



ONECUT

Efficient and convenient!

Most standard cutters are available with either a stainless steel shaft or a micrograin carbide shaft



DIAMOND

Delicacy and precision!

For scribing or dot marking metals and glass.

Rotating or tracing diamonds available in the Onecut and Twincut ranges.

1/8" SHANK SIZE

Compatible with: M20Jewel, M20 3 Axis, M20 4 Axis, IM4 IM3, ITM, ITL and IF3 machines.
Unless otherwise stated, cutter length is 4-5 inches (101.6 mm - 127 mm).



1/8" Diamond Drag cutters for metal

Cutting width	Part no.
.020	33954
1/8" Rotating cutter for harder metals and glass	
Cutting width	Part no.
.005	52163
.010	52183
.020	51089
.030	52184



1/8" Diamond Drag Inserts for metal

M20 7/16" length Fixed Diamond	
Part no.	33825
For IM4RM & Manual Inside Ring Engraver 5/16" length	
Part no.	28187
For Heavy Duty Diamond Spindle With insert (1" long for #22224 Spindle)	
Part no.	33827



1/8" Burnishing cutters for coated and polished metals

Trophy Brass, Colored and Marbled Steel, Gravoxal, and Gravometal	
Cutting width	Part no.
.005	33877
.010	33878
.015	33879
.020	33880
.030	33882
.040	33883
.060	33884
.090	33885



1/8" Carbide cutters for plastic

GPLY I & II, Ultra, Gravolase, Metallex & Metallex 2	
Cutting width	Part no.
.005	33855
.010	33856
.015	33857
.020	33858
.030	33860
.040	33861
.060	33862
.090	33863
.125	33864



1/8" Carbide cutters for Gravostrat

Cutting Width	Part no.
.010	33836
.015	33837
.020	33838
.030	33839
.040	33840
.060	33841
.090	33842
.125	33843



1/8" Carbide cutters for Acrylic and all Gravoglas
55° cutting angle for letters over .5"

Cutting width	Part Number
0.005	33924
0.015	33926
0.020	33927
0.030	33928
0.040	33929
0.060	33930
0.090	33931
0.125	33932



1/8" HSS cutters for Acrylic and all Gravoglas
35° cutting angle

Cutting width	Part Number
0.005	33910
0.010	33911
0.015	33912
0.020	33913
0.030	33914
0.040	33915
0.060	33916
0.090	33917
0.125	33918



1/8" Carbide cutters for Acrylic and all Gravoglas

Cutting width	Part Number
0.010	33934
0.015	33935
0.020	33936
0.030	33937
0.040	33938
0.060	33939
0.090	33940
0.125	33941



1/8" Carbide cutters for deep engraving aluminum brass and soft metals

Gravoxal, Gravometal, Gravostrat, Colored Aluminum, Trophy Brass, Colored and Marbled Steel	
Cutting width	Part Number
0.005	33866
0.010	33867
0.015	33868
0.020	33869
0.030	33870
0.040	33871
0.060	33872



1/8" Carbide cutters for ferrous metals for deep engraving in steel and ferrous metals

Cutting width	Part Number
0.010	33847
0.015	33848
0.020	33849
0.030	33850
0.040	33851
0.060	33852
0.090	33853
0.125	33854

Compatible with: M20Jewel, M20 3 Axis, M20 4 Axis, IM4 IM3, ITM, ITL and IF3 machines.
Unless otherwise stated, cutter length is 4-5 inches (101.6 mm - 127 mm).

1/8" SHANK SIZE



1/8" HSS cutters for ferrous metals for deep engraving in steel and ferrous metals

Cutting width	Part Number
0.005	33910
0.010	33911
0.015	33912
0.020	33913
0.030	33914
0.040	33915
0.060	33916
0.090	33917
0.125	33918



1/8" Wide Angle cutters for painted, or coated aluminum, brass and soft metals

Gravoxal, Gravometal Colored Aluminum, Trophy Brass, Colored and Marbled Steel	
Cutting width	Part Number
0.010	33888
0.015	33889
0.020	33890
0.030	33892
0.040	33893
0.060	33894
0.090	33895
0.125	33896



1/8" Quarter Round cutters for stainless steel and other hard metals

Cutting width	Part Number
0.005	33943
0.015	33944
0.020	33945
0.030	33946
0.040	33948
0.060	33919
0.090	33950
0.125	33951



