

Engravers

Tools for mICRO mACHINING



Engravers



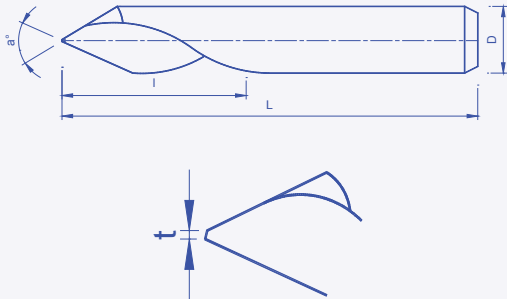
***High Precision
Burr Free Edges
Easy Availability
Application Specific Geometries***

QUALITY • PRECISION • CONSISTENCY



**HELICAL ENGRAVER G8451
HELICAL ENGRAVER G8451X**

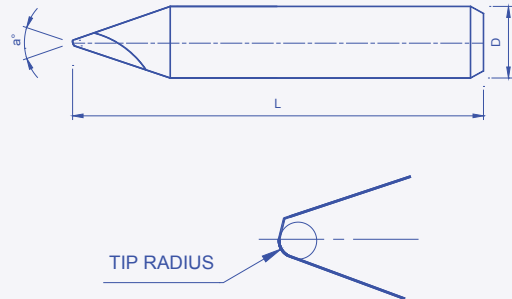
**RH
COATED**



Tip Dia t	Dia D h6	Angle α	Length l	OAL
* 0.03	3.00	60°	9.0	38
0.05	3.00	60°	9.0	38
0.10	3.00	60°	9.0	38
0.15	4.00	60°	12.0	40

**ENGRAVER G8511
ENGRAVER G8511X**

**RH
COATED**

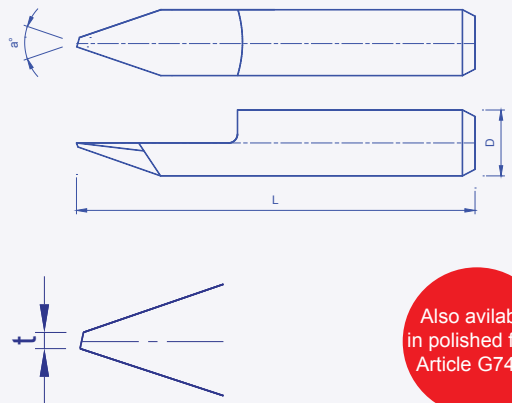


Tip Radius	Dia D h6	Angle α	OAL
* 0.03	3.00	35°	30
0.05	3.00	35°	30
0.10	3.00	35°	30
0.15	3.00	35°	30
0.20	3.00	35°	30

**ENGRAVER G8471
ENGRAVER G8471X**

**RH
COATED**

Tip Dia t	Dia D h6	Angle α					OAL
* 0.03	3.00	30°	45°	60°	90°	120°	38
0.05	3.00	30°	45°	60°	90°	120°	38
0.10	3.00	30°	45°	60°	90°	120°	38
0.15	3.00	30°	45°	60°	90°	120°	38
0.20	3.00	30°	45°	60°	90°	120°	38
* 0.03	3.175	30°	45°	60°	90°	120°	38
0.05	3.175	30°	45°	60°	90°	120°	38
0.10	3.175	30°	45°	60°	90°	120°	38
0.15	3.175	30°	45°	60°	90°	120°	38
0.20	3.175	30°	45°	60°	90°	120°	38
* 0.03	6.00	30°	45°	60°	90°	120°	50
0.05	6.00	30°	45°	60°	90°	120°	50
0.10	6.00	30°	45°	60°	90°	120°	50
0.15	6.00	30°	45°	60°	90°	120°	50
0.20	6.00	30°	45°	60°	90°	120°	50



Also available
in polished flute
Article G7471

This type of Engraver can be modified as per material property with desired angle & tip diameter

* Dia 0.030mm available on request

ALSO AVAILABLE

- Other Shank Diameter
- With Special Angles
- With Special Dimensions

- Left Hand Cutting
- Shank Diameter h4 on request

All dimensions are in mm

PACKING

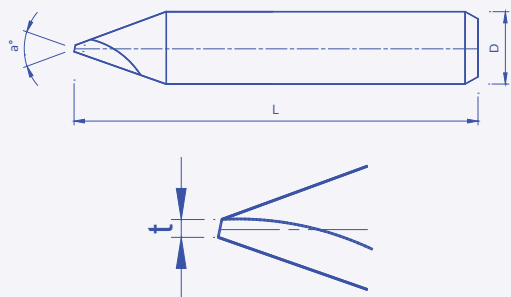
- Dia \leq 3.175 mm : 10 Tools / Pack
- Dia $>$ 3.175 mm : 1 Tool / Pack

