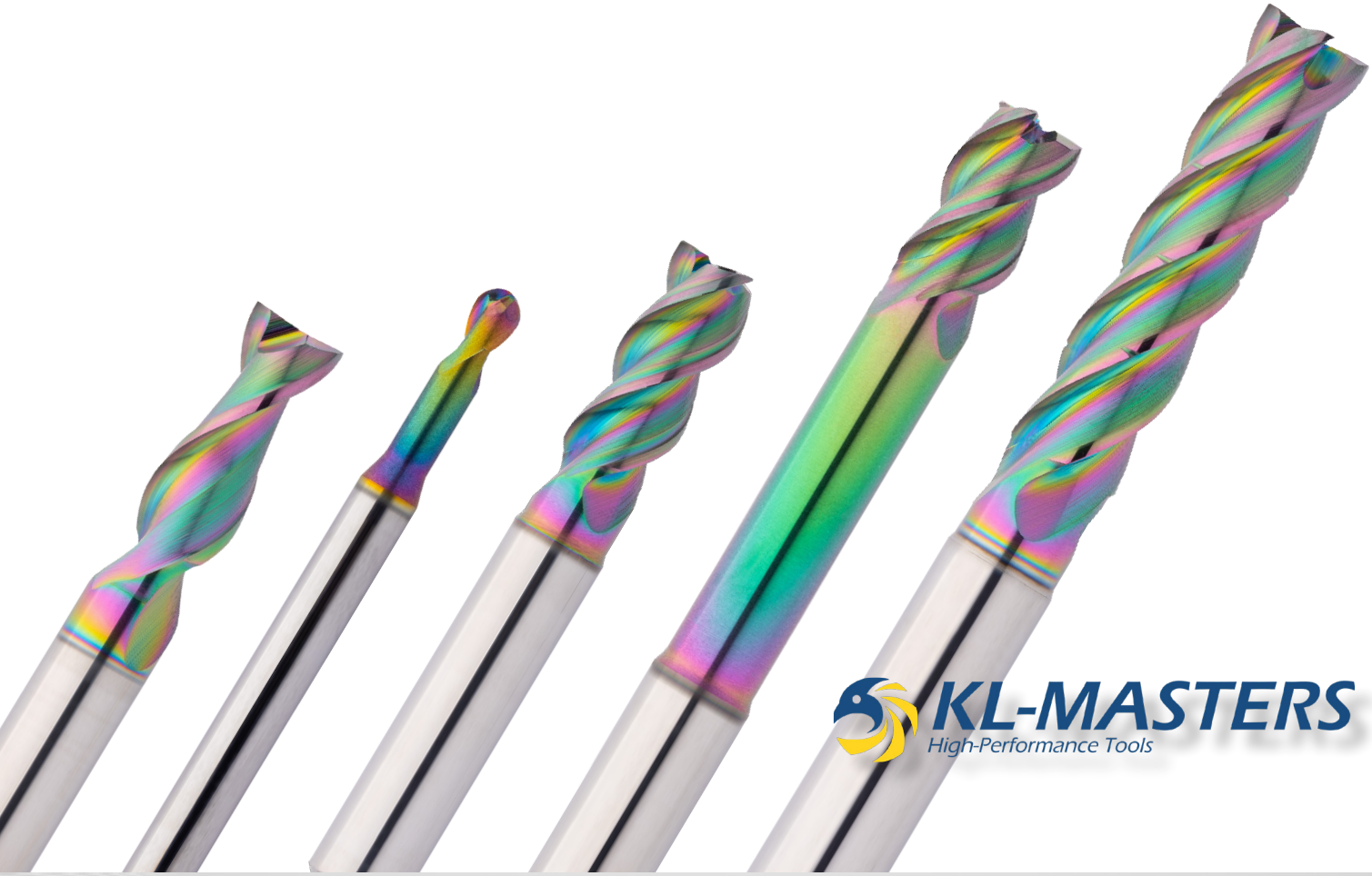
KL-TOOLING
PRÄZISIONSWERKZEUGE

Advantage through precision

NExus PRO

Experts in cutting non-ferrous materials!



www.kl-tooling.bayern
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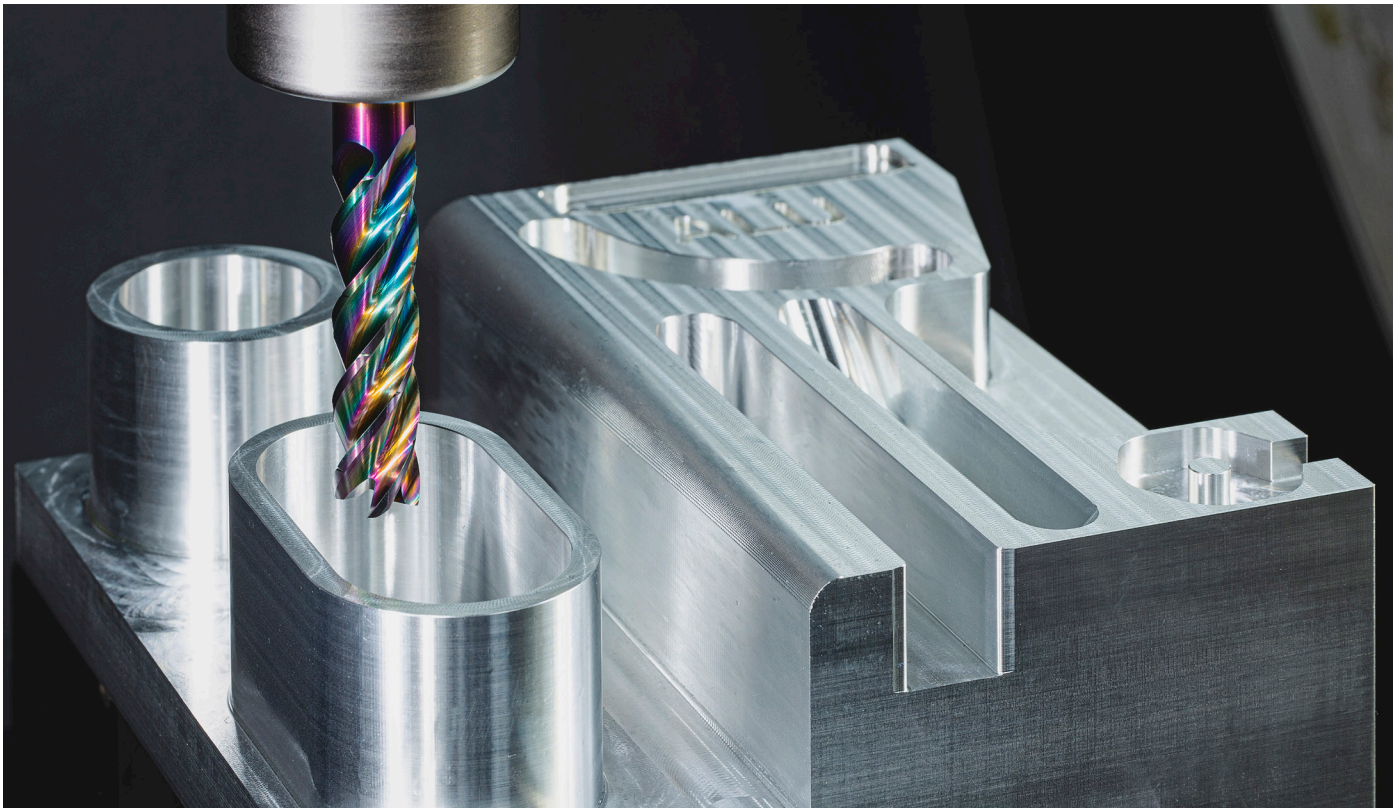
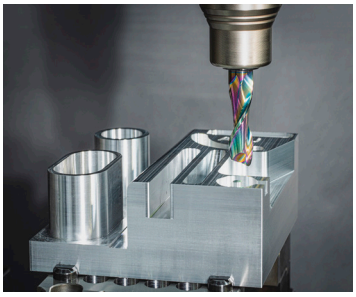
At cooperation with our premium-partner :

Made in Bavaria / Germany





Highest Performance at machining non-ferrous materials!

Non-ferrous materials are very versatile and range from aluminium to plastic to multi-layered materials. In spite of their easy machinability, they make extra demands on the cutting tools due to their use as a composite material or their tendency to adhesion.

Our **NExus PRO Series** was developed to enable potentially easily machinable materials to be safely processed and to meet the specific requirements of non-ferrous material cutting.

Your benefits:

- **Fine-grain substrate, particularly suited to non-ferrous materials, for longterm retention of sharp edges and homogeneous wear**
- **Polished chip spaces for straightforward evacuation of chips**
- **High-performance geometry tailored to volume machining and surface quality**

NExus PRO - Balancemaker

KL-MASTERS High-Performance Tools

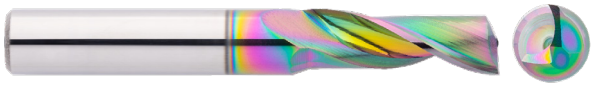
COOLING		HPC	STRATEGY
TOLERANCE	h6	Z1 short	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharp edged • HA-Shank	• 30° Helical pitch • ASR-High Performance Coating	

At cooperation with: H&Y

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	250 m/min	300 m/min

Description:

- Balanced for maximum smoothness
- For use in high speed milling machines
- Special helical pitch for smooth running and soft cut
- For roughing and finishing, up to 1.5xD full slot
- For process reliable, helical diving and immersion
- Defined clearance angle for ideal stabilization with high cutting depths



Article-Code EXN1-M05-0023	Cutting Ø mm	Shank Ø mm	Length of cut mm	Total length mm	Z			List price at Euro
HA-Shank						ae=1xD ap=1xD	ae=0.3xD ap=1xD	
EXN1-M05-0023-1	1,0	3,0	4	50	1	0,010	0,015	**39,67 €**
EXN1-M05-0023-1,5	1,5	3,0	6	50	1	0,010	0,015	**39,67 €**
EXN1-M05-0023-2	2,0	3,0	8	50	1	0,015	0,020	**39,67 €**
EXN1-M05-0023-3	3,0	3,0	12	50	1	0,020	0,030	**39,67 €**
EXN1-M05-0023-4	4,0	4,0	15	54	1	0,025	0,035	**45,24 €**
EXN1-M05-0023-5	5,0	5,0	17	54	1	0,030	0,040	**51,80 €**
EXN1-M05-0023-6	6,0	6,0	20	65	1	0,040	0,050	**59,62 €**
EXN1-M05-0023-8	8,0	8,0	22	63	1	0,045	0,055	**67,90 €**
EXN1-M05-0023-10	10,0	10,0	25	72	1	0,055	0,065	**91,20 €**
EXN1-M05-0023-12	12,0	12,0	30	83	1	0,070	0,090	**107,06 €**

KL-TOOLING PRÄZISIONSWERKZEUGE

NExus PRO - Balancemaker

KL-MASTERS High-Performance Tools

COOLING		HPC	STRATEGY
TOLERANCE	h6	Z1 long	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharp edged • HA-Shank	• 30° Helical pitch • ASR-High Performance Coating	*At cooperation with:* H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
450 m/min	425 m/min	400 m/min	170 m/min	170 m/min	300 m/min

Description:

- Balanced for maximum smoothness
- For use in high speed milling machines
- Special helical pitch for smooth running and soft cut
- For roughing and finishing, up to 1.5xD full slot
- For process reliable, helical diving and immersion
- Defined clearance angle for ideal stabilization with high cutting depths

Article-Code EXN1-M05-0053	Cutting Ø mm	Shank Ø mm	Length of cut mm	Total length mm	Z	ae=1xD ap=1xD	ae=0.3xD ap=1xD	List price at Euro
HA-Shank								
EXN1-M05-0053-1	1,0	3,0	8	75	1	0,006	0,010	**43,90 €**
EXN1-M05-0053-1,5	1,5	3,0	12	75	1	0,006	0,010	**43,90 €**
EXN1-M05-0053-2	2,0	3,0	18	75	1	0,010	0,015	**43,90 €**
EXN1-M05-0053-3	3,0	3,0	22	75	1	0,015	0,020	**43,90 €**
EXN1-M05-0053-4	4,0	4,0	25	75	1	0,020	0,025	**54,10 €**
EXN1-M05-0053-5	5,0	5,0	25	75	1	0,025	0,033	**61,68 €**
EXN1-M05-0053-6	6,0	6,0	30	100	1	0,033	0,043	**65,08 €**
EXN1-M05-0053-8	8,0	8,0	35	100	1	0,038	0,048	**83,27 €**
EXN1-M05-0053-10	10,0	10,0	40	100	1	0,045	0,055	**124,78 €**
EXN1-M05-0053-12	12,0	12,0	45	120	1	0,060	0,080	**156,00 €**

NExus PRO - Performmaker

KL-MASTERS
High-Performance Tools

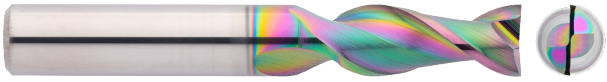
COOLING		HPC	STRATEGY
TOLERANCE	h6	Z2	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharp edged • HA-Shank	• 38° Helical pitch • ASR-High Performance Coating	

At cooperation with:

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	350 m/min

Description:

- For use in high speed milling machines
- AlphaSlide Rainbow High Performance Coating
- Extra large chip chambers for an extreme chip volume
- For roughing and finishing, up to 1.5xD full slot
- Special helical pitch for smooth running and soft cut
- Defined clearance angle for ideal stabilization with high cutting depths



Article-Code EXN1-M01-0043	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z	ae=1xD ap=1xD	ae=0.3xD ap=2xD	List price at Euro
HA-Shank										
EXN1-M01-0043-4	4,0	6,0	13	18	-	57	2	0,045	0,055	**41,21 €**
EXN1-M01-0043-6	6,0	6,0	16	21	-	57	2	0,055	0,075	**41,21 €**
EXN1-M01-0043-8	8,0	8,0	22	27	-	63	2	0,070	0,080	**48,72 €**
EXN1-M01-0043-10	10,0	10,0	25	30	-	72	2	0,080	0,110	**67,45 €**
EXN1-M01-0043-12	12,0	12,0	28	33	-	83	2	0,090	0,13	**99,67 €**
EXN1-M01-0043-16	16,0	16,0	36	41	-	92	2	0,120	0,160	**164,96 €**
EXN1-M01-0043-20	20,0	20,0	41	51	-	104	2	0,160	0,200	**239,10 €**

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KL-MASTERS High-Performance Tools

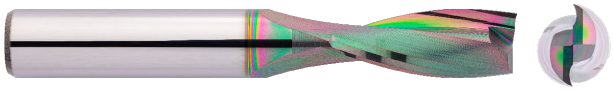
COOLING		HPC	STRATEGY
TOLERANCE	e8	Z2-Z3	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharp edged • HA-Shank	• 20° Helical pitch • ASR-High Performance Coating	

At cooperation with: H&V

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
-	-	-	-	-	420 m/min

Description:

- For use in high speed milling machines
- AlphaSlide Rainbow High Performance Coating
- Extra large chip chambers for an extreme chip volume
- Special helical pitch for smooth running
- Highly polished chip space for optimized chip evacuation
- Extra sharp cutting edges for a smooth and soft cut in all plastics



Article-Code EXN1-M01-0013	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z	ae=1xD ap=1xD	ae=0.4xD ap=2xD	List price at Euro
HA-Shank										
EXN1-M01-0013-1	1,0	3,0	5	8	-	50	2	0,004	0,007	**41,90 €**
EXN1-M01-0013-2	2,0	3,0	8	11	-	50	2	0,006	0,010	**41,90 €**
EXN1-M01-0013-3	3,0	3,0	11	14	-	50	2	0,008	0,012	**41,90 €**
EXN1-M01-0013-4	4,0	4,0	13	16	-	54	2	0,012	0,020	**47,65 €**
EXN1-M01-0013-5	5,0	5,0	15	18	-	54	2	0,015	0,025	**49,83 €**
EXN1-M01-0013-6	6,0	6,0	16	21	-	65	2	0,025	0,40	**53,75 €**
EXN1-M01-0013-8	8,0	8,0	22	27	-	70	2	0,030	0,050	**59,10 €**
EXN1-M01-0013-10	10,0	10,0	25	32	-	73	2	0,040	0,055	**85,90 €**
EXN1-M01-0013-12	12,0	12,0	28	38	-	84	3	0,048	0,075	**109,42 €**
EXN1-M01-0013-14	14,0	14,0	30	42	-	84	3	0,050	0,085	**145,76 €**
EXN1-M01-0013-16	16,0	16,0	36	44	-	93	3	0,055	0,090	**184,63 €**
EXN1-M01-0013-20	20,0	20,0	41	54	-	104	3	0,060	0,011	**269,31 €**

NExus PRO - Performmaker

KL-MASTERS
High-Performance Tools

COOLING		HPC	STRATEGY
TOLERANCE	h6	Z3	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner bevel • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	

At cooperation with:

H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	350 m/min

Description:

- Perfect for helical diving
- For roughing and finishing, up to 2xD full slot
- Extra large chip chambers for an extreme chip volume
- AlphaSlide Rainbow High Performance Coating
- Special helical pitch for smooth running and soft cut
- Defined clearance angle for ideal stabilization with high cutting depths

