

ENGRAVING CUTTERS

How to select cutting width											
Height of character	0,4 mm 1/64"	0,8 mm 1/32"	1,5 mm 1/16"	3 mm 1/8"	6 mm 1/4"	8 mm 5/16"	12 mm 1/2"	19 mm 3/4"	25 mm 1"	32 mm 1 1/4"	50 mm 2"
The width of the cut is directly related to the height of the engraved character. This chart is a useful guide to help you select cutter tip widths for various engraved letter heights.											
Width of cutter											
Single line font	0,127 mm .005"	0,25 mm .010"	0,38 mm .015"	0,5 mm .020"	0,76 mm .030"	1,0 mm .040"	1,52 mm .060"	2,28 mm .090"	3,17 mm .125"	4,34 mm .171"	6,35 mm .250"
Multi line font	0,127 mm .005"	0,127 mm .005"	0,25 mm .010"	0,25 mm .010"	0,38 mm .015"	0,38 mm .015"	0,76 mm .030"	1,02 mm .040"	1,52 mm .060"	1,52 mm .060"	2,30 mm .090"

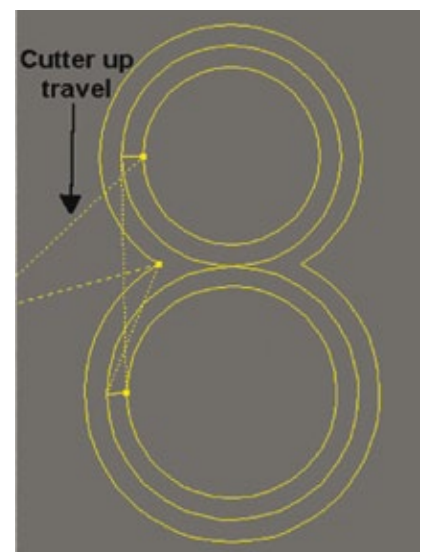
Font types are critical to engraving quality and time

There are 2 main types of fonts for engraving: TrueType (print fonts), and pre-engineered engraving fonts.

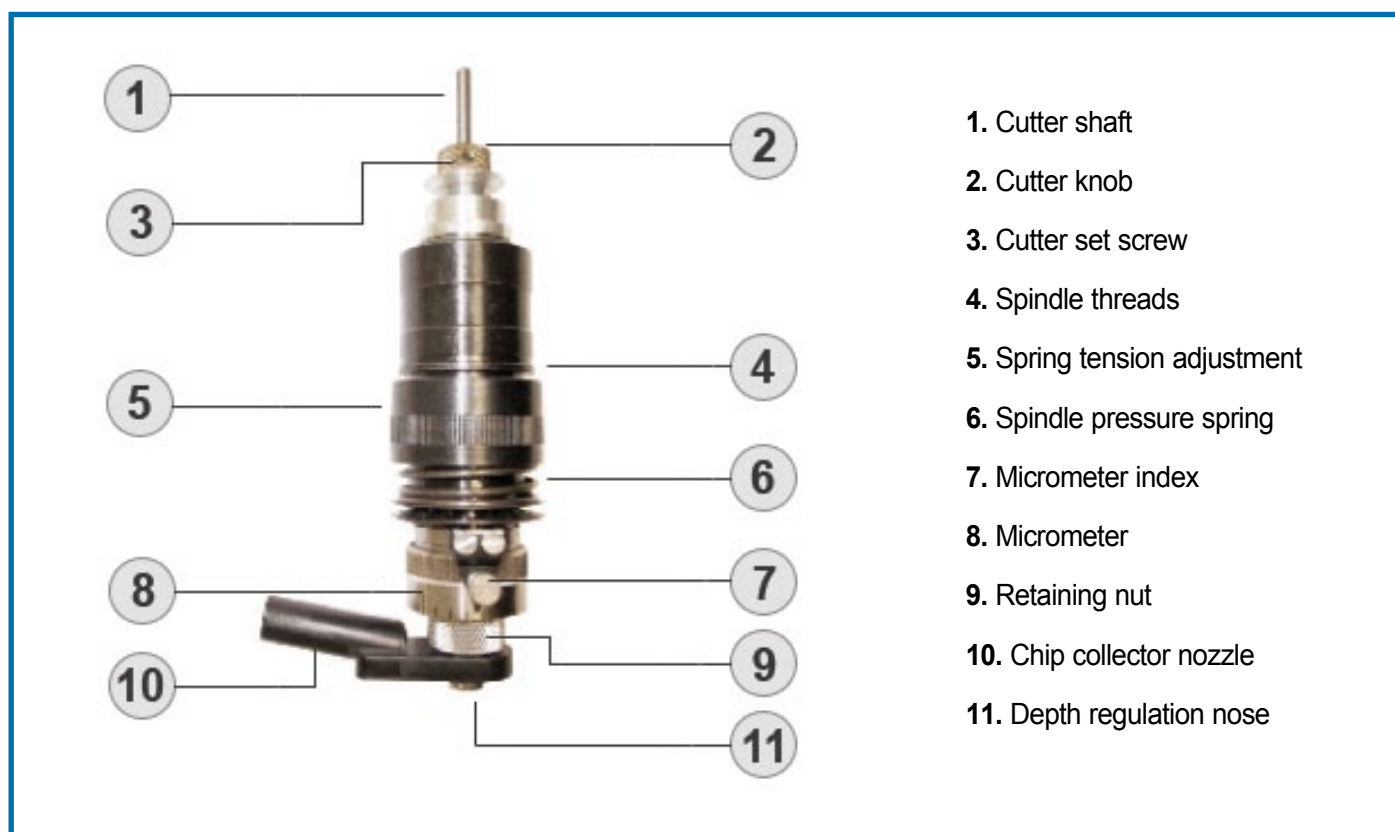
TrueType fonts are outline fonts. They can be filled for a solid, bold look. Filling requires the engraving programme to calculate the tool paths.

