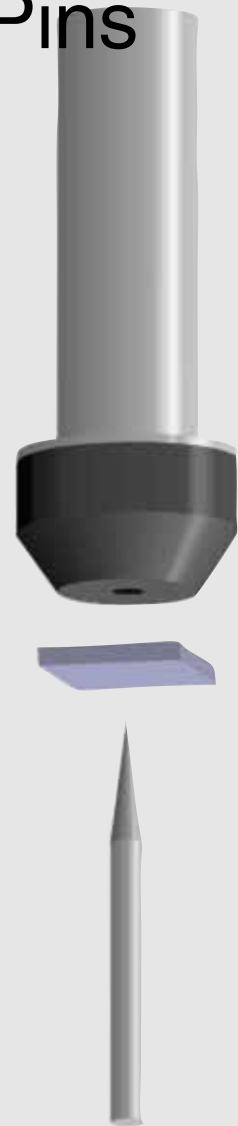


© **microTouch**  
Pick-Up Tips  
Epoxy Tools  
&  
**microPoint**  
Ejector Pins



**mikrotech**  
elektronik gmbh

**S**emiconductor Assembly, as commonly defined, starts with Wafer Dicing or Scribing. Wafers are being mounted on tape and singulated into chipform by the use of Dicing Saws. The tape itself is held into position with WAFER FRAMES (**microFrame**). In some cases for better shape recognition or easier pick-up, it might be necessary to expand the tape after dicing. The expanded tape is locked into place by **microSnap** WAFER RINGS.

Singulated chips, still on tape or in waffle packs, are transferred onto headers, leadframes, packages, or substrates, and permanently mounted on them. This process is called DIE-BONDING, the equipment employed are manual or automatic Die Bonders.

For the common Die-Bonding technologies the following materials are used:

- „**Silver EPOXY**“, most commonly used for plastic packages. The organic adhesive is silver filled and not necessarily epoxy based.
- **Eutectic Alloy**, for low noise discrete and power devices,
- **Silver Glass**, for hermetic packages and large Chips, and
- **Soft Solder**, for power applications.

These bonding techniques are using process temperatures between 20 and 430 deg.C. The different temperatures require different materials for the bonding tool.

We supply tools and accessories for all the technologies mentioned above and for most machines, from manual die bonders to state-of-the-art fully automatic equipment.

For eutectic alloying the required metal components are already present as layers of plating or will be fed as ribbon or preform. For soft soldering preforms, inlays, wire, or paste are being used.

For silver glassing or epoxying the material is provided in paste form. This bonding process is performed by placing the chip onto an exactly positioned amount of deposited paste. To transfer the chip a pick-up tool is being used, assisted by a needle to push-up the die from the tape while lifted by the pick-up tip.

The two tools in use are:

- Pick-Up Tips / Die Collets and
- Ejector Pins / Push-Up Needles.

Die Collets or Pick-Up Tools, depending on the application, can be made of hard metal, plastic materials such as PVC, DELRIN or VESPEL®, or in most economic way by synthetic rubber. The exchangeable **rubber tip** is mounted on a metal shaft or **shank**, which is part of the pick-up system of the machine.

The most common Die-Bonding process is „Silver Epoxy“-attach. Here the rubber pick-up tips offer the distinct advantage of low-cost replaceability once they become contaminated by the paste. Changing the tips is accomplished in no-time, does not decrease equipment up-time, nor does it require resetting of machine parameters.

The following characteristics are required for the tip material:

- softness, to avoid damaging the sensitive chip metallization, and
- toughness, to ensure planparallel chip embedding into paste with higher viscosity.



Picture 1

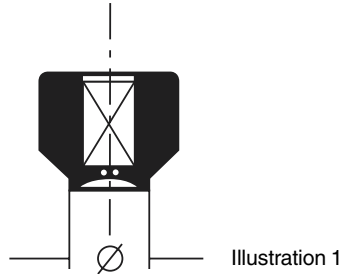
**microTouch** Die-pick-up Tips are designed as flat face tools for easy changeability. The pick-up system consists of a metal shaft and a replaceable tip. Different die-bonders require metal shafts with different shapes and dimensions. We provide shafts for all common machines.

The rubber tips require different performance from the material they are made of. Hardness, in order not to deform when pushing the chip onto the adhesive, antistatic or conductive behaviour, a self-cleaning surface not to accumulate debris or dust, and last but not least a soft and super smooth face that on the sensitive chip surface will not leave behind much more than a **microTouch**.

Suitable materials in sequence of most common use, are:

- Urethane rubber,
- Silicone rubber, and
- Nitra rubber.

## microTouch Die Pick-Up Tools (round) Series 1532 & 1533

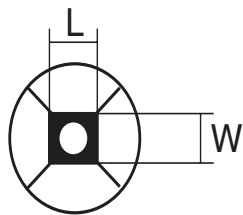


Partnumber	Dimensions		Shank	
	mm	inch		
1532-25-05	0,63	.025	x1-1532 <sup>1)</sup>	1,6
1532-30-05	0,76	.030	x1-1532 <sup>1)</sup>	1,6
1532-35-05	0,89	.035	x1-1532 <sup>1)</sup>	1,6
1532-40-05	1,02	.040	x1-1532 <sup>1)</sup>	1,6
1532-45-05	1,14	.045	x1-1532 <sup>1)</sup>	1,6
1532-50-05	1,27	.050	x1-1532 <sup>1)</sup>	1,6
1532-60-05	1,52	.060	x1-1532 <sup>1)</sup>	1,6
1532-70-05	1,78	.070	x1-1532 <sup>1)</sup>	1,6
1532-80-05	2,03	.080	x1-1532 <sup>1)</sup>	1,6
1532-90-05	2,29	.090	x1-1532 <sup>1)</sup>	1,6
1532-100-05	2,54	.100	x1-1532 <sup>1)</sup>	1,6
1532-110-05	2,79	.110	x1-1532 <sup>1)</sup>	1,6
1532-120-05	3,05	.120	x1-1532 <sup>1)</sup>	1,6
1532-130-05	3,30	.130	x1-1532 <sup>1)</sup>	1,6
1532-140-05	3,56	.140	x1-1532 <sup>1)</sup>	1,6
1532-150-05	3,81	.150	x1-1532 <sup>1)</sup>	1,6
1532-160-05	4,06	.160	x1-1532 <sup>1)</sup>	1,6
1532-170-05	4,57	.170	x1-1532 <sup>1)</sup>	1,6
1532-200-05	5,08	.200	x1-1532 <sup>1)</sup>	1,6
1533-220-05	5,59	.220	x1-1533 <sup>1)</sup>	2,6
1533-240-05	6,10	.240	x1-1533 <sup>1)</sup>	2,6
1533-260-05	6,60	.260	x1-1533 <sup>1)</sup>	2,6
1533-280-05	7,11	.280	x1-1533 <sup>1)</sup>	2,6
1533-300-05	7,62	.300	x1-1533 <sup>1)</sup>	2,6
1533-320-05	8,13	.320	x1-1533 <sup>1)</sup>	2,6
1533-340-05	8,64	.340	x1-1533 <sup>1)</sup>	2,6
1533-360-05	9,14	.360	x1-1533 <sup>1)</sup>	2,6
1533-380-05	9,65	.380	x1-1533 <sup>1)</sup>	2,6
1533-400-05	10,16	.400	x1-1533 <sup>1)</sup>	2,6
1533-420-05	10,67	.420	x1-1533 <sup>1)</sup>	2,6
1533-440-05	11,18	.440	x1-1533 <sup>1)</sup>	2,6
1533-460-05	11,68	.460	x1-1533 <sup>1)</sup>	2,6
1533-480-05	12,00	.480	x1-1533 <sup>1)</sup>	2,6
1533-500-05	12,70	.500	x1-1533 <sup>1)</sup>	2,6
1533-550-05	13,97	.550	x1-1533 <sup>1)</sup>	2,6
1533-600-05	15,24	.600	x1-1533 <sup>1)</sup>	2,6

