

HX2

STAGGERED HELIX END MILLS





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Europa Tool 8TH EDITION

HX2 STAGGERED HELIX END MILL CONTENTS

(Carbide for silent and improved machining)

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HX2 STAGGERED HELIX MILLING CUTTERS



COMPLETELY NEW MILLING GENERATION

WORLD FIRST. VERY SMOOTH CHIP REMOVAL AND SILENT MACHINING
AVOIDS RESONANCE VIBRATION DUE TO THE UNIQUE SINUSOIDAL FLUTE FORM DESIGN
IMPROVES SURFACE FINISH DUE TO THE CHATTER FREE DESIGN
INCREASED CUTTING DEPTH AND FEED RATES

APPLICATION

STAINLESS STEELS, TITANIUM ALLOYS, INCONEL, MILD STEELS & CAST IRON,
TOOL STEELS AND LOW HARDNESS MATERIAL UNDER HRC40

MATERIAL	K30/40	PRIME GRADE CARBIDE
COATING	ALTIN	HARDNESS: HV (0.05) = 3,500 OXIDISATION TEMP: 900 DEG C
GEOMETRY	SINUSOIDAL	HIGH RAKE MEDIUM CORE

HX2 STAGGERED HELIX VS COMPETITORS

THE CHARACTERISTICS

HX2	CONVENTIONAL	HX2	CONVENTIONAL
CROSS SECTION OF CORE			
		Chip flow: Very smooth	Chip flow: Not smooth

GEOMETRY COMPARISON BETWEEN HX2 AND COMPETITORS

HELIX	HX2 END MILL SINUSOIDAL	COMPETITORS END MILLS UNEQUAL CONSTANT
END INDEX		
RADIAL RAKE ANGLE	EQUAL CHANGEABLE	UNEQUAL CONSTANT
RADIAL PRIMARY RELIEF & TYPE	CHANGEABLE & ECCENTRIC	CONSTANT & ECCENTRIC
FLUTE FORM DESIGN	UNIQUE	CONVENTIONAL

UNIQUE PATENTED FLUTE FORM DESIGN

4 FLUTE, SHORT LENGTH



Series No. 136123, 136323

SOLID CARBIDE MICRO GRAIN
STRAIGHT AND FLATTED SHANK ALTiN COATED
4 FLUTES SHORT

MINIMIZED TOOL DEFLECTION
CORNER PROTECTED
REDUCED TOOL VIBRATION

ALL DIMENSIONS ARE IN MM

MILL DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EUROPA CODE FLATTED	EUROPA CODE PLAIN
3	6	7	54	1361230300	1363230300
4	6	8	54	1361230400	1363230400
5	6	10	54	1361230500	1363230500
6	6	10	54	1361230600	1363230600
8	8	12	58	1361230800	1363230800
10	10	14	66	1361231000	1363231000
12	12	16	73	1361231200	1363231200
14	14	18	75	1361231400	1363231400
16	16	22	82	1361231600	1363231600
18	18	24	84	1361231800	1363231800
20	20	26	92	1361232000	1363232000

SUITABLE FOR
STAINLESS STEELS, TITANIUM AND INCONEL

4 FLUTE, SHORT LENGTH, CORNER RADIUS



Series No. 137123, 137323



SOLID CARBIDE MICRO GRAIN
STRAIGHT AND FLATTED SHANK
ALTIN COATED
4 FLUTES SHORT

MINIMIZED TOOL DEFLECTION
CORNER PROTECTED
REDUCED TOOL VIBRATION

ALL DIMENSIONS ARE IN MM

MILL DIA.	RADIUS R	SHANK DIA.	L.O.C.	O/ALL	EUROPA CODE FLATTED	EUROPA CODE PLAIN
3	R0.25-R0.38	6	7	54	1371230300	1373230300
4	R0.25-R0.38	6	8	54	1371230400	1373230400
5	R0.25-R0.38	6	10	54	1371230500	1373230500
6	R0.38-R0.51	6	10	54	1371230600	1373230600
8	R0.38-R0.51	8	12	58	1371230800	1373230800
10	R0.38-R0.51	10	14	66	1371231000	1373231000
12	R0.64-R0.76	12	16	73	1371231200	1373231200
14	R0.64-R0.76	14	18	75	1371231400	1373231400
16	R0.89-R1.02	16	22	82	1371231600	1373231600
18	R0.89-R1.02	18	24	84	1371231800	1373231800
20	R0.89-R1.02	20	26	92	1371232000	1373232000