Article-Code EXN1-M01-0103	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z	ae=1xD ap=1xD	ae=0.3xD ap=2xD	List price at Euro
HA-Shank										
EXN1-M01-0103-3	3,0	6,0	8	12	0,10	57	3	0,035	0,045	43,82 €
EXN1-M01-0103-4	4,0	6,0	11	18	0,10	57	3	0,045	0,055	43,82 €
EXN1-M01-0103-5	5,0	6,0	13	18	0,10	57	3	0,050	0,065	43,82 €
EXN1-M01-0103-6	6,0	6,0	13	18	0,20	57	3	0,055	0,075	43,82 €
EXN1-M01-0103-8	8,0	8,0	21	25	0,20	63	3	0,075	0,090	53,42 €
EXN1-M01-0103-10	10,0	10,0	22	30	0,20	72	3	0,080	0,110	77,93 €
EXN1-M01-0103-12	12,0	12,0	26	36	0,20	83	3	0,090	0,130	105,90 €
EXN1-M01-0103-16	16,0	16,0	36	42	0,20	92	3	0,130	0,170	177,25 €
EXN1-M01-0103-20	20,0	20,0	41	52	0,20	104	3	0,170	0,200	255,93 €

NExus PRO - Performmaker

KL-MASTERS High-Performance Tools

COOLING		HPC	STRATEGY
TOLERANCE	h6	Z3	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharp edged • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	

At cooperation with: H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	350 m/min

Description:

- Perfect for helical diving
- For roughing and finishing, up to 2xD full slot
- Extra large chip chambers for an extreme chip volume
- AlphaSlide Rainbow High Performance Coating
- Special helical pitch for smooth running and soft cut
- Defined clearance angle for ideal stabilization with high cutting depths

Article-Code EXN1-M01-0093	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Total length mm	Z	ae=1xD ap=1xD	ae=0.3xD ap=2xD	List price at Euro
HA-Shank									
EXN1-M01-0093-3	3,0	6,0	8	14	57	3	0,035	0,045	43,82 €
EXN1-M01-0093-4	4,0	6,0	11	16	57	3	0,045	0,055	43,82 €
EXN1-M01-0093-5	5,0	6,0	13	18	57	3	0,050	0,065	43,82 €
EXN1-M01-0093-6	6,0	6,0	13	20	57	3	0,055	0,075	43,82 €
EXN1-M01-0093-8	8,0	8,0	21	26	63	3	0,075	0,090	53,42 €
EXN1-M01-0093-10	10,0	10,0	22	31	72	3	0,080	0,110	77,93 €
EXN1-M01-0093-12	12,0	12,0	26	37	83	3	0,090	0,130	105,90 €
EXN1-M01-0093-16	16,0	16,0	36	43	92	3	0,130	0,170	177,25 €
EXN1-M01-0093-20	20,0	20,0	41	53	104	3	0,170	0,200	255,93 €

NExus PRO - Performmaker

KL-MASTERS
High-Performance Tools

KÜHLUNG		HPC	EINSATZGEBIET
TOLERANZ	h6	Werksnorm, Z3 mittellang	AUSFÜHRUNG
BESCHICHTUNG	AlphaSlide Rainbow		ANWENDUNG
SPEZIFIKATION	• Eckenfase • HA-Schaftform	• 45° Spiral-Winkel • Ungleichgeteilte Schneidreihen	*In Zusammenarbeit mit:* H&Y

NE-Werkstoffe					
Alu-Knetlegierung	< 10% Si	> 10% Si	Kupfer	Messing	Kunststoff
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	350 m/min

Produktbeschreibung:

- Ideal zum helikalen Eintauchen
- Angepasste Stirn zum prozesssicheren Rampen
- Große Spankammern für ein extremes Spanvolumen
- Mit zentraler Innenkühlung
- Spezielle Drallsteigung für ruhigen Lauf und weichen Schnitt
- Definierter Freiwinkel für ideale Stabiliserung bei hohen Zustellungen

Artikel-Code EXN1-M01-0203	Nenn-Ø mm	Schaft-Ø mm	Schneide mm	Freischliff mm	Gesamtlänge mm	Z	ae=1xD ap=1xD	ae=0.3xD ap=2xD	Stückpreis in Euro
HA-Schaft									
EXN1-M01-0203-5	5,0	6,0	13	18	57	3	0,050	0,065	**48,70 €**
EXN1-M01-0203-6	6,0	6,0	13	18	57	3	0,055	0,075	**48,70 €**
EXN1-M01-0203-8	8,0	8,0	21	25	63	3	0,075	0,090	**58,10 €**
EXN1-M01-0203-10	10,0	10,0	22	30	72	3	0,080	0,110	**87,46 €**
EXN1-M01-0203-12	12,0	12,0	26	36	83	3	0,090	0,130	**120,44 €**
EXN1-M01-0203-16	16,0	16,0	36	42	92	3	0,013	0,017	**198,25 €**
EXN1-M01-0203-20	20,0	20,0	41	52	104	3	0,170	0,200	**278,50 €**

NExus PRO - Performmaker

KL-MASTERS
High-Performance Tools

COOLING		HPC	STRATEGY
TOLERANCE	h6	Z3	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner bevel • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	

At cooperation with:

H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	350 m/min

Description:

- Perfect for helical diving
- For roughing and finishing
- Extra large chip chambers for an extreme chip volume
- AlphaSlide Rainbow High Performance Coating
- Special helical pitch for smooth running and soft cut
- Defined clearance angle for ideal stabilization with high cutting depths

Article-Code EXN1-M01-0123	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z	ae=1xD ap=1xD	ae=0.3xD ap=3xD	List price at Euro
HA-Shank										
EXN1-M01-0123-5	5,0	6,0	18	24	0,10	65	3	0,040	0,055	**48,20 €**
EXN1-M01-0123-6	6,0	6,0	20	24	0,20	65	3	0,045	0,065	**48,20 €**
EXN1-M01-0123-8	8,0	8,0	26	30	0,20	70	3	0,060	0,080	**58,76 €**
EXN1-M01-0123-10	10,0	10,0	30	38	0,20	80	3	0,070	0,100	**85,43 €**
EXN1-M01-0123-12	12,0	12,0	36	46	0,20	93	3	0,080	0,120	**116,79 €**
EXN1-M01-0123-16	16,0	16,0	48	58	0,20	110	3	0,120	0,150	**199,90 €**
EXN1-M01-0123-20	20,0	20,0	60	74	0,20	125	3	0,150	0,190	**294,53 €**

NExus PRO - Performmaker

KL-MASTERS High-Performance Tools

COOLING		HPC	STRATEGY
TOLERANCE	h6	Z3 Overlong	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner bevel • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	*At cooperation with:* H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
280 m/min	260 m/min	240 m/min	120 m/min	120 m/min	170 m/min

Description:

- Perfect for helical diving
- For roughing and finishing
- Extra large chip chambers for an extreme chip volume
- AlphaSlide Rainbow High Performance Coating
- Special helical pitch for smooth running and soft cut
- Defined clearance angle for ideal stabilization with high cutting depths

Article-Code EXN1-M01-0113	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z	ae=1xD ap=1xD	ae=0.3xD ap=1xD	List price at Euro
HA-Shank										
EXN1-M01-0113-3	3,0	6,0	5	18	0,10	83	3	0,025	0,035	**47,05 €**
EXN1-M01-0113-4	4,0	6,0	6,5	24	0,10	83	3	0,035	0,045	**47,05 €**
EXN1-M01-0113-5	5,0	6,0	8	30	0,10	83	3	0,040	0,055	**47,05 €**
EXN1-M01-0113-6	6,0	6,0	10	42	0,20	83	3	0,045	0,055	**47,05 €**
EXN1-M01-0113-8	8,0	8,0	13	62	0,20	100	3	0,050	0,065	**63,20 €**
EXN1-M01-0113-10	10,0	10,0	16	58	0,20	100	3	0,065	0,080	**87,56 €**
EXN1-M01-0113-12	12,0	12,0	19	73	0,20	119	3	0,070	0,090	**116,89 €**
EXN1-M01-0113-16	16,0	16,0	25	100	0,20	150	3	0,090	0,110	**209,34 €**
EXN1-M01-0113-20	20,0	20,0	32	98	0,20	150	3	0,110	0,130	**284,21 €**

NExus PRO - Performmaker

KL-MASTERS High-Performance Tools

COOLING		HPC	STRATEGY
TOLERANCE	h6	Z3 Overlong	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner bevel • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	*At cooperation with:* H&Y

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
280 m/min	260 m/min	240 m/min	120 m/min	120 m/min	170 m/min

Description:

- Perfect for helical diving
- For roughing and finishing
- Extra large chip chambers for an extreme chip volume
- With central inner cooling
- Special helical pitch for smooth running and soft cut
- Defined clearance angle for ideal stabilization with high cutting depths

Article-Code EXN1-M01-0213	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z	ae=1xD ap=1xD	ae=0.3xD ap=1xD	List price at Euro
HA-Shank										
EXN1-M01-0213-5	5,0	6,0	8	30	0,10	83	3	0,040	0,055	**51,11 €**
EXN1-M01-0213-6	6,0	6,0	10	42	0,20	83	3	0,045	0,055	**51,11 €**
EXN1-M01-0213-8	8,0	8,0	13	62	0,20	100	3	0,050	0,065	**71,14 €**
EXN1-M01-0213-10	10,0	10,0	16	58	0,20	100	3	0,065	0,080	**102,85 €**
EXN1-M01-0213-12	12,0	12,0	19	73	0,20	119	3	0,070	0,090	**135,78 €**
EXN1-M01-0213-16	16,0	16,0	25	100	0,20	150	3	0,090	0,110	**238,12 €**
EXN1-M01-0213-20	20,0	20,0	32	98	0,20	150	3	0,110	0,130	**327,39 €**

NExus PRO - Performmaker

KL-MASTERS High-Performance Tools

COOLING		HPC	STRATEGY
TOLERANCE	h6	Z4	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharp edged • HA-Shank	• 38° Helical pitch • Unequal tooth pitch	*At cooperation with:* H&S

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	350 m/min

Description:

- Perfect for helical diving
- For roughing and finishing
- Extra large chip chambers for an extreme chip volume
- AlphaSlide Rainbow High Performance Coating
- Special helical pitch for smooth running and soft cut
- Defined clearance angle for ideal stabilization with high cutting depths

Article-Code EXN1-M01-0293	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z	ae=1xD ap=1xD	ae=0.3xD ap=2xD	List price at Euro
HA-Shank										
EXN1-M01-0293-4	4,0	6,0	13	18	-	57	4	0,035	0,045	**51,60 €**
EXN1-M01-0293-5	5,0	6,0	14	18	-	57	4	0,040	0,060	**51,60 €**
EXN1-M01-0293-6	6,0	6,0	16	21	-	57	4	0,045	0,065	**51,60 €**
EXN1-M01-0293-8	8,0	8,0	22	27	-	63	4	0,065	0,085	**59,42 €**
EXN1-M01-0293-10	10,0	10,0	25	30	-	72	4	0,080	0,100	**89,97 €**
EXN1-M01-0293-12	12,0	12,0	28	33	-	83	4	0,090	0,130	**119,56 €**
EXN1-M01-0293-16	16,0	16,0	36	41	-	92	4	0,110	0,150	**204,87 €**
EXN1-M01-0293-20	20,0	20,0	41	51	-	104	4	0,140	0,180	**284,12 €**

KL-TOOLING
PRÄZISIONSWERKZEUGE

NExus PRO - Rowmaker

KL-MASTERS
High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	f8	Z2 Short	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Ball nose • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	

At cooperation with:

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
650 m/min	620 m/min	550 m/min	280 m/min	280 m/min	400 m/min

Description:

- For use in HSC milling
- For roughing and finishing
- Optimized face geometry for excellent surfaces
- AlphaSlide Rainbow High Performance Coating
- Defined microbevel for support and stabilizatio
- Special chip chambers designed for optimal chip evacuation

Article-Code EXN1-M08-0003	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Radius mm	Total length mm	Z		List price at Euro
HA-Shank								ae=0.05xD ap=0.05xD	
EXN1-M08-0003-0,5	0,5	6,0	1	-	0,25	55	2	0,008	**54,30 €**
EXN1-M08-0003-1	1,0	6,0	2	-	0,50	55	2	0,012	**54,30 €**
EXN1-M08-0003-2	2,0	6,0	4	-	1,00	55	2	0,018	**54,30 €**
EXN1-M08-0003-3	3,0	6,0	6	-	1,50	55	2	0,022	**54,30 €**
EXN1-M08-0003-4	4,0	6,0	7	-	2,00	55	2	0,026	**54,30 €**
EXN1-M08-0003-5	5,0	6,0	8	-	2,50	55	2	0,045	**49,80 €**
EXN1-M08-0003-6	6,0	6,0	10	-	3,00	55	2	0,055	**49,80 €**
EXN1-M08-0003-8	8,0	8,0	12	-	4,00	63	2	0,065	**65,50 €**
EXN1-M08-0003-10	10,0	10,0	14	-	5,00	72	2	0,075	**86,12 €**
EXN1-M08-0003-12	12,0	12,0	16	-	6,00	74	2	0,080	**109,90 €**

NExus PRO - Rowmaker

COOLING		HSC	STRATEGY
TOLERANCE	f8	Z2 Long	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Ball nose • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	*At cooperation with:*

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
550 m/min	525 m/min	460 m/min	240 m/min	240 m/min	340 m/min

Description:

- For use in HSC milling
- For roughing and finishing
- Optimized face geometry for excellent surfaces
- AlphaSlide Rainbow High Performance Coating
- Defined microbevel for support and stabilizatio
- Special chip chambers designed for optimal chip evacuation

Article-Code EXN1-M08-0013	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Radius mm	Total length mm	Z		List price at Euro
HA-Shank								ae=0.05xD ap=0.05xD	
EXN1-M08-0013-0,5	0,5	6,0	1	-	0,25	75	2	0,006	**59,80 €**
EXN1-M08-0013-1	1,0	6,0	2	-	0,50	75	2	0,010	**59,80 €**
EXN1-M08-0013-2	2,0	6,0	4	-	1,00	75	2	0,016	**59,80 €**
EXN1-M08-0013-3	3,0	6,0	6	-	1,50	75	2	0,019	**59,80 €**
EXN1-M08-0013-4	4,0	6,0	7	-	2,00	75	2	0,022	**59,80 €**
EXN1-M08-0013-5	5,0	6,0	8	-	2,50	100	2	0,040	**56,83 €**
EXN1-M08-0013-6	6,0	6,0	10	-	3,00	100	2	0,050	**56,83 €**
EXN1-M08-0013-8	8,0	8,0	12	-	4,00	100	2	0,055	**74,12 €**
EXN1-M08-0013-10	10,0	10,0	14	-	5,00	100	2	0,065	**96,75 €**
EXN1-M08-0013-12	12,0	12,0	16	-	6,00	100	2	0,070	**123,97 €**

KL-TOOLING PRÄZISIONSWERKZEUGE

NExus PRO - Rowmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro Short	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Ball nose • HA-Shank	• 30° Helical pitch • High Performance	

At cooperation with: H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Polished chip space for ideal chip evacuation
- AlphaSlide Rainbow High Performance Coating
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M17-0003	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M17-0003-0,1x0,3	0,1	4,0	0,1	0,3	0,05	45	2	70,53 €
EXN1-M17-0003-0,1x0,5	0,1	4,0	0,1	0,5	0,05	45	2	70,53 €
EXN1-M17-0003-0,1x1	0,1	4,0	0,1	1,0	0,05	45	2	70,53 €
EXN1-M17-0003-0,2x0,5	0,2	4,0	0,2	0,5	0,10	45	2	65,43 €
EXN1-M17-0003-0,2x1	0,2	4,0	0,2	1,0	0,10	45	2	65,43 €
EXN1-M17-0003-0,2x2	0,2	4,0	0,2	2,0	0,10	45	2	65,43 €
EXN1-M17-0003-0,2x3	0,2	4,0	0,2	3,0	0,10	45	2	65,43 €
EXN1-M17-0003-0,3x0,5	0,3	4,0	0,2	0,5	0,15	45	2	61,53 €
EXN1-M17-0003-0,3x1	0,3	4,0	0,2	1,0	0,15	45	2	61,53 €
EXN1-M17-0003-0,3x2	0,3	4,0	0,2	2,0	0,15	45	2	61,53 €
EXN1-M17-0003-0,3x3	0,3	4,0	0,2	3,0	0,15	45	2	61,53 €
EXN1-M17-0003-0,3x4	0,3	4,0	0,2	4,0	0,15	45	2	61,53 €
EXN1-M17-0003-0,3x6	0,3	4,0	0,2	6,0	0,20	45	2	61,53 €
EXN1-M17-0003-0,4x1	0,4	4,0	0,3	1,0	0,20	45	2	58,24 €
EXN1-M17-0003-0,4x2	0,4	4,0	0,3	2,0	0,20	45	2	58,24 €
EXN1-M17-0003-0,4x3	0,4	4,0	0,3	3,0	0,20	45	2	58,24 €
EXN1-M17-0003-0,4x4	0,4	4,0	0,3	4,0	0,20	45	2	58,24 €
EXN1-M17-0003-0,4x6	0,4	4,0	0,3	6,0	0,20	45	2	60,03 €
EXN1-M17-0003-0,4x8	0,4	4,0	0,3	8,0	0,20	45	2	61,53 €
EXN1-M17-0003-0,5x1	0,5	4,0	0,4	1,0	0,25	45	2	49,53 €
EXN1-M17-0003-0,5x1,5	0,5	4,0	0,4	1,5	0,25	45	2	47,38 €
EXN1-M17-0003-0,5x2	0,5	4,0	0,4	2,0	0,25	45	2	49,53 €
EXN1-M17-0003-0,5x3	0,5	4,0	0,4	3,0	0,25	45	2	49,53 €
EXN1-M17-0003-0,5x4	0,5	4,0	0,4	4,0	0,25	45	2	49,53 €