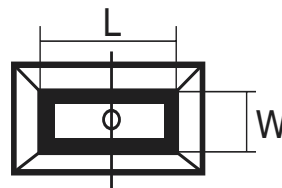
<sup>1)</sup> x depend on Bonder:: 1=K&S 2=Foton 3=AMI 4=ESEC (see page 8)

Table 1

# micro TOUCH Die Pick-Up Tools (square / rectangular) Series 1534 &1535



square Illustration 2



rectangular Illustration 3

Partnumber	Dimensions		Shank	
	mm	inch		
1534-30x30-05	0,76 x 0,76	.030 x .030	x1-1532 <sup>1)</sup>	1,6
1534-35x45-05	0,89 x 1,14	.035 x .045	x1-1532 <sup>1)</sup>	1,6
1534-35x55-05	0,89 x 1,40	.035 x .055	x1-1532 <sup>1)</sup>	1,6
1534-35x70-05	0,89 x 1,78	.035 x .070	x1-1532 <sup>1)</sup>	1,6
1534-35x90-06	0,89 x 2,29	.035 x .090	x1-1532 <sup>1)</sup>	1,6
1534-35x120-05	0,89 x 3,05	.035 x .120	x1-1532 <sup>1)</sup>	1,6
1534-35x180-05	0,89 x 4,57	.035 x .180	x1-1532 <sup>1)</sup>	1,6
1534-40x40-05	1,02 x 1,02	.040 x .040	x1-1532 <sup>1)</sup>	1,6
1534-40x60-05	1,02 x 1,52	.040 x .060	x1-1532 <sup>1)</sup>	1,6
1534-40x80-05	1,02 x 2,03	.040 x .080	x1-1532 <sup>1)</sup>	1,6
1534-50x50-05	1,27 x 1,27	.050 x .050	x1-1532 <sup>1)</sup>	1,6
1534-50x60-05	1,27 x 1,52	.050 x .060	x1-1532 <sup>1)</sup>	1,6
1534-50x70-05	1,27 x 1,78	.050 x .070	x1-1532 <sup>1)</sup>	1,6
1534-50x90-05	1,27 x 2,29	.050 x .090	x1-1532 <sup>1)</sup>	1,6
1534-50x110-05	1,27 x 2,79	.050 x .110	x1-1532 <sup>1)</sup>	1,6
1534-60x60-05	1,52 x 1,52	.060 x .060	x1-1532 <sup>1)</sup>	1,6
1534-60x75-05	1,52 x 1,91	.060 x .075	x1-1532 <sup>1)</sup>	1,6
1534-60x80-05	1,52 x 2,03	.060 x .080	x1-1532 <sup>1)</sup>	1,6
1534-60x100-05	1,52 x 2,54	.060 x .100	x1-1532 <sup>1)</sup>	1,6
1534-60x110-05	1,52 x 2,79	.060 x .110	x1-1532 <sup>1)</sup>	1,6
1534-60x130-05	1,52 x 3,30	.060 x .130	x1-1532 <sup>1)</sup>	1,6
1534-60x160-05	1,52 x 4,06	.060 x .160	x1-1532 <sup>1)</sup>	1,6
1534-70x70-05	1,78 x 1,78	.070 x .070	x1-1532 <sup>1)</sup>	1,6
1534-70x80-05	1,78 x 2,03	.070 x .080	x1-1532 <sup>1)</sup>	1,6
1534-70x90-05	1,78 x 2,29	.070 x .090	x1-1532 <sup>1)</sup>	1,6
1534-70x105-05	1,78 x 2,67	.070 x .105	x1-1532 <sup>1)</sup>	1,6
1534-70x120-05	1,78 x 3,05	.070 x .120	x1-1532 <sup>1)</sup>	1,6
1534-70x140-05	1,78 x 3,56	.070 x .140	x1-1532 <sup>1)</sup>	1,6
1534-70x150-05	1,78 x 3,81	.070 x .150	x1-1532 <sup>1)</sup>	1,6
1534-80x80-05	2,03 x 2,03	.080 x .080	x1-1532 <sup>1)</sup>	1,6
1534-80x90-05	2,03 x 2,29	.080 x .090	x1-1532 <sup>1)</sup>	1,6
1534-80x100-05	2,03 x 2,54	.080 x .100	x1-1532 <sup>1)</sup>	1,6
1534-90x90-05	2,29 x 2,29	.090 x .090	x1-1532 <sup>1)</sup>	1,6
1534-90x110-05	2,29 x 2,79	.090 x .110	x1-1532 <sup>1)</sup>	1,6
1534-90x130-05	2,29 x 3,30	.090 x .130	x1-1532 <sup>1)</sup>	1,6
1534-90x150-05	2,29 x 3,81	.090 x .150	x1-1532 <sup>1)</sup>	1,6

<sup>1)</sup> x depend on Bonder: 1=K&S 2=Foton 3=AMI 4=ESEC ( see page 8)

