die in the event of accidental contact.

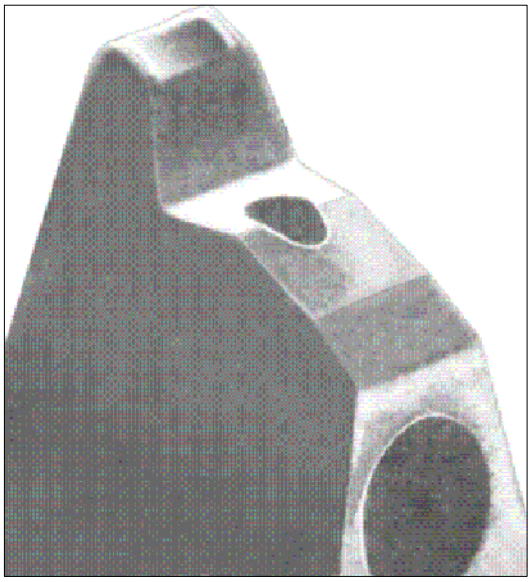


Photo 1. DeWeyl CSF Ultrasonic Bonding Tool This photo shows are CS-Series with a A6 option

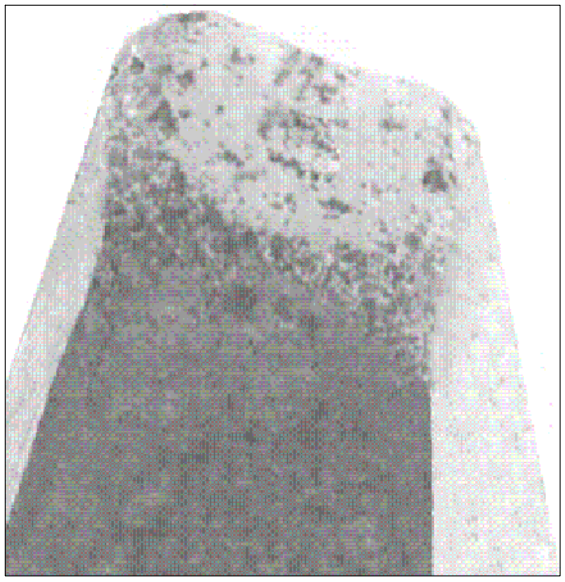


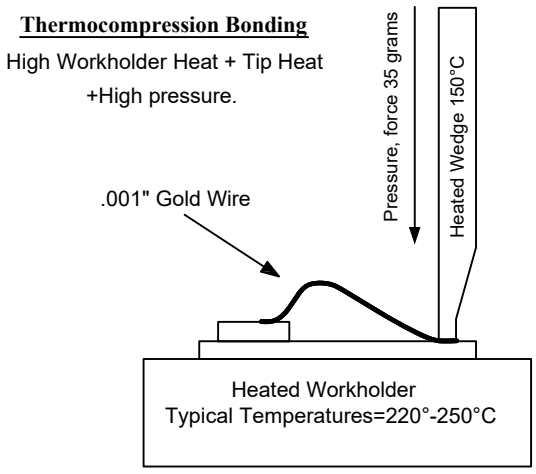
Photo 2. Typical concave Ultrasonic Bonding Tool after 100,000 bonds

THE CSF BONDING TOOL

- EXTENDED TOOL LIFE
- HIGHER BOND STRENGTHS
- LESS BONDER DOWN TIME
- LOWER COST PER BOND

Photograph No. 2 shows a standard concave tool after 100,000 bonds. The sharp edges have started the normal breakdown process. Micro-chipping will swiftly progress to ultimate tool failure—the typical wear-out mode of both concave and flat tool geometries.

Thermocompression Bonding

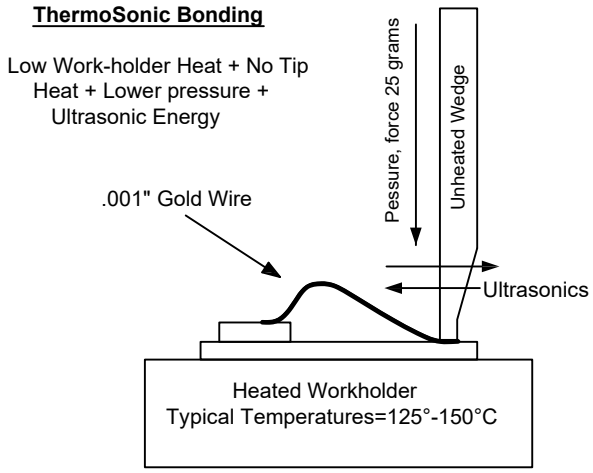


The microwave industry primarily uses a method called "thermocompression bonding" on gold wire.

Thermocompression bonding is used for bonding gold wire with heat, pressure and time. No ultrasonic energy is applied to the bond wire. This bonding process requires elevated temperatures during the bonding process when compared to "thermosonic bonding".

The heat is supplied by a heated workholder, which holds the part being bonded. The bonding wedge is usually heated as well. The bonding machine supplies the pressure as it pushes down the wedge onto the wire. The time or duration is how long the bonding wedge sits on the wire.

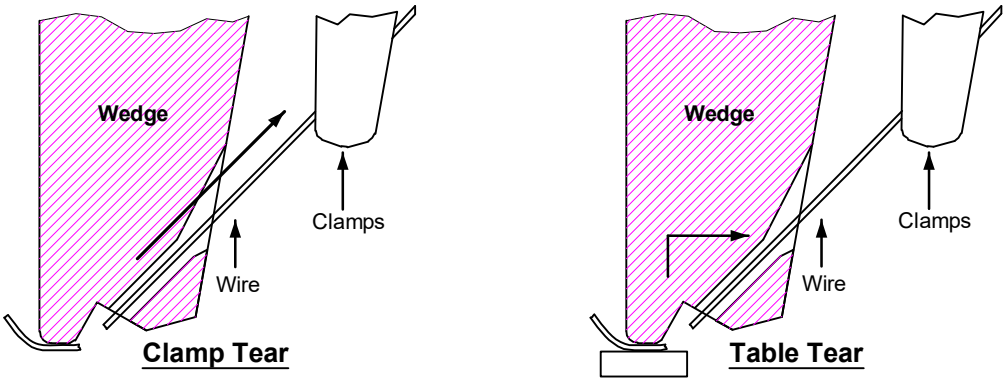
ThermoSonic Bonding



Thermosonic bonding is used for bonding gold wire with less heat, less pressure and less time, when compared to the thermocompression technique. This bonding process allows reduced temperatures during the bonding process.

The addition of ultrasonic energy is what allows all of the reductions in heat and pressure. The lower heat is still supplied by a heated workholder, which holds the part being bonded. The bonding wedge is usually unheated. The bonding machine supplies the lower pressure as it pushes down the wedge onto the wire. The time or duration is how long the bonding wedge sits on the wire and this time requirement is typically reduced as well.

The ultrasonic energy results from a mechanical vibration of the wedge at a standard frequency of 63khz. New high frequency systems offer frequencies of 110-120Khz. The ultrasonic vibration of the wedge is what allows all the reduction in forces and temperatures, and scrubs the bonding wire into the metal interface.



There are two basic methods that wire bonding equipment use to terminate the wire bond. The first is called clamp tear and the second is called table tear.

Clamp Tear

Just like it sounds, the wire bonding machine uses a set of clamp blades to clamp on to the wire immediately after the last wire bond contact is made and the clamps actually move back and pull on the wire with enough force to break the wire. This wire clamp movement must be done while the bonding wedge is in contact with the wire. The tool is pressing down on the wire while the clamps are pulling on the wire.

This sequence is very important. If the wedge is not holding the pressure down on the wire, the clamp pull force would likely lift up the already bonded wire connection. How does the wire know where to break? The wire will break at its weakest point. Where is that weakest point? If we assume that the correct bonding wedge is used, the weakest location will be at the back radius of the tool. This semi-sharp portion of the tool is designed to weaken the wire strength and allow for the wire to break at a predictable location. Many manual machines and a some automatic wire bonders use this technique to terminate the wire.

Table Tear

This method still utilizes a set of clamp blades, however the clamps only clamp on the wire and do not have a motion to pull back on the wire. Instead, the wire bonding machine lifts up the wedge after the last bond is complete. This lift elevation is extremely low and is measured in just a few thousandths of an inch. After the tool lifts from the surface, the table moves such that the tool steps back and as a result breaks the wire.

Once again, how does it know where to break? The back of the bond foot has been weakened by the back radius design of our wedge. As a result of the semi-sharp back radius, the wire breaks at the desired location.

Since this wire termination method requires some motorized table movement, it is almost exclusively used on automatic wire bonders. The automatic equipment engineers like to use this method out of consideration for bonding speed. They can perform a table tear method faster than trying to perform a clamp tear sequence, because every fraction of a second is considered.

VERTICAL FEED / DEEP ACCESS

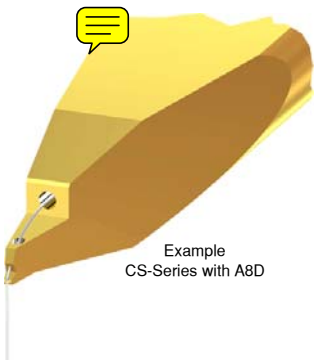
OPTIONS FOR DEEP ACCESS APPLICATIONS
DeWeyl Tool has the wedge technology solution for all application needs. The following highlights a few of our many product offerings. Please refer to the Tool Options page for other design solutions to common problem situations that can occur during normal bonding applications.

VERTICAL FEED / DEEP ACCESS
DeWeyl Tool continues to offer the industry's first high technology bonding wedge for deep access applications, as well as for standard wire feed angles. Our Vertical Feed/Deep Access bonding wedges offer significant solutions in maintaining maximum looping and tail control.

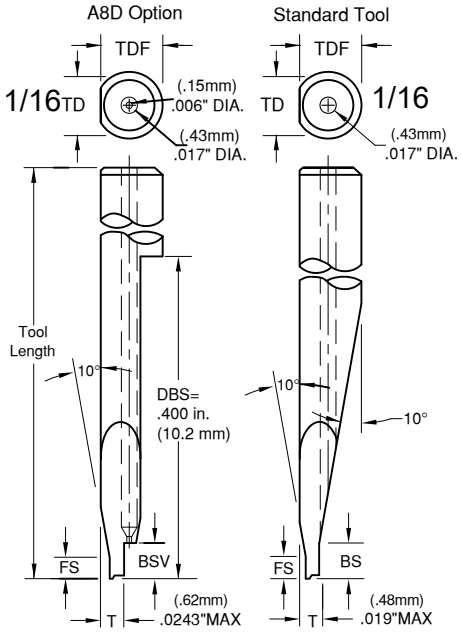
Our product line includes a wide selection of Vertical Feed/Deep Access bonding tool solutions for manual, semi-automatic and automatic bonding equipment. A minimum of three material choices are available for your consideration: Tungsten Carbide, Titanium and Ceramic. Additionally, our vertical feed bonding wedges are offered with 45 degree, 52 degree and 60 degree feed hole angles.

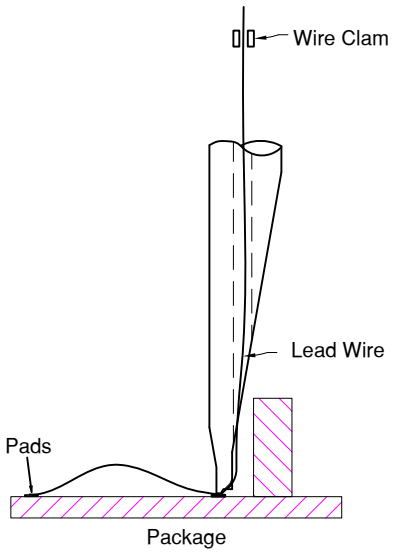
DeWeyl Tool understands that today's complex Vertical Feed applications require gold bonding of .0007" diameter wire. Our extensive micro-machining experience has allowed the development of wedges for eve .0005" diamter wire, utilizing bond lengths of .0005" and fed holes of .001".

The DeWeyl Vertical Feed tools, along with their basic design specifications, are indicated accordingly within our online and PDF catalogs. Please visit the appropriate wedge style category for your specific needs, or consult your local representative or the DeWeyl factory to discuss your application requirements.



A8D Option for Vertical Feed/Deep Access Applications





Example:
C-Series (left) A8D OPTION, (right) Standard Vertical Feed

DeWeyl has developed an exclusive design for the Vertical Feed/Deep Access applications identified as the "A8D" option. This feature maintains maximum control during the looping and feeding operations of your equipment, and is highly recommended for maximum Vertical Feed/Deep Access performance. Please pay particular attention to the "Problem and Solution" drawings on the Tool Options page.

Note: The A8D option is not suitable for use with **F&K Delvotec** and **Hesse Mechatronics** machines.

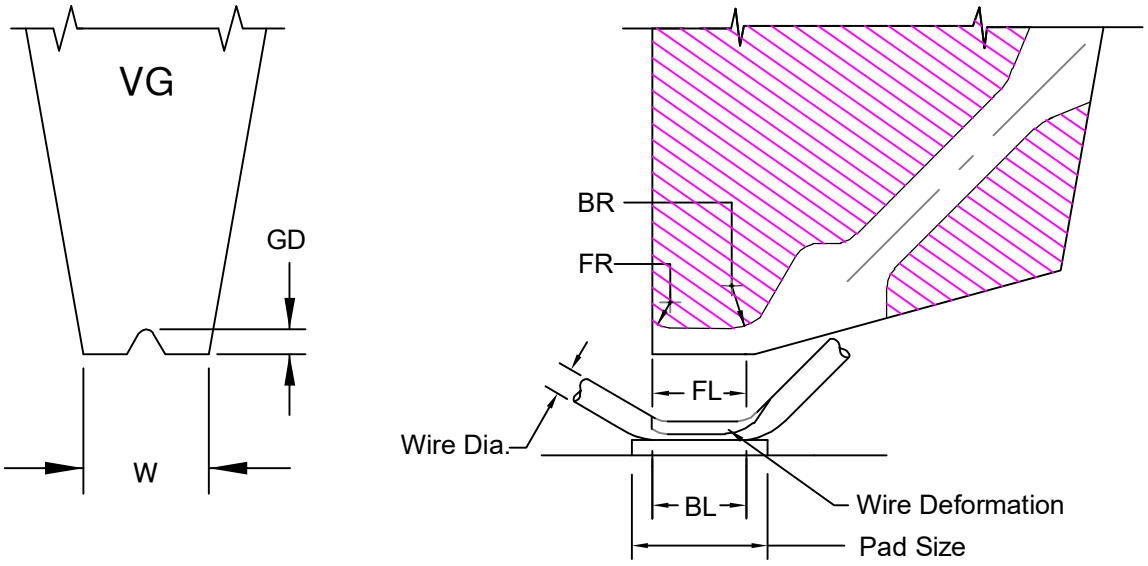
"V" GROOVE BOND LENGTH ILLUSTRATION

In this illustration we are showing a "V" Groove bonding foot for larger wire, .003 through .0160 Notice that the FL (Foot Length) and the BL (Bond Length) are the same dimension. When choosing a tool size use the following bonding formula:

70% of the FR (Front Radius) plus the BF (Bond Flat) plus 35% of the BR (Back Radius) equals the BL (Bond Length).

Example: .70 (.002 FR) + .0021 BF + .35 (.007 BR) = .006 BL

For this size bond length you may need a pad size of .0075 using 80% coverage of bond pad in wire direction. In this case the tool size you would choose from our dimension chart for .003 diameter wire would be 4560. Again, the sizes on our chart are the most common, but you may choose any size using this formula.



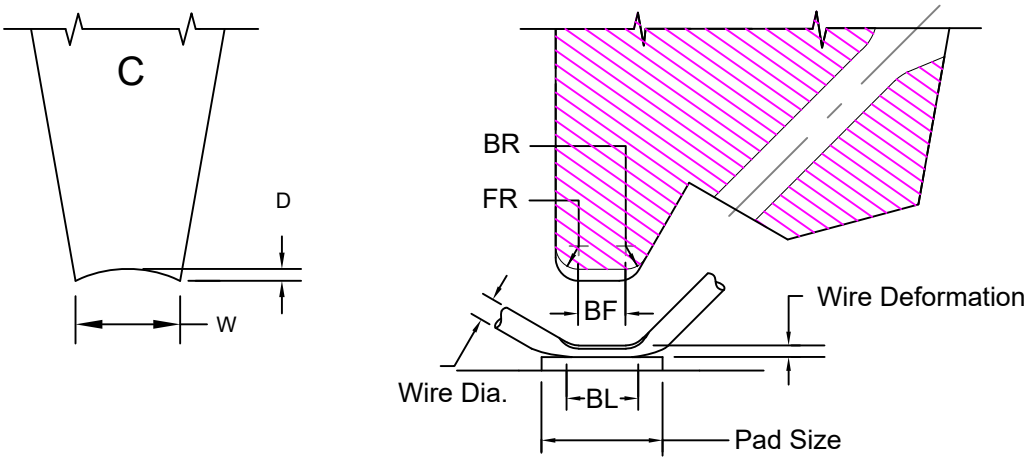
On "V" Groove Tools the Foot Length (FL) equals Bond Length (BL).

SMALL WIRE BOND LENGTH ILLUSTRATION

We are showing our style of Concave tool in the Small Wire Illustration with instruction on how to determine bond length and how the bond would look. Bond length is the bottom surface of the wire that is bonded to the chip. We calculate the bond length by adding the bond flat dimension plus **1/3 of the FR (Front Radius) dimension plus 1/3 of the BR (Back Radius)** dimension. So when trying to decide what tool size to choose, find the smallest pad size within the package and multiply 50% to 70% times the pad size in the wire direction. One concern here is to understand how much space you need for targeting your wire onto the bonding pad. Some operators need less space than others. If this is the case then you may want to use a larger % basis to determine a larger bond length. The tool sizes shown in our catalog are the most common but you may select any size that is not shown by using this formula.

Example: 50% x .002 (pad size) = .001 (bond length)

For .0007 wire your selection for tool size would be 1510.



Bond Flat (BF) + 1/3 Front Radius (FR) + 1/3 Back Radius (BR) = Bond Length (BL).

Front Radius and Back Radius

The front radius and back radius of the bonding tool can sometimes seem like something rather insignificant. But actually, the proper selection of radii, especially the back radius, is very important to the strength of the wire bond system. The FR and BR need to be modified based on the type of wire being bonding, i.e. gold or aluminum. You must also consider the wire size when deciding the size of the radius. Generally speaking, gold wire will use a smaller back radius to help cut the wire cleanly. Aluminum wire is harder and more brittle. It needs to have a smoother radius to prevent cracking of the wire.

Front Radius **(FR)** The front radius of the bond tool needs consideration on the second bond. The first bond does not matter much with regard to the front radius. The front radius' main job is to offer a smooth and gentle transition between the bond flat and the wire diameter at the second bond contact. The most common choices for the **front radius on .001" diameter wire is FR= .001" for both aluminum and gold wire.**

Back Radius **(BR)** The back radius is the critical radius. If this is selected incorrectly an aluminum wire may break very easily or a gold wire may not terminate properly. The most common choices for the **back radius on .001" diameter wire** is **BR= .001" for aluminum wire and BR= .0005" for gold wire.**

ULTRASONIC GOLD WIRE AND RIBBON BONDING

Deep Access-Vertical Feed Applications

DeWeyl Tool Company continues to offer the industries first high technology bonding wedge for “deep access” applications as well as standard wire feed angles. DeWeyl's “deep access” or “vertical feed” bonding wedges offer significant solutions in maintaining maximum looping and tail control. DeWeyl vertical feed bonding wedges are offered with 45°, 52° and 60° feed hole angles. Common bonding wedge materials such as Tungsten Carbide and Titanium Carbide have exhibited specific performance limitations thus DeWeyl Tool Company developed the industries first ceramic tip-bonding wedge.

DeWeyl's ceramic tip bonding wedge offers a unique and enhanced surface texture. This surface texture allows optimum ultrasonic coupling with the wire structure. This results in a superb *tool to wire* interface and thus efficient ultrasonic energy transfer. The DeWeyl ceramic tip wedge offers impressive benefits for gold wire, aluminum wire and gold ribbon ultrasonic applications. Here are some of the reported advantages when using DeWeyl's ceramic tip wedge:

- INCREASED BOND ADHESION
- INCREASED PULL TEST RESULTS
- ULTRASONIC OUTPUT REDUCTION
- EXTENDED WEDGE LIFE
- IMPROVED BOND DEFINITION
- GOLD BONDING AT AMBIENT TEMPERATURES

In addition to the ceramic tip wedges, DeWeyl has developed an exclusive design for the “vertical feed” applications identified as the “A8D” option. This feature maintains maximum control during the looping and feeding operations of your equipment. It is highly recommended for maximum vertical feed/deep access performance.

Note: The A8D option is not suitable for use with **F&K Delvotec** and **Hesse Mechatronics** machines.

In order to take full advantage of the ceramic tip tool on ultrasonic gold wire applications we recommend using 0.5-2% wire elongation. This wire elongation will offer the best response to the ultrasonic energy. However, some applications may find acceptable performance from 1-3% wire elongation. Thick film applications may find additional advantages in using a cross-groove style bonding tip in addition to the ceramic material.

DeWeyl Tool Company understands that today's complex vertical feed applications require gold bonding of .0007” diameter wire. Our extensive micro-machining experience has allowed the development of wedges for even .0005” diameter wire, utilizing bond lengths of .0005” and feed holes of .001”. Please do not hesitate to consult your local representative or call the factory direct to discuss your application requirement. DeWeyl Tool Company has the wedge technology solution for your application.

PROCESS

Ultrasonic wedge bonding presents an alternative to thermo-sonic and thermo-compression bonding techniques.

The key difference between the two is that the latter employs heat energy, while ultrasonic bonding uses mechanical energy together with pressure and time to effect a bond.

The ultrasonic technique is applicable with materials of low heat tolerance, and particularly, to the bonding of aluminum wire. Ultrasonic bonding to date, is the most successful and proven method for work with aluminum.

In the ultrasonic bonding process, a metallurgical bond is achieved through the proper transmittal of ultrasonic energy under pressure to the bond Interface. Consistent and reliable bonding requires optimized parameters as Illustrated in the following paragraphs. The parameters to consider are power, clamping force (pressure), time, mating of tool geometry with wire, and bonding pad and package condition.

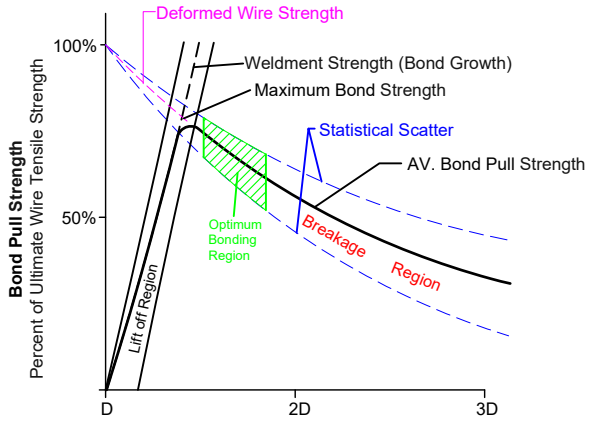
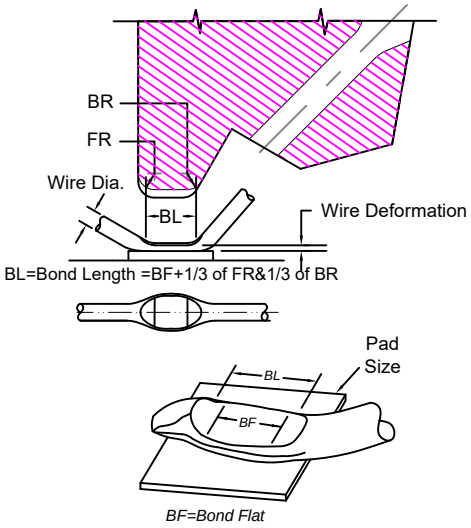


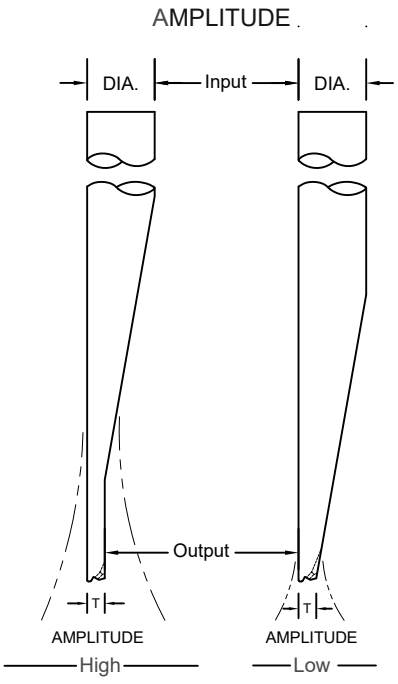
Fig. 1 - Bond Pull Strength vs.
Deformed Width or Ultrasonic Power

Figure 1 shows the relationship of the bond pull strength In percent of ultimate wire tensile strength to the deformed width of the bond (see Fig. 2). Three sets of curves of bond pull strength versus power, time, or clamping force can be obtained by varying one of these parameters while holding the other two constant at their optimum. Each curve Is similar to, and can be related to, the curve of bond pull strength versus wire deformed width.

As each parameter is increased, the weldment grows stronger in lift off strength through bond growth. At the same time, due to wire deformation, the transition from the wire into the weldment becomes weaker. The failure mode changes from weldment failure (lift off) to wire breakage failure. Maximum pull strength is at the intersection of the two failure modes. Lowest reproducibility is within the lift off failure mode and within the breakage failure mode after the deformed width exceeds two times the wire diameter. Highest reproducibility is within the breakage failure mode, directly after, but less than the maximum pull strength.

Fig. 2 - Plastic Deformation of Wire





CERAMIC

Introducing the newest technology in gold wire and ribbon bonding.

DeWeyl has always strived to bring the finest line of wedge type bonding tools to the industry and has done so for more than thirty years.

Now we bring a new ceramic material to the industry that has more superior bonding qualities than any other material on the market today. This new material is a type of silicon nitride specially selected for our great line of tools. We researched this area quite extensively until we found just the right matrix.

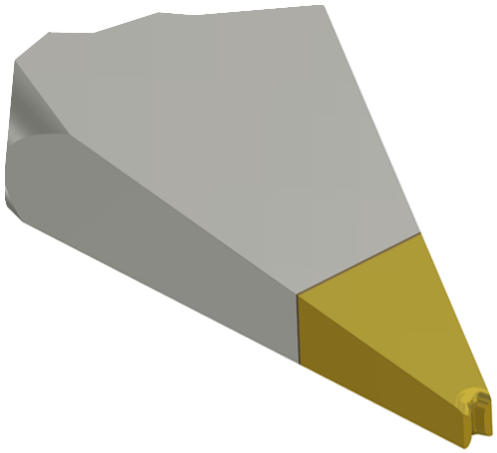
Now you have a new material selection and, as always DeWeyl quality,which, when matched with our new designs give you a precision made, superior quality bonding tool that we call our SUPER TOOL.

If you have any questions please be encouraged to call

our customer service department.

1-800-821-8665
1-707-765-5779
info@deweyl.com

The Ceramic Advantage



Why Ceramic?

DeWeyl Tool developed the industry's first Ceramic tip bonding wedge, because common bonding wedge materials such as Tungsten Carbide and Titanium exhibited specific performance limitations.

The ceramic material is bonded to a tungsten carbide shank utilizing, once again, a process developed and mastered by DeWeyl Tool. And, while designed primarily for ultrasonic bonding of gold wire, many customers have reported tremendous tool life while bonding aluminum wire with very little aluminum build up on the bond flat. Please refer to the Recommendations page for further details.

BENEFITS

Our Ceramic tip wedge offers impressive benefits for both gold wire, aluminum wire and gold ribbon ultrasonic applications. It also has a proven track record on both production and R&D products. Here are some of the reported advantages when using our Ceramic tip wedge:

- Increased Bond Adhesion
- Increased Pull Test Results
- Ultrasonic Output Reduction
- Extended Wedge Life
- Improved Bond Definition
- Gold Bonding at Ambient Temperatures
- Improved Production Yields

ULTRASONIC EFFICIENCY

One of the most significant benefits of the DeWeyl Ceramic wedge is the excellent tool to wire interface. The ideal ultrasonic bonding wedge allows for zero tool slippage while in contact with the wire and during the application of ultrasonic energy. If the tool has zero slippage then the ultrasonic transfer of energy is operating at 100%. This is the value of the Ceramic wedge. The naturally porous structure of the Ceramic offers a surface texture that couples with the wire giving optimum ultrasonic transfer. This efficiency in transfer allows for a reduction in ultrasonic power and time levels, which results in a superb tool-to-wire interface and thus efficient ultrasonic energy transfer. Difficult applications due to low bonding temperature or contaminated bond surfaces are made easier with the use of the Ceramic tool.

ECONOMICAL

The standard angle feed Ceramic wedge (non vertical feed) costs only 8% more than the cost of titanium. And the cost of a vertical feed Ceramic tool is only 18% more expensive than the cost of titanium. The additional cost for ceramic becomes very economical when DeWeyl customers understand that the life expectancy of Ceramic is 2-3 times greater than other available materials. The net cost per bond thus is significantly lower with the Ceramic wedge.

The Ceramic Advantage

CLIENT RECOMMENDATIONS / TESTIMONIALS

Since 1969, DeWeyl Tool has provided some of the best and most reliable wedge bonding tools in the industry. Our customer list is extensive – from well known research universities to high volume manufacturers overseas. No matter if you are looking for 1 tool or 50,000 per year, give us a call or email us. While we have an extensive listing of tools and combinations on our web site, we also provide custom configurations to meet all of your bonding needs.

CLIENT RECOMMENDATIONS GOLD WIRE

Many customers have discovered that gold wedge bonding at room temperature is dramatically enhanced by utilization of the ceramic wedge.

BONDING ALUMINUM WITH CERAMIC TIP

The Ceramic wedge tool is primarily designed for ultrasonic bonding of gold wire. However, many customers have reported tremendous tool life while bonding aluminum wire with very little aluminum build up on the bond flat. To reap the rewards of using our Ceramic tool you will need to follow a few recommendations. Use .5 to 2 percent wire elongation. You can also use 1 to 3 percent elongation with good results. If you use 3 to 5 percent elongation, results will be over-bonding because the wire is too soft. Next use very low channel settings to start with as well as low heat since our ceramic material has excellent coupling features and produces a very efficient bonding scrub. Then increase your power and heat if needed until you obtain the desired results. If you are bonding to thick film you probably will require a Cross Groove style tip to obtain more scrubbing action.

CLIENT TESTIMONIALS

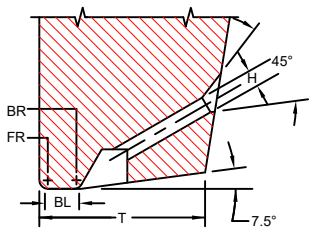
In a recent survey, we collected input from Customers, Equipment Manufacturers and DeWeyl Reps. Following is some of the feedback we received:

- "Even though I only needed at most a half dozen wedge tools, the customer support treated me as though I had ordered a thousand or more; I felt I mattered to them."
- "You had what we needed and we received our p roduct in a timely manner."
- "Customer Service always made our quote and ordering process very quick and easy."
- "We once compared the bonding characteristics of DeWeyl ceramic with (competitor) ceramic; DeWeyl ceramic performed better. "
- "Very good tool for Au and deep access applications."
- "The best in your industry!"
- "The R&D Director is quite happy with the wedge tool (as) he is having a problem with others."
- "Easy to do custom orders."
- "We are extremely happy with the tools."
- "We use the A8D option and we are extremely pleased with the tool."

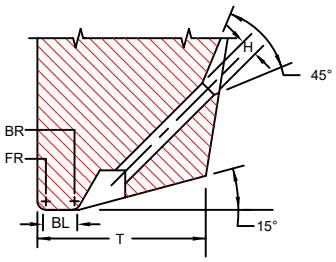
SERIES AL & AL-V

SMALL WIRE & LARGE WIRE

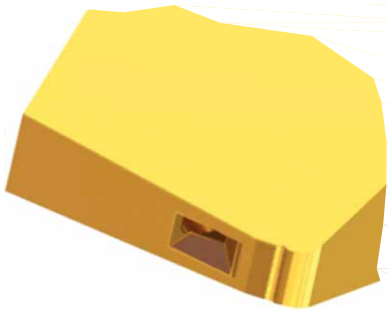
FOR AUTOMATIC BONDERS



30°-38° Hole Angle



45° Hole Angle

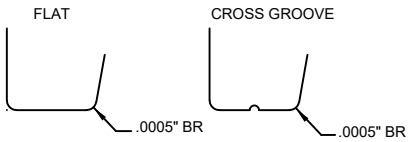


FOR AL-V SERIES (VERTICAL FEED)

FOR AL SERIES

Available Vertical Hole Ø marked with X

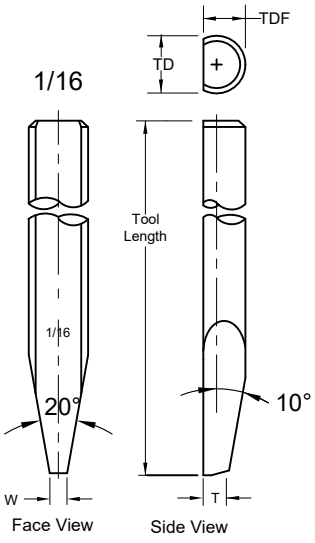
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

AL-SERIES SMALL WIRE

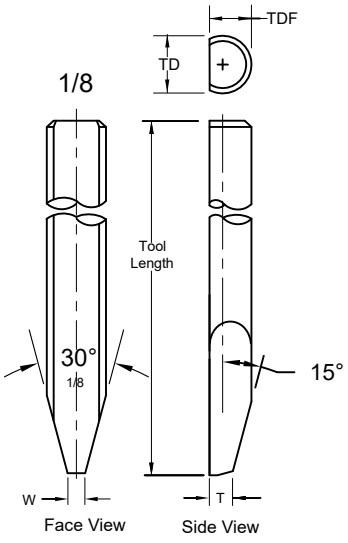
.0005" through .0020" wireØ



Standard:Ø 1/16, 45° Hole Angle

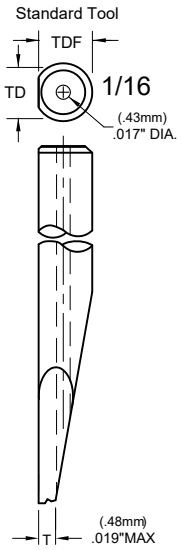
AL-SERIES LARGE WIRE

For wire diameters .0030" through .0160"



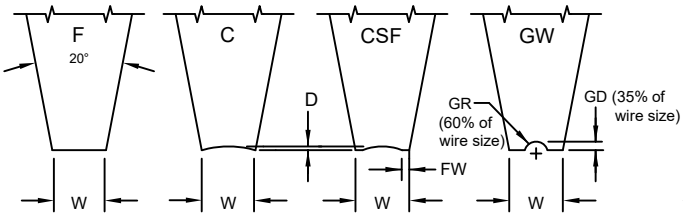
AL-V SERIES VERTICAL FEED DEEP ACCESS

.0005" through .0020" wireØ



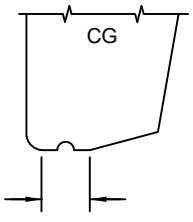
Standard: Ø1/16 45° Hole Angle

Face Views



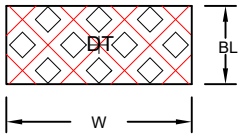
Flat | Concave | Concave with Side Flats | Groove in Wire Direction | 'V' Groove preferably for large Tools

Side View



Cross Groove

Top View



Diamond Tip=DT preferably for large Tools Minimum of Groove Radius=.00025 Groove to Groove=.0015

DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES AL & AL-V

SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL & LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-AL-O-X-1/16-1-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. MATERIAL:
   - M = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - All other: See Material Selection Guide
2. **SERIES: AL**
3. **WIRE FEED:** **O** = Standard Feed; **V** = Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH:** **Please Specify Length**
7. **HOLE ANGLE:** **for AL (30°, 38°, 45°)**
   for AL-V (45°)

(8) FOOT TYPE:
- F = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats **(CSF not available with ceramic tools)**
- **CG** = Cross Groove
- **GW** = Groove in wire direction **(Please specify wire size)**
- **DT** = Diamond Tip **(Please specify Ribbon size)**
- **VG** = V Groove **(Please specify wire size)**

(9) TOOL SIZE: See Standard Chart

(10) FOOT FINISH:
- M = Matte finish (FR, BR, & Bond Flat) Polish
- P = finish (FR, BR, & Bond Flat) Polish finish
- MP= (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-AL-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART AL SMALL WIRE: FOR WIRE DIAMETERS .0005" THROUGH .0020"

TS	H		BL		D		T(30°38°)		T(45°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0140	356	.0110	279	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0140	356	.0110	279	.0025	64	**.0005**	**13**
1510	.0015	38	.0010	25	.0002	5	.0140	356	.0120	305	.0025	64	**through**	
1513	.0015	38	.0013	33	.0002	5	.0140	356	.0120	305	.0025	64	**.0007**	**18**
1515	.0015	38	.0015	38	.0002	5	.0150	381	.0120	305	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0150	381	.0130	330	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	0.0005	12.7	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0160	406	.0140	356	.0040	102		
2015	.0020	51	.0015	38	.0002	5	.0160	406	.0140	356	.0040	102	**.0007**	**18**
2020	.0020	51	.0020	51	.0002	5	.0170	432	.0150	381	.0040	102	**through**	
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0150	381	.0040	102	**.0010**	**25**
2030	.0020	51	.0030	76	.0002	5	.0170	432	.0150	381	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0170	432	.0150	381	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0170	432	.0160	406	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0180	457	.0170	432	.0050	127	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0180	457	.0170	432	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0180	457	.0170	432	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0180	457	.0170	432	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0200	508	.0170	432	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0210	533	.0180	457	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0210	533	.0180	457	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0220	559	.0190	483	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0220	559	.0200	508	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0230	584	.0200	508	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0230	584	.0210	533	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0240	610	.0210	533	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0240	610	.0220	559	.0060	152		

STANDARD CHART AL LARGE WIRE: FOR WIRE DIAMETERS .0030" THROUGH .0160"

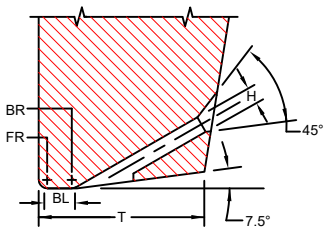
TS	H		BL		D		T(30°38°)		T(45°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0005	±13	**±.0005**	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	±.0010	±25		
4560	.0045	114	.0060	152	.0006	15	.0340	864	.0310	787	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0008	20	.0390	991	.0340	864	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0010	25	.0450	1143	.0410	1041	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0012	30	.0520	1321	.0490	1245	.0150	381	.0060	152
Tolerance	±.0005	±13	**±.0010**	±25	±.0002	±5	±.0010	±25	±.0010	±25	±.0010	±25		
01014	.0105	267	.0140	356	.0014	36	.0650	1651	.0540	1372	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0016	41	.0680	1727	.0560	1422	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0020	51	.0720	1829	.0640	1626	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0024	61	.0900	2286	.0800	2032	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0028	71	.0980	2489	.0820	2083	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0032	81	.1100	2794	.0930	2362	.0400	1016	.0160	406

*Other sizes available upon request *All dimensions and tolerances are for reference only
TOOL SIZE=TS , WIRE DIAMETER =WD, "T" To be determined according to the size of FR and BR and Hole Bore Length

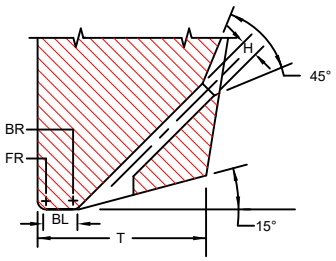
SERIES AN & AN-V

FOR AUTOMATIC BONDERS

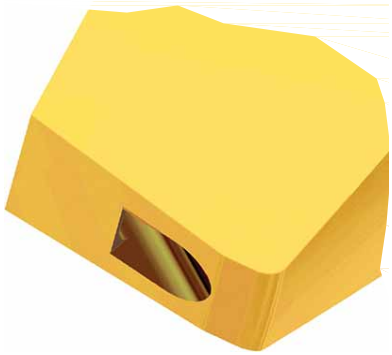
SMALL WIRE & LARGE WIRE



30°-38° Hole Angle



45° Hole Angle

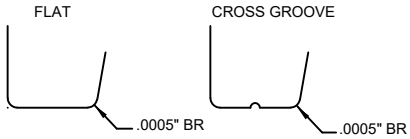


FOR AN-V SERIES (VERTICAL FEED)

FOR AN SERIES

Available Vertical Hole Ø marked with X

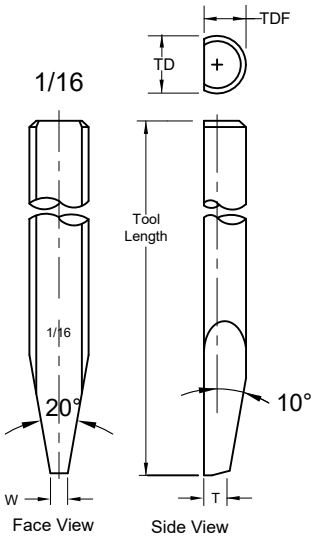
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

AN-SERIES SMALL WIRE

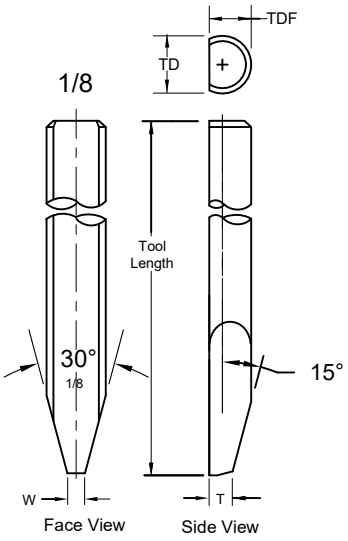
.0005" through .0020" wireØ



Standard:Ø 1/16, 45° Hole Angle

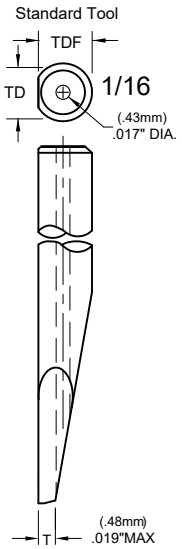
AN-SERIES LARGE WIRE

For wire diameters .0030" through .0160"

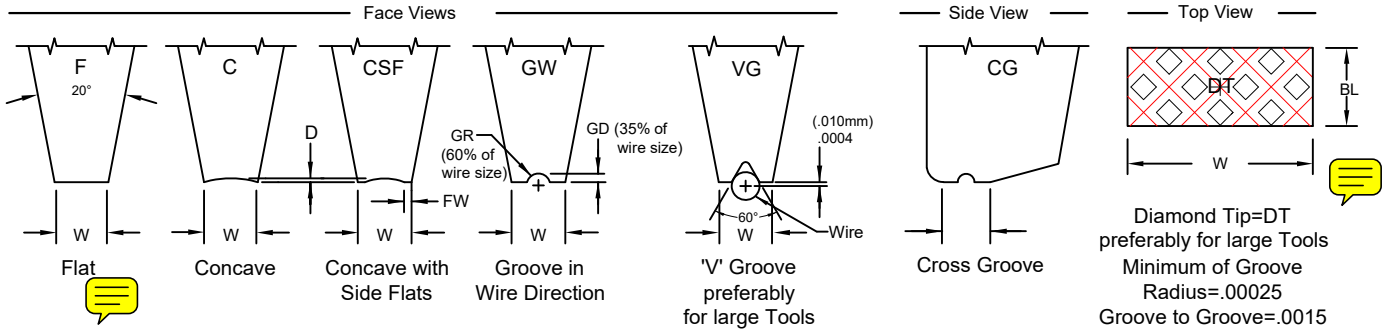


AN-V SERIES
VERTICAL FEED DEEP ACCESS

.0005" through .0020" wireØ



Standard: Ø1/16 45° Hole Angle



DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES AN & AN-V

SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL & LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-AN-O-X-1/16-1-45-CG-2020-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES: AN**
3. **WIRE FEED:** **O =** Standard Feed; **V =** Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH:** **Please Specify Length**
7. **HOLE ANGLE:** **for AN (30°, 38°, 45°)**
   for AN-V (45°)

(8) FOOT TYPE:
- F = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats **(CSF not available with ceramic tools)**
- **CG** = Cross Groove
- **GW** = Groove in wire direction **(Please specify wire size)**
- **DT** = Diamond Tip **(Please specify Ribbon size)**
- **VG** = V Groove **(Please specify wire size)**

(9) TOOL SIZE: See Standard Chart

(10) FOOT FINISH:
- M = Matte finish (FR, BR, & Bond Flat)
- P = Polish finish (FR, BR, & Bond Flat)
- MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-AN-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART AN SMALL WIRE: FOR WIRE DIAMETERS .0005" THROUGH .0020"														
TS	H		BL		D		T(30°38°)		T(45°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0140	356	.0110	279	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0140	356	.0110	279	.0025	64	**.0005**	**13**
1510	.0015	38	.0010	25	.0002	5	.0140	356	.0120	305	.0025	64	through	
1513	.0015	38	.0013	33	.0002	5	.0140	356	.0120	305	.0025	64	**.0007**	**18**
1515	.0015	38	.0015	38	.0002	5	.0150	381	.0120	305	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0150	381	.0130	330	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	0.0005	12.7	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0160	406	.0120	305	* .0040	102		
2015	.0020	51	.0015	38	.0002	5	.0160	406	.0130	330	.0040	102	**.0007**	**18**
2020	.0020	51	.0020	51	.0002	5	.0170	432	.0140	356	.0040	102	through	
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0140	356	.0040	102	**.0010**	**25**
2030	.0020	51	.0030	76	.0002	5	.0170	432	.0150	381	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0170	432	.0150	381	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0170	432	.0160	406	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0180	457	.0160	406	.0050	127	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0180	457	.0170	432	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0180	457	.0170	432	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0180	457	.0170	432	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0200	508	.0170	432	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0210	533	.0180	457	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0210	533	.0180	457	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0220	559	.0190	483	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0220	559	.0200	508	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0230	584	.0200	508	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0230	584	.0210	533	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0240	610	.0210	533	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0240	610	.0210	533	.0060	152		
STANDARD CHART AN LARGE WIRE: FOR WIRE DIAMETERS .0030" THROUGH .0160"														
TS	H		BL		D		T(30°38°)		T(45°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0005	±13	**±.0005**	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	± .0010	±25		
4560	.0045	114	.0060	152	.0006	15	.0340	864	.0310	787	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0008	20	.0390	991	.0340	864	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0010	25	.0450	1143	.0410	1041	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0012	30	.0520	1321	.0490	1245	.0150	381	.0060	152
Tolerance	±.0005	±13	**±.0010**	±25	±.0002	±5	±.0010	±25	±.0010	±25	± .0010	±25		
01014	.0105	267	.0140	356	.0014	36	.0650	1651	.0540	1372	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0016	41	.0680	1727	.0560	1422	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0020	51	.0720	1829	.0640	1626	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0024	61	.0900	2286	.0800	2032	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0028	71	.0980	2489	.0820	2083	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0032	81	.1100	2794	.0930	2362	.0400	1016	.0160	406

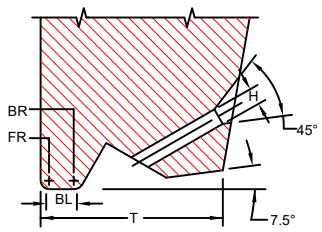
*Other sizes available upon request *All dimensions and tolerances are for reference only
TOOL SIZE=TS , WIRE DIAMETER =WD, "T" To be determined according to the size of FR and BR and Hole Bore Length

Return to Table of Contents

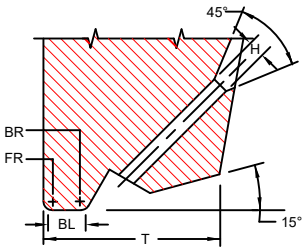
SERIES AS/AS-V

SMALL WIRE & LARGE WIRE

FOR MANUAL AND SEMI-AUTOMATIC BONDERS

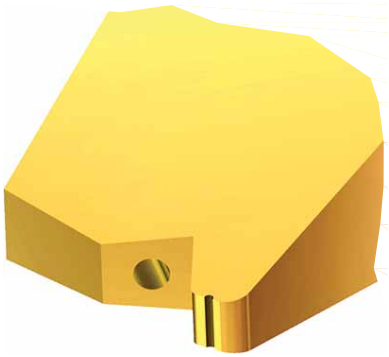


30°-38° Hole Angle



45° Hole Angle

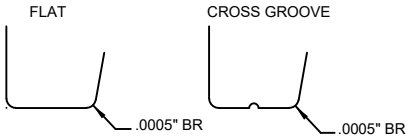
FOR AS-V SERIES (VERTICAL FEED)



FOR AS SERIES

Available Vertical Hole Ø marked with X

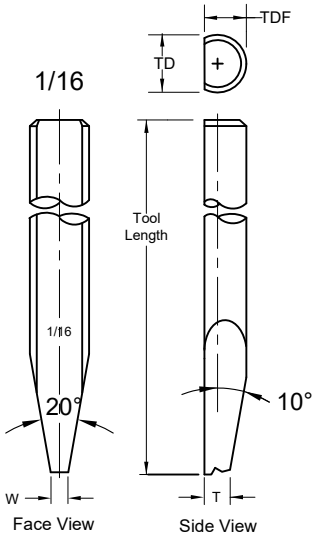
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

AS-SERIES SMALL WIRE

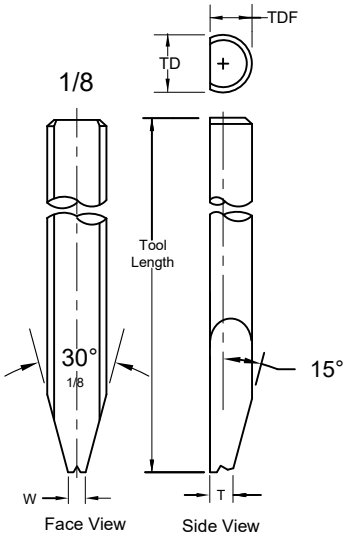
.0005" through .0020" wireØ



Standard:Ø 1/16, 45° Hole Angle

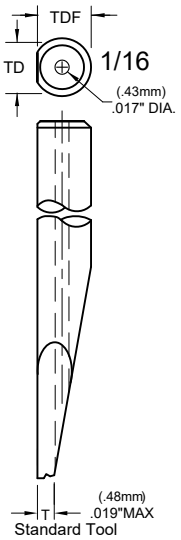
AS-SERIES LARGE WIRE

For wire diameters .0030" through .0160"



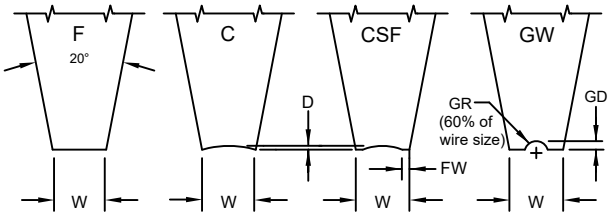
AS-V SERIES
VERTICAL FEED DEEP ACCESS

.0005" through .0020" wireØ



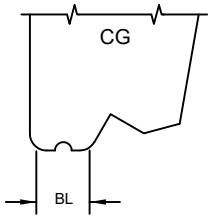
Standard: Ø1/16 45° Hole Angle

Face Views



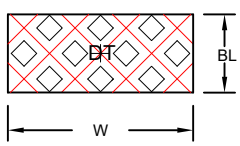
Flat | Concave | Conacave with Side Flats | Groove in Wire Direction | 'V' Groove preferably for large Tools

Side View



Cross Groove

Top View



Diamond Tip=DT preferably for large Tools
Minimum of Groove Radius=.00025
Groove to Groove=.0015

SERIES AS/AS-V

SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL & LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-AS-O-X-1/16-1-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - All other: see Material Selection Guide
2. **SERIES: AS (Small wire & Large wire)**
3. **WIRE FEED:** **O =** Standard Feed; **V =** Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH: Please Specify Length**
7. **HOLE ANGLE: for AS (30°, 38°, 45°), for AS-V (45°)**

(8) FOOT TYPE:
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats **(CSF not available with ceramic tools)**
- **CG** = Cross Groove
- **GW** = Groove in wire direction **(Please specify wire size)**
- **DT** = Diamond Tip **(Please specify Ribbon size)**
- **VG** = V Groove **(Please specify wire size)**

(9) TOOL SIZE: See Standard Chart

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-AS-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART AS SMALL WIRE: FOR WIRE DIAMETERS .0005" THROUGH .0020"

TS	H		BL		D		T(30°38°)		T(45°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0140	356	.0115	292	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0140	356	.0115	292	.0025	64	**.0005 through .0007**	**13 18**
1510	.0015	38	.0010	25	.0002	5	.0150	381	.0125	318	.0025	64		
1513	.0015	38	.0013	33	.0002	5	.0150	381	.0125	318	.0025	64		
1515	.0015	38	.0015	38	.0002	5	.0150	381	.0130	330	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0155	394	.0135	343	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	0.0005	12.7	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0160	406	.0135	343	* .0040	102		
2015	.0020	51	.0015	38	.0002	5	.0165	419	.0135	343	.0040	102	**.0007 through .0010**	**18 25**
2020	.0020	51	.0020	51	.0002	5	.0165	419	.0140	356	.0040	102		
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0150	381	.0040	102		
2030	.0020	51	.0030	76	.0002	5	.0175	445	.0150	381	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0180	457	.0150	381	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0180	457	.0150	381	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0195	495	.0160	406	.0040	102	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0195	495	.0170	432	.0040	102		
2540	.0025	64	.0040	102	.0002	5	.0200	508	.0170	432	.0040	102		
3020	.0030	76	.0020	51	.0003	8	.0190	483	.0170	432	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0200	508	.0170	432	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0210	533	.0180	457	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0210	533	.0190	483	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0220	559	.0190	483	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0220	559	.0200	508	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0230	584	.0200	508	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0230	584	.0210	533	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0240	610	.0210	533	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0240	610	.0220	559	.0060	152		

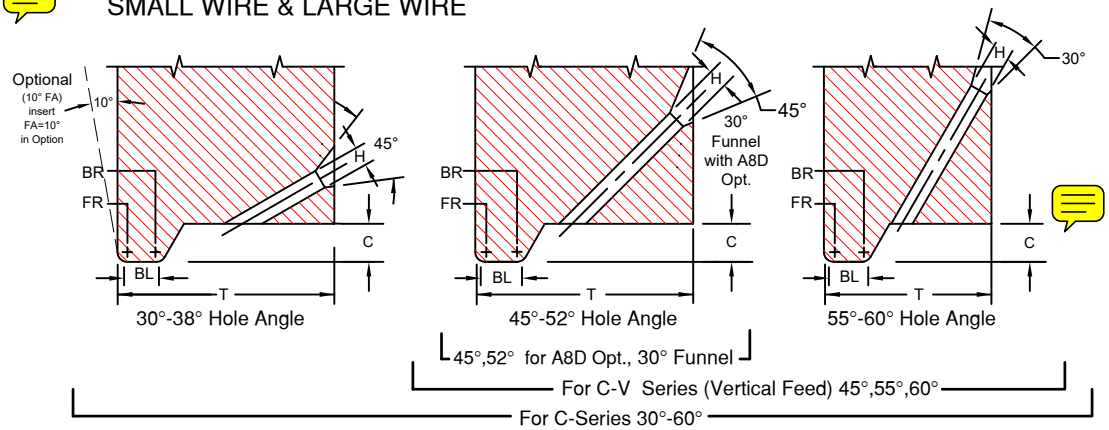
STANDARD CHART AS LARGE WIRE: FOR WIRE DIAMETERS .0030" THROUGH .0160"

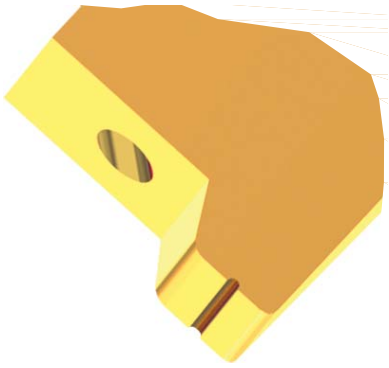
TS	H		BL		D		T(30°38°)		T(45°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0005	±13	**±.0005**	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	± .0010	±25		
4560	.0045	114	.0060	152	.0006	15	.0340	864	.0310	787	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0008	20	.0390	991	.0340	864	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0010	25	.0450	1143	.0410	1041	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0012	30	.0520	1321	.0490	1245	.0150	381	.0060	152
Tolerance	±.0005	±13	**±.0010**	±25	±.0002	±5	±.0010	±25	±.0010	±25	± .0010	±25		
01014	.0105	267	.0140	356	.0014	36	.0650	1651	.0540	1372	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0016	41	.0680	1727	.0560	1422	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0020	51	.0720	1829	.0640	1626	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0024	61	.0900	2286	.0800	2032	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0028	71	.0980	2489	.0820	2083	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0032	81	.1100	2794	.0930	2362	.0400	1016	.0160	406

*Other sizes available upon request *All dimensions and tolerances are for reference only
TOOL SIZE=TS , WIRE DIAMETER =WD, "T" To be determined according to the size of FR and BR and Hole Bore Length

SERIES C & C-V
SMALL WIRE & LARGE WIRE

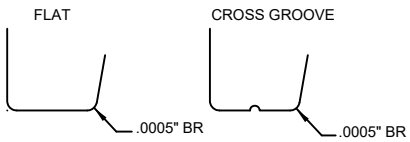
FOR MANUAL AND SEMI-AUTOMATIC BONDERS





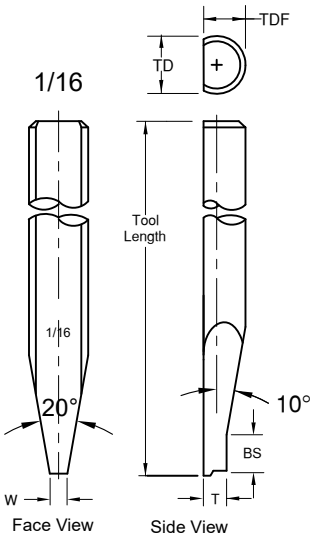
Available Vertical Hole Ø marked with X

TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	

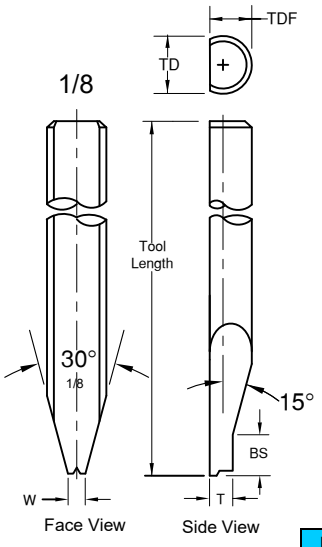


We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

C-SERIES SMALL WIRE
.0005" through .0020" wireØ



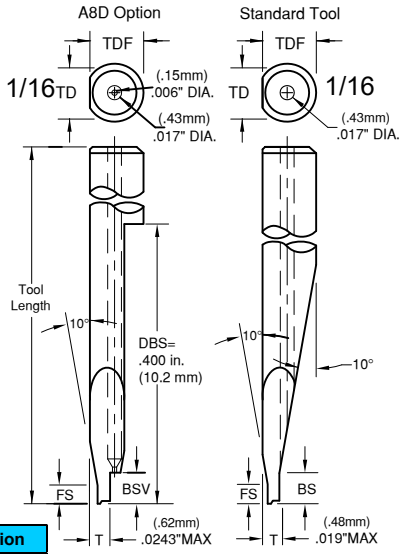
C-SERIES LARGE WIRE
For wire diameters .0030" through .0160"



Standard:Ø 1/16, 45°to 52°Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

C-V SERIES
VERTICAL FEED DEEP ACCESS
.0005" through .0020" wireØ

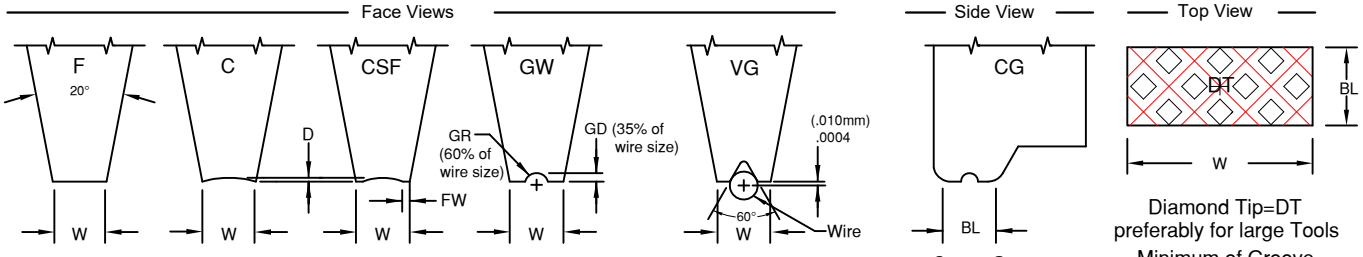
NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control.
See in **Tool Options** for illustration.
To order just add A8D in space **11.**
Not suitable for F&K and Hesse Mechatronics machine



A8D Option

Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45°to 52° Hole Angle :
FS=.015"(.38mm) **BS"=.045"** (1.14mm)
Standard: (FS&BS) supplied unless otherwise specified. See Tool Options #A3
No FS if T=MAX



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DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES C & C-V

SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL & LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-C-O-X-1/8-1-45-VG-6008-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES: C**
3. **WIRE FEED:** **O =** Standard Feed; **V =** Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH:** Please Specify Length
7. **HOLE ANGLE:** for C (30°, 38°, 45°,52°, 55°, 60°) for C-V (45°, 55°, 60°) for C-V with A8D-Opt. (45°,52°)

(8) FOOT TYPE:
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats (CSF not available with ceramic tools)
- **CG** = Cross Groove
- **GW** = Groove in wire direction (Please specify wire size)
- **DT** = Diamond Tip
- **VG** = V Groove

(9) TOOL SIZE: See Standard Chart

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-C-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007
On V-groove tools the bond length is the same as the foot length.