Engraving fonts are pre-engineered fonts with optimised tool paths, designed for reducing engraving time and optimising engraving quality. Engraving fonts are optimised with reduced tool lifts, tool paths start from the inside of a contour - so you don't lose the leading edge of a filled contour which causes "dimpling". Tool path direction is predetermined for high quality engraving. The engraving path order is optimised as a time saving measure. Use single-line fonts to increase production speed.

When selecting cutters, please use the B chart above as a guideline for choosing the appropriate sized tip for engraving.



SETTING YOUR CUTTERS TO ZERO FOR SURFACE & SUBSURFACE ENGRAVING



1. Cutter shaft
2. Cutter knob
3. Cutter set screw
4. Spindle threads
5. Spring tension adjustment
6. Spindle pressure spring
7. Micrometer index
8. Micrometer
9. Retaining nut
10. Chip collector nozzle
11. Depth regulation nose

This procedure is a one-time operation performed before using a new engraving cutter. It is a best practice that will improve productivity. It will allow changing cutters without having to re-adjust the micrometer

1. Turn micrometer gauge in the direction of increasing numbers until it stops
2. Back off 3 full turns to 0. Tighten the micrometer set screw. This will allow up to 1.9 mm engraving/cutting depth to be dialed in later. If you are cutting out 3.18 mm material, back off 5 full turns.
3. Screw in desired cutter (reverse threads) making sure cutter tip is not sticking out of the nose cone. You may need to adjust cutter offset with yellow cutter wrench.
4. Using the arrows on the remote control, move spindle over flat table.
5. Press Z on the remote control (LCD reads Z = 0.00 mm ⇅ to change).
6. Press the down arrow on the remote control until nose cone touches the table (& there is slight separation between the snap ring and spindle assembly).
7. Loosen the black set screw on the brass collar of the cutter (with yellow wrench) and carefully lower the cutter down until it just touches the material. Then tighten set screw.
8. Without moving the spindle, repeat the previous step on all the plastic cutters and place in cutter rack.
9. Press tick ✓ on the remote control to raise the spindle back up. Press X to cancel the XY jog mode.