Table 2

# microTOUCH Die Pick-Up Tools (square / rectangular) Series 1534 & 1535

Partnumber	Dimensions		Shank	
	mm	inch		
1534-100x100-05	2,54 x 2,54	.100 x .100	x1-1532 <sup>1)</sup>	1,6
1534-100x140-05	2,54 x 3,56	.100 x .140	x1-1532 <sup>1)</sup>	1,6
1534-100x175-05	2,54 x 4,44	.100 x .175	x1-1532 <sup>1)</sup>	1,6
1534-100x200-05	2,54 x 5,08	.100 x .200	x1-1532 <sup>1)</sup>	1,6
1534-110x130-05	2,79 x 3,30	.110 x .130	x1-1532 <sup>1)</sup>	1,6
1534-110x150-05	2,79 x 3,81	.110 x .150	x1-1532 <sup>1)</sup>	1,6
1534-110x170-05	2,79 x 4,32	.110 x .170	x1-1532 <sup>1)</sup>	1,6
1534-110x190-05	2,79 x 4,83	.110 x .190	x1-1532 <sup>1)</sup>	1,6
1534-120x120-05	3,05 x 3,05	.120 x .120	x1-1532 <sup>1)</sup>	1,6
1534-120x150-05	3,05 x 3,81	.120 x .150	x1-1532 <sup>1)</sup>	1,6
1534-120x180-05	3,05 x 4,57	.120 x .180	x1-1532 <sup>1)</sup>	1,6
1535-120x240-05	3,05 x 6,10	.120 x .240	x1-1533 <sup>1)</sup>	2,6
1534-130x130-05	3,30 x 3,30	.130 x .130	x1-1532 <sup>1)</sup>	1,6
1534-130x160-05	3,30 x 4,06	.130 x .160	x1-1532 <sup>1)</sup>	1,6
1534-130x180-05	3,30 x 4,57	.130 x .180	x1-1532 <sup>1)</sup>	1,6
1534-135x135-05	3,43 x 3,81	.135 x .135	x1-1532 <sup>1)</sup>	1,6
1534-140x140-05	3,56 x 3,56	.140 x .140	x1-1532 <sup>1)</sup>	1,6
1534-140x160-05	3,56 x 4,06	.140 x .160	x1-1532 <sup>1)</sup>	1,6
1534-140x175-05	3,56 x 4,44	.140 x .175	x1-1532 <sup>1)</sup>	1,6
1535-140x210-05	3,56 x 5,33	.140 x .210	x1-1533 <sup>1)</sup>	2,6
1535-140x245-05	3,56 x 6,22	.140 x .245	x1-1533 <sup>1)</sup>	2,6
1535-140x280-05	3,56 x 7,11	.140 x .280	x1-1533 <sup>1)</sup>	2,6
1534-150x150-05	3,81 x 3,81	.150 x .150	x1-1532 <sup>1)</sup>	1,6
1534-150x170-05	3,81 x 4,32	.150 x .170	x1-1532 <sup>1)</sup>	1,6
1534-160x160-05	4,06 x 4,06	.160 x .160	x1-1532 <sup>1)</sup>	1,6
1534-160x200-05	4,06 x 5,08	.160 x .200	x1-1532 <sup>1)</sup>	1,6
1535-160x240-05	4,06 x 6,10	.160 x .240	x1-1533 <sup>1)</sup>	2,6
1535-160x280-05	4,06 x 7,11	.160 x .280	x1-1533 <sup>1)</sup>	2,6
1535-160x320-05	4,06 x 8,13	.160 x .320	x1-1533 <sup>1)</sup>	2,6
1534-170x170-05	4,32 x 4,32	.170 x .170	x1-1532 <sup>1)</sup>	1,6
1534-170x180-05	4,32 x 4,57	.170 x .180	x1-1532 <sup>1)</sup>	1,6
1534-170x190-05	4,32 x 4,83	.170 x .190	x1-1532 <sup>1)</sup>	1,6
1534-170x200-05	4,32 x 5,08	.170 x .200	x1-1532 <sup>1)</sup>	1,6
1535-170x230-05	4,32 x 5,84	.170 x .230	x1-1533 <sup>1)</sup>	2,6
1535-170x240-05	4,32 x 6,10	.170 x .240	x1-1533 <sup>1)</sup>	2,6
1535-170x250-05	4,32 x 6,35	.170 x .250	x1-1533 <sup>1)</sup>	2,6
1534-180x180-05	4,57 x 4,57	.180 x .180	x1-1532 <sup>1)</sup>	1,6
1535-180x225-05	4,57 x 5,71	.180 x .225	x1-1533 <sup>1)</sup>	2,6
1535-180x260-05	4,57 x 6,60	.180 x .260	x1-1533 <sup>1)</sup>	2,6
1535-180x270-05	4,57 x 6,86	.180 x .270	x1-1533 <sup>1)</sup>	2,6
1535-180x315-05	4,57 x 8,00	.180 x .315	x1-1533 <sup>1)</sup>	2,6
1535-180x360-05	4,57 x 9,14	.180 x .360	x1-1533 <sup>1)</sup>	2,6
1535-190x210-05	4,83 x 5,33	.190 x .210	x1-1533 <sup>1)</sup>	2,6

<sup>1)</sup> x depend on Bonder:: 1=K&S 2=Foton 3=AMI 4=ESEC (see page 8)