1/8" Parallel cutters for 90° cut outs

Material type	Part Number
Gravoply	33865
Phenolic	33844
Ferrous Metals	33909

Please see page 103 "How to Choose Parallel Cutters"



1/8" Radius Cutters for rounded cut

Use reverse engraving on Gravoglass for neon tube look. Also used for gasket grooves & 3D milling

Material type	Part Number
Gravoply	34086
Phenolic	34086
Ferrous Metals	34086

Choose radius (1/32", 1/16", 3/32", 1/8", 5/32")

Compatible with TXL, IS, M and Vanguard series machines.

11/64" SHANK SIZE



Diamond 11/64" for Drag and Rotating cutters for metal

Cutting width	Part Number
0.020 Diamond Drag	34094
0.020 Rotating	34095



Glass Engraving Faceted Diamond Rotating cutters Max depth .003
(use Gravolube for best results)

Cutting width	Part Number
0.010	34122
0.015	34123
0.030	34124

Glass Engraving Sintered Diamond Rotating cutters Max depth .003
(use Gravolube for best results)

Cutting width	Part Number
0.030	34119
0.060	34120
0.090	34121



11/64" Burnishing cutters for coated and polished metals
Trophy Brass, Colored and Marbled Steel, Gravoxal, and Gravometal

Maximum depth .002
(use light pressure setting for best results)

Cutting width	Part Number
0.005	34036
0.010	34037
0.015	34038
0.020	34039
0.030	34041
0.040	34042
0.060	34043
0.090	34044



11/64" Carbide cutters for plastic

Gravoply 1 & 2, Ultra, Gravolase, Metallex & Metallex 2

Cutting width	Part Number
0.005	34012
0.010	34013
0.015	34014
0.020	34015
0.030	34017
0.040	34018
0.060	34019
0.090	34020
0.125	34021
0.171	34022



11/64" Carbide cutters for Gravostrat

Cutting width	Part Number
0.005	33989
0.010	33990
0.015	33991
0.020	33992
0.030	33993
0.040	33994
0.060	33995
0.090	33996
0.125	33997
0.171	33998

11/64" SHANK SIZE

Compatible with TXL, IS, M and Vanguard series machines.



11/64" HSS cutters for Acrylic and all Gravoglas 35° cutting angle

Cutting width	Part Number
0.005	34075
0.010	34076
0.015	34077
0.020	34078
0.030	34079
0.040	34080
0.060	34081
0.090	34082
0.125	34083
0.171	34084



11/64" Carbide cutters for Acrylic

All Gravoglas and Acrylic

Cutting width	Part Number
0.005	34108
0.010	34109
0.015	34110
0.020	34111
0.030	34112
0.040	34113
0.060	34114
0.090	34115
0.125	34116
0.171	34117



11/64" Carbide cutters for Acrylic for all Gravoglas 55° cutting angle for letters over .5"

Cutting width	Part Number
0.005	34099
0.015	34100
0.020	34101
0.030	34102
0.040	34103
0.060	34104
0.090	34105
0.125	34106
0.171	34107



11/64" Carbide cutters for deep engraving aluminum brass and soft metals

Gravoxal, Gravometal, Gravostral, Colored Aluminum, Trophy Brass, Colored & Marble Steel

Cutting width	Part Number
0.005	34024
0.010	34025
0.015	34026
0.020	34027
0.030	34028
0.040	34029
0.060	34030
0.090	34031
0.125	34032
0.171	34033



11/64" Carbide cutters for deep engraving steel and ferrous metals

Cutting width	Part Number
0.005	34000
0.010	34001
0.015	34002
0.020	34003
0.030	34004
0.040	34005
0.060	34006
0.090	34007
0.125	34008
0.171	34009



11/64" HSS cutters for ferrous metals for deep engraving in steel and ferrous metals

Cutting width	Part no.
.005	34064
.010	34065
.015	34066
.020	34067
.030	34068
.040	34069
.060	34070
.090	34071
.125	34072
.171	34073



11/64" Wide Angle cutters for painted or coated aluminum brass and soft metals

Gravoxal, Colored Aluminum, Trophy Brass, Colored & Marbled Steel, and Gravometal