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART — C SMALL WIRE: FOR WIRE DIAMETERS .0005" THROUGH .0020"

TS	H		BL		C		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	+ .0005	+13		
1505	.0015	38	.0005	13	.0020	51	.0002	5	.0150	381	.0130	330	.0100	254	.0025	64		
1507	.0015	38	.0007	18	.0020	51	.0002	5	.0150	381	.0130	330	.0100	254	.0025	64	.0005	13
1510	.0015	38	.0010	25	.0020	51	.0002	5	.0155	394	.0135	343	.0110	279	.0025	64	through	
1513	.0015	38	.0013	33	.0020	51	.0002	5	.0155	394	.0140	356	.0110	279	.0025	64	.0007	18
1515	.0015	38	.0015	38	.0020	51	.0002	5	.0160	406	.0140	356	.0110	279	.0025	64		
1520	.0015	38	.0020	51	.0020	51	.0002	5	.0165	419	.0145	368	.0120	305	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	± .0002	±5		
2010	.0020	51	.0010	25	.0030	76	.0002	5	.0165	419	.0145	368	.0110	279	* .0040	102		
2015	.0020	51	.0015	38	.0030	76	.0002	5	.0165	419	.0145	368	.0120	305	.0040	102	.0007	18
2020	.0020	51	.0020	51	.0030	76	.0002	5	.0165	419	.0145	368	.0120	305	.0040	102	through	
2025	.0020	51	.0025	64	.0030	76	.0002	5	.0170	432	.0150	381	.0130	330	.0040	102	.0010	25
2030	.0020	51	.0030	76	.0030	76	.0002	5	.0175	445	.0155	394	.0130	330	.0040	102		
2520	.0025	64	.0020	51	.0030	76	.0002	5	.0180	457	.0160	406	.0125	318	.0040	102		
2525	.0025	64	.0025	64	.0030	76	.0002	5	.0180	457	.0160	406	.0125	318	.0040	102		
2530	.0025	64	.0030	76	.0030	76	.0002	5	.0195	495	.0170	432	.0140	356	.0040	102	.0013	33
2535	.0025	64	.0035	89	.0030	76	.0002	5	.0195	495	.0170	432	.0140	356	.0040	102		
2540	.0025	64	.0040	102	.0030	76	.0002	5	.0200	508	.0180	457	.0150	381	.0040	102		
3020	.0030	76	.0020	51	.0030	76	.0003	8	.0190	483	.0170	432	.0150	381	.0050	127		
3025	.0030	76	.0025	64	.0030	76	.0003	8	.0200	508	.0170	432	.0150	381	.0050	127		
3030	.0030	76	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0160	406	.0050	127	.0015	38
3035	.0030	76	.0035	89	.0030	76	.0003	8	.0210	533	.0180	457	.0160	406	.0050	127		
3040	.0030	76	.0040	102	.0030	76	.0003	8	.0210	533	.0190	483	.0170	432	.0050	127		
3525	.0035	89	.0025	64	.0030	76	.0003	8	.0220	559	.0190	483	.0170	432	.0060	152		
3530	.0035	89	.0030	76	.0030	76	.0003	8	.0220	559	.0200	508	.0180	457	.0060	152		
3535	.0035	89	.0035	89	.0030	76	.0003	8	.0230	584	.0200	508	.0180	457	.0060	152	.0020	51
3540	.0035	89	.0040	102	.0030	76	.0003	8	.0230	584	.0210	533	.0190	483	.0060	152		
3545	.0035	89	.0045	114	.0030	76	.0003	8	.0240	610	.0210	533	.0190	483	.0060	152		
3550	.0035	89	.0050	127	.0030	76	.0003	8	.0240	610	.0220	559	.0190	483	.0060	152		

STANDARD CHART — C LARGE WIRE: FOR WIRE DIAMETERS .0030" THROUGH .0160"

TS	H		BL		C		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0005	±13	±.0005	±13	±.0005	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
4560	.0045	114	.0060	152	.0080	203	.0006	15	.0340	864	.0310	787	.0260	660	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0100	254	.0008	20	.0390	991	.0340	864	.0290	737	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0115	292	.0010	25	.0450	1143	.0410	1041	.0350	889	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0135	343	.0012	30	.0520	1321	.0490	1245	.0410	1041	.0150	381	.0060	152
Tolerance	±.0005	±13	±.0010	±25	±.0005	±13	±.0002	±5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
01014	.0105	267	.0140	356	.0150	381	.0014	36	.0650	1651	.0540	1372	.0450	1143	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0170	432	.0016	41	.0680	1727	.0560	1422	.0460	1168	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0200	508	.0020	51	.0720	1829	.0720	1829	.0600	1524	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0200	508	.0024	61	.0900	2286	.0800	2032	.0690	1753	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0210	533	.0028	71	.0980	2489	.0820	2083	.0700	1778	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0220	559	.0032	81	.1270	3226	.0930	2362	.0830	2108	.0400	1016	.0160	406

***Other sizes available upon request *All dimensions and tolerances are for reference only**

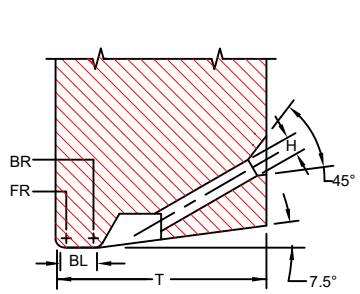
TOOL SIZE=TS , WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

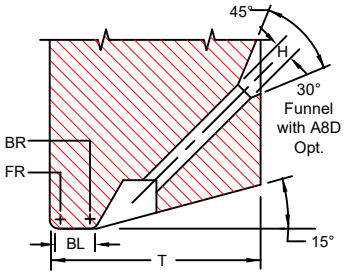
SERIES CL & CL-V

SMALL WIRE & LARGE WIRE

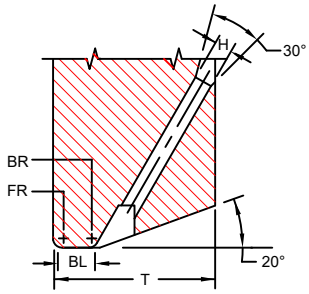
FOR AUTOMATIC BONDERS



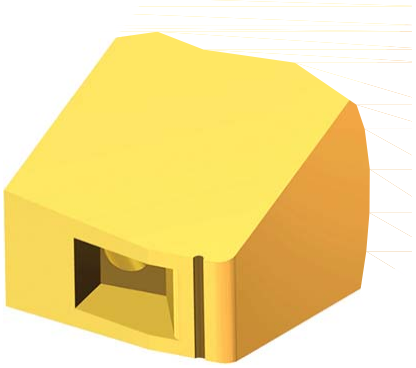
30°-38° Hole Angle



45°-52° Hole Angle



55°-60° Hole Angle



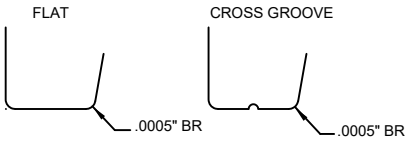
45°,52° for A8D Opt., 30° Funnel

For CL-V Series (Vertical Feed) 45°,55°,60°

For CL-Series 30°-60°

Available Vertical Hole Ø marked with X

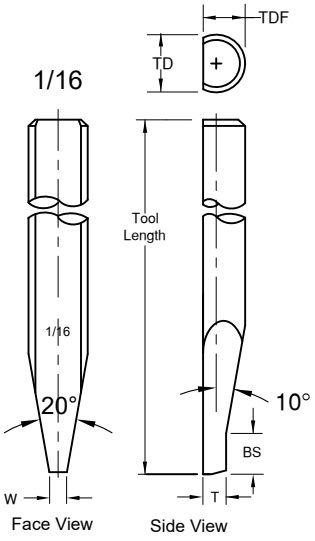
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

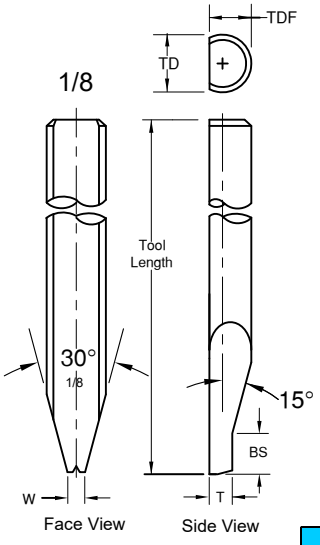
CL-SERIES SMALL WIRE

.0005" through .0020" wireØ



CL-SERIES LARGE WIRE

For wire diameters .0030" through .0160"

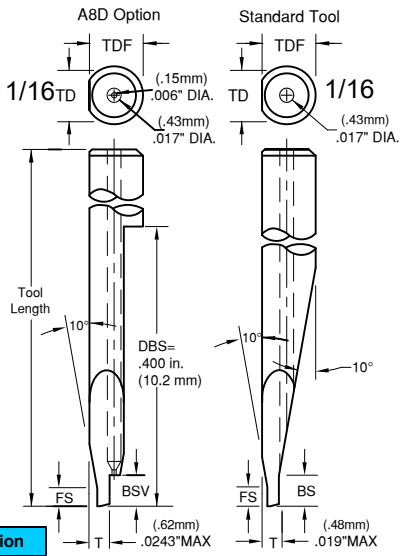


Standard:Ø 1/16, 45°to 52°Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

CL-V SERIES
VERTICAL FEED DEEP ACCESS

0005" through .0020" wireØ

NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control.
See in **Tool Options** for illustration.
To order just add A8D in space **11.**
Not suitable for F&K and Hesse Mechatronics machine

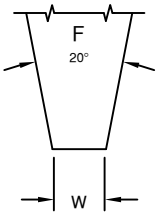


A8D Option

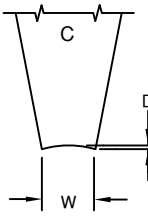
Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45°to 52° Hole Angle : **FS=.015"**(.38mm) **BS"=.045"** (1.14mm)
Standard: (FS&BS) supplied unless otherwise specified. See Tool Options #A3
No FS if T=MAX

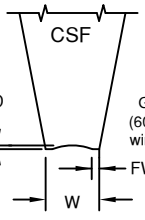
Face Views



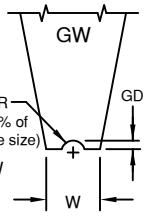
Flat



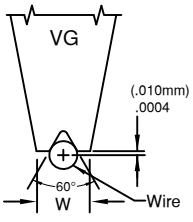
Concave



Concave with Side Flats

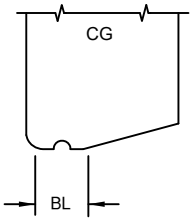


Groove in Wire Direction



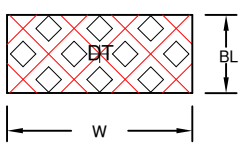
'V' Groove preferably for large Tools

Side View



Cross Groove

Top View



Diamond Tip=DT preferably for large Tools
Minimum of Groove Radius=.00025
Groove to Groove=.0015

DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES CL & CL-V

SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL & LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-CL-O-X-1/16-1-45-CG-2020-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES:** CL
3. **WIRE FEED:** O = Standard Feed; V = Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH:** Please Specify Length
7. **HOLE ANGLE:** for CL (30°, 38°, 45°,52°,55°,60,°), for CL-V (45°,55°,60,°) for CL-V with A8D Opt. (45°,52°)

(8) FOOT TYPE:
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats (CSF not available with ceramic tools)
- **CG** = Cross Groove
- **GW** = Groove in wire direction (Please specify wire size)
- **DT** = Diamond Tip (Please specify Ribbon size)
- **VG** = V Groove (Please specify wire size)

(9) TOOL SIZE: See Standard Chart

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-CL-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007
On V-groove tools the bond length is the same as the foot length.

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		μ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		μ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART — CL SMALL WIRE: FOR WIRE DIAMETERS .0005" THROUGH .0020"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	+.0005	+13		
1505	.0015	38	.0005	13	.0002	5	.0140	356	.0120	305	.0100	254	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0140	356	.0125	318	.0100	254	.0025	64	.0005 through .0007	13 through 18
1510	.0015	38	.0010	25	.0002	5	.0140	356	.0130	330	.0100	254	.0025	64		
1513	.0015	38	.0013	33	.0002	5	.0140	356	.0130	330	.0110	279	.0025	64		
1515	.0015	38	.0015	38	.0002	5	.0150	381	.0130	330	.0110	279	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0150	381	.0140	356	.0110	279	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	±.0002	±5		
2010	.0020	51	.0010	25	.0002	5	.0160	406	.0140	356	.0120	305	*.0040	102		
2015	.0020	51	.0015	38	.0002	5	.0160	406	.0140	356	.0120	305	.0040	102	.0007 through .0010	18 through 25
2020	.0020	51	.0020	51	.0002	5	.0170	432	.0150	381	.0130	330	.0040	102		
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0150	381	.0130	330	.0040	102		
2030	.0020	51	.0030	76	.0002	5	.0180	457	.0150	381	.0140	356	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0170	432	.0150	381	.0140	356	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0180	457	.0170	432	.0140	356	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0180	457	.0170	432	.0150	381	.0050	127	.0013	33
2535	.0025	64	.0035	89	.0002	5	.0180	457	.0170	432	.0150	381	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0180	457	.0170	432	.0160	406	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0190	483	.0170	432	.0150	381	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0200	508	.0170	432	.0150	381	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0160	406	.0050	127	.0015	38
3035	.0030	76	.0035	89	.0003	8	.0210	533	.0180	457	.0160	406	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0210	533	.0190	483	.0170	432	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0220	559	.0190	483	.0170	432	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0220	559	.0200	508	.0180	457	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0230	584	.0200	508	.0180	457	.0060	152	.0020	51
3540	.0035	89	.0040	102	.0003	8	.0230	584	.0210	533	.0180	457	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0240	610	.0210	533	.0190	483	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0240	610	.0220	559	.0190	483	.0060	152		

STANDARD CHART — CL LARGE WIRE: FOR WIRE DIAMETERS .0030" THROUGH .0160"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ
Tolerance	±.0005	±13	±.0005	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
4560	.0045	114	.0060	152	.0006	15	.0340	864	.0310	787	.0260	660	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0008	20	.0390	991	.0340	864	.0290	737	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0010	25	.0450	1143	.0410	1041	.0350	889	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0012	30	.0520	1321	.0490	1245	.0410	1041	.0150	381	.0060	152
Tolerance	±.0005	±13	±.0010	±25	±.0002	±5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
01014	.0105	267	.0140	356	.0014	36	.0650	1651	.0540	1372	.0450	1143	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0016	41	.0680	1727	.0560	1422	.0460	1168	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0020	51	.0720	1829	.0640	1626	.0600	1524	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0024	61	.0900	2286	.0800	2032	.0690	1753	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0028	71	.0980	2489	.0820	2083	.0700	1778	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0032	81	.1100	2794	.0930	2362	.0830	2108	.0400	1016	.0160	406

***Other sizes available upon request *All dimensions and tolerances are for reference only**

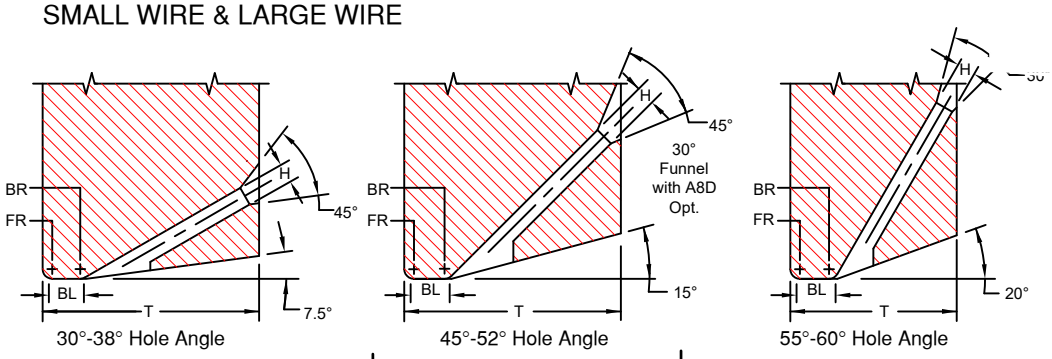
TOOL SIZE=TS , WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

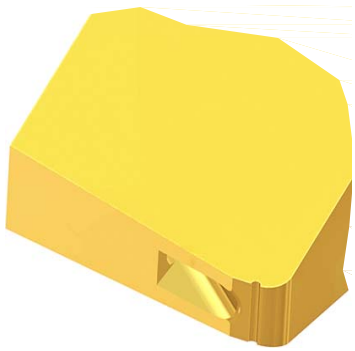
DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES CN & CN-V

SMALL WIRE & LARGE WIRE

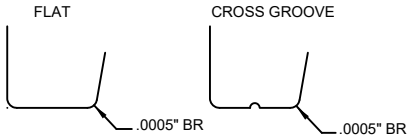
FOR AUTOMATIC BONDERS





Available Vertical Hole Ø marked with X

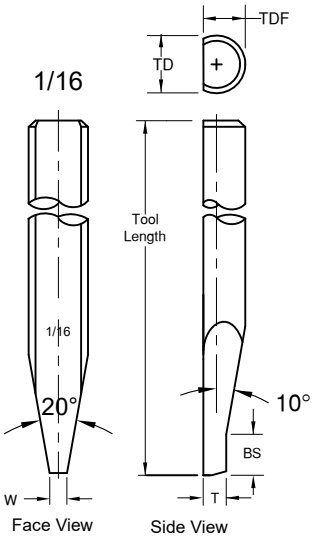
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

CN SERIES SMALL WIRE

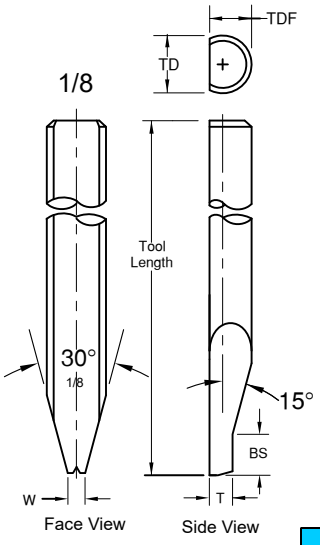
.0005" through .0020" wireØ



Standard:Ø 1/16, 45°to 52°Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

CN SERIES LARGE WIRE

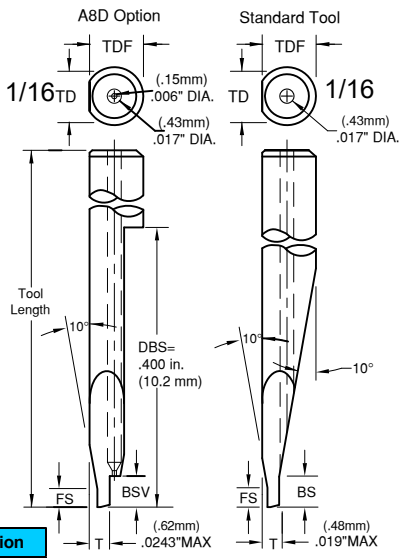
For wire diameters .0030" through .0160"



CN-V SERIES
VERTICAL FEED DEEP ACCESS

.0005" through .0020" wireØ

NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control.
See in **Tool Options** for illustration.
To order just add A8D in space **11.**
Not suitable for F&K and Hesse Mechatronics machine

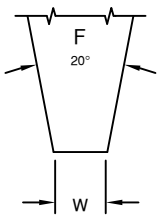


A8D Option

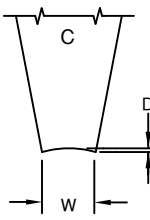
Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45°to 52° Hole Angle : **FS=.015"**(.38mm) **BS"=.045"** (1.14mm)
Standard: (FS&BS) supplied unless otherwise specified. See Tool Options #A3
No FS if T=MAX

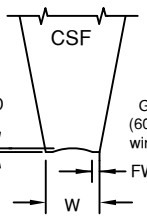
Face Views



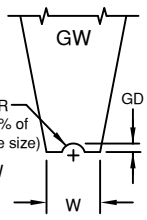
Flat



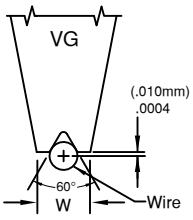
Concave



Concave with Side Flats

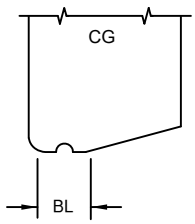


Groove in Wire Direction



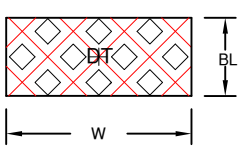
'V' Groove preferably for large Tools

Side View



Cross Groove

Top View



Diamond Tip=DT preferably for large Tools
Minimum of Groove Radius=.00025
Groove to Groove=.0015

Return to Table of Contents

SERIES CN & CN-V

SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL & LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-CN-O-X-1/16-1-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES: CN**
3. **WIRE FEED:** **O =** Standard Feed
   V = Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH: Please Specify Length**

HOLE ANGLE: **for CN (30°, 38°, 45°,52°,55°,60,°),for CN-V (45°,55°,60,°)**
for CN-V with A8D Opt.(45°,52°)

(8) FOOT TYPE:
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats **(CSF not available with ceramic tools)**
- **CG** = Cross Groove
- **GW** = Groove in wire direction **(Please specify wire size)**
- **DT** = Diamond Tip **(Please specify Ribbon size)**
- **VG** = V Groove **(Please specify wire size)**

(9) TOOL SIZE: See Standard Chart

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-CN-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART — CN SMALL WIRE: FOR WIRE DIAMETERS .0005" THROUGH .0020"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	+.0005	+13		
1505	.0015	38	.0005	13	.0002	5	.0140	356	.0110	279	.0090	229	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0140	356	.0110	279	.0090	229	.0025	64	.0005 through .0007	13 through 18
1510	.0015	38	.0010	25	.0002	5	.0140	356	.0120	305	.0100	254	.0025	64		
1513	.0015	38	.0013	33	.0002	5	.0140	356	.0130	330	.0100	254	.0025	64		
1515	.0015	38	.0015	38	.0002	5	.0150	381	.0130	330	.0100	254	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0150	381	.0130	330	.0110	279	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	±.0002	±5		
2010	.0020	51	.0010	25	.0002	5	.0160	406	.0140	356	.0110	279	.0040	102		
2015	.0020	51	.0015	38	.0002	5	.0160	406	.0140	356	.0110	279	.0040	102	.0007 through .0010	18 through 25
2020	.0020	51	.0020	51	.0002	5	.0170	432	.0150	381	.0120	305	.0040	102		
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0150	381	.0120	305	.0040	102		
2030	.0020	51	.0030	76	.0002	5	.0170	432	.0150	381	.0130	330	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0170	432	.0150	381	.0140	356	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0170	432	.0160	406	.0140	356	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0180	457	.0170	432	.0150	381	.0050	127	.0013	33
2535	.0025	64	.0035	89	.0002	5	.0180	457	.0170	432	.0150	381	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0180	457	.0170	432	.0160	406	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0190	483	.0170	432	.0150	381	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0200	508	.0170	432	.0150	381	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0160	406	.0050	127	.0015	38
3035	.0030	76	.0035	89	.0003	8	.0210	533	.0180	457	.0160	406	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0210	533	.0190	483	.0170	432	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0220	559	.0190	483	.0150	381	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0220	559	.0200	508	.0160	406	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0230	584	.0200	508	.0160	406	.0060	152	.0020	51
3540	.0035	89	.0040	102	.0003	8	.0230	584	.0210	533	.0170	432	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0240	610	.0210	533	.0170	432	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0240	610	.0220	559	.0180	457	.0060	152		

STANDARD CHART — CN LARGE WIRE: FOR WIRE DIAMETERS .0030" THROUGH .0160"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0005	±13	±.0005	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
4560	.0045	114	.0060	152	.0006	15	.0340	864	.0310	787	.0260	660	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0008	20	.0390	991	.0340	864	.0290	737	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0010	25	.0450	1143	.0410	1041	.0350	889	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0012	30	.0520	1321	.0490	1245	.0410	1041	.0150	381	.0060	152
Tolerance	±.0005	±13	±.0010	±25	±.0002	±5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
01014	.0105	267	.0140	356	.0014	36	.0650	1651	.0540	1372	.0450	1143	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0016	41	.0680	1727	.0560	1422	.0460	1168	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0020	51	.0720	1829	.0640	1626	.0600	1524	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0024	61	.0900	2286	.0800	2032	.0690	1753	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0028	71	.0980	2489	.0820	2083	.0700	1778	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0032	81	.1100	2794	.0930	2362	.0830	2108	.0400	1016	.0160	406

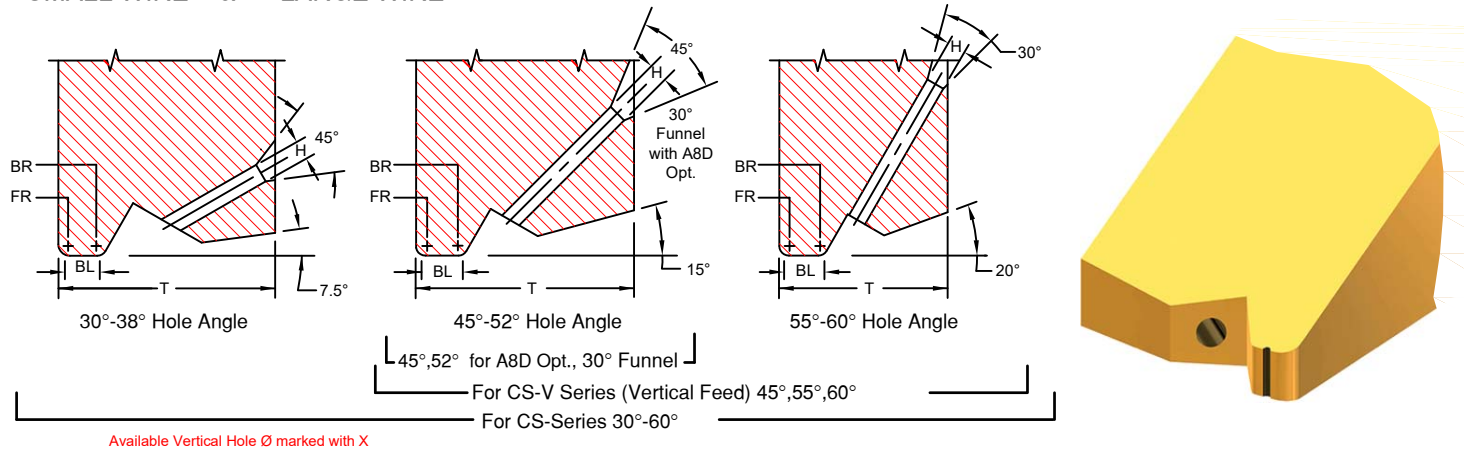
***Other sizes available upon request *All dimensions and tolerances are for reference only**

TOOL SIZE=TS , WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

SERIES CS/CS-V

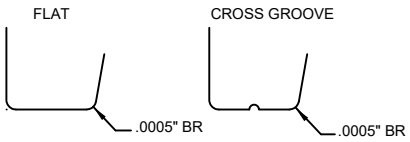
SMALL WIRE & LARGE WIRE

FOR MANUAL AND SEMI-AUTOMATIC BONDERS



Available Vertical Hole Ø marked with X

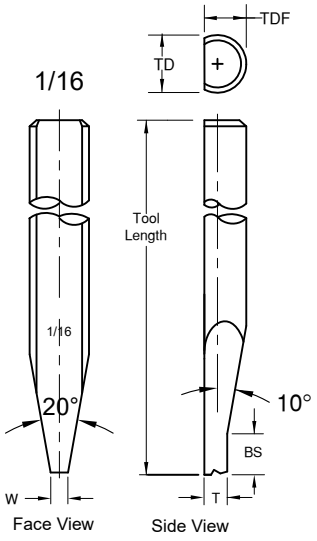
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

CS-SERIES SMALL WIRE

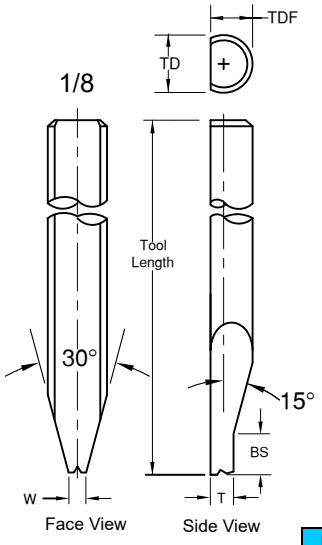
.0005" through .0020" wireØ



Standard:Ø 1/16, 45°to 52°Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

CS-SERIES LARGE WIRE

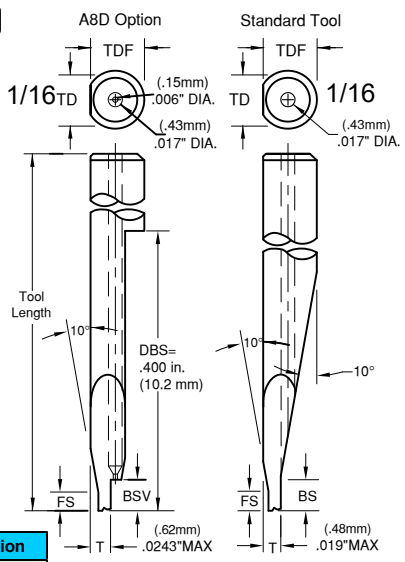
For wire diameters .0030" through .0160"



CS-V SERIES
VERTICAL FEED DEEP ACCESS

.0005" through .0020" wireØ

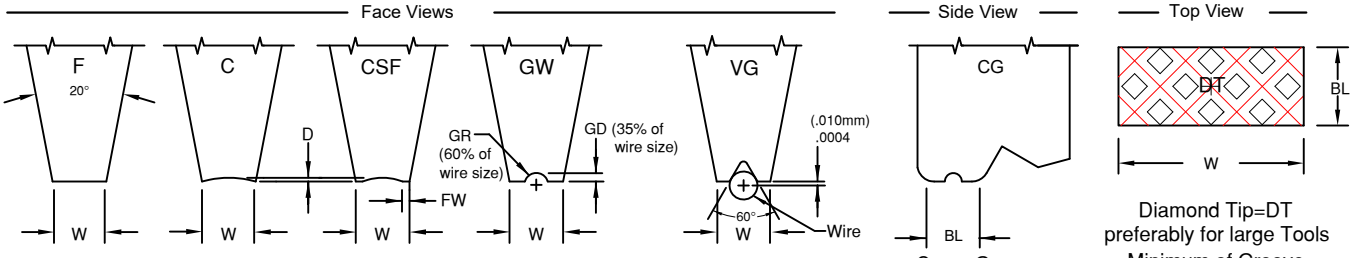
NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control.
See in **Tool Options** for illustration.
To order just add A8D in space **11.**
Not suitable for F&K and Hesse Mechatronics machine



A8D Option

Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45°to 52° Hole Angle : **FS=.015"**(.38mm) **BS"=.045"** (1.14mm)
Standard: (FS&BS) supplied unless otherwise specified. See Tool Options #A3
No FS if T=MAX



DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES CS/CS-V

SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL & LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-CS-O-X-1/16-1-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES:** **CS (small Wire), CS (large Wire)**
3. **WIRE FEED:** **O =** Standard Feed; **V =** Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH:** **Please Specify Length**
7. **HOLE ANGLE:** **for CS, (30°, 38°, 45°,52°,55°,60,°)**
   for CS-V(45°,55°,60,°) for CS-V with A8D Opt.(45°,52°)

(11) See Tool Option

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(9) TOOL SIZE: See Standard Chart

(8) FOOT TYPE:
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats **(CSF not available with ceramic tools)**
- **CG** = Cross Groove
- **GW** = Groove in wire direction **(Please specify wire size)**
- **DT** = Diamond Tip **(Please specify Ribbon size)**
- **VG** = V Groove **(Please specify wire size)**

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-CS-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART — CS SMALL WIRE: FOR WIRE DIAMETERS .0005" THROUGH .0020"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0150	381	.0130	330	.0100	254	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0150	381	.0130	330	.0100	254	.0025	64	**.0005 through .0007**	**13 18**
1510	.0015	38	.0010	25	.0002	5	.0155	394	.0135	343	.0110	279	.0025	64		
1513	.0015	38	.0013	33	.0002	5	.0155	394	.0140	356	.0110	279	.0025	64		
1515	.0015	38	.0015	38	.0002	5	.0160	406	.0140	356	.0110	279	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0165	419	.0145	368	.0120	305	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0165	419	.0145	368	.0110	279	* .0040	102		
2015	.0020	51	.0015	38	.0002	5	.0165	419	.0145	368	.0120	305	.0040	102	**.0007 through .0010**	**18 25**
2020	.0020	51	.0020	51	.0002	5	.0165	419	.0145	368	.0120	305	.0040	102		
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0150	381	.0130	330	.0040	102		
2030	.0020	51	.0030	76	.0002	5	.0175	445	.0155	394	.0130	330	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0180	457	.0160	406	.0125	318	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0180	457	.0160	406	.0125	318	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0195	495	.0170	432	.0140	356	.0040	102	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0195	495	.0170	432	.0140	356	.0040	102		
2540	.0025	64	.0040	102	.0002	5	.0200	508	.0180	457	.0150	381	.0040	102		
3020	.0030	76	.0020	51	.0003	8	.0190	483	.0170	432	.0150	381	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0200	508	.0170	432	.0150	381	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0160	406	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0210	533	.0180	457	.0160	406	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0210	533	.0190	483	.0170	432	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0220	559	.0190	483	.0170	432	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0220	559	.0200	508	.0180	457	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0230	584	.0200	508	.0180	457	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0230	584	.0210	533	.0190	483	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0240	610	.0210	533	.0190	483	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0240	610	.0220	559	.0190	483	.0060	152		

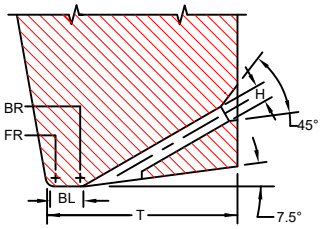
STANDARD CHART — CS LARGE WIRE: FOR WIRE DIAMETERS .0030" THROUGH .0160"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0005	±13	**±.0005**	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
4560	.0045	114	.0060	152	.0006	15	.0340	864	.0310	787	.0260	660	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0008	20	.0390	991	.0340	864	.0290	737	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0010	25	.0450	1143	.0410	1041	.0350	889	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0012	30	.0520	1321	.0490	1245	.0410	1041	.0150	381	.0060	152
Tolerance	±.0005	±13	**±.0010**	±25	±.0002	±5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
01014	.0105	267	.0140	356	.0014	36	.0650	1651	.0540	1372	.0450	1143	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0016	41	.0680	1727	.0560	1422	.0460	1168	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0020	51	.0720	1829	.0640	1626	.0600	1524	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0024	61	.0900	2286	.0800	2032	.0690	1753	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0028	71	.0980	2489	.0820	2083	.0700	1778	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0032	81	.1100	2794	.0930	2362	.0830	2108	.0400	1016	.0160	406

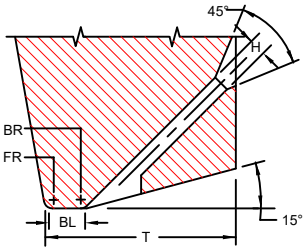
SERIES KN & KN-V

SMALL WIRE & LARGE WIRE

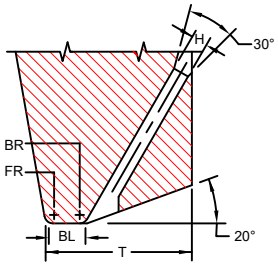
FOR AUTOMATIC BONDERS



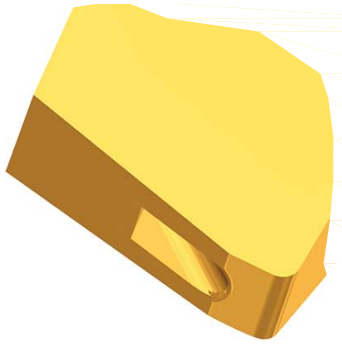
30°-38° Hole Angle



45°-52° Hole Angle



55°-60° Hole Angle



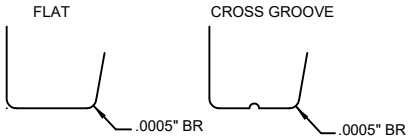
45°,52° for A8D Opt., 30° Funnel

For KN-V Series (Vertical Feed) 45°,55°,60°

For KN-Series 30°-60°

Available Vertical Hole Ø marked with X

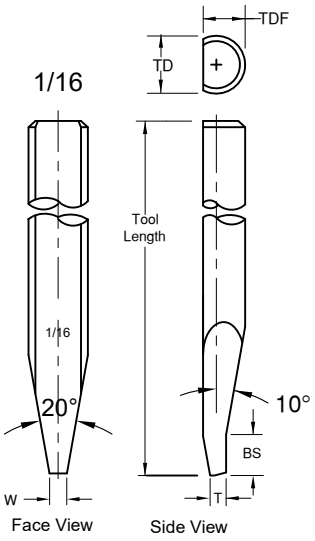
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

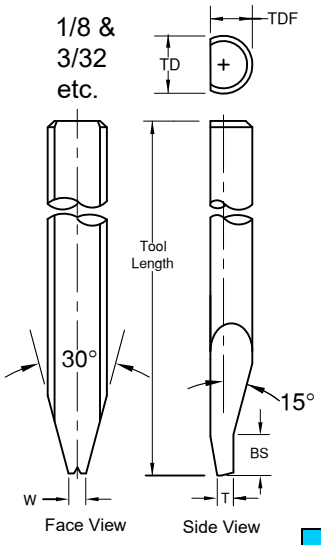
KN-SERIES SMALL WIRE

.0005" through .0020" wireØ



KN-SERIES LARGE WIRE

.0030" through .0160" For wire Ø

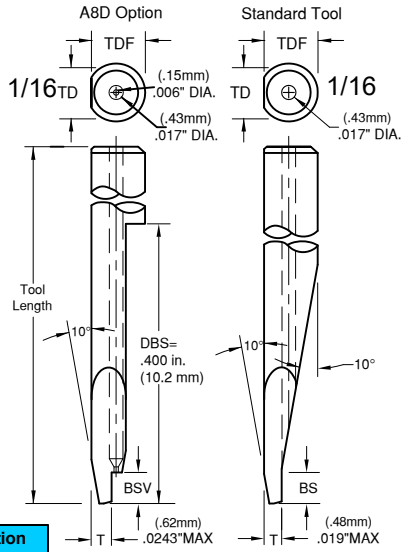


Standard:Ø 1/16, 45°to 52°Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

KN-V SERIES VERTICAL FEED DEEP ACCESS

.0005" through .0020" wireØ

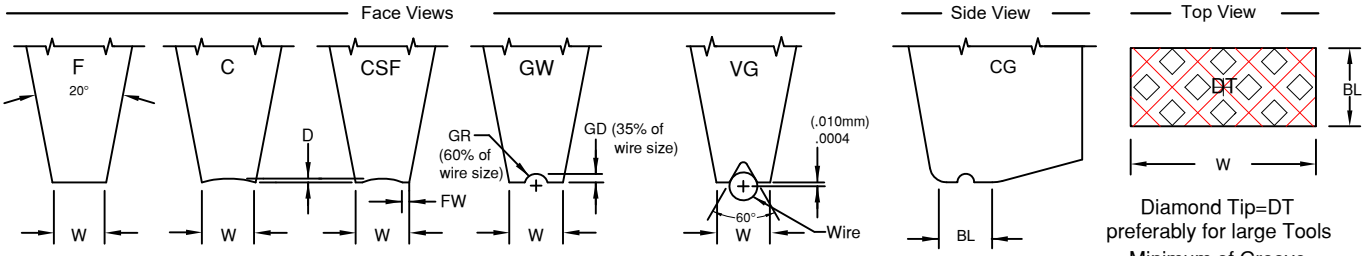
NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control.
See in **Tool Options** for illustration.
To order just add A8D in space **11.**
Not suitable for F&K and Hesse Mechatronics machine



A8D Option

Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45° to 52° Hole Angle : **BS"=.045"** (1.14mm)
Standard: (BS) supplied unless otherwise specified. See Tool Options
No Front Angle if T=MAX



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SERIES KN & KN-V
SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL & LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-KN-O-X-1/16-1-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES: KN**
3. **WIRE FEED: O =** Standard Feed
   V = Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH: Please Specify Length**
7. **HOLE ANGLE: for KN (30°, 38°, 45°,55°,52°,60,°),for KN-V (45°,55°,60,°)**
   for KN-V with A8D Opt.(45°,52°)

(8) FOOT TYPE:
F = Flat
C = Concave
CSF = Concave with Side Flats
(CSF not available with ceramic tools)
CG = Cross Groove
GW = Groove in wire direction
(Please specify wire size)
DT = Diamond Tip **(Please specify Ribbon size)**
VG = V Groove **(Please specify wire size)**

(9) TOOL SIZE: See Standard Chart

(10) FOOT FINISH:
M = Matte finish (FR, BR, & Bond Flat)
P = Polish finish (FR, BR, & Bond Flat)
MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-KN-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART **KN SMALL WIRE:** **FOR WIRE DIAMETERS .0005" THROUGH .0020"**

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	+.0005	+13		
1505	.0015	38	.0005	13	.0002	5	.0140	356	.0110	279	.0090	229	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0140	356	.0110	279	.0090	229	.0025	64	.0005	13
1510	.0015	38	.0010	25	.0002	5	.0140	356	.0120	305	.0100	254	.0025	64	through	
1513	.0015	38	.0013	33	.0002	5	.0140	356	.0130	330	.0100	254	.0025	64	.0007	18
1515	.0015	38	.0015	38	.0002	5	.0150	381	.0130	330	.0100	254	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0150	381	.0130	330	.0110	279	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	±.0002	±5		
2010	.0020	51	.0010	25	.0002	5	.0160	406	.0140	356	.0110	279	.0040	102		
2015	.0020	51	.0015	38	.0002	5	.0160	406	.0140	356	.0110	279	.0040	102	.0007	18
2020	.0020	51	.0020	51	.0002	5	.0170	432	.0150	381	.0120	305	.0040	102	through	
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0150	381	.0120	305	.0040	102	.0010	25
2030	.0020	51	.0030	76	.0002	5	.0170	432	.0150	381	.0130	330	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0170	432	.0150	381	.0140	356	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0170	432	.0160	406	.0140	356	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0180	457	.0170	432	.0150	381	.0050	127	.0013	33
2535	.0025	64	.0035	89	.0002	5	.0180	457	.0170	432	.0150	381	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0180	457	.0170	432	.0160	406	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0190	483	.0170	432	.0150	381	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0200	508	.0170	432	.0150	381	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0160	406	.0050	127	.0015	38
3035	.0030	76	.0035	89	.0003	8	.0210	533	.0180	457	.0160	406	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0210	533	.0190	483	.0170	432	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0220	559	.0190	483	.0170	432	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0220	559	.0200	508	.0180	457	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0230	584	.0200	508	.0180	457	.0060	152	.0020	51
3540	.0035	89	.0040	102	.0003	8	.0230	584	.0210	533	.0190	483	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0240	610	.0210	533	.0190	483	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0240	610	.0220	559	.0200	508	.0060	152		

STANDARD CHART **KN LARGE WIRE:** **FOR WIRE DIAMETERS .0030" THROUGH .0160"**

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0005	±13	±.0005	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
4560	.0045	114	.0060	152	.0006	15	.0340	864	.0310	787	.0260	660	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0008	20	.0390	991	.0340	864	.0290	737	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0010	25	.0450	1143	.0410	1041	.0350	889	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0012	30	.0520	1321	.0490	1245	.0410	1041	.0150	381	.0060	152
Tolerance	±.0005	±13	±.0010	±25	±.0002	±5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
01014	.0105	267	.0140	356	.0014	36	.0650	1651	.0540	1372	.0450	1143	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0016	41	.0680	1727	.0560	1422	.0460	1168	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0020	51	.0720	1829	.0640	1626	.0600	1524	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0024	61	.0900	2286	.0800	2032	.0690	1753	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0028	71	.0980	2489	.0820	2083	.0700	1778	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0032	81	.1100	2794	.0930	2362	.0830	2108	.0400	1016	.0160	406

***Other sizes available upon request** ***All dimensions and tolerances are for reference only**
TOOL SIZE=TS , WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

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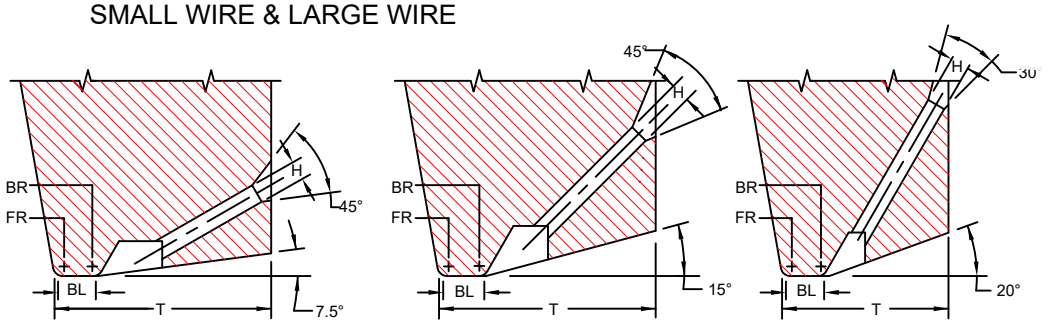
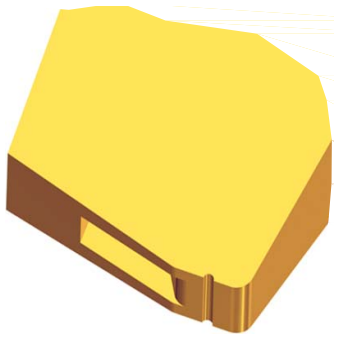
SERIES KNL & KNL-V

SMALL WIRE & LARGE WIRE

FOR AUTOMATIC BONDERS





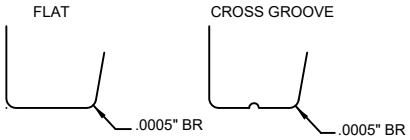
45°,52° for A8D Opt., 30° Funnel

For KNL-V Series (Vertical Feed) 45°,55°,60°

For KNL-Series 30°-60°

Available Vertical Hole Ø marked with X

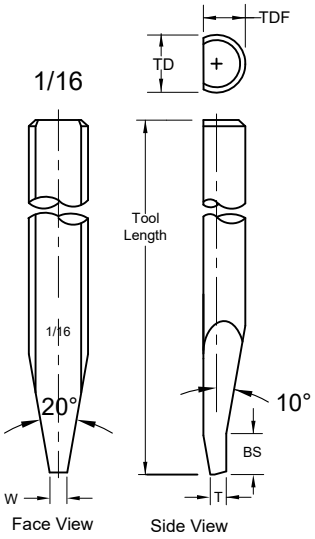
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

KNL-SERIES SMALL WIRE

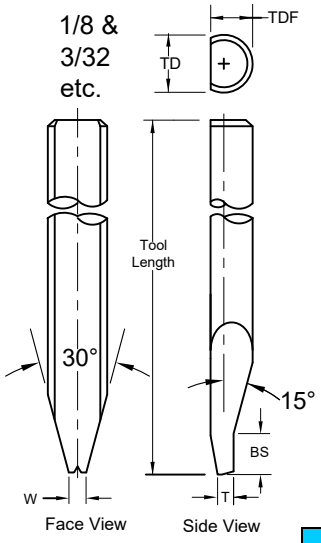
.0005" through .0020" wireØ



Standard:Ø 1/16, 45°to 52°Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

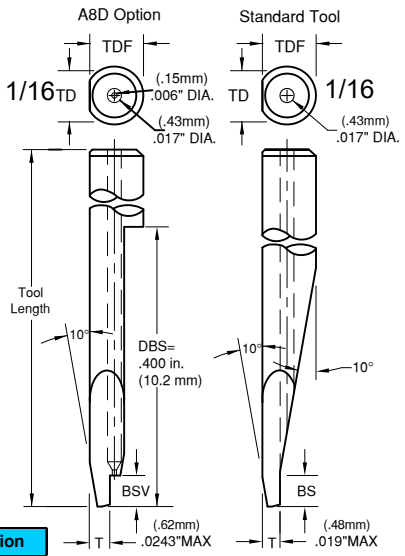
KNL-SERIES LARGE WIRE

For wire diameters .0030" through .0160"



KNL-V SERIES
VERTICAL FEED DEEP ACCESS

.0005" through .0020" wireØ



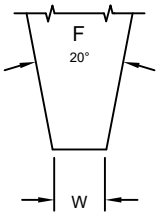
NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control.
See in **Tool Options** for illustration.
To order just add A8D in space **11.**
Not suitable for F&K and Hesse Mechatronics machine

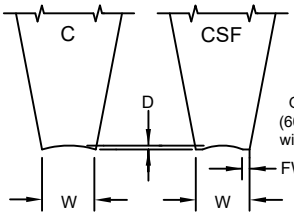
A8D Option

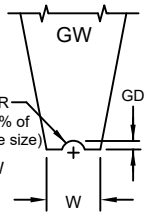
Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

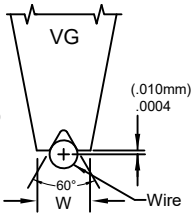
Standard: Ø1/16 45° to 52° Hole Angle :
BS"=.045" (1.14mm)
Standard: (BS) supplied unless otherwise specified. See Tool Options
No Front Angle if T=MAX

Face Views

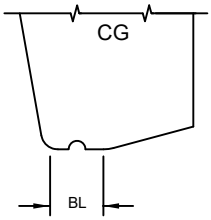




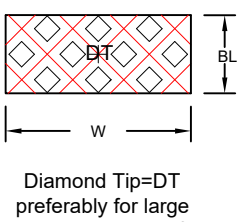




Side View



Top View



Diamond Tip=DT preferably for large Tools Minimum of Groove Radius=.00025 Groove to Groove=.0015

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SERIES KNL & KNL-V

SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-KNL-O-X-1/16-1-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES: KNL**
3. **WIRE FEED:** **O =** Standard Feed; **V =** Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH: Please Specify Length**
7. **HOLE ANGLE:** **for KNL (30°, 38°, 45°,55°,52°,60,°),for KNL-V (45°,55°,60,°) for KNL-V with A8D Opt.(45°,52°)**

(8) FOOT TYPE:
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats **(CSF not available with ceramic tools)**
- **CG** = Cross Groove
- **GW** = Groove in wire direction **(Please specify wire size)**
- **DT** = Diamond Tip **(Please specify Ribbon size)**
- **VG** = V Groove **(Please specify wire size)**

(9) TOOL SIZE: See Standard Chart

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-KNL-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART — KNL SMALL WIRE: — FOR WIRE DIAMETERS .0005" THROUGH .0020"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0140	356	.0120	305	.0100	254	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0140	356	.0125	318	.0100	254	.0025	64	**.0005**	**13**
1510	.0015	38	.0010	25	.0002	5	.0140	356	.0130	330	.0100	254	.0025	64	**through**	
1513	.0015	38	.0013	33	.0002	5	.0140	356	.0130	330	.0110	279	.0025	64	**.0007**	**18**
1515	.0015	38	.0015	38	.0002	5	.0150	381	.0130	330	.0110	279	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0150	381	.0140	356	.0110	279	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0160	406	.0140	356	.0120	305	* .0040	102		
2015	.0020	51	.0015	38	.0002	5	.0160	406	.0140	356	.0120	305	.0040	102	**.0007**	**18**
2020	.0020	51	.0020	51	.0002	5	.0170	432	.0150	381	.0130	330	.0040	102	**through**	
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0150	381	.0130	330	.0040	102	**.0010**	**25**
2030	.0020	51	.0030	76	.0002	5	.0180	457	.0150	381	.0140	356	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0170	432	.0150	381	.0140	356	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0180	457	.0160	406	.0140	356	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0180	457	.0170	432	.0150	381	.0050	127	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0180	457	.0170	432	.0150	381	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0190	483	.0170	432	.0160	406	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0200	508	.0170	432	.0150	381	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0200	508	.0170	432	.0150	381	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0160	406	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0210	533	.0180	457	.0160	406	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0210	533	.0190	483	.0170	432	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0220	559	.0190	483	.0170	432	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0220	559	.0200	508	.0180	457	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0230	584	.0200	508	.0180	457	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0230	584	.0210	533	.0190	483	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0240	610	.0210	533	.0190	483	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0240	610	.0220	559	.0200	508	.0060	152		

STANDARD CHART — KNL LARGE WIRE: — FOR WIRE DIAMETERS .0030" THROUGH .0160"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0005	±13	**±.0005**	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
4560	.0045	114	.0060	152	.0006	15	.0340	864	.0310	787	.0260	660	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0008	20	.0390	991	.0340	864	.0290	737	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0010	25	.0450	1143	.0410	1041	.0350	889	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0012	30	.0520	1321	.0490	1245	.0410	1041	.0150	381	.0060	152
Tolerance	±.0005	±13	**±.0010**	±25	±.0002	±5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
01014	.0105	267	.0140	356	.0014	36	.0650	1651	.0540	1372	.0450	1143	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0016	41	.0680	1727	.0560	1422	.0460	1168	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0020	51	.0720	1829	.0640	1626	.0600	1524	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0024	61	.0900	2286	.0800	2032	.0690	1753	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0028	71	.0980	2489	.0820	2083	.0700	1778	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0032	81	.1100	2794	.0930	2362	.0830	2108	.0400	1016	.0160	406