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NExus PRO - Rowmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro Short	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Ball nose • HA-Shank	• 30° Helical pitch • High Performance	*At cooperation with:* H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Polished chip space for ideal chip evacuation
- AlphaSlide Rainbow High Performance Coating
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M17-0003	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M17-0003-0,5x6	0,5	4,0	0,4	6,0	0,25	45	2	49,53 €
EXN1-M17-0003-0,5x8	0,5	4,0	0,4	8,0	0,25	45	2	49,53 €
EXN1-M17-0003-0,6x2	0,6	4,0	0,5	2,0	0,30	45	2	48,03 €
EXN1-M17-0003-0,6x3	0,6	4,0	0,5	3,0	0,30	45	2	48,03 €
EXN1-M17-0003-0,6x4	0,6	4,0	0,5	4,0	0,30	45	2	48,03 €
EXN1-M17-0003-0,6x6	0,6	4,0	0,5	6,0	0,30	45	2	48,03 €
EXN1-M17-0003-0,6x8	0,6	4,0	0,5	8,0	0,30	45	2	48,03 €
EXN1-M17-0003-0,8x2	0,8	4,0	0,6	2,0	0,40	45	2	46,53 €
EXN1-M17-0003-0,8x3	0,8	4,0	0,6	3,0	0,40	45	2	46,53 €
EXN1-M17-0003-0,8x4	0,8	4,0	0,6	4,0	0,40	45	2	46,53 €
EXN1-M17-0003-0,8x6	0,8	4,0	0,6	6,0	0,40	45	2	46,53 €
EXN1-M17-0003-0,8x8	0,8	4,0	0,6	8,0	0,40	45	2	48,03 €
EXN1-M17-0003-1x2	1,0	4,0	0,8	2,0	0,50	45	2	46,53 €
EXN1-M17-0003-1x3	1,0	4,0	0,8	3,0	0,50	45	2	46,53 €
EXN1-M17-0003-1x4	1,0	4,0	0,8	4,0	0,50	45	2	46,53 €
EXN1-M17-0003-1x5	1,0	4,0	0,8	5,0	0,50	45	2	46,53 €
EXN1-M17-0003-1x6	1,0	4,0	0,8	6,0	0,50	45	2	46,53 €
EXN1-M17-0003-1x8	1,0	4,0	0,8	8,0	0,50	45	2	46,53 €
EXN1-M17-0003-1x10	1,0	4,0	0,8	10,0	0,50	45	2	51,04 €
EXN1-M17-0003-1x12	1,0	4,0	0,8	12,0	0,50	45	2	51,04 €
EXN1-M17-0003-1,2x3	1,2	4,0	1,0	3,0	0,60	45	2	49,53 €
EXN1-M17-0003-1,2x4	1,2	4,0	1,0	4,0	0,60	45	2	49,53 €
EXN1-M17-0003-1,2x6	1,2	4,0	1,0	6,0	0,60	45	2	49,53 €
EXN1-M17-0003-1,2x8	1,2	4,0	1,0	8,0	0,60	45	2	49,53 €

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NExus PRO - Rowmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro Short	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Ball nose • HA-Shank	• 30° Helical pitch • High Performance	

At cooperation with: H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Polished chip space for ideal chip evacuation
- AlphaSlide Rainbow High Performance Coating
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M17-0003	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M17-0003-1,2x10	1,2	4,0	1,0	10,0	0,60	45	2	49,53 €
EXN1-M17-0003-1,2x12	1,2	4,0	1,0	12,0	0,60	50	2	52,55 €
EXN1-M17-0003-1,2x20	1,2	4,0	1,0	20,0	0,60	54	2	54,02 €
EXN1-M17-0003-1,5x3	1,5	4,0	1,2	3,0	0,75	45	2	48,03 €
EXN1-M17-0003-1,5x4	1,5	4,0	1,2	4,0	0,75	45	2	48,03 €
EXN1-M17-0003-1,5x6	1,5	4,0	1,2	6,0	0,75	45	2	48,03 €
EXN1-M17-0003-1,5x8	1,5	4,0	1,2	8,0	0,75	45	2	48,03 €
EXN1-M17-0003-1,5x10	1,5	4,0	1,2	10,0	0,75	45	2	48,03 €
EXN1-M17-0003-1,5x12	1,5	4,0	1,2	12,0	0,75	50	2	51,04 €
EXN1-M17-0003-1,8x8	1,8	4,0	1,4	8,0	0,90	45	2	48,03 €
EXN1-M17-0003-1,8x10	1,8	4,0	1,4	10,0	0,90	45	2	48,03 €
EXN1-M17-0003-1,8x12	1,8	4,0	1,4	12,0	0,90	50	2	51,04 €
EXN1-M17-0003-2x4	2,0	4,0	1,6	4,0	1,00	45	2	48,03 €
EXN1-M17-0003-2x6	2,0	4,0	1,6	6,0	1,00	45	2	48,03 €
EXN1-M17-0003-2x8	2,0	4,0	1,6	8,0	1,00	45	2	48,03 €
EXN1-M17-0003-2x10	2,0	4,0	1,6	10,0	1,00	45	2	48,03 €
EXN1-M17-0003-2x12	2,0	4,0	1,6	12,0	1,00	45	2	50,33 €
EXN1-M17-0003-3x6	3,0	4,0	3,5	6,0	1,50	45	2	48,91 €
EXN1-M17-0003-3x8	3,0	4,0	3,5	8,0	1,50	45	2	48,91 €
EXN1-M17-0003-3x10	3,0	4,0	3,5	10,0	1,50	45	2	48,91 €
EXN1-M17-0003-3x12	3,0	4,0	3,5	12,0	1,50	45	2	48,91 €

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Overview Cutting data

Material	Cutting data										
Dimension		Ø 0,1x0,3	Ø 0,1x1	Ø 0,2x0,5	Ø 0,2x3	Ø 0,3x0,5	Ø 0,3x6	Ø 0,4x1	Ø 0,4x8	Ø 0,5x1	Ø 0,5x8
		ae= 0,1xD ap= 0,1xD	ae=0,05xD ap=0,05xD	ae=0,1xD ap=0,1xD	ae=0,02xD ap=0,02xD	ae=0,1xD ap=0,1xD	ae=0,01xD ap=0,01xD	ae=0,1xD ap=0,1xD	ae=0,01xD ap=0,01xD	ae=0,1xD ap=0,1xD	ae=0,015xD ap=0,015xD
Aluminium, alloyed < 500 N/mm	500 m/min	0,012	0,007	0,014	0,008	0,014	0,008	0,018	0,009	0,016	0,012
Aluminium, alloyed < 600 N/mm	480 m/min	0,012	0,007	0,014	0,008	0,014	0,008	0,018	0,009	0,016	0,012
Aluminium, casted < 600 N/mm	450 m/min	0,011	0,006	0,013	0,007	0,013	0,007	0,017	0,008	0,015	0,011
Copper	220 m/min	0,010	0,005	0,012	0,006	0,012	0,006	0,016	0,007	0,014	0,010
Brass	220 m/min	0,010	0,005	0,012	0,006	0,012	0,006	0,016	0,007	0,014	0,010
Plastics	350 m/min	0,011	0,006	0,013	0,007	0,013	0,007	0,017	0,008	0,014	0,010

Material	Cutting data										
Dimension		Ø 0,6x2	Ø 0,6x8	Ø 0,8x2	Ø 0,8x8	Ø 1x2	Ø 1x12	Ø 1,2x3	Ø 1,2x20	Ø 1,5x3	Ø 1,5x12
		ae=0,1xD ap=0,1xD	ae=0,025xD ap=0,025xD	ae=0,1xD ap=0,1xD	ae=0,05xD ap=0,05xD	ae=0,1xD ap=0,1xD	ae=0,03xD ap=0,03xD	ae=0,1xD ap=0,1xD	ae=0,015xD ap=0,015xD	ae=0,1xD ap=0,1xD	ae=0,07xD ap=0,07xD
Aluminium, alloyed < 500 N/mm	500 m/min	0,022	0,017	0,022	0,017	0,035	0,028	0,035	0,025	0,035	0,030
Aluminium, alloyed < 600 N/mm	480 m/min	0,022	0,017	0,022	0,017	0,035	0,028	0,035	0,025	0,035	0,030
Aluminium, casted < 600 N/mm	450 m/min	0,021	0,016	0,021	0,016	0,032	0,026	0,032	0,023	0,032	0,027
Copper	220 m/min	0,020	0,015	0,020	0,015	0,029	0,024	0,029	0,021	0,029	0,024
Brass	220 m/min	0,020	0,015	0,020	0,015	0,029	0,024	0,029	0,021	0,029	0,024
Plastics	350 m/min	0,021	0,016	0,021	0,016	0,029	0,024	0,029	0,021	0,029	0,024

Material	Cutting data										
Dimension		Ø 1,8x8	Ø 1,8x12	Ø 2x4	Ø 2x12	Ø 3x6	Ø 3x12				
		ae=0,1xD ap=0,1xD	ae=0,09xD ap=0,09xD	ae=0,1xD ap=0,1xD	ae=0,09xD ap=0,09xD	ae=0,1xD ap=0,1xD	ae=0,1xD ap=0,1xD				
Aluminium, alloyed < 500 N/mm	500 m/min	0,040	0,035	0,040	0,035	0,043	0,040				
Aluminium, alloyed < 600 N/mm	480 m/min	0,040	0,035	0,040	0,035	0,043	0,040				
Aluminium, casted < 600 N/mm	450 m/min	0,035	0,032	0,035	0,032	0,038	0,035				
Copper	220 m/min	0,030	0,029	0,030	0,029	0,033	0,030				
Brass	220 m/min	0,030	0,029	0,030	0,029	0,033	0,030				
Plastics	350 m/min	0,030	0,029	0,030	0,029	0,033	0,030				

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.

KL-TOOLING PRÄZISIONSWERKZEUGE

NExus PRO - Rowmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro Long	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Ball nose • HA-Shank	• 30° Helical pitch • High Performance	

At cooperation with: H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Polished chip space for ideal chip evacuation
- AlphaSlide Rainbow High Performance Coating
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M17-0013	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M17-0013-0,5x10	0,5	4,0	0,4	10,0	0,25	50	2	54,64 €
EXN1-M17-0013-0,6x10	0,6	4,0	0,5	10,0	0,30	50	2	53,13 €
EXN1-M17-0013-0,8x10	0,8	4,0	0,6	10,0	0,40	50	2	52,55 €
EXN1-M17-0013-0,8x12	0,8	4,0	0,6	12,0	0,40	50	2	52,55 €
EXN1-M17-0013-1x15	1,0	4,0	0,8	15,0	0,50	50	2	51,04 €
EXN1-M17-0013-1x20	1,0	4,0	0,8	20,0	0,50	60	2	54,02 €
EXN1-M17-0013-1x25	1,0	4,0	0,8	25,0	0,50	60	2	54,02 €
EXN1-M17-0013-1x30	1,0	4,0	0,8	30,0	0,50	70	2	60,03 €
EXN1-M17-0013-1,2x15	1,2	4,0	1,0	15,0	0,50	54	2	54,02 €
EXN1-M17-0013-1,5x15	1,5	4,0	1,2	15,0	0,75	50	2	51,04 €
EXN1-M17-0013-1,5x20	1,5	4,0	1,2	20,0	0,75	60	2	54,02 €
EXN1-M17-0013-1,5x25	1,5	4,0	1,2	25,0	0,75	60	2	54,02 €
EXN1-M17-0013-1,5x30	1,5	4,0	1,2	30,0	0,75	70	2	60,03 €
EXN1-M17-0013-1,8x15	1,8	4,0	1,4	15,0	0,90	50	2	51,04 €
EXN1-M17-0013-1,8x20	1,8	4,0	1,4	20,0	0,90	54	2	54,02 €
EXN1-M17-0013-2x12	2,0	4,0	1,6	12,0	1,00	50	2	51,04 €
EXN1-M17-0013-2x15	2,0	4,0	1,6	15,0	1,00	50	2	51,04 €
EXN1-M17-0013-2x20	2,0	4,0	1,6	20,0	1,00	60	2	54,02 €
EXN1-M17-0013-2x25	2,0	4,0	1,6	25,0	1,00	60	2	54,02 €
EXN1-M17-0013-2x30	2,0	4,0	1,6	30,0	1,00	70	2	57,03 €
EXN1-M17-0013-2x35	2,0	4,0	1,6	35,0	1,00	80	2	60,03 €
EXN1-M17-0013-2x40	2,0	4,0	1,6	40,0	1,00	80	2	60,03 €
EXN1-M17-0013-2,5x15	2,5	4,0	2,0	15,0	1,25	50	2	52,55 €
EXN1-M17-0013-2,5x20	2,5	4,0	2,0	20,0	1,25	54	2	54,02 €

Cutting data - Page 23

NExus PRO - Rowmaker Micro

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro Long	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Ball nose • HA-Shank	• 30° Helical pitch • High Performance	

At cooperation with:

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Polished chip space for ideal chip evacuation
- AlphaSlide Rainbow High Performance Coating
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M17-0013	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M17-0013-2,5x25	2,5	4,0	2,0	25,0	1,25	60	2	**57,03 €**
EXN1-M17-0013-2,5x30	2,5	4,0	2,0	30,0	1,25	70	2	**60,03 €**
EXN1-M17-0013-3x15	3,0	4,0	3,5	15,0	1,50	50	2	**51,63 €**
EXN1-M17-0013-3x20	3,0	4,0	3,5	20,0	1,50	54	2	**54,02 €**
EXN1-M17-0013-3x25	3,0	4,0	3,5	25,0	1,50	60	2	**57,03 €**
EXN1-M17-0013-3x30	3,0	4,0	3,5	30,0	1,50	70	2	**60,03 €**
EXN1-M17-0013-3x35	3,0	4,0	3,5	35,0	1,50	70	2	**60,03 €**
EXN1-M17-0013-3x40	3,0	4,0	3,5	40,0	1,50	80	2	**66,05 €**
EXN1-M17-0013-3x45	3,0	4,0	3,5	45,0	1,50	80	2	**66,05 €**

Cutting data - Page 23

Overview Cutting data

Material		Cutting data									
Dimension		Ø 0,5x10	Ø 0,6x10	Ø 0,8x10	Ø 0,8x12	Ø 1x15	Ø 1x30	Ø 1,2x15	Ø 1,5x15	Ø 1,5x30	Ø 1,8x15
		ae= 0,01xD ap= 0,01xD	ae=0,015xD ap=0,015xD	ae=0,035xD ap=0,035xD	ae=0,02xD ap=0,02xD	ae=0,02xD ap=0,02xD	ae=0,01xD ap=0,01xD	ae=0,035xD ap=0,035xD	ae=0,05xD ap=0,05xD	ae=0,01xD ap=0,01xD	ae=0,07xD ap=0,07xD
Aluminium, alloyed < 500 N/mm	500 m/min	0,012	0,017	0,017	0,017	0,028	0,017	0,028	0,030	0,025	0,035
Aluminium, alloyed < 600 N/mm	480 m/min	0,012	0,017	0,017	0,017	0,028	0,017	0,028	0,030	0,025	0,035
Aluminium, casted < 600 N/mm	450 m/min	0,011	0,016	0,016	0,016	0,026	0,016	0,026	0,027	0,022	0,032
Copper	220 m/min	0,010	0,015	0,015	0,015	0,024	0,015	0,024	0,024	0,019	0,029
Brass	220 m/min	0,010	0,015	0,015	0,015	0,024	0,015	0,024	0,024	0,019	0,029
Plastics	350 m/min	0,011	0,016	0,016	0,016	0,024	0,016	0,024	0,024	0,019	0,029

Material		Cutting data									
Dimension		Ø 1,8x20	Ø 2x12	Ø 2x40	Ø 2,5x15	Ø 2,5x30	Ø 3x15	Ø 3x45			
		ae=0,05xD ap=0,05xD	ae=0,09xD ap=0,09xD	ae=0,01xD ap=0,01xD	ae=0,09xD ap=0,09xD	ae=0,035xD ap=0,035xD	ae=0,09xD ap=0,09xD	ae=0,02xD ap=0,02xD			
Aluminium, alloyed < 500 N/mm	500 m/min	0,030	0,035	0,025	0,035	0,030	0,040	0,030			
Aluminium, alloyed < 600 N/mm	480 m/min	0,030	0,035	0,025	0,035	0,030	0,040	0,030			
Aluminium, casted < 600 N/mm	450 m/min	0,027	0,032	0,022	0,032	0,027	0,035	0,025			
Copper	220 m/min	0,024	0,029	0,019	0,029	0,024	0,030	0,020			
Brass	220 m/min	0,024	0,029	0,019	0,029	0,024	0,030	0,020			
Plastics	350 m/min	0,024	0,029	0,019	0,029	0,024	0,030	0,020			

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.