Sharp Cutting Edge

High Precision

Polished Flutes

REINFORCED ENGRAVER G6471 RH COATED REINFORCED ENGRAVER G6471X



Tip Dia t	Dia D h6	Angle α		OAL
* 0.03	3.00	35°	40°	30
0.05	3.00	35°	40°	30
0.10	3.00	35°	40°	30
0.15	3.00	35°	40°	30
0.20	3.00	35°	40°	30

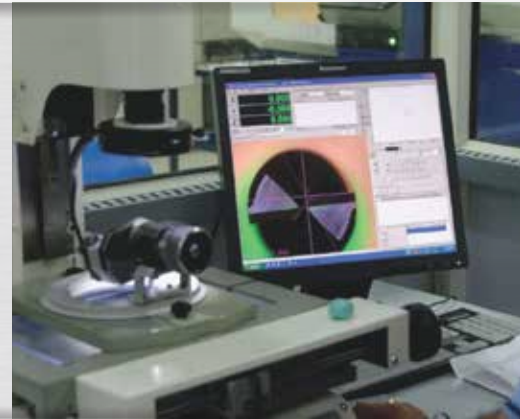
ENGRAVER APPLICATION

Material	G8451	G8511	G6471	G8471
Unalloyed / Low Alloyed Steel <600 N/mm	⊗	○	○	⊙
Unalloyed / Low Alloyed Steel 600 - 1500N/mm	⊗	⊙	⊙	○
High Alloyed Steel 700 - 1500N/mm	⊗	⊙	⊙	○
Grey Cast Iron <250HB	⊙	○	○	⊙
Grey Cast Iron >250HB	⊙	○	○	⊙
Heat Resisting Stainless Steel	⊗	○	○	○
Titanium Alloy	⊗	⊙	⊙	○
Copper Alloy (easy to machine)	⊙	○	○	⊙
Copper Alloy (difficult to machine)	⊗	⊙	⊙	○
Aluminium Alloy (Si < 8%)	⊙	○	○	⊙
Aluminium Alloy (Si > 8%)	⊙	○	○	⊙
Plastic	⊗	○	○	○
Gold, Silver	⊙	○	○	⊙

Legends Perfect ⊙ Partly ○ No ⊗

RECOMMENDED CUTTING PARAMETERS

Material	G8471 / G8471X				G6471/ G6471X / G8511/ G851X			
	RPM Uncoated	RPM Coated	Vf (mm/min)	ap (mm)	RPM Uncoated	RPM Coated	Vf (mm/min)	ap (mm)
Unalloyed / Low Alloyed Steel <600 N/mm	25K - 40K	---	75 - 240	0.05 - 0.20	20K - 35K	---	50 - 200	0.05 - 0.15
Unalloyed / Low Alloyed Steel 600 - 1500N/mm	25K - 35K	25K - 35K	60 - 200	0.05 - 0.20	---	20K - 30K	50 - 150	0.05 - 0.10
High Alloyed Steel 700 - 1500N/mm	---	15K - 20K	50 - 160	0.05 - 0.10	15K - 28K	15K - 28K	50 - 150	0.05 - 0.10
Grey Cast Iron <250HB	25K - 35K	---	75 - 240	0.05 - 0.20	25K - 35K	25K - 35K	75 - 240	0.05 - 0.15
Grey Cast Iron >250HB	15K - 20K	15K - 20K	50 - 180	0.05 - 0.15	20K - 30K	20K - 30K	50 - 200	0.05 - 0.10
Heat Resisting Stainless Steel	10K - 15K	10K - 15K	30 - 80	0.05 =0.10	---	---	---	---
Titanium Alloy	20K - 30K	---	75 - 200	0.05 - 0.20	20K - 35K	---	60 - 200	0.05 - 0.15
Copper Alloy (easy to machine)	30K - 40K	---	75 - 240	0.05 - 0.20	25K - 35K	20K - 30K	50 - 300	0.05 - 0.20
Copper Alloy (difficult to machine)	20K - 30K	---	50 - 200	0.05 - 0.15	20K - 30K	20K - 30K	50 - 150	0.05 - 0.10
Aluminium Alloy (Si < 8%)	25K - 30K	---	75 - 240	0.05 - 0.20	20K - 35K	---	50 - 300	0.05 - 0.20
Aluminium Alloy (Si > 8%)	20K - 30K	---	75 - 240	0.05 - 0.20	20K - 30K	---	75 - 240	0.05 - 0.15
Plastic	30K - 40K	---	100 - 240	0.05 - 0.30	20K - 35K	---	50 - 300	0.05 - 0.20
Gold, Silver	25K - 40K	---	75 - 240	0.05 - 0.20	20K - 35K	---	50 - 300	0.05 - 0.20



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