ENGRAVING CUTTERS

ONECUT

3.17 mm
Top loading cutters

6.35 mm
Top loading cutters



Carbide cutter



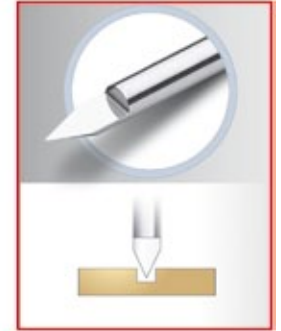
Steel cutter



Parallel steel cutter



Round base cylindrical steel cutter



Carbide cutter

Compatible with M20, IM4, IM3, ITM, ITL, IF3

Compatible with IRV

Cutting width	NEW Part No.	Old Part No.
0.25	48793	20134
0.32	48794	20135
0.50	48795	20137
0.75	48796	20138
1.00	48797	20140
1.25	48798	20141
1.50	48799	20142
2.00	48800	20143
3.00	48801	20144
45°	51368	20136
90°	51372	20139

Cutting width	NEW Part No.	Old Part No.
0.00	48773	20156
0.25	48774	20158
0.32	48775	20159
0.50	48776	20161
0.75	48777	20162
1.00	48778	20165
1.25	48779	20166
1.50	48780	20167
2.00	48781	20168
3.00	48782	20170
15°	48802	20157
45°	48807	20160

Cutting width	NEW Part No.	Old Part No.
1.00	48783	20174
1.50	48784	20175
2.00	48785	20176
2.50	48786	20177
3.00	48787	20178

Cutting width	NEW Part No.	Old Part No.
1.00	48788	20179
1.40	48789	20180
2.00	48790	20181
2.50	48791	20182
3.00	48792	20183

Cutting width	NEW Part No.	Old Part No.
0.32	48836	20940
0.50	48837	20942
0.75	48838	20943
1.25	48839	20946
2.00	48840	20948
3.17	48841	20949
6.00	48842	20951

⚠ Cutter references have changed. Please use the new references when ordering (see conversion table opposite.) Every cutter is engraved with its reference.



ONECUT

4.36 mm
Top loading cutters



Steel cutter



Carbide cutter



Parallel steel cutter



Round base cylindrical steel cutter



1/4 round carbide cutter

Compatible with TXL, TX3, IRV, VX Range, V-3000, V-4000, UNICA, VEGA, IS Range, M40 Range

Cutting width	NEW Part No.	Old Part No.
0.00	48808	21051
0.25	48809	21053
0.32	48810	21054
0.50	48811	21056
0.75	48812	21057
1.00	48813	21060
1.25	48814	21061
1.50	48815	21062
2.00	48816	21063
3.17	48818	21065
4.36	48819	21066
15°	48830	21052
45°	48831	21055
Special*	48832	21058

Cutting width	NEW Part No.	Old Part No.
0.25	48820	21036
0.32	48821	21037
0.50	48822	21039
0.75	48823	21040
1.00	48824	21042
1.25	48825	21043
1.50	48826	21044
2.00	48827	21045
3.17	48828	21046
4.00	48829	21047

Cutting width	NEW Part No.	Old Part No.
1.00	51355	21071
1.50	51356	21072
2.00	51358	21073
2.50	51359	21074
3.00	51360	21075
3.50	51361	21076
4.00	48834	21077

Cutting width	NEW Part No.	Old Part No.
1.00	51362	21078
1.50	51363	21079
2.00	51364	21080
2.50	51365	21081
3.00	51366	21082
3.50	51367	21083
4.00	48835	21084

Cutting width	NEW Part No.	Old Part No.
0.32	51373	-
0.50	51374	21102
0.75	51375	21103
1.25	51376	21104
2.00	51377	21105
3.00	55984	12226