NExus PRO - Formmaker

KL-MASTERS
High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	h6	Z3	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner radius • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	*At cooperation with:* H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	350 m/min

Description:

- Multipass milling of 3D contours
- For roughing and finishing, up to 1.5xD full slot
- For process reliable, helical diving and immersion
- Special helical pitch for smooth running and soft cut
- Extra large chip chambers for an extreme chip volume
- Defined clearance angle for ideal stabilization with high cutting depths

Article-Code EXN1-M06-0003	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z				List price at Euro
HA-Shank								ae=1xD ap=1xD	ae=0.3xD ap=1xD	ae=0.04xD ap=0.04xD	
EXN1-M06-0003-5/0,5	5,0	6,0	13	18	0,5	57	3	0,05	0,065	0,075	**48,60 €**
EXN1-M06-0003-5/1	5,0	6,0	13	18	1,0	57	3	0,05	0,065	0,075	**48,60 €**
EXN1-M06-0003-6/0,5	6,0	6,0	13	18	0,5	57	3	0,055	0,075	0,085	**48,60 €**
EXN1-M06-0003-6/1	6,0	6,0	13	18	1,0	57	3	0,055	0,075	0,085	**48,60 €**
EXN1-M06-0003-8/0,5	8,0	8,0	21	25	0,5	63	3	0,075	0,090	0,100	**59,71 €**
EXN1-M06-0003-8/1	8,0	8,0	21	25	1,0	63	3	0,075	0,090	0,100	**59,71 €**
EXN1-M06-0003-10/0,5	10,0	10,0	22	30	0,5	72	3	0,080	0,110	0,120	**86,03 €**
EXN1-M06-0003-10/1	10,0	10,0	22	30	1,0	72	3	0,080	0,110	0,120	**86,03 €**
EXN1-M06-0003-10/2	10,0	10,0	22	30	2,0	72	3	0,080	0,110	0,120	**86,03 €**
EXN1-M06-0003-12/0,5	12,0	12,0	26	36	0,5	83	3	0,090	0,130	0,150	**108,19 €**
EXN1-M06-0003-12/1	12,0	12,0	26	36	1,0	83	3	0,090	0,130	0,150	**108,19 €**
EXN1-M06-0003-12/2	12,0	12,0	26	36	2,0	83	3	0,090	0,130	0,150	**108,19 €**
EXN1-M06-0003-16/1	16,0	16,0	36	42	1,0	92	3	0,130	0,170	0,190	**189,00 €**
EXN1-M06-0003-16/2	16,0	16,0	36	42	2,0	92	3	0,130	0,170	0,190	**189,00 €**
EXN1-M06-0003-16/3	16,0	16,0	36	42	3,0	92	3	0,130	0,170	0,190	**189,00 €**
EXN1-M06-0003-20/1	20,0	20,0	41	52	1,0	104	3	0,170	0,200	0,220	**278,99 €**
EXN1-M06-0003-20/2	20,0	20,0	41	52	2,0	104	3	0,170	0,200	0,220	**278,99 €**
EXN1-M06-0003-20/3	20,0	20,0	41	52	3,0	104	3	0,170	0,200	0,220	**278,99 €**
EXN1-M06-0003-20/4	20,0	20,0	41	52	4,0	104	3	0,170	0,200	0,220	**278,99 €**

NExus PRO - Formmaker

KL-MASTERS
High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	h6	Z3 Overlong	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner radius • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	

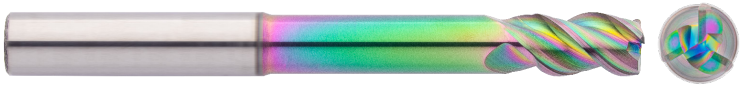
At cooperation with:

H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
280 m/min	260 m/min	240 m/min	120 m/min	120 m/min	170 m/min

Description:

- For roughing and finishing
- Multipass milling of 3D contours
- Long version for deeper cavities
- Special helical pitch for smooth running and soft cut
- Extra large chip chambers for an extreme chip volume
- Defined clearance angle for ideal stabilization with high cutting depths



Article-Code EXN1-M06-0013	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	ae=0.3xD ap=1xD	ae=0,04xD ap=0,04xD	List price at Euro
HA-Shank										
EXN1-M06-0013-5/0,5	5,0	6,0	8	30	0,5	83	3	0,055	0,065	**53,30 €**
EXN1-M06-0013-5/1	5,0	6,0	8	30	1,0	83	3	0,055	0,065	**53,30 €**
EXN1-M06-0013-6/0,5	6,0	6,0	10	42	0,5	83	3	0,055	0,065	**53,30 €**
EXN1-M06-0013-6/1	6,0	6,0	10	42	1,0	83	3	0,055	0,065	**53,30 €**
EXN1-M06-0013-8/0,5	8,0	8,0	13	62	0,5	100	3	0,065	0,075	**65,90 €**
EXN1-M06-0013-8/1	8,0	8,0	13	62	1,0	100	3	0,065	0,075	**65,90 €**
EXN1-M06-0013-10/0,5	10,0	10,0	16	58	0,5	100	3	0,080	0,090	**91,16 €**
EXN1-M06-0013-10/1	10,0	10,0	16	58	1,0	100	3	0,080	0,090	**91,16 €**
EXN1-M06-0013-10/2	10,0	10,0	16	58	2,0	100	3	0,080	0,090	**91,16 €**
EXN1-M06-0013-12/0,5	12,0	12,0	19	73	0,5	119	3	0,090	0,110	**115,03 €**
EXN1-M06-0013-12/1	12,0	12,0	19	73	1,0	119	3	0,090	0,110	**115,03 €**
EXN1-M06-0013-12/2	12,0	12,0	19	73	2,0	119	3	0,090	0,110	**115,03 €**
EXN1-M06-0013-16/1	16,0	16,0	25	100	1,0	150	3	0,110	0,130	**205,60 €**
EXN1-M06-0013-16/2	16,0	16,0	25	100	2,0	150	3	0,110	0,130	**205,60 €**
EXN1-M06-0013-16/3	16,0	16,0	25	100	3,0	150	3	0,110	0,130	**205,60 €**
EXN1-M06-0013-20/1	20,0	20,0	32	98	1,0	150	3	0,130	0,150	**309,82 €**
EXN1-M06-0013-20/2	20,0	20,0	32	98	2,0	150	3	0,130	0,150	**309,82 €**
EXN1-M06-0013-20/3	20,0	20,0	32	98	3,0	150	3	0,130	0,150	**309,82 €**
EXN1-M06-0013-20/4	20,0	20,0	32	98	4,0	150	3	0,130	0,150	**309,82 €**

NExus PRO - Formmaker Micro

KL-MASTERS
High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,05mm	• 30° Helical pitch • High Performance	

At cooperation with:

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description::

- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- AlphaSlide Rainbow High Performance Coating
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0023	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								Cutting data Page 27+28
EXN1-M16-0023-0,2x0,5	0,2	4,0	0,2	0,5	0,05	50	2	70,53 €
EXN1-M16-0023-0,2x1	0,2	4,0	0,2	1,0	0,05	50	2	70,53 €
EXN1-M16-0023-0,2x2	0,2	4,0	0,2	2,0	0,05	50	2	70,53 €
EXN1-M16-0023-0,2x3	0,2	4,0	0,2	3,0	0,05	50	2	70,53 €
EXN1-M16-0023-0,3x1	0,3	4,0	0,3	1,0	0,05	50	2	67,55 €
EXN1-M16-0023-0,3x2	0,3	4,0	0,3	2,0	0,05	50	2	67,55 €
EXN1-M16-0023-0,3x3	0,3	4,0	0,3	3,0	0,05	50	2	67,55 €
EXN1-M16-0023-0,3x4	0,3	4,0	0,3	4,0	0,05	50	2	69,03 €
EXN1-M16-0023-0,3x6	0,3	4,0	0,3	6,0	0,05	50	2	70,53 €
EXN1-M16-0023-0,4x1	0,4	4,0	0,4	1,0	0,05	50	2	57,03 €
EXN1-M16-0023-0,4x2	0,4	4,0	0,4	2,0	0,05	50	2	57,03 €
EXN1-M16-0023-0,4x3	0,4	4,0	0,4	3,0	0,05	50	2	57,03 €
EXN1-M16-0023-0,4x4	0,4	4,0	0,4	4,0	0,05	50	2	57,03 €
EXN1-M16-0023-0,4x6	0,4	4,0	0,4	6,0	0,05	50	2	60,03 €
EXN1-M16-0023-0,4x8	0,4	4,0	0,4	8,0	0,05	50	2	60,09 €
EXN1-M16-0023-0,5x1	0,5	4,0	0,5	1,0	0,05	50	2	47,12 €
EXN1-M16-0023-0,5x2	0,5	4,0	0,5	2,0	0,05	50	2	47,12 €
EXN1-M16-0023-0,5x3	0,5	4,0	0,5	3,0	0,05	50	2	47,12 €
EXN1-M16-0023-0,5x4	0,5	4,0	0,5	4,0	0,05	50	2	47,12 €
EXN1-M16-0023-0,5x6	0,5	4,0	0,5	6,0	0,05	50	2	47,12 €
EXN1-M16-0023-0,5x8	0,5	4,0	0,5	8,0	0,05	50	2	49,53 €
EXN1-M16-0023-0,5x10	0,5	4,0	0,5	10,0	0,05	50	2	51,04 €
EXN1-M16-0023-0,6x3	0,6	4,0	0,6	3,0	0,05	50	2	46,53 €
EXN1-M16-0023-0,6x4	0,6	4,0	0,6	4,0	0,05	50	2	46,53 €
EXN1-M16-0023-0,6x6	0,6	4,0	0,6	6,0	0,05	50	2	46,53 €
EXN1-M16-0023-0,6x8	0,6	4,0	0,6	8,0	0,05	50	2	46,53 €
EXN1-M16-0023-0,6x10	0,6	4,0	0,6	10,0	0,05	50	2	48,03 €

Overview Cutting data

KL-MASTERS High-Performance Tools

Material	Cutting data									
Dimension		Ø 0,2x0,5			Ø 0,2x3			Ø 0,3x1		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD ap=0,1xD	ae= 1xD ap= 0,06xD	ae= 0,05xD	ae= 0,05xD ap=0,05xD	ae= 1xD ap= 0,2xD	ae= 0,25xD a	ae= 0,1xD ap=0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,008	0,012	0,014	0,005	0,007	0,009	0,008	0,012	0,014
Aluminium, alloyed < 600 N/mm	480 m/min	0,008	0,012	0,014	0,005	0,007	0,009	0,008	0,012	0,014
Aluminium, casted < 600 N/mm	450 m/min	0,007	0,011	0,013	0,004	0,006	0,008	0,007	0,011	0,013
Copper	220 m/min	0,006	0,010	0,012	0,003	0,005	0,007	0,006	0,010	0,012
Brass	220 m/min	0,006	0,010	0,012	0,003	0,005	0,007	0,006	0,010	0,012
Plastics	350 m/min	0,007	0,011	0,013	0,004	0,006	0,008	0,007	0,011	0,013

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 0,3x6			Ø 0,4x1			Ø 0,4x8		
		ae= 1xD ap= 0,02xD	ae= 0,03xD	ae= 0,01xD ap=0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD ap=0,1xD	ae= 1xD ap= 0,02xD	ae= 0,03xD	ae= 0,01xD ap=0,01xD
Aluminium, alloyed < 500 N/mm	500 m/min	0,005	0,007	0,009	0,012	0,016	0,018	0,005	0,007	0,009
Aluminium, alloyed < 600 N/mm	480 m/min	0,005	0,007	0,009	0,012	0,016	0,018	0,005	0,007	0,009
Aluminium, casted < 600 N/mm	450 m/min	0,004	0,006	0,008	0,011	0,015	0,017	0,004	0,006	0,008
Copper	220 m/min	0,003	0,005	0,007	0,010	0,014	0,016	0,003	0,005	0,007
Brass	220 m/min	0,003	0,005	0,007	0,010	0,014	0,016	0,003	0,005	0,007
Plastics	350 m/min	0,004	0,006	0,008	0,011	0,015	0,017	0,004	0,006	0,008

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 0,5x1			Ø 0,5x10			Ø 0,6x3		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD ap=0,1xD	ae= 1xD ap= 0,02xD	ae= 0,03xD	ae= 0,01xD ap=0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD ap=0,1xD
Aluminium, alloyed < 500 N/mm	500 m/min	0,016	0,020	0,022	0,009	0,013	0,015	0,016	0,020	0,022
Aluminium, alloyed < 600 N/mm	480 m/min	0,016	0,020	0,022	0,009	0,013	0,015	0,016	0,020	0,022
Aluminium, casted < 600 N/mm	450 m/min	0,015	0,018	0,021	0,008	0,012	0,014	0,015	0,018	0,021
Copper	220 m/min	0,014	0,017	0,020	0,007	0,011	0,013	0,014	0,016	0,020
Brass	220 m/min	0,014	0,017	0,020	0,007	0,011	0,013	0,014	0,016	0,020
Plastics	350 m/min	0,015	0,016	0,021	0,008	0,012	0,014	0,015	0,016	0,021

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Overview Cutting data

Material	Cutting data									
Dimension			Ø 0,6x10							
		ae= 1xD ap= 0,03xD	ae= 0,04xD ap=	ae= 0,015xD ap= 0,015xD						
Aluminium, alloyed <500 N/mm	500 m/min	0,012	0,015	0,017						
Aluminium, alloyed < 600 N/mm	480 m/min	0,012	0,015	0,017						
Aluminium, casted < 600 N/mm	450 m/min	0,011	0,014	0,016						
Copper	220 m/min	0,010	0,013	0,015						
Brass	220 m/min	0,010	0,013	0,015						
Plastics	350 m/min	0,011	0,014	0,016						

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

NExus PRO - Formmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,10mm	• 30° Helical pitch • High Performance	

At cooperation with: H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0063	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0063-0,4x1	0,4	4,0	0,4	1,0	0,10	50	2	**57,03 €**
EXN1-M16-0063-0,4x2	0,4	4,0	0,4	2,0	0,10	50	2	**57,03 €**
EXN1-M16-0063-0,4x3	0,4	4,0	0,4	3,0	0,10	50	2	**57,03 €**
EXN1-M16-0063-0,4x4	0,4	4,0	0,4	4,0	0,10	50	2	**57,03 €**
EXN1-M16-0063-0,4x6	0,4	4,0	0,4	6,0	0,10	50	2	**60,03 €**
EXN1-M16-0063-0,4x8	0,4	4,0	0,4	8,0	0,10	50	2	**63,04 €**
EXN1-M16-0063-0,5x1	0,5	4,0	0,5	1,0	0,10	50	2	**47,12 €**
EXN1-M16-0063-0,5x2	0,5	4,0	0,5	2,0	0,10	50	2	**47,12 €**
EXN1-M16-0063-0,5x3	0,5	4,0	0,5	3,0	0,10	50	2	**47,12 €**
EXN1-M16-0063-0,5x4	0,5	4,0	0,5	4,0	0,10	50	2	**47,12 €**
EXN1-M16-0063-0,5x6	0,5	4,0	0,5	6,0	0,10	50	2	**47,12 €**
EXN1-M16-0063-0,5x8	0,5	4,0	0,5	8,0	0,10	50	2	**49,53 €**
EXN1-M16-0063-0,5x10	0,5	4,0	0,5	10,0	0,10	50	2	**51,04 €**
EXN1-M16-0063-0,6x3	0,6	4,0	0,6	3,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-0,6x4	0,6	4,0	0,6	4,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-0,6x6	0,6	4,0	0,6	6,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-0,6x8	0,6	4,0	0,6	8,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-0,6x10	0,6	4,0	0,6	10,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-0,8x2	0,8	4,0	0,8	2,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-0,8x4	0,8	4,0	0,8	4,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-0,8x6	0,8	4,0	0,8	6,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-0,8x8	0,8	4,0	0,8	8,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-0,8x10	0,8	4,0	0,8	10,0	0,10	50	2	**49,53 €**
EXN1-M16-0063-0,8x12	0,8	4,0	0,8	12,0	0,10	50	2	**51,04 €**
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NExus PRO - Formmaker Micro

KL-MASTERS
High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,10mm	• 30° Helical pitch • High Performance	*At cooperation with:* H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0063	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0063-1x2	1,0	4,0	1,0	2,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-1x3	1,0	4,0	1,0	3,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-1x4	1,0	4,0	1,0	4,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-1x5	1,0	4,0	1,0	5,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-1x6	1,0	4,0	1,0	6,0	0,10	50	2	**46,53 €**
EXN1-M16-0063-1x8	1,0	4,0	1,0	8,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-1x10	1,0	4,0	1,0	10,0	0,10	50	2	**49,53 €**
EXN1-M16-0063-1x12	1,0	4,0	1,0	12,0	0,10	54	2	**51,04 €**
EXN1-M16-0063-1x15	1,0	4,0	1,0	15,0	0,10	60	2	**54,02 €**
EXN1-M16-0063-1x20	1,0	4,0	1,0	20,0	0,10	60	2	**55,52 €**
EXN1-M16-0063-1x25	1,0	4,0	1,0	25,0	0,10	70	2	**57,03 €**
EXN1-M16-0063-1x30	1,0	4,0	1,0	30,0	0,10	70	2	**58,53 €**
EXN1-M16-0063-1,2x5	1,2	4,0	1,2	5,0	0,10	50	2	**49,53 €**
EXN1-M16-0063-1,2x10	1,2	4,0	1,2	10,0	0,10	50	2	**49,53 €**
EXN1-M16-0063-1,2x15	1,2	4,0	1,2	15,0	0,10	54	2	**52,55 €**
EXN1-M16-0063-1,2x20	1,2	4,0	1,2	20,0	0,10	60	2	**54,02 €**
EXN1-M16-0063-1,5x4	1,5	4,0	1,5	4,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-1,5x6	1,5	4,0	1,5	6,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-1,5x8	1,5	4,0	1,5	8,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-1,5x10	1,5	4,0	1,5	10,0	0,10	50	2	**49,53 €**
EXN1-M16-0063-1,5x12	1,5	4,0	1,5	12,0	0,10	54	2	**51,04 €**
EXN1-M16-0063-1,5x15	1,5	4,0	1,5	15,0	0,10	54	2	**51,04 €**
EXN1-M16-0063-1,5x20	1,5	4,0	1,5	20,0	0,10	60	2	**54,02 €**
EXN1-M16-0063-1,5x25	1,5	4,0	1,5	25,0	0,10	60	2	**54,02 €**
Cutting data Page 32+33								

NExus PRO - Formmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,10mm	• 30° Helical pitch • High Performance	