Cutting width	Part no.
.005	34049
.010	34050
.015	34051
.020	34052
.030	34054
.040	34055
.060	34056
.090	34057
.125	34058
.171	34059



11/64" Quarter Round cutters for stainless steel and other hard metals

Cutting width	Part no.
0.005	34126
0.010	34127
0.015	34128
0.020	34130
0.030	34132
0.040	34133
0.060	34134
0.090	34135
.125	34136
.171	34137



11/64" End Mill Cutters for deep routing in metal

Cutting width	Part no.
.060	34146
.090	34147
.125	34148
.171	34149



11/64" Parallel cutters for 90° cut outs

Material Type	Part no.
Gravoply	34023
Phenolic	33999
Acrylic	34118
Ferrous Metals	34010
Aluminum	34034

Please see page 103 "How To Choose Parallel Cutters"

Compatible with TXL, IS, M and Vanguard series machines.

11/64" SHANK SIZE



11/64" Radius Cutters for rounded cut

Use reverse engraving on Gravoglas for neon tube look. Also used for gasket grooves & 3D milling

Material Type	Part no.
Gravoply	34086
Phenolic	34086
Acrylic	34086
Ferrous Metals	34086
Aluminum	34086

Choose radius (1/32", 1/16", 3/32", 1/8", 5/32")

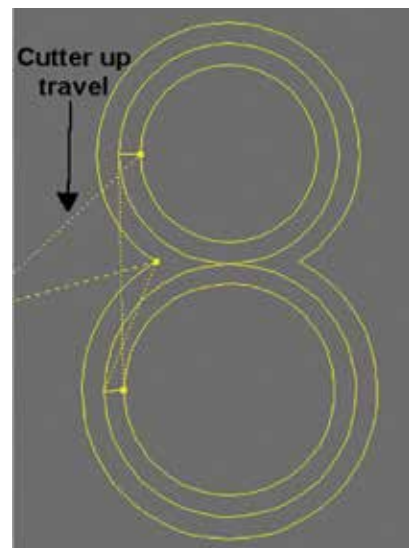
Font types are critical to engraving quality and time

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 program 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.



Compatible with 1/4" Collet spindles and Vanguard series machines.

1/4" SHANK SIZE



1/4" Diamond Drag cutters for metal

Cutting width	Part no.
.020	34261



1/4" Burnishing cutters for coated and polished metals

Trophy Brass, Colored and Marbled Steel, Gravoxal and Gravometal

Maximum depth .002
(use light pressure setting for best results)

Cutting width	Part no.
.010	34207
.015	34208
.020	34209
.030	34211
.040	34212
.060	34213
.090	34214



1/4" Carbide cutters for plastic

GPLY I & II, Ultra, Gravolase, Metallex & Metallex 2

Cutting width	Part no.
.005	34184
.010	34185
.015	34186
.020	34187
.030	34189
.040	34190
.060	34191
.090	34192
.125	34193
.171	34194
.250	34196



1/4" Carbide cutters for Gravostat and Gravoply 2-Plex

Cutting width	Part no.
.005	34158
.010	34159
.015	34160
.020	34161
.030	34162
.040	34163
.060	34164
.090	34165
.171	34167
.250	34169



1/4" Carbide cutters for Acrylic

All Gravoglas and Acrylic 35° cutting angle for deep engraving

Cutting width	Part no.
0.010	34273
0.015	34274
0.020	34275
0.030	34276
0.040	34277
0.060	34278
0.090	34279
.125	34280
.171	34281
.187	34282
.250	34283

1/4" SHANK SIZE

Compatible with 1/4" Collet spindles and Vanguard series machines.