Table 3

# micro TOUCH Die Pick-Up Tools (square / rectangular) Series 1534 &1535

Partnumber	Dimensions		Shank	
	mm	inch		
1534-200x200-05	5,08 x 5,08	.200 x .200	x1-1532 <sup>1)</sup>	1,6
1535-200x210-05	5,08 x 5,33	.200 x .210	x1-1533 <sup>1)</sup>	2,6
1535-200x250-05	5,08 x 6,35	.200 x .250	x1-1533 <sup>1)</sup>	2,6
1535-200x300-05	5,08 x 7,62	.200 x .300	x1-1533 <sup>1)</sup>	2,6
1535-200x350-05	5,08 x 8,89	.200 x .350	x1-1533 <sup>1)</sup>	2,6
1535-200x400-05	5,08 x 10,16	.200 x .400	x1-1533 <sup>1)</sup>	2,6
1535-210x240-05	5,33 x 6,10	.210 x .240	x1-1533 <sup>1)</sup>	2,6
1535-220x220-05	5,59 x 5,59	.220 x .220	x1-1533 <sup>1)</sup>	2,6
1535-230x240-05	5,84 x 6,10	.230 x .240	x1-1533 <sup>1)</sup>	2,6
1535-230-260-06	5,84 x 6,60	.230 x .260	x1-1533 <sup>1)</sup>	2,6
1535-240x240-05	6,10 x 6,10	.240 x .240	x1-1533 <sup>1)</sup>	2,6
1535-240x250-05	6,10 x 6,35	.240 x .250	x1-1533 <sup>1)</sup>	2,6
1535-250x260-05	6,35 x 6,60	.250 x .260	x1-1533 <sup>1)</sup>	2,6
1535-250x300-05	6,35 x 7,62	.250 x .300	x1-1533 <sup>1)</sup>	2,6
1535-260x270-05	6,60 x 6,86	.260 x .270	x1-1533 <sup>1)</sup>	2,6
1535-270x270-05	6,86 x 6,86	.270 x .270	x1-1533 <sup>1)</sup>	2,6
1535-280x280-05	7,11 x 7,11	.280 x .280	x1-1533 <sup>1)</sup>	2,6
1535-290x290-05	7,37 x 7,37	.290 x .290	x1-1533 <sup>1)</sup>	2,6
1535-290x310-05	7,37 x 7,87	.290 x .310	x1-1533 <sup>1)</sup>	2,6
1535-300x320-05	7,62 x 8,13	.300 x .320	x1-1533 <sup>1)</sup>	2,6
1535-300x360-05	7,62 x 9,14	.300 x .360	x1-1533 <sup>1)</sup>	2,6
1535-310x380-05	7,87 x 9,65	.310 x .380	x1-1533 <sup>1)</sup>	2,6
1535-320x320-05	8,13 x 8,13	.320 x .320	x1-1533 <sup>1)</sup>	2,6
1535-320x330-05	8,13 x 8,38	.320 x .330	x1-1533 <sup>1)</sup>	2,6
1535-350x350-05	8,89 x 8,89	.350 x .350	x1-1533 <sup>1)</sup>	2,6
1535-360x360-05	9,14 x 9,14	.360 x .360	x1-1533 <sup>1)</sup>	2,6
1535-390x390-05	9,91 x 9,91	.390 x .390	x1-1533 <sup>1)</sup>	2,6
1535-400x400-05	10,16 x 10,16	.400 x .400	x1-1533 <sup>1)</sup>	2,6
1535-440x440-05	11,18 x 11,18	.440 x .440	x1-1533 <sup>1)</sup>	2,6
1535-480x480-05	12,19 x 12,19	.480 x .480	x1-1533 <sup>1)</sup>	2,6

<sup>1)</sup> x depend on Bonder:: 1=K&S 2=Foton 3=AMI 4=ESEC ( see page 8)

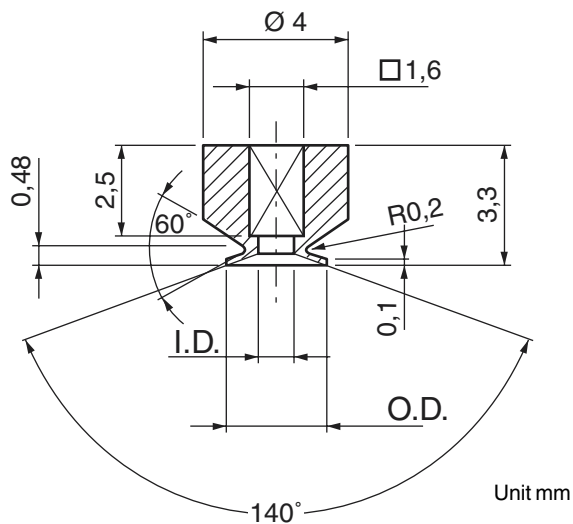
Table 4

# microTouch Rubber Tips (round) Series 1536

Partnumber	O.D.		I.D.		.Shank
	mm	inch	mm	inch	
1536-40-05	1,016	.040	0,45	.018	x1-1532 <sup>1)</sup>
1536-50-05	1,270	.050	0,6	.024	x1-1532 <sup>1)</sup>
1536-60-05	1,524	.060	0,7	.027	x1-1532 <sup>1)</sup>
1536-70-05	1,778	.070	1,0	.039	x1-1532 <sup>1)</sup>
1536-80-05	2,032	.080	1,0	.039	x1-1532 <sup>1)</sup>
1536-90-05	2,286	.090	1,0	.039	x1-1532 <sup>1)</sup>
1536-100-05	2,540	.100	1,0	.039	x1-1532 <sup>1)</sup>
1536-110-05	2,794	.110	1,0	.039	x1-1532 <sup>1)</sup>
1536-120-05	3,048	.120	1,0	.039	x1-1532 <sup>1)</sup>
1536-140-05	3,556	.140	1,0	.039	x1-1532 <sup>1)</sup>
1536-160-05	4,064	.160	1,0	.039	x1-1532 <sup>1)</sup>
1536-180-05	4,572	.180	1,0	.039	x1-1532 <sup>1)</sup>
1536-200-05	5,080	.200	1,0	.039	x1-1532 <sup>1)</sup>

<sup>1)</sup> x depend on Bonder:: 1=K&S 2=Foton 3=AMI 4=ESEC (see page 8)

Table 5



Rubber Tip Series 1536 Illustration 4

# micro TOUCH Die Pick-Up Shanks for Series 1532, 1533, 1534, 1535 & 1536

Shanks for use with other machines on request

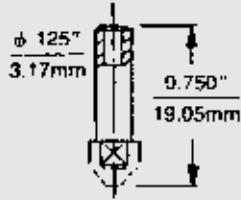
(.025"-.200" Tips)

(.210"-.600" Tips)

for K&S-Bonder  
6300 Machine

11-1532

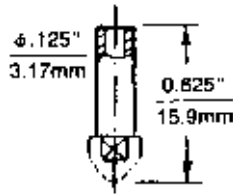
11-1533



for FOTON /  
MÜHLBAUER /  
DELVOTEC-Bonder

21-1532

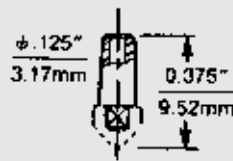
21-1533



for AMI-Bonder  
(cone seat)

31-1532

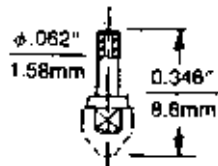
31-1533



for ESEC-Bonder

41-1532

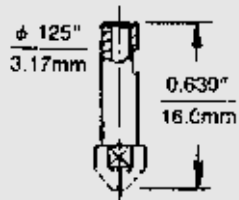
41-1532



for K&S-Bonder  
6100 Machine

51-1532

51-1533



for ASM-Bonder

61-1532

61-1533

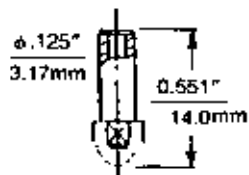


Table 6

# microTouch Die Pick-Up Tips Series 1538 & 1548

microTouch pick-up tips with round shankmount are supplied in two shapes:

**Series 1538** is a small but compact shape with an outer diameter of .150" (3,8 mm) for all sizes. The face diameter can be chosen from .030" (0,76 mm) up to .150" (3,8 mm) dia.