At cooperation with: H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0063	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0063-1,5x30	1,5	4,0	1,5	30,0	0,10	70	2	**57,03 €**
EXN1-M16-0063-1,8x8	1,8	4,0	1,8	8,0	0,10	50	2	**49,53 €**
EXN1-M16-0063-1,8x10	1,8	4,0	1,8	10,0	0,10	50	2	**49,53 €**
EXN1-M16-0063-1,8x15	1,8	4,0	1,8	15,0	0,10	50	2	**49,53 €**
EXN1-M16-0063-1,8x20	1,8	4,0	1,8	20,0	0,10	54	2	**52,55 €**
EXN1-M16-0063-2x4	2,0	4,0	2,0	4,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-2x6	2,0	4,0	2,0	6,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-2x8	2,0	4,0	2,0	8,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-2x10	2,0	4,0	2,0	10,0	0,10	50	2	**48,03 €**
EXN1-M16-0063-2x12	2,0	4,0	2,0	12,0	0,10	54	2	**51,04 €**
EXN1-M16-0063-2x15	2,0	4,0	2,0	15,0	0,10	54	2	**51,04 €**
EXN1-M16-0063-2x20	2,0	4,0	2,0	20,0	0,10	60	2	**52,55 €**
EXN1-M16-0063-2x25	2,0	4,0	2,0	25,0	0,10	70	2	**54,02 €**
EXN1-M16-0063-2x30	2,0	4,0	2,0	30,0	0,10	70	2	**54,02 €**
EXN1-M16-0063-2x35	2,0	4,0	2,0	35,0	0,10	80	2	**72,03 €**
EXN1-M16-0063-2x40	2,0	4,0	2,0	40,0	0,10	80	2	**72,03 €**

Cutting data Page 32+33

Overview Cutting data

KL-MASTERS High-Performance Tools

Material	Cutting data									
Dimension		Ø 0,4x1			Ø 0,4x8			Ø 0,5x1		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,02xD	ae= 0,03xD	ae= 0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,012	0,016	0,018	0,005	0,007	0,009	0,016	0,020	0,022
Aluminium, alloyed < 600 N/mm	480 m/min	0,012	0,016	0,018	0,005	0,007	0,009	0,016	0,020	0,022
Aluminium, casted < 600 N/mm	450 m/min	0,011	0,015	0,017	0,004	0,006	0,008	0,015	0,018	0,021
Copper	220 m/min	0,010	0,014	0,016	0,003	0,005	0,007	0,014	0,016	0,020
Brass	220 m/min	0,010	0,014	0,016	0,003	0,005	0,007	0,014	0,016	0,020
Plastics	350 m/min	0,011	0,015	0,017	0,004	0,006	0,008	0,015	0,016	0,021

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 0,5x10			Ø 0,6x3			Ø 0,6x10		
		ae= 1xD ap= 0,02xD	ae= 0,03xD	ae= 0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,03xD	ae= 0,04xD	ae= 0,015xD
Aluminium, alloyed <500 N/mm	500 m/min	0,009	0,013	0,015	0,016	0,020	0,022	0,012	0,015	0,017
Aluminium, alloyed < 600 N/mm	480 m/min	0,009	0,013	0,015	0,016	0,020	0,022	0,012	0,015	0,017
Aluminium, casted < 600 N/mm	450 m/min	0,008	0,012	0,014	0,015	0,018	0,021	0,011	0,014	0,016
Copper	220 m/min	0,007	0,011	0,013	0,014	0,016	0,020	0,010	0,013	0,015
Brass	220 m/min	0,007	0,011	0,013	0,014	0,016	0,020	0,010	0,013	0,015
Plastics	350 m/min	0,008	0,012	0,014	0,015	0,016	0,021	0,011	0,014	0,016

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 0,8x2			Ø 0,8x12			Ø 1x2		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,05xD	ae= 0,06xD	ae= 0,03xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,016	0,020	0,022	0,012	0,015	0,017	0,025	0,030	0,035
Aluminium, alloyed < 600 N/mm	480 m/min	0,016	0,020	0,022	0,012	0,015	0,017	0,025	0,030	0,035
Aluminium, casted < 600 N/mm	450 m/min	0,015	0,018	0,021	0,011	0,014	0,016	0,022	0,027	0,032
Copper	220 m/min	0,014	0,016	0,020	0,010	0,013	0,015	0,019	0,024	0,029
Brass	220 m/min	0,014	0,016	0,020	0,010	0,013	0,015	0,019	0,024	0,029
Plastics	350 m/min	0,015	0,016	0,021	0,011	0,014	0,016	0,019	0,024	0,029

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Overview Cutting data

KL-MASTERS High-Performance Tools

Material	Cutting data									
Dimension		Ø 1x30			Ø 1,2x5			Ø 1,2x20		
		ae= 1xD ap= 0,01xD	ae= 0,015xD	ae= 0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,03xD	ae= 0,04xD	ae= 0,015xD
Aluminium, alloyed <500 N/mm	500 m/min	0,01	0,015	0,020	0,025	0,030	0,035	0,020	0,025	0,030
Aluminium, alloyed < 600 N/mm	480 m/min	0,01	0,015	0,020	0,025	0,030	0,035	0,020	0,025	0,030
Aluminium, casted < 600 N/mm	450 m/min	0,008	0,013	0,017	0,022	0,027	0,032	0,017	0,022	0,027
Copper	220 m/min	0,006	0,011	0,014	0,019	0,024	0,029	0,014	0,019	0,024
Brass	220 m/min	0,006	0,011	0,014	0,019	0,024	0,029	0,014	0,019	0,024
Plastics	350 m/min	0,006	0,011	0,014	0,019	0,024	0,029	0,014	0,019	0,024

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 1,5x4			Ø 1,5x30			Ø 1,8x8		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,02xD	ae= 0,03xD	ae= 0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,035	0,015	0,020	0,025	0,030	0,035	0,040
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,035	0,015	0,020	0,025	0,030	0,035	0,040
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,027	0,032	0,013	0,017	0,022	0,027	0,031	0,035
Copper	220 m/min	0,019	0,024	0,029	0,011	0,014	0,019	0,024	0,027	0,030
Brass	220 m/min	0,019	0,024	0,029	0,011	0,014	0,019	0,024	0,027	0,030
Plastics	350 m/min	0,019	0,024	0,029	0,011	0,014	0,019	0,024	0,027	0,030

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 1,8x20			Ø 2x4			Ø 2x40		
		ae= 1xD ap= 0,1xD	ae= 0,13xD	ae= 0,05xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,01xD	ae= 0,015xD	ae= 0,010xD
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,035	0,030	0,035	0,040	0,020	0,025	0,030
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,035	0,030	0,035	0,040	0,020	0,025	0,030
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,026	0,030	0,027	0,031	0,035	0,017	0,021	0,025
Copper	220 m/min	0,019	0,022	0,025	0,024	0,027	0,030	0,014	0,017	0,020
Brass	220 m/min	0,019	0,022	0,025	0,024	0,027	0,030	0,014	0,017	0,020
Plastics	350 m/min	0,019	0,022	0,025	0,024	0,027	0,030	0,014	0,017	0,020

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

NExus PRO - Formmaker Micro

KL-MASTERS
High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,20mm	• 30° Helical pitch • High Performance	

At cooperation with:

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0103	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0103-0,8x2	0,8	4,0	0,8	2,0	0,2	50	2	46,53 €
EXN1-M16-0103-0,8x4	0,8	4,0	0,8	4,0	0,2	50	2	46,53 €
EXN1-M16-0103-0,8x6	0,8	4,0	0,8	6,0	0,2	50	2	46,53 €
EXN1-M16-0103-0,8x8	0,8	4,0	0,8	8,0	0,2	50	2	48,03 €
EXN1-M16-0103-0,8x10	0,8	4,0	0,8	10,0	0,2	50	2	49,53 €
EXN1-M16-0103-0,8x12	0,8	4,0	0,8	12,0	0,2	50	2	51,04 €
EXN1-M16-0103-1x2	1,0	4,0	1,0	2,0	0,2	50	2	46,53 €
EXN1-M16-0103-1x3	1,0	4,0	1,0	3,0	0,2	50	2	46,53 €
EXN1-M16-0103-1x4	1,0	4,0	1,0	4,0	0,2	50	2	46,53 €
EXN1-M16-0103-1x5	1,0	4,0	1,0	5,0	0,2	50	2	46,53 €
EXN1-M16-0103-1x6	1,0	4,0	1,0	6,0	0,2	50	2	46,53 €
EXN1-M16-0103-1x8	1,0	4,0	1,0	8,0	0,2	50	2	48,03 €
EXN1-M16-0103-1x10	1,0	4,0	1,0	10,0	0,2	50	2	49,53 €
EXN1-M16-0103-1x12	1,0	4,0	1,0	12,0	0,2	54	2	51,04 €
EXN1-M16-0103-1x15	1,0	4,0	1,0	15,0	0,2	60	2	54,02 €
EXN1-M16-0103-1x20	1,0	4,0	1,0	20,0	0,2	60	2	55,52 €
EXN1-M16-0103-1x25	1,0	4,0	1,0	25,0	0,2	70	2	57,44 €
EXN1-M16-0103-1x30	1,0	4,0	1,0	30,0	0,2	70	2	58,53 €
EXN1-M16-0103-1,2x5	1,2	4,0	1,2	5,0	0,2	50	2	49,53 €
EXN1-M16-0103-1,2x10	1,2	4,0	1,2	10,0	0,2	50	2	49,53 €
EXN1-M16-0103-1,2x15	1,2	4,0	1,2	15,0	0,2	54	2	52,55 €
EXN1-M16-0103-1,2x20	1,2	4,0	1,2	20,0	0,2	60	2	54,02 €
EXN1-M16-0103-1,5x4	1,5	4,0	1,5	4,0	0,2	50	2	48,03 €
EXN1-M16-0103-1,5x6	1,5	4,0	1,5	6,0	0,2	50	2	48,03 €
Cutting data Page 37+38								

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KL-MASTERS
High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,20mm	• 30° Helical pitch • High Performance	

At cooperation with:

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0103	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0103-1,5x8	1,5	4,0	1,5	8,0	0,2	50	2	48,03 €
EXN1-M16-0103-1,5x10	1,5	4,0	1,5	10,0	0,2	50	2	48,03 €
EXN1-M16-0103-1,5x12	1,5	4,0	1,5	12,0	0,2	54	2	51,04 €
EXN1-M16-0103-1,5x15	1,5	4,0	1,5	15,0	0,2	54	2	51,04 €
EXN1-M16-0103-1,5x20	1,5	4,0	1,5	20,0	0,2	60	2	54,02 €
EXN1-M16-0103-1,5x25	1,5	4,0	1,5	25,0	0,2	60	2	54,02 €
EXN1-M16-0103-1,5x30	1,5	4,0	1,5	30,0	0,2	70	2	57,03 €
EXN1-M16-0103-1,8x8	1,8	4,0	1,8	8,0	0,2	50	2	49,53 €
EXN1-M16-0103-1,8x10	1,8	4,0	1,8	10,0	0,2	50	2	49,53 €
EXN1-M16-0103-1,8x15	1,8	4,0	1,8	15,0	0,2	50	2	49,53 €
EXN1-M16-0103-1,8x20	1,8	4,0	1,8	20,0	0,2	54	2	52,55 €
EXN1-M16-0103-2x4	2,0	4,0	2,0	4,0	0,2	50	2	48,03 €
EXN1-M16-0103-2x6	2,0	4,0	2,0	6,0	0,2	50	2	48,03 €
EXN1-M16-0103-2x8	2,0	4,0	2,0	8,0	0,2	50	2	48,03 €
EXN1-M16-0103-2x10	2,0	4,0	2,0	10,0	0,2	50	2	48,03 €
EXN1-M16-0103-2x12	2,0	4,0	2,0	12,0	0,2	54	2	51,04 €
EXN1-M16-0103-2x15	2,0	4,0	2,0	15,0	0,2	54	2	51,04 €
EXN1-M16-0103-2x20	2,0	4,0	2,0	20,0	0,2	60	2	52,55 €
EXN1-M16-0103-2x25	2,0	4,0	2,0	25,0	0,2	70	2	54,02 €
EXN1-M16-0103-2x30	2,0	4,0	2,0	30,0	0,2	70	2	54,02 €
EXN1-M16-0103-2x35	2,0	4,0	2,0	35,0	0,2	80	2	72,03 €
EXN1-M16-0103-2x40	2,0	4,0	2,0	40,0	0,2	80	2	72,03 €
EXN1-M16-0103-2,5x15	2,5	4,0	2,5	15,0	0,2	54	2	51,04 €
EXN1-M16-0103-2,5x20	2,5	4,0	2,5	20,0	0,2	54	2	51,04 €
Cutting data Page 37+38								

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KL-MASTERS
High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,20mm	• 30° Helical pitch • High Performance	

At cooperation with:

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0103	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0103-2,5x25	2,5	4,0	2,5	25,0	0,2	60	2	54,02 €
EXN1-M16-0103-2,5x30	2,5	4,0	2,5	30,0	0,2	70	2	57,03 €
EXN1-M16-0103-3x6	3,0	4,0	4,5	6,0	0,2	50	2	51,04 €
EXN1-M16-0103-3x8	3,0	4,0	4,5	8,0	0,2	50	2	51,04 €
EXN1-M16-0103-3x10	3,0	4,0	4,5	10,0	0,2	50	2	51,04 €
EXN1-M16-0103-3x12	3,0	4,0	4,5	12,0	0,2	50	2	51,04 €
EXN1-M16-0103-3x15	3,0	4,0	4,5	15,0	0,2	54	2	52,55 €
EXN1-M16-0103-3x20	3,0	4,0	4,5	20,0	0,2	54	2	52,55 €
EXN1-M16-0103-3x25	3,0	4,0	4,5	25,0	0,2	60	2	54,02 €
EXN1-M16-0103-3x30	3,0	4,0	4,5	30,0	0,2	70	2	57,03 €
EXN1-M16-0103-3x35	3,0	4,0	4,5	35,0	0,2	80	2	69,03 €
EXN1-M16-0103-3x40	3,0	4,0	4,5	40,0	0,2	80	2	69,03 €
EXN1-M16-0103-3x45	3,0	4,0	4,5	45,0	0,2	90	2	75,04 €

Cutting data Page 37+38

Overview Cutting data

Material	Cutting data									
Dimension		Ø 0,8x2			Ø 0,8x12			Ø 1x2		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,05xD	ae= 0,06xD	ae= 0,03xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,016	0,020	0,022	0,012	0,015	0,017	0,025	0,030	0,035
Aluminium, alloyed < 600 N/mm	480 m/min	0,016	0,020	0,022	0,012	0,015	0,017	0,025	0,030	0,035
Aluminium, casted < 600 N/mm	450 m/min	0,015	0,018	0,021	0,011	0,014	0,016	0,022	0,027	0,032
Copper	220 m/min	0,014	0,016	0,020	0,010	0,013	0,015	0,019	0,024	0,029
Brass	220 m/min	0,014	0,016	0,020	0,010	0,013	0,015	0,019	0,024	0,029
Plastics	350 m/min	0,015	0,016	0,021	0,011	0,014	0,016	0,019	0,024	0,029

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 1x30			Ø 1,2x5			Ø 1,2x20		
		ae= 1xD ap= 0,01xD	ae= 0,015xD ap= L2max	ae= 0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD ap= L2max	ae= 0,1xD	ae= 1xD ap= 0,03xD	ae= 0,04xD ap= L2max	ae= 0,015xD
Aluminium, alloyed <500 N/mm	500 m/min	0,010	0,015	0,020	0,025	0,030	0,035	0,020	0,025	0,030
Aluminium, alloyed < 600 N/mm	480 m/min	0,010	0,015	0,020	0,025	0,030	0,035	0,020	0,025	0,030
Aluminium, casted < 600 N/mm	450 m/min	0,008	0,013	0,017	0,022	0,027	0,032	0,017	0,022	0,027
Copper	220 m/min	0,006	0,011	0,014	0,019	0,024	0,029	0,014	0,019	0,024
Brass	220 m/min	0,006	0,011	0,014	0,019	0,024	0,029	0,014	0,019	0,024
Plastics	350 m/min	0,006	0,011	0,014	0,019	0,024	0,029	0,014	0,019	0,024

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 1,5x4			Ø 1,5x30			Ø 1,8x8		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,02xD	ae= 0,03xD	ae= 0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,035	0,015	0,020	0,025	0,030	0,035	0,040
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,035	0,015	0,020	0,025	0,030	0,035	0,040
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,027	0,032	0,013	0,017	0,022	0,027	0,031	0,035
Copper	220 m/min	0,019	0,024	0,029	0,011	0,014	0,019	0,024	0,027	0,030
Brass	220 m/min	0,019	0,024	0,029	0,011	0,014	0,019	0,024	0,027	0,030
Plastics	350 m/min	0,019	0,024	0,029	0,011	0,014	0,019	0,024	0,027	0,030

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Overview Cutting data

KL-MASTERS High-Performance Tools

Material	Cutting data									
Dimension		Ø 1,8x20			Ø 2x4			Ø 2x40		
		ae= 1xD ap= 0,1xD	ae= 0,13xD	ae= 0,05xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,01xD	ae= 0,015xD	ae= 0,01xD
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,035	0,030	0,035	0,040	0,020	0,025	0,030
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,035	0,030	0,035	0,040	0,020	0,025	0,030
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,026	0,030	0,027	0,031	0,035	0,017	0,021	0,025
Copper	220 m/min	0,019	0,022	0,025	0,024	0,027	0,030	0,014	0,017	0,020
Brass	220 m/min	0,019	0,022	0,025	0,024	0,027	0,030	0,014	0,017	0,020
Plastics	350 m/min	0,019	0,022	0,025	0,024	0,027	0,030	0,014	0,017	0,020