1/4" Carbide cutters for Acrylic and all Gravoglas 110° cutting angle for letters over .5"

Cutting width	Part no.
.030	34265
.060	34267
.171	34270
.250	34272



1/4" HSS cutters for Acrylic and all Gravoglas 70° cutting angle

Cutting width	Part no.
.010	34248
.015	34249
.020	34250
.030	34251
.040	34252
.060	34253
.090	34254
.125	34255
.171	34256
.187	34257
.250	34258



1/4" Carbide cutters for deep engraving aluminum, brass and soft metals
Gravoxal, Gravometal, Gravostral, Colored Aluminum, Trophy Brass, Colred and Marbled Steel

Cutting width	Part no.
.005	34198
.010	34199
.015	34200
.020	34201
.030	34202
.040	34203
.060	34204



1/4" Wide Angle cutters for painted or coated aluminum, brass and soft metals
Gravoxal, Colored Aluminum, Trophy Brass, Colored & Marbled Steel, and Gravometal

Cutting width	Part no.
.010	34219
.015	34220
.020	34221
.030	34223
.040	34224
.060	34225
.090	34226
.125	34227
.171	34228
.190	34229
.250.	34230



1/4" Carbide 18° cutters for deep engraving steel and ferrous metals

Cutting width	Part no.
.005	34309
.010	34310
.015	34311
.030	34312



1/4" HSS cutters for ferrous metals for deep engraving in steel and ferrous metals

Cutting width	Part no.
.005	34236
.010	34237
.015	34238
.020	34239
.030	34240
.040	34241
.060	34242
.125	34244
.250	34247



1/4" Quarter Round cutters for stainless steel and other hard metals

Cutting width	Part no.
.005	34285
.010	34286
.015	34287
.020	34288
.030	34290
.040	34291
.060	34292
.090	34293
.125	34294
.171	34295



1/4" Carbide 20° cutters for deep engraving steel and ferrous metals

Cutting width	Part no.
.005	34313
.010	34314
.015	34315



1/4" End Mill cutters for deep routing in metal

Cutting width	Part no.
.060	34303
.090	34304
.125	34305
.171	34306



1/4" Parallel cutters for 90° cut outs

Material Type	Part no.
Gravoply	34023
Phenolic	33999
Ferrous Metals	34010

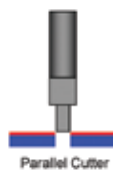
Please see page 103 "How To Choose Parallel Cutters"

Compatible with: IS400, IS900, IS6000/7000/8000 & biseauteuse B6

1/4" SHANK SIZE



How to choose parallel cutters



Typical applications – Typical applications for Parallel cutters include cutting holes and routing flexible engraving plastic.

Type of cut – The main difference between Parallel cutters and standard engraving cutters is that the cut is vertical rather than beveled.

1/4" Radius cutters for rounded cut

Use reverse engraving on Gravoglas for neon tube look. Also used for gasket grooves & 3D milling

Material Type	Part no.
Gravoply	34259
Phenolic	33999
Ferrous metals	34010

Choose radius (1/32", 1/16", 3/32", 1/8", 5/32")

How to order

1. Choose the cutter family by the material you are engraving or cutting from the charts on these pages. For soft plastic, choose either Carbide or High Speed Steel (HSS). Carbide lasts longer but costs more than High Speed Steel (HSS). For metal, carbide is recommended.
2. Specify the tip diameter size.
 - Tip sizes can be specified from .015" to the shank diameter.
3. Specify the cutting depth.
 - For best strength, specify tip length up to 1.5 times the tip diameter.
 - Tip lengths > 1.5 x tip size can be specified, but they will tend to break easier.
4. Call Customer Service at 1-800-843-7637 to place an order.

Parallel cutters vs. engraving cutters where tip size equals shank diameter – Standard conical cutters with tip size equal to shank size will also provide a vertical cut. The difference is that the cutting depth is fixed with engraving cutters, but can be specified with Parallel cutters.

Typically, the cutting depth of engraving cutters with tip size equal to shank diameter is in the range of .125" - .150". These are primarily for engraving applications, but can also be used for routing.

Application tips – Cutting or routing 1/8" acrylic is best performed with a 90 x 150 Parallel cutter (.090" tip and .150 length). The Carbide tool is part number 34118, and the HSS tool is part number 34085. Cutting in one pass can be accomplished with the 200 watt spindle motor. Cut in multiple passes when using the 80 watt spindle motor.

Cutting or routing 1/4" acrylic is best performed with a 171 x 275 Parallel cutter (.171" tip and .275 length). The Carbide tool is part number 34118 and the HSS tool is part number 34085. This should be cut in multiple passes.

Radius cutters – Radius cutters are similar to Parallel cutters except for having a rounded shape. These are specified the same. Available in HSS or Carbide for tip sizes at least .030". Applications include reverse engraving, 3D contouring & gasket grooves.