* for drilling and cutting

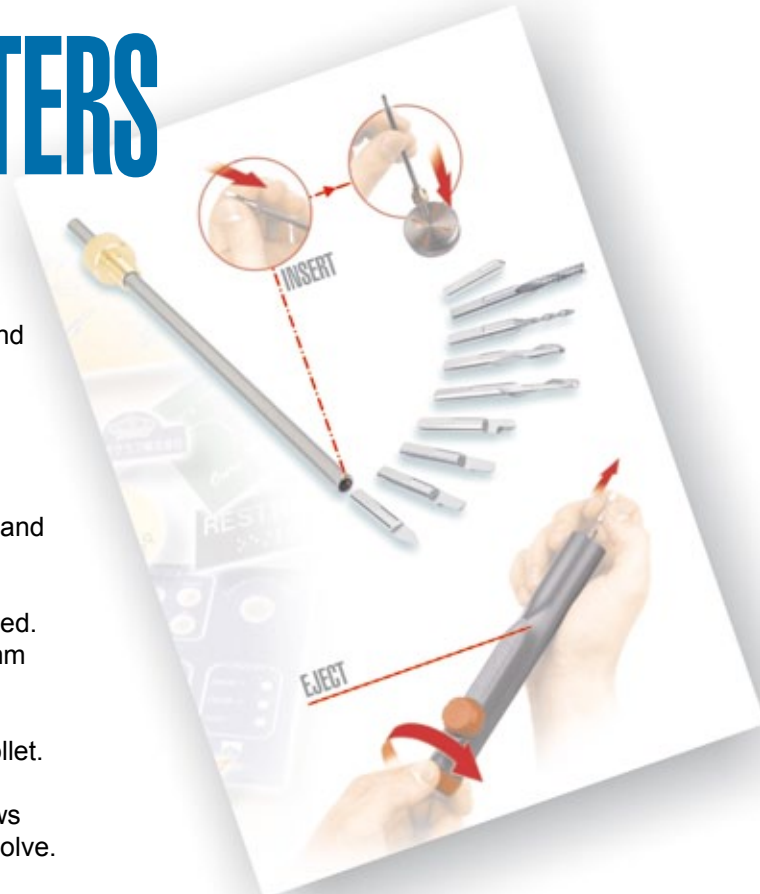
Cutter recommendations for different materials

		Plastics		Metals						Glass	
		Gravoply	Gravoglas	Gravostrat	Aluminium	Brass	Bronze	Soft metal	Stainless steel		Precious metals
Cutters	steel	X	X			X	X	X		X	
	carbide	X	X	X	X	X	X	X	X	X	
	diamond				X	X	X	X	X	X	X

ENGRAVING CUTTERS

TWINCUT

- **Multipurpose.** A range of inserts to engrave, cut and drill the widest range of materials (plastic, plexiglas, laminates, aluminium, brass, etc.)
- **Interchangeable.** A tool-holder with length preset, designed to hold any insert from the Twincut range.
- **Proven quality.** Twincut's micrograin carbide technology ensures very durable resistance to wear and tear, achieving the best possible engraving results.
- **Economical.** The life span of the toolholders is practically unlimited. Only the active parts are replaced.
- **Compatible.** Twincut tools can be used with 4.36mm diameter spindles and collet spindles (top-loading - length preset).
- **Direct fixing** of the insert into 3.17mm diameter collet.
- **Useful and progressive.** The complete range of engraving, cutting, surfacing and drilling inserts allows you to adapt your equipment as your applications evolve.



Toolholder

All inserts must be used with this toolholder
Part No. 22987

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Every cutter is engraved with its reference.



Engraving insert for common materials

Use on brass, Gravoply, aluminium



Jewellery engraving insert

Signet rings, bracelets, medallions



Insert for engraving on hard metals

Use on soft and semi-hard steel



Parallel engraving insert

Drilling, filling, engraving on Gravoply



Round nose engraving insert

Use on Gravoglas for subsurface engraving

Cutting width	NEW Part No.	Old Part No.
0.25	48608	22991
0.32	48609	22992
0.50	48610	13808
0.75	48611	22994
1.00	48612	22995
1.25	48613	22996
1.50	48614	22997
1.75	48615	22998
2.00	48616	22999
2.50	48617	23000
3.00	48618	23001

Cutting width	NEW Part No.	Old Part No.
0.25	50135	23002
0.32	50136	23003
0.50	50137	23004
0.75	50138	23005

Cutting width	NEW Part No.	Old Part No.
0.25	48629	23046
0.32	48630	23047
0.50	48631	23048
0.75	48632	23049
1.00	48633	23050
1.25	48634	23051
1.50	48635	23052

Cutting width	NEW Part No.	Old Part No.
1.00	48619	23016
1.50	48620	23017
2.00	48621	23018
2.50	48622	23019
3.00	48623	23020

Cutting width	NEW Part No.	Old Part No.
1.00	48624	23026
1.50	48625	23027
2.00	48626	23028
2.50	48627	23029
3.00	48628	23030