***Other sizes available upon request *All dimensions and tolerances are for reference only**

TOOL SIZE=TS , WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

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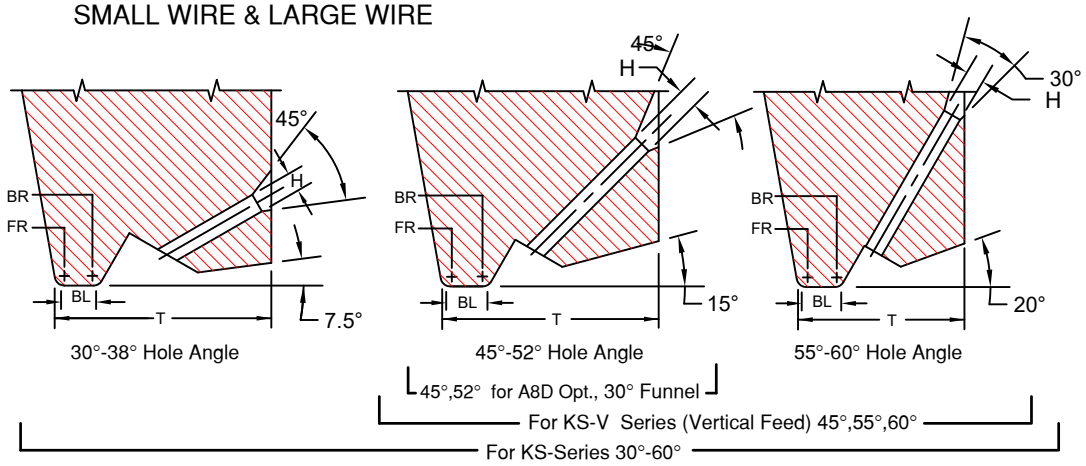
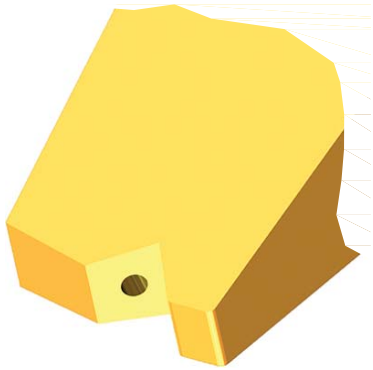
SERIES KS & KS-V

SMALL WIRE & LARGE WIRE

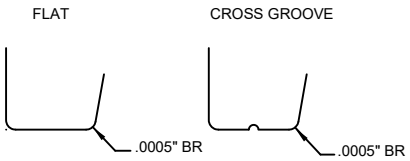
FOR MANUAL AND SEMI-AUTOMATIC BONDERS





Available Vertical Hole Ø marked with X

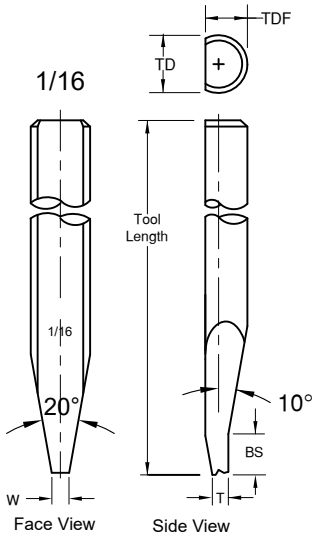
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

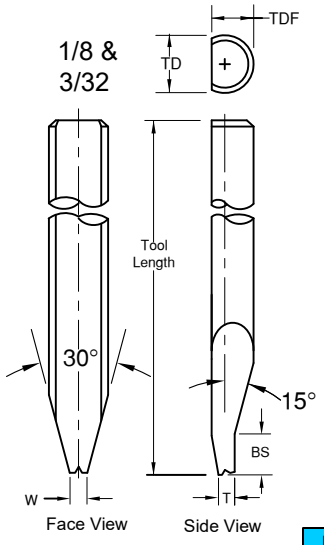
KS-SERIES SMALL WIRE

.0005" through .0020" wireØ



KS-SERIES LARGE WIRE

For wire diameters .0030" through .0160"

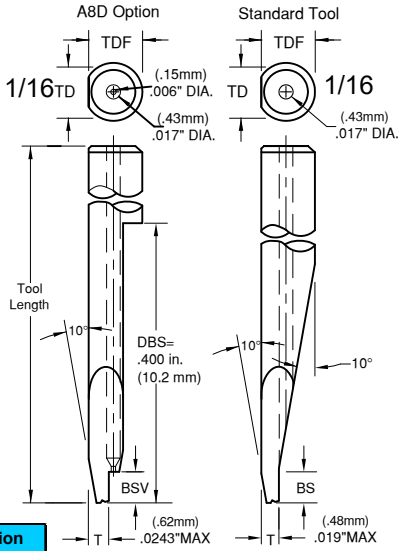


Standard:Ø 1/16, 45°to 52°Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

KS-V SERIES VERTICAL FEED DEEP ACCESS

SMALL WIRE .0005" through .0020" wireØ

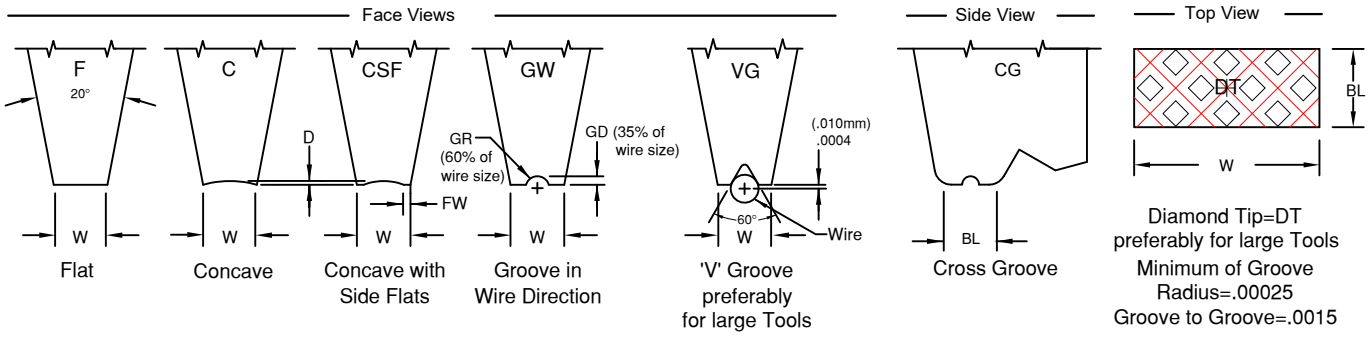
NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control.
See in **Tool Options** for illustration.
To order just add A8D in space **11.**
Not suitable for F&K and Hesse Mechatronics machine



A8D Option

Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45° to 52° Hole Angle : **BS"=.045"** (1.14mm)
Standard: (BS) supplied unless otherwise specified. See Tool Options
No Front Angle if T=MAX



DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES KS & KS-V

SMALL WIRE & LARGE WIRE

ORDERING INFORMATION
SMALL & LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-KS-O-X-1/16-1-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES: KS**
3. **WIRE FEED:** **O =** Standard Feed; **V =** Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH: Please Specify Length**
7. **HOLE ANGLE: for KS (30°, 38°, 45°,52°,55°,60°) for KS-V (45°,55°,60°) for KS-V with A8D Opt. (45°,52°)**

(8) FOOT TYPE:
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats **(CSF not available with ceramic tools)**
- **CG** = Cross Groove
- **GW** = Groove in wire direction **(Please specify wire size)**
- **DT** = Diamond Tip **(Please specify Ribbon size)**
- **VG** = V Groove **(Please specify wire size)**

(9) TOOL SIZE: See Standard Chart

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

***NOTE: Please specify for either guillotine cut or tension break.**
On V-groove tools the bond length (BL) is the same as the foot length (FL).
For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-KS-O-X-1/16-3/4-45-CG-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

STANDARD CHART — KS SMALL WIRE: — FOR WIRE DIAMETERS .0005" THROUGH .0020"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0150	381	.0130	330	.0100	254	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0150	381	.0130	330	.0100	254	.0025	64	**.0005**	**13**
1510	.0015	38	.0010	25	.0002	5	.0155	394	.0135	343	.0110	279	.0025	64	**through**	
1513	.0015	38	.0013	33	.0002	5	.0155	394	.0140	356	.0110	279	.0025	64	**.0007**	**18**
1515	.0015	38	.0015	38	.0002	5	.0160	406	.0140	356	.0110	279	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0165	419	.0145	368	.0120	305	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0165	419	.0145	368	.0110	279	* .0040	102		
2015	.0020	51	.0015	38	.0002	5	.0165	419	.0145	368	.0120	305	.0040	102	**.0007**	**18**
2020	.0020	51	.0020	51	.0002	5	.0165	419	.0145	368	.0120	305	.0040	102	**through**	
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0150	381	.0130	330	.0040	102	**.0010**	**25**
2030	.0020	51	.0030	76	.0002	5	.0175	445	.0155	394	.0130	330	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0180	457	.0160	406	.0125	318	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0180	457	.0160	406	.0125	318	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0195	495	.0170	432	.0140	356	.0040	102	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0195	495	.0170	432	.0140	356	.0040	102		
2540	.0025	64	.0040	102	.0002	5	.0200	508	.0180	457	.0150	381	.0040	102		
3020	.0030	76	.0020	51	.0003	8	.0190	483	.0170	432	.0150	381	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0200	508	.0170	432	.0150	381	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0200	508	.0180	457	.0160	406	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0210	533	.0180	457	.0160	406	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0210	533	.0190	483	.0170	432	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0220	559	.0190	483	.0170	432	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0220	559	.0200	508	.0180	457	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0230	584	.0200	508	.0180	457	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0230	584	.0210	533	.0190	483	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0240	610	.0210	533	.0190	483	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0240	610	.0220	559	.0190	483	.0060	152		

STANDARD CHART — KS LARGE WIRE: — FOR WIRE DIAMETERS .0030" THROUGH .0160"

TS	H		BL		D		T(30°38°)		T(45° 52°)		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0005	±13	**±.0005**	±13	-.0001	-2.5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
4560	.0045	114	.0060	152	.0006	15	.0340	864	.0310	787	.0260	660	.0075	191	.0030	76
6008	.0060	152	.0080	203	.0008	20	.0390	991	.0340	864	.0290	737	.0100	254	.0040	102
7510	.0075	191	.0100	254	.0010	25	.0450	1143	.0410	1041	.0350	889	.0125	318	.0050	127
0912	.0090	229	.0120	305	.0012	30	.0520	1321	.0490	1245	.0410	1041	.0150	381	.0060	152
Tolerance	±.0005	±13	**±.0010**	±25	±.0002	±5	±.0010	±25	±.0010	±25	±.0010	±25	± .0010	±25		
01014	.0105	267	.0140	356	.0014	36	.0650	1651	.0540	1372	.0450	1143	.0175	445	.0070	178
01215	.0120	305	.0150	381	.0016	41	.0680	1727	.0560	1422	.0460	1168	.0200	508	.0080	203
01518	.0150	381	.0180	457	.0020	51	.0720	1829	.0640	1626	.0600	1524	.0250	635	.0100	254
01820	.0180	457	.0200	508	.0024	61	.0900	2286	.0800	2032	.0690	1753	.0300	762	.0120	305
02122	.0210	533	.0220	559	.0028	71	.0980	2489	.0820	2083	.0700	1778	.0350	889	.0140	356
02424	.0240	610	.0240	610	.0032	81	.1100	2794	.0930	2362	.0830	2108	.0400	1016	.0160	406

***Other sizes available upon request *All dimensions and tolerances are for reference only**

TOOL SIZE=TS , WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

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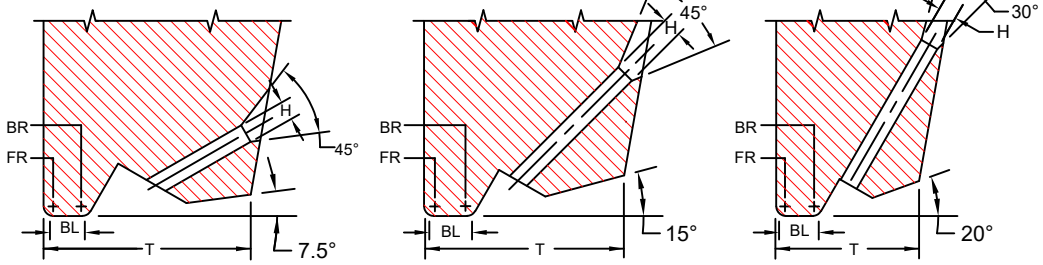
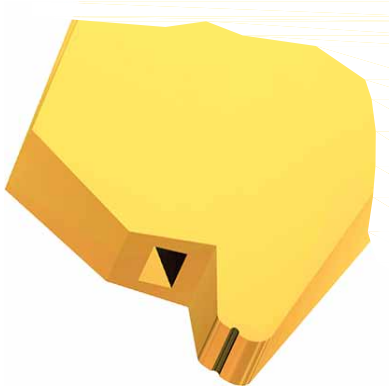
SERIES R & R-V

RIBBON WIRE

FOR MANUAL AND SEMI-AUTOMATIC BONDERS

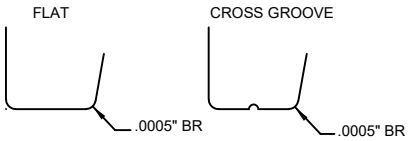
Help Example





FOR R-SERIES

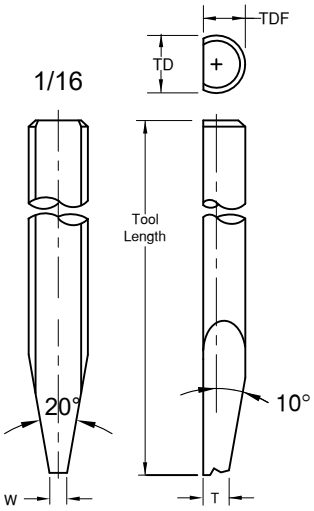
	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00



We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

R-SERIES

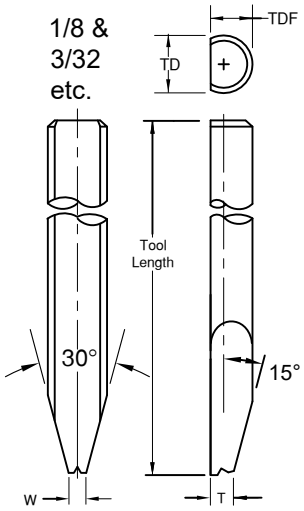
Ribbon Width: .0020" through .030"
Ribbon Thickness: .00025" through .0020"



Standard:Ø 1/16, 45° Hole Angle

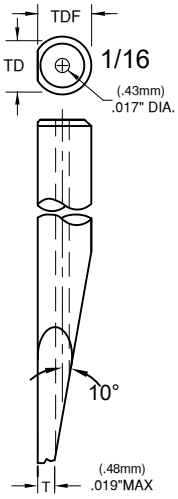
R-SERIES

Large Ø



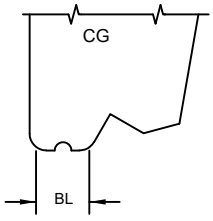
R-V SERIES
VERTICAL FEED DEEP ACCESS

Ribbon Width: .0020" through .030"
Ribbon Thickness: .00025" through .0020"

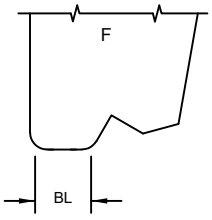


Standard: Ø1/16 45° Hole Angle

Side View

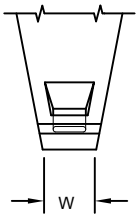


Cross Groove

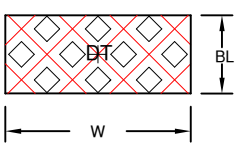


Flat

Back View



Top View



Diamond Tip=DT
preferably for large Tools
Minimum of Groove
Radius=.00025
Groove to Groove=.0015

DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES R& R-V

RIBBON WIRE

ORDERING INFORMATION
RIBBON WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-R-O-D-1/16-1-45-CG-.5x5-2-M- *

Help Example

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11 12

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** R
3. **WIRE FEED:** **O** = Standard Feed
   V = Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH:** **Please Specify Length**
7. **HOLE ANGLE:** **30°, 38°, 45°, 52° 55°, 60°**

(8) FOOT TYPE: **F** = Flat
CG = Cross Groove
DT = Diamond Tip
(Please specify Ribbon size)

(9) RIBBON SIZE: See Standard Chart
Example: .0005 x .005 = .5 x 5
Thickness x Width

(10) Bond Length: See Standard Chart
Example: BL of .0020 = 2
Note: We do not recommend bond lengths any larger than .005".

(11) FOOT FINISH:
M = Matte finish (FR, BR, & Bond Flat)
P = Polish finish (FR, BR, & Bond Flat)
MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals. Example: M-R-O-X-1/16-3/4-45-CG-.5x5-2-M-A7 (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

STANDARD CHART **R RIBBON WIRE:** **FOR RIBBON THICKNESS: .00025" THROUGH .0020"** **WIDTHS: .002" THROUGH .030"**

RIBBON WIDTH		RIBBON THICKNESS		BL		T(30°38°)		T(45° 52°)		T(55° 60°)		W	
in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance				±.0002	±5	±.0005	±13	±.0005	±13	±.0005	±13	± .0002	±5
.0020	51	.00025 through .00125	6.4 to 32	.0010	25	.0120	305	.0110	279	.0080	203	.0055	140
				.0015	38	.0130	330	.0110	279	.0090	229		
				.0020	51	.0130	330	.0120	305	.0090	229		
				.0025	64	.0140	356	.0120	305	.0100	254		
				.0030	76	.0140	356	.0130	330	.0100	254		
.0030	76	.00025 through .00125	6.4 to 32	.0010	25	.0160	406	.0130	330	.0090	229	.0065	165
				.0015	38	.0160	406	.0130	330	.0100	254		
				.0020	51	.0160	406	.0140	356	.0100	254		
				.0025	64	.0170	432	.0140	356	.0110	279		
				.0030	76	.0170	432	.0140	356	.0110	279		
.0040	102	.00025 through .00125	6.4 to 32	.0020	51	.0160	406	.0140	356	.0100	254	.0075	191
				.0025	64	.0170	432	.0140	356	.0110	279		
				.0030	76	.0170	432	.0140	356	.0110	279		
.0050	127	.0005 through .0020	13 to 51	.0020	51	.0160	406	.0140	356	.0100	254	.0085	216
				.0025	64	.0170	432	.0140	356	.0110	279		
				.0030	76	.0170	432	.0140	356	.0110	279		
				.0035	89	.0180	457	.0150	381	.0120	305		
.0070	178	.0005 through .0020	13 to 51	.0025	64	.0170	432	.0140	356	.0110	279	.0125	318
				.0030	76	.0170	432	.0140	356	.0110	279		
				.0035	89	.0180	457	.0150	381	.0120	305		
				.0040	102	.0180	457	.0150	381	.0120	305		
.0100	254	.0005 through .0020	13 to 51	.0025	64	.0170	432	.0140	356	.0110	279	.0155	394
				.0030	76	.0170	432	.0140	356	.0110	279		
				.0035	89	.0180	457	.0150	381	.0120	305		
				.0040	102	.0180	457	.0150	381	.0120	305		
.0120	305	.0005 through .0020	13 to 51	.0025	64	.0170	432	.0140	356	.0110	279	.0175	445
				.0030	76	.0170	432	.0140	356	.0110	279		
				.0035	89	.0180	457	.0150	381	.0120	305		
				.0040	102	.0180	457	.0150	381	.0120	305		
.0150	381	.0005 through .0020	13 to 51	.0025	64	.0170	432	.0140	356	.0110	279	.0205	521
				.0030	76	.0170	432	.0140	356	.0110	279		
				.0035	89	.0180	457	.0150	381	.0120	305		
				.0040	102	.0180	457	.0150	381	.0120	305		
.0200	508	.0005 through .0020	13 to 51	.0025	64	.0170	432	.0140	356	.0110	279	.0255	648
				.0030	76	.0170	432	.0140	356	.0110	279		
				.0035	89	.0180	457	.0150	381	.0120	305		
				.0040	102	.0180	457	.0150	381	.0120	305		

***Other sizes available upon request *All dimensions and tolerances are for reference only**
"T" To be determined according to the size of FR and BR and Hole Bore Length

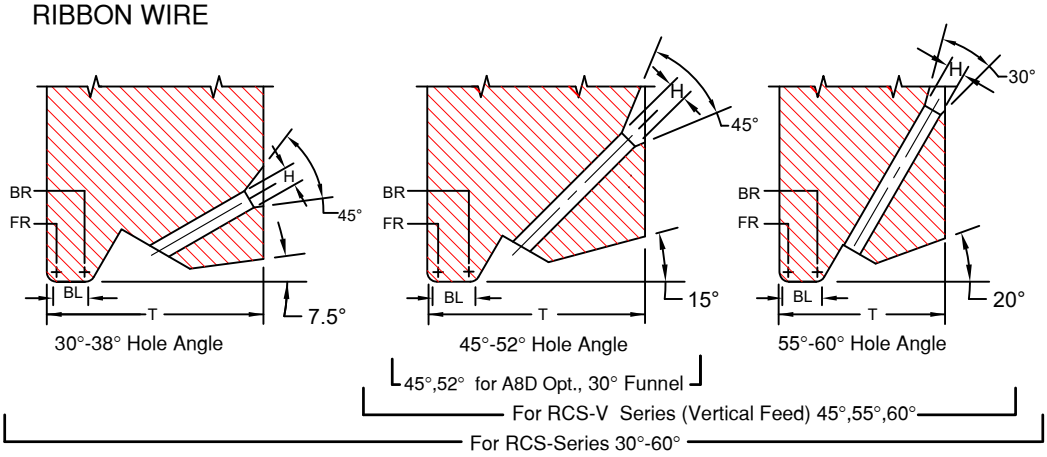
DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

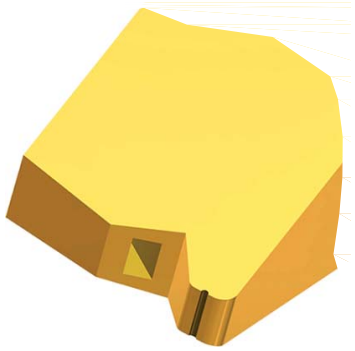
SERIES RCS & RCS-V

RIBBON WIRE

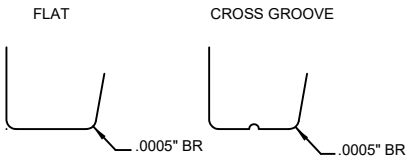
FOR MANUAL AND SEMI-AUTOMATIC BONDERS

Help Example





TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	

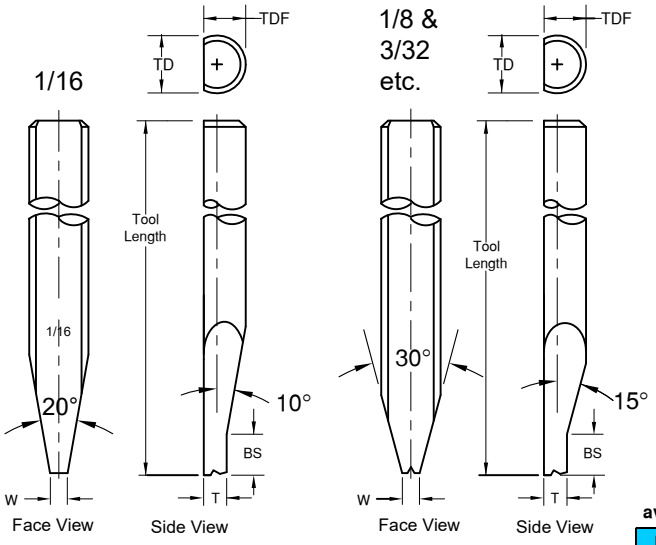


We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see Tech Tip

RCS-SERIES RIBBON WIRE

Ribbon Width: .0020" through .030"
Ribbon Thickness: .00025" through .0020"

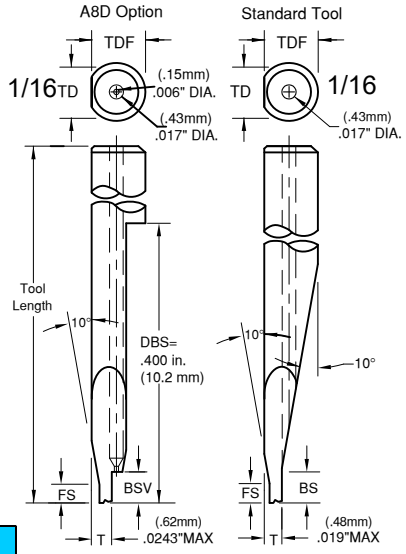
For all large Ø



Standard:Ø 1/16, 45°to 52°Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

RCS-V SERIES
VERTICAL FEED DEEP ACCESS

Ribbon Width: .0020" through .030"
Ribbon Thickness: .00025" through .0020"

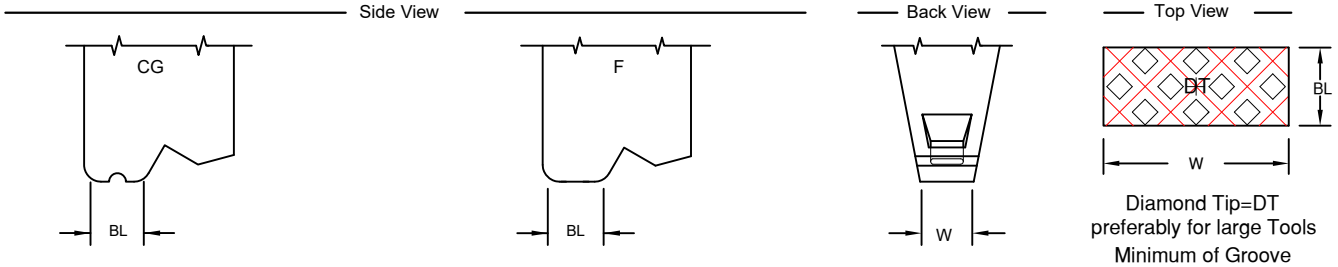


NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control.
See in **Tool Options** for illustration.
To order just add A8D in space **11.**
Not suitable for F&K and Hesse Mechatronics machine

A8D Option
available for ribbon widths up to .005

Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45°to 52° Hole Angle :
FS=.015"(.38mm) **BS"=.045"** (1.14mm)
Standard: (FS&BS) supplied unless otherwise specified. See Tool Option #A3
No FS if T=MAX



Diamond Tip=DT
preferably for large Tools
Minimum of Groove
Radius=.00025
Groove to Groove=.0015

SERIES RCS & RCS-V

RIBBON WIRE

ORDERING INFORMATION
RIBBON BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

Help Example

SAMPLE PART NUMBER: M-RCS-O-D-1/16-1-45-CG-.5x5-2-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11 12

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** RCS
3. **WIRE FEED:** **O =** Standard Feed
   V = Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH:** Please Specify Length
7. **HOLE ANGLE:** for RCS (30°, 38°, 45°,52°,55°,60,°) for RCS-V (45°,55°,60,°)
   for RCS-V with A8D Opt.(45°,52°)

(8) FOOT TYPE: **F** = Flat
CG = Cross Groove
DT = Diamond Tip
(Please specify Ribbon size)

(9) RIBBON SIZE: See Standard Chart
Example: .0005 x .005 = .5 x 5
Thickness x Width

(10) Bond Length: See Standard Chart
Example: BL of .0020 = 2
Note: We do not recommend bond lengths any larger than .005".

(11) FOOT FINISH:
M = Matte finish (FR, BR, & Bond Flat)
P = Polish finish (FR, BR, & Bond Flat)
MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals. Example: M-RCS-O-X-1/16-3/4-45-CG-.5x5-2-M-A7 (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

Size Restrictions for Vertical Feed Tools		
STANDARD		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0150	.0190
3/32	.0300	.0210
A8D Option, RW up to .0070		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0070	.0243
A8D Option, RW .0080 and larger		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0120	.0190
Larger Tool Ø, Ribbon Width and "T" Dimensions available upon request		
RW = Ribbon Width		

STANDARD CHART RCS — **FOR RIBBON THICKNESS: .00025" THROUGH .0020"** — **WIDTHS: .002" THROUGH .030"**

RIBBON WIDTH		RIBBON THICKNESS		BL		T(30°38°)		T(45° 52°)		T(55° 60°)		W	
in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance				±.0002	±5	±.0005	±13	±.0005	±13	±.0005	±13	± .0002	±5
.0020	51	.00025 through .00125	6.4 through 32	.0010	25	.0130	330	.0110	279	.0090	229	.0055	140
				.0015	38	.0130	330	.0110	279	.0090	229		
				.0020	51	.0140	356	.0120	305	.0100	254		
				.0025	64	.0140	356	.0120	305	.0100	254		
				.0030	76	.0150	381	.0130	330	.0105	267		
.0030	76	.00025 through .00125	6.4 through 32	.0010	25	.0150	381	.0130	330	.0110	279	.0065	165
				.0015	38	.0150	381	.0140	356	.0110	279		
				.0020	51	.0160	406	.0140	356	.0120	305		
				.0025	64	.0160	406	.0150	381	.0120	305		
				.0030	76	.0160	406	.0155	394	.0125	318		
.0040	102	.00025 through .00125	6.4 through 32	.0020	51	.0160	406	.0140	356	.0120	305	.0075	191
				.0025	64	.0160	406	.0150	381	.0120	305		
				.0030	76	.0160	406	.0155	394	.0125	318		
.0050	127	.0005 through .0020	13 through 51	.0020	51	.0160	406	.0140	356	.0120	305	.0085	216
				.0025	64	.0160	406	.0150	381	.0120	305		
				.0030	76	.0160	406	.0155	394	.0125	318		
				.0035	89	.0170	432	.0155	394	.0130	330		
.0070	178	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0150	381	.0120	305	.0125	318
				.0030	76	.0160	406	.0155	394	.0125	318		
				.0035	89	.0170	432	.0155	394	.0130	330		
				.0040	102	.0170	432	.0160	406	.0140	356		
.0100	254	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0150	381	.0120	305	.0155	394
				.0030	76	.0160	406	.0155	394	.0125	318		
				.0035	89	.0170	432	.0155	394	.0130	330		
				.0040	102	.0170	432	.0160	406	.0140	356		
.0120	305	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0150	381	.0120	305	.0175	445
				.0030	76	.0160	406	.0155	394	.0125	318		
				.0035	89	.0170	432	.0155	394	.0130	330		
				.0040	102	.0170	432	.0160	406	.0140	356		
.0150	381	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0150	381	.0120	305	.0205	521
				.0030	76	.0160	406	.0155	394	.0125	318		
				.0035	89	.0170	432	.0155	394	.0130	330		
				.0040	102	.0170	432	.0160	406	.0140	356		
.0200	508	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0150	381	.0120	305	.0255	648
				.0030	76	.0160	406	.0155	394	.0125	318		
				.0035	89	.0170	432	.0155	394	.0130	330		
				.0040	102	.0170	432	.0160	406	.0140	356		

***Other sizes available upon request *All dimensions and tolerances are for reference only**
"T" To be determined according to the size of FR and BR and Hole Bore Length

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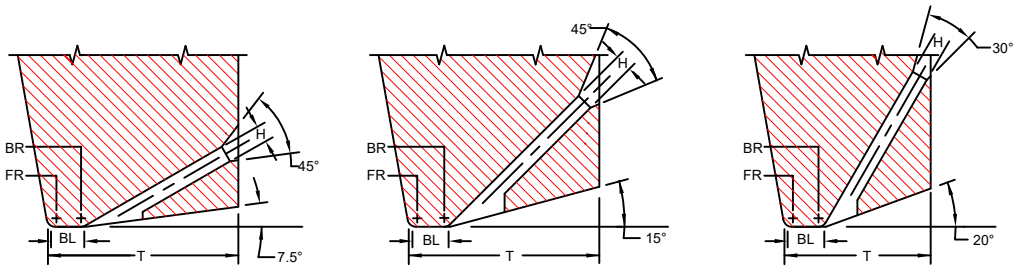
SERIES RKN & RKN-V

RIBBON WIRE

FOR AUTOMATIC BONDERS

Help Example

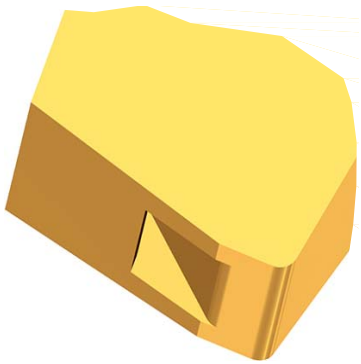


30°-38° Hole Angle | 45°-52° Hole Angle | 55°-60° Hole Angle

45°,52° for A8D Opt., 30° Funnel

For RKN-V Series (Vertical Feed) 45°,55°,60°

For RKN-Series 30°-60°



Available Vertical Hole Ø marked with X

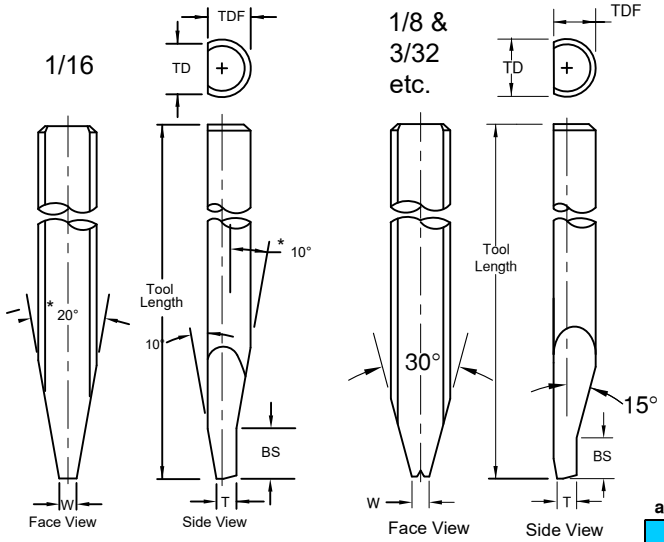
TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	

We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tip**

RKN-SERIES RIBBON WIRE

Ribbon Width: .0020" through .030"
Ribbon Thickness: .00025" through .0020"

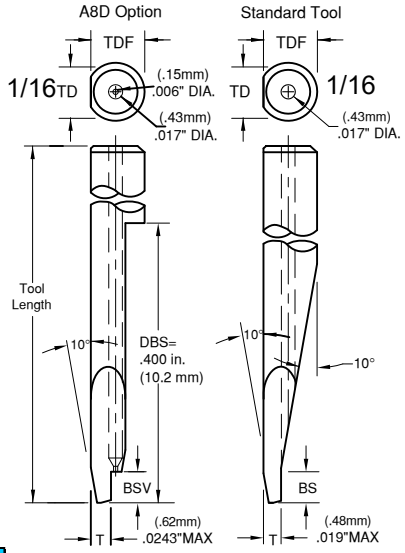
For all large Ø



Standard:Ø 1/16, 45° to 52° Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

RKN-V SERIES
VERTICAL FEED DEEP ACCESS

Ribbon Width: .0020" through .030", Ribbon Thickness: .00025" through .0020"



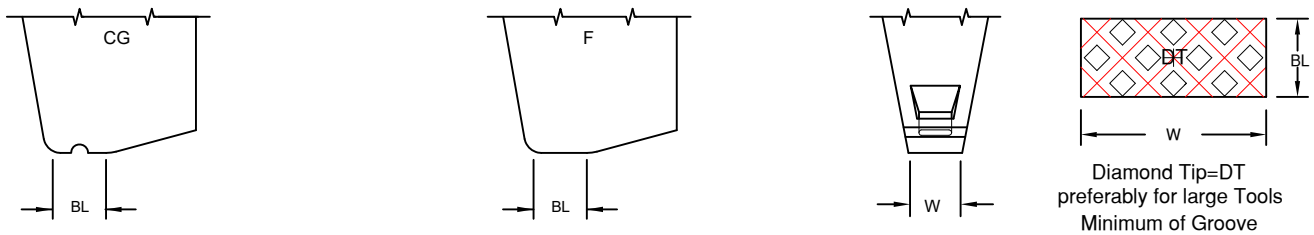
NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control. See Tool Option for illustration. To order just add A8D in space 12. Not suitable for F&K and Hesse Mechatronics machine

A8D Option
available for ribbon widths up to .005

Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45°to 52° Hole Angle : **BS"=.045"** (1.14mm)
Standard: (BS) supplied unless otherwise specified. See Tool Options
No Front Angle if T=MAX

Side View | Back View | Top View



Diamond Tip=DT preferably for large Tools
Minimum of Groove Radius=.00025
Groove to Groove=.0015

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SERIES RKN & RKN-V

RIBBON WIRE

ORDERING INFORMATION
RIBBON BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

Help Example

SAMPLE PART NUMBER: M-RKN-O-D-1/16-1-45-CG-.5x5-2-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11 12

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** RKN
3. **WIRE FEED:** **O** = Standard Feed
   V = Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH:** Please Specify Length
7. **HOLE ANGLE:** for RKN (30°, 38°, 45°,52°,55°,60,°) for RKN-V (45°,55°,60,°) for RKN-V with A8D Opt.(45°,52°)

(8) **FOOT TYPE:** **F** = Flat
CG = Cross Groove
DT = Diamond Tip
(Please specify Ribbon size)

(9) **RIBBON SIZE**: See Standard Chart
Example: .0005 x .005 = .5 x 5
Thickness x Width

(10) **Bond Length**: See Standard Chart
Example: BL of .0020 = 2
Note: We do not recommend bond lengths any larger than .005".

(11) **FOOT FINISH:**
M = Matte finish (FR, BR, & Bond Flat)
P = Polish finish (FR, BR, & Bond Flat)
MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

(12) See Tool Option

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals. Example: M-RKN-O-X-1/16-3/4-45-CG-.5x5-2-M-A7 (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

Size Restrictions for Vertical Feed Tools		
STANDARD		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0150	.0190
3/32	.0300	.0210
A8D Option, RW up to .0070		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0070	.0243
A8D Option, RW .0080 and larger		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0120	.0190
Larger Tool Ø, Ribbon Width and "T" Dimensions available upon request		
RW = Ribbon Width		

STANDARD CHART RKN — **FOR RIBBON THICKNESS: .00025" THROUGH .0020"** — **WIDTHS: .002" THROUGH .030"**

RIBBON WIDTH		RIBBON THICKNESS		BL		T(30°38°)		T(45° 52°)		T(55° 60°)		W	
in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance				±.0002	±5	±.0005	±13	±.0005	±13	±.0005	±13	± .0002	±5
.0020	51	.00025 through .00125	6.4 through 32	.0010	25	.0130	330	.0110	279	.0090	229	.0055	140
				.0015	38	.0130	330	.0120	305	.0090	229		
				.0020	51	.0130	330	.0120	305	.0090	229		
				.0025	64	.0140	356	.0120	305	.0100	254		
				.0030	76	.0140	356	.0130	330	.0100	254		
.0030	76	.00025 through .00125	6.4 through 32	.0010	25	.0160	406	.0130	330	.0100	254	.0065	165
				.0015	38	.0170	432	.0140	356	.0100	254		
				.0020	51	.0170	432	.0140	356	.0110	279		
				.0025	64	.0180	457	.0150	381	.0110	279		
				.0030	76	.0180	457	.0155	394	.0120	305		
.0040	102	.00025 through .00125	6.4 through 32	.0020	51	.0170	432	.0140	356	.0110	279	.0075	191
				.0025	64	.0180	457	.0150	381	.0110	279		
				.0030	76	.0180	457	.0155	394	.0120	305		
.0050	127	.0005 through .0020	13 through 51	.0020	51	.0170	432	.0140	356	.0110	279	.0085	216
				.0025	64	.0180	457	.0150	381	.0110	279		
				.0030	76	.0180	457	.0155	394	.0120	305		
				.0035	89	.0190	483	.0160	406	.0120	305		
.0070	178	.0005 through .0020	13 through 51	.0025	64	.0180	457	.0150	381	.0110	279	.0125	318
				.0030	76	.0180	457	.0155	394	.0120	305		
				.0035	89	.0190	483	.0160	406	.0120	305		
				.0040	102	.0195	495	.0160	406	.0130	330		
.0100	254	.0005 through .0020	13 through 51	.0025	64	.0180	457	.0150	381	.0110	279	.0155	394
				.0030	76	.0180	457	.0155	394	.0120	305		
				.0035	89	.0190	483	.0155	394	.0120	305		
				.0040	102	.0195	495	.0160	406	.0130	330		
.0120	305	.0005 through .0020	13 through 51	.0025	64	.0180	457	.0150	381	.0110	279	.0175	445
				.0030	76	.0180	457	.0155	394	.0120	305		
				.0035	89	.0190	483	.0160	406	.0120	305		
				.0040	102	.0195	495	.0160	406	.0130	330		
.0150	381	.0005 through .0020	13 through 51	.0025	64	.0180	457	.0150	381	.0110	279	.0205	521
				.0030	76	.0180	457	.0155	394	.0120	305		
				.0035	89	.0190	483	.0160	406	.0120	305		
				.0040	102	.0195	495	.0160	406	.0130	330		
.0200	508	.0005 through .0020	13 through 51	.0025	64	.0180	457	.0150	381	.0110	279	.0255	648
				.0030	76	.0180	457	.0155	394	.0120	305		
				.0035	89	.0190	483	.0160	406	.0120	305		
				.0040	102	.0195	495	.0160	406	.0130	330		

***Other sizes available upon request *All dimensions and tolerances are for reference only**
"T" To be determined according to the size of FR and BR and Hole Bore Length

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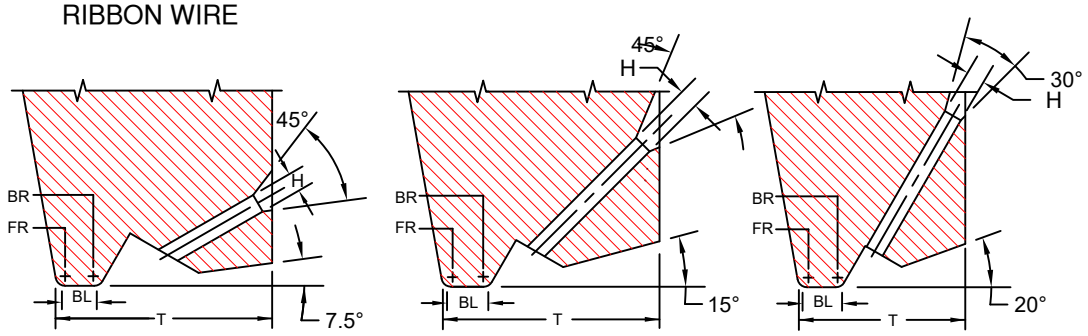
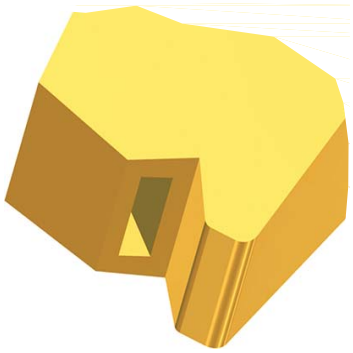
SERIES RKS & RKS-V

RIBBON WIRE

FOR MANUAL AND SEMI-AUTOMATIC BONDERS

Help Example





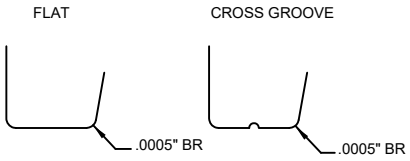
45°,52° for A8D Opt., 30° Funnel

For RKS-V Series (Vertical Feed) 45°,55°,60°

For RKS-Series 30°-60°

Available Vertical Hole Ø marked with X

TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	

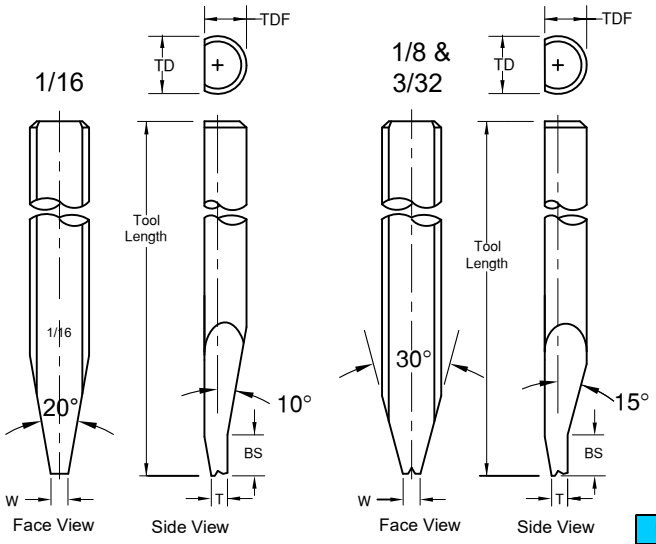


We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tip**

RKS-SERIES

Ribbon Width: .0020" through .030"
Ribbon Thickness: .00025" through .0020"

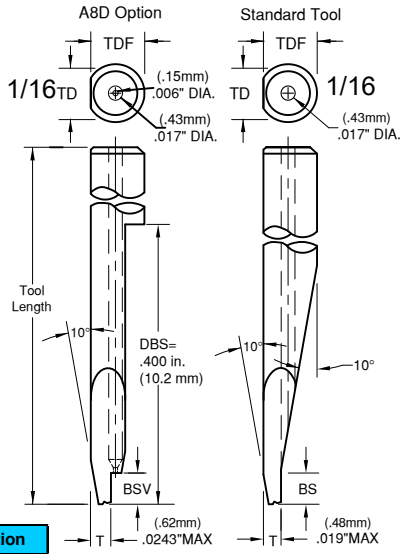
For large Ø



Standard:Ø 1/16, 45° to 52° Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

RKS-V SERIES
VERTICAL FEED DEEP ACCESS

NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control. See Tool Option for illustration. To order just add A8D in space 12. Not suitable for F&K and Hesse Mechatronics machine

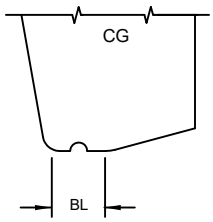


A8D Option

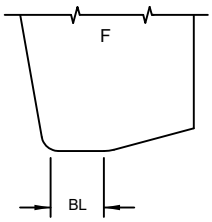
Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45°to 52° Hole Angle :
BS"=.045" (1.14mm)
Standard: (BS) supplied unless otherwise specified. See Tool Options
No Front Angle if T=MAX

Side View

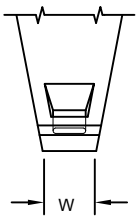


Cross Groove

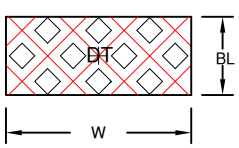


Flat

Back View



Top View



Diamond Tip=DT
preferably for large Tools
Minimum of Groove
Radius=.00025
Groove to Groove=.0015

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SERIES RKS & RKS-V
RIBBON WIRE

ORDERING INFORMATION
RIBBON BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

Help Example

SAMPLE PART NUMBER: M-RKS-O-D-1/16-1-45-CG-.5x5-2-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11 12

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection
2. **SERIES:** RKS
3. **WIRE FEED:** O = Standard Feed
   V = Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH:** Please Specify Length
7. **HOLE ANGLE:** for RKS (30°, 38°, 45°,52°,55°,60,°) for RKS-V (45°,55°,60,°) for RKS-V with A8D Opt.(45°,52°)

(8) FOOT TYPE: F = Flat
CG = Cross Groove
DT = Diamond Tip
(Please specify Ribbon size)

(9) RIBBON SIZE: See Standard Chart
Example: .0005 x .005 = .5 x 5
Thickness x Width

(10) Bond Length: See Standard Chart
Example: BL of .0020 = 2
Note: We do not recommend bond lengths any larger than .005".

(11) FOOT FINISH:
M = Matte finish (FR, BR, & Bond Flat)
P = Polish finish (FR, BR, & Bond Flat)
MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

(12) See Tool Option

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals. Example: M-RKS-O-X-1/16-3/4-45-CG-.5x5-2-M-A7 (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

Size Restrictions for Vertical Feed Tools		
STANDARD		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0150	.0190
3/32	.0300	.0210
A8D Option, RW up to .0070		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0070	.0243
A8D Option, RW .0080 and larger		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0120	.0190
Larger Tool Ø, Ribbon Width and "T" Dimensions available upon request		
RW = Ribbon Width		

STANDARD CHART RKS — **FOR RIBBON THICKNESS: .00025" THROUGH .0020"** — **WIDTHS: .002" THROUGH .030"**

RIBBON WIDTH		RIBBON THICKNESS		BL		T(30°38°)		T(45° 52°)		T(55° 60°)		W	
in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance				±.0002	±5	±.0005	±13	±.0005	±13	±.0005	±13	±.0002	±5
.0020	51	.00025 through .00125	6.4 through 32	.0010	25	.0130	330	.0110	279	.0090	229	.0055	140
				.0015	38	.0130	330	.0110	279	.0090	229		
				.0020	51	.0140	356	.0120	305	.0100	254		
				.0025	64	.0140	356	.0120	305	.0100	254		
				.0030	76	.0150	381	.0130	330	.0105	267		
.0030	76	.00025 through .00125	6.4 through 32	.0010	25	.0150	381	.0130	330	.0110	279	.0065	165
				.0015	38	.0160	406	.0140	356	.0110	279		
				.0020	51	.0160	406	.0140	356	.0120	305		
				.0025	64	.0170	432	.0150	381	.0120	305		
				.0030	76	.0170	432	.0155	394	.0125	318		
.0040	102	.00025 through .00125	6.4 through 32	.0020	51	.0160	406	.0140	356	.0120	305	.0075	191
				.0025	64	.0170	432	.0150	381	.0120	305		
				.0030	76	.0170	432	.0155	394	.0125	318		
.0050	127	.0005 through .0020	13 through 51	.0020	51	.0160	406	.0140	356	.0120	305	.0085	216
				.0025	64	.0170	432	.0150	381	.0120	305		
				.0030	76	.0170	432	.0155	394	.0125	318		
				.0035	89	.0180	457	.0155	394	.0130	330		
.0070	178	.0005 through .0020	13 through 51	.0025	64	.0170	432	.0150	381	.0120	305	.0125	318
				.0030	76	.0170	432	.0155	394	.0125	318		
				.0035	89	.0180	457	.0155	394	.0130	330		
				.0040	102	.0180	457	.0160	406	.0130	330		
.0100	254	.0005 through .0020	13 through 51	.0025	64	.0170	432	.0150	381	.0120	305	.0155	394
				.0030	76	.0170	432	.0155	394	.0125	318		
				.0035	89	.0180	457	.0155	394	.0130	330		
				.0040	102	.0180	457	.0160	406	.0130	330		
.0120	305	.0005 through .0020	13 through 51	.0025	64	.0170	432	.0150	381	.0120	305	.0175	445
				.0030	76	.0170	432	.0155	394	.0125	318		
				.0035	89	.0180	457	.0155	394	.0130	330		
				.0040	102	.0180	457	.0160	406	.0130	330		
.0150	381	.0005 through .0020	13 through 51	.0025	64	.0170	432	.0150	381	.0120	305	.0205	521
				.0030	76	.0170	432	.0155	394	.0125	318		
				.0035	89	.0180	457	.0155	394	.0130	330		
				.0040	102	.0180	457	.0160	406	.0130	330		
.0200	508	.0005 through .0020	13 through 51	.0025	64	.0170	432	.0150	381	.0120	305	.0255	648
				.0030	76	.0170	432	.0155	394	.0125	318		
				.0035	89	.0180	457	.0155	394	.0130	330		
				.0040	102	.0180	457	.0160	406	.0130	330		

*Other sizes available upon request *All dimensions and tolerances are for reference only
"T" To be determined according to the size of FR and BR and Hole Bore Length

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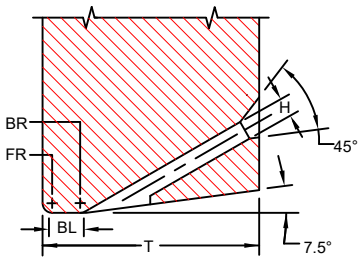
SERIES RN & RN-V

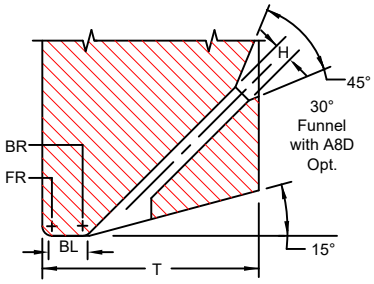
RIBBON WIRE

FOR AUTOMATIC BONDERS

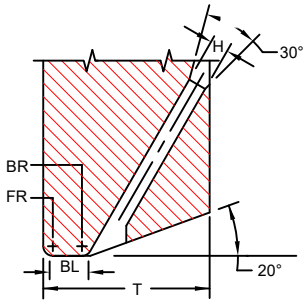
Help Example



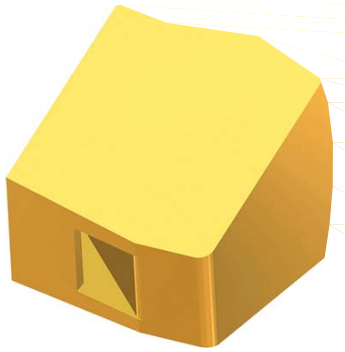
30°-38° Hole Angle



45°-52° Hole Angle



55°-60° Hole Angle



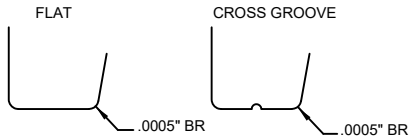
45°,52° for A8D Opt., 30° Funnel

For RN-V Series (Vertical Feed) 45°,55°,60°

For RN-Series 30°-60°

Available Vertical Hole Ø marked with X

TD			TDF		For Vertical Hole
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	X
3/32	.0937	2.38	.0880	2.24	X
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	

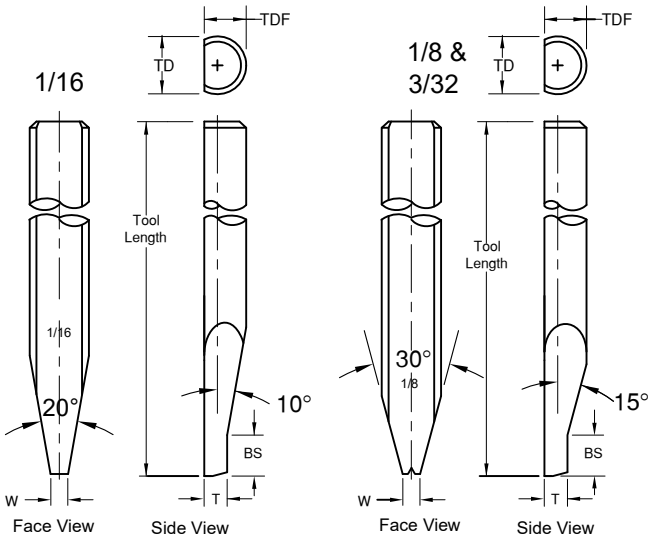


We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tip**

RN-SERIES

Ribbon Width: .0020" through .030"
Ribbon Thickness: .00025" through .0020"

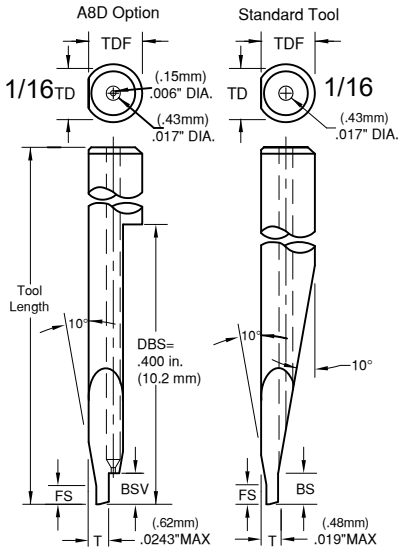
For large Ø



Standard:Ø 1/16, 45° to 52° Hole Angle : BS"=.045" (1.14mm) .
Supplies only to Standard size Ø1/16, larger tool Ø are different.
Standard: (BS) supplied unless otherwise specified. See Tool Options #A3

RN-V SERIES
VERTICAL FEED DEEP ACCESS

Ribbon Width: .0020" through .030", Ribbon Thickness: .00025" through .0020"

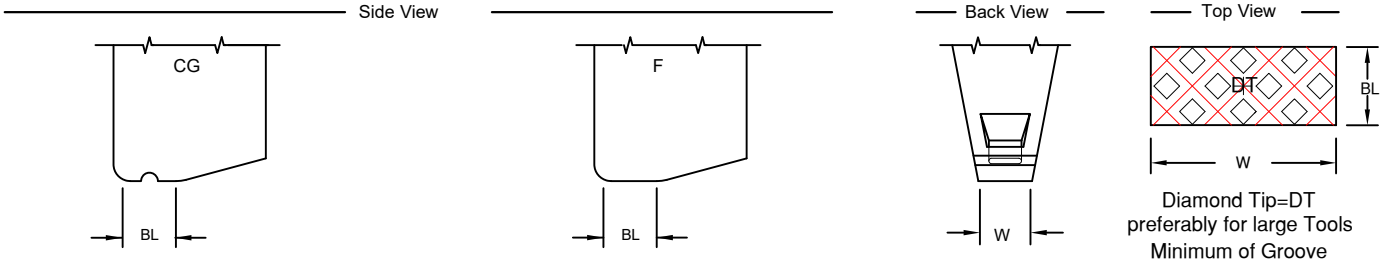


NOTE: We recommend our A8D option for enhanced wire control. Our standard vertical feed has slightly more clearance but less wire control. See Tool Option for illustration. To order just add A8D in space 12. Not suitable for F&K and Hesse Mechatronics machine

A8D Option

Hole Angles Available with A8D Option		
Hole Angle	BSV	
	in.	mm
45°	.035	.89
52°	.050	1.27

Standard: Ø1/16 45°to 52° Hole Angle :
FS=.015"(.38mm) **BS"=.045"** (1.14mm)
Standard: (FS&BS) supplied unless otherwise specified. See Tool Options
No FS if T=MAX



Diamond Tip=DT
preferably for large Tools
Minimum of Groove
Radius=.00025
Groove to Groove=.0015

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DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES RN & RN-V
RIBBON WIRE

ORDERING INFORMATION
RIBBON BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

Help Example

SAMPLE PART NUMBER: M- RN-O-D-1/16-1-45-CG-.5x5-2-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11 12

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES: RN**
3. **WIRE FEED: O =** Standard Feed
   V = Vertical Feed
4. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
5. **SHANK DIA.:** Please Specify Diameter
6. **TOOL LENGTH: Please Specify Length**
7. **HOLE ANGLE: for RN (30°, 38°, 45°,52°,55°,60,°) for RN-V (45°,55°,60,°) for RN-V with A8D Opt.(45°,52°)**

(8) FOOT TYPE: **F** = Flat
CG = Cross Groove
DT = Diamond Tip
(Please specify Ribbon size)

(9) RIBBON SIZE: See Standard Chart
Example: .0005 x .005 = .5 x 5
Thickness x Width

(10) Bond Length: See Standard Chart
Example: BL of .0020 = 2
Note: We do not recommend bond lengths any larger than .005".