**Series 1548** was developed to cover a wider range of chip sizes. The common outer diameter is .030" (0,76 mm) for all face sizes up to .190". For larger faces face diameter is outside diameter. Face sizes begin at .030" (0,762 mm) and range to .300" (7,62 mm).

Shanks (shafts) for both series are available for the most common Die-Bonders (Part Numbers & list to select on page -11-).

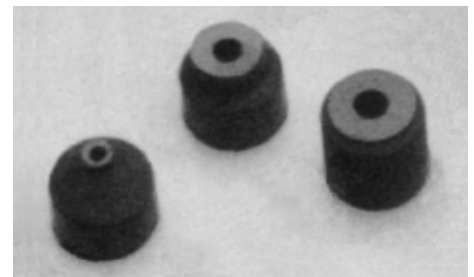
These tips are recommended in all applications, that require a very sensitive chip surface requires a pick-up tool with a **microTouch** face. Compared with pick-up tips made out of metal or plastic materials, the risk of damaging the chip metalization is dramatically reduced. The formulation for microtouch tips resists the embedding of abrasive silicon dust. Tips are economical and easy to replace.

General Outer Dimensions of the Tips (just for Information):

Shank-Type / Series	Outer-Ø OD		Height H		Inner-Ø ID	
	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]
1538	.150	3,81	.150	3,81	.095	2,41
1548	.190 <sup>+) </sup>	4,83	.190	4,83	.115	2,92

<sup>+)</sup>  for Face-Ø FD > .190" (right table on page 10) the Outer-Ø OD is equal to the Face-Ø (cylindrical tip)

Table 7



Picture 2

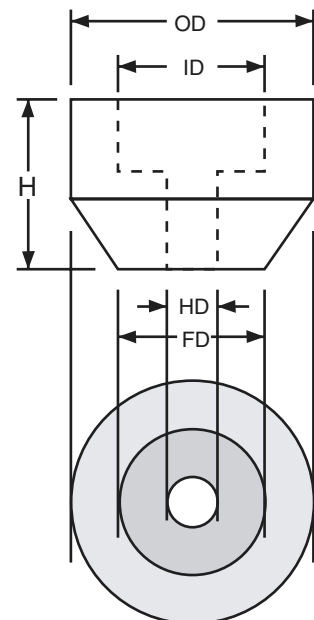


Illustration 5

## Part Numbers:

The specifications of the pick-up tips together with the part numbers are given on page 10. Please append the ID for the desired material to the number of the selected tip (see ordering example on page 10).

## Specifications and Part Numbers of the Pick-up Tips:

The part number is composed from the Series-No., the face dia. and the material ID: A tip of series 1548 (= for shank type 1548) with a face-diameter of .200 in. (5,080 mm) out of black urethane has the part number:

**Die Pick-Up Tool 1548 - 200 - 04 .**

### Series 1548:

FD(±.002) Face-Ø		HD(±.002) Hole-Ø		Tip ID
[in.]	[mm]	[in.]	[mm]	
.030	0,760	.013	0,330	<b>1548 - 30 -</b>
.040	1,010	.017	0,430	<b>1548 - 40 -</b>
.050	1,270	.020	0,510	<b>1548 - 50 -</b>
.060	1,520	.025	0,630	<b>1548 - 60 -</b>
.070	1,770	.030	0,760	<b>1548 - 70 -</b>
.080	2,030	.035	0,880	<b>1548 - 80 -</b>
.090	2,280	.040	1,010	<b>1548 - 90 -</b>
.100	2,540	.045	1,140	<b>1548 - 100 -</b>
• .110	2,790	.050	1,270	<b>1548 - 110 -</b>
.120	3,040	.055	1,390	<b>1548 - 120 -</b>
.130	3,300	.060	1,520	<b>1548 - 130 -</b>
• .140	3,550	.065	1,650	<b>1548 - 140 -</b>
.150	3,800	.070	1,770	<b>1548 - 150 -</b>
• .160	4,060	.075	1,900	<b>1548 - 160 -</b>
.170	4,310	.080	2,030	<b>1548 - 170 -</b>
.180	4,570	.085	2,160	<b>1548 - 180 -</b>
.190	4,820	.090	2,280	<b>1548 - 190 -</b>
• .200	5,080	.095	2,410	<b>1548 - 200 -</b>
.220	5,580	.105	2,660	<b>1548 - 220 -</b>
.230	5,840	.110	2,790	<b>1548 - 230 -</b>
.250	6,350	.120	3,040	<b>1548 - 250 -</b>
.300	7,620	.145	3,680	<b>1548 - 300 -</b>

• = in stock

Table 8

### Series 1538:

FD(±.002) Face-Ø		HD(±.002) Hole-Ø		Tip ID
[in.]	[mm]	[in.]	[mm]	
.030	0,760	.013	0,330	<b>1538 - 30 -</b>
.040	1,010	.017	0,430	<b>1538 - 40 -</b>
.050	1,270	.020	0,510	<b>1538 - 50 -</b>
.060	1,520	.025	0,630	<b>1538 - 60 -</b>
.070	1,770	.030	0,760	<b>1538 - 70 -</b>
.080	2,030	.035	0,880	<b>1538 - 80 -</b>
.090	2,280	.040	1,010	<b>1538 - 90 -</b>
.100	2,540	.045	1,140	<b>1538 - 100 -</b>
• .110	2,790	.050	1,270	<b>1538 - 110 -</b>
.120	3,040	.055	1,390	<b>1538 - 120 -</b>
.130	3,300	.060	1,520	<b>1538 - 130 -</b>
• .140	3,550	.065	1,650	<b>1538 - 140 -</b>
.150	3,800	.070	1,770	<b>1538 - 150 -</b>