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 2,5x15			Ø 2,5x30			Ø 3x6		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,07xD	ae= 0,09xD	ae= 0,04xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,030	0,035	0,040	0,025	0,030	0,035	0,033	0,038	0,043
Aluminium, alloyed < 600 N/mm	480 m/min	0,030	0,035	0,040	0,025	0,030	0,035	0,033	0,038	0,043
Aluminium, casted < 600 N/mm	450 m/min	0,027	0,031	0,035	0,022	0,026	0,030	0,030	0,034	0,038
Copper	220 m/min	0,024	0,027	0,030	0,019	0,022	0,025	0,027	0,030	0,033
Brass	220 m/min	0,024	0,027	0,030	0,019	0,022	0,025	0,027	0,030	0,033
Plastics	350 m/min	0,024	0,027	0,030	0,019	0,022	0,025	0,027	0,030	0,033

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 3x45								
		ae= 1xD ap= 0,04xD	ae= 0,05xD	ae= 0,02xD						
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,035						
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,035						
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,026	0,030						
Copper	220 m/min	0,019	0,022	0,025						
Brass	220 m/min	0,019	0,022	0,025						
Plastics	350 m/min	0,019	0,022	0,025						

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

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KL-MASTERS
High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,30mm	• 30° Helical pitch • High Performance	

At cooperation with:

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0143	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0143-1x2	1,0	4,0	1,0	2,0	0,3	50	2	46,53 €
EXN1-M16-0143-1x3	1,0	4,0	1,0	3,0	0,3	50	2	46,53 €
EXN1-M16-0143-1x4	1,0	4,0	1,0	4,0	0,3	50	2	46,53 €
EXN1-M16-0143-1x5	1,0	4,0	1,0	5,0	0,3	50	2	46,53 €
EXN1-M16-0143-1x6	1,0	4,0	1,0	6,0	0,3	50	2	46,53 €
EXN1-M16-0143-1x8	1,0	4,0	1,0	8,0	0,3	50	2	48,03 €
EXN1-M16-0143-1x10	1,0	4,0	1,0	10,0	0,3	50	2	49,53 €
EXN1-M16-0143-1x12	1,0	4,0	1,0	12,0	0,3	54	2	51,04 €
EXN1-M16-0143-1x15	1,0	4,0	1,0	15,0	0,3	60	2	54,02 €
EXN1-M16-0143-1x20	1,0	4,0	1,0	20,0	0,3	60	2	55,52 €
EXN1-M16-0143-1x25	1,0	4,0	1,0	25,0	0,3	70	2	57,03 €
EXN1-M16-0143-1x30	1,0	4,0	1,0	30,0	0,3	70	2	58,53 €
EXN1-M16-0143-1,2x5	1,2	4,0	1,2	5,0	0,3	50	2	49,53 €
EXN1-M16-0143-1,2x10	1,2	4,0	1,2	10,0	0,3	50	2	49,53 €
EXN1-M16-0143-1,2x15	1,2	4,0	1,2	15,0	0,3	54	2	52,55 €
EXN1-M16-0143-1,2x20	1,2	4,0	1,2	20,0	0,3	60	2	54,02 €
EXN1-M16-0143-1,5x4	1,5	4,0	1,5	4,0	0,3	50	2	48,03 €
EXN1-M16-0143-1,5x6	1,5	4,0	1,5	6,0	0,3	50	2	48,03 €
EXN1-M16-0143-1,5x8	1,5	4,0	1,5	8,0	0,3	50	2	48,03 €
EXN1-M16-0143-1,5x10	1,5	4,0	1,5	10,0	0,3	50	2	48,03 €
EXN1-M16-0143-1,5x12	1,5	4,0	1,5	12,0	0,3	54	2	51,04 €
EXN1-M16-0143-1,5x15	1,5	4,0	1,5	15,0	0,3	54	2	51,04 €
EXN1-M16-0143-1,5x20	1,5	4,0	1,5	20,0	0,3	60	2	54,02 €
EXN1-M16-0143-1,5x25	1,5	4,0	1,5	25,0	0,3	60	2	54,02 €
EXN1-M16-0143-1,5x30	1,5	4,0	1,5	30,0	0,3	70	2	57,03 €

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NExus PRO - Formmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,30mm	• 30° Helical pitch • High Performance	

At cooperation with: H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Article-Code EXN1-M16-0143	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0143-1,8x8	1,8	4,0	1,8	8,0	0,3	50	2	49,53 €
EXN1-M16-0143-1,8x10	1,8	4,0	1,8	10,0	0,3	50	2	49,53 €
EXN1-M16-0143-1,8x15	1,8	4,0	1,8	15,0	0,3	50	2	49,53 €
EXN1-M16-0143-1,8x20	1,8	4,0	1,8	20,0	0,3	54	2	52,55 €
EXN1-M16-0143-2x4	2,0	4,0	2,0	4,0	0,3	50	2	48,03 €
EXN1-M16-0143-2x6	2,0	4,0	2,0	6,0	0,3	50	2	48,03 €
EXN1-M16-0143-2x8	2,0	4,0	2,0	8,0	0,3	50	2	48,03 €
EXN1-M16-0143-2x10	2,0	4,0	2,0	10,0	0,3	50	2	48,03 €
EXN1-M16-0143-2x12	2,0	4,0	2,0	12,0	0,3	54	2	53,95 €
EXN1-M16-0143-2x15	2,0	4,0	2,0	15,0	0,3	54	2	51,04 €
EXN1-M16-0143-2x20	2,0	4,0	2,0	20,0	0,3	60	2	52,55 €
EXN1-M16-0143-2x25	2,0	4,0	2,0	25,0	0,3	70	2	54,02 €
EXN1-M16-0143-2x30	2,0	4,0	2,0	30,0	0,3	70	2	54,02 €
EXN1-M16-0143-2x35	2,0	4,0	2,0	35,0	0,3	80	2	72,03 €
EXN1-M16-0143-2x40	2,0	4,0	2,0	40,0	0,3	80	2	72,03 €
EXN1-M16-0143-2,5x15	2,5	4,0	2,5	15,0	0,3	54	2	51,04 €
EXN1-M16-0143-2,5x20	2,5	4,0	2,5	20,0	0,3	54	2	51,04 €
EXN1-M16-0143-2,5x25	2,5	4,0	2,5	25,0	0,3	60	2	54,02 €
EXN1-M16-0143-2,5x30	2,5	4,0	2,5	30,0	0,3	70	2	57,03 €
EXN1-M16-0143-3x6	3,0	4,0	4,5	6,0	0,3	50	2	51,04 €
EXN1-M16-0143-3x8	3,0	4,0	4,5	8,0	0,3	50	2	51,04 €
EXN1-M16-0143-3x10	3,0	4,0	4,5	10,0	0,3	50	2	51,04 €
EXN1-M16-0143-3x12	3,0	4,0	4,5	12,0	0,3	50	2	51,04 €
EXN1-M16-0143-3x15	3,0	4,0	4,5	15,0	0,3	54	2	52,55 €
EXN1-M16-0143-3x20	3,0	4,0	4,5	20,0	0,3	54	2	52,55 €
EXN1-M16-0143-3x25	3,0	4,0	4,5	25,0	0,3	60	2	54,02 €
EXN1-M16-0143-3x30	3,0	4,0	4,5	30,0	0,3	70	2	57,03 €
EXN1-M16-0143-3x35	3,0	4,0	4,5	35,0	0,3	80	2	69,03 €
EXN1-M16-0143-3x40	3,0	4,0	4,5	40,0	0,3	80	2	69,03 €
EXN1-M16-0143-3x45	3,0	4,0	4,5	45,0	0,3	90	2	75,04 €

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Overview Cutting data

KL-MASTERS High-Performance Tools

Material	Cutting data									
Dimension		Ø 1x2			Ø 1x30			Ø 1,2x5		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,01xD	ae= 0,015xD	ae= 0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,035	0,010	0,015	0,020	0,025	0,030	0,035
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,035	0,010	0,015	0,020	0,025	0,030	0,035
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,027	0,032	0,008	0,013	0,017	0,022	0,027	0,032
Copper	220 m/min	0,019	0,024	0,029	0,006	0,011	0,014	0,019	0,024	0,029
Brass	220 m/min	0,019	0,024	0,029	0,006	0,011	0,014	0,019	0,024	0,029
Plastics	350 m/min	0,019	0,024	0,029	0,006	0,011	0,014	0,019	0,024	0,029

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 1,2x20			Ø 1,5x4			Ø 1,5x30		
		ae= 1xD ap= 0,03xD	ae= 0,04xD	ae= 0,015xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,02xD	ae= 0,03xD	ae= 0,01xD
Aluminium, alloyed <500 N/mm	500 m/min	0,020	0,025	0,030	0,025	0,030	0,035	0,015	0,020	0,025
Aluminium, alloyed < 600 N/mm	480 m/min	0,020	0,025	0,030	0,025	0,030	0,035	0,015	0,020	0,025
Aluminium, casted < 600 N/mm	450 m/min	0,017	0,022	0,027	0,022	0,027	0,032	0,013	0,017	0,022
Copper	220 m/min	0,014	0,019	0,024	0,019	0,024	0,029	0,011	0,014	0,019
Brass	220 m/min	0,014	0,019	0,024	0,019	0,024	0,029	0,011	0,014	0,019
Plastics	350 m/min	0,014	0,019	0,024	0,019	0,024	0,029	0,011	0,014	0,019

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 1,8x8			Ø 1,8x20			Ø 2x4		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,1xD	ae= 0,13xD	ae= 0,05xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,030	0,035	0,040	0,025	0,030	0,035	0,030	0,035	0,040
Aluminium, alloyed < 600 N/mm	480 m/min	0,030	0,035	0,040	0,025	0,030	0,035	0,030	0,035	0,040
Aluminium, casted < 600 N/mm	450 m/min	0,027	0,031	0,035	0,022	0,026	0,030	0,027	0,031	0,035
Copper	220 m/min	0,024	0,027	0,030	0,019	0,022	0,025	0,024	0,027	0,030
Brass	220 m/min	0,024	0,027	0,030	0,019	0,022	0,025	0,024	0,027	0,030
Plastics	350 m/min	0,024	0,027	0,030	0,019	0,022	0,025	0,024	0,027	0,030

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Overview Cutting data

KL-MASTERS High-Performance Tools

Material	Cutting data									
Dimension		Ø 2x40			Ø 2,5x15			Ø 2,5x30		
		ae= 1xD ap= 0,01xD	ae= 0,015xD ap= L2max	ae= 0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD ap= L2max	ae= 0,1xD	ae= 1xD ap= 0,07xD	ae= 0,09xD ap= L2max	ae= 0,04xD
Aluminium, alloyed <500 N/mm	500 m/min	0,020	0,025	0,030	0,030	0,035	0,040	0,025	0,030	0,035
Aluminium, alloyed < 600 N/mm	480 m/min	0,020	0,025	0,030	0,030	0,035	0,040	0,025	0,030	0,035
Aluminium, casted < 600 N/mm	450 m/min	0,017	0,021	0,025	0,027	0,031	0,035	0,022	0,026	0,030
Copper	220 m/min	0,014	0,017	0,020	0,024	0,027	0,030	0,019	0,022	0,025
Brass	220 m/min	0,014	0,017	0,020	0,024	0,027	0,030	0,019	0,022	0,025
Plastics	350 m/min	0,014	0,017	0,020	0,024	0,027	0,030	0,019	0,022	0,025

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 3x6			Ø 3x45					
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,04xD	ae= 0,05xD	ae= 0,02xD			
Aluminium, alloyed <500 N/mm	500 m/min	0,033	0,038	0,043	0,025	0,030	0,035			
Aluminium, alloyed < 600 N/mm	480 m/min	0,033	0,038	0,043	0,025	0,030	0,035			
Aluminium, casted < 600 N/mm	450 m/min	0,030	0,034	0,038	0,022	0,026	0,030			
Copper	220 m/min	0,027	0,030	0,033	0,019	0,022	0,025			
Brass	220 m/min	0,027	0,030	0,033	0,019	0,022	0,025			
Plastics	350 m/min	0,027	0,030	0,033	0,019	0,022	0,025			

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

NExus PRO - Formmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,50mm	• 30° Helical pitch • High Performance	

At cooperation with: H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0183	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0183-1,5x4	1,5	4,0	1,5	4,0	0,5	50	2	48,03 €
EXN1-M16-0183-1,5x6	1,5	4,0	1,5	6,0	0,5	50	2	48,03 €
EXN1-M16-0183-1,5x8	1,5	4,0	1,5	8,0	0,5	50	2	48,03 €
EXN1-M16-0183-1,5x10	1,5	4,0	1,5	10,0	0,5	50	2	48,03 €
EXN1-M16-0183-1,5x12	1,5	4,0	1,5	12,0	0,5	54	2	51,04 €
EXN1-M16-0183-1,5x15	1,5	4,0	1,5	15,0	0,5	54	2	51,04 €
EXN1-M16-0183-1,5x20	1,5	4,0	1,5	20,0	0,5	60	2	54,02 €
EXN1-M16-0183-1,5x25	1,5	4,0	1,5	25,0	0,5	60	2	54,02 €
EXN1-M16-0183-1,5x30	1,5	4,0	1,5	30,0	0,5	70	2	57,03 €
EXN1-M16-0183-1,8x8	1,8	4,0	1,8	8,0	0,5	50	2	49,53 €
EXN1-M16-0183-1,8x10	1,8	4,0	1,8	10,0	0,5	50	2	49,53 €
EXN1-M16-0183-1,8x15	1,8	4,0	1,8	15,0	0,5	50	2	49,53 €
EXN1-M16-0183-1,8x20	1,8	4,0	1,8	20,0	0,5	54	2	52,55 €
EXN1-M16-0183-2x4	2,0	4,0	2,0	4,0	0,5	50	2	48,03 €
EXN1-M16-0183-2x6	2,0	4,0	2,0	6,0	0,5	50	2	48,03 €
EXN1-M16-0183-2x8	2,0	4,0	2,0	8,0	0,5	50	2	48,03 €
EXN1-M16-0183-2x10	2,0	4,0	2,0	10,0	0,5	50	2	48,03 €
EXN1-M16-0183-2x12	2,0	4,0	2,0	12,0	0,5	54	2	51,04 €
EXN1-M16-0183-2x15	2,0	4,0	2,0	15,0	0,5	54	2	51,04 €
EXN1-M16-0183-2x20	2,0	4,0	2,0	20,0	0,5	60	2	52,55 €
EXN1-M16-0183-2x25	2,0	4,0	2,0	25,0	0,5	70	2	54,02 €
EXN1-M16-0183-2x30	2,0	4,0	2,0	30,0	0,5	70	2	54,02 €
EXN1-M16-0183-2x35	2,0	4,0	2,0	35,0	0,5	80	2	72,03 €
EXN1-M16-0183-2x40	2,0	4,0	2,0	40,0	0,5	80	2	72,03 €
Cutting data Page 45+46								

NExus PRO - Formmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• HA-Shank • Corner radius 0,50mm	• 30° Helical pitch • High Performance	

At cooperation with: H&Y

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Radius tolerance: 0/-0.003 mm
- Multipass milling of 3D contours
- Polished chip space for ideal chip evacuation
- Defined microbevel for support and stabilization
- Optimized face geometry for excellent surfaces and highest dimensional

Article-Code EXN1-M16-0183	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	List price at Euro
HA-Shank								
EXN1-M16-0183-2,5x12	2,5	4,0	2,5	12,0	0,5	54	2	**52,46 €**
EXN1-M16-0183-2,5x15	2,5	4,0	2,5	15,0	0,5	54	2	**51,04 €**
EXN1-M16-0183-2,5x20	2,5	4,0	2,5	20,0	0,5	54	2	**51,04 €**
EXN1-M16-0183-2,5x25	2,5	4,0	2,5	25,0	0,5	60	2	**54,02 €**
EXN1-M16-0183-2,5x30	2,5	4,0	2,5	30,0	0,5	70	2	**57,03 €**
EXN1-M16-0183-3x6	3,0	4,0	4,5	6,0	0,5	50	2	**51,04 €**
EXN1-M16-0183-3x8	3,0	4,0	4,5	8,0	0,5	50	2	**51,04 €**
EXN1-M16-0183-3x10	3,0	4,0	4,5	10,0	0,5	50	2	**51,04 €**
EXN1-M16-0183-3x12	3,0	4,0	4,5	12,0	0,5	50	2	**51,04 €**
EXN1-M16-0183-3x15	3,0	4,0	4,5	15,0	0,5	54	2	**52,55 €**
EXN1-M16-0183-3x20	3,0	4,0	4,5	20,0	0,5	54	2	**52,55 €**
EXN1-M16-0183-3x25	3,0	4,0	4,5	25,0	0,5	60	2	**54,02 €**
EXN1-M16-0183-3x30	3,0	4,0	4,5	30,0	0,5	70	2	**57,03 €**
EXN1-M16-0183-3x35	3,0	4,0	4,5	35,0	0,5	80	2	**69,03 €**
EXN1-M16-0183-3x40	3,0	4,0	4,5	40,0	0,5	80	2	**69,03 €**
EXN1-M16-0183-3x45	3,0	4,0	4,5	45,0	0,5	90	2	**75,04 €**
Cutting data Page 45+46								

Overview Cutting data

KL-MASTERS High-Performance Tools

Material	Cutting data									
Dimension		Ø 1,5x4			Ø 1,5x30			Ø 1,8x8		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,02xD	ae= 0,03xD	ae= 0,01xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,035	0,015	0,020	0,025	0,030	0,035	0,040
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,035	0,015	0,020	0,025	0,030	0,035	0,040
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,027	0,032	0,013	0,017	0,022	0,027	0,031	0,035
Copper	220 m/min	0,019	0,024	0,029	0,011	0,014	0,019	0,024	0,027	0,030
Brass	220 m/min	0,019	0,024	0,029	0,011	0,014	0,019	0,024	0,027	0,030
Plastics	350 m/min	0,019	0,024	0,029	0,011	0,014	0,019	0,024	0,027	0,030

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 1,8x20			Ø 2x4			Ø 2x40		
		ae= 1xD ap= 0,01xD	ae= 0,13xD	ae= 0,05xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,01xD	ae= 0,015xD	ae= 0,01xD
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,035	0,030	0,035	0,040	0,020	0,025	0,030
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,035	0,030	0,035	0,040	0,020	0,025	0,030
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,026	0,030	0,027	0,031	0,035	0,017	0,021	0,025
Copper	220 m/min	0,019	0,022	0,025	0,024	0,027	0,030	0,014	0,017	0,020
Brass	220 m/min	0,019	0,022	0,025	0,024	0,027	0,030	0,014	0,017	0,020
Plastics	350 m/min	0,019	0,022	0,025	0,024	0,027	0,030	0,014	0,017	0,020

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Material	Cutting data									
Dimension		Ø 2,5x12			Ø 2,5x30			Ø 3x6		
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD	ae= 1xD ap= 0,07xD	ae= 0,09xD	ae= 0,04xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 0,1xD
Aluminium, alloyed <500 N/mm	500 m/min	0,030	0,035	0,040	0,025	0,030	0,035	0,033	0,038	0,043
Aluminium, alloyed < 600 N/mm	480 m/min	0,030	0,035	0,040	0,025	0,030	0,035	0,033	0,038	0,043
Aluminium, casted < 600 N/mm	450 m/min	0,027	0,031	0,035	0,022	0,026	0,030	0,030	0,034	0,038
Copper	220 m/min	0,024	0,027	0,030	0,019	0,022	0,025	0,027	0,030	0,033
Brass	220 m/min	0,024	0,027	0,030	0,019	0,022	0,025	0,027	0,030	0,033
Plastics	350 m/min	0,024	0,027	0,030	0,019	0,022	0,025	0,027	0,030	0,033

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

Overview Cutting data

Material	Cutting data									
Dimension			Ø 3x45							
		ae= 1xD ap= 0,04xD	ae= 0,05xD	ae= 0,02xD						
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,035						
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,035						
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,026	0,030						
Copper	220 m/min	0,019	0,022	0,025						
Brass	220 m/min	0,019	0,022	0,025						
Plastics	350 m/min	0,019	0,022	0,025						

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap, and ae depending on the given values.
ae/ap (max) = 0.5x corner radius!