(11) FOOT FINISH:
M = Matte finish (FR, BR, & Bond Flat)
P = Polish finish (FR, BR, & Bond Flat)
MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

(12) See Tool Option

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals. Example: M-RN-O-X-1/16-3/4-45-CG-.5x5-2-M-A7 (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

For Vertical Feed: Tmax. for Dia. 1/16 =.0190 and for A8D: Tmax=.0243, Supplies only to Standard size Ø1/16, larger tool Ø are different.

Size Restrictions for Vertical Feed Tools		
STANDARD		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0150	.0190
3/32	.0300	.0210
A8D Option, RW up to .0070		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0070	.0243
A8D Option, RW .0080 and larger		
TD	Maximum Ribbon Width	Maximum "T" Dimension
1/16	.0120	.0190
Larger Tool Ø, Ribbon Width and "T" Dimensions available upon request		
RW = Ribbon Width		

STANDARD CHART RN — **FOR RIBBON THICKNESS: .00025" THROUGH .0020"** — **WIDTHS: .002" THROUGH .030"**

RIBBON WIDTH		RIBBON THICKNESS		BL		T(30°38°)		T(45° 52°)		T(55° 60°)		W	
in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance				±.0002	±05	±.0005	±13	±.0005	±13	±.0005	±13	± .0002	±5
.0020	51	.00025 through .00125	6.4 through 32	.0010	25	.0140	356	.0110	279	.0090	229	.0055	140
				.0015	38	.0140	356	.0110	279	.0090	229		
				.0020	51	.0150	381	.0120	305	.0090	229		
				.0025	64	.0150	381	.0120	305	.0100	254		
				.0030	76	.0160	406	.0130	330	.0100	254		
.0030	76	.00025 through .00125	6.4 through 32	.0010	25	.0150	381	.0130	330	.0100	254	.0065	165
				.0015	38	.0150	381	.0140	356	.0100	254		
				.0020	51	.0160	406	.0140	356	.0110	279		
				.0025	64	.0160	406	.0140	356	.0110	279		
				.0030	76	.0160	406	.0150	381	.0120	305		
.0040	102	.00025 through .00125	6.4 through 32	.0020	51	.0160	406	.0140	356	.0110	279	.0075	191
				.0025	64	.0160	406	.0140	356	.0110	279		
				.0030	76	.0160	406	.0150	381	.0120	305		
.0050	127	.0005 through .0020	13 through 51	.0020	51	.0160	406	.0140	356	.0110	279	.0085	216
				.0025	64	.0160	406	.0140	356	.0110	279		
				.0030	76	.0160	406	.0150	381	.0120	305		
				.0035	89	.0170	432	.0150	381	.0120	305		
.0070	178	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0140	356	.0110	279	.0125	318
				.0030	76	.0160	406	.0150	381	.0120	305		
				.0035	89	.0170	432	.0150	381	.0120	305		
				.0040	102	.0170	432	.0160	406	.0130	330		
.0100	254	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0140	356	.0110	279	.0155	394
				.0030	76	.0160	406	.0150	381	.0120	305		
				.0035	89	.0170	432	.0150	381	.0120	305		
				.0040	102	.0170	432	.0160	406	.0130	330		
.0120	305	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0140	356	.0110	279	.0175	445
				.0030	76	.0160	406	.0150	381	.0120	305		
				.0035	89	.0170	432	.0150	381	.0120	305		
				.0040	102	.0170	432	.0160	406	.0130	330		
.0150	381	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0140	356	.0110	279	.0205	521
				.0030	76	.0160	406	.0150	381	.0120	305		
				.0035	89	.0170	432	.0150	381	.0120	305		
				.0040	102	.0170	432	.0160	406	.0130	330		
.0200	508	.0005 through .0020	13 through 51	.0025	64	.0160	406	.0140	356	.0110	279	.0255	648
				.0030	76	.0160	406	.0150	381	.0120	305		
				.0035	89	.0170	432	.0150	381	.0120	305		
				.0040	102	.0170	432	.0160	406	.0130	330		

***Other sizes available upon request *All dimensions and tolerances are for reference only**
"T" To be determined according to the size of FR and BR and Hole Bore Length

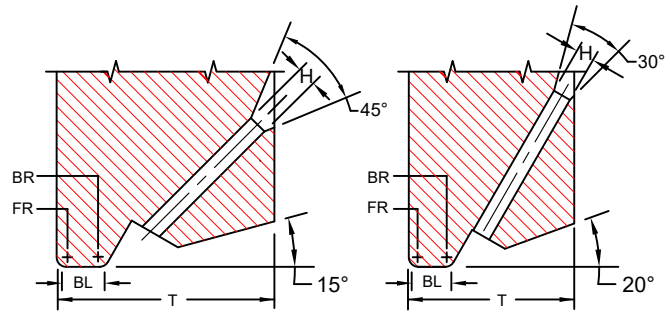
DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

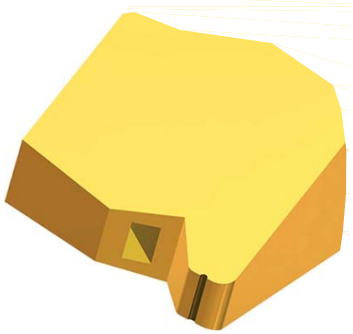
SERIES RCSH

FOR MANUAL AND SEMI-AUTOMATIC BONDERS

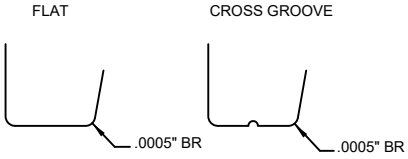
Help Example

Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics





FOR RCSH-SERIES



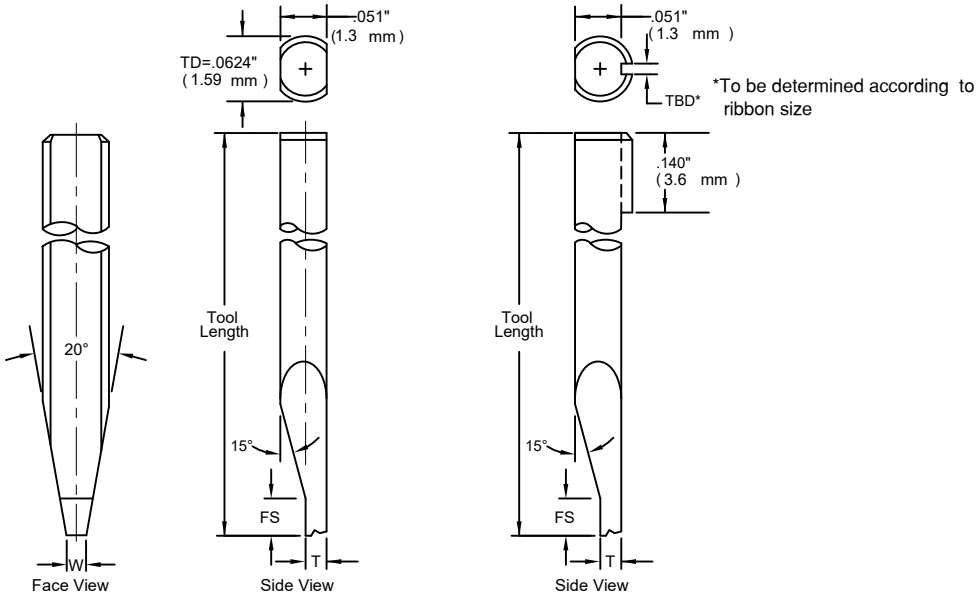
We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tip**

RCSH-SERIES
RIBBON WIRE

Ribbon Width: .0020" through .0200

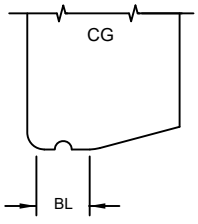
Ribbon Thickness: .00025" through .0020"

*** S1 Option**

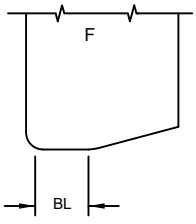


Standard: Ø 1/16, 45°,55°, 60° Hole Angle : FS"=.015" (.38 mm) .

Side View

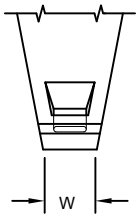


Cross Groove

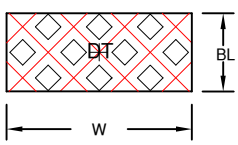


Flat

Back View



Top View



Diamond Tip=DT
preferably for large Tools
Minimum of Groove
Radius=.00025
Groove to Groove=.0015

Return to Table of Contents

SERIES RCSH

RIBBON WIRE

ORDERING INFORMATION
RIBBON BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

Help Example

SAMPLE PART NUMBER: M-RCSH-D-1/16-1-45-CG-.5x5-2-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - All other: See Material Selection Guide
2. **SERIES: RCSH**
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH:** Please Specify Length
6. **HOLE ANGLE:** for RCSH (45°,55°,60,°)

(7) FOOT TYPE: **F** = Flat; **CG** = Cross Groove; **DT** = Diamond Tip
(Please specify Ribbon size)

(8) RIBBON SIZE: See Standard Chart
Example: .0005 x .005 = .5 x 5
Thickness x Width

(9) Bond Length: See Standard Chart
Example: BL of .0020 = 2
Note: We do not recommend bond lengths any larger than .005".

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(12) See Tool Option

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals. Example: M-RCSH-X-1/16-1"-45-CG-.5x5-2-M-A7 (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

STANDARD CHART	RCSH	FOR RIBBON THICKNESS: .00025" THROUGH .0020" WIDTHS: .002" THROUGH .030"									
RIBBON WIDTH		RIBBON THICKNESS		BL		T(45°)		T(55° 60°)		W	
in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance				±.0002	±5	±.0005	±13	±.0005	±13	±.0002	±5
.0020	51	.00025 through .00125	6.4 through 32	.0010	25	.0090	229	.0080	203	.0055	140
				.0015	38	.0100	254	.0080	203		
				.0020	51	.0110	279	.0090	229		
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0030	76	.00025 through .00125	6.4 through 32	.0010	25	.0090	229	.0080	203	.0065	165
				.0015	38	.0100	254	.0080	203		
				.0020	51	.0110	279	.0090	229		
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0040	102	.00025 through .00125	6.4 through 32	.0020	51	.0110	279	.0090	229	.0075	191
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0050	127	.0005 through .0020	13 through 51	.0020	51	.0110	279	.0090	229	.0085	216
				.0025	64	.0115	292	.0090	229		
				.0030	76	.0115	292	.0100	254		
				.0035	89	.0120	305	.0100	254		
.0070	178	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0125	318
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0100	254	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0155	394
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0120	305	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0175	445
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0150	381	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0205	521
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0200	508	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0255	648
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		

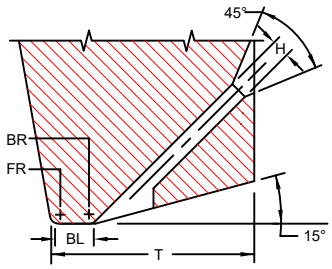
***Other sizes available upon request *All dimensions and tolerances are for reference only**
"T" To be determined according to the size of FR and BR and Hole Bore Length

SERIES RKNH

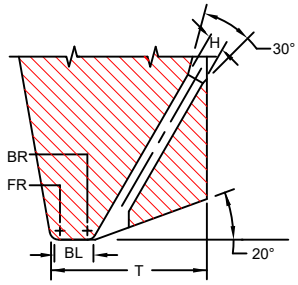
FOR AUTOMATIC BONDERS

Help Example

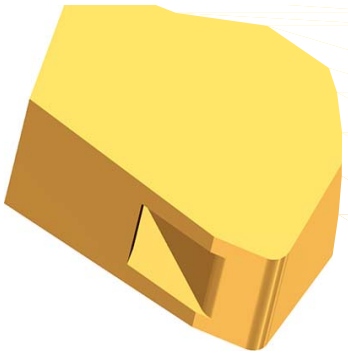
Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics



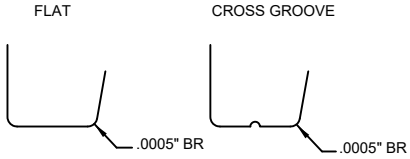
45° Hole Angle



55°-60° Hole Angle



FOR RKNH-SERIES

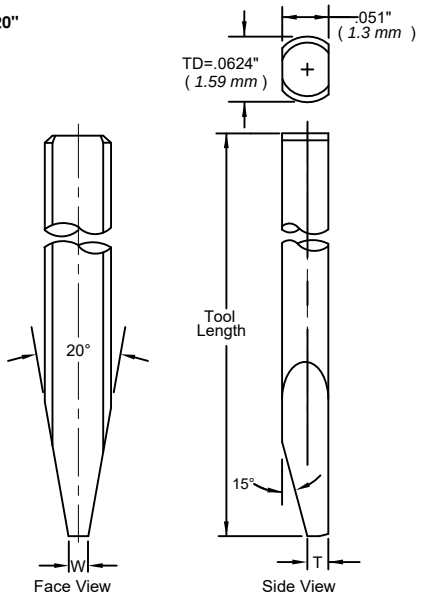


We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tip**

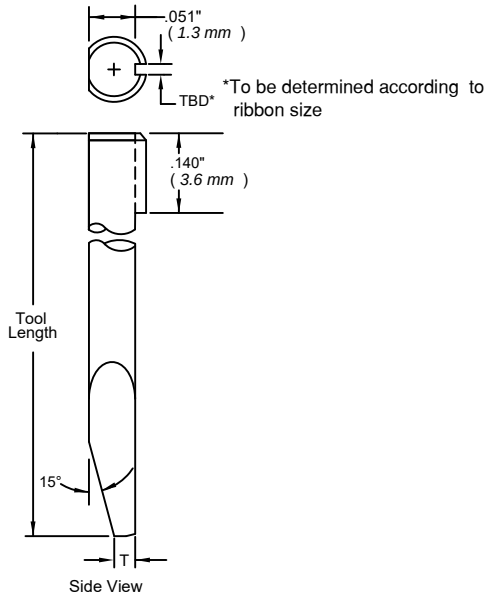
RKNH-SERIES
RIBBON WIRE

Ribbon Width: .0020" through .0200

Ribbon Thickness: .00025" through .0020"

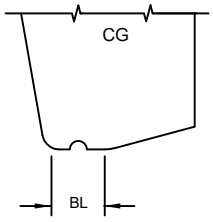


*** S1 Option**

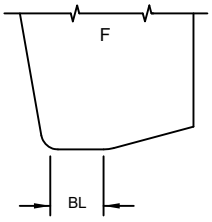


Standard: Ø 1/16, 45°,55°, 60° Hole Angle

Side View

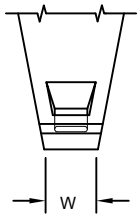


Cross Groove

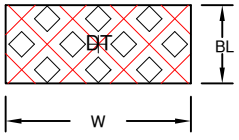


Flat

Back View



Top View



Diamond Tip=DT
preferably for large Tools
Minimum of Groove
Radius=.00025
Groove to Groove=.0015

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DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES RKNH
RIBBON WIRE

ORDERING INFORMATION
RIBBON BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

Help Example

SAMPLE PART NUMBER: M-RKNH-D-1/16-1"-45-CG-.5x5-2-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** RKNH
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH:** Please Specify Length
6. **HOLE ANGLE:** for RKNH (45°,55°,60,°)

(7) FOOT TYPE: **F** = Flat
CG = Cross Groove
DT = Diamond Tip
(Please specify Ribbon size)

(8) RIBBON SIZE: See Standard Chart
Example: .0005 x .005 = .5 x 5
Thickness x Width

(9) Bond Length: See Standard Chart
Example: BL of .0020 = 2
Note: We do not recommend bond lengths any larger than .005".

(10) FOOT FINISH:
M = Matte finish (FR, BR, & Bond Flat)
P = Polish finish (FR, BR, & Bond Flat)
MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals. Example: M-RKNH-X-1/16-1"-45-CG-.5x5-2-M-A7 (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

STANDARD CHART	RKNH			FOR RIBBON THICKNESS: .00025" THROUGH .0020" WIDTHS: .002" THROUGH .030"							
RIBBON WIDTH		RIBBON THICKNESS		BL		T(45°)		T(55° 60°)		W	
in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance				±.0002	±5	±.0005	±13	±.0005	±13	±.0002	±5
.0020	51	.00025 through .00125	6.4 through 32	.0010	25	.0090	229	.0080	203	.0055	140
				.0015	38	.0100	254	.0080	203		
				.0020	51	.0110	279	.0090	229		
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0030	76	.00025 through .00125	6.4 through 32	.0010	25	.0090	229	.0080	203	.0065	165
				.0015	38	.0100	254	.0080	203		
				.0020	51	.0110	279	.0090	229		
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0040	102	.00025 through .00125	6.4 through 32	.0020	51	.0110	279	.0090	229	.0075	191
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0050	127	.0005 through .0020	13 through 51	.0020	51	.0110	279	.0090	229	.0085	216
				.0025	64	.0115	292	.0090	229		
				.0030	76	.0115	292	.0100	254		
				.0035	89	.0120	305	.0100	254		
.0070	178	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0125	318
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0100	254	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0155	394
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0120	305	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0175	445
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0150	381	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0205	521
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0200	508	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0255	648
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		

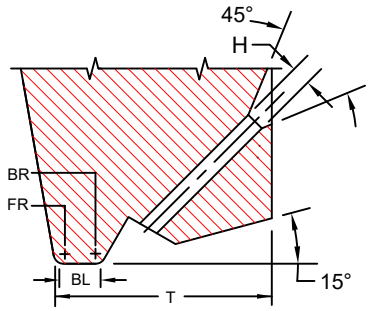
***Other sizes available upon request *All dimensions and tolerances are for reference only**
"T" To be determined according to the size of FR and BR and Hole Bore Length

SERIES RKSH

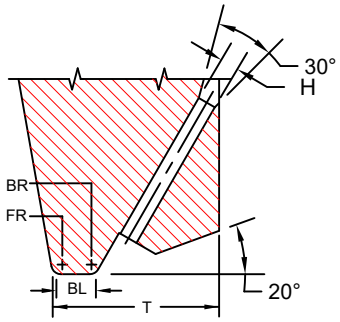
FOR MANUAL AND SEMI-AUTOMATIC BONDERS

Help Example

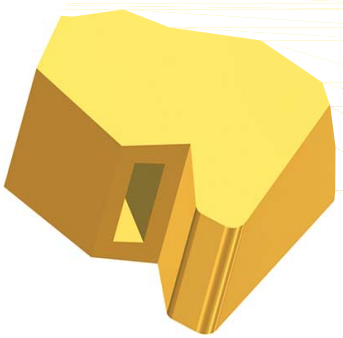
Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics



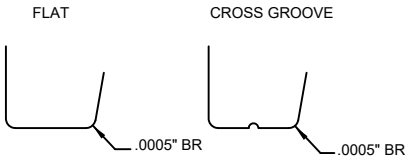
45° Hole Angle



55°-60° Hole Angle



FOR RKSH-SERIES



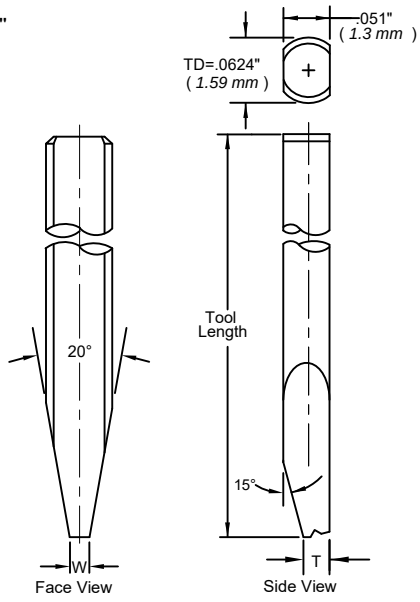
We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tip**

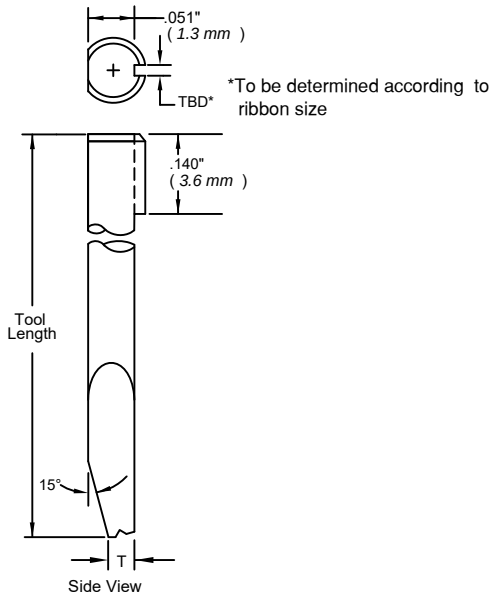
RKSH-SERIES RIBBON WIRE

Ribbon Width: .0020" through .0200

Ribbon Thickness: .00025" through .0020"

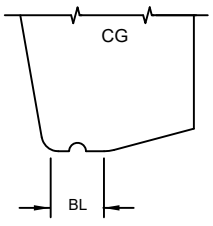
*** S1 Option**



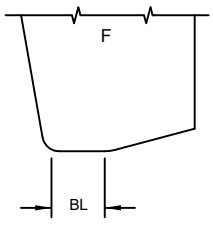


Standard: Ø 1/16, Hole Angle : 45°,55°, 60° .

Side View

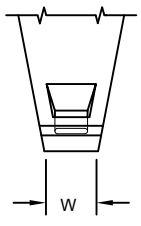


Cross Groove

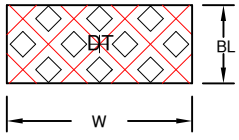


Flat

Back View



Top View



Diamond Tip=DT
preferably for large Tools
Minimum of Groove
Radius=.00025
Groove to Groove=.0015

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DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES RKSH

RIBBON WIRE

ORDERING INFORMATION
RIBBON BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

Help Example

SAMPLE PART NUMBER: M-RKSH-D-1/16-1"-45-CG-.5x5-2-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - All other: See Material Selection Guide
2. **SERIES:** RKSH
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH:** Please Specify Length
6. **HOLE ANGLE:** for RKSH **(45°,55°,60,°)**

(7) FOOT TYPE:
- **F** = Flat
- **CG** = Cross Groove
- **DT** = Diamond Tip
- **(Please specify Ribbon size)**

(8) RIBBON SIZE: See Standard Chart
Example: .0005 x .005 = .5 x 5
Thickness x Width

(9) Bond Length: See Standard Chart
Example: BL of .0020 = 2
Note: We do not recommend bond lengths any larger than .005".

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals. Example: M-RKSH-X-1/16-1"-45-CG-.5x5-2-M-A7 (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

STANDARD CHART **RKSH** **FOR RIBBON THICKNESS: .00025" THROUGH .0020"** **WIDTHS: .002" THROUGH .030"**

RIBBON WIDTH		RIBBON THICKNESS		BL		T(45°)		T(55° 60°)		W	
in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance				±.0002	±5	±.0005	±13	±.0005	±13	±.0002	±5
.0020	51	.00025 through .00125	6.4 through 32	.0010	25	.0090	229	.0080	203	.0055	140
				.0015	38	.0100	254	.0080	203		
				.0020	51	.0110	279	.0090	229		
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0030	76	.00025 through .00125	6.4 through 32	.0010	25	.0090	229	.0080	203	.0065	165
				.0015	38	.0100	254	.0080	203		
				.0020	51	.0110	279	.0090	229		
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0040	102	.00025 through .00125	6.4 through 32	.0020	51	.0110	279	.0090	229	.0075	191
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0050	127	.0005 through .0020	13 through 51	.0020	51	.0110	279	.0090	229	.0085	216
				.0025	64	.0115	292	.0090	229		
				.0030	76	.0115	292	.0100	254		
				.0035	89	.0120	305	.0100	254		
.0070	178	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0125	318
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0100	254	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0155	394
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0120	305	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0175	445
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0150	381	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0205	521
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0200	508	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0255	648
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		

***Other sizes available upon request *All dimensions and tolerances are for reference only**
*"T" To be determined according to the size of FR and BR and Hole Bore Length

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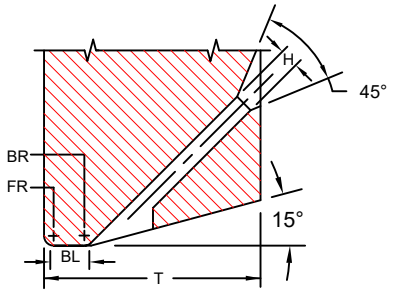
SERIES RNH

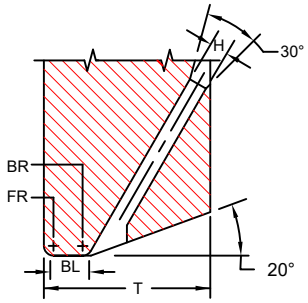
FOR AUTOMATIC BONDERS

Help Example

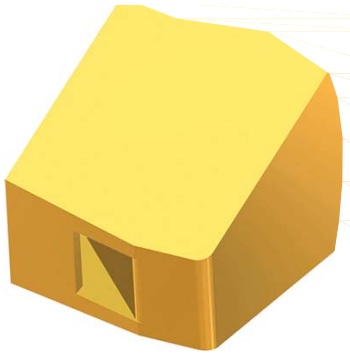
Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics



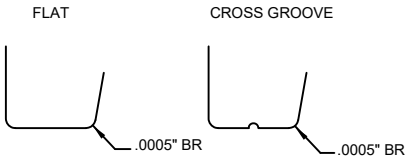
45° Hole Angle



55°-60° Hole Angle



FOR RNH-SERIES



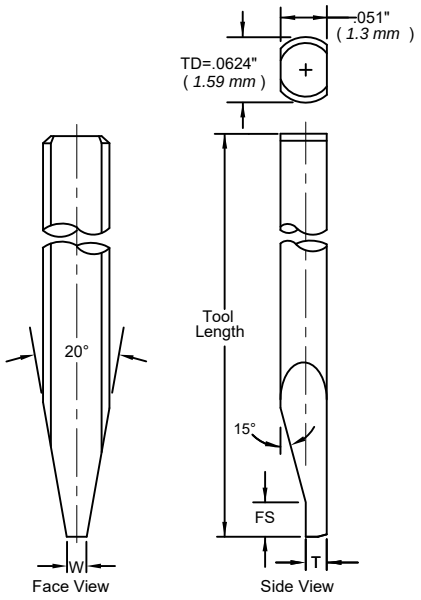
We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tip**

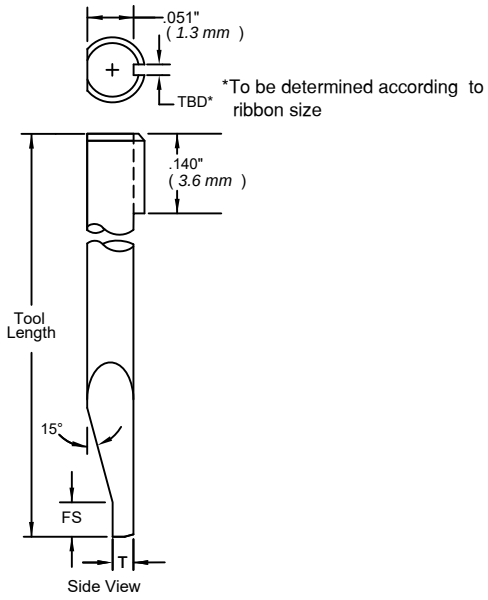
RNH-SERIES
RIBBON WIRE

Ribbon Width: .0020" through .0200

Ribbon Thickness: .00025" through .0020"

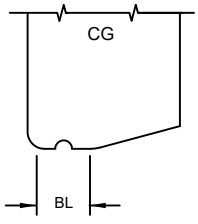
* **S1 Option**



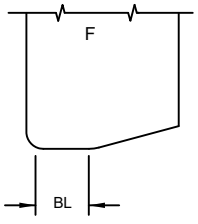


Standard: Ø 1/16, Hole Angle: 45°,55°, 60° , FS"=.015" (.38 mm)

Side View

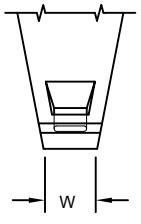


Cross Groove

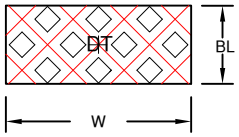


Flat

Back View



Top View



Diamond Tip=DT
preferably for large Tools
Minimum of Groove
Radius=.00025
Groove to Groove=.0015

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SERIES RNH
RIBBON WIRE

ORDERING INFORMATION
RIBBON BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

Help Example

SAMPLE PART NUMBER: M-RNH-D-1/16-1"-45-CG-.5x5-2-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - All other: See Material Selection Guide
2. **SERIES:** RNH
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH:** Please Specify Length
6. **HOLE ANGLE:** for RNH (45°,55°,60,°)

(7) FOOT TYPE: **F** = Flat; **CG** = Cross Groove; **DT** = Diamond Tip (Please specify Ribbon size)

(8) RIBBON SIZE: See Standard Chart
Example: .0005 x .005 = .5 x 5
Thickness x Width

(9) Bond Length: See Standard Chart
Example: BL of .0020 = 2
Note: We do not recommend bond lengths any larger than .005".

(10) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(11) See Tool Option

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals. Example: M-RNH-X-1/16-1"-45-CG-.5x5-2-M-A7 (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

STANDARD CHART	RNH			FOR RIBBON THICKNESS: .00025" THROUGH .0020" WIDTHS: .002" THROUGH .030"							
RIBBON WIDTH		RIBBON THICKNESS		BL		T(45°)		T(55° 60°)		W	
in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance				±.0002	±5	±.0005	±13	±.0005	±13	±.0002	±5
.0020	51	.00025 through .00125	6.4 through 32	.0010	25	.0090	229	.0080	203	.0055	140
				.0015	38	.0100	254	.0080	203		
				.0020	51	.0110	279	.0090	229		
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0030	76	.00025 through .00125	6.4 through 32	.0010	25	.0090	229	.0080	203	.0065	165
				.0015	38	.0100	254	.0080	203		
				.0020	51	.0110	279	.0090	229		
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0040	102	.00025 through .00125	6.4 through 32	.0020	51	.0110	279	.0090	229	.0075	191
				.0025	64	.0115	292	.0100	254		
				.0030	76	.0115	292	.0100	254		
.0050	127	.0005 through .0020	13 through 51	.0020	51	.0110	279	.0090	229	.0085	216
				.0025	64	.0115	292	.0090	229		
				.0030	76	.0115	292	.0100	254		
				.0035	89	.0120	305	.0100	254		
.0070	178	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0125	318
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0100	254	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0155	394
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0120	305	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0175	445
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0150	381	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0205	521
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		
.0200	508	.0005 through .0020	13 through 51	.0025	64	.0120	305	.0100	254	.0255	648
				.0030	76	.0120	305	.0100	254		
				.0035	89	.0125	318	.0110	279		
				.0040	102	.0125	318	.0110	279		

***Other sizes available upon request *All dimensions and tolerances are for reference only**
"T" To be determined according to the size of FR and BR and Hole Bore Length

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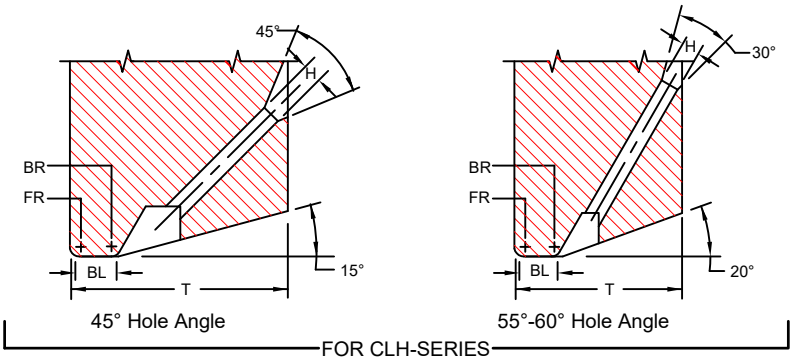
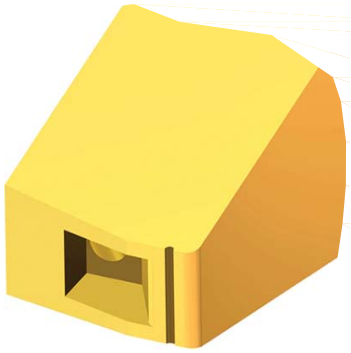
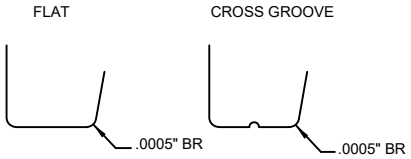
SERIES CLH

FOR AUTOMATIC BONDERS

Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics





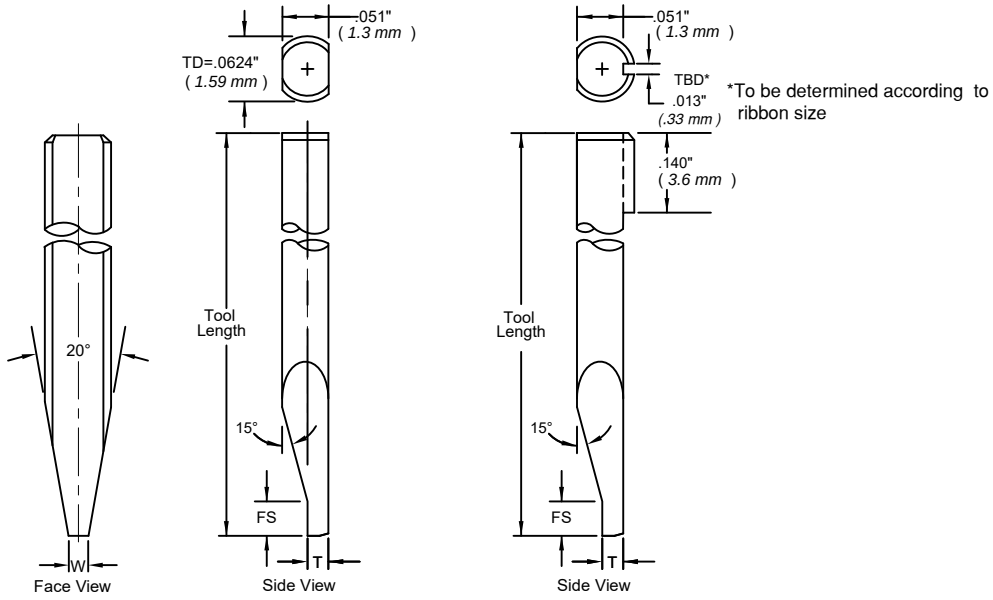


We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tips**

CLH-SERIES

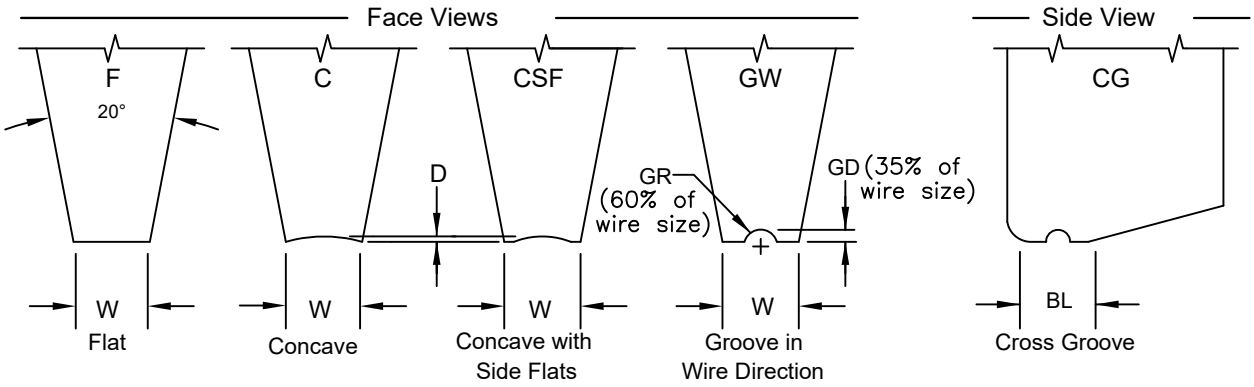
WIREØ .0005" through .0020

S1 Option



*To be determined according to ribbon size

Standard: Ø 1/16, Hole Angle: 45°,55°, 60° , FS"=.015" (.38 mm)



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SERIES CLH

SMALL WIRE

ORDERING INFORMATION
SMALL WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-CLH-D-1/16-3/4-45-CG-2020-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES:** CLH
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH:** Please Specify Length
6. **HOLE ANGLE:** 45°,55°,60
7. **(7) FOOT TYPE:**
   - **F** = Flat
   - **C** = Concave
   - **CSF** = Concave with Side Flats (CSF not available with ceramic tools)
   - **CG** = Cross Groove
   - **GW** = Groove in wire direction (Please specify wire size)
8. **(8) TOOL SIZE**: See Standard Chart
9. **(9) FOOT FINISH:**
   - **M =** Matte finish (FR, BR, & Bond Flat)
   - **P =** Polish finish (FR, BR, & Bond Flat)
   - **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)
10. **(10)** S1 and other Option See Tool Options

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-CLH-X-1/16-3/4-45-F-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

STANDARD CHART **CLH SMALL WIRE:** **FOR WIRE DIAMETERS .0005" THROUGH .0020"**

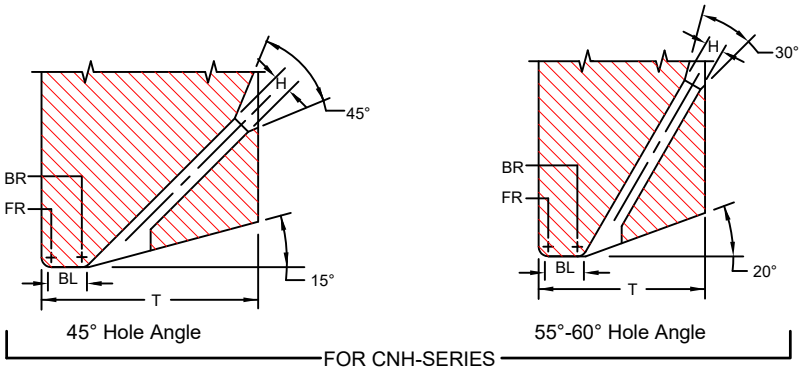
TS	H		BL		D		T 45°		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0090	229	.0075	191	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0090	229	.0075	191	.0025	64	**.0005**	**13**
1510	.0015	38	.0010	25	.0002	5	.0100	254	.0080	203	.0025	64	**through**	
1513	.0015	38	.0013	33	.0002	5	.0100	254	.0080	203	.0025	64	**.0007**	**18**
1515	.0015	38	.0015	38	.0002	5	.0100	254	.0080	203	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0110	279	.0090	229	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0100	254	.0090	229	*.0040	102		
2015	.0020	51	.0015	38	.0002	5	.0110	279	.0100	254	.0040	102	**.0007**	**18**
2020	.0020	51	.0020	51	.0002	5	.0110	279	.0100	254	.0040	102	**through**	
2025	.0020	51	.0025	64	.0002	5	.0120	305	.0110	279	.0040	102	**.0010**	**25**
2030	.0020	51	.0030	76	.0002	5	.0120	305	.0110	279	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0130	330	.0110	279	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0130	330	.0120	305	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0140	356	.0120	305	.0050	127	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0140	356	.0130	330	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0150	381	.0130	330	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0140	356	.0120	305	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0140	356	.0130	330	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0150	381	.0130	330	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0150	381	.0140	356	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0160	406	.0140	356	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0150	381	.0130	330	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0150	381	.0130	330	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0160	406	.0140	356	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0160	406	.0140	356	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0170	432	.0150	381	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0170	432	.0150	381	.0060	152		

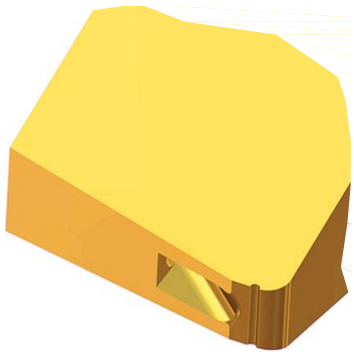
***Other sizes available upon request** ***All dimensions and tolerances are for reference only**
TOOL SIZE=TS , WIRE DIAMETER =WD, "T" To be determined according to the size of FR and BR and Hole Bore Length

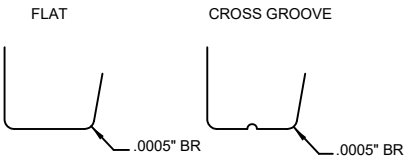
SERIES CNH

FOR AUTOMATIC BONDERS

Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics





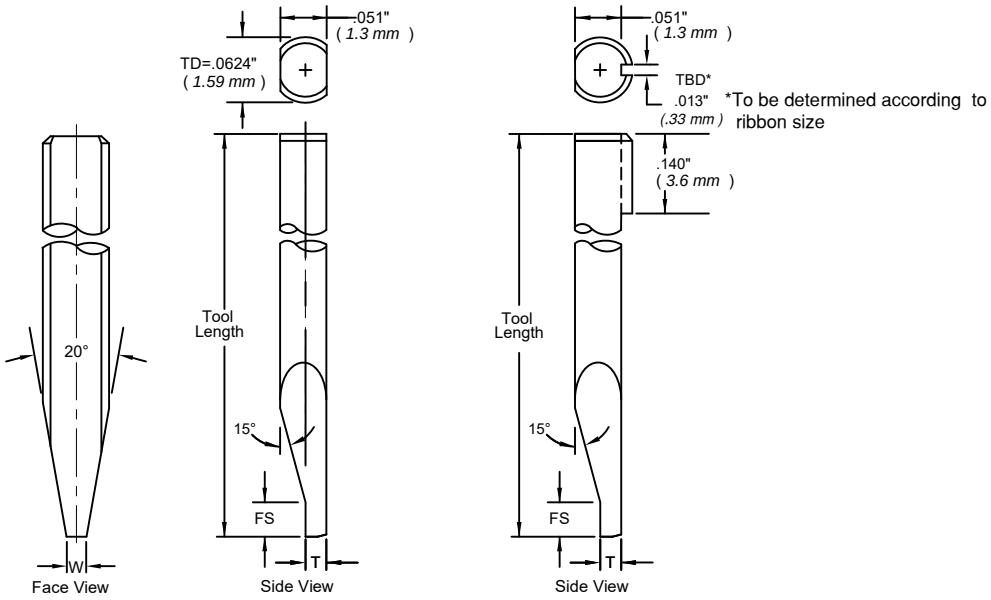


We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tips**

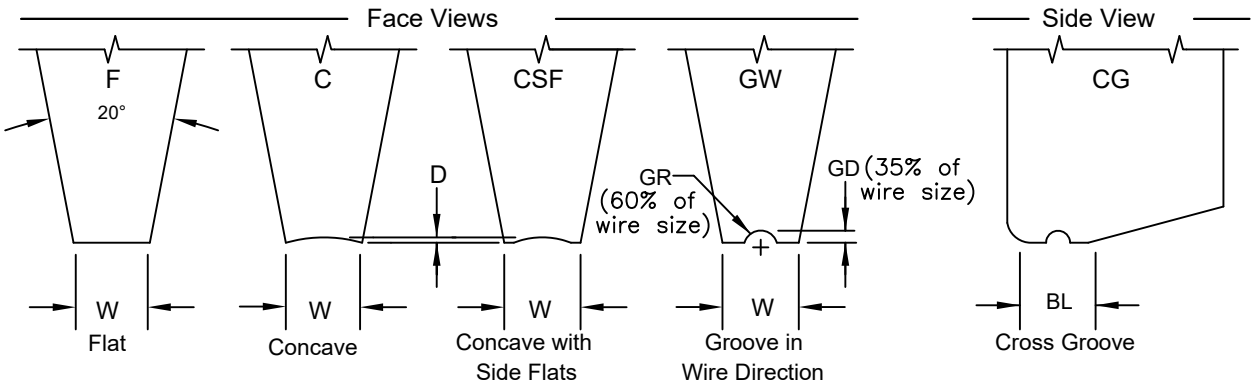
CNH-SERIES

WIREØ .0005" through .0020

S1 Option



Standard: Ø 1/16, Hole Angle: 45°,55°, 60° , FS"=.015" (.38 mm)



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SERIES CNH

SMALL WIRE

ORDERING INFORMATION
SMALL WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-CNH-D-1/16-3/4-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES:** CNH
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH:** Please Specify Length
6. **HOLE ANGLE:** 45°,55°,60
7. **(7) FOOT TYPE:**
   - **F** = Flat
   - **C** = Concave
   - **CSF** = Concave with Side Flats (CSF not available with ceramic tools)
   - **CG** = Cross Groove
   - **GW** = Groove in wire direction (Please specify wire size)
8. **(8) TOOL SIZE**: See Standard Chart
9. **(9) FOOT FINISH:**
   - **M =** Matte finish (FR, BR, & Bond Flat)
   - **P =** Polish finish (FR, BR, & Bond Flat)
   - **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)
10. **(10)** S1 and other Option See Tool Options

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-CNH-X-1/16-3/4-45-F-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

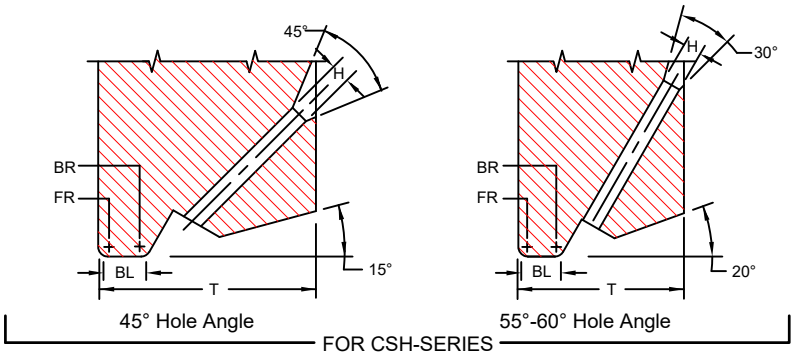
STANDARD CHART	CNH SMALL WIRE:				FOR WIRE DIAMETERS .0005" THROUGH .0020"									
TS	**H**		**BL**		**D**		**T 45°**		**T(55° 60°)**		**W**		**SUGGESTED WD**	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0080	203	.0075	191	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0080	203	.0075	191	.0025	64	**.0005**	**13**
1510	.0015	38	.0010	25	.0002	5	.0090	229	.0080	203	.0025	64	**through**	
1513	.0015	38	.0013	33	.0002	5	.0090	229	.0080	203	.0025	64	**.0007**	**18**
1515	.0015	38	.0015	38	.0002	5	.0100	254	.0080	203	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0100	254	.0090	229	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0100	254	.0090	229	* .0040	102		
2015	.0020	51	.0015	38	.0002	5	.0110	279	.0100	254	.0040	102	**.0007**	**18**
2020	.0020	51	.0020	51	.0002	5	.0110	279	.0100	254	.0040	102	**through**	
2025	.0020	51	.0025	64	.0002	5	.0120	305	.0110	279	.0040	102	**.0010**	**25**
2030	.0020	51	.0030	76	.0002	5	.0120	305	.0110	279	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0120	305	.0100	254	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0130	330	.0100	254	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0130	330	.0110	279	.0050	127	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0140	356	.0120	305	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0140	356	.0120	305	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0130	330	.0110	279	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0130	330	.0120	305	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0140	356	.0120	305	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0140	356	.0130	330	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0150	381	.0130	330	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0150	381	.0120	305	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0150	381	.0130	330	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0160	406	.0130	330	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0160	406	.0140	356	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0170	432	.0140	356	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0170	432	.0140	356	.0060	152		

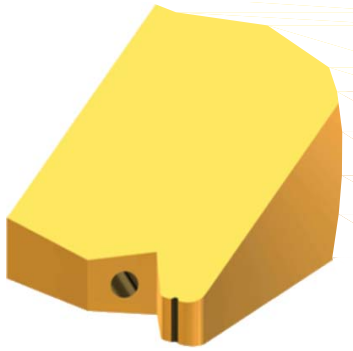
***Other sizes available upon request *All dimensions and tolerances are for reference only**

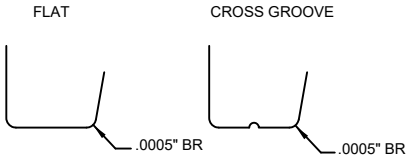
TOOL SIZE=TS , WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

SERIES CSH

Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics





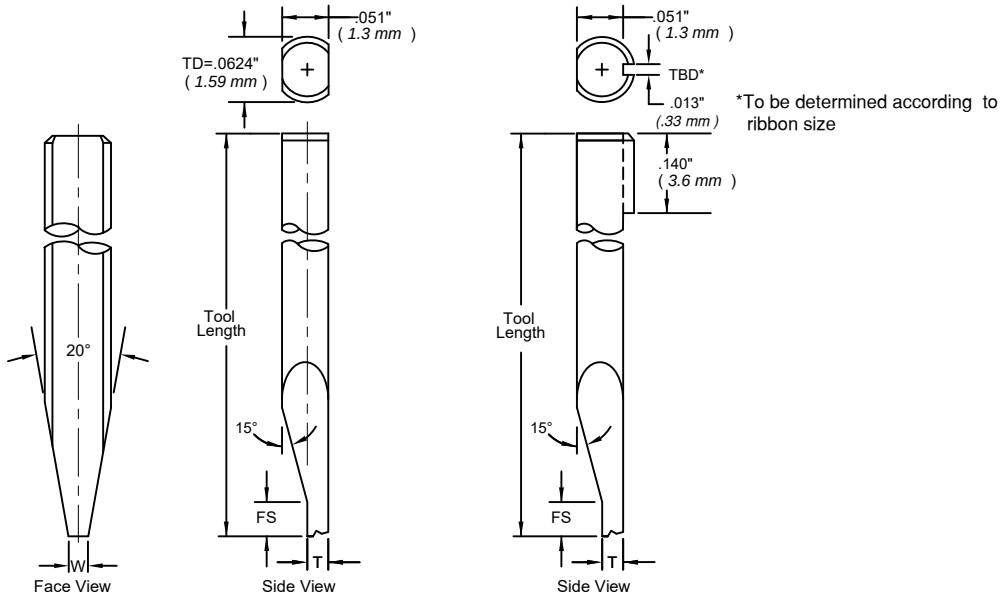


We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tips**

CSH-SERIES

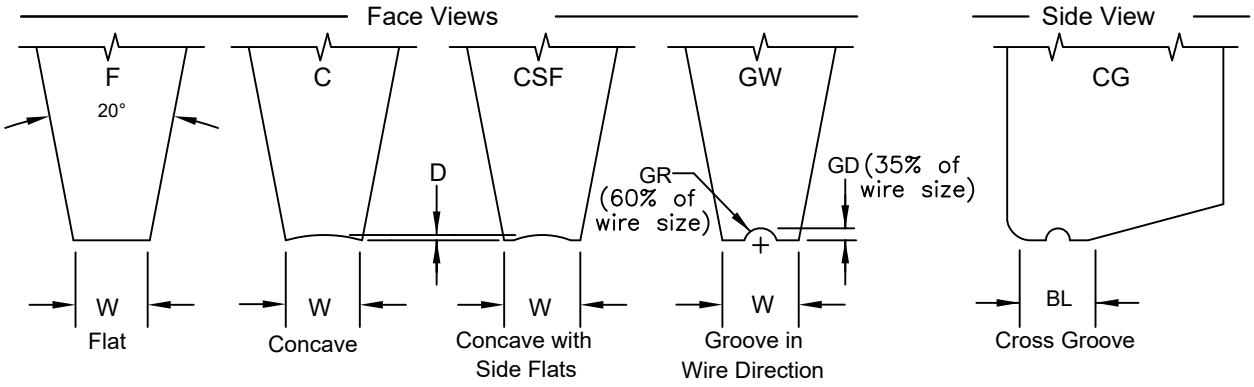
WIREØ .0005" through .0020

S1 Option



*To be determined according to ribbon size

Standard: Ø 1/16, Hole Angle: 45°,55°, 60° , FS"=.015" (.38 mm)



SERIES CSH

SMALL WIRE

ORDERING INFORMATION
SMALL WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-CSH-D-1/16-3/4-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES:** CSH
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH:** Please Specify Length
6. **HOLE ANGLE:** 45°,55°,60

(7) **FOOT TYPE:**
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats (CSF not available with ceramic tools)
- **CG** = Cross Groove
- **GW** = Groove in wire direction (Please specify wire size)

(8) **TOOL SIZE**: See Standard Chart

(9) **FOOT FINISH:**
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(10) S1 and other Option See Tool Options

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-CSH-X-1/16-3/4-45-F-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

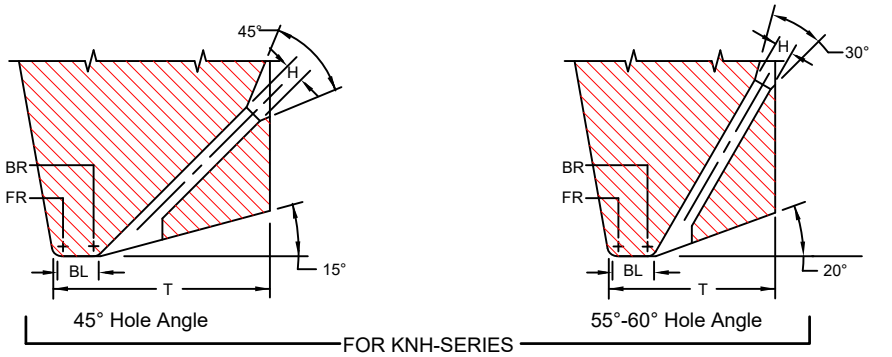
STANDARD CHART	CSH SMALL WIRE:						FOR WIRE DIAMETERS .0005" THROUGH .0020"							
TS	H		BL		D		T 45°		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0090	229	.0075	191	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0090	229	.0075	191	.0025	64	**.0005**	**13**
1510	.0015	38	.0010	25	.0002	5	.0100	254	.0080	203	.0025	64	**through**	
1513	.0015	38	.0013	33	.0002	5	.0100	254	.0080	203	.0025	64	**.0007**	**18**
1515	.0015	38	.0015	38	.0002	5	.0100	254	.0080	203	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0110	279	.0090	229	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0100	254	.0080	203	*.0040	102		
2015	.0020	51	.0015	38	.0002	5	.0110	279	.0090	229	.0040	102	**.0007**	**18**
2020	.0020	51	.0020	51	.0002	5	.0110	279	.0090	229	.0040	102	**through**	
2025	.0020	51	.0025	64	.0002	5	.0120	305	.0100	254	.0040	102	**.0010**	**25**
2030	.0020	51	.0030	76	.0002	5	.0120	305	.0100	254	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0130	330	.0100	254	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0130	330	.0110	279	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0140	356	.0110	279	.0050	127	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0150	381	.0120	305	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0150	381	.0120	305	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0130	330	.0120	305	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0140	356	.0130	330	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0140	356	.0130	330	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0150	381	.0140	356	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0150	381	.0140	356	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0140	356	.0130	330	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0150	381	.0130	330	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0150	381	.0140	356	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0160	406	.0140	356	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0160	406	.0150	381	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0160	406	.0150	381	.0060	152		

***Other sizes available upon request *All dimensions and tolerances are for reference only**
TOOL SIZE=TS , WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

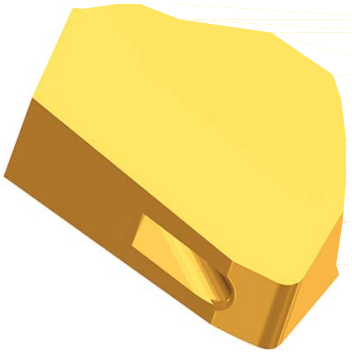
SERIES KNH

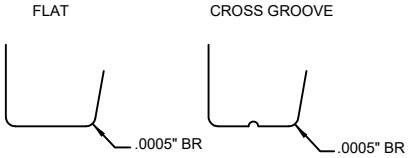
FOR AUTOMATIC BONDERS

Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics



FOR KNH-SERIES



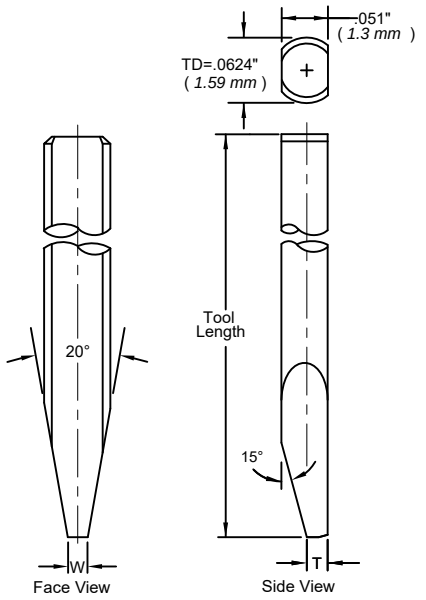


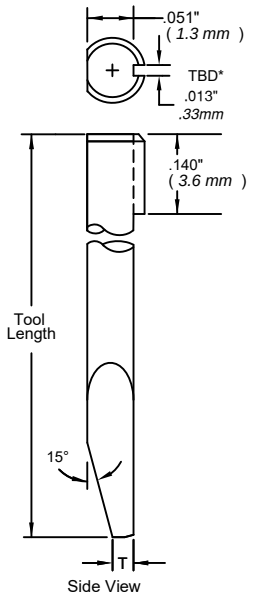
We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tips**