• = in stock

Table 9

### Materials:

Bezeichnung	Properties	Hardness	Temperature	ID
Silicone Rubber	white, ultra pure	SH75	300°C	<b>- 01</b>
Nitra Rubber	black, hard	SH80	350°C	<b>- 03</b>
• Urethan Rubber	black, conductive	SH90	70°C	<b>- 04</b>

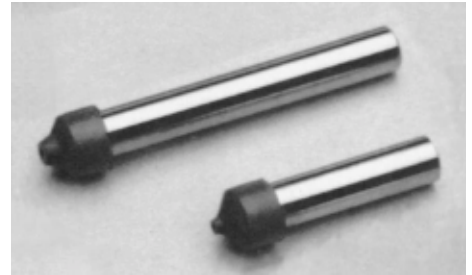
• = in stock

Table 10

# microTouch Die Pick-Up Shanks for Rubber Tips, Series 1538 & 1548

The shank is mounted as an integral part of the Die-Bonder's pick-up system. It does not wear.

The replaceable rubber tip is subject to wear and contamination while in use. It is recommended to determine the life span of the tips in a given application and to replace them periodically. Replacing is accomplished directly on the shank, which does not need to be removed from the bonder. The tip size should be chosen as large as possible to ascertain a planparallel chip. As the face of the tip would extend over the chip surface, it could easily be contaminated.



Picture 3

Die Pick-up Tips are available in two main geometries: Series 1538 is of a compact shape and requires little space, Series 1548 is of a larger shape for additional stability.

The table below lists shank part-numbers of both series for the most popular die bonders.

### Part Numbers for Pick-Up Shanks:

Die-Bonder	Series 1538	Series 1548	Shank-Ø D		Total Tool Length	
			[in.]	[mm]	[in.]	[mm]
K & S	11 - 1538	11 - 1548	.125	3,175	.750	19,05
FOTON / MÜHLBAUER / DELVOTEC	21 - 1538	21 - 1548	.125	3,175	.625	15,85
AMI (Konus)	31 - 1538	31 - 1548	~.125	~3,175	.4375	11,11
ESEC	41 - 1538	41 - 1548	.0626	1,59	.315	8,00

Table 11

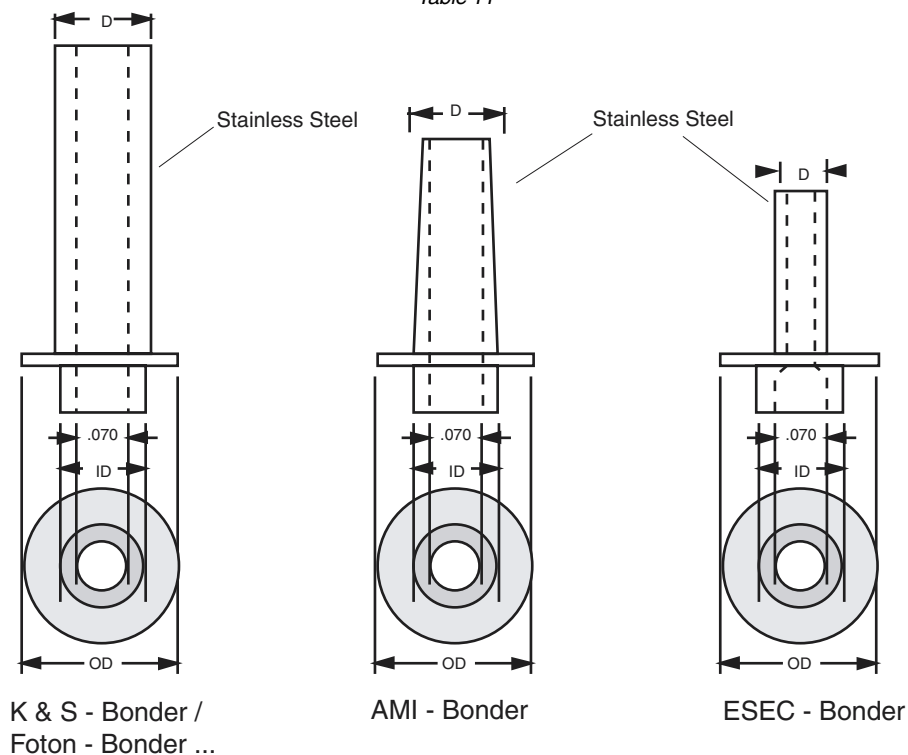
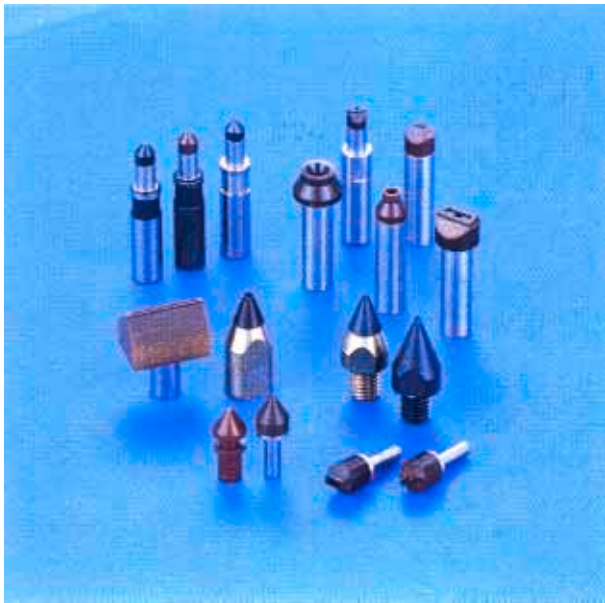


Illustration 6

## microTouch Vespel® Tools (High Temperature Plastic Tips)



Picture 4

For small **microTouch** tips with holes  $\leq 200\mu\text{m}$  rubber is unsuitable as tip material. These tips with holes down to  $100\mu\text{m}$  are made of the polyimide VESPEL®. VESPEL® is a high temperature polyimide with outstanding particle repellent, non-stick characteristics and high stability.

VESPEL® tips are permanently attached to the shank (nonchangeable).

The most common applications are eutectical bonding, because VESPEL® tips can withstand temperatures up to  $450^\circ\text{C}$  for a short period of time, or very small chip handling.