NExus PRO - Performmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharp edged • HA-Shank	• 30° Helical pitch • High Performance	*At cooperation with:* H&S

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Tolerance Cutting Diameter: -0.001/-0.006 mm
- AlphaSlide Rainbow High Performance Coating
- Polished chip space for ideal chip evacuation
- Optimized face geometry for excellent surfaces
- Defined microbevel for support and stabilization

Article-Code EXN1-M15-0003	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Total length mm	Z	List price at Euro
HA-Shank							
EXN1-M15-0003-0,2x0,5	0,2	4,0	0,3	0,5	45	2	56,34 €
EXN1-M15-0003-0,2x1	0,2	4,0	0,3	1,0	45	2	56,34 €
EXN1-M15-0003-0,2x1,5	0,2	4,0	0,3	1,5	45	2	56,34 €
EXN1-M15-0003-0,3x1	0,3	4,0	0,4	1,0	45	2	53,03 €
EXN1-M15-0003-0,3x2	0,3	4,0	0,4	2,0	45	2	53,03 €
EXN1-M15-0003-0,4x2	0,4	4,0	0,6	2,0	45	2	53,03 €
EXN1-M15-0003-0,4x3	0,4	4,0	0,6	3,0	45	2	53,03 €
EXN1-M15-0003-0,5x2	0,5	4,0	0,7	2,0	45	2	43,09 €
EXN1-M15-0003-0,5x4	0,5	4,0	0,7	4,0	45	2	43,09 €
EXN1-M15-0003-0,5x6	0,5	4,0	0,7	6,0	45	2	43,09 €
EXN1-M15-0003-0,6x2	0,6	4,0	0,9	2,0	45	2	43,09 €
EXN1-M15-0003-0,6x4	0,6	4,0	0,9	4,0	45	2	43,09 €
EXN1-M15-0003-0,6x6	0,6	4,0	0,9	6,0	45	2	43,09 €
EXN1-M15-0003-0,7x2	0,7	4,0	1,0	2,0	45	2	43,09 €
EXN1-M15-0003-0,7x4	0,7	4,0	1,0	4,0	45	2	43,09 €
EXN1-M15-0003-0,8x4	0,8	4,0	1,2	4,0	45	2	45,49 €
EXN1-M15-0003-0,8x6	0,8	4,0	1,2	6,0	45	2	45,49 €
EXN1-M15-0003-0,8x8	0,8	4,0	1,2	8,0	45	2	45,49 €
EXN1-M15-0003-1x4	1,0	4,0	1,5	4,0	45	2	41,94 €
EXN1-M15-0003-1x6	1,0	4,0	1,5	6,0	45	2	41,94 €
EXN1-M15-0003-1x8	1,0	4,0	1,5	8,0	45	2	42,86 €
EXN1-M15-0003-1x10	1,0	4,0	1,5	10,0	45	2	42,86 €
EXN1-M15-0003-1x12	1,0	4,0	1,5	12,0	45	2	44,23 €
EXN1-M15-0003-1x14	1,0	4,0	1,5	14,0	45	2	44,23 €
Cutting data Page 50+51							

NExus PRO - Performmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharp edged • HA-Shank	• 30° Helical pitch • High Performance	

At cooperation with: H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Tolerance Cutting Diameter: -0.001/-0.006 mm
- AlphaSlide Rainbow High Performance Coating
- Polished chip space for ideal chip evacuation
- Optimized face geometry for excellent surfaces
- Defined microbevel for support and stabilization

Article-Code EXN1-M15-0003	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Total length mm	Z	List price at Euro
HA-Shank							
EXN1-M15-0003-1x16	1,0	4,0	1,5	16,0	50	2	**45,83 €**
EXN1-M15-0003-1x25	1,0	4,0	1,5	25,0	70	2	**54,40 €**
EXN1-M15-0003-1,2x6	1,2	4,0	1,8	6,0	45	2	**46,40 €**
EXN1-M15-0003-1,2x8	1,2	4,0	1,8	8,0	45	2	**46,40 €**
EXN1-M15-0003-1,2x10	1,2	4,0	1,8	10,0	45	2	**47,77 €**
EXN1-M15-0003-1,4x6	1,4	4,0	2,1	6,0	45	2	**46,74 €**
EXN1-M15-0003-1,4x8	1,4	4,0	2,1	8,0	45	2	**46,74 €**
EXN1-M15-0003-1,5x6	1,5	4,0	2,3	6,0	45	2	**44,57 €**
EXN1-M15-0003-1,5x8	1,5	4,0	2,3	8,0	45	2	**44,57 €**
EXN1-M15-0003-1,5x10	1,5	4,0	2,3	10,0	45	2	**45,49 €**
EXN1-M15-0003-1,5x12	1,5	4,0	2,3	12,0	45	2	**45,49 €**
EXN1-M15-0003-1,5x14	1,5	4,0	2,3	14,0	50	2	**47,89 €**
EXN1-M15-0003-1,5x16	1,5	4,0	2,3	16,0	50	2	**47,89 €**
EXN1-M15-0003-1,5x20	1,5	4,0	2,3	20,0	54	2	**50,97 €**
EXN1-M15-0003-1,5x25	1,5	4,0	2,3	25,0	70	2	**55,09 €**
EXN1-M15-0003-1,6x6	1,6	4,0	2,4	6,0	45	2	**44,57 €**
EXN1-M15-0003-1,6x10	1,6	4,0	2,4	10,0	45	2	**44,57 €**
EXN1-M15-0003-1,8x6	1,8	4,0	2,7	6,0	45	2	**44,57 €**
EXN1-M15-0003-1,8x8	1,8	4,0	2,7	8,0	45	2	**44,57 €**
EXN1-M15-0003-1,8x10	1,8	4,0	2,7	10,0	45	2	**45,37 €**
EXN1-M15-0003-2x6	2,0	4,0	3,0	6,0	45	2	**44,57 €**
EXN1-M15-0003-2x8	2,0	4,0	3,0	8,0	45	2	**44,57 €**
EXN1-M15-0003-2x10	2,0	4,0	3,0	10,0	45	2	**45,49 €**
EXN1-M15-0003-2x12	2,0	4,0	3,0	12,0	45	2	**47,89 €**
Cutting data Page 50+51							

NExus PRO - Performmaker Micro

KL-MASTERS High-Performance Tools

COOLING		HSC	STRATEGY
TOLERANCE	d04	Z2 Micro	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharp edged • HA-Shank	• 30° Helical pitch • High Performance	

At cooperation with: H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	220 m/min	220 m/min	350 m/min

Description:

- For use in HSC milling
- Tolerance Cutting Diameter: -0.001/-0.006 mm
- AlphaSlide Rainbow High Performance Coating
- Polished chip space for ideal chip evacuation
- Optimized face geometry for excellent surfaces
- Defined microbevel for support and stabilization

Article-Code EXN1-M15-0003	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Total length mm	Z	List price at Euro
HA-Shank							
EXN1-M15-0003-2x14	2,0	4,0	3,0	14,0	50	2	47,89 €
EXN1-M15-0003-2x16	2,0	4,0	3,0	16,0	50	2	47,89 €
EXN1-M15-0003-2x20	2,0	4,0	3,0	20,0	54	2	51,09 €
EXN1-M15-0003-2x25	2,0	4,0	3,0	25,0	60	2	55,09 €
EXN1-M15-0003-2x30	2,0	4,0	3,0	30,0	70	2	58,29 €
EXN1-M15-0003-2x35	2,0	4,0	3,0	35,0	80	2	59,89 €
EXN1-M15-0003-2,5x8	2,5	4,0	3,7	8,0	45	2	45,49 €
EXN1-M15-0003-2,5x12	2,5	4,0	3,7	12,0	45	2	45,49 €
EXN1-M15-0003-2,5x16	2,5	4,0	3,7	16,0	50	2	48,00 €
EXN1-M15-0003-2,5x20	2,5	4,0	3,7	20,0	54	2	50,97 €
EXN1-M15-0003-2,5x25	2,5	4,0	3,7	25,0	60	2	56,34 €
EXN1-M15-0003-2,5x30	2,5	4,0	3,7	30,0	70	2	59,89 €
Cutting data Page 50+51							

Overview Cutting data

KL-MASTERS High-Performance Tools

Material	Cutting data										
Dimension		Ø 0,2x0,5		Ø 0,2x1,5		Ø 0,3x1		Ø 0,3x2		Ø 0,4x2	
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,18xD	ae= 0,2xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,18xD	ae= 0,23xD	ae= 1xD ap= 0,2xD	ae= 0,25xD
Aluminium, alloyed <500 N/mm	500 m/min	0,008	0,012	0,007	0,011	0,012	0,016	0,011	0,015	0,012	0,016
Aluminium, alloyed < 600 N/mm	480 m/min	0,008	0,012	0,007	0,011	0,012	0,016	0,011	0,015	0,012	0,016
Aluminium, casted < 600 N/mm	450 m/min	0,007	0,011	0,006	0,010	0,011	0,015	0,010	0,014	0,011	0,015
Copper	220 m/min	0,006	0,010	0,005	0,009	0,010	0,014	0,009	0,013	0,010	0,014
Brass	220 m/min	0,006	0,010	0,005	0,009	0,010	0,014	0,009	0,013	0,010	0,014
Plastics	350 m/min	0,007	0,011	0,006	0,010	0,011	0,015	0,010	0,014	0,011	0,014

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap and ae depending on the given values.

Material	Cutting data										
Dimension		Ø 0,4x3		Ø 0,5x2		Ø 0,5x6		Ø 0,6x2		Ø 0,6x6	
		ae= 1xD ap= 0,18xD	ae= 0,23xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,1xD	ae= 0,12xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,1xD	ae= 0,12xD
Aluminium, alloyed <500 N/mm	500 m/min	0,011	0,015	0,016	0,020	0,013	0,017	0,016	0,020	0,013	0,017
Aluminium, alloyed < 600 N/mm	480 m/min	0,011	0,015	0,016	0,020	0,013	0,017	0,016	0,020	0,013	0,017
Aluminium, casted < 600 N/mm	450 m/min	0,010	0,014	0,015	0,018	0,012	0,015	0,015	0,018	0,012	0,015
Copper	220 m/min	0,009	0,013	0,014	0,016	0,011	0,013	0,014	0,016	0,011	0,013
Brass	220 m/min	0,009	0,013	0,014	0,016	0,011	0,013	0,014	0,016	0,011	0,013
Plastics	350 m/min	0,010	0,014	0,015	0,016	0,012	0,013	0,015	0,016	0,012	0,013

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap and ae depending on the given values.

Material	Cutting data										
Dimension		Ø 0,7x2		Ø 0,7x4		Ø 0,8x4		Ø 0,8x8		Ø 1x4	
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,18xD	ae= 0,23xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,16xD	ae= 0,2xD	ae= 1xD ap= 0,2xD	ae= 0,25xD
Aluminium, alloyed <500 N/mm	500 m/min	0,016	0,020	0,015	0,018	0,018	0,022	0,016	0,020	0,025	0,030
Aluminium, alloyed < 600 N/mm	480 m/min	0,016	0,020	0,015	0,018	0,018	0,022	0,016	0,020	0,025	0,030
Aluminium, casted < 600 N/mm	450 m/min	0,015	0,018	0,014	0,016	0,016	0,020	0,014	0,018	0,022	0,027
Copper	220 m/min	0,014	0,016	0,013	0,014	0,014	0,018	0,012	0,016	0,019	0,024
Brass	220 m/min	0,014	0,016	0,013	0,014	0,014	0,018	0,012	0,016	0,019	0,024
Plastics	350 m/min	0,015	0,016	0,014	0,014	0,014	0,018	0,012	0,016	0,019	0,024

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap and ae depending on the given values.

Overview Cutting data

KL-MASTERS High-Performance Tools

Material	Cutting data										
Dimension		Ø 1x25		Ø 1,2x6		Ø 1,2x10		Ø 1,4x6		Ø 1,4x8	
		ae= 1xD ap= 0,02xD	ae= 0,025xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,16xD	ae= 0,2xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,18xD	ae= 0,23xD
Aluminium, alloyed <500 N/mm	500 m/min	0,015	0,020	0,025	0,030	0,023	0,028	0,025	0,030	0,024	0,028
Aluminium, alloyed < 600 N/mm	480 m/min	0,015	0,020	0,025	0,030	0,023	0,028	0,025	0,030	0,024	0,028
Aluminium, casted < 600 N/mm	450 m/min	0,013	0,018	0,022	0,027	0,020	0,025	0,022	0,027	0,021	0,025
Copper	220 m/min	0,011	0,016	0,019	0,024	0,017	0,022	0,019	0,024	0,018	0,022
Brass	220 m/min	0,011	0,016	0,019	0,024	0,017	0,022	0,019	0,024	0,018	0,022
Plastics	350 m/min	0,011	0,016	0,019	0,024	0,017	0,022	0,019	0,024	0,018	0,022

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap and ae depending on the given values.

Material	Cutting data										
Dimension		Ø 1,5x6		Ø 1,5x25		Ø 1,6x6		Ø 1,6x10		Ø 1,8x6	
		ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,03xD	ae= 0,04xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,18xD	ae= 0,23xD	ae= 1xD ap= 0,2xD	ae= 0,25xD
Aluminium, alloyed <500 N/mm	500 m/min	0,025	0,030	0,018	0,023	0,030	0,035	0,028	0,033	0,030	0,035
Aluminium, alloyed < 600 N/mm	480 m/min	0,025	0,030	0,018	0,023	0,030	0,035	0,028	0,033	0,030	0,035
Aluminium, casted < 600 N/mm	450 m/min	0,022	0,027	0,015	0,002	0,027	0,031	0,025	0,030	0,027	0,031
Copper	220 m/min	0,019	0,024	0,012	0,017	0,024	0,027	0,022	0,027	0,024	0,027
Brass	220 m/min	0,019	0,024	0,012	0,017	0,024	0,027	0,022	0,027	0,024	0,027
Plastics	350 m/min	0,019	0,024	0,012	0,017	0,024	0,027	0,022	0,027	0,024	0,027

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap and ae depending on the given values.

Material	Cutting data										
Dimension		Ø 1,8x10		Ø 2x6		Ø 2x35		Ø 2,5x8		Ø 2,5x30	
		ae= 1xD ap= 0,18xD	ae= 0,23xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,02xD	ae= 0,025xD	ae= 1xD ap= 0,2xD	ae= 0,25xD	ae= 1xD ap= 0,06xD	ae= 0,08xD
Aluminium, alloyed <500 N/mm	500 m/min	0,028	0,033	0,030	0,035	0,018	0,023	0,035	0,040	0,023	0,028
Aluminium, alloyed < 600 N/mm	480 m/min	0,028	0,033	0,030	0,035	0,018	0,023	0,035	0,040	0,023	0,028
Aluminium, casted < 600 N/mm	450 m/min	0,025	0,030	0,027	0,031	0,015	0,020	0,030	0,035	0,020	0,025
Copper	220 m/min	0,022	0,027	0,024	0,027	0,012	0,017	0,025	0,030	0,017	0,022
Brass	220 m/min	0,022	0,027	0,024	0,027	0,012	0,017	0,025	0,030	0,017	0,022
Plastics	350 m/min	0,022	0,027	0,024	0,027	0,012	0,017	0,025	0,030	0,017	0,022

Note: Values in the table are the shortest and the longest overhang length of each dimension; please calculate fz, ap and ae depending on the given values.