KNH-SERIES

WIREØ .0005" through .0020

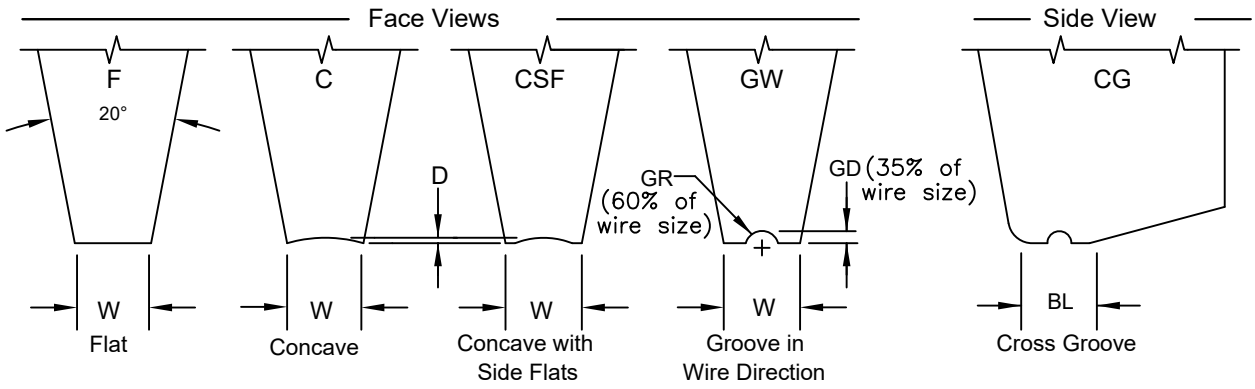
S1 Option





*To be determined according to ribbon size

Standard: Ø 1/16, Hole Angle: 45°,55°, 60°



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SERIES KNH

SMALL WIRE

ORDERING INFORMATION
SMALL WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-KNH-D-1/16-3/4-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES:** KNH
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH:** Please Specify Length
6. **HOLE ANGLE:** 45°,55°,60

(7) **FOOT TYPE:**
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats (CSF not available with ceramic tools)
- **CG** = Cross Groove
- **GW** = Groove in wire direction (Please specify wire size)

(8) **TOOL SIZE**: See Standard Chart

(9) **FOOT FINISH:**
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(10) **S1** and other Option See Tool Options

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-KNH-X-1/16-3/4-45-F-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

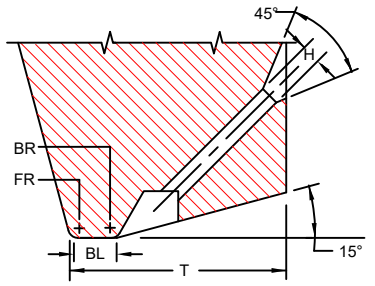
STANDARD CHART	KNH SMALL WIRE:						FOR WIRE DIAMETERS .0005" THROUGH .0020"							
TS	**H**		**BL**		**D**		**T 45°**		**T(55° 60°)**		**W**		**SUGGESTED WD**	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0085	216	.0075	191	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0085	216	.0075	191	.0025	64	**.0005**	**13**
1510	.0015	38	.0010	25	.0002	5	.0090	229	.0080	203	.0025	64	**through**	
1513	.0015	38	.0013	33	.0002	5	.0090	229	.0080	203	.0025	64	**.0007**	**18**
1515	.0015	38	.0015	38	.0002	5	.0090	229	.0080	203	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0100	254	.0090	229	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0100	254	.0090	229	*.0040	102		
2015	.0020	51	.0015	38	.0002	5	.0100	254	.0090	229	.0040	102	**.0007**	**18**
2020	.0020	51	.0020	51	.0002	5	.0110	279	.0090	229	.0040	102	**through**	
2025	.0020	51	.0025	64	.0002	5	.0110	279	.0100	254	.0040	102	**.0010**	**25**
2030	.0020	51	.0030	76	.0002	5	.0120	305	.0100	254	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0120	305	.0100	254	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0120	305	.0110	279	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0130	330	.0110	279	.0050	127	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0130	330	.0110	279	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0140	356	.0120	305	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0130	330	.0110	279	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0130	330	.0120	305	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0140	356	.0120	305	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0140	356	.0130	330	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0150	381	.0130	330	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0150	381	.0120	305	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0150	381	.0130	330	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0160	406	.0130	330	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0160	406	.0140	356	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0170	432	.0140	356	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0170	432	.0150	381	.0060	152		

***Other sizes available upon request *All dimensions and tolerances are for reference only**
TOOL SIZE=TS, WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

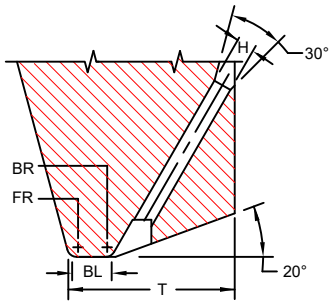
SERIES KNLH

FOR AUTOMATIC BONDERS

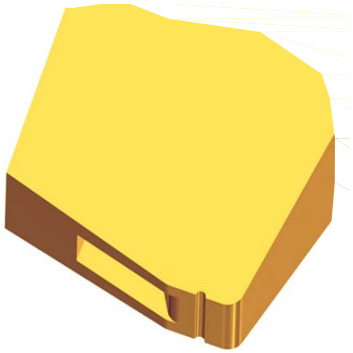
Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics



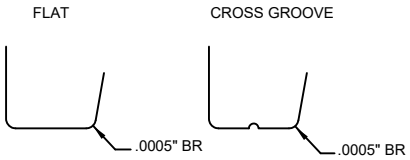
45° Hole Angle



55°-60° Hole Angle



FOR KNLH-SERIES

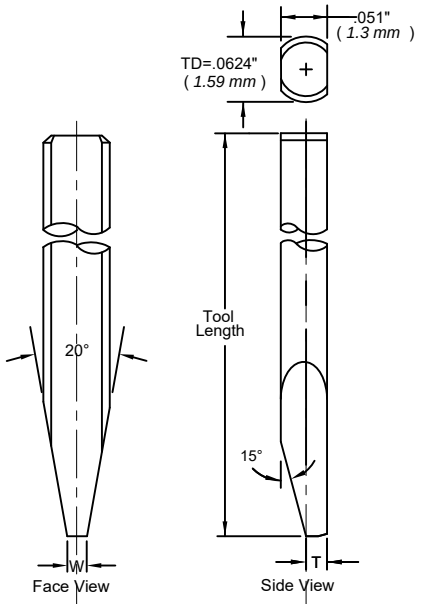


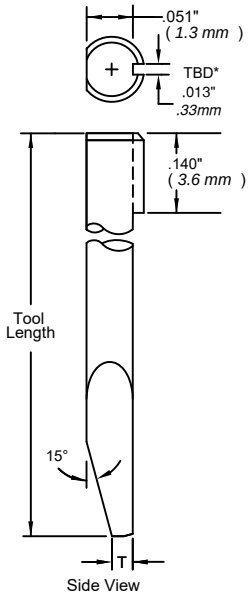
We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tips**

KNLH-SERIES

WIREØ .0005" through .0020

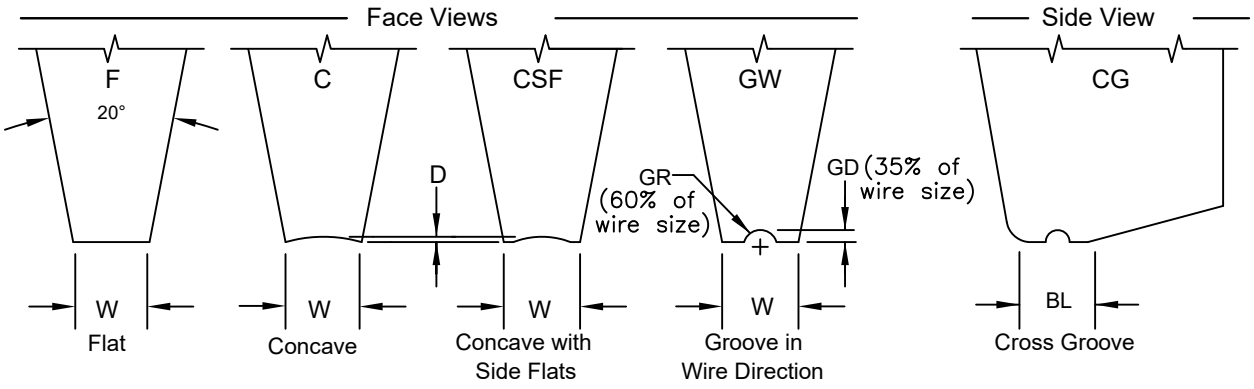
S1 Option





*To be determined according to ribbon size

Standard: Ø 1/16, Hole Angle: 45°,55°, 60°



Return to Table of Contents

SERIES KNLH

SMALL WIRE

ORDERING INFORMATION
SMALL WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-KNLH-D-1/16-3/4-45-CG-2020-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES:** KNLH
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH:** Please Specify Length
6. **HOLE ANGLE:** 45°,55°,60

(7) **FOOT TYPE:**
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats (CSF not available with ceramic tools)
- **CG** = Cross Groove
- **GW** = Groove in wire direction (Please specify wire size)

(8) **TOOL SIZE**: See Standard Chart

(9) **FOOT FINISH:**
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(10) S1 and other Option See Tool Options

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-KNLH-X-1/16-3/4-45-F-2020-M (X) FR=.0012, BR=.0007

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

STANDARD CHART — **KNLH SMALL WIRE: FOR WIRE DIAMETERS .0005" THROUGH .0020"**

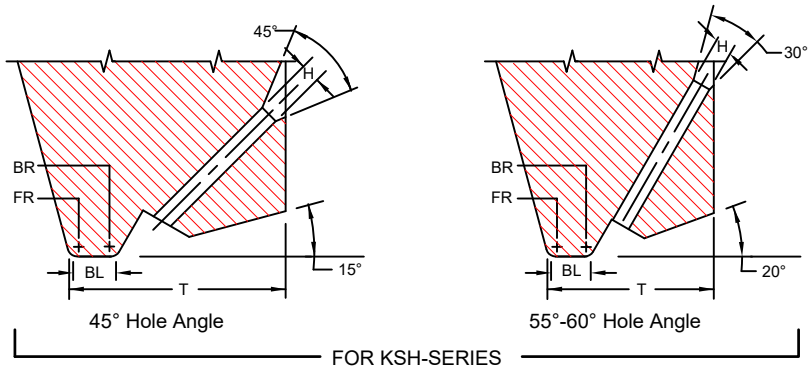
TS	H		BL		D		T 45°		T(55° 60°)		W		SUGGESTED WD	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	+.0005	+13		
1505	.0015	38	.0005	13	.0002	5	.0090	229	.0075	191	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0090	229	.0075	191	.0025	64	.0005 through .0007	13 through 18
1510	.0015	38	.0010	25	.0002	5	.0100	254	.0080	203	.0025	64		
1513	.0015	38	.0013	33	.0002	5	.0100	254	.0080	203	.0025	64		
1515	.0015	38	.0015	38	.0002	5	.0100	254	.0080	203	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0110	279	.0090	229	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	±.0002	±5		
2010	.0020	51	.0010	25	.0002	5	.0100	254	.0090	229	*.0040	102		
2015	.0020	51	.0015	38	.0002	5	.0110	279	.0100	254	.0040	102	.0007 through .0010	18 through 25
2020	.0020	51	.0020	51	.0002	5	.0120	305	.0100	254	.0040	102		
2025	.0020	51	.0025	64	.0002	5	.0130	330	.0100	254	.0040	102		
2030	.0020	51	.0030	76	.0002	5	.0130	330	.0110	279	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0130	330	.0110	279	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0130	330	.0120	305	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0140	356	.0120	305	.0050	127	.0013	33
2535	.0025	64	.0035	89	.0002	5	.0140	356	.0130	330	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0150	381	.0130	330	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0140	356	.0120	305	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0140	356	.0130	330	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0150	381	.0130	330	.0050	127	.0015	38
3035	.0030	76	.0035	89	.0003	8	.0150	381	.0140	356	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0160	406	.0140	356	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0150	381	.0130	330	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0150	381	.0130	330	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0160	406	.0140	356	.0060	152	.0020	51
3540	.0035	89	.0040	102	.0003	8	.0160	406	.0140	356	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0170	432	.0150	381	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0170	432	.0150	381	.0060	152		

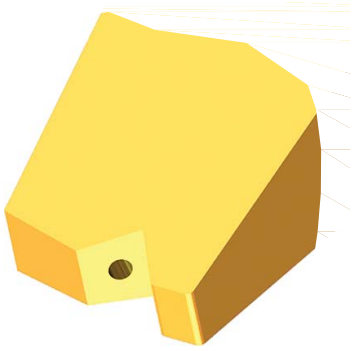
***Other sizes available upon request *All dimensions and tolerances are for reference only**
TOOL SIZE=TS, WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

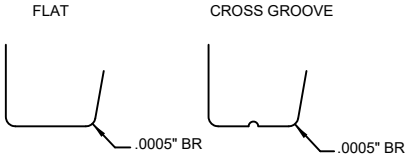
SERIES KSH

FOR MANUAL AND
SEMI-AUTOMATIC BONDERS

Double Flat ,Vertical Feed for Palomar (Hughes)
Hesse Mechatronics





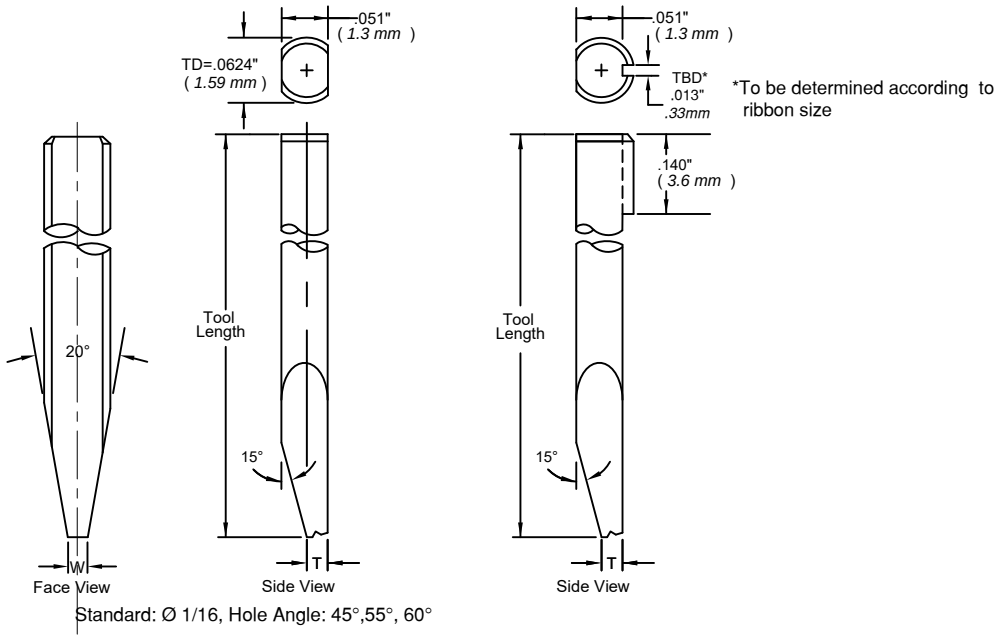


We recommend a .0005" back radius and a cross groove or a flat bond foot when ordering tools for gold wire thermosonic bonding. For more gold wire application information see **Tech Tips**

KSH-SERIES

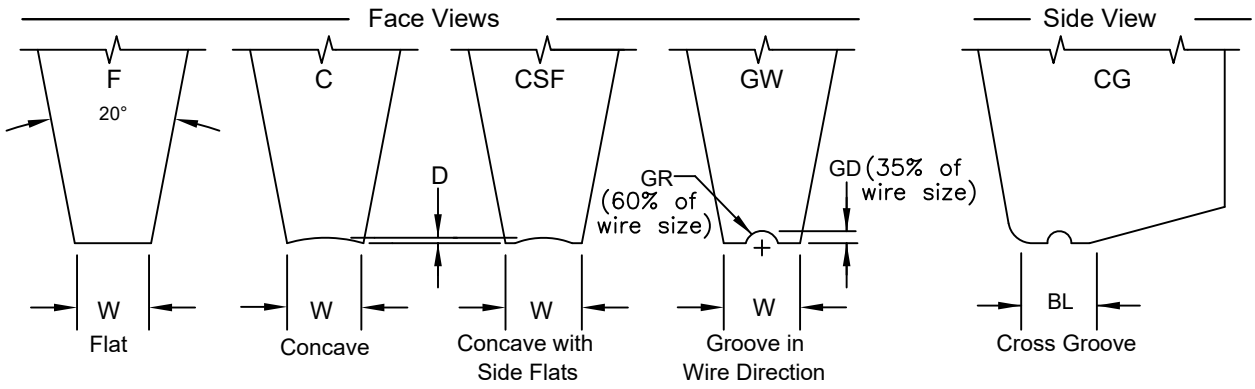
WIREØ .0005" through .0020

S1 Option



*To be determined according to ribbon size

Standard: Ø 1/16, Hole Angle: 45°,55°, 60°



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SERIES KSH

SMALL WIRE

ORDERING INFORMATION
SMALL WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-KSH-D-1/16-3/4-45-CG-2020-M-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - **All other:** See Material Selection Guide
2. **SERIES: KSH**
3. **FRONT/BACK RADIUS:** See Radius Option Chart
   *For special Radius sizes insert an X Please specify FR/BR
4. **SHANK DIA.:** Please Specify Diameter
5. **TOOL LENGTH: Please Specify Length**
6. **HOLE ANGLE:** 45°,55°,60

(7) FOOT TYPE:
- **F** = Flat
- **C** = Concave
- **CSF** = Concave with Side Flats
  (CSF not available with ceramic tools)
- **CG** = Cross Groove
- **GW** = Groove in wire direction
  (Please specify wire size)

(8) TOOL SIZE: See Standard Chart

(9) FOOT FINISH:
- **M =** Matte finish (FR, BR, & Bond Flat)
- **P =** Polish finish (FR, BR, & Bond Flat)
- **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)

(10) S1 and other Option See Tool Options

For special sizes or dimensions insert an (X) in the appropriate position of the part number then specify what (X) equals.
Example: M-KSH-X-1/16-3/4-45-F-2020-M (X) FR=.0012, BR=.0007

STANDARD CHART	KSH SMALL WIRE:				FOR WIRE DIAMETERS .0005" THROUGH .0020"									
TS	**H**		**BL**		**D**		**T 45°**		**T(55° 60°)**		**W**		**SUGGESTED WD**	
Units	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**+.0005**	+13		
1505	.0015	38	.0005	13	.0002	5	.0090	229	.0075	191	.0025	64		
1507	.0015	38	.0007	18	.0002	5	.0090	229	.0075	191	.0025	64	**.0005**	**13**
1510	.0015	38	.0010	25	.0002	5	.0100	254	.0080	203	.0025	64	**through**	
1513	.0015	38	.0013	33	.0002	5	.0100	254	.0080	203	.0025	64	**.0007**	**18**
1515	.0015	38	.0015	38	.0002	5	.0100	254	.0090	229	.0025	64		
1520	.0015	38	.0020	51	.0002	5	.0110	279	.0090	229	.0025	64		
Tolerance	±.0002	±5	±.0002	±5	-.0001	-2.5	±.0005	±13	±.0005	±13	**±.0002**	±5		
2010	.0020	51	.0010	25	.0002	5	.0100	254	.0090	229	*.0040	102		
2015	.0020	51	.0015	38	.0002	5	.0110	279	.0090	229	.0040	102	**.0007**	**18**
2020	.0020	51	.0020	51	.0002	5	.0110	279	.0100	254	.0040	102	**through**	
2025	.0020	51	.0025	64	.0002	5	.0120	305	.0100	254	.0040	102	**.0010**	**25**
2030	.0020	51	.0030	76	.0002	5	.0120	305	.0110	279	.0040	102		
2520	.0025	64	.0020	51	.0002	5	.0130	330	.0110	279	.0040	102		
2525	.0025	64	.0025	64	.0002	5	.0140	356	.0120	305	.0040	102		
2530	.0025	64	.0030	76	.0002	5	.0140	356	.0120	305	.0050	127	**.0013**	**33**
2535	.0025	64	.0035	89	.0002	5	.0150	381	.0125	318	.0050	127		
2540	.0025	64	.0040	102	.0002	5	.0150	381	.0125	318	.0050	127		
3020	.0030	76	.0020	51	.0003	8	.0130	330	.0115	292	.0050	127		
3025	.0030	76	.0025	64	.0003	8	.0140	356	.0115	292	.0050	127		
3030	.0030	76	.0030	76	.0003	8	.0140	356	.0125	318	.0050	127	**.0015**	**38**
3035	.0030	76	.0035	89	.0003	8	.0150	381	.0125	318	.0050	127		
3040	.0030	76	.0040	102	.0003	8	.0150	381	.0135	343	.0050	127		
3525	.0035	89	.0025	64	.0003	8	.0140	356	.0130	330	.0060	152		
3530	.0035	89	.0030	76	.0003	8	.0150	381	.0130	330	.0060	152		
3535	.0035	89	.0035	89	.0003	8	.0150	381	.0140	356	.0060	152	**.0020**	**51**
3540	.0035	89	.0040	102	.0003	8	.0160	406	.0140	356	.0060	152		
3545	.0035	89	.0045	114	.0003	8	.0160	406	.0150	381	.0060	152		
3550	.0035	89	.0050	127	.0003	8	.0160	406	.0150	381	.0060	152		

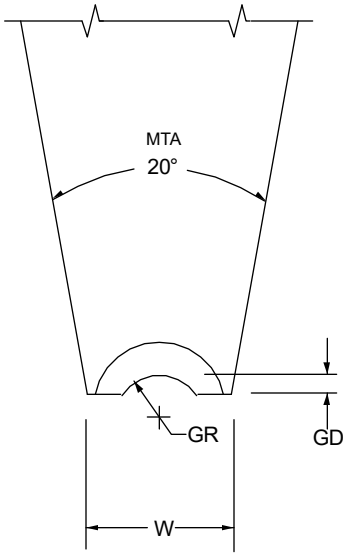
***Other sizes available upon request *All dimensions and tolerances are for reference only**
TOOL SIZE=TS , WIRE DIAMETER =WD "T" To be determined according to the size of FR and BR and Hole Bore Length

SERIES G

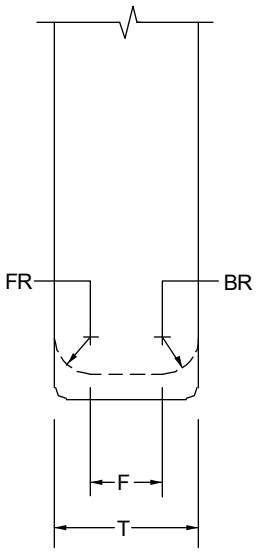
LARGE WIRE, U GROOVE

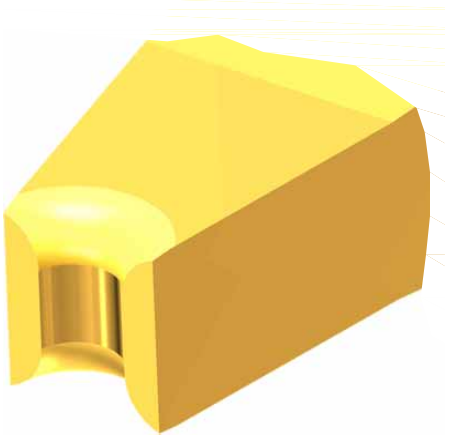
FOR MANUAL, AUTOMATIC AND
SEMI-AUTOMATIC BONDERS

FACE VIEW



SIDE VIEW



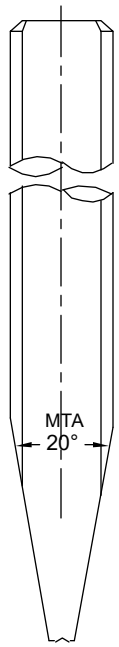


MTA = MAIN TAPER ANGLE
SA = SIDE-VIEW ANGLE
BA = BACK ANGLE
FA = FRONT ANGLE

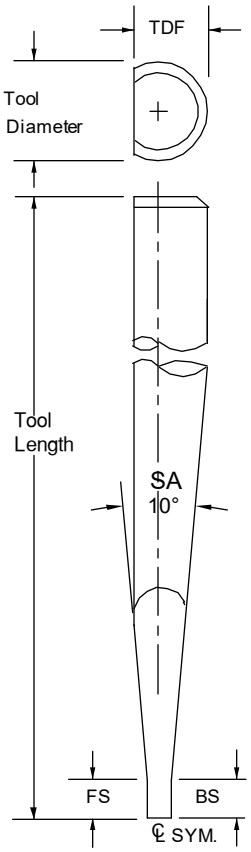
TDF" To be determined according to the "T" size

TD			TDF	
	inch	mm	inch	mm
1/16	.0624	1.58	.0460	1.17
1/16	.0624	1.58	.0590	1.50
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1100	2.79
1/8	.1249	3.17	.1180	3.00

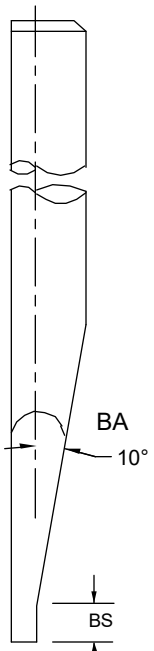
Standard Front Step and Back Step supplied unless otherwise specified. See **Tool Options** for other options. (A4, A5)



FACE VIEW



SIDE VIEW
CENTER LINE
(S=Standard)



SIDE VIEW
'C' STYLE
(O=Optional)

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SERIES G

U-GROOVE IN WIRE DIRECTION
LARGE WIRE

ORDERING INFORMATION
LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-S-G-100-1-1/8-1.97-M- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection

2. **S**= Standard, Center line
   O = Optional, C Style

3. **PART NUMBER :** G
   Wire Ø (100 in µ) and Revision Number (1)

4. **SHANK DIA.:** Please Specify Length
   Select TD from chart on page

5. **TOOL LENGTH:**
   Please Specify Length

6. **FOOT FINISH:**
   M = Matte finish (FR, BR, & Bond Flat)
   P = Polish finish (FR, BR, & Bond Flat)
   MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

7. See Tool Options

STANDARD CHART — **G LARGE WIRE:** — **FOR WIRE DIAMETERS .0040" THROUGH .0200"**

PART NUMBER	F		FR		BR		GR		GD		FS & BS		T		W		WD	
Units	in.	µ		µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance small Tools	(Ref)		±.0002	±5	±.0002	±5	±.0002	±5	±.0002	±5	±.0004	±10	±.0004	±10	±.0004	±10		
G-100-1	.0051	130	.0024	61	.0024	61	.0024	61	.0016	41	.0390	991	.0098	249	.0098	249	.0040	102
G-100-2	.0057	145											.0104	264				
G-100-3	.0063	160											.0110	279				
G-100-4	.0071	180											.0118	300				
G-125-1	.0059	150	.0030	76	.0030	76	.0030	76	.0020	51	.0390	991	.0118	300	.0118	300	.0050	127
G-125-2	.0069	175											.0128	325				
G-125-3	.0079	201											.0138	351				
G-125-4	.0089	226											.0148	376				
G-150-1	.0067	170	.0035	89	.0035	89	.0035	89	.0024	61	.0390	991	.0138	351	.0138	351	.0060	152
G-150-2	.0077	196											.0148	376				
G-150-3	.0091	231											.0161	409				
G-150-4	.0106	269											.0177	450				
G-175-1	.0075	191	.0041	104	.0041	104	.0041	104	.0028	71	.0390	991	.0157	399	.0157	399	.0070	178
G-175-2	.0091	231											.0173	439				
G-175-3	.0106	269											.0189	480				
G-175-4	.0124	315											.0207	526				
G-200-1	.0083	211	.0047	119	.0047	119	.0047	119	.0031	79	.0390	991	.0177	450	.0197	500	.0080	203
G-200-2	.0102	259											.0197	500				
G-200-3	.0122	310											.0217	551				
G-200-4	.0142	361											.0236	599				
G-250-1	.0098	249	.0059	150	.0059	150	.0059	150	.0039	99	.0590	1499	.0217	551	.0217	551	.0100	254
G-250-2	.0130	330											.0248	630				
G-250-3	.0150	381											.0268	681				
G-250-4	.0177	450											.0295	749				
G-300-1	.0114	290	.0071	180	.0071	180	.0071	180	.0047	119	.0590	1499	.0256	650	.0236	599	.0120	305
G-300-2	.0154	391											.0295	749				
G-300-3	.0181	460											.0323	820				
G-300-4	.0213	541											.0354	899				
G-350-1	.0134	340	.0083	211	.0083	211	.0083	211	.0055	140	.0590	1499	.0300	762	.0276	701	.0140	356
G-350-2	.0177	450											.0343	871				
G-350-3	.0213	541											.0378	960				
G-350-4	.0248	630											.0413	1049				
G-400-1	.0150	381	.0095	241	.0095	241	.0095	241	.0063	160	.0590	1499	.0339	861	.0315	800	.0160	406
G-400-2	.0205	521											.0394	1001				
G-400-3	.0244	620											.0433	1100				
G-400-4*	.0283	719											.0472	1199				
G-450-1	.0177	450	.0106	269	.0106	269	.0106	269	.0071	180	.0590	1499	.0390	991	.0354	899	.0180	457
G-450-2*	.0230	584											.0445	1130				
G-450-3*	.0272	691											.0484	1229				
G-450-4*	.0319	810											.0531	1349				
G-500-1	.0197	500	.0118	300	.0118	300	.0118	300	.0079	201	.0590	1499	.0433	1100	.0394	1001	.0200	508
G-500-2*	.0256	650											.0492	1250				
G-500-3*	.0303	770											.0539	1369				
G-500-4*	.0355	902											.0591	1501				

*= Must be "C" Style ***Other sizes available upon request** ***All dimensions and tolerances are for reference only**

WIRE DIAMETER =WD

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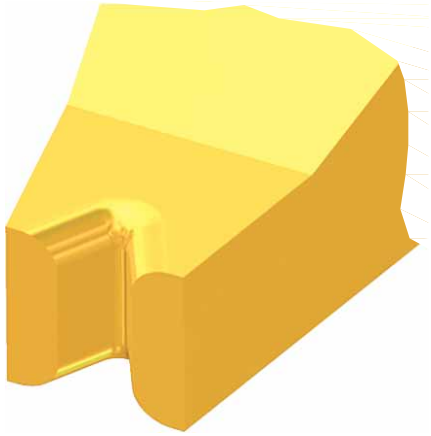
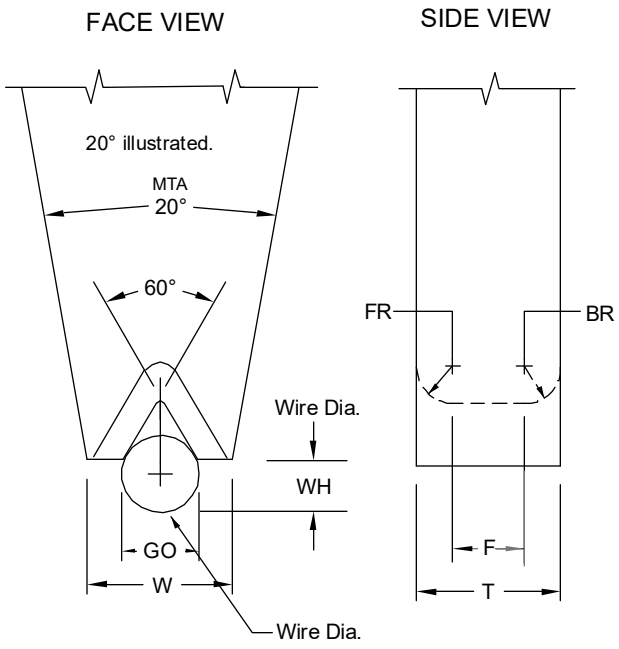
SERIES GE

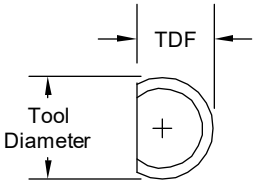
LARGE WIRE, V GROOVE

FOR MANUAL, AUTOMATIC AND SEMI-AUTOMATIC BONDERS

20° OR 30° MAIN TAPER ANGLE (MTA)







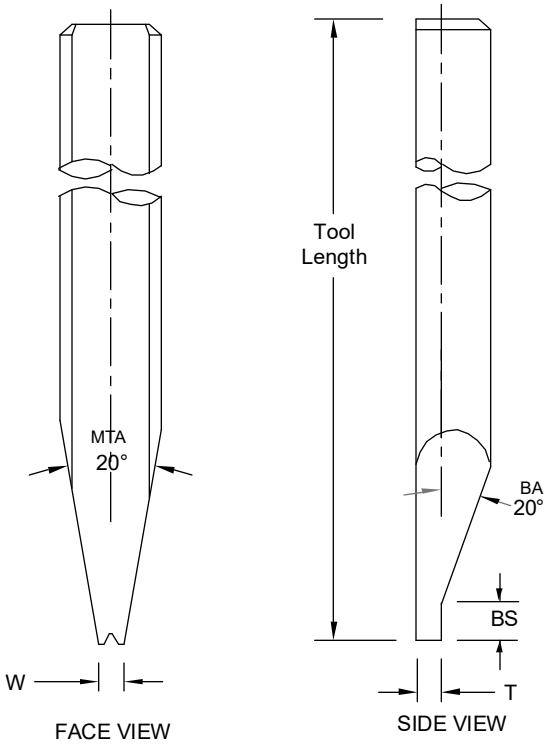
MTA = MAIN TAPER ANGLE
SA = SIDE-VIEW ANGLE
BA = BACK ANGLE
GO= GROOVE OPENING

Standard				
	TD		TDF	
	in.	mm	in.	mm
1/8	.1249	3.17	.1100	2.79

1/8" diameter tools illustrated.

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
1/16	.0624	1.59	.0590	1.50
	.0784	1.99	.0630	1.60
	.0784	1.99	.0720	1.83
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

Standard Back Step supplied unless otherwise specified. See **Tool Options** for other options. (A4, A5)



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SERIES GE

LARGE WIRE
V-GROOVE IN WIRE DIRECTION

ORDERING INFORMATION
LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-GE-100-1-1/8-1.97-M- *
SYMBOL EXPLANATION: 1 2 3 4 5 6

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide

2. **PART NUMBER :** GE
   Wire Ø (100 in µ) and Revision Number (1)

3. **SHANK DIA.:** Please Specify Diameter
   Select TD from chart on page

4. **TOOL LENGTH:**
   Please Specify Length

5. **FOOT FINISH:**
   M = Matte finish (FR, BR, & Bond Flat)
   P = Polish finish (FR, BR, & Bond Flat)
   MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

6. **See Tool Options**

GE SERIES: STANDARD CHART FOR WIRE DIAMETERS .0040 THROUGH .0200

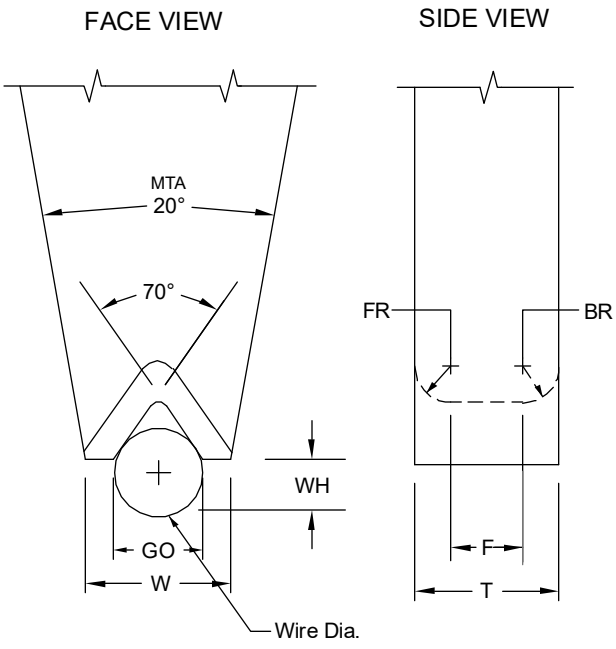
PART NUMBER	MTA ANGLE W	FR		BR		GD		GO		BS		T		W		WIRE DIAMETER	
Units	DEGREES	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance small Tools	(Ref)	±.0002	±5	±.0002	±5	+.0005 -.0002	+13 -5	±.0004	±10	±.0040	±102	±.0004	±10	±.0005	±13		
GE-100-1	30°	.0020	51	.0020	51	.0033	84	.0044	112	.0200	508	.0106	270	.0098	250	.0040	102
GE-125-1	30°	.0025	64	.0025	64	.0041	104	.0055	140	.0200	508	.0138	350	.0118	300	.0050	127
GE-150-1	30°	.0030	76	.0030	76	.0050	127	.0066	168	.0200	508	.0157	400	.0138	350	.0060	152
Tolerance large Tools	(Ref)	±.0004	±10	±.0004	±13	+.0010 -.0002	+25 -5	±.0006	±15	±.0040	±102	±.0004	±10	±.0010	±25		
GE-175-1	30°	.0035	89	.0035	89	.0058	147	.0077	195	.0200	508	.0181	460	.0157	400	.0070	178
GE-200-1	30°	.0040	102	.0040	102	.0066	168	.0088	224	.0200	508	.0205	520	.0177	450	.0080	203
GE-250-1	20°	.0050	127	.0050	127	.0083	211	.0110	279	.0390	991	.0268	680	.0217	550	.0100	254
GE-300-1	20°	.0060	152	.0060	152	.0098	249	.0130	330	.0390	991	.0307	780	.0256	650	.0120	305
GE-350-1	20°	.0070	178	.0070	178	.0116	295	.0154	391	.0390	991	.0331	840	.0295	750	.0140	356
GE-380-1	20°	.0075	191	.0075	191	.0124	315	.0165	419	.0590	1499	.0346	880	.0315	800	.0150	381
GE-400-1	20°	.0080	203	.0080	203	.0130	330	.0173	439	.0590	1499	.0354	900	.0335	850	.0160	406
GE-500-1	20°	.0098	249	.0098	249	.0170	432	.0217	551	.0590	1499	.0445	1130	.0413	1050	.0200	508

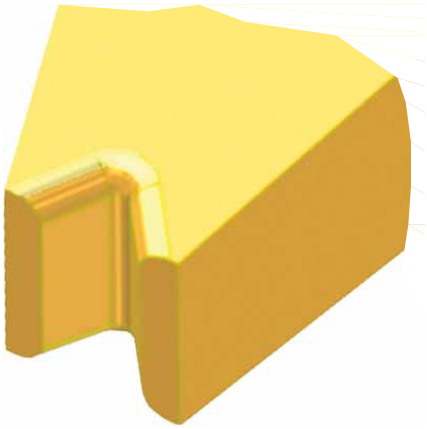
WD=WIREØ GO= GROOVE OPENING PLEASE SPECIFY WIRE SIZE AND WIRE MATERIAL WHEN ORDERING
***Other sizes available upon request *All dimensions and tolerances are for reference only**

SERIES GF

LARGE WIRE, V GROOVE

FOR MANUAL, AUTOMATIC AND
SEMI-AUTOMATIC BONDERS





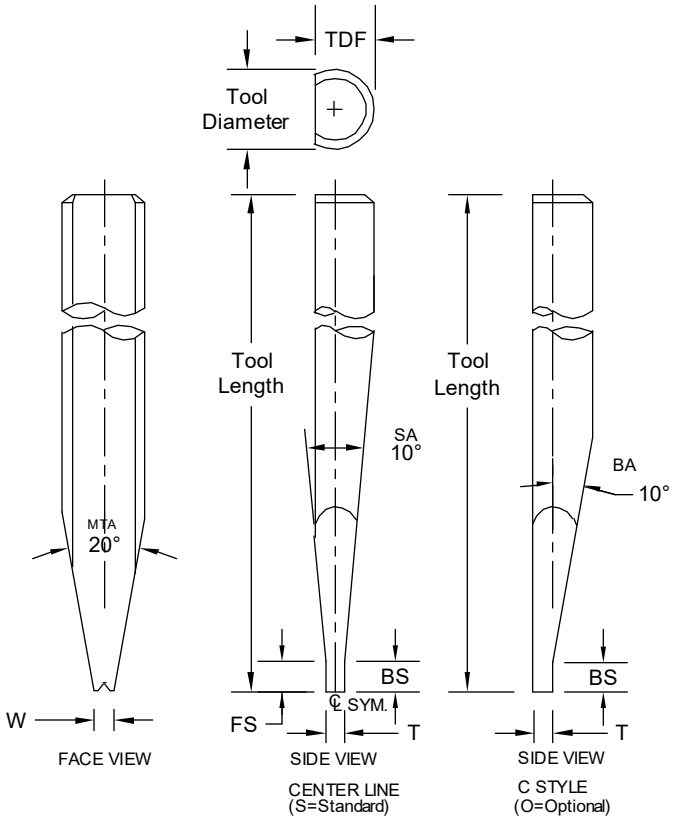
MTA = MAIN TAPER ANGLE
SA = SIDE-VIEW ANGLE
BA = BACK ANGLE
GO= GROOVE OPENING

Standard				
	TD		TDF	
	in.	mm	in.	mm
1/8	.1249	3.17	.1100	2.79

Illustrated Tool: Diameter 1/8"

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
1/16	.0624	1.59	.0590	1.50
	.0784	1.99	.0630	1.60
	.0784	1.99	.0720	1.83
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

Standard Front Step and Back Step supplied unless otherwise specified. See **Tool Options** for other options. (A4, A5)



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SERIES GF

LARGE WIRE
V-GROOVE IN WIRE DIRECTION

ORDERING INFORMATION
LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-S-GF-100-1-1/8-1.97-M- *
SYMBOL EXPLANATION: 1 2 3 4 5 6 7

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide

2. **S**= Standard, Center line
   O = Optional, C Style

3. **PART NUMBER :** GF
   Wire Ø (100 in µ) and Revision Number (1)

4. **SHANK DIA.:** Please Specify Diameter
   Select TD from chart on page

5. **TOOL LENGTH:**
   Please Specify Length

6. **FOOT FINISH:**
   M = Matte finish (FR, BR, & Bond Flat)
   P = Polish finish (FR, BR, & Bond Flat)
   MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

7. **See Tool Options**

STANDARD CHART	GF LARGE WIRE:		FOR WIRE DIAMETERS .0040" THROUGH .0200"															
PART NUMBER	F		FR		BR		GO		WH		FS & BS		T		W		WIRE DIAMETER	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance small Tools	(Ref)		±.0003	±8	±.0003	±8	±.0003	±8	±0002	± 5	±0020	± 51	±0004	± 5	±0004	± 10		
GF—100—1	.0074	188	.0012	30	.0012	30	.0039	99	.0027	69	.0394	1001	.0098	249	.0078	198	.0040	102
GF—125—1	.0088	224	.0015	38	.0015	38	.0054	137	.0030	76	.0394	1001	.0118	300	.0098	249	.0050	127
GF—150—1	.0102	259	.0018	46	.0018	46	.0066	168	.0035	89	.0394	1001	.0138	351	.0118	300	.0060	152
GF—150—2	.0112	284	.0018	46	.0018	46	.0066	168	.0035	89	.0394	1001	.0148	376	.0120	305	.0060	152
GF—150—3	.0125	318	.0018	46	.0018	46	.0066	168	.0035	89	.0394	1001	.0161	409	.0120	305	.0060	152
Tolerance large Tools	(Ref)		±.0005	±13	±.0005	±13	±.0005	±13	±0004	± 10	±0020	± 51	±0005	± 5	±0006	± 15		
GF—175—1	.0116	295	.0021	53	.0021	53	.0076	193	.0042	107	.0394	1001	.0158	401	.0136	345	.0070	178
GF—200—1A	.0129	328	.0024	61	.0024	61	.0087	221	.0048	122	.0394	1001	.0177	450	.0158	401	.0080	203
GF—200—1B	.0062	157	.0028	71	.0028	71	.0087	221	.0048	122	.0394	1001	.0118	300	.0157	399	.0080	203
GF—200—1C	.0042	107	.0028	71	.0028	71	.0087	221	.0048	122	.0394	1001	.0098	249	.0157	399	.0080	203
GF—200—1D	.0082	208	.0028	71	.0028	71	.0087	221	.0048	122	.0394	1001	.0138	351	.0157	399	.0080	203
GF—250—1	.0157	399	.0030	76	.0030	76	.0108	274	.0060	152	.0590	1499	.0217	551	.0196	498	.0100	254
GF—300—1	.0184	467	.0036	91	.0036	91	.0130	330	.0072	183	.0590	1499	.0256	650	.0236	599	.0120	305
GF—350—1	.0215	546	.0042	107	.0042	107	.0152	386	.0084	213	.0590	1499	.0299	759	.0276	701	.0140	356
GF—350—2	.0238	605	.0042	107	.0042	107	.0152	386	.0084	213	.0590	1499	.0322	818	.0276	701	.0140	356
GF—380—1	.0233	592	.0045	114	.0045	114	.0165	419	.0088	224	.0590	1499	.0323	820	.0300	762	.0150	381
GF—400—1	.0247	627	.0048	122	.0048	122	.0174	442	.0095	241	.0590	1499	.0343	871	.0316	803	.0160	406
GF—450—1	.0282	716	.0054	137	.0054	137	.0195	495	.0108	274	.0590	1499	.0390	991	.0354	899	.0180	457
GF—500—1	.0313	795	.0060	152	.0060	152	.0217	551	.0118	300	.0590	1499	.0433	1100	.0394	1001	.0200	508

WD=WIREØ GO= GROOVE OPENING PLEASE SPECIFY WIRE SIZE AND WIRE MATERIAL WHEN ORDERING
***Other sizes available upon request *All dimensions and tolerances are for reference only**

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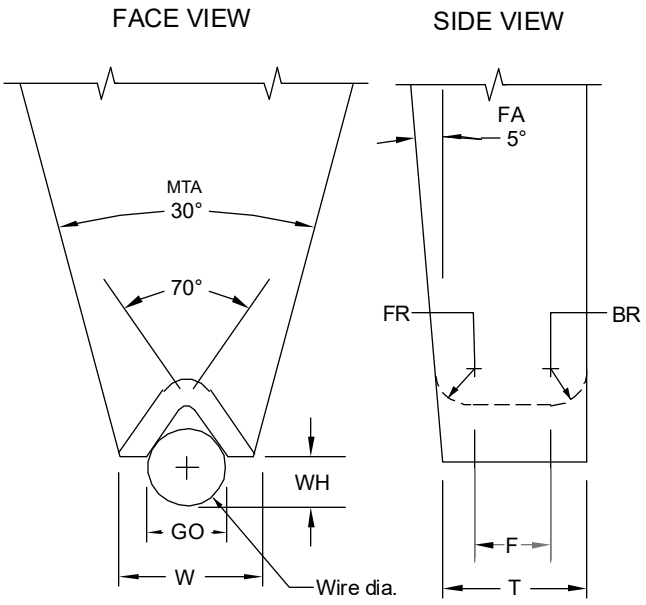
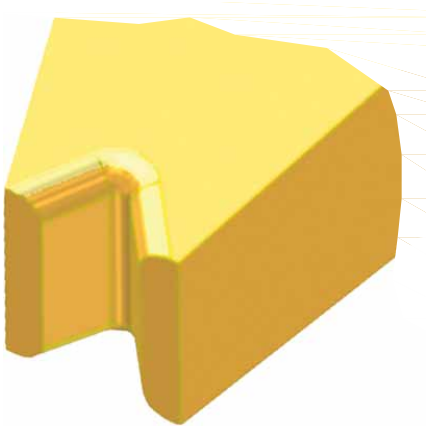
SERIES GFK

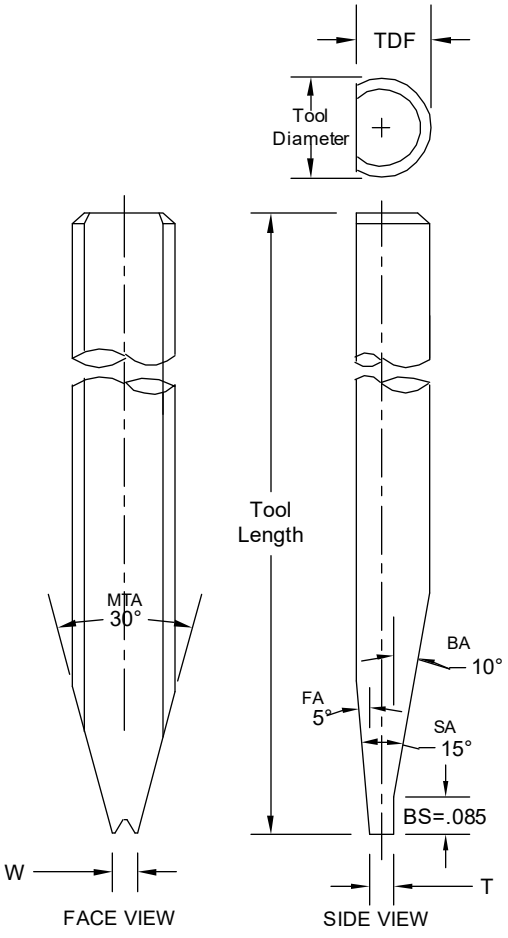
LARGE WIRE, V GROOVE
FOR F&K DELVOTEC

FOR MANUAL BONDERS AND SEMI-AUTOMATIC
BONDERS-MODEL 5450 AUTOMATIC BONDERS-MODEL 6600





MTA = MAIN TAPER ANGLE
SA = SIDE-VIEW ANGLE
BA = BACK ANGLE
FA = FRONT ANGLE
GO= GROOVE OPENING



	TD		TDF	
	in.	mm	in.	mm
1/8	.1249	3.17	.1100	2.79

Standard Back Step supplied unless otherwise specified. See **Tool Options** for other options. (A4, A5)

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SERIES GFK

LARGE WIRE
V-GROOVE IN WIRE DIRECTION

ORDERING INFORMATION
LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: M-GFK-100-1-1/8-1.97-M- *
SYMBOL EXPLANATION: 1 2 3 4 5 6

1. **MATERIAL:**
   - **M** = Ceramic
   - **C** = Tungsten Carbide
   - **T** = Titanium
   - All other: See Material Selection Guide
2. **PART NUMBER :** GFK
   Wire Ø (100 in µ) and Revision Number (1)
3. **SHANK DIA.:** Please Specify Diameter
4. **TOOL LENGTH:** Please Specify Length
5. **FOOT FINISH:**
   - **M =** Matte finish (FR, BR, & Bond Flat)
   - **P =** Polish finish (FR, BR, & Bond Flat)
   - **MP=** Polish finish (FR, BR), and Matte finish (Bond Flat)
6. **See Tool Options**

GFK SERIES:	STANDARD CHART		FOR WIRE DIAMETERS .0040 THROUGH .0200															
PART NUMBER	F		FR		BR		GD		WH		BS		T		W		WIRE DIAMETER	
Units	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ	in.	µ
Tolerance small Tools	(Ref)		±.0003	±8	±.0003	±8	+.0005 -.0002	+13 -5	±.0002	±5	±.0020	± 51	±.0002	±5	±.0004	±10		
GFK—100—1	.0077	196	.0012	30	.0012	30	.0027	69	.0023	58	.0850	2159	.0098	249	.0080	203	.0040	102
GFK—125—1	.0092	234	.0015	38	.0015	38	.0034	86	.0029	74	.0850	2159	.0118	300	.0100	254	.0050	127
GFK—150—1	.0107	272	.0018	46	.0018	46	.0040	102	.0035	89	.0850	2159	.0138	351	.0120	305	.0060	152
GFK—150—2	.0117	297	.0018	46	.0018	46	.0040	102	.0035	89	.0850	2159	.0148	376	.0120	305	.0060	152
GFK—150—3	.0130	330	.0018	46	.0018	46	.0040	102	.0035	89	.0850	2159	.0161	409	.0120	305	.0060	152
Tolerance large Tools	(Ref)		±.0005	±13	±.0005	±13	+.0010 -.0002	+25 -5	±.0004	±10	±.0020	± 51	±.0002	±5	±.0006	±15		
GFK—175—1	.0122	310	.0021	53	.0021	53	.0048	122	.0040	102	.0850	2159	.0158	401	.0140	356	.0070	178
GFK—200—1A	.0136	345	.0024	61	.0024	61	.0054	137	.0046	117	.0850	2159	.0177	450	.0160	406	.0080	203
GFK—200—1B	.0077	196	.0024	61	.0024	61	.0054	137	.0046	117	.0850	2159	.0118	300	.0160	406	.0080	203
GFK—200—1C	.0057	145	.0024	61	.0024	61	.0054	137	.0046	117	.0850	2159	.0098	249	.0160	406	.0080	203
GFK—200—1D	.0097	246	.0024	61	.0024	61	.0054	137	.0046	117	.0850	2159	.0138	351	.0160	406	.0080	203
GFK—250—1	.0166	422	.0030	76	.0030	76	.0075	191	.0050	127	.0850	2159	.0217	551	.0200	508	.0100	254
GFK—300—1	.0195	495	.0036	91	.0036	91	.0090	229	.0060	152	.0850	2159	.0256	650	.0240	610	.0120	305
GFK—350—1	.0228	579	.0042	107	.0042	107	.0105	267	.0070	178	.0850	2159	.0299	759	.0280	711	.0140	356
GFK—350—2	.0252	640	.0042	107	.0042	107	.0105	267	.0070	178	.0850	2159	.0322	818	.0280	711	.0140	356
GFK—380—1	.0247	627	.0045	114	.0045	114	.0113	287	.0075	191	.0850	2159	.0323	820	.0300	762	.0150	381
GFK—400—1	.0262	665	.0048	122	.0048	122	.0120	305	.0080	203	.0850	2159	.0343	871	.0320	813	.0160	406
GFK—450—1	.0298	757	.0054	137	.0054	137	.0135	343	.0090	229	.0850	2159	.0390	991	.0360	914	.0180	457
GFK—500—1	.0331	841	.0060	152	.0060	152	.0150	381	.0100	254	.0850	2159	.0433	1100	.0400	1016	.0200	508

WD=WIREØ GO= GROOVE OPENING PLEASE SPECIFY WIRE SIZE AND WIRE MATERIAL WHEN ORDERING
*Other sizes available upon request *All dimensions and tolerances are for reference only

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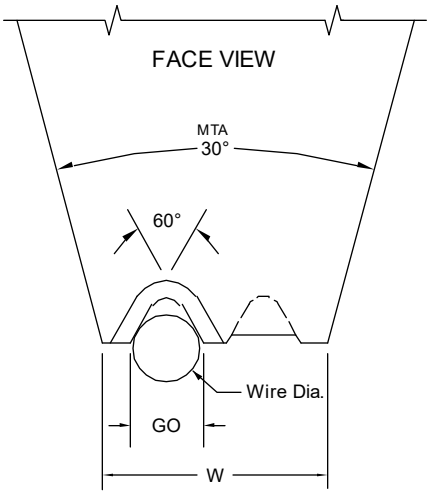
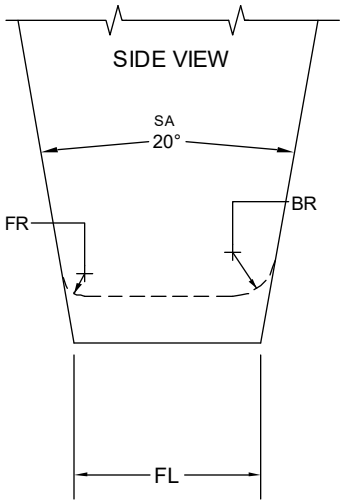
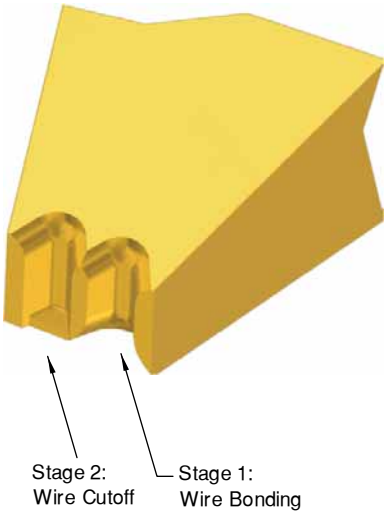
SERIES OGQ

Twin Groove Tool



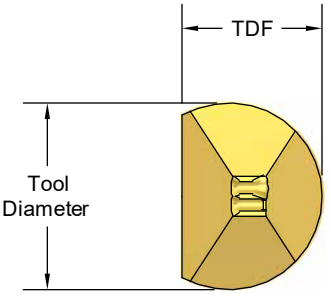




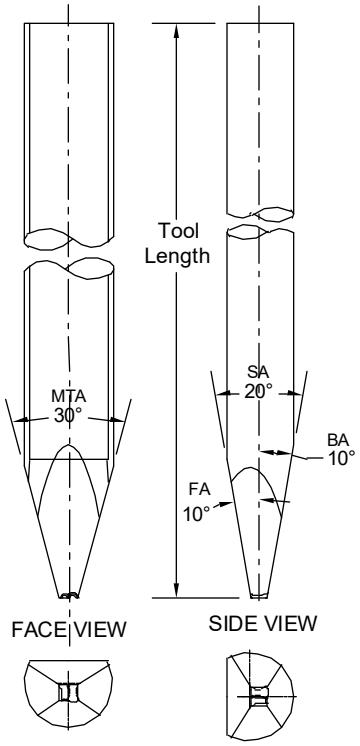
MTA = MAIN TAPER ANGLE
SA = SIDE-VIEW ANGLE
BA = BACK ANGLE
FA = FRONT ANGLE
GO= GROOVE OPENING

Special dimensions available upon request.
Dimensions not shown please specify.

	TD		TDF	
	in.	mm	in.	mm
1/8	.1249	3.17	.0937	2.38



TOP VIEW



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SERIES OGQ

Twin Groove Tool

STANDARD TOOL NUMBER **WIRE SIZE 4 TILL 24**

SAMPLE PART NUMBER: * -OGQ-8-1/8-2-60-MP- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8

FF

1. MATERIAL:
Tungsten Carbide "*" **=Standard "empty field"**
M = Ceramic
T = Titanium
All other: See Material Selection Guide

2. SERIES: OGQ

3. WIRE SIZE: 4....10....20 etc. Please specify

4. TOOL DIAMETER: Please specify

5. TOOL LENGTH: (L) Please specify

6. GROOVE ANGLE: (60° or 70°) Please specify

7. FOOT FINISH (FF): Please specify
M = Matte finish (FR, BR, & Bond Flat)
P = Polish finish (FR, BR, & Bond Flat)
MP= Standard: Polish finish (FR, BR) and Matte finish (Bond Flat)

8. OPTION:
TOOL ANGLE: (MTA) and other Option
Please specify
MTA=MAIN TAPER ANGLE
BA=BACK-ANGLE
FA=FRONT-ANGLE
SA = SIDE-VIEW ANGLE
STANDARD:
MTA=30°, SA=20° =Empty field

TOOL NUMBER FOR CUSTOMIZED TOOLS

SAMPLE PART NUMBER: * -OGQ-8-1/8-2-60-.0260X.0220-MP-G5-N5- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11 12

W FL FF FR BR

1. MATERIAL:
Tungsten Carbide "*" **=Standard "empty field"**
M = Ceramic
T = Titanium
All other: See Material Selection Guide

2. SERIES: OGQ

3. WIRE SIZE: 4....10....20 etc. Please specify

4. TOOL DIAMETER: Please specify

5. TOOL LENGTH: (L) Please specify

6. GROOVE ANGLE: (60°) Please specify

7. FOOT WIDTH: (W) Please specify

8. FOOT LENGTH: (FL) Please specify

9. FOOT FINISH (FF): Please specify
M = Matte finish (FR, BR, & Bond Flat)
P = Polish finish (FR, BR, & Bond Flat)
MP= Polish finish (FR, BR), and Matte finish (Bond Flat)

10. BACK RADIUS (FL):
Please specify A, B,C etc.
See Option Chart below.

11. FRONT/BACK RADIUS (FL):
Please specify A, B,C etc.
See Option Chart below.

12. OPTION:
TOOL ANGLE: (MTA) and other OPTION
Please specify
MTA=MAIN TAPER ANGLE
BA=BACK-ANGLE
FA=FRONT-ANGLE
SA = SIDE-VIEW ANGLE
STANDARD:
MTA=30°, SA=20° =Empty field

OPTION CHART (10&11) RADIUS FOR FOOT LENGTH (FL)	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
	FRONT RADIUS	in.	.0000	.0010	.0020	.0030	.0040	.0050	.0060	.0070	.0080	.0090	.0100	.0110	.0120	.0130	.0140	.0150	.0160	.0170	.0180	.0190	.0200	.0210	.0220
		µ	0	25	51	76	102	127	152	178	203	229	254	279	305	330	356	381	406	432	457	483	508	533	559
	BACK RADIUS	in.	.0000	.0010	.0020	.0030	.0040	.0050	.0060	.0070	.0080	.0090	.0100	.0110	.0120	.0130	.0140	.0150	.0160	.0170	.0180	.0190	.0200	.0210	.0220
		µ	0	25	51	76	102	127	152	178	203	229	254	279	305	330	356	381	406	432	457	483	508	533	559

EXAMPLE:
ALL OTHER RADIUS:

D =.0030
D4=.0034
D5=.0035
D6=.0036
D7=.0037

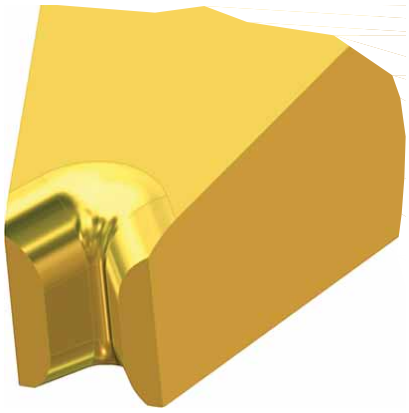
E =.0040
E1=.0041
E2=.0042
E3=.0043
E4=.0044

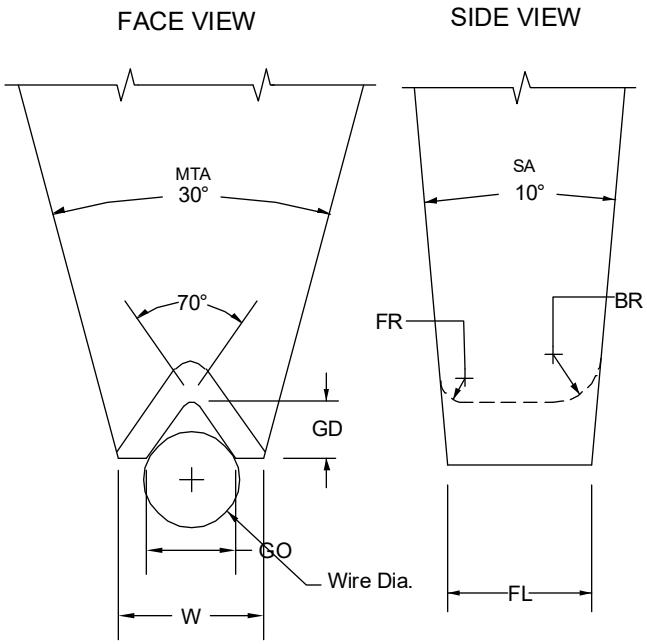
A1 to A9=.0001-.0009
B1 to B9=.0011-.0019
C1 to C9=.0021-.0029
D1 to D9=.0031-.0039
for all

EXAMPLE:
Front Radius=.0065 = G5
Back Radius =.0120 = M

SERIES SIVG

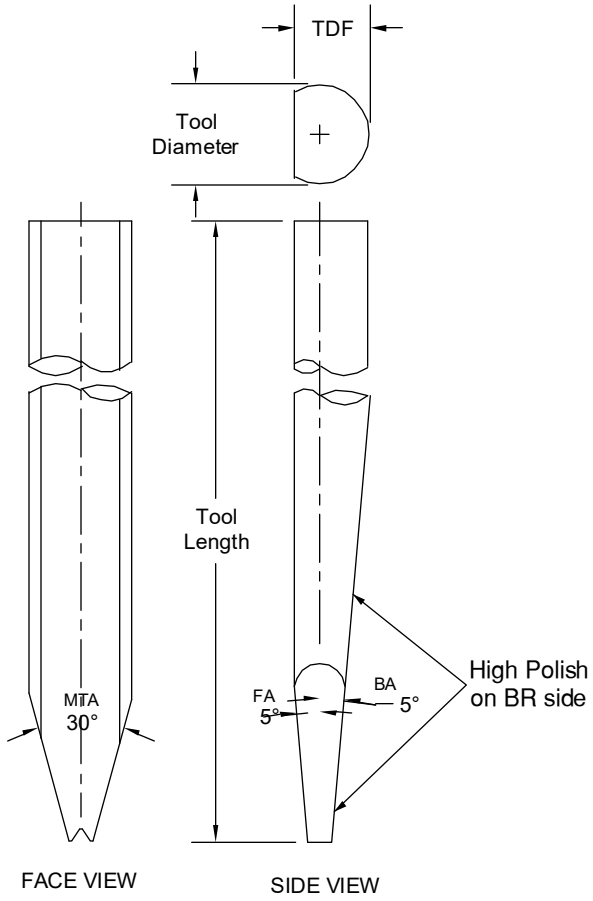
LARGE WIRE, V GROOVE





MTA = MAIN TAPER ANGLE
SA = SIDE-VIEW ANGLE
BA = BACK ANGLE
FA = FRONT ANGLE
GO= GROOVE OPENING

TD			TDF	
	in.	mm	in.	mm
1/8	.1249	3.17	.1100	2.79



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SERIES SIVG

LARGE WIRE, V-GROOVE IN WIRE DIRECTION

ORDERING INFORMATION
LARGE WIRE BONDING WEDGES
FOR GOLD AND ALUMINUM WIRE

SAMPLE PART NUMBER: C-SIVG-20-1/8-2.50-70-M-1- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** SIVG
3. **WIRE SIZE:** See Standard Chart
4. **TOOL DIAMETER:** = .125" / 3.18 mm
5. **TOOL LENGTH:** = 2.50" / 63.5 mm
6. **GROOVE ANGLE:** = 70°
7. **FOOT FINISH:**
   M = Matte finish (FR, BR, & Bond Flat)
   P = Polish finish (FR, BR, & Bond Flat)
   MP= Polish finish (FR, BR), and Matte finish (Bond Flat)
8. **REVISION # IF APPLICABLE**
   EXAMPLE: LOOKUP SIVG-8 "(1)"
9. **See Tool Options**
   EXAMPLE: A1 or VGC

STANDARD CHART **SIVG LARGE WIRE:** **FOR WIRE DIAMETERS .0040" THROUGH .0240"**

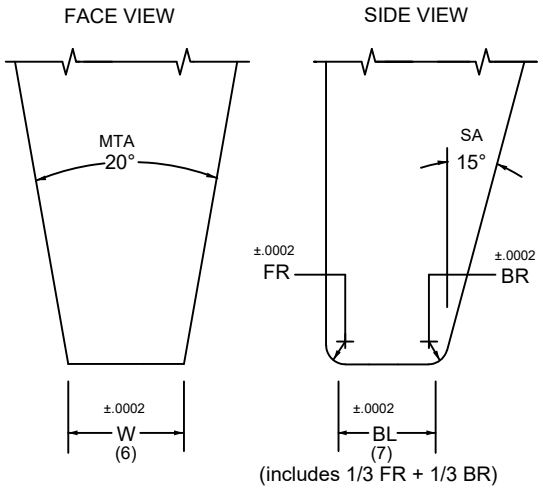
Part and Revision #	FR		BR		GO		GD		FL		W		WD	
Units	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ	in.	μ
Tolerance	(REF)		(REF)		±.0005 ±.0003	±13 ±08	±.0005	±13	±.0005	±13	±.0005	±13		
SIVG-4	.0027	69	.0054	137	.0046	117	.0027	69	.0114	290	.0080	203	.0040	102
SIVG-5	.0034	86	.0068	173	.0057	145	.0034	86	.0142	361	.0100	254	.0050	127
SIVG-6	.0041	104	.0082	208	.0068	173	.0040	102	.0170	432	.0120	305	.0060	152
SIVG-6 (1)	.0041	104	.0082	208	.0068	173	.0040	102	.0148	376	.0120	305	.0060	152
SIVG-7	.0048	122	.0096	244	.0080	203	.0048	122	.0175	445	.0140	356	.0070	178
SIVG-8	.0054	137	.0109	277	.0091	231	.0055	140	.0226	574	.0160	406	.0080	203
SIVG-8 (1)	.0054	137	.0109	277	.0091	231	.0055	140	.0195	495	.0160	406	.0080	203
SIVG-10	.0068	173	.0136	345	.0122	310	.0075	191	.0250	635	.0200	508	.0100	254
SIVG-12	.0082	208	.0163	414	.0146	371	.0090	229	.0340	864	.0240	610	.0120	305
SIVG-12 (3)	.0082	208	.0163	414	.0146	371	.0090	229	.0294	747	.0240	610	.0120	305
SIVG-14	.0110	279	.0140	356	.0171	434	.0105	267	.0345	876	.0270	686	.0140	356
SIVG-15*	.0102	259	.0204	518	.0183	465	.0113	287	.0375	953	.0300	762	.0150	381
SIVG-16*	.0106	269	.0211	536	.0195	495	.0118	300	.0440	1118	.0320	813	.0160	406
SIVG-16* (1)	.0106	269	.0211	536	.0195	495	.0118	300	.0390	991	.0320	813	.0160	406
SIVG-16* (2)	.0106	269	.0211	536	.0195	495	.0118	300	.0335	851	.0320	813	.0160	406
SIVG-18*	.0122	310	.0245	622	.0220	559	.0140	356	.0360	914	.0360	914	.0180	457
SIVG-18*(1)	.0080	203	.0150	381	.0220	559	.0130	330	.0220	559	.0350	889	.0180	457
SIVG-20	.0136	345	.0272	691	.0244	620	.0150	381	.0487	1237	.0400	1016	.0200	508
SIVG-24	.0096	244	.0156	396	.0272	691	.0160	406	.0330	838	.0350	889	.0240	610

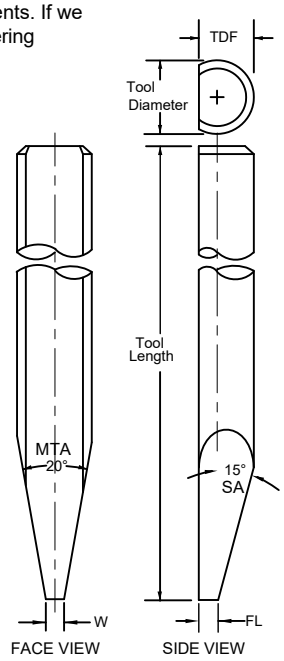
WD=WIREØ GO= GROOVE OPENING PLEASE SPECIFY WIRE SIZE AND WIRE MATERIAL WHEN ORDERING
***Other sizes available upon request *All dimensions and tolerances are for reference only**

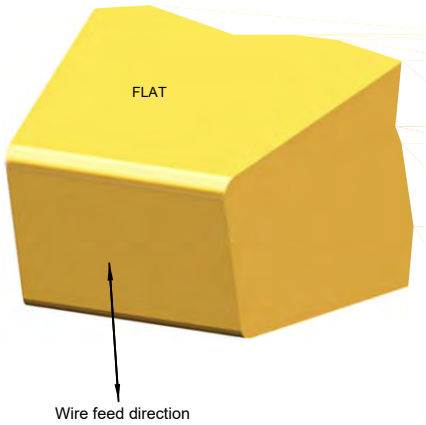
SERIES F-101

Standard Tab Tool

This style of tool has no feed hole and is used on very small pads. Usually manual Bonders are used. The wire is first positioned over the bonding pad area then the wedge is lowered onto the wire to make the bond. This operation can be thermo compression, thermosonic, or ultrasonic type bonding. We have tried to cover most bonding styles in this series for your requirements. If we have not shown a style for your needs please contact the Engineering Department for your custom design.







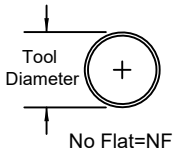
MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.

We recommend ceramic material for all gold wire bonding for optimum results.

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

OPTIONAL ROUND



No Flat=NF

SAMPLE PART NUMBER: M-F-101-1/16-1-.004X.004-M-E
SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES: F**
3. **STYLE: 101**
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **FOOT WIDTH: (W)** Please specify
7. **BOND LENGTH: (BL)** Please specify (includes 1/3 FR + 1/3 BR)
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
   P = Polished FR, BR, & Bond Flat for thermocompression gold bonding
   MP= Polished FR, BR, and Matte Bond Flat. For ultrasonic aluminum bonding.
9. **FRONT/BACK RADIUS:** See Option Chart below.

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

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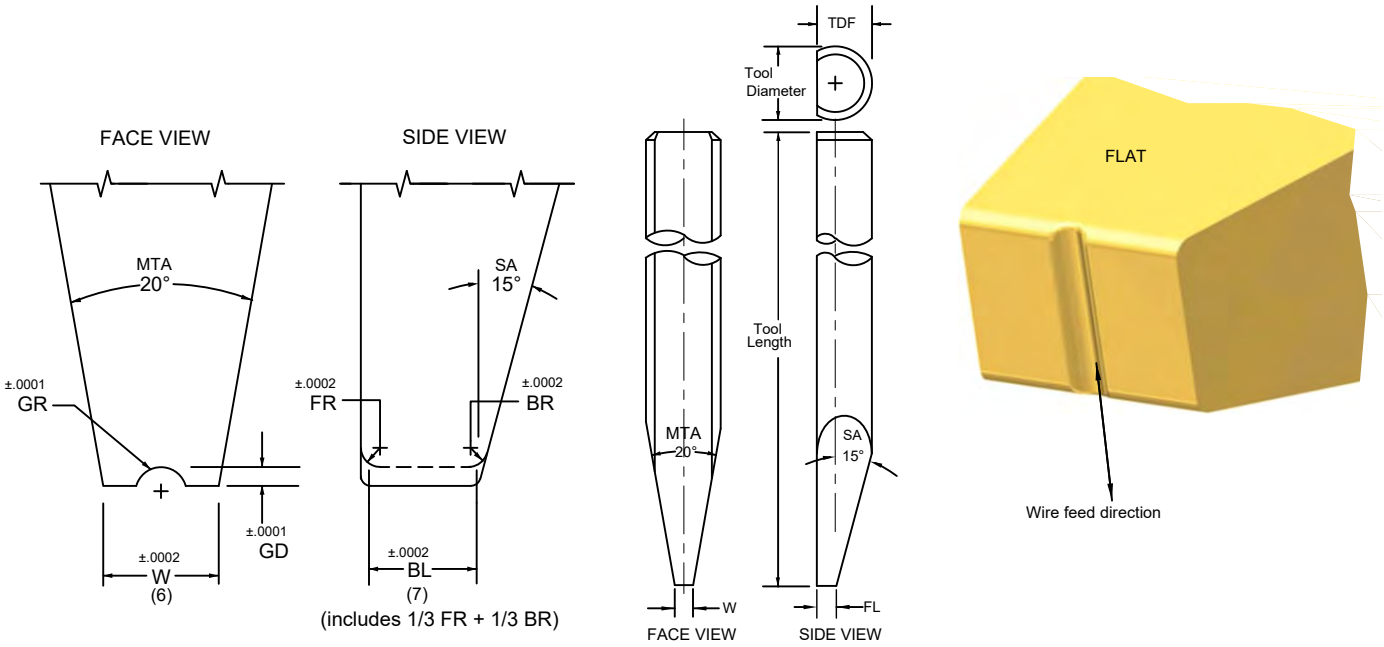
DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES F-102

Tab Tool with Groove in Wire Direction



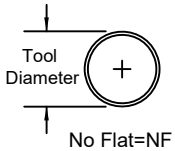
MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.

We recommend ceramic material for all gold wire bonding for optimum results.

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

OPTIONAL ROUND



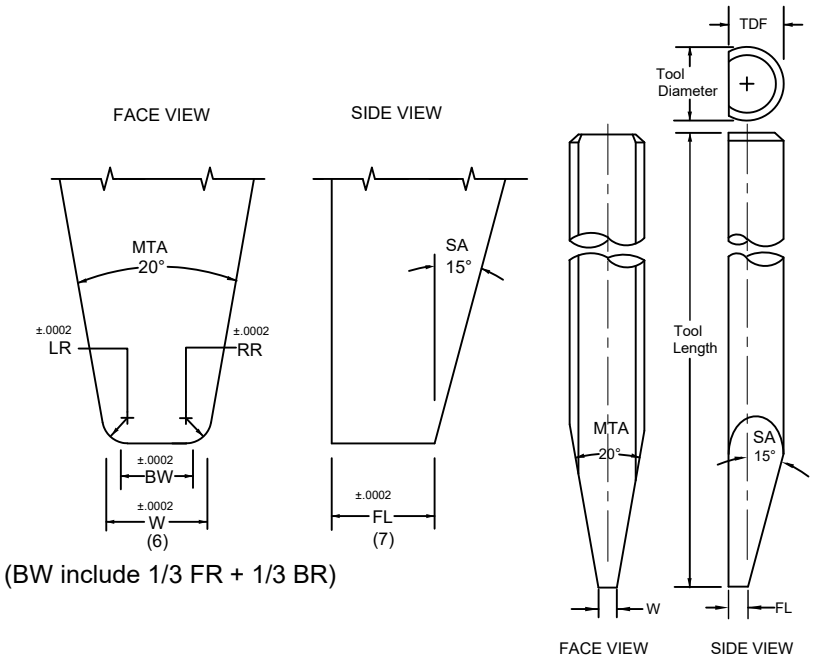
SAMPLE PART NUMBER: M-F-102-1/16-1-.004X.004-M-E-.001
SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** F
3. **STYLE:** 102
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **FOOT WIDTH:(W)** Please specify
7. **BOND LENGTH: (BL)** Please specify (includes 1/3 FR + 1/3 BR)
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
   P = Polished FR, BR, & Bond Flat for thermocompression gold bonding
   MP= Polished FR, BR, and Matte Bond Flat. For ultrasonic aluminum bonding.
9. **FRONT/BACK RADIUS:** See Option Chart below.
10. **WIRE:** Specify wire diameter:
    GR=60% of wire diameter
    GD=35% of wire diameter

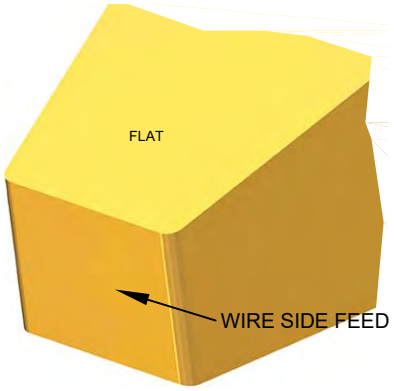
RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

SERIES F-103

Two Sides Radius Tab Tool



(BW include 1/3 FR + 1/3 BR)



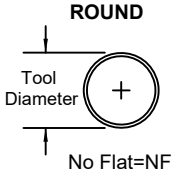
MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.

We recommend ceramic material for all gold wire bonding for optimum results.

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

OPTIONAL ROUND



No Flat=NF

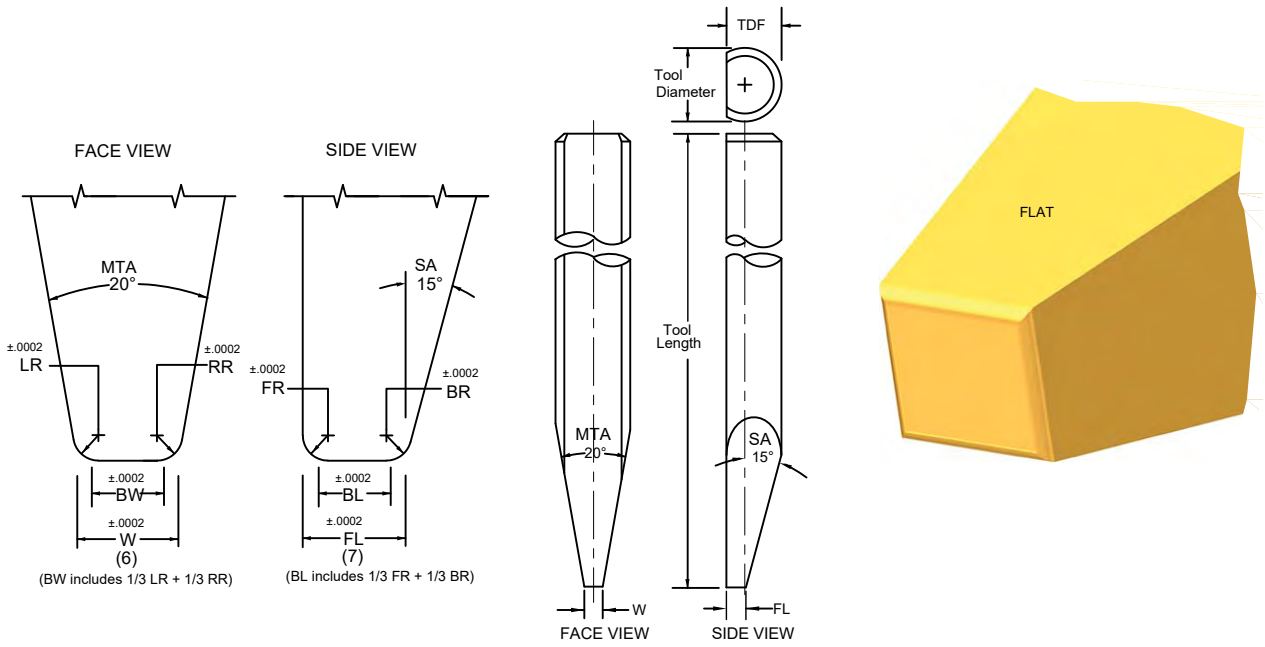
SAMPLE PART NUMBER: M-F-103-1/16-1-.004X.004-M-E
SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** F
3. **STYLE:** 103
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **BOND WIDTH: (BW)** Please specify (include 1/3 FR + 1/3 BR)
7. **FOOT LENGTH: (FL)** Please specify
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
   P = Polished FR, BR, & Bond Flat for thermocompression gold bonding
   MP= Polished FR, BR, and Matte Bond Flat. For ultrasonic aluminum bonding.
9. **LEFT / RIGHT RADIUS:** See Option Chart below.

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	LEFT RADIUS LR	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	RIGHT RADIUS RR	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

SERIES F-103A

Four Sides Radius Tab Tool

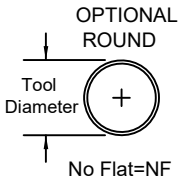


MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.

We recommend ceramic material for all gold wire bonding for optimum results.

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00



SAMPLE PART NUMBER: M-F-103A-1/16-1-.004X.004-M-E-E
SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

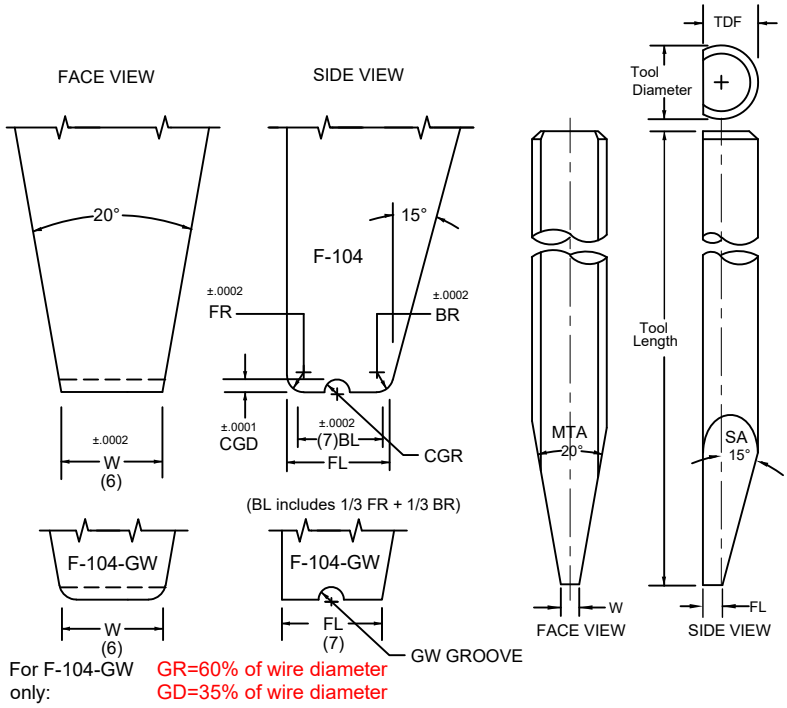
1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** F
3. **STYLE:** 103A
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **BOND WIDTH: (BW)** Please specify (include 1/3 FR + 1/3 BR)
7. **BOND LENGTH: (BL)** Please specify (includes 1/3 FR + 1/3 BR)
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
   P = Polished FR, BR, & Bond Flat for thermocompression gold bonding
   MP= Polished FR, BR, and Matte Bond Flat. For ultrasonic aluminum bonding.
9. **FRONT/BACK RADIUS:** See Option Chart below.
10. **LEFT/RIGHT RADIUS:** See Option Chart below.

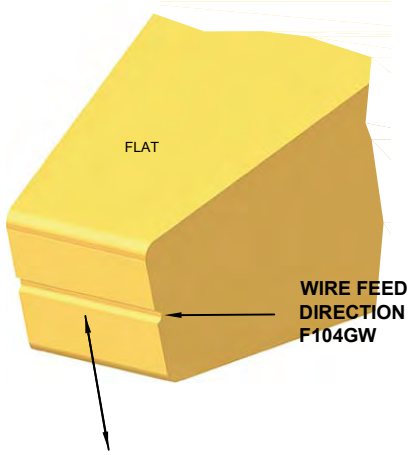
RADIUS OPTION CHART	OPTION LETTER			A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	LEFT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
	FR	LR	µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	RIGHT RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
	BR	RR	µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

SERIES F-104
SERIES F-104-GW

Single Point Tab and Gold Wire Bonding

with GW Groove (FL)





For F-104-GW only: GR=60% of wire diameter
GD=35% of wire diameter

SERIES F-104-GW (WITH GW GROOVE IN FL RADIUS ON W)

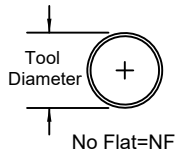
MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.

We recommend ceramic material for all gold wire bonding for optimum results.

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

OPTIONAL ROUND



SAMPLE PART NUMBER: M-F-104-1/16-1-.004X.004-M-E-.001

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES: F**
3. **STYLE: 104 or 104-GW**
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **FOOT WIDTH: (W)** Please specify
7. **FOOT or BOND LENGTH: F104 (BL) / F104-GW (FL),** For F104 only: Please specify (include 1/3 FR + 1/3 BR)
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
   P = Polished FR, BR, & Bond Flat for thermocompression gold bonding
   MP= Polished FR, BR, and Matte Bond Flat. For ultrasonic aluminum bonding.
9. **FRONT/BACK RADIUS:** See Option Chart below. Optional Radius on W and FL insert B-B or E-E etc.
10. **only for F104-GW** Please specify wire size
    GR=60% of wire diameter
    GD=35% of wire diameter

Optional Radius on W, LR and RR insert a second letter (E-E) in place (.9) , **Standard Radius on FL, FR and BR only**

RADIUS OPTION CHART	OPTION LETTER			A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	LEFT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
	FR	LR	µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	RIGHT RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
	BR	RR	µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

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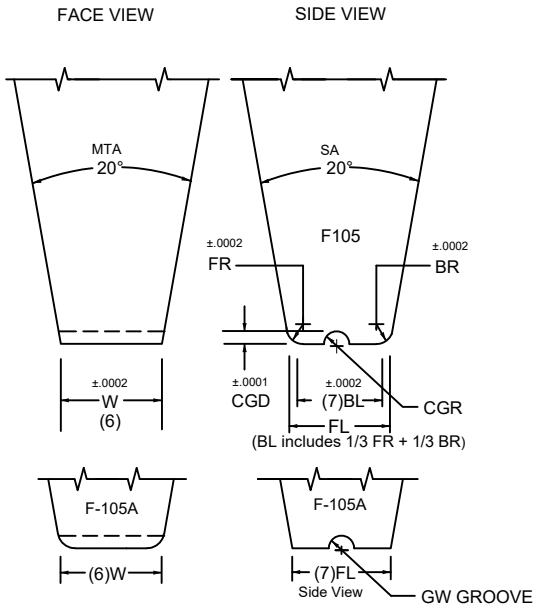
DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

SERIES F-105
SERIES F-105A
SERIES F-105B

Single Point Tab and Gold Wire Bonding, Center Line

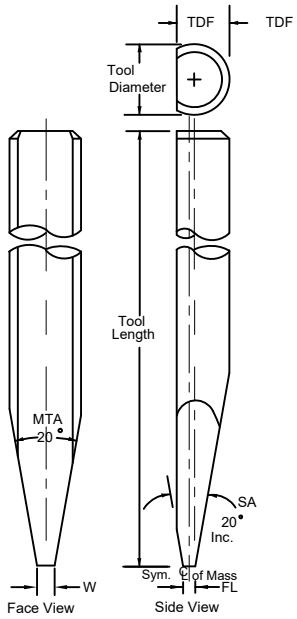
With GW Groove

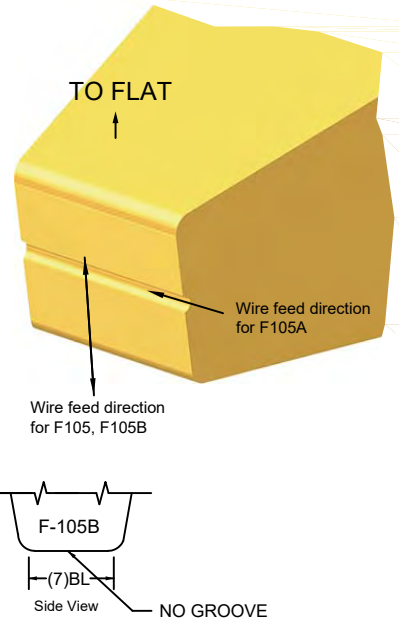
Without Groove



SERIES F-105A WITH GW GROOVE RADIUS ON "W"

GR=60% of wire diameter
GD=35% of wire diameter





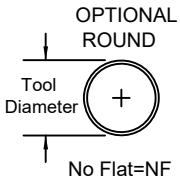
SERIES F 105B without CGR or GW (no Groove)

MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.

We recommend ceramic material for all gold wire bonding for optimum results.

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00



SAMPLE PART NUMBER: M-F-105-1/16-1-.004X.004-M-E-.001
SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

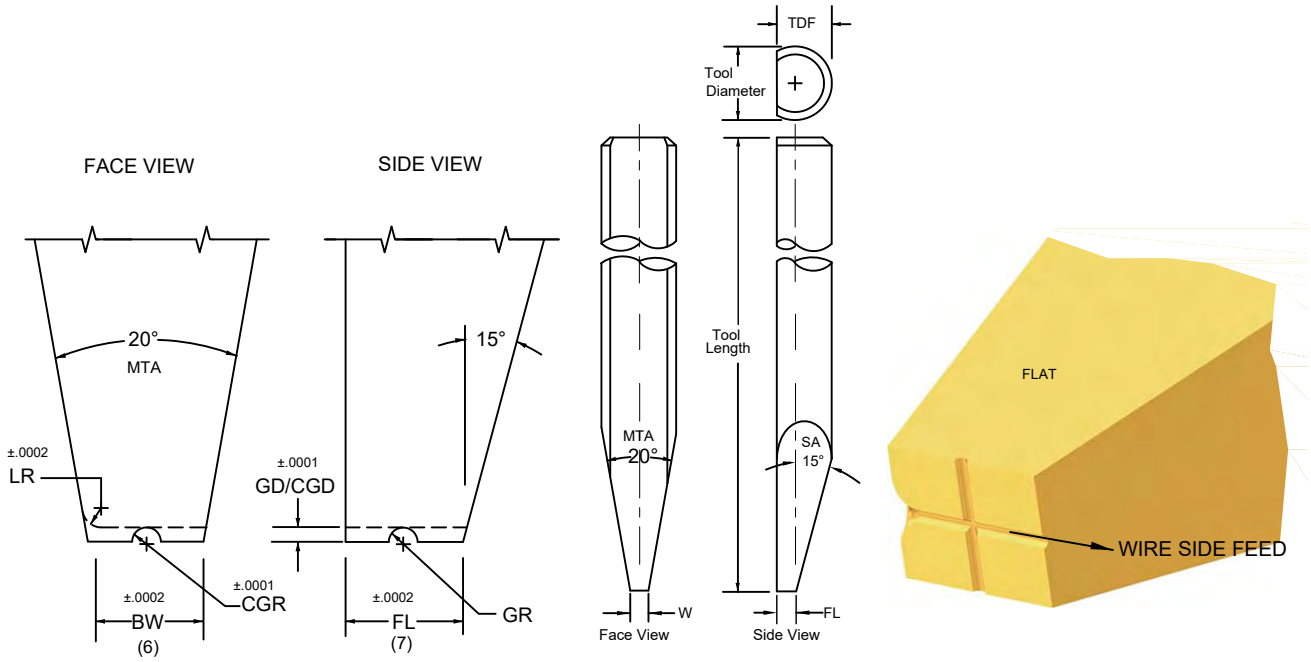
1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES: F**
3. **STYLE: 105 ,105A OR 105B**
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **FOOT WIDTH: (W)** Please specify
7. **FOOT or BOND LENGTH: F105 (BL) / F105A (FL)**
   F105/F105B only: Please specify **(include 1/3 FR + 1/3 BR)**
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
   P = Polished FR, BR, & Bond Flat for thermocompression gold bonding
   MP= Polished FR, BR, and Matte Bond Flat. For ultrasonic aluminum bonding.
9. **FRONT/BACK RADIUS:**
   See Option Chart below.
   Optional Radius on W and FL insert B-B or E-E etc.
10. **only for F105A**
    Please specify wire size
    GR=60% of wire diameter
    GD=35% of wire diameter

Optional Radius on W, LR and RR insert a second letter (E-E) in place (.9) , **Standard Radius on FL, FR and BR only**

RADIUS OPTION CHART	OPTION LETTER			A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	LEFT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
	FR	LR	µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	RIGHT RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
	BR	RR	µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

SERIES F-106

Tab Tool with Groove in Wire Direction and Cross Groove

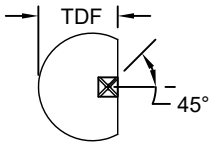


MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE

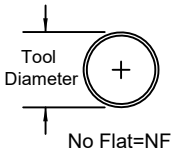
Special dimensions available upon request.
Dimensions not shown please specify.

We recommend ceramic material for all gold wire bonding for optimum results.

A15 OPTION (ROTATION 45°)



OPTIONAL ROUND



	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

SAMPLE PART NUMBER: M-F-106-1/16-1-.004X.004-P-C-.001-*

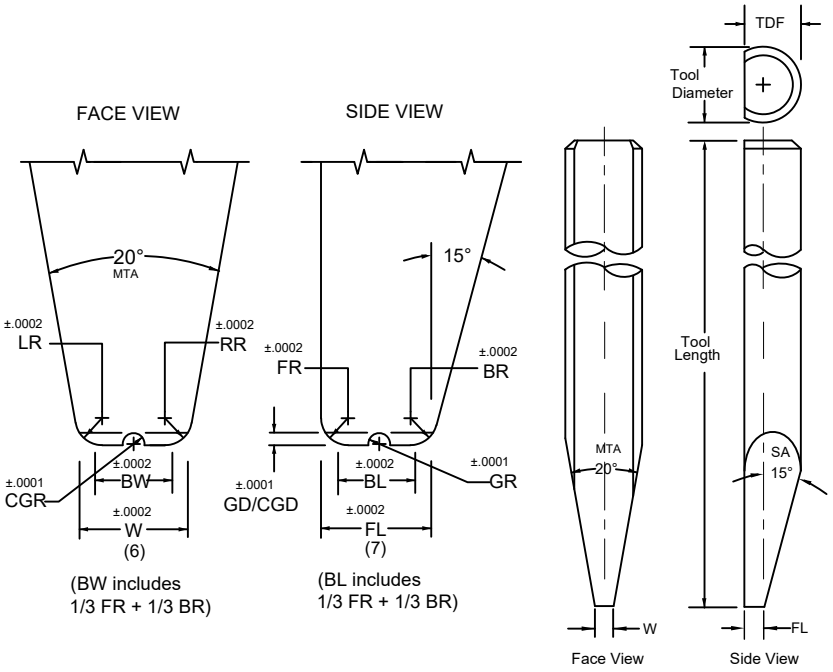
SYMBOL EXPLANATION: * 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11

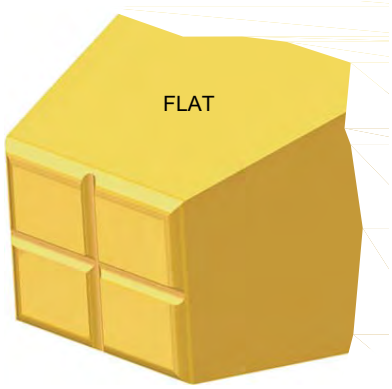
1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** F
3. **STYLE:** 106
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **BOND WIDTH: (BW)** Please specify (include 1/3 LR)
7. **FOOT LENGTH: (FL)** Please specify
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
   P = Polished Left Radius
9. **LEFT RADIUS (LR):** See Option Chart below.
10. **WIRE Ø**
    Wire Ø / Groove Ratios:
    GR/CGR=60% of wire Ø
    GD/CGD=35% of wire Ø
11. **Tool Option:** Please specify MTA , A15 or see **Tool Options**

RADIUS OPTION CHART	OPTION LETTER		A	C	F	J
	LEFT RADIUS	in.	.0005	.0010	.0015	.0020
	LR	µ	13	25	38	51
	RIGHT RADIUS	in.	0	0	0	0
	RR	µ	0	0	0	0

SERIES F-106A

Four Sides Radius Tab Tool with Double Cross Groove



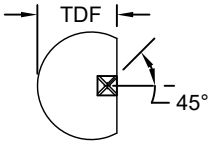


MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE

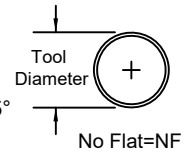
Special dimensions available upon request.
Dimensions not shown please specify.

We recommend ceramic material for all gold wire bonding for optimum results.

A15 OPTION (ROTATION 45°)



OPTIONAL ROUND



	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

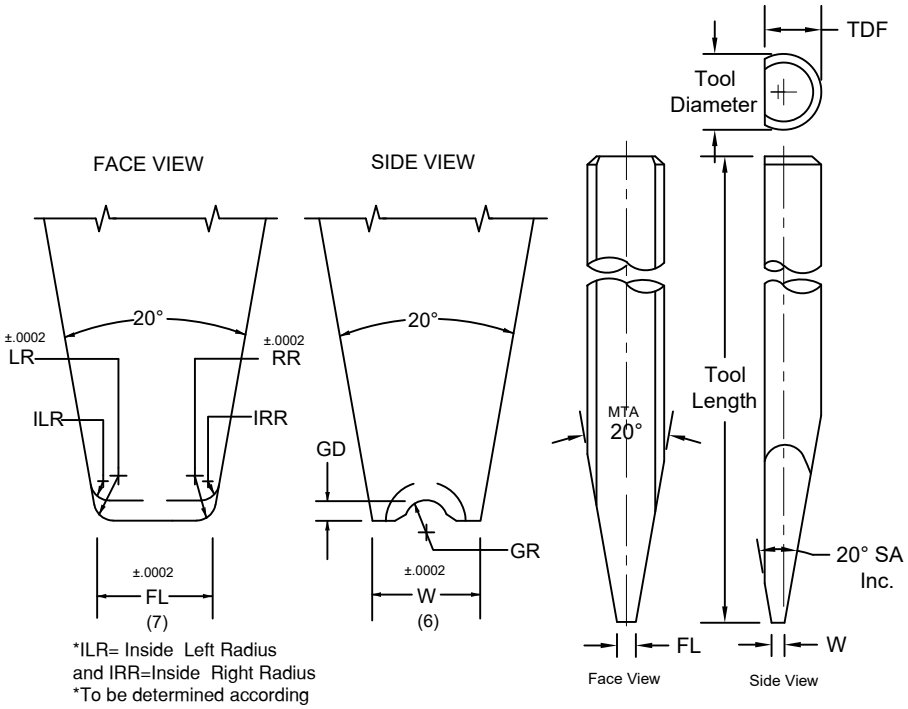
SAMPLE PART NUMBER: M-F-106A-1/16-1-.004X.004-M-E-E-.001-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11 12

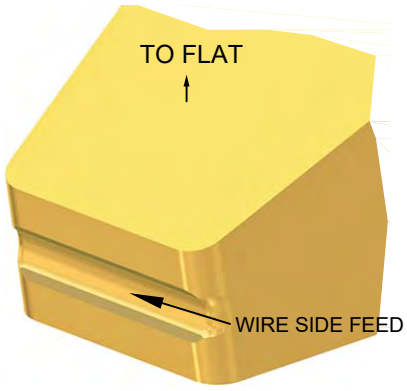
1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: Material Selection Guide **Tool Tips**
2. **SERIES: F**
3. **STYLE: 106A**
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **BOND WIDTH: (BW)** Please specify
7. **BOND LENGTH: (BL)** Please specify
   (includes 1/3 FR + 1/3 BR)
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
   P = Polished FR, BR, & Bond Flat for thermocompression gold bonding
   MP= Polished FR, BR, and Matte Bond Flat. For ultrasonic aluminum bonding.
9. **FRONT/BACK RADIUS:** See Option Chart below.
10. **LEFT/RIGHT RADIUS:** See Option Chart below.
11. **WIRE Ø:** Please specify
    Wire Ø / Groove Ratios:
    GR/CGR=60% of wire Ø
    GD/CGD=35% of wire Ø
12. **Tool Option:** Please specify MTA , A15 or see **Tool Options**

RADIUS OPTION CHART	OPTION LETTER			A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	LEFT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
	FR	LR	µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	RIGHT RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
	BR	RR	µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

SERIES F-108 Tab Tool for Bonding Insulated Wire



*ILR= Inside Left Radius
and IRR=Inside Right Radius
*To be determined according
to the Size of the Groove Radius "GR"



Standard: Wire Side Feed
Optional: Wire Feed to Flat insert **TF** In place 11.
TF=To Flat (Groove 90° rotated)

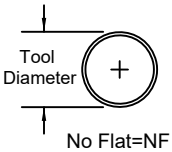
MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.

We recommend ceramic material for all gold wire bonding for optimum results.

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

OPTIONAL ROUND



SAMPLE PART NUMBER: M-F-108-1/16-1-.004X.007-M-E-.001-*
SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

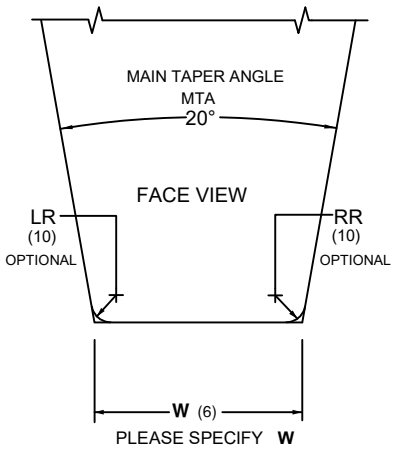
1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other:
   See Material Selection Guide
2. **SERIES: F**
3. **STYLE: 108**
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **FOOT WIDTH: (W)** Please specify
7. **FOOT LENGTH: (FL)**
   Please specify
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
   P = Polished FR, BR, & Bond Flat for thermocompression gold bonding
   MP= Polished FR, BR, and Matte Bond Flat. For ultrasonic aluminum bonding.
9. **LEFT/RIGHT RADIUS:**
   See Option Chart below.
10. **WIRE Ø:**
    Please specify wire diameter
    GR=60% of wire diameter
    GD=50% of wire diameter
11. **OPTIONS**
    TF=To Flat

RADIUS OPTION CHART	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N
	LEFT RADIUS LR	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
		µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	RIGHT RADIUS RR	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
		µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

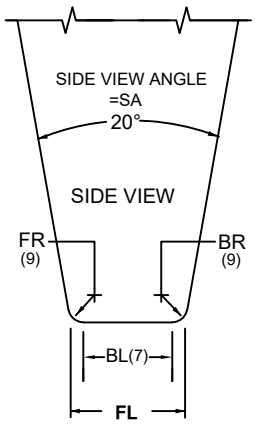
SERIES F-109

Right Angled Tip Tab Tool

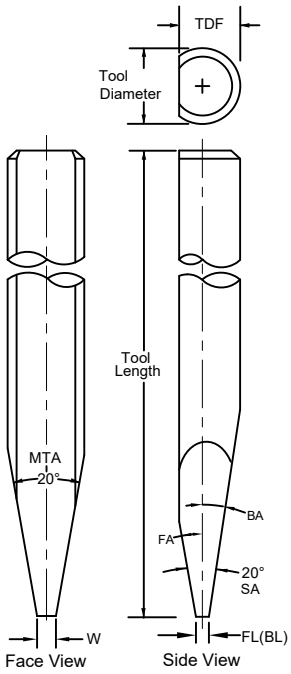


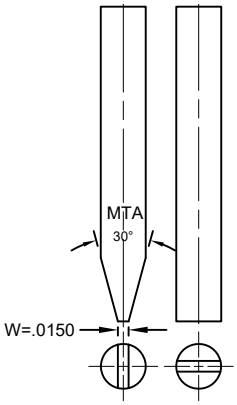
PLEASE SPECIFY **W**

STANDARD FOR W
(10) NO RADIUS =**A**



PLEASE SPECIFY **BL**
BOND LENGTH
(includes 1/3 FR + 1/3 BR)

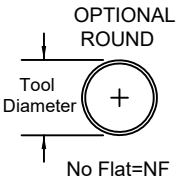




Example: Optional Round,
no Radius, W=.0150,
FL= same as Diameter, MTA=30°
PART#: MF109-1/16-437-.015-M-MTA=30°

TD			TDF	
	inch	mm	inch	mm
1/16	.0624	1.58	.0460	1.17
1/16	.0624	1.58	.0590	1.50
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1100	2.79
1/8	.1249	3.17	.1180	3.00

For Standard Round specify TD only
For Optional Flat specify TD and TDF



SAMPLE PART NUMBER: M- F -109-1/16-1-.010X.020-M-B5-A-*
SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. **MATERIAL:**
M = Ceramic
C = Tungsten Carbide
T = Titanium
All other: See Material Selection Guide

2. **SERIES: F**

3. **STYLE: 109**

4. **TOOL DIAMETER:** Please specify

5. **TOOL LENGTH:** Please specify

6. **FOOT WIDTH: (W)** Please specify

7 . **BOND LENGTH: (BL)** Please specify
(includes 1/3FR 1/3+ BR)

8. **FOOT FINISH: M =** Matte
P = Polished Radius

9. **RADIUS: FR/BR**
See Option Chart.

10. **RADIUS: LR/RR**
See Option Chart. (STANDARD A=0)

11. **Tool Option:**
Please specify MTA&
SA (Tool-Angle)
or see **Tool Options**

OPTION CHART (10/11)	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M
	Radius W / FL	in.	.0000	.0010	.0020	.0030	.0040	.0050	.0060	.0070	.0080	.0090	.0100	.0110	.0120
		µ	0	25	51	76	102	127	152	178	203	229	254	279	305

EXAMPLE FOR ALL OTHER RADIUS :

D =.0030 **E =.0040** **A1 to A9=.0001-.0009**
D4=.0034 **E1=.0041** **B1 to B9=.0011-.0019**
D5=.0035 **E2=.0042** **C1 to C9=.0021-.0029**

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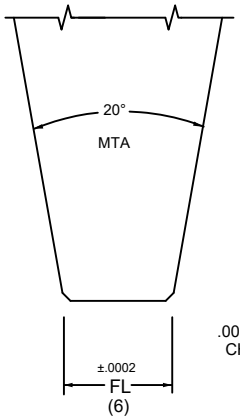
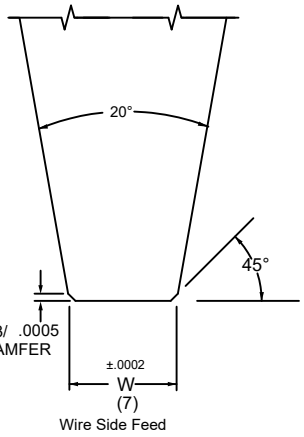
SERIES F-408

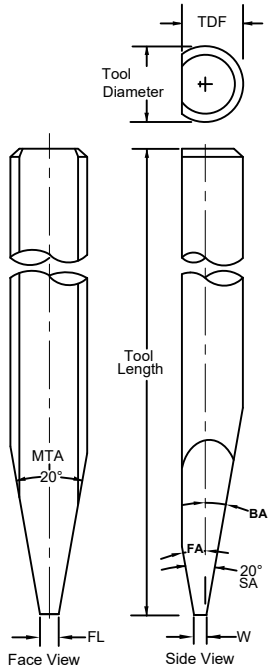
Four Sides Tab Tool with Cross Grooves and Diamond Points

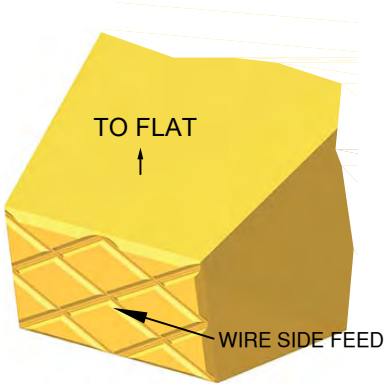
FACE VIEW



SIDE VIEW



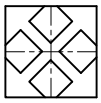




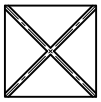
Example for 12 raised Section

STANDARD: WIRE SIDE FEED
OPTIONAL: WIRE FEED TO FLAT

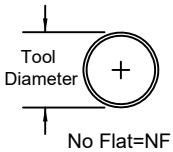
FD OPTION 4 whole Diamond (only required by only 4 Diamond)



Standard for 4 raised Section



OPTIONAL ROUND



No Flat=NF

MTA = MAIN TAPER ANGLE
SA = SIDE VIEW ANGLE
FA = FRONT ANGLE
BA =BACK ANGLE
Special dimensions available upon request.
Dimensions not shown please specify.
We recommend ceramic material for all gold wire bonding for optimum results.

	TD		TDF	
	inch	mm	inch	mm
1/16	.0624	1.58	.0460	1.17
1/16	.0624	1.58	.0590	1.50
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1100	2.79
1/8	.1249	3.17	.1180	3.00

SAMPLE PART NUMBER: M-F-408-1/16-1-.004X.004-M-12-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other:
   See Material Selection Guide
2. **SERIES: F**
3. **STYLE: 408**
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **FOOT WIDTH: (W)** Please specify
7. **FOOT LENGTH: (FL)** Please specify
8. **FOOT FINISH:**
   M = Matte, better coupling for thermosonic gold bonding
9. **DIAMOND POINTS or raised Section:**
   Please specify desired number of Diamond Points or raised Section
10. **Option and Specification**
    FD= Full Diamond or empty
    Specify Tool Angle: MTA, SA, FA or BA

Standard on SERIES F-408 45° Chamfer

Optional Radius on FL, Left Radius = LR and RR=Right Radius , for W, FR and BR. **Example: insert E-E or E in Place 10. Option**

RADIUS OPTION CHART	OPTION LETTER			A	B	C	D	E	F	G	H	I	J	K	L	M	N
	FRONT RADIUS	LEFT RADIUS	in.	.0005	.0005	.0010	.0010	.0010	.0015	.0015	.0015	.0015	.0020	.0020	.0020	.0020	.0020
	FR	LR	µ	13	13	25	25	25	38	38	38	38	51	51	51	51	51
	BACK RADIUS	RIGHT RADIUS	in.	0	.0005	0	.0005	.0010	0	.0005	.0010	.0015	0	.0005	.0010	.0015	.0020
	BR	RR	µ	0	13	0	13	25	0	13	25	38	0	13	25	38	51

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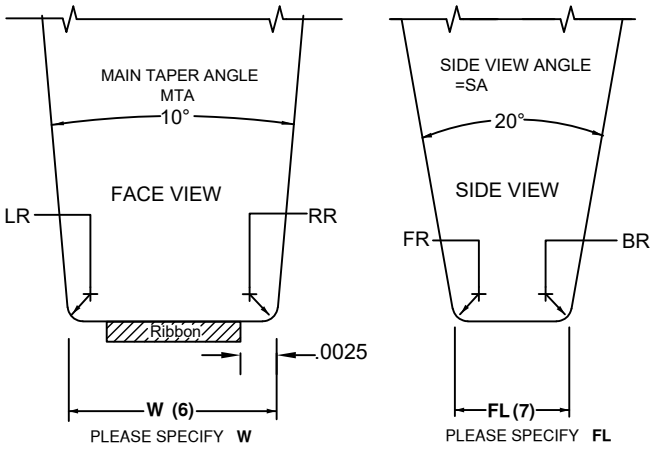
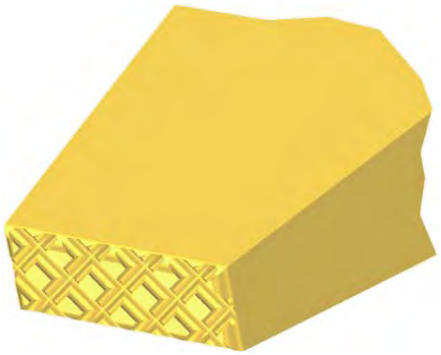
SERIES F 508 (A) (B) or (C)

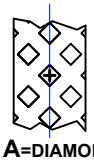
RIBBON STANDARD : A & **TD= Ø ⅛, TDF=.110**

REQUIRED FOR ORDER: RIBBON SIZE & (4),(5),(7),(8),(9)

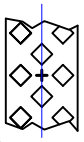


For Example click here

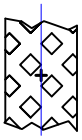




A=DIAMOND POSITION IN CENTER STANDARD



B= DIAMOND POSITION AROUND CENTER



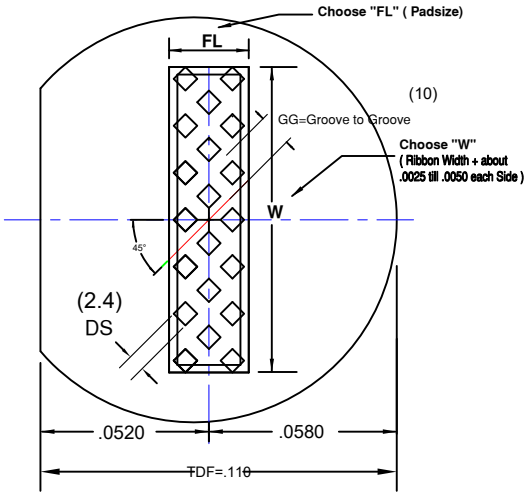
C= DIAMOND POSITION CENTER BETWEEN DIAMOND

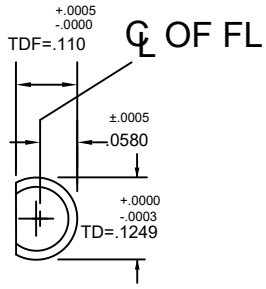
PLEASE SPECIFY EXAMPLE: ONLY FOR REFERENCE
W= RIBBON WIDTH + 2 x .0025 RIBBON THICKNESS MORE THAN .010 (10 MILL) THEN 2x.0050

MTA = MAIN TAPER ANGLE = 10° STANDARD
SA = SIDE VIEW ANGLE = 20° STANDARD
EXAMPLE:
10: GG GROOVE TO GROOVE=.0060=(6)
11: DS= DIAMOND SIZE=.0024=(2.4)
12: GD=GROOVE DEPTH=.0020=(2)
13: GR=GROOVE RADIUS=.0026=(2.6)

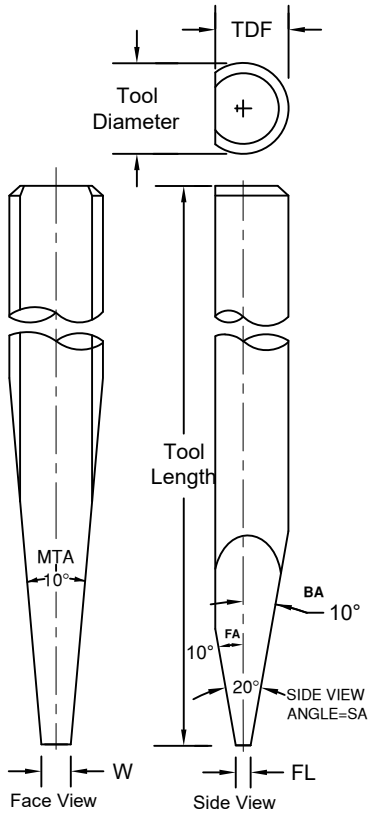
TD			TDF	
	inch	mm	inch	mm
1/16	.0624	1.58	.0460	1.17
1/16	.0624	1.58	.0590	1.50
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1100	2.79
1/8	.1249	3.17	.1180	3.00

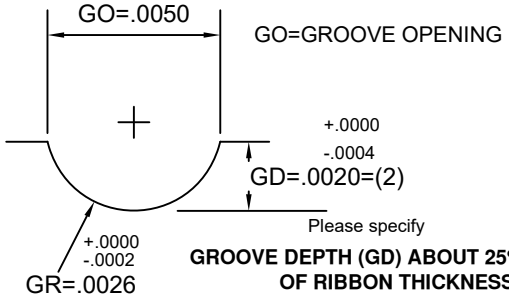
Diamond Tip=DT
preferably
for large Tools
Minimum of Groove:
Radius=.00025
Groove to Groove=.0015





STANDARD
TD=1/8





Diamond Tip
preferably for large Tools
Minimum of Groove:
Radius=.00025
Groove to Groove=.0015

GROOVE DEPTH (GD) ABOUT 25% TO 50% OF RIBBON THICKNESS

DETAIL GROOVE EXAMPLE

SERIES F 508 (A) (B) or (C)

RIBBON A= STANDARD= (EMPTY FIELD)

Standard for all of are F508 Series:
Foot Finish = M = Matte , no Letter required

REQUIRED FOR ORDER: RIBBON SIZE FOR GD CALCULATION & (4),(5),(7),(8),(9)

Special dimensions available upon request.
Dimensions not shown please specify.
Two or Four Sides Radius Tab Tool

Example in mil :
GG=.0060=6
.0060*1000=6

TOOL ANGLE:
(STANDARD=MTA=10°)
MTA=MAIN TAPER ANGLE
(STANDARD=SA=20°)
SIDE-VIEW ANGLE=SA

Special dimensions available upon request.