Partnumbers			
Dimensions			Type
Ø Outside	Ø Hole	Length	
250 µm	100 µm	19 mm	1549-10-07
300 µm	125 µm	19 mm	1549-12-07
380 µm	160 µm	19 mm	1549-15-07
500 µm	200 µm	19 mm	1549-20-07
625 µm	200 µm	19 mm	1549-25-07
750 µm	200 µm	19 mm	1549-30-07

Table 12

Other dimensions can be made upon request. Please inquire.

# microTouch Epoxy Dispensing Nozzles



Picture 5

## available Styles:

- with Needles

Suitable for die sizes above 1,52x1,52mm (60x60mil.).



Illustration 8

- with holes

suitable for die sizes above 1,52x1,52mm (60x60mil.).

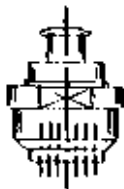


Illustration 9

The microTouch Epoxy dispensing nozzles were designed to prevent inconsistent epoxy problems, like tailing, bridging, voids and insufficient epoxy coverage.

Two styles (Needle Style and Hole Style) are available with many different patterns (Matrix, Star or Interlocking).

## possible patterns:

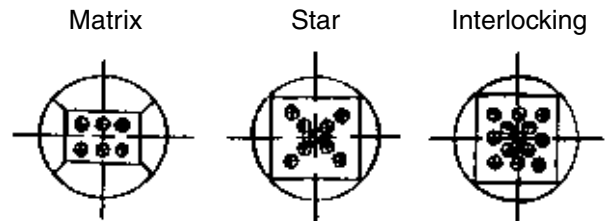


Illustration 7

## common needle sizes

Gauge	Outer diameter		Inner diameter	
	mm	inch	mm	inch
16 G	1,65 mm	0.065"	1,30 mm	0.051"
18 G	1,25 mm	0.049"	0,90 mm	0.035"
19 G	1,08 mm	0.043"	0,75 mm	0.029"
20 G	0,90 mm	0.035"	0,65 mm	0.026"
21 G	0,82 mm	0.032"	0,50 mm	0.020"
22 G	0,72 mm	0.028"	0,45 mm	0.018"

Table 13

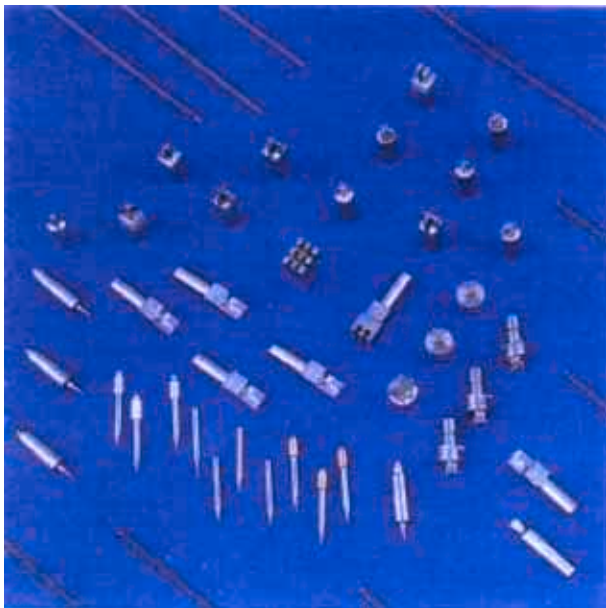
## common hole sizes

Ø Hole	
0,65 mm	0.026"
0,50 mm	0.020"
0,45 mm	0.018"

Table 14

Contact us with your requirements. We will recommend a suitable design for your application.

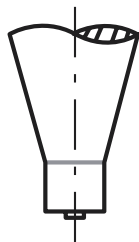
# microTouch Epoxy Stamping Tools



Picture? microTouch Epoxy Stamping Tools

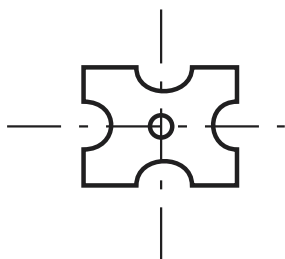
The microTouch Epoxy Stamping Tools were carefully designed to produce well defined epoxy prints. The most preferred types are BAR-TYPE, STAR-TYPE and PIN-PATTERN.

## BAR-TYPE Stamping Tool



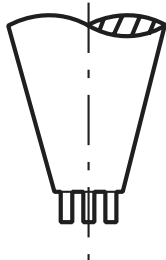
suitable for small dies 0,2 to 1,02mm (8-40 Mils)  
Led production or other small dies.

## STERN-TYPE Stamping Tool



suitable for die size 0,75 to 5.0 mm (30-200 Mils)  
Leaving a print with a higher center area and concave sides it reduces voids and leaking epoxy.

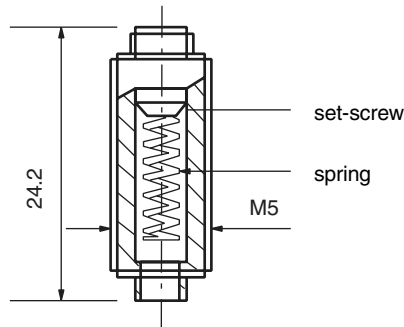
## PIN-PATTERN Stamping Tool



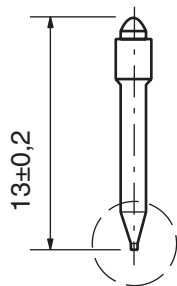
suitable for die size above 1,52x1,52mm (above 60x60 Mils)

Many other types can be made. Please contact us with your requirements.

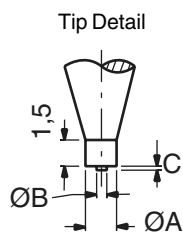
# microTouch Epoxy Stemps



microTouch toolholder (SPRING-LOADED) for epoxy-Stamp in ASM-borders



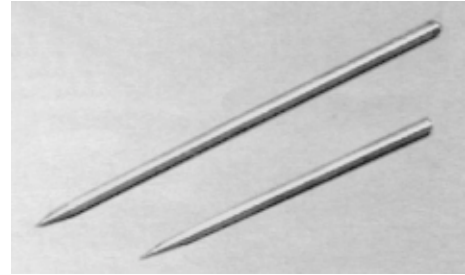
microTouch epoxy-Stemps (SPRING-LOADED) suitable for small dies ( $\leq 1 \times 1 \text{ mm}$  /  $\leq 40 \times 40 \text{ mil}$ )