NExus PRO - Chipmaker

KL-MASTERS High-Performance Tools

COOLING		TPC	STRATEGY
TOLERANCE	h6	Z4 3xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner radius • HA/HB-Shank	• 38° Helical pitch • Unequal tooth pitch	

At cooperation with: H&Y

Non-ferrous metal				
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass
520 m/min	500 m/min	480 m/min	220 m/min	220 m/min

Description:

- Chip breaker for short, defined chip length
- Reinforced face with 2 cutting edges to the center
- For roughing and finishing under TPC conditions
- Reinforced face with 2 cutting edges to the center
- Ideal chip evacuation, even with high radial depth of cutting
- Unequal tooth pitch combined with variable helical pitch for smooth running

Article-Code EXN1-M03-0033/0034			Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z		List price at Euro
	HA-Shank	HB-Shank								ae = 15% ap= 100%	
EXN1-M03-	0033-5	-	5,0	6,0	17	24	0,15	65	4	0,050	**59,85 €**
EXN1-M03-	0033-6	-	6,0	6,0	18	25	0,15	65	4	0,050	**59,85 €**
EXN1-M03-	0033-8	-	8,0	8,0	24	30	0,20	70	4	0,070	**71,72 €**
EXN1-M03-	0033-10	0034-10	10,0	10,0	30	35	0,20	80	4	0,080	**83,40 €**
EXN1-M03-	0033-12	0034-12	12,0	12,0	36	45	0,20	93	4	0,100	**119,97 €**
EXN1-M03-	0033-16	0034-16	16,0	16,0	48	55	0,30	110	4	0,140	**214,23 €**
EXN1-M03-	0033-20	0034-20	20,0	20,0	60	70	0,30	125	4	0,170	**329,90 €**

NExus PRO - Chipmaker

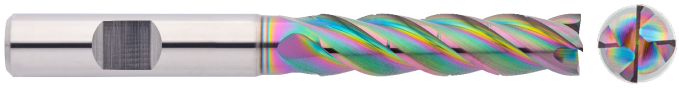
KL-MASTERS High-Performance Tools

COOLING		TPC	STRATEGY
TOLERANCE	h6	Z4 4xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner radius • HA/HB-Shank	• 38° Helical pitch • Unequal tooth pitch	*At cooperation with:* H&V

Non-ferrrous metal				
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass
520 m/min	500 m/min	480 m/min	220 m/min	220 m/min

Description:

- Chip breaker for short, defined chip length
- Reinforced face with 2 cutting edges to the center
- For roughing and finishing under TPC conditions
- Reinforced face with 2 cutting edges to the center
- Ideal chip evacuation, even with high radial depth of cutting
- Unequal tooth pitch combined with variable helical pitch for smooth running



Article-Code EXN1-M03-0043/0044			Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z		List price at Euro
	HA-Shank	HB-Shank								ae = 10% ap= 100%	
EXN1-M03-	0043-5	-	5,0	6,0	21	30	0,15	70	4	0,035	**69,57 €**
EXN1-M03-	0043-6	-	6,0	6,0	25	30	0,15	70	4	0,045	**69,57 €**
EXN1-M03-	0043-8	-	8,0	8,0	33	40	0,20	80	4	0,065	**85,43 €**
EXN1-M03-	0043-10	0044-10	10,0	10,0	41	50	0,20	90	4	0,080	**107,62 €**
EXN1-M03-	0043-12	0044-12	12,0	12,0	49	60	0,20	110	4	0,090	**142,29 €**
EXN1-M03-	0043-16	0044-16	16,0	16,0	65	80	0,30	130	4	0,130	**259,90 €**
EXN1-M03-	0043-20	0044-20	20,0	20,0	82	100	0,30	150	4	0,160	**381,00 €**

NExus PRO - Chipmaker

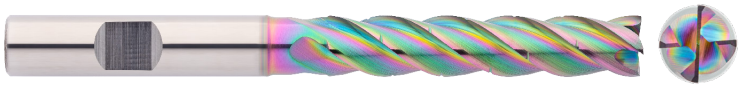
KL-MASTERS High-Performance Tools

COOLING		TPC	STRATEGY
TOLERANCE	h6	Z4 5xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner radius • HA/HB-Shank	• 38° Helical pitch • Unequal tooth pitch	*At cooperation with:* H&V

Non-ferrous metal				
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass
500 m/min	480 m/min	460 m/min	200 m/min	200 m/min

Description:

- Chip breaker for short, defined chip length
- Reinforced face with 2 cutting edges to the center
- For roughing and finishing under TPC conditions
- Reinforced face with 2 cutting edges to the center
- Ideal chip evacuation, even with high radial depth of cutting
- Unequal tooth pitch combined with variable helical pitch for smooth running



Article-Code EXN1-M03-0053/0054			Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z		List price at Euro
	HA-Shank	HB-Shank								ae = 7% ap= 100%	
EXN1-M03-	0053-5	-	5,0	6,0	26	36	0,15	75	4	0,030	**77,90 €**
EXN1-M03-	0053-6	-	6,0	6,0	31	36	0,15	75	4	0,045	**77,90 €**
EXN1-M03-	0053-8	-	8,0	8,0	41	48	0,20	90	4	0,060	**91,73 €**
EXN1-M03-	0053-10	0054-10	10,0	10,0	51	60	0,20	104	4	0,070	**122,85 €**
EXN1-M03-	0053-12	0054-12	12,0	12,0	61	72	0,20	120	4	0,085	**159,67 €**
EXN1-M03-	0053-16	0054-16	16,0	16,0	81	96	0,30	150	4	0,120	**308,56 €**
EXN1-M03-	0053-20	0054-20	20,0	20,0	102	120	0,30	175	4	0,150	**419,14 €**

NExus PRO - Slotmaker

KL-MASTERS
High-Performance Tools

COOLING			STRATEGY
TOLERANCE	h6	Z3 2xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner radius • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	

At cooperation with:

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	300 m/min

Description:

- For roughing, up to 2xD full slot
- For process reliable, helical diving and immersion
- Also ideally designed for trochoidal milling
- Special helical pitch for smooth running and soft cut
- Extra large chip chambers for an extreme chip volume
- Roughing teeth for the smallest chips in volume machining

Article-Code EXN1-M02-0023	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z			List price at Euro
HA-Shank								ae=1xD ap=2xD	ae=0.6xD ap=2xD	
EXN1-M02-0023-4	4,0	6,0	8	-	0,10	57	3	0,030	0,045	**54,89 €**
EXN1-M02-0023-5	5,0	6,0	9	-	0,20	57	3	0,045	0,065	**54,89 €**
EXN1-M02-0023-6	6,0	6,0	13	19	0,20	57	3	0,065	0,085	**54,89 €**
EXN1-M02-0023-8	8,0	8,0	19	25	0,20	63	3	0,085	0,100	**72,45 €**
EXN1-M02-0023-10	10,0	10,0	22	30	0,32	72	3	0,100	0,120	**94,00 €**
EXN1-M02-0023-12	12,0	12,0	26	36	0,32	83	3	0,120	0,140	**119,60 €**
EXN1-M02-0023-16	16,0	16,0	31	42	0,32	92	3	0,130	0,150	**187,53 €**
EXN1-M02-0023-20	20,0	20,0	41	52	0,50	104	3	0,160	0,200	**269,82 €**

KL-TOOLING PRÄZISIONSWERKZEUGE

NExus PRO - Slotmaker

KL-MASTERS High-Performance Tools

COOLING			STRATEGY
TOLERANCE	h6	Z3 2xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner radius • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	

At cooperation with: H&Y

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	300 m/min

Description:

- With central inner cooling
- For roughing, up to 2xD full slot
- Also ideally designed for trochoidal milling
- Special helical pitch for smooth running and soft cut
- Extra large chip chambers for an extreme chip volume
- Roughing teeth for the smallest chips in volume machining

Article-Code EXN1-M02-0123	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	ae=1xD ap=2xD	ae=0.6xD ap=2xD	List price at Euro
HA-Shank										
EXN1-M02-0123-4	4,0	6,0	8	-	0,10	57	3	0,030	0,045	**59,80 €**
EXN1-M02-0123-5	5,0	6,0	9	-	0,20	57	3	0,045	0,065	**59,80 €**
EXN1-M02-0123-6	6,0	6,0	13	19	0,20	57	3	0,065	0,085	**59,80 €**
EXN1-M02-0123-8	8,0	8,0	19	25	0,20	63	3	0,085	0,100	**78,25 €**
EXN1-M02-0123-10	10,0	10,0	22	30	0,32	72	3	0,100	0,120	**102,47 €**
EXN1-M02-0123-12	12,0	12,0	26	36	0,32	83	3	0,120	0,140	**129,65 €**
EXN1-M02-0123-16	16,0	16,0	31	42	0,32	92	3	0,130	0,150	**209,86 €**
EXN1-M02-0123-20	20,0	20,0	41	52	0,50	104	3	0,160	0,200	**299,54 €**

NExus PRO - Slotmaker

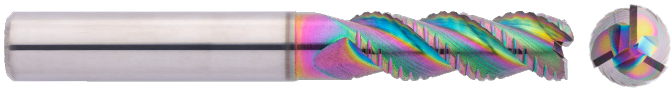
KL-MASTERS
High-Performance Tools

COOLING			STRATEGY
TOLERANCE	h6	Z3 3xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner radius • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	*At cooperation with:* H&V

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	300 m/min

Description:

- For roughing, up to 3xD full slot
- For process reliable, helical diving and immersion
- Also ideally designed for trochoidal milling
- Special helical pitch for smooth running and soft cut
- Extra large chip chambers for an extreme chip volume
- Roughing teeth for the smallest chips in volume machining



Article-Code EXN1-M02-0053	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	ae=1xD ap=2xD	ae=0.3xD ap=3xD	List price at Euro
HA-Shank										
EXN1-M02-0053-4	4,0	6,0	13	-	0,10	65	3	0,025	0,035	**60,67 €**
EXN1-M02-0053-5	5,0	6,0	16	-	0,20	65	3	0,035	0,055	**60,67 €**
EXN1-M02-0053-6	6,0	6,0	18	24	0,20	65	3	0,055	0,070	**60,67 €**
EXN1-M02-0053-8	8,0	8,0	24	30	0,20	70	3	0,070	0,090	**77,96 €**
EXN1-M02-0053-10	10,0	10,0	30	38	0,32	80	3	0,090	0,110	**102,10 €**
EXN1-M02-0053-12	12,0	12,0	36	46	0,32	93	3	0,110	0,130	**129,80 €**
EXN1-M02-0053-16	16,0	16,0	48	58	0,32	110	3	0,120	0,140	**209,25 €**
EXN1-M02-0053-20	20,0	20,0	60	74	0,50	125	3	0,140	0,180	**311,00 €**

NExus PRO - Slotmaker

KL-MASTERS
High-Performance Tools

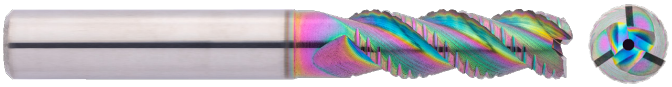
COOLING			STRATEGY
TOLERANCE	h6	Z3 3xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Corner radius • HA-Shank	• 45° Helical pitch • Unequal tooth pitch	

At cooperation with:

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
500 m/min	480 m/min	450 m/min	200 m/min	200 m/min	300 m/min

Description:

- With central inner cooling
- For roughing, up to 3xD full slot
- Also ideally designed for trochoidal milling
- Special helical pitch for smooth running and soft cut
- Extra large chip chambers for an extreme chip volume
- Roughing teeth for the smallest chips in volume machining



Article-Code EXN1-M02-0163	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner radius mm	Total length mm	Z	ae=1xD ap=2xD	ae=0.3xD ap=3xD	List price at Euro
HA-Shank										
EXN1-M02-0163-4	4,0	6,0	13	-	0,10	65	3	0,025	0,035	**65,58 €**
EXN1-M02-0163-5	5,0	6,0	16	-	0,20	65	3	0,035	0,055	**65,58 €**
EXN1-M02-0163-6	6,0	6,0	18	24	0,20	65	3	0,055	0,070	**65,58 €**
EXN1-M02-0163-8	8,0	8,0	24	30	0,20	70	3	0,070	0,090	**86,17 €**
EXN1-M02-0163-10	10,0	10,0	30	38	0,32	80	3	0,090	0,110	**109,60 €**
EXN1-M02-0163-12	12,0	12,0	36	46	0,32	93	3	0,110	0,130	**142,65 €**
EXN1-M02-0163-16	16,0	16,0	48	58	0,32	110	3	0,120	0,140	**234,00 €**
EXN1-M02-0163-20	20,0	20,0	60	74	0,50	125	3	0,140	0,180	**329,31 €**

NExus PRO - Mirrormaker

KL-MASTERS
High-Performance Tools

COOLING			STRATEGY
TOLERANCE	h6	Z6 3xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharped edged • HA-Shank	• 39° Helical pitch • Unequal tooth pitch	*At cooperation with:* H&Y

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
380 m/min	360 m/min	320 m/min	160 m/min	160 m/min	260 m/min

Description:

- Ultra-sharp and lapped cutting edges
- 6 cutting edges for highest feed rates
- AlphaSlide Rainbow High Performance Coating
- Face-Finish-bevel for smooth workpiece surfaces
- For excellent surfaces and maximum dimensional accuracy
- Special chip chambers designed for the evacuation of extra long chips

Article-Code EXN1-M04-0033	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z		List price at Euro
HA-Shank								ae = 5% ap= 100%	
EXN1-M04-0033-6	6,0	6,0	18	25	-	65	6	0,025	**65,43 €**
EXN1-M04-0033-8	8,0	8,0	24	30	-	70	6	0,027	**81,72 €**
EXN1-M04-0033-10	10,0	10,0	30	35	-	80	6	0,029	**92,80 €**
EXN1-M04-0033-12	12,0	12,0	36	45	-	93	6	0,031	**128,71 €**
EXN1-M04-0033-16	16,0	16,0	48	55	-	110	6	0,033	**225,58 €**
EXN1-M04-0033-20	20,0	20,0	60	70	-	125	6	0,035	**341,00 €**

NExus PRO - Mirrormaker

KL-MASTERS
High-Performance Tools

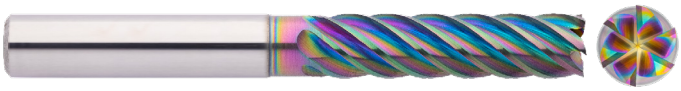
COOLING			STRATEGY
TOLERANCE	h6	Z6 4xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharped edged • HA-Shank	• 39° Helical pitch • Unequal tooth pitch	

At cooperation with:

Non-ferrrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
380 m/min	360 m/min	320 m/min	160 m/min	160 m/min	260 m/min

Description:

- Ultra-sharp and lapped cutting edges
- 6 cutting edges for highest feed rates
- AlphaSlide Rainbow High Performance Coating
- Face-Finish-bevel for smooth workpiece surfaces
- For excellent surfaces and maximum dimensional accuracy
- Special chip chambers designed for the evacuation of extra long chips



Article-Code EXN1-M04-0043	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z		List price at Euro
HA-Shank								ae = 5% ap= 100%	
EXN1-M04-0043-6	6,0	6,0	24	32	-	65	6	0,025	**73,12 €**
EXN1-M04-0043-8	8,0	8,0	32	40	-	75	6	0,027	**91,98 €**
EXN1-M04-0043-10	10,0	10,0	40	48	-	90	6	0,029	**106,72 €**
EXN1-M04-0043-12	12,0	12,0	48	56	-	100	6	0,031	**148,63 €**
EXN1-M04-0043-16	16,0	16,0	64	72	-	125	6	0,033	**259,41 €**
EXN1-M04-0043-20	20,0	20,0	80	88	-	150	6	0,035	**392,87 €**

NExus PRO - Mirrormaker

KL-MASTERS
High-Performance Tools

COOLING			STRATEGY
TOLERANCE	h6	Z6 5xD	VARIANT
COATING	AlphaSlide Rainbow		APPLICATION
SPECIFICATION	• Sharped edged • HA-Shank	• 39° Helical pitch • Unequal tooth pitch	

At cooperation with:

Non-ferrous metal					
Aluminium, alloyed < 500 N/mm	Aluminium, alloyed < 600 N/mm	Aluminium, casted < 600 N/mm	Copper	Brass	Plastics
380 m/min	360 m/min	320 m/min	160 m/min	160 m/min	260 m/min

Description:

- Ultra-sharp and lapped cutting edges
- 6 cutting edges for highest feed rates
- AlphaSlide Rainbow High Performance Coating
- Face-Finish-bevel for smooth workpiece surfaces
- For excellent surfaces and maximum dimensional accuracy
- Special chip chambers designed for the evacuation of extra long chips

Article-Code EXN1-M04-0053	Cutting Ø mm	Shank Ø mm	Length of cut mm	Undercut length mm	Corner bevel mm	Total length mm	Z		List price at Euro
HA-Shank								ae = 5% ap= 100%	
EXN1-M04-0053-6	6,0	6,0	30	38	-	75	6	0,021	**79,28 €**
EXN1-M04-0053-8	8,0	8,0	40	48	-	80	6	0,023	**99,14 €**
EXN1-M04-0053-10	10,0	10,0	50	58	-	100	6	0,025	**114,67 €**
EXN1-M04-0053-12	12,0	12,0	60	68	-	120	6	0,027	**159,50 €**
EXN1-M04-0053-16	16,0	16,0	80	88	-	134	6	0,029	**280,00 €**
EXN1-M04-0053-20	20,0	20,0	100	108	-	175	6	0,031	**423,46 €**

Advantage through precision

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