SUITABLE FOR
STAINLESS STEELS, TITANIUM AND INCONEL

4 FLUTE, LONG LENGTH



Series No. 138123, 138323



SOLID CARBIDE MICRO GRAIN
STRAIGHT AND FLATTED SHANK
ALTIN COATED
4 FLUTES LONG SERIES

MINIMIZED TOOL DEFLECTION
CORNER PROTECTED
REDUCED TOOL VIBRATION

ALL DIMENSIONS ARE IN MM

MILL DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EUROPA CODE FLATTED	EUROPA CODE PLAIN
3	6	8	57	1381230300	1383230300
4	6	11	57	1381230400	1383230400
5	6	13	57	1381230500	1383230500
6	6	13	57	1381230600	1383230600
8	8	19	63	1381230800	1383230800
10	10	22	72	1381231000	1383231000
12	12	26	83	1381231200	1383231200
14	14	26	83	1381231400	1383231400
16	16	32	92	1381231600	1383231600
18	18	32	92	1381231800	1383231800
20	20	38	104	1381232000	1383232000
25	25	38	108	1381232500	1383232500

SUITABLE FOR
STAINLESS STEELS, TITANIUM AND INCONEL

4 FLUTE, LONG LENGTH, CORNER RADIUS



Series No. 139123, 139323

**SOLID CARBIDE MICRO GRAIN
STRAIGHT AND FLATTED SHANK
ALTIN COATED
4 FLUTES LONG**

**MINIMIZED TOOL DEFLECTION
CORNER PROTECTED
REDUCED TOOL VIBRATION**

ALL DIMENSIONS ARE IN MM

MILL DIA.	RADIUS R	SHANK DIA.	L.O.C.	O/ALL	EUROPA CODE FLATTED	EUROPA CODE PLAIN
3	R0.25-R0.38	6	8	57	1391230300	1393230300
4	R0.25-R0.38	6	11	57	1391230400	1393230400
5	R0.25-R0.38	6	13	57	1391230500	1393230500
6	R0.38-R0.51	6	13	57	1391230600	1393230600
8	R0.38-R0.51	8	19	63	1391230800	1393230800
10	R0.38-R0.51	10	22	72	1391231000	1393231000
12	R0.64-R0.76	12	26	83	1391231200	1393231200
14	R0.64-R0.76	14	26	83	1391231400	1393231400
16	R0.89-R1.02	16	32	92	1391231600	1393231600
18	R0.89-R1.02	18	32	92	1391231800	1393231800
20	R0.89-R1.02	20	38	104	1391232000	1393232000

**SUITABLE FOR
STAINLESS STEELS, TITANIUM AND INCONEL**

HX2 STAGGERED HELIX cutting condition

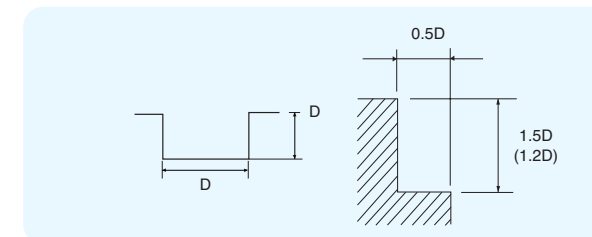
136123, 137123, 138123, 139123



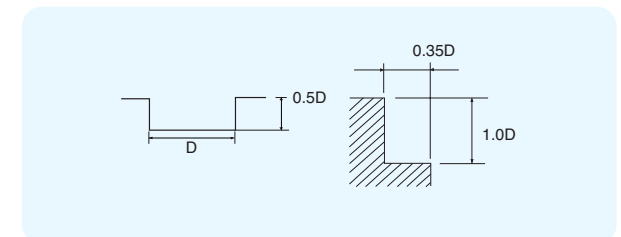
MATERIAL (material)	ALLOY STEELS CