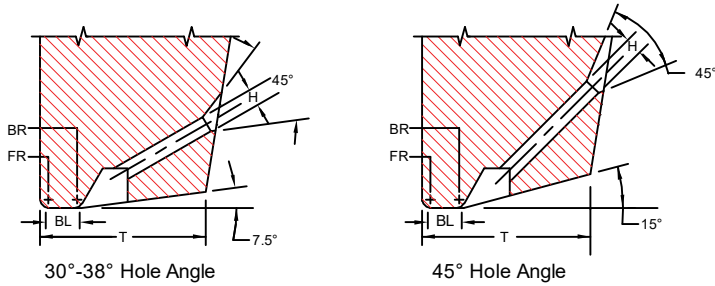


SERIES AL & AL-V

SMALL WIRE & LARGE WIRE

FOR AUTOMATIC BONDERS

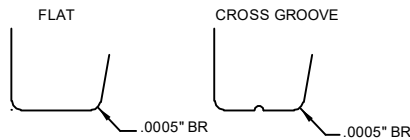


FOR AL-V SERIES (VERTICAL FEED)

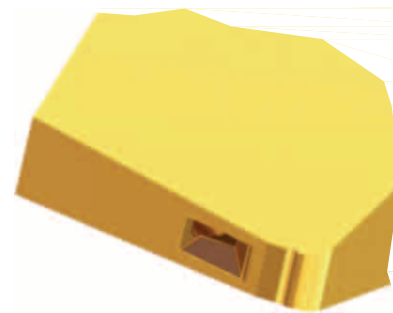
FOR AL SERIES

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

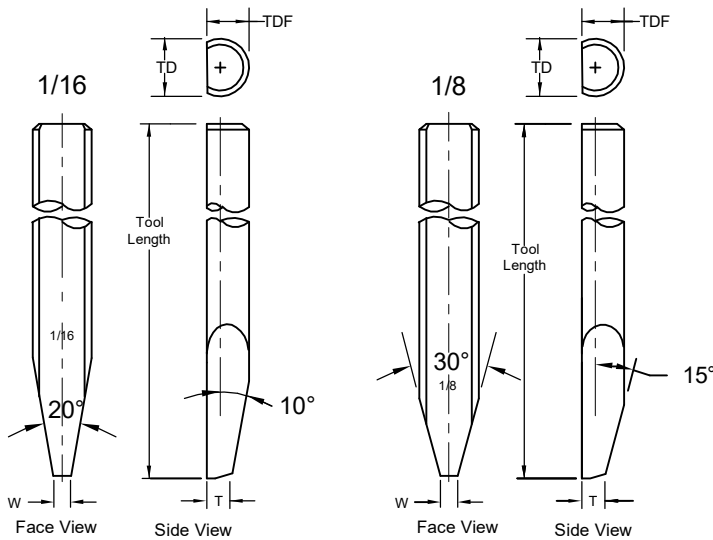


AL-SERIES SMALL WIRE

.0005" through .0020" wireØ

AL-SERIES LARGE WIRE

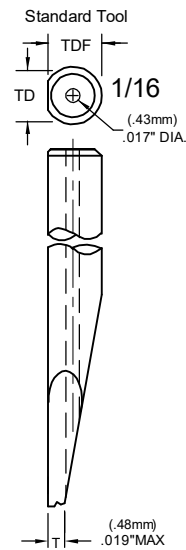
For wire diameters .0030" through .0160"



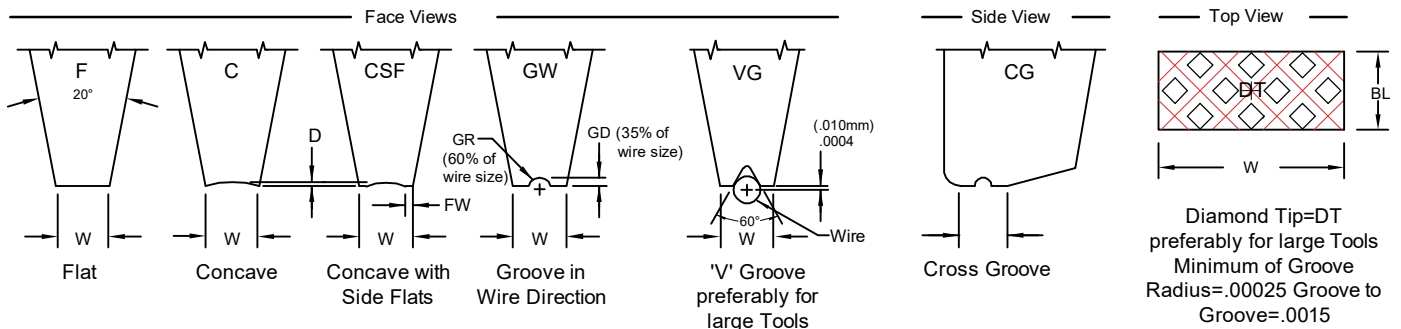
Standard: Ø 1/16, 45° Hole Angle

AL-V SERIES VERTICAL FEED DEEP ACCESS

.0005" through .0020" wireØ



Standard: Ø1/16 45° Hole Angle



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

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

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

- (11) See Tool Option
- (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)
- (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-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
	BACK RADIUS	μ	13	13	25	25	25	38	38	38	38	51	51	51	51	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	±.0005	±13	
1505	.0015	38	.0005	13	.0002	5	.0140	356	.0110	279	.0025	64	.0005	13	
1507	.0015	38	.0007	18	.0002	5	.0140	356	.0110	279	.0025	64	.0007	18	
1510	.0015	38	.0010	25	.0002	5	.0140	356	.0120	305	.0025	64			
1513	.0015	38	.0013	33	.0002	5	.0140	356	.0120	305	.0025	64			
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	.0007	18	
2015	.0020	51	.0015	38	.0002	5	.0160	406	.0140	356	.0040	102	.0010	25	
2020	.0020	51	.0020	51	.0002	5	.0170	432	.0150	381	.0040	102			
2025	.0020	51	.0025	64	.0002	5	.0170	432	.0150	381	.0040	102			
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	±.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	±.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