SAMPLE PART NUMBER: M-F-508A-1/8-2-.045X.015-A8-A-6-2.4-2-2.6-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11 12 13 14

6 = **W** 7 = **FL** 8 = **FR & BR** 9 = **LR & RR** 10 = **GG** 11 = **DS** 12 = **GD** 13 = **GR**

1. MATERIAL:
M = Ceramic
C = Tungsten Carbide
T = Titanium Tip Carbide Shank ,
All other:
See Material Selection Guide

2. SERIES: F

3. STYLE: 508
Please specify
Diamond Position A, B, or C

4. TOOL DIAMETER: Please specify

5. TOOL LENGTH: Please specify

6. FOOT WIDTH: (W) Please specify

7. FOOT LENGTH: (FL) Please specify

8. FRONT/BACK RADIUS (FL):
Please specify A, B,C etc.
See Option Chart below. X=customized

9. LEFT/RIGHT RADIUS (W):
Please specify A, B,C etc.
See Option Chart below. X=customized

10. GROOVE TO GROOVE (GG):
Please specify in mil

11. DIAMOND SIZE (DS)
Please specify in mil

12. CROSS GROOVE DEPTH (GD):
Please specify in mil

13. CROSS GROOVE RADIUS (GR):
Please specify in mil
Empty field=same as GD

14. OPTION:
TOOL ANGLE: (MTA)
and other OPTION
Please specify
MTA=MAIN TAPER ANGLE
BA=BACK-ANGLE
FA=FRONT-ANGLE
SA = SIDE-VIEW ANGLE
STANDARD:
MTA=10°, SA=20° =Empty field

OPTION CHART (8) RADIUS FOR FOOT LENGTH (FL)	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	FRONT RADIUS	in.	.0000	.0010	.0020	.0030	.0040	.0050	.0060	.0070	.0080	.0090	.0100	.0110	.0120	.0130	.0140
		µ	0	25	51	76	102	127	152	178	203	229	254	279	305	330	356
	BACK RADIUS	in.	.0000	.0010	.0020	.0030	.0040	.0050	.0060	.0070	.0080	.0090	.0100	.0110	.0120	.0130	.0140
		µ	0	25	51	76	102	127	152	178	203	229	254	279	305	330	356

OPTION CHART (9) RADIUS FOR FOOT WIDTH (W)	OPTION LETTER		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	LEFT RADIUS	in.	.0000	.0010	.0020	.0030	.0040	.0050	.0060	.0070	.0080	.0090	.0100	.0110	.0120	.0130	.0140
		µ	0	25	51	76	102	127	152	178	203	229	254	279	305	330	356
	RIGHT RADIUS	in.	.0000	.0010	.0020	.0030	.0040	.0050	.0060	.0070	.0080	.0090	.0100	.0110	.0120	.0130	.0140
		µ	0	25	51	76	102	127	152	178	203	229	254	279	305	330	356

EXAMPLE
ALL OTHER
RADIUS:
A =.0000 **B =.0010**
A4=.0004 **B1=.0011**
A5=.0005 **B2=.0012**
A6=.0006 **B3=.0013**
A7=.0007 **B4=.0014**
A8=.0008 **B5=.0015**

A1 to A9=.0001-.0009
B1 to B9=.0011-.0019
C1 to C9=.0021-.0029
D1 to D9=.0031-.0039
for all

EXAMPLE:
RADIUS=.0000 = A
RADIUS=.0015 = B5
RADIUS=.0066 = G6

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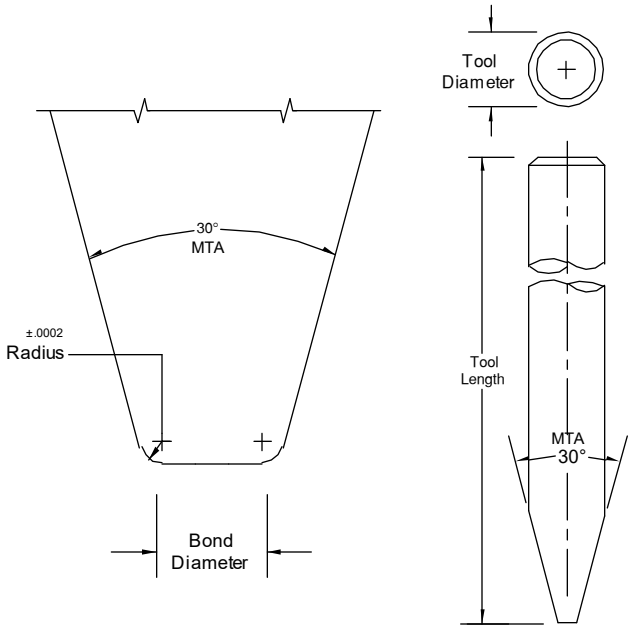
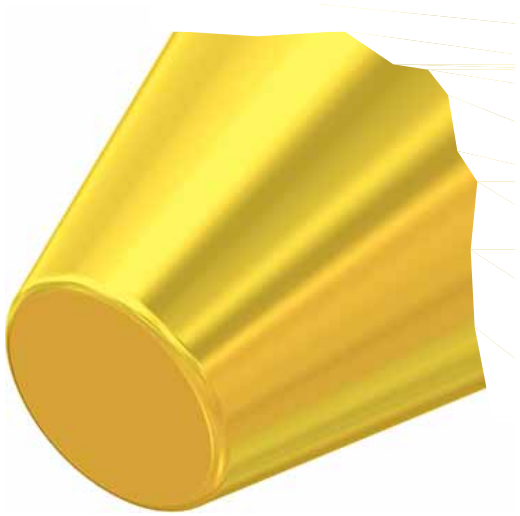
SERIES CT-107

Conical Tip Tab Tool

STANDARD ROUND

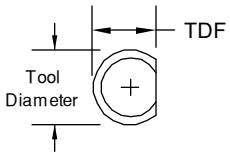




MTA = MAIN TAPER ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.
We recommend ceramic material for all gold wire bonding for optimum results.

OPTIONAL FLAT



For Standard Round specify TD only
For Optional Flat specify TD and TDF

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

SAMPLE PART NUMBER: M-CT-107-1/16-1-.001-M-C-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9

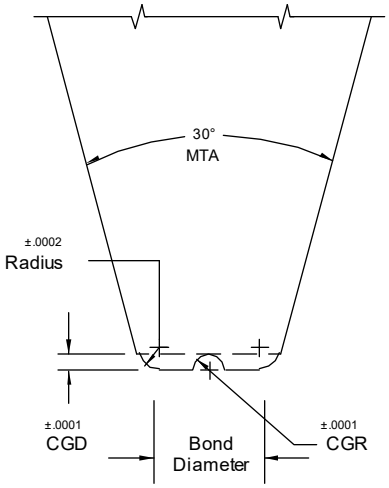
1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** CT
3. **STYLE:** 107
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **BOND DIAMETER:** Please specify (Includes 2/3 R)
7. **FOOT FINISH:**
   M = Matte
   P = Polished Radius
8. **RADIUS:** See Option Chart.
9. **Tool Option:**
   Please specify MTA (Tool-Angle) or see **Tool Options**

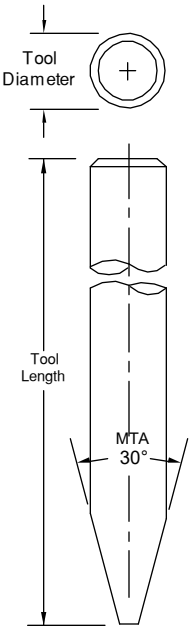
RADIUS OPTION CHART	OPTION LETTER		A	C	F	J
	RADIUS	in.	.0005	.0010	.0015	.0020
		µ	13	25	38	51

SERIES CT-207

Conical Tip Tab Tool, Groove in Wire Direction and Cross Groove

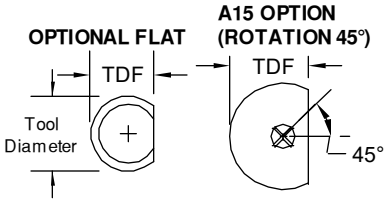
STANDARD ROUND





MTA = MAIN TAPER ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.
We recommend ceramic material for all gold wire bonding for optimum results.



For Standard Round specify TD only
For Optional Flat specify TD and TDF

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

SAMPLE PART NUMBER: M-CT-207-1/16-1-.001-M-C-.0010-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** CT
3. **STYLE:** 207
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **BOND DIAMETER:** Please specify (Includes 2/3 R)
7. **FOOT FINISH:**
   M = Matte
   P = Polished Radius
8. **RADIUS:** See Option Chart below.
9. **WIRE:**
   Please specify Wire Ø
   GR/CGR=60% of wire Ø.
   GD/CGD=35% of wire Ø.
10. **Tool Option:**
    Please specify MTA (Tool-Angle)
    A15 or see **Tool Options**

RADIUS OPTION CHART	OPTION LETTER		A	C	F	J
	RADIUS	in.	.0005	.0010	.0015	.0020
		µ	13	25	38	51

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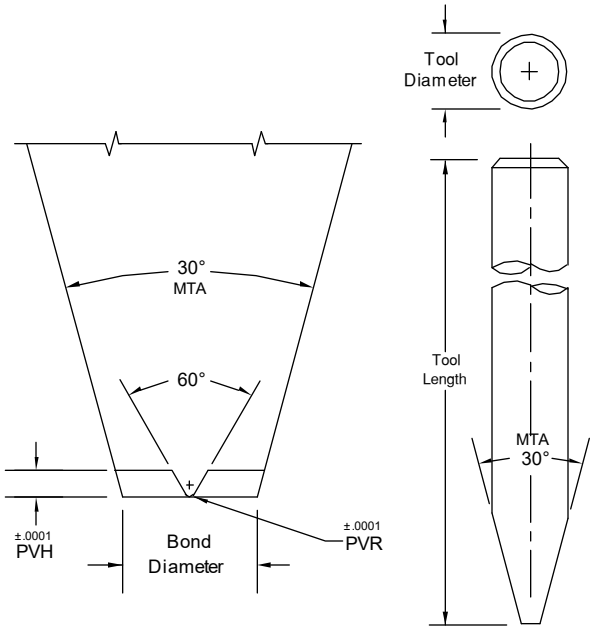
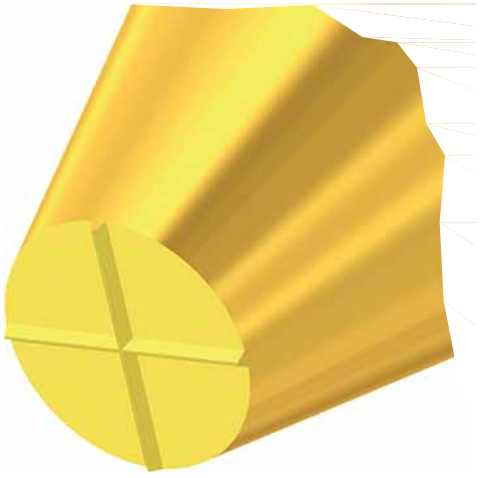
SERIES CT-208

Conical Tip Tool with Double Protruding `V' Radius

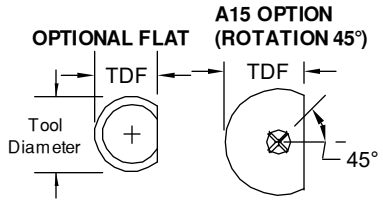
STANDARD ROUND





MTA = MAIN TAPER ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.
We recommend ceramic material for all gold wire bonding for optimum results.



For Standard Round specify TD only
For Optional Flat specify TD and TDF

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

SAMPLE PART NUMBER: M-CT-208-1/16-1-.001-M-R-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9

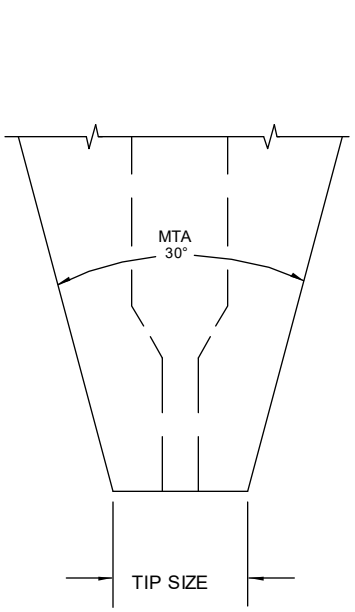
1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES: CT**
3. **STYLE: 208**
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **BOND DIAMETER:** Please specify
7. **FOOT FINISH:**
   M = Matte finish
8. **PVR / PVH:**
   See Option Chart below.
   PVR= Protruding 'V' Radius
   PVH= Protruding 'V' Height
9. **Tool Option:**
   Please specify MTA (Tool-Angle)
   A15 or see **Tool Options**

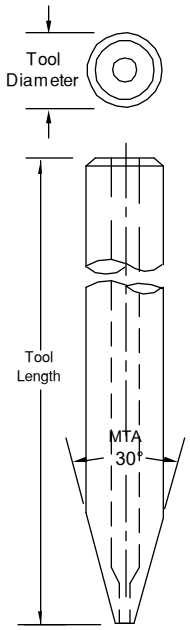
OPTION LETTER		O	P	Q	R	S
PVR RADIUS	in.	0	0	.0002	.0002	.0004
	µ	0	0	5	5	10
PVH HEIGHT	in.	.0002	.0003	.0005	.0005	.0010
	µ	5	8	13	13	25

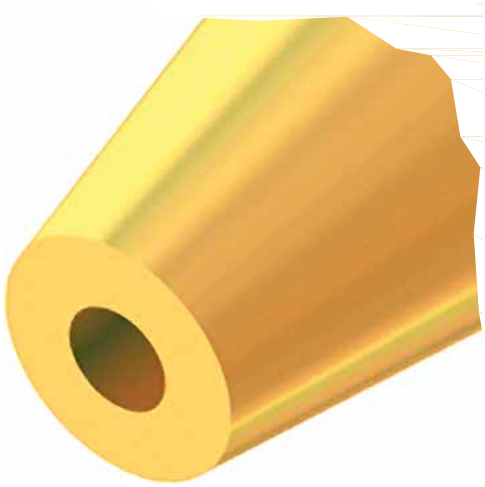
SERIES CTV

VACUUM PICK-UP TOOL

STANDARD ROUND



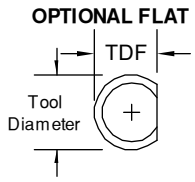




MTA = MAIN TAPER ANGLE

Special dimensions available upon request.
Dimensions not shown please specify.
We recommend ceramic material for all gold wire bonding for optimum results.

OPTIONAL FLAT



For Standard Round specify TD only
For Optional Flat specify TD and TDF

	TD		TDF	
	in.	mm	in.	mm
1/16	.0624	1.59	.0460	1.17
	.0784	1.99	.0630	1.60
3/32	.0937	2.38	.0880	2.24
	.1180	3.00	.0985	2.50
1/8	.1249	3.17	.0937	2.38
1/8	.1249	3.17	.1180	3.00

SAMPLE PART NUMBER: C-CT-V-1/16-1-.015-.010-P-X- *

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10

1. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide
2. **SERIES:** CT
3. **STYLE:** Vacuum Pick-up Tool
4. **TOOL DIAMETER:** Please specify
5. **TOOL LENGTH:** Please specify
6. **TIP SIZE:** Please specify
7. **HOLE DIAMETER:** Please specify
8. **TIP FINISH:**
   M = Matte
   P = Polish
9. **RADIUS:** See Option Chart below.
10. **Tool Option:** Please specify MTA (Tool-Angle) or see **Tool Options**

RADIUS OPTION CHART	OPTION LETTER		A	C	F	J	X
	RADIUS	in.	.0005	.0010	.0015	.0020	.0000
		µ	13	25	38	51	0

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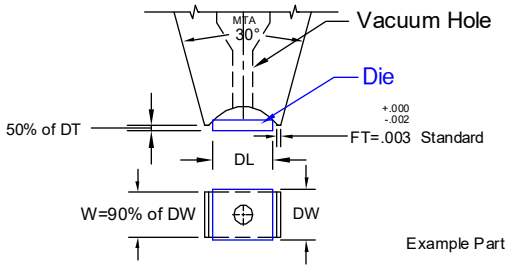
Help Example

SERIES CC, FT, IP, SC, P

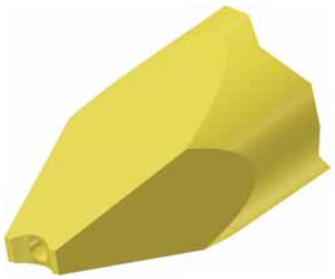
First, choose Tool Tip input: CC, FT, IP, SC or P , **Second choose Tip Style (Head Form) input:** 1,2 or 3 (Page 115)

CC= Concave Channel

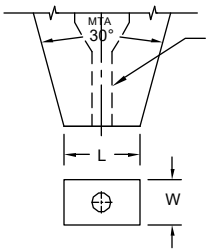


L = Tool Length
DL = Die Length
DW =Die Width
DT = Die Thickness

"L" "DL" "DW" "DT"
Example Part # C- CC - 2 -1/16-1-012-010-004
Insert a CC in Series Part# Place 2.

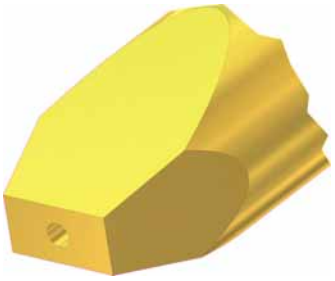


FT= Flat Tip Rectangular

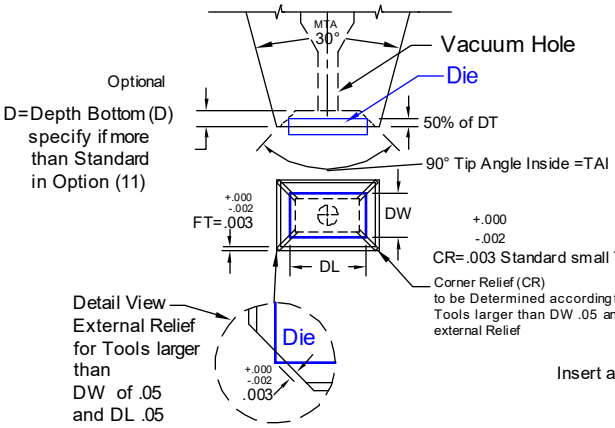


L = Tool Tip Length
W = Tool Tip Width

"Tool Length" "L" "W"
Example Part # C-FT-2-1/16-1-041-036
Insert a FT in Part# Place 2.

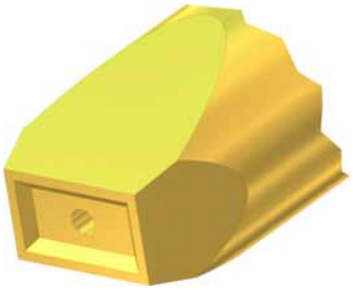


IP= Inverted Pyramid

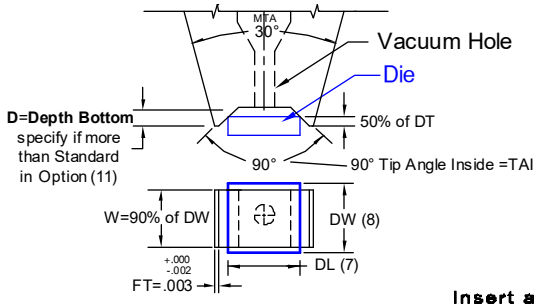


L = Tool Length
TAI = Tip Angle Inside
DL = Die Length
DW =Die Width
DT = Die Thickness

Insert a IP in Part# Place 2.
"L" "TAI" "DL" "DW" "DT"
Example Part # C-IP-2-1/16-1-90-041-036-004

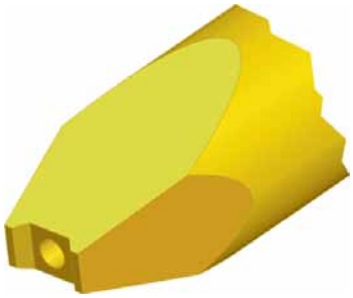


SC= Straight Sided Channel



L = Tool Length
TAI = Tip Angle Inside
DL = Die Length
DW =Die Width
DT = Die Thickness

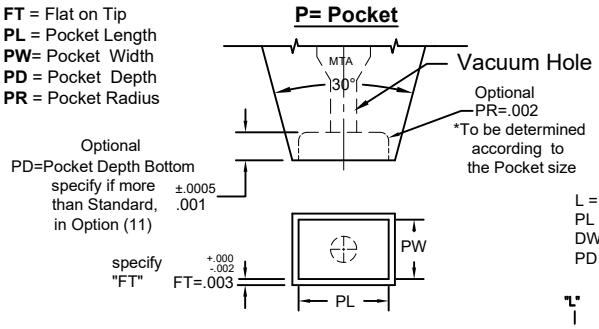
Insert a SC in Place 2. Series
"L" "TAI" "DL" "DW" "DT"
Example Part # C-SC-2-1/16-1-90-625-90-020-016-004

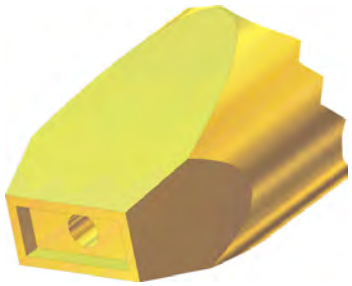


For Order Information lookup Page 3 of the Series Vacuum Pickup Tools
DL = Die Length, DW =Die Width, DT = Die Thickness, CR = Corner Relief, TAI = Tip Angle Inside
*All dimensions and tolerances are for reference only

SERIES CC, FT, IP, SC, P

FT = Flat on Tip
PL = Pocket Length
PW= Pocket Width
PD = Pocket Depth
PR = Pocket Radius





Example Part # C-P-2-1/16-1-041-036-004

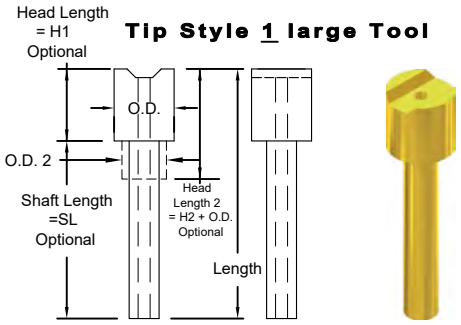
Insert a P in Part# Place 2.

Tip Style (Head Form) Configuration

Choose a Tip Style, input : 1, 2 or 3 in the Part Number in **3. Style**

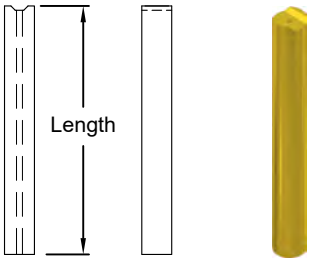
Illustrated Tool SC-SERIES

Tip Style 1 large Tool



Illustrated Tool SC-1

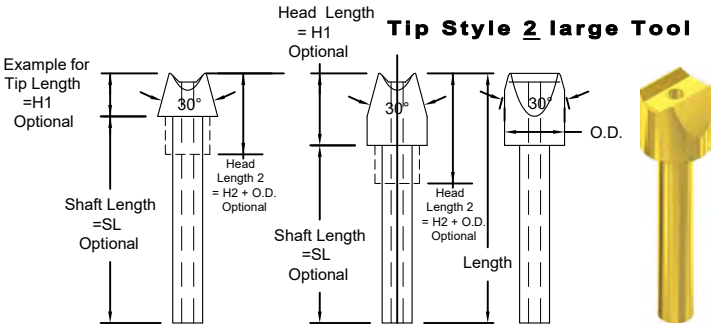
Tip Style 1 small Tool



Example Part # C-SC-1-1/16-1-90-036-041-004-H1=.125

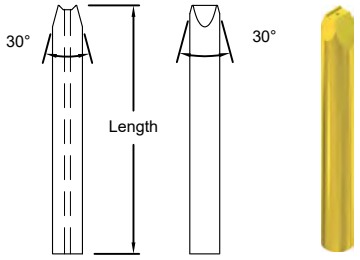
Insert a 1 for Tip (Head) Style in Part # Place 3

Tip Style 2 large Tool



Illustrated Tool SC-2

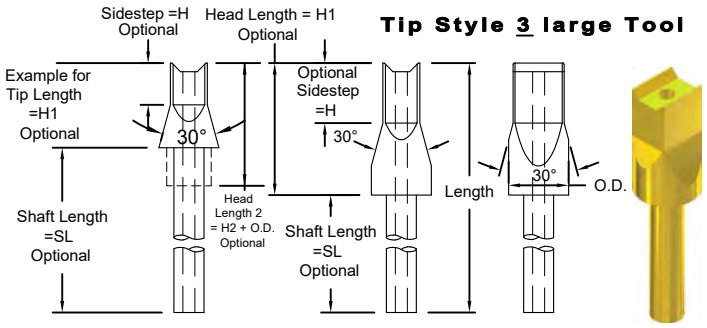
Tip Style 2 small Tool



Example Part # C-SC-2-1/16-1-90-036-041-004-H1=.125

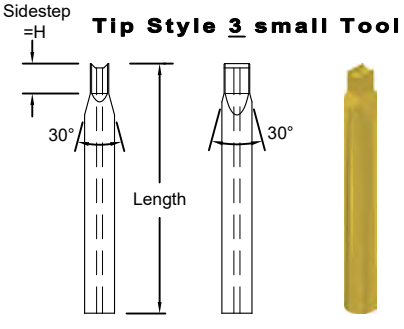
Insert a 2 for Tip (Head) Style in Part # Place 3

Tip Style 3 large Tool



Illustrated Tool SC-3

Tip Style 3 small Tool



Example Part # C-SC-3-1/16-1-90-036-041-004-H=.125-H1=.250

Insert a 3 for Tip (Head) Style in Part # Place 3

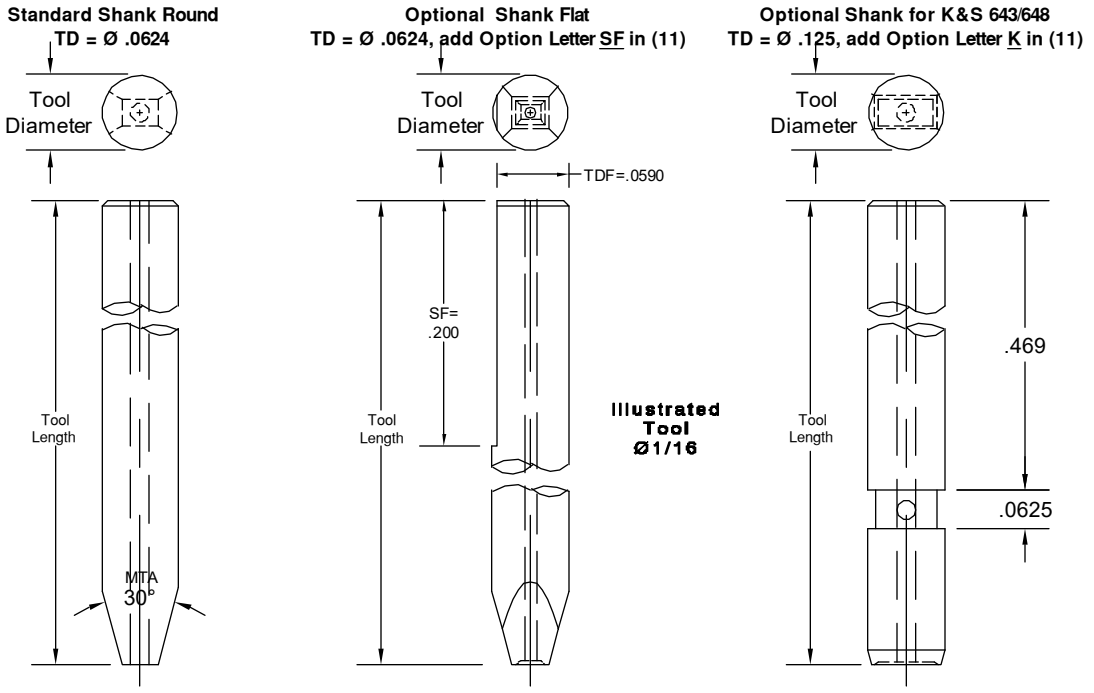
For Order Information lookup Page 3 of the Series Vacuum Pickup Tools
DL= Die Length, DW=Die Width, DT= Die Thickness, CR= Corner Relief, FT= Flat on Tip, TAI= Tip Angle Inside
*All dimensions and tolerances are for reference only

Return to Table of Contents

SERIES CC, FT, IP, SC, P

This are Representative Tools, please contact DeWeyl Customer Service for customized Tools

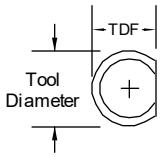
Help Example



Special dimensions available upon request.
Dimensions not shown please specify.

D= Depth Bottom (Pocket and Cannel, IP, P ,SC)
H= Sidestep Tip
HL= Head Length (Tip)
O.D.= Outside Ø Tip (Head)
MTA = MAIN TAPER ANGLE
SL= Shaft Length

OPTIONAL FLAT



For Standard Round specify TD only
For Optional Flat specify TD and TDF

TD			TDF		STANDARD FOR TDF
	in.	mm	in.	mm	
1/16	.0624	1.59	.0460	1.17	
1/16	.0624	1.59	.0590	1.50	X
	.0784	1.99	.0630	1.60	
	.0784	1.99	.0720	1.83	
3/32	.0937	2.38	.0880	2.24	
	.1180	3.00	.0985	2.50	
1/8	.1249	3.17	.0937	2.38	
1/8	.1249	3.17	.1180	3.00	

ORDERING INFORMATION

SAMPLE PART NUMBER: C-SC-3-1/16-1-90-036-041-004-*-*

SYMBOL EXPLANATION: 1 2 3 4 5 6 7 8 9 10 11

1. MATERIAL:
M = Ceramic
C = Tungsten Carbide **(Standard)**
T = Titanium
All other: See Material Selection Guide

2. SERIES: CC, FT, IP, SC, P

3. STYLE: Tip Style 1, 2, 3

4. TOOL DIAMETER: Please specify

5. TOOL LENGTH: Please specify

6. TIP ANGLE INSIDE (TAI): For Die Please specify, only Series IP, SC

7. LENGTH: For Die Tools=DL (For Series FT=L, P=PL) Please specify

8. WIDTH: For Die Tools= DW
(For Series FT=W, P=PW)
Please specify

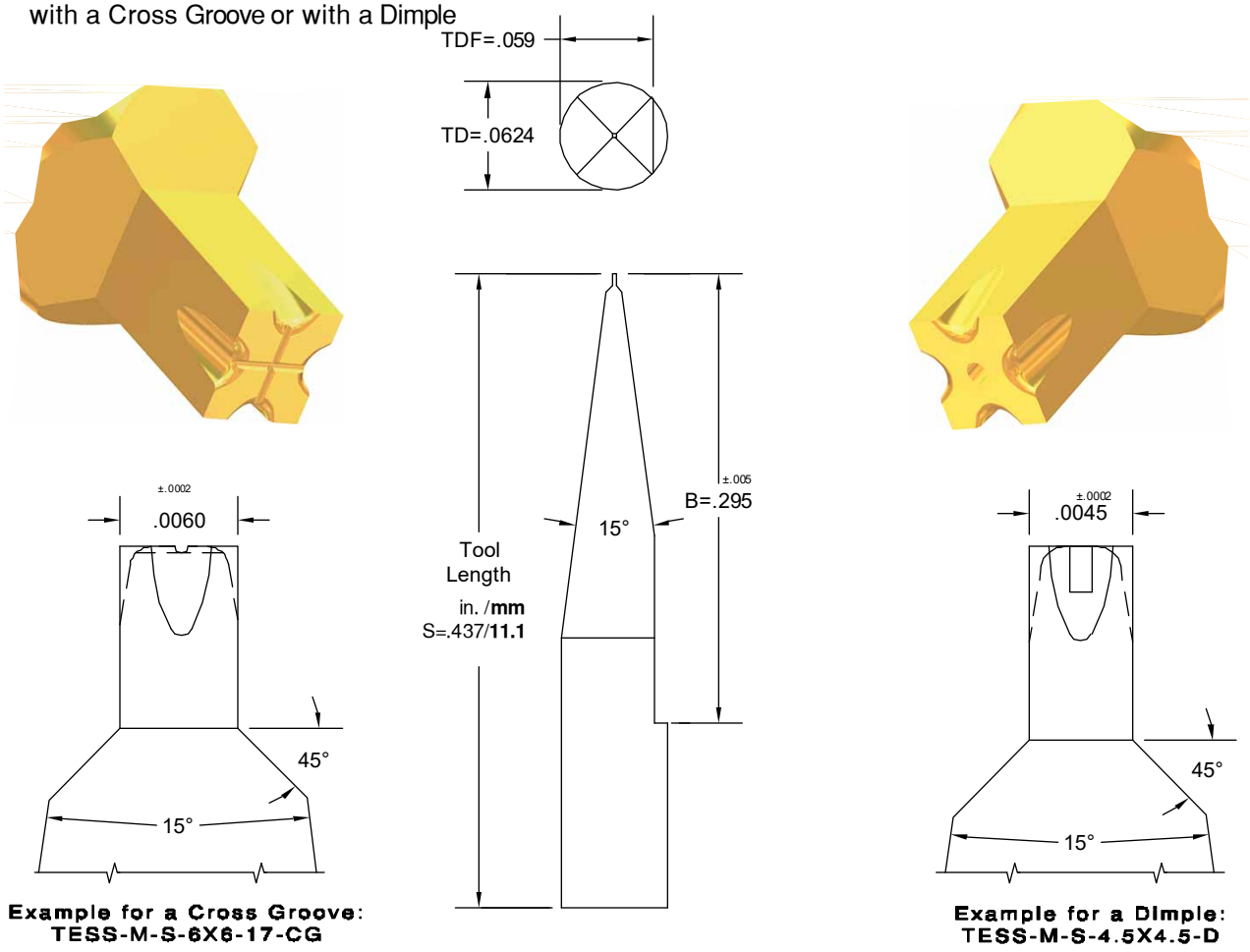
9. THICKNESS:
For Die Tools=DT
For Series FT=empty, P=PD
Please specify.

10. FOOT FINISH :
Standard= Matte finish =**empty**
P= Polished Top

11. Tool Option:
Please specify
D, H, H1, H2, PD, SL
SF, MTA (Tool-Angle)

TESSERA®

Four Sides Tab Tool
with a Cross Groove or with a Dimple



SAMPLE PART NUMBER: TESS-M-S-6X6- *
SYMBOL EXPLANATION: 1 2 3 4 5

1. **SERIES: CT**

2. **MATERIAL:**
   M = Ceramic
   C = Tungsten Carbide
   T = Titanium
   All other: See Material Selection Guide

3. **TOOL LENGTH:** S=.437/**11.1**

4. **TOOL SIZE:** Please specify

5. **OPTION:** Tip Style and other options
   with a Cross Groove insert a "**CG**" and size
   with a Dimple insert a "**D**" (old DMPL)
   Type # 17 Example: **TESS-M-S-6X6-17-CG or TESS-M-S-6X6-18-CG**
   Please specify

Other dimensions available upon request
Please contact DeWeyl Tool Company

µ BGA® is the registered product trademark of Tessera®

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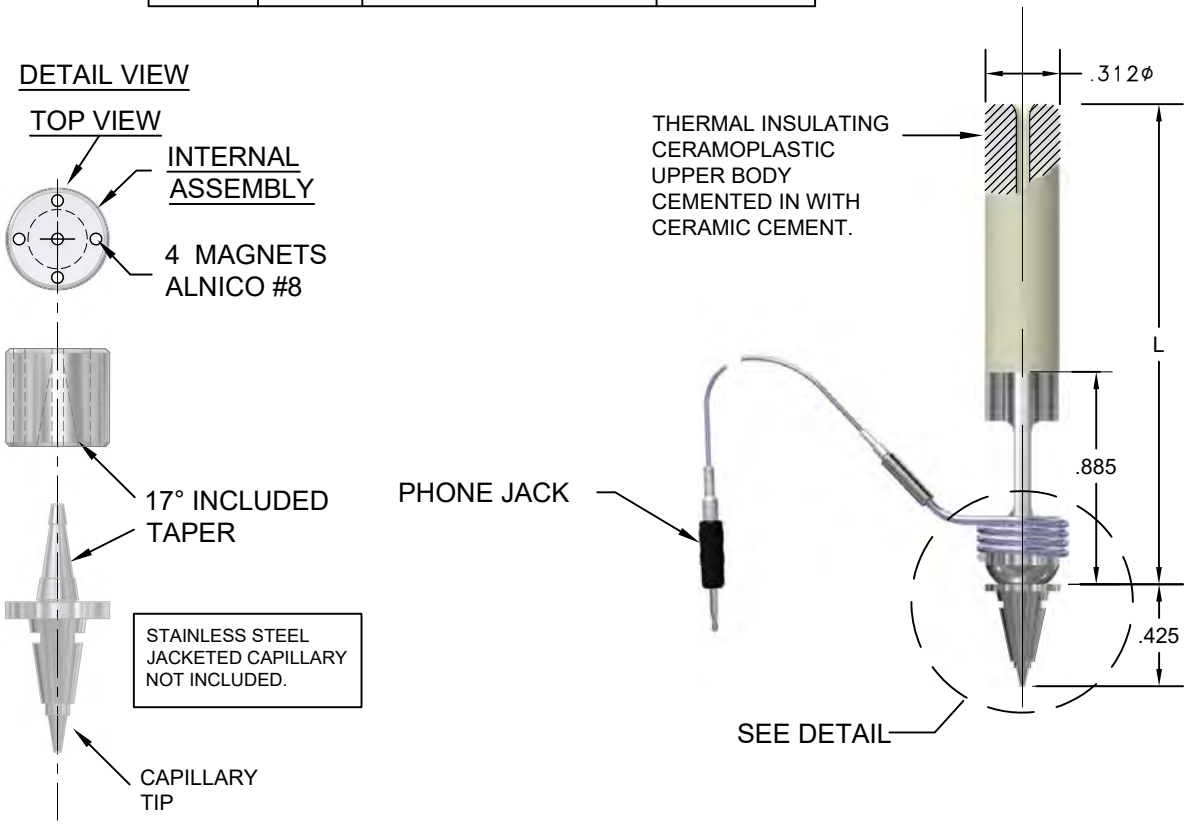
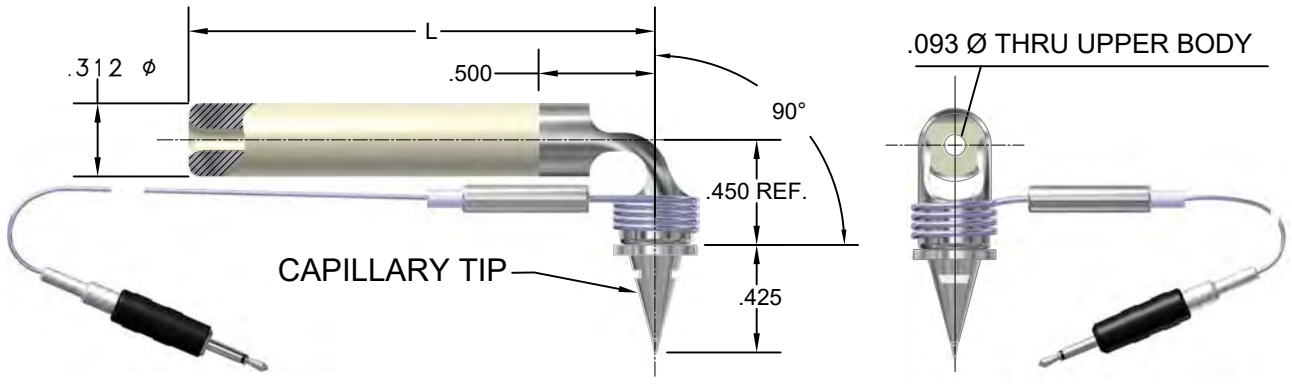
HEATED CAPILLARY HOLDER

FOR USE WITH A STAINLESS STEEL JACKETED CAPILLARY

SPECIFICATIONS			
VOLTS	WATTS	MAX.TEMPERATURE	L-LENGTH
12V	15W	900° F	1.500 2.000 2.500



■ TOOL NO.-HCH-S-(SPECIFY LENGTH)-SSC MAGNETIC TYPE HOLDER

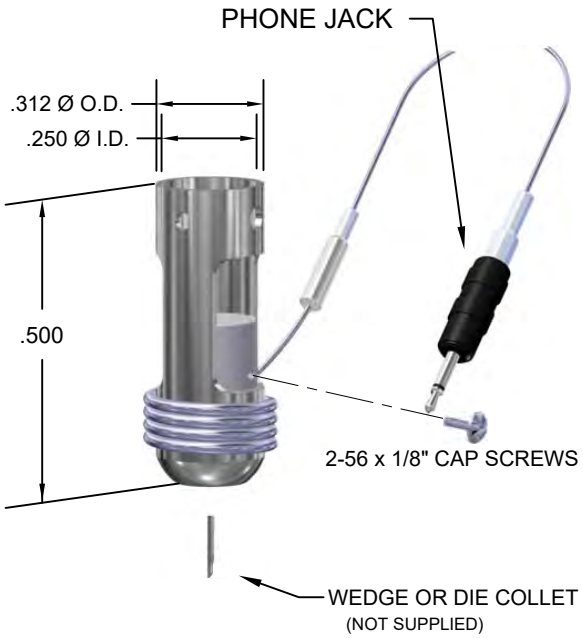


■ TOOL NO.-HCH-90-(LENGTH) MAGNETIC TYPE HOLDER

HEATED WEDGE HOLDER

FOR USE WITH A WEDGE OR DIE COLLET

SPECIFICATIONS			
VOLTS	WATTS	MAX.TEMPERATURE	L-LENGTH
12V	15W	900° F	.500



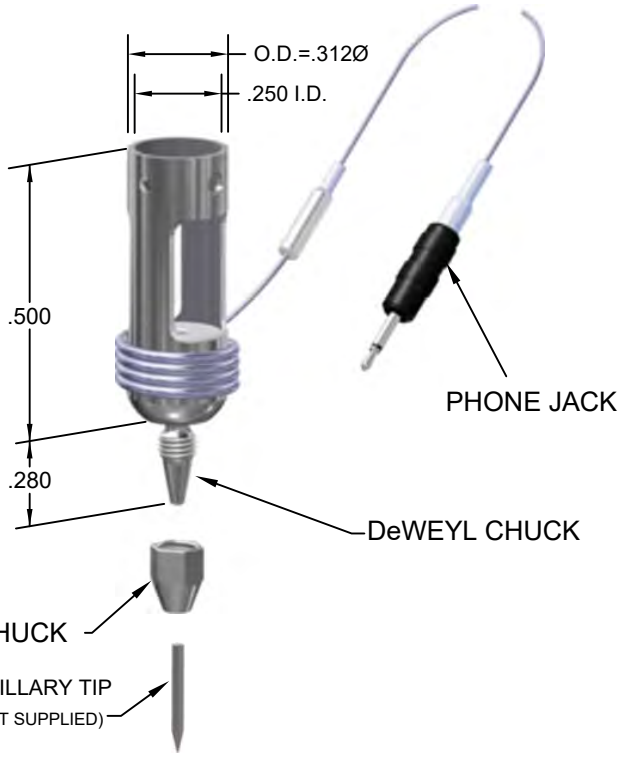
■TOOL NO.-HWH-400

HEATED CAPILLARY HOLDER

FOR USE WITH A STRAIGHT SIDED CAPILLARY

OPTIONAL:

SPECIFICATIONS			
VOLTS	WATTS	MAX.TEMPERATURE	L-LENGTH
12V	15W	900° F	.500



■TOOL NO.-HCH-400

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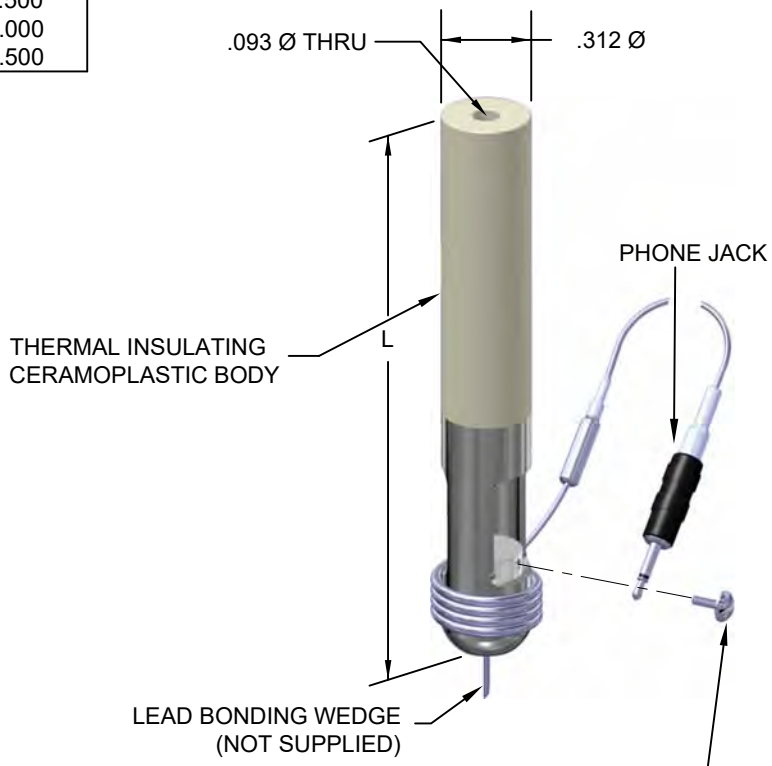
HEATED WEDGE HOLDER

FOR USE WITH A LEAD BONDING WEDGE

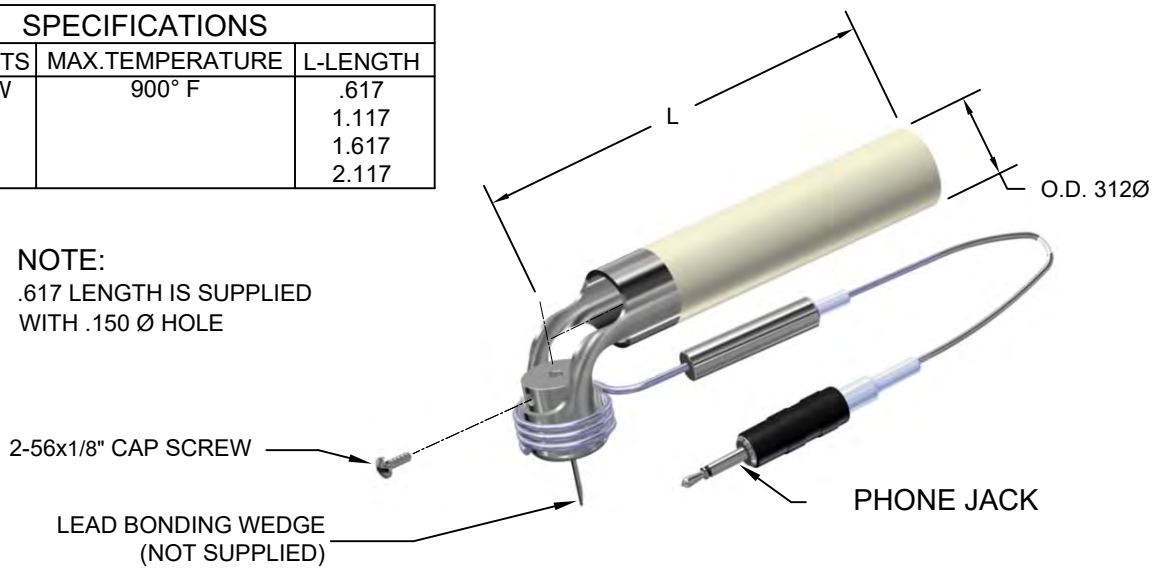
SPECIFICATIONS			
VOLTS	WATTS	MAX.TEMPERATURE	L-LENGTH
12V	15W	900° F	1.500 2.000 2.500



■ TOOL NO.-HWH-S (SPECIFY LENGTH)

SPECIFICATIONS			
VOLTS	WATTS	MAX.TEMPERATURE	L-LENGTH
12V	15W	900° F	.617 1.117 1.617 2.117

NOTE:
.617 LENGTH IS SUPPLIED
WITH .150 Ø HOLE

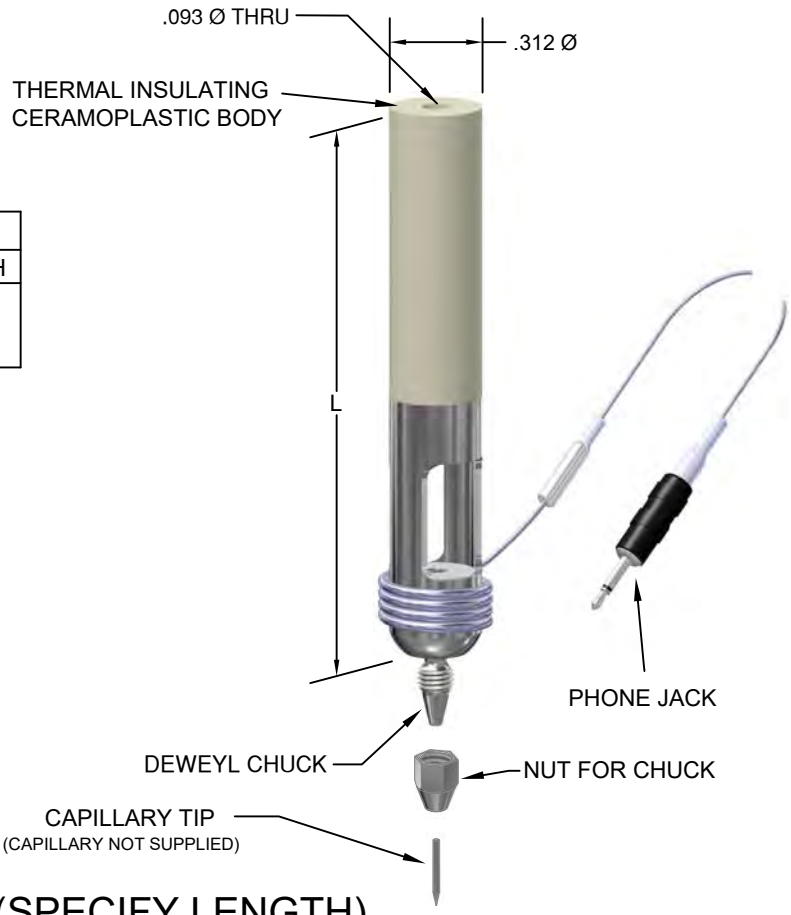


■ TOOL NO.-HWH-90- (SPECIFY LENGTH)

HEATED CAPILLARY HOLDER

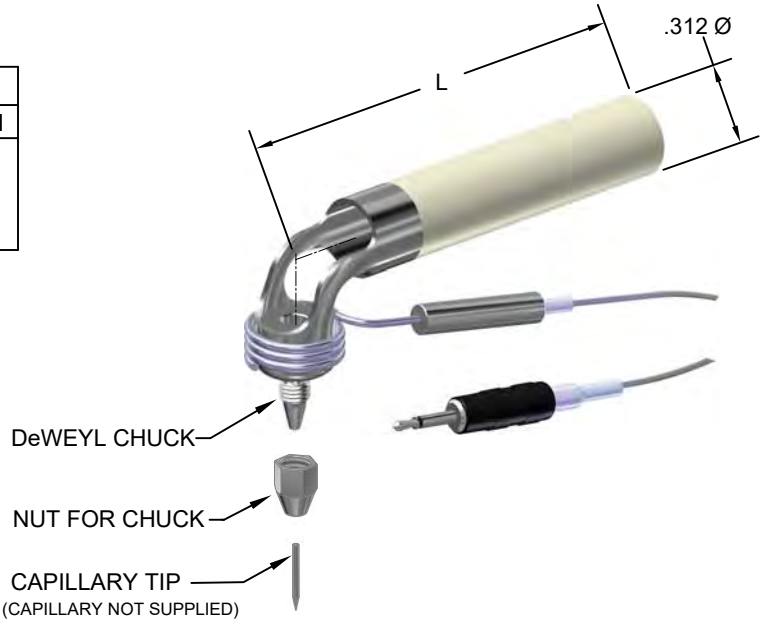
FOR USE WITH A STRAIGHT SIDED CAPILLARY

SPECIFICATIONS			
VOLTS	WATTS	MAX.TEMPERATURE	L-LENGTH
12V	15W	900° F	1.500 2.000 2.500



■ TOOL NO.-HCH-S (SPECIFY LENGTH)

SPECIFICATIONS			
VOLTS	WATTS	MAX.TEMPERATURE	L-LENGTH
12V	15W	900° F	.617 1.117 1.617 2.117



NOTE:
.617 LENGTH IS SUPPLIED
WITH .150 Ø HOLE

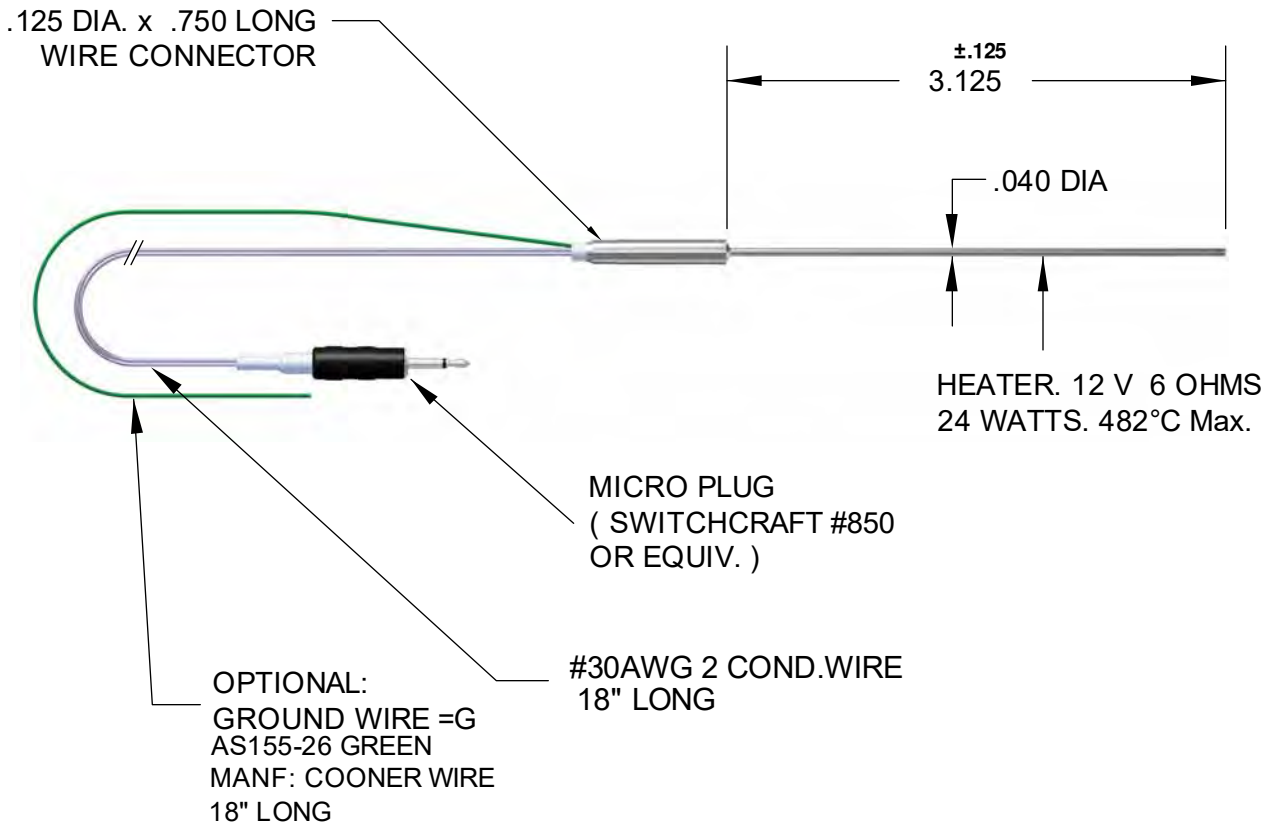
CAPILLARY TIP
(CAPILLARY NOT SUPPLIED)

■ TOOL NO.-HCH-90 (SPECIFY LENGTH)

DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

Radiant Heater

SPECIFICATIONS		
VOLTS 12V	WATTS 24W	MAX. TEMPERATURE 482°C 900° F



■TOOL NO.
West Bond #A-3021
(Optional add "G" for Ground Wire)
Radiant Heater
DeWeyl Tool Co.Inc.