DIE SIZE	ØA	ØB	C	DIE THICKNESS	
8x8	0,20mm	0,10mm	0,076mm	89µm - 114µm	3.5 - 4.5 mil
10x10	0,25mm	0,10mm	0,076mm	89µm - 114µm	3.5 - 4.5 mil
12x12	0,32mm	0,13mm	0,076mm	89µm - 114µm	3.5 - 4.5 mil
8x8	0,20mm	0,10mm	0,10mm	150µm - 280µm	6 - 11 mil
10x10	0,25mm	0,10mm	0,10mm	150µm - 280µm	6 - 11 mil
12x12	0,32mm	0,13mm	0,10mm	150µm - 280µm	6 - 11 mil
14x14	0,35mm	0,15mm	0,10mm	150µm - 280µm	6 - 11 mil
16x16	0,40mm	0,15mm	0,10mm	150µm - 280µm	6 - 11 mil
20x20	0,50mm	0,15mm	0,10mm	150µm - 280µm	6 - 11 mil
7x7	0,30mm	0,10mm	0,25mm	305µm - 405µm	12 - 16 mil
10x10	0,38mm	0,10mm	0,25mm	305µm - 405µm	12 - 16 mil
12x12	0,43mm	0,13mm	0,25mm	305µm - 405µm	12 - 16 mil
14x14	0,48mm	0,15mm	0,25mm	305µm - 405µm	12 - 16 mil
15x15	0,50mm	0,15mm	0,25mm	305µm - 405µm	12 - 16 mil
16x16	0,50mm	0,15mm	0,25mm	305µm - 405µm	12 - 16 mil
20x20	0,63mm	0,18mm	0,25mm	305µm - 405µm	12 - 16 mil
25x25	0,68mm	0,20mm	0,25mm	305µm - 405µm	12 - 16 mil
30x30	0,75mm	0,25mm	0,25mm	305µm - 405µm	12 - 16 mil
40x40	0,95mm	0,25mm	0,25mm	305µm - 405µm	12 - 16 mil

# microPonit Ejector Pins

Die Ejector-Pins / Push-up needles are needed to eject dies from the dicing tape while they are vacuum lifted by the pick-up tip. Depending on machine type the method could either be to push the needle through the tape or only lift the tape without punching a hole (small tip radius / large tip radius). When punching through, the tape is held down to the needle bushing by vacuum.



Picture 5

## Part Numbering:

The table on the right hand side lists all common ejector pins. The part number is made up from the cone angle, the tip radius, and the needle design shape. Cone and tip radius are electropolished. To complete the part number a code for the Die-Bonder used shall be put in-front (table on the left).

Example: An ejector pin for an ESEC-Bonder (code: 41 -) with 15 deg. cone angle and 20 $\mu$  tip radius in shape 10 (ID: -15 - 20 - 10) carries the part number 41 - 15 - 20 - 10

**Part Number: Die Ejector Pin 41 - 15 - 20 - 10**

Die-Bonder	ID	Length L	
		[mm]	[in.]
DATACON	21 -	17,0	.669
FOTON	21 -	17,0	.669
MÜHLBAUER	21 -	17,0	.669
AMI	31 -	14,3	.563
K & S	31 -	14,3	.563
ESEC	41 -	18,0	.709
ALPHASEM	51 -	19,0	.745

Table 15

Cone Angle	Tip Radius		Needle ID	Shape
	[mm]	[in.]		
10°	0,020	.0008	- 10 - 20	10
	0,025	.001	- 10 - 25	10
15°	0,020	.0008	- 15 - 20	10
	0,025	.001	- 15 - 25	10
20°	0,020	.0008	- 20 - 20	10
	0,025	.001	- 20 - 25	10

Table 16

The **microPoint** is in contact with a wearing silicon surface several ten-thousand times. For a high Die-Bonder up-time a long life of the point's shape is required. **microPoint** needles are made of finest grain tungsten carbide. By high-pressure sintering needles are produced which are centerless-ground to  $\text{\O} 0,7 \text{ mm}$ .

**microPoint** ejector-pins are most commonly supplied in design shape 10.

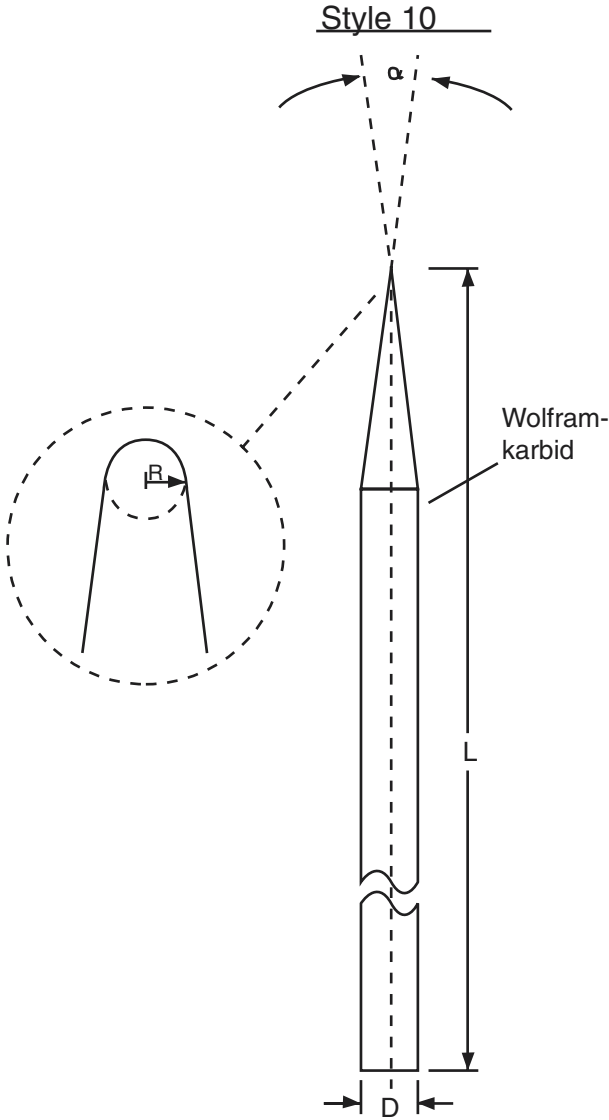


Illustration 10







**minitron**  
**elektronik gmbh**

Noerdl. Ringstr. 14  
D-85057 Ingolstadt  
Tel. 0841 / 82077  
Fax 0841 / 84404  
<http://www.minitron.com>  
eMail: [info@minitron.com](mailto:info@minitron.com)