Gravogyde attachment

Add the Gravogyde attachment to your cutter to get a light pressure or soft touch for a great polished look for burnishing (not for M series machines).

For 1/8" cutters **34379**
For 11/64" cutters **34384**

Yellow handle cutter wrench

To tighten and loosen set-screws in brass collar of 1/8", 11/64" and 1/4" cutter **33015**

Black handle cutter wrench

To tighten and loosen set-screws in brass collar of M20 and M40 machine spindles (for cutter replacement). **10016**

Wrench for diamond inserts

To tighten and loosen set-screws holding diamond inserts **33009**

Ball point pen cutter

Used to verify engraving location on tape prior to engraving to prevent costly mistakes

1/8" ball point pen cutter for IM4 and M20 machines **47112**
Ball point pen assy. (11/64" shaft) M40 only **21679**
Ball point pen assy. (11/64" shaft) IS series only **33568**
Ball point pen cartridge replacement (medium) 2/pack **33569**

Diamond inserts

5/16" length, 1/8" shank for manual inside ring engraver and IM4RM **28187**
7/16" length, 1/8" shank for M20 Pix & M20 fixed diamond **33825**
Heavy duty diamond spindle with insert, non-rotating **22224**
1" replacement insert for 22224 **33827**

.015 modified faceted cutter for glass engraving

Use with nose cone **20131**
11/64" modified faceted cutter 015 6" long **49720**

ONECUT Cutter Sharpening Service

Use with nose cone **32777**
11/64" modified faceted cutter 015 6" long **49720**

Bottom load tools

Description		Part Number
1/8 carbide cutter 010 1.5"	Hf spindle; 1.5" length	52182
1/8 carbide cutter 020 1.5"	Hf spindle; 1.5" length	52181
1/8 ball end mill 1/32d	1.5" 4 flute tin coat	48464
1/8 ball end mill 3/64d	1.5" 4 flute tin coat	48465
1/4 carbide cutter 15° 0.002	For 1/4 collet 2"	34307
1/4 carbide cutter 20° 0.005	For 1/4 collet 2"	34313
1/4 carbide cutter 18° 0.010	For 1/4 collet 2"	34310
1/4 carbide cutter 20° 0.010	For 1/4 collet 2"	34314
1/4 carbide cutter 18° 0.015	For 1/4 collet 2"	34311
1/4 carbide cutter 20° 0.015	For 1/4 collet 2"	34315
1/4 stencil carbide cutter 010	For 1/4 collet 2"	52179
1/8 stencil carbide cutter 010	For 1/8 collet 2"	52180
1/4 end mill 092d 2" 2 flute	For 1/4 collet 2"	34304
1/4 end mill 250d 2" 2 flute	For 1/4 collet 2"	34306
1/4 end mill 125d 2" 2 flute	For 1/4 collet 2"	34305
1/4 end mill 062d 2" 2 flute	For 1/4 collet 2"	34303
1/4 end mill 125d 2" 2 flute	For router	46360
1/4 ball end mill 125d 2" 2 flute	For router	46043
1/4 end mill 250d 2" 2 flute	For router	46359
1/4 ball end mill 150d 2" 2 flute	For router	46044

Cutters for collet spindles / All 2" length unless specified.

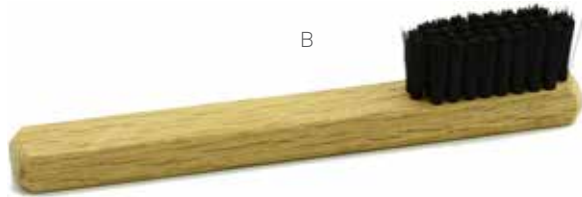
Top load tools

Description		Part Number
1/8 stencil HSS cutter 010	Top load 18°	33898
1/4 stencil carbide cutter 010	Top load 18°	34155
1/4 stencil HSS cutter 010	Top load 18°	34232
11/64 stencil carbide cutter 010	Top load 18°	33984
11/64 stencil HSS cutter 010	Top load 18°	34061
11/64 stencil HSS cutter 040	Top load 18°	34091
11/64 stencil HSS cutter 060	Top load 18°	34092
11/64 stencil HSS cutter 080	Top load 18°	34093
11/64 engr. end mill 060 cutter	6-3/8 Lg.	34146
11/64 engr. end mill 090 cutter	6-3/8 Lg.	34147
11/64 engr. end mill 125 cutter	6-3/8 Lg.	34146
11/64 engr. end mill 090 cutter	6-3/8 Lg.	34147
11/64 engr. end mill 125 cutter	6-3/8 Lg.	34148
11/64 engr. end mill 171 cutter	6-3/8 Lg.	34149