HEATER POWER SUPPLY

SPECIFICATIONS:

SIZE:	**W=5", H=3", D=6"**
INPUT:	**115 VAC @ 1/2 AMP**
FUSE:	**1 AMP "SLO BLO"**
POWER CORD:	**3 WIRE "U" GROUND**
OUTPUT:	**12 VAC @ 3 AMP**
POWER RATING:	**32 WATT INTO 5 OHM LOAD, MAX.**

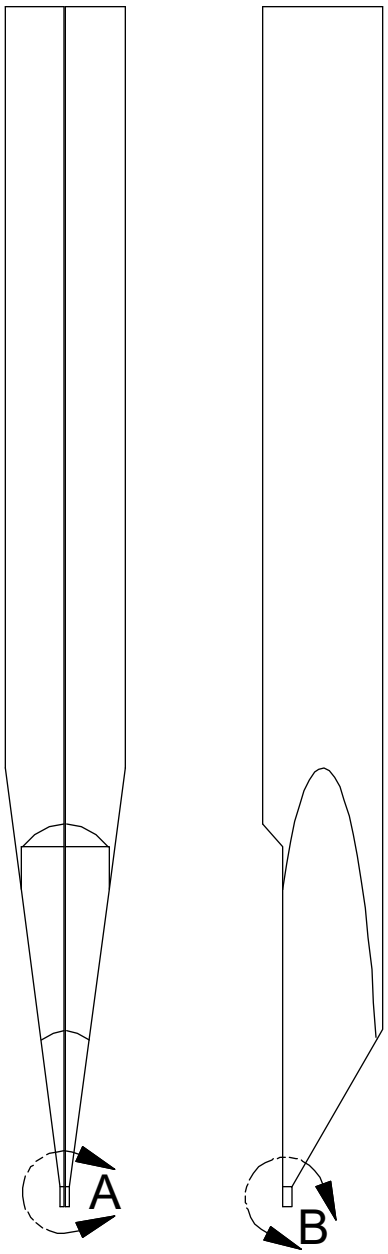
DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

RECLAIMING WORN TIPS

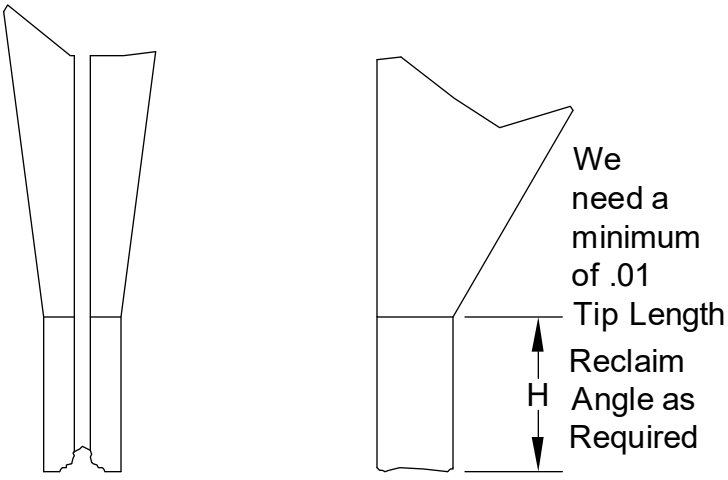
We rework Worn Tips

Tools as used on Unitek Welder

Example Tool

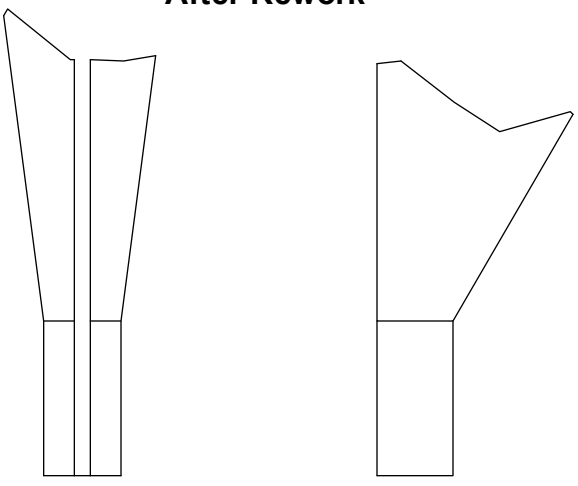


Before Rework



DETAIL A DETAIL B

After Rework



DETAIL A DETAIL B

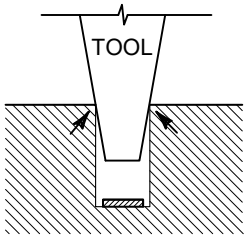
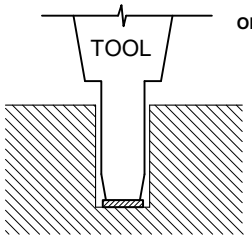
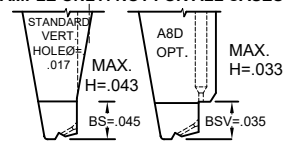
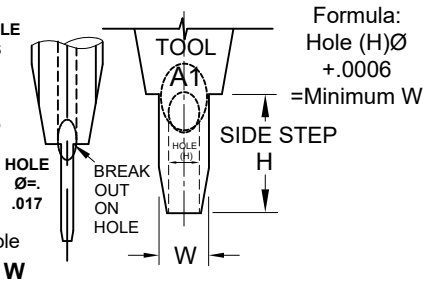
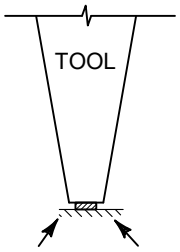
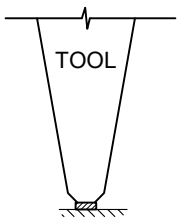
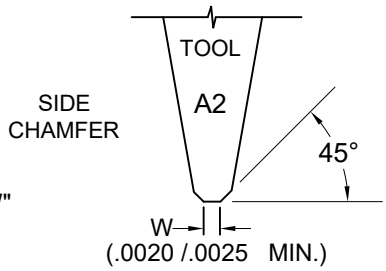
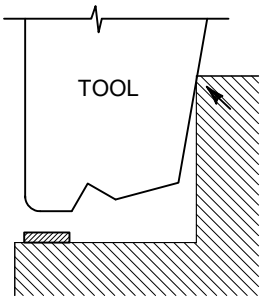
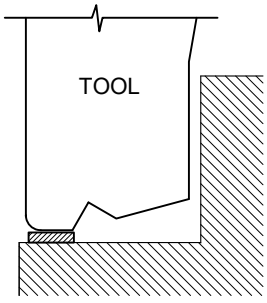
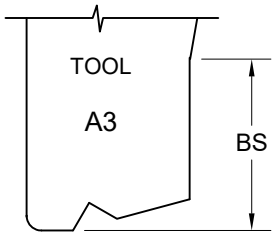
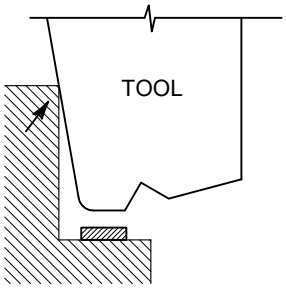
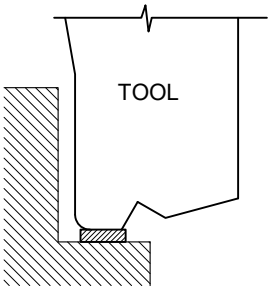
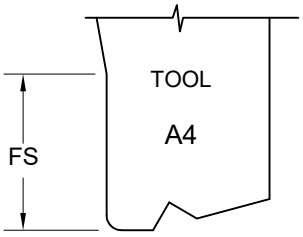
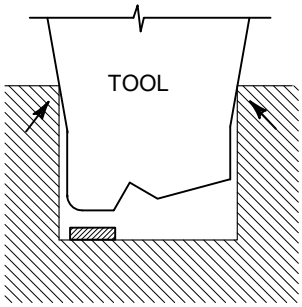
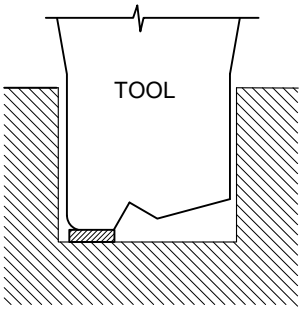
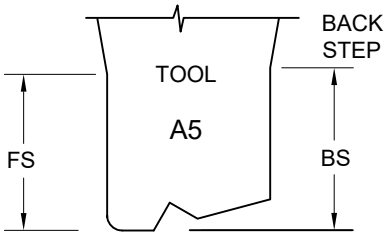
Weyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

TOOL OPTIONS

Page 126 till 131

OPTIONS

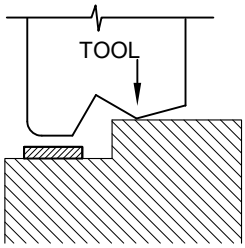
Below are shown various problem situations that can occur during bonding operations and their solutions. When choosing an option, please note the corresponding option number (A1, A2, etc.) when completing the part number from the Ordering Information sections. **These option numbers should appear as the last item in the part number**.

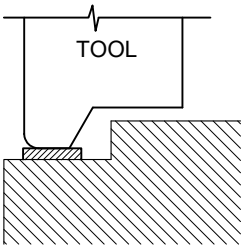
PROBLEM	SOLUTION	USE OPTION
		**ATTENTION ON VERTICAL HOLES: ONLY IF W SMALLER THAN VERTICAL HOLE EXAMPLE ONLY: NOT FOR ALL CASES**  only for long H and if W smaller than V-Hole ■ **SPECIFY "H" & W** 
		■ SPECIFY "W" 
		BACK STEP ■ SPECIFY "BS" 
		FRONT STEP  ■ SPECIFY "FS"
		FRONT STEP  ■ SPECIFY "FS" & "BS"

OPTIONS

Below are shown various problem situations that can occur during bonding operations and their solutions. When choosing an option, please note the corresponding option number (A1, A2, etc.) when completing the part number from the Ordering Information sections. **These option numbers should appear as the last item in the part number.**

PROBLEM | SOLUTION | USE OPTION

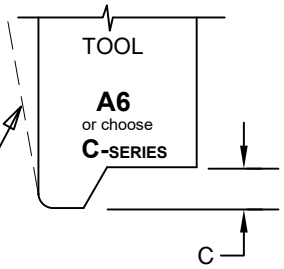


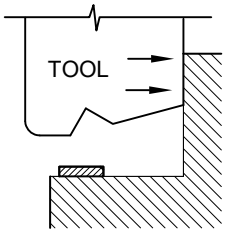


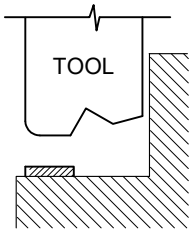
For CS, CN, CL use C-SERIES

■ SPECIFY "C"

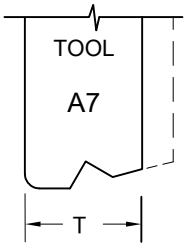
Use A6 for Series with Front Angle

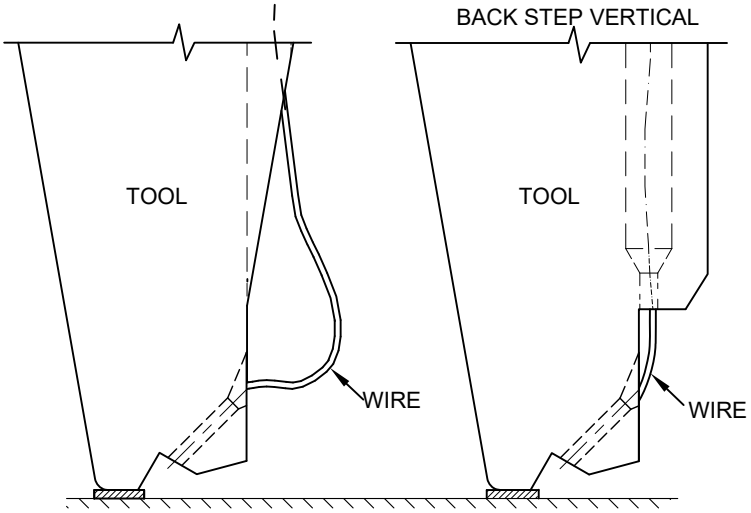


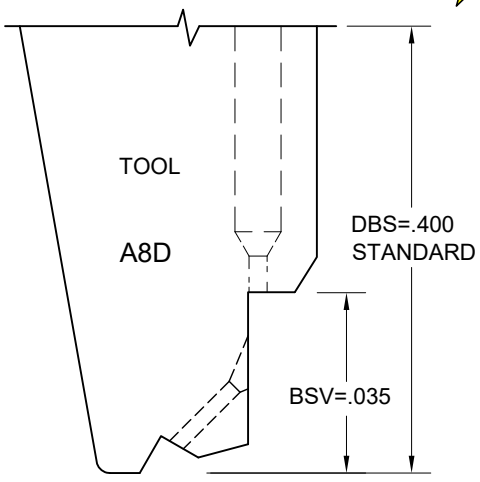




■ SPECIFY "T"

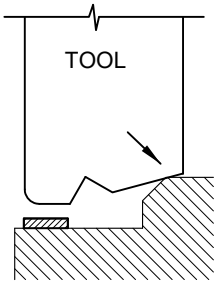


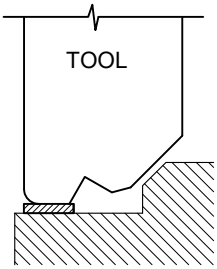




IF OTHER THAN STANDARD, SPECIFY "BSV" & "DBS" MINIMUM "BSV" IS .035 in. (.89mm) FOR 45° HOLE AND BSV= .050 in. (1.27mm) FOR 52° HOLE.

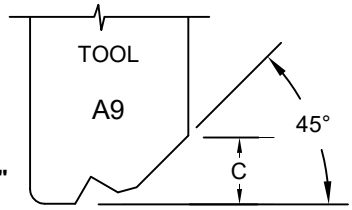
A8D OPTION, NOT SUITABLE FOR F & K DELVOTEC AND HESSE MECHATRONICS MACHINES





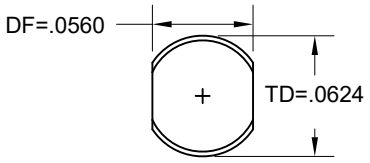
BACK CHAMFER

■ **SPECIFY "C"** AND ANGLE IF OTHER THAN STANDARD 45°

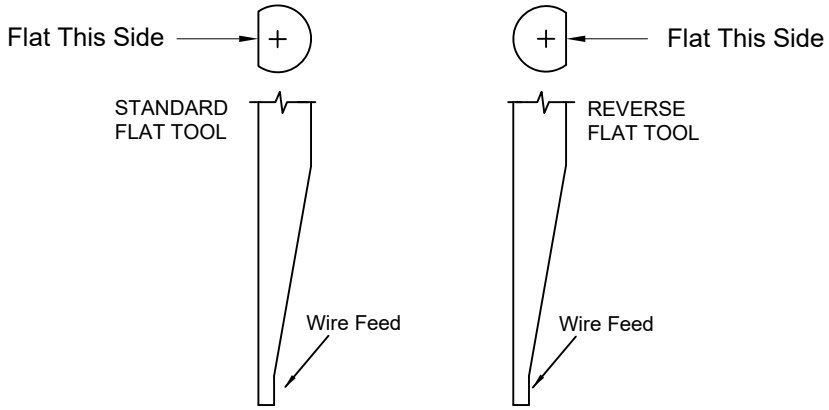


OPTIONS

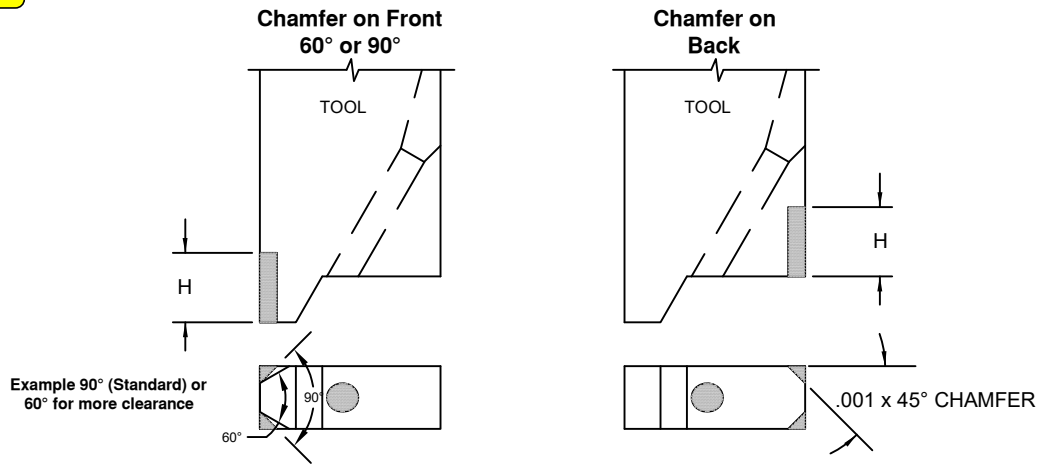
Below are shown various problem situations that can occur during bonding operations and their solutions. When choosing an option, please note the corresponding option number (A1, A2, etc.) when completing the part number from the Ordering Information sections. **These option numbers should appear as the last item in the part number.**



A10 OPTION
(DOUBLE FLAT)



A12 OPTION
(REVERSE FLAT)

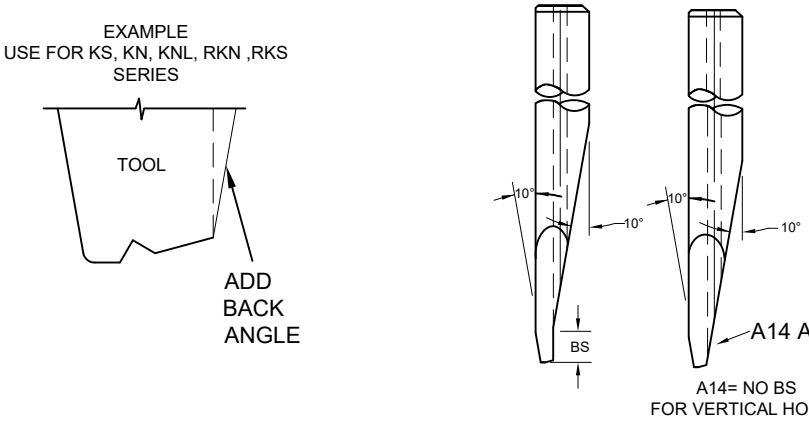


A13 OPTION
(CHAMFER)

■ **SPECIFY (H)**
on Front or Back

Angle 60°or 90°
(Front only)

NO BACK STEP FOR TOOLS WITH VERTICAL HOLE

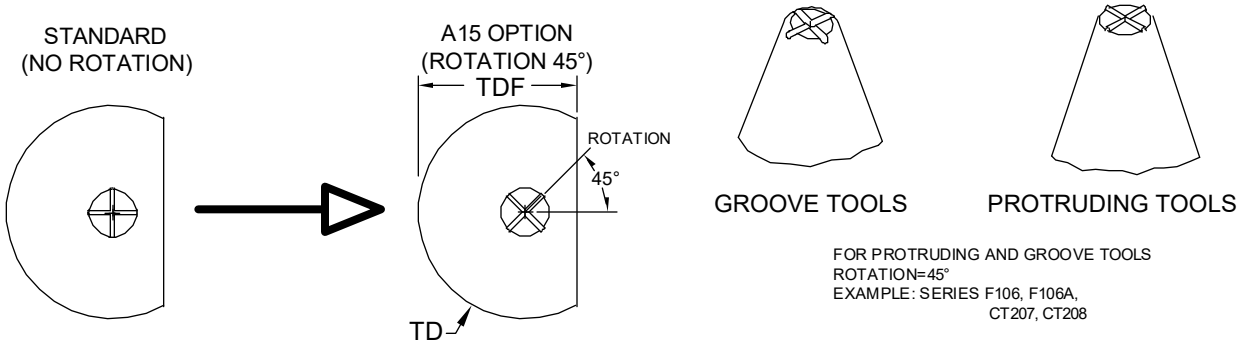


A14 OPTION
(NO BACK STEP)
FOR VERTICAL
HOLE

OPTIONS

Below are shown various problem situations that can occur during bonding operations and their solutions. When choosing an option, please note the corresponding option number (A1, A2, etc.) when completing the part number from the Ordering Information sections. **These option numbers should appear as the last item in the part number.**

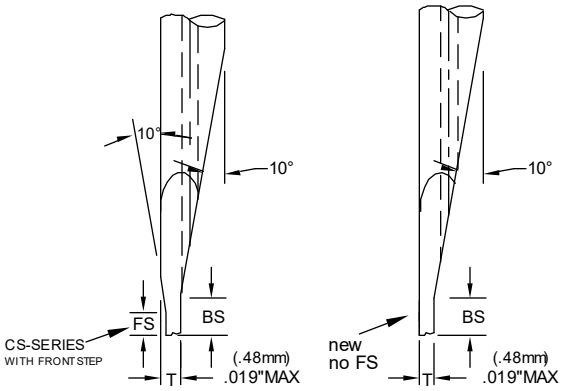
A15 OPTION
(ROTATION 45°)



FOR PROTRUDING AND GROOVE TOOLS
ROTATION=45°
EXAMPLE: SERIES F106, F106A,
CT207, CT208

NO FRONT STEP FOR TOOLS WITH VERTICAL HOLE

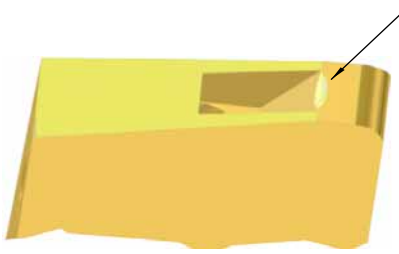
EXAMPLE CS-V SERIES



A16 OPTION
(NO FRONT STEP)
FOR VERTICAL
HOLE

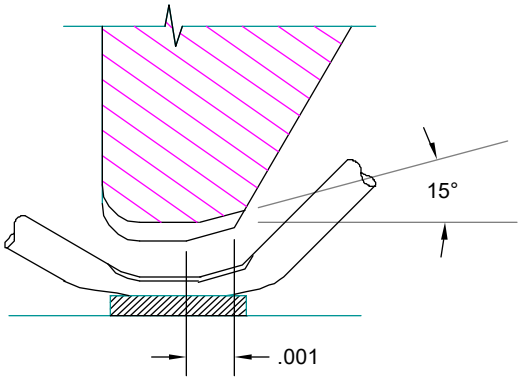
OPTIONS

Below are shown various problem situations that can occur during bonding operations and their solutions. When choosing an option, please note the corresponding option number (A1, A2, etc.) when completing the part number from the Ordering Information sections.
These option numbers should appear as the last item in the part number.

PROBLEM	SOLUTION	USE OPTION
Heel Cracks		**XPBR =** Extra Polished Back Radius

Extra Polished Back Radius
(Elliptical Back Radius)

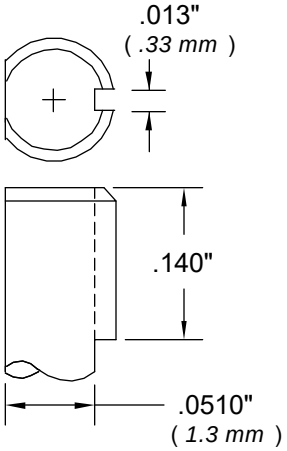
Heel Cracks



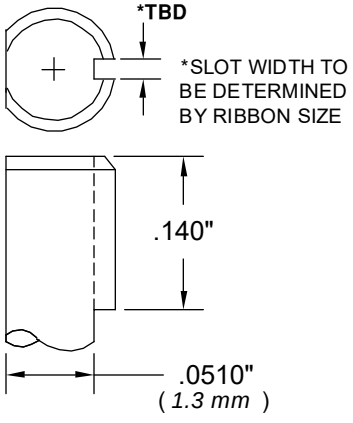
CHAMFERED BACK RADIUS

CBR = Chamfered Back Radius

FOR STANDARD WIRE



FOR RIBBON WIRE



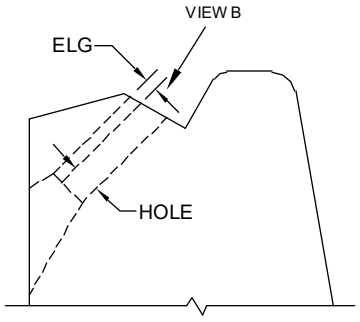
S1 OPTION

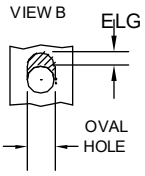
OPTIONS

Below are shown various problem situations that can occur during bonding operations and their solutions. When choosing an option, please note the corresponding option number (A1, A2, etc.) when completing the part number from the Ordering Information sections.
These option numbers should appear as the last item in the part number.

PROBLEM	SOLUTION	USE OPTION

WIRE DRAGGING IN FEED

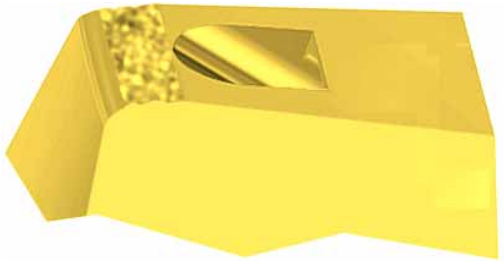




ELG=
HOLE BORE
ELONGATION

HOLE BORE ELONGATION			
STANDARD HOLE SIZE	**WIRE Ø**	**SUGGESTED HOLE Ø MINIMUM**	**SUGGESTED HOLE ELONGATION (ELG)**
15	.0007	.0013	.0004
20	.0010	.0017	.0006
25	.0013	.0022	.0006
30	.0015	.0025	.0010
35	.0020	.0030	.0010

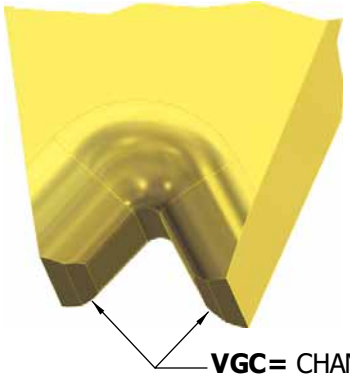
NO GRIP



ECM=
EXTRA COARSE
MATTE FINISH

ECM SURFACE ILLUSTRATION, REFERENCE ONLY

TOOL LIFE
WIRE RESIDUE BUILDUP



VGC= CHAMFER
ON VG
INCREASE TOOL LIFE

VGC= CHAMFER ON VG

959 Transport Way
Petaluma, Ca. 94954 USA
Phone 800-821-8665 707-765-5779
FAX 707-765-0327

WEDGE APPLICATION QUESTIONNAIRE

The following questionnaire will assist DEWEYL Tool Co. in recommending the appropriate wedge for your specific application. We understand that the demands on your daily schedule may not allow time to interpret our catalog part numbering system. Thus we encourage you to take advantage of this form which will allow our applications staff to recommend the finest bonding wedge in the industry.

1. What wire size will you be bonding?

_____

2. What wire material will you be bonding?

_____

3. What is the smallest bonding pad size in your specific application?

_____

4. Who manufactures your wire bonder?

_____

5. What model number wire bonder are you utilizing with this application?

_____

Please don t or et to n lude your name, address, phone, fax, and E-mail address. Thank you for considering DEWEYL Tool Co.

6. What length bonding wedge does your equipment manufacturer recommend?

_____

7. To what angle wire feed is your wire bonder configured?

_____

8. What type of product do you wire bond?

_____

9. What special circumstances would you like considered when we select your wedge part number?

_____

_____

10. If your application is gold wire, then will you utilize the "thermocompression" or the "thermosonic" bonding technology? (Circle one)

11. Is this for manual, semi-automatic, or automatic bonding? (Circle one)

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959 Transport Way
Petaluma, Ca. 94954 USA
Phone 800-821-8665 707-765-5779
FAX 707-765-0327

Tool Cleaning Process

For Aluminum Wire Bonding Tools.

Materials Required:

1. Tool Tray
2. Sodium Hydroxide
3. (3) 400 ml glass beakers.
4. Ultrasonic Cleaner
5. Distilled water
6. Isopropyl alcohol
7. Dry compressed air

Step (1) Load all tools in tool tray with point of tool up. Do not place tools in tray tip down or tool damage will occur. Mix cleaning solution using water and sodium hydroxide. Mix (5) five parts water to (1) one part sodium hydroxide.

Step (2) Place tool tray in 400ml beaker with enough Sodium Hydroxide cleaning solution to cover all tools completely. Place the beaker into the ultrasonic cleaner for approximately (3) three to (5) five minutes.

Step (3) Transfer tool tray from cleaning solution beaker to 400ml beaker of hot water. Place beaker in ultrasonic cleaner for (3) three to (5) five minutes. Repeat this procedure with fresh hot water.

Step (4) Complete the cleaning sequence with an alcohol rinse. Submerge the tool tray (2) two or (3) times in alcohol solution and then blow-dry with clean dry air. Warning-Do not use compressed air contaminated with moisture or oil.

Note: It's important to insure the tools are properly secured during the ultrasonic cleaning process. Damage will occur if the tools are not held properly during the ultrasonic cleaning.

For your convenience

We offer this information in support of our customers and to encourage them to maximize the life of our product. However, for your convenience we offer this cleaning service. You may contact our sales order desk to arrange for tool cleaning. Call 707-765-5779.

959 Transport Way
Petaluma, Ca. 94954 USA
Phone 800-821-8665 707-765-5779
FAX 707-765-0327

Date:________________

Company Name:________________________________ **Phone**: __________________________

Buyer: ____ **FAX:**____________________________

Ship To Address: **Bill To Address**

____ ____

____ ____

____ ____

Purchase Order No.:_______________________ **Requested Ship Date:**____________________

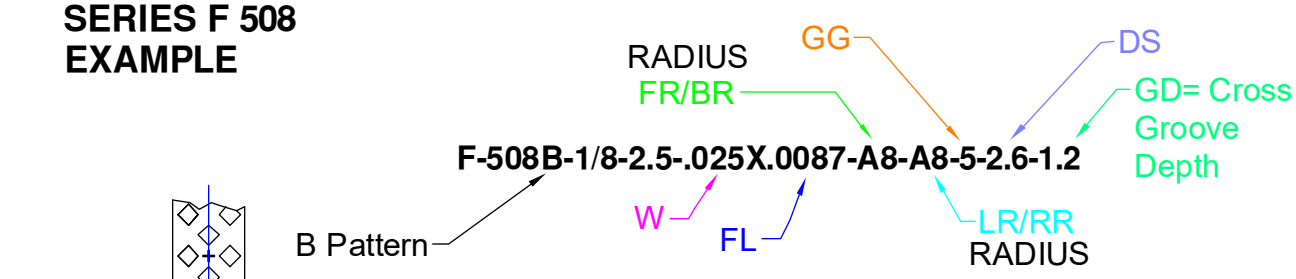
Ship Via: ______________________ **Account No.:** ____________________ **Taxable / Resale**

QTY	Item / Part Number		Price:	Total:
___	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ 1 2 3 4 5 6 7 8 9 10 11 12 13 14		$_______	$_______
	Special Dimensions: ______________________________		Wire: Gold /	Aluminum
QTY	Item / Part Number		Price:	Total:
___	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ 1 2 3 4 5 6 7 8 9 10 11 12 13 14		$_______	$_______
	Special Dimensions: ______________________________		Wire: Gold /	Aluminum
QTY	Item / Part Number		Price:	Total:
___	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ 1 2 3 4 5 6 7 8 9 10 11 12 13 14		$_______	$_______
	Special Dimensions: ______________________________		Wire: Gold /	Aluminum
QTY	Item / Part Number		Price:	Total:
___	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ 1 2 3 4 5 6 7 8 9 10 11 12 13 14		$_______	$_______
	Special Dimensions: ______________________________		Wire: Gold /	Aluminum

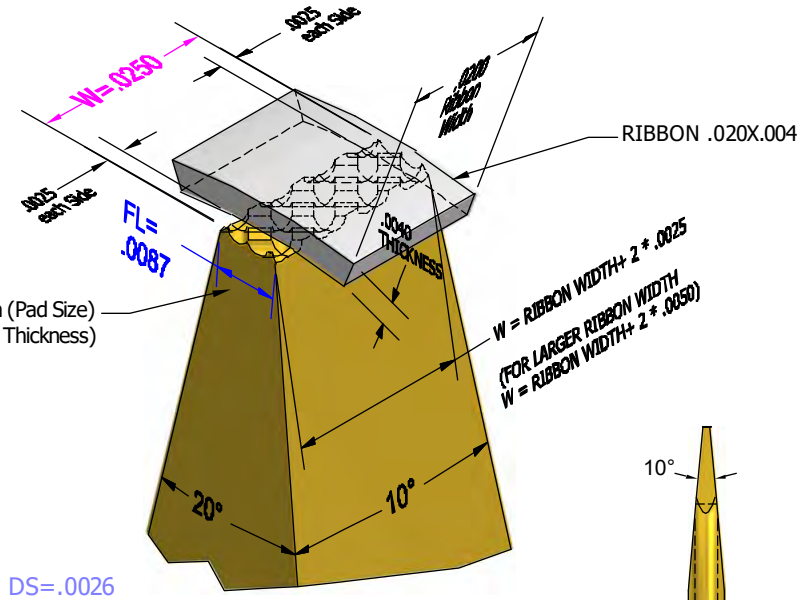
NOTE:
1. **Confirming Purchase Order is required before production of tools will begin**
2. **Terms: Net 30 days from date of invoice**
3. **FOB: Petaluma, California USA**

in order to improve product quality and design, we reserve the right to make design and specifiCAtion changes without notice

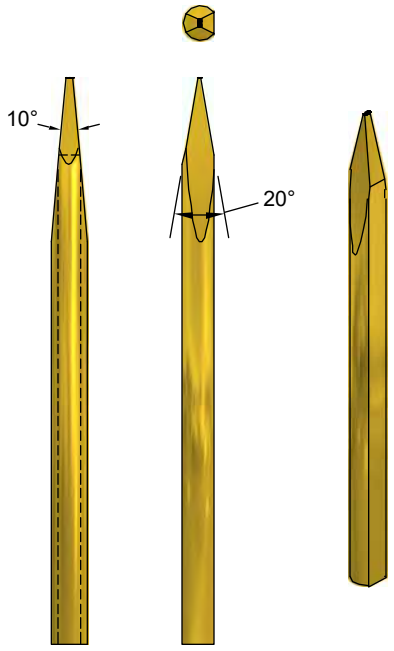
SERIES F 508 EXAMPLE

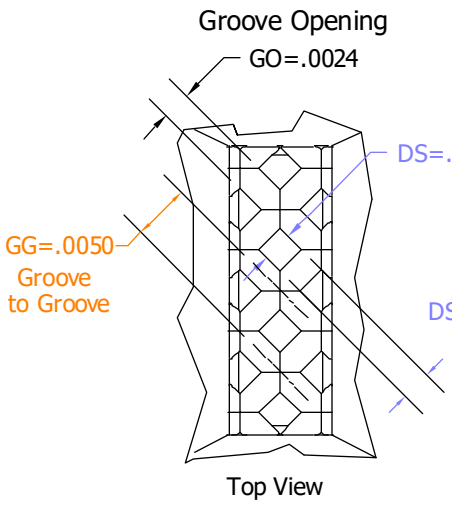


B= DIAMOND POSITION AROUND CENTER



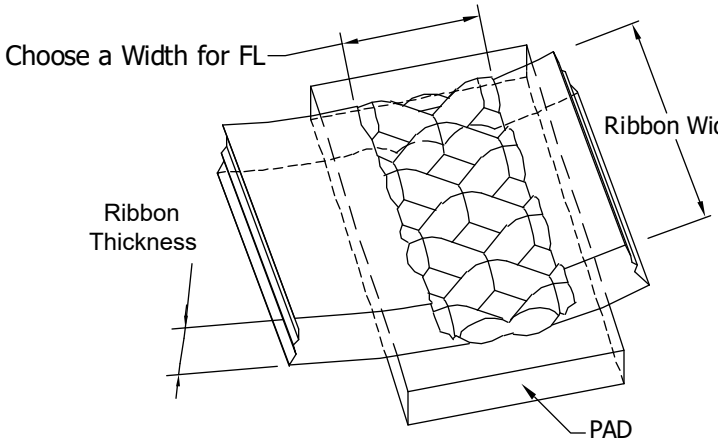
STANDARD F508 TOOL
TOOL ANGLE MTA=10°,
SA=20°



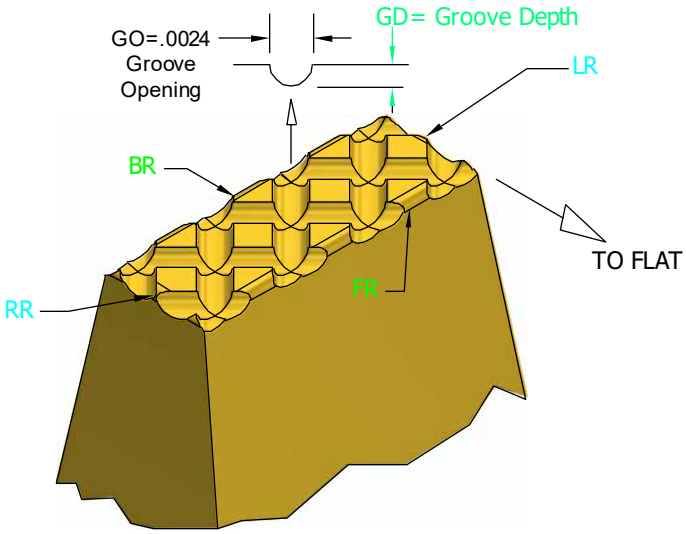


Top View

Needed for Order: Ribbon Size
(Width & Thickness)
FL, Tool Ø, Tool Length

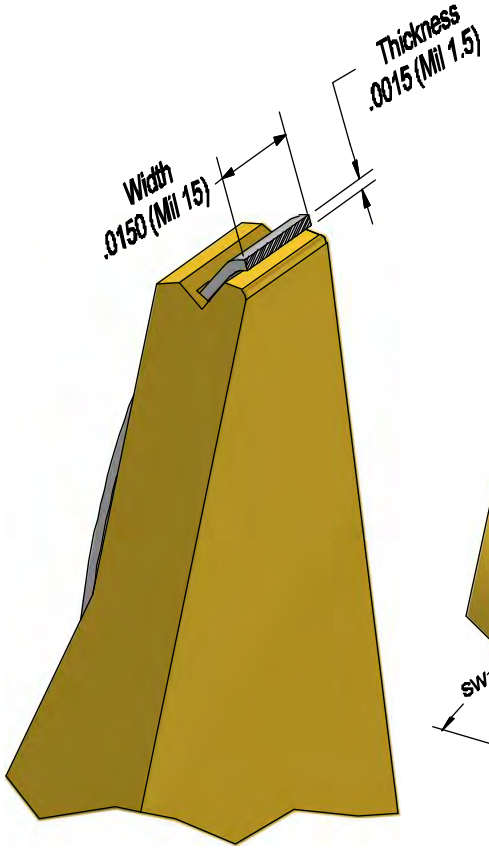


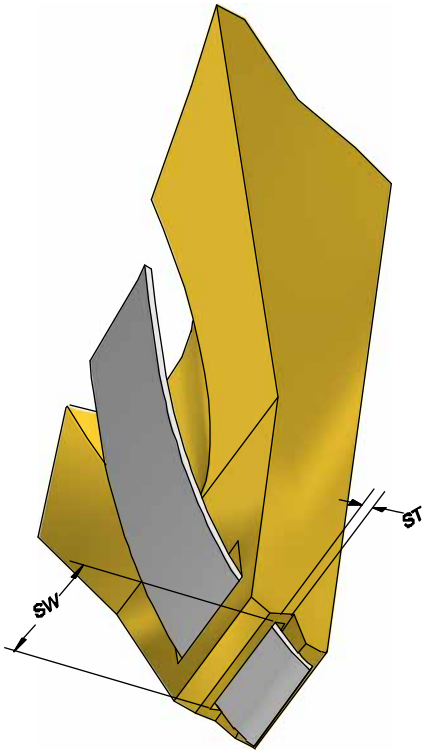
RIBBON WIRE ILLUSTRATION AFTER
BONDING WITH A F508 TOOL



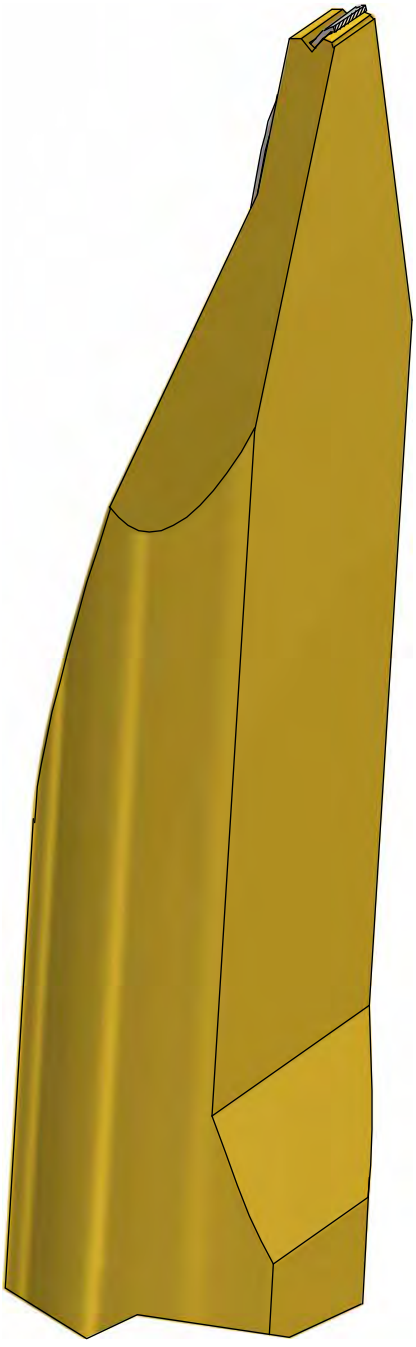
DeWeyl Tool Company, 959 Transport Way Petaluma, CA 94954 USA Phone 800-821-8665 707-765-5779

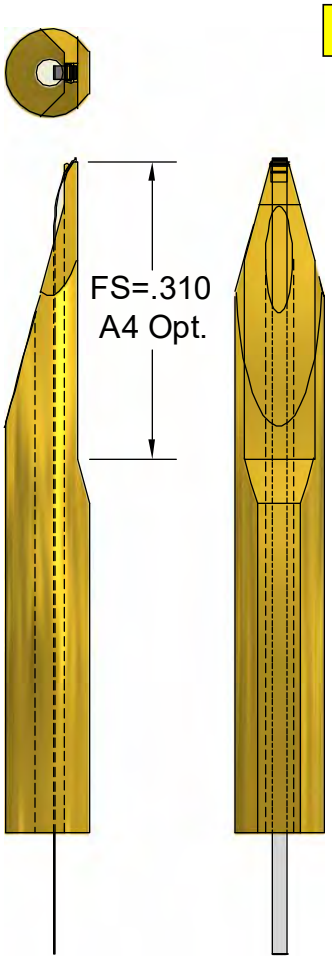
Example: MRCSVC-3/32-700-60-CG-1.5X15-3-M-A4
with a A4 Option. FS=.310





ST= Slot Thickness
SW=Slot Width
Ribbon Size =1.5X15 =.0015X.015



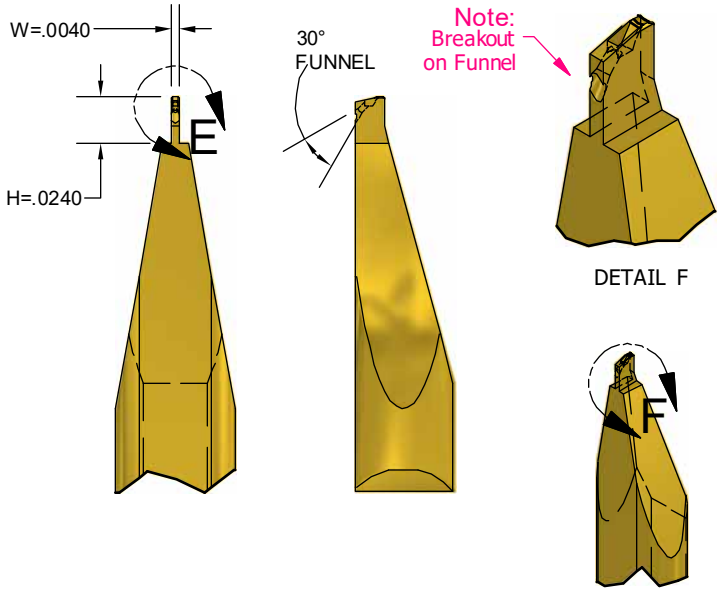


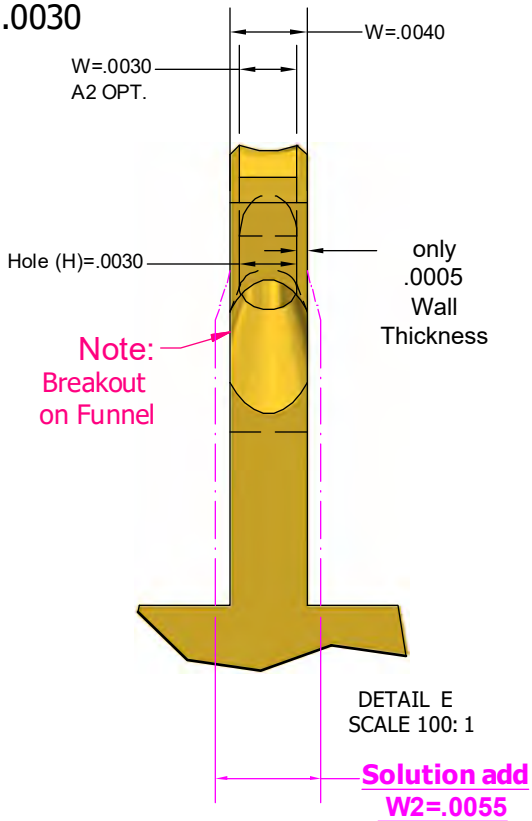
Example: A1&A2 OPTION

TCLHE-1/16-1"-45-C-3025-MP-A1-A2
A1=H.024, W=.0040-A2=W=.0030

EXAMPLE:
with a small W
on A1
and A2 Option

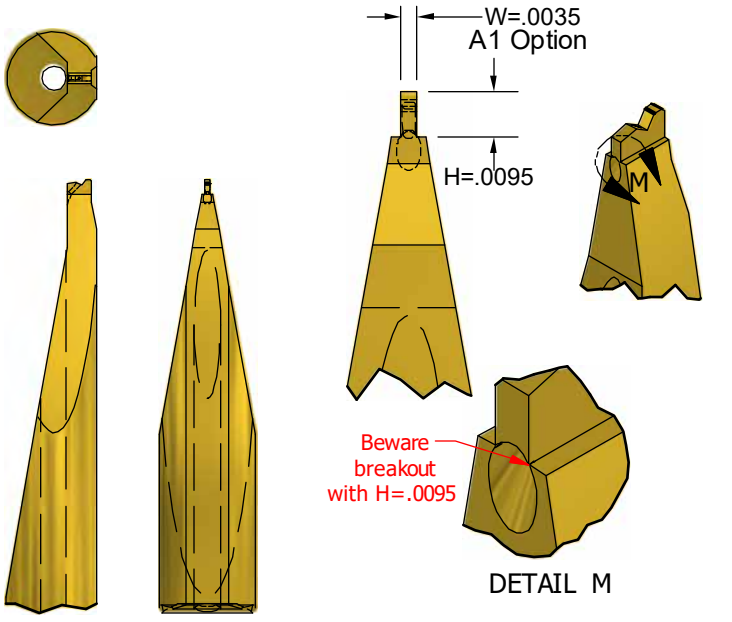
Standard Funnel for this tool is 45°, but still breakouts after a change to 30°Funnel



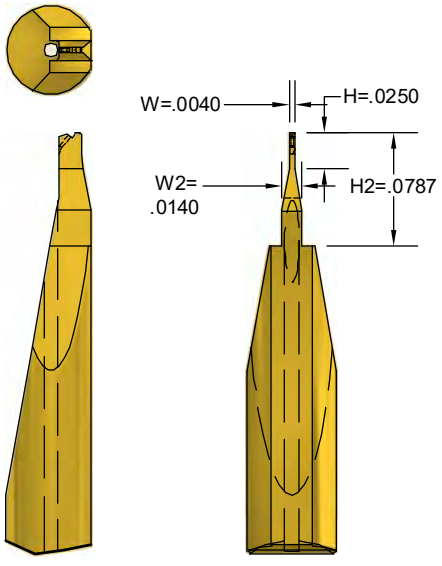


Solution add
W2=.0055
H=.0060
see Example
below

Example: with a small W on A1
MCSVD-1/16-750-45-C-2530-MP-A1



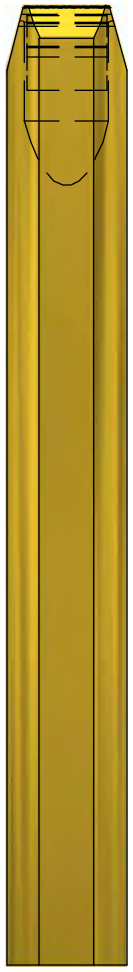
Example:
MCSVE-1/16-875-45-C-2030-MP-A1

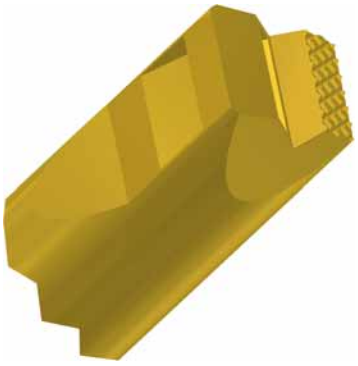


Example:

Diamond Tip=DT
preferably for large Tools
Minimum of Groove
Radius=.00025
Groove to Groove=.0015

MRKSOD-1/8-2"-45-DT-12X79-22.5-M

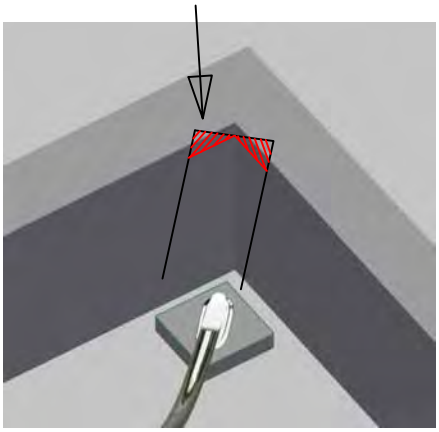


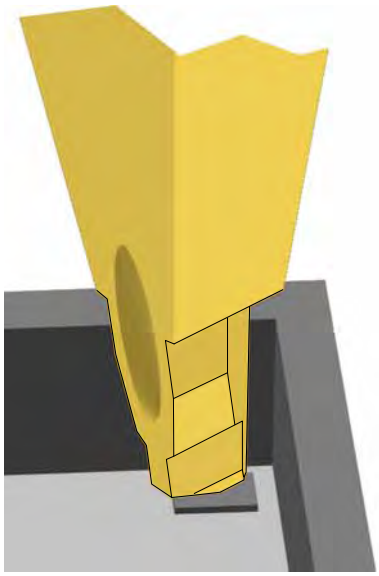


Example: A13 Option on Front

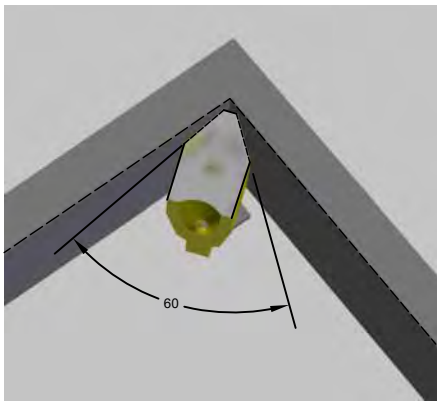
ALOE-1/16-750-60-C-2025-A1-A7-A13

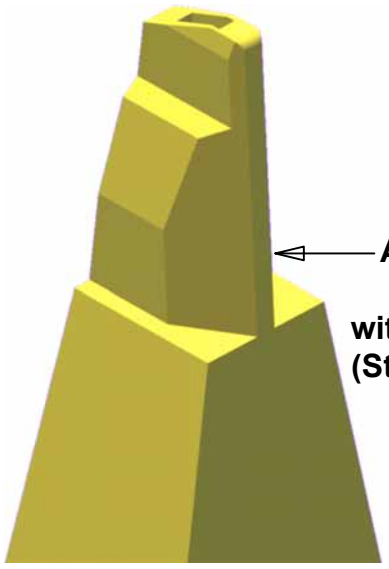
Problem
no clearance





Solution

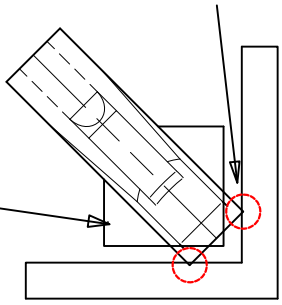




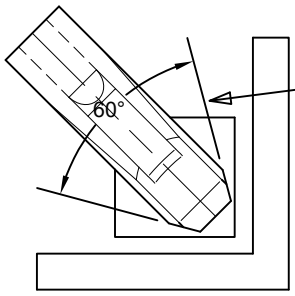
A13 Option on Front with 60° Angle (Standard 90°)

Problem
no clearance

Pad



Solution



60° Angle (Standard 90°)

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Example: Vacuum Pick-up Tools SC

Choose Series: CC, FT, IC, IP, SC or P, for this Example **insert a SC Series in Place 2.**

TAI (6) DL (7) DW (8) DT (9)

Example Part # C-SC-2-1/16-1"-90-036-041-004-*

Die Size
.036-.041-.004

Insert Material in Place 1.
C=Tungsten Carbide

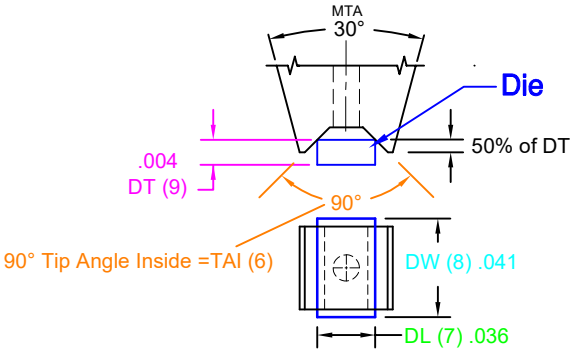
See below Tip Style "2"

Diameter 1/16 (Ø.0624) Tool Length 1" inch

Tool Option
Like D, H, H1, H2
PD, SL, MTA
P= Polished Tip (Top only)

CC= Concave Channel
FT= Flat Tip Rectangular
IP= Inverted Pyramid
SC= Straight Sided Channel
P= Pocket

SC Series



Choose Tip Style "1" or "2" or "3" insert "SC-2" for this Example

Insert a 2 in Place 3. Tip Style

Example Part # C-SC-2-1/16-1"-90-036-041-004

Tip Style 1 large Tool

Illustrated Tool SC-1

Tip Style 1 small Tool

Tip Style 2 large Tool

Illustrated Tool SC-2

Tip Style 2 small Tool

Tip Style 3 large Tool

Illustrated Tool SC-3

Tip Style 3 small Tool

Back to Vacuum Tools

DEWEYL TOOL COMPANY INC.

MANUFACTURER OF HIGH QUALITY BONDING WEDGES FOR THE MICROELECTRONIC INDUSTRY

THE LEADER IN CERAMIC WEDGE TECHNOLOGY

ISO9001 Certified #97230

40th ANNIVERSARY 1969–2009

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