TWINCUT



1/4 round engraving insert

For use on stainless steel, anodised aluminium



Double cone engraving insert

For use on teal or stainless steel



15° insert for cutting out plastic

For cutting out letters and shapes in plastic



45° insert for cutting out plastic

Bevelled edge, v-grooved surface



Insert for cutting out epoxy PCB

For cutting-out printed circuit boards

Cutting width	NEW Part No.	Old Part No.
0.25	48636	23031
0.32	48637	23032
0.50	48638	23033
0.75	48639	23034
1.00	48640	23035
1.25	48641	23036
1.50	48642	23037
1.75	48643	23038
2.00	48644	23039

Cutting width	NEW Part No.	Old Part No.
0.25	48645	23040
0.32	48646	23041
0.50	48647	23042
0.75	48648	23043
1.00	48649	23044
1.25	48650	23045

Cutting width	NEW Part No.	Old Part No.
0.32	48713	23054

Cutting width	NEW Part No.	Old Part No.
0.32	48925	23055

Cutting width	NEW Part No.	Old Part No.
1.00	48651	23057
2.00	48652	23058



2-lip cutter for metal cutting

For front panels, letter cutting, etc.



1-lip cutter for acrylic cutting

For use on GRAVOGLAS, GRAVOMETALL



Specific drilling insert for epoxy PCB

Epoxy coated printed circuit boards

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Diamond insert

Non-rotating tracing diamond for all shallow marking jobs



Diamond insert

Rotating diamond (rotary motor spindle) for engraving on crystal, glass or hard materials

Cutting width	NEW Part No.	Old Part No.
0.80	48657	-
1.00	48658	23062
2.00	48659	23063
3.00	48660	23064

Cutting width	NEW Part No.	Old Part No.
0.80	48653	-
1.00	48654	23067
2.00	48655	23068
3.00	48656	23069

Cutting width	NEW Part No.	Old Part No.
0.50	48661	22989
0.80	48682	26412
1.00	48683	22990
1.20	48684	26415
1.40	48685	26416
1.50	48686	26417
2.00	48687	26422
2.50	48688	26423

Cutting width	Part No.
0.20	23061

Cutting width	Part No.
0.20	23060

Twin-cut kits	Part No.
Twin-cut Starter kit	23056
Twin-cut kit 6 inserts	26860
Twin-cut kit 10 inserts	25424
Twin-cut kit 25 inserts	25425
Twin-cut kit 40 inserts	25426

ENGRAVING CUTTERS

PERCUT Professional cutters

- Professional cutters for cutting and drilling with High Frequency (HF) Spindles.
- Engraving cutters for collet or HF spindles.

All 4.0 mm diameter cutters can be used with the toolchanger on IS6000/7000/8000.



Engraving cutter for HF and Collet spindles 4 mm



Carbide cutter

For use on aluminium and plastics

6 mm



Carbide cutter

For use on aluminium and plastics

Cutting and drilling tool for HF spindle and Collet spindles



Spiral 3-lip cutter

Tip diameter 3.17 mm

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Cutting width	NEW Part No.	Old Part No.
0.25	48757	23081
0.32	48758	23082
0.50	48759	23083
0.75	48760	23084
1.25	48761	23085

Cutting width	NEW Part No.	Old Part No.
0.32	48762	23087
0.50	48763	23088
0.75	48764	23089
1.25	48765	23090

Cutting width	Part No.
2.00	23079

Diamonds



Diamond tip

	Part No.
3.17 fixed	20147
3.17 rotating	20149
For diamond spindle	12224
4.36	21050

Glass engraving

Diamond tip	12909
0.75 mm	27044
1.50 mm	21753

Granite engraving

1.6 mm tip	20932
3.1 mm tip	20933

Cutters



Cutters for grinding machines

Cutting width	NEW Part No.	Old Part No.
Steel cutter 45° for B4	48807	20160
Steel cutter 90° for B4	48806	20163
Carbide cutter 45° for B4	51368	20136
Carbide cutter 90° for B4	51372	20139
Carbide cutter 45° for B6	48846	21022
Carbide cutter 90° for B6	48847	21023



Cutter knobs

	Part No.
4.36. preset	22740
6.35. preset	22741
3.17	20148
4.36	12335
4.36	10488
6.35	20973
Screws for knobs	12574

The quality of engraving relies upon using the right tool as well as using a sharp tool. Gravograph grinding machines and grinding service are indispensable for your engraving.