Custom cutter sizes are available upon request



A



B

A. Cutter knob key

B. Brush

Onecut	Twincut	M20 /IS machine	M40
●	●	10016	
●	●	11791	

Cutting Grinder

20125	Carbide grinding wheel D46 for Carbide cutters
20126	Corundum grinding wheel for Steel cutters
20891	CG30 collet - Ø = 4.36 mm (11/64")

Reliability and quality. The CG 30 grinding machine benefits from Gravograph's high standards of manufacturing and knowledge.

Compact, CG 30 requires minimal workspace.

Easy to use. CG 30 enables the grinding of all cutters except diamond tip cutters.

The cutter is automatically positioned thanks to the guiding tool.

The principal cutting angles are selected, thanks to the graduated index.

A preset index automatically indicates the cutter position for the realization of the truncature, without disassembling the cutter holder.

Absolute safety. CG 30 Protection guard ensures optimum protection.

Clean. the incorporated dust extractor allows collection of the dust particles.

A series of collets for the grinding of cutter (1/8", 11/64", 3/64". 1/4" 5/16").

Part Number - 34490 - CG 30 Grinder (includes 1 collet-specify from list below, 1 carborundum grinding wheel. 1 11/64" diamond dresser).

Grinding Wheels - 32760 - 2 1/4" diamond for all sharpening all cutter types

Dresser Stick - 32766 - 1/4" dressing stick for resin bound diamond wheel. Used for smoothing diamond wheel.

Replacement Belt - 13370

Grinder Collets

- 20890 - 1/8"
- 20891 - 11/64"
- 20892 - 1/4"
- 27836 - 5/16"



20126



20125







Before starting adjustment of your tools

1. Set the depth micrometer to position 0
2. Fit a cutter knob into the spindle. The screw thread is reversed.






Step-by-step engraving cutter adjustment for engraving plastics

1. Move the spindle into position above the plate to be engraved, using the X and Y arrows on the remote control 
2. Press the remote control button  (Z = 0.00 is displayed on the LCD screen)
Then lower the spindle by pressing and holding the button  until the adjustment tip touches the material to be engraved
3. Insert the engraving cutter into the button cutter knob. Lower it gently until the truncation touches the material to be engraved. Set the adjustment by tightening the cutter knob screw
4. Press the remote control button  to save the adjustment; the spindle then rises into position
5. Rotate the micrometer upwards to display the engraving depth (1 division = 0.025 mm - depth example: Gravoply 1 = 12 division)



Step-by-step diamond adjustment for engraving metals

Note: the regulator nose is not used for diamond engraving.

1. Remove the tool fitted to the spindle
2. Press the remote control button  and lower the bottom of the spindle  to within 8 mm to 12 mm of the metal plate to be engraved
3. Insert the diamond into the button cutter knob (previously fitted to the spindle) and lower it gently until it touches the metal material. Set the adjustment by tightening the cutter knob screw
4. Press the remote control button to save the adjustment 
5. The depth should be entered on the Gravostyle engraving screen.

How to choose the truncation width of an engraving cutter?

	0.4 mm 1/64"	0.8 mm 1/32"	1.5 mm 1/16"	3.0 mm 1/8"	6 mm 1/4"	8.0 mm 5/16"	12.0 mm 1/2"	19.0 mm 3/4"	25.0 mm 1"	32.0 mm 1 1/4"	50 mm 2"
1 Height of characters to be engraved											
The cutter tip width is directly related to the height of the engraved characters. To use this guide most effectively, define the cutter tip width according to: 1 - the height of the engraved characters 2 - the type of characters used (single or multi-line)											
2 Tool width											
Single-line characters	0.127 mm .005"	0.25 mm .010"	0.38 mm .015"	0.50 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 characters	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"

Example: Characters 12 mm (.47") high with a set of multi-character traits => width of tool = 0.75 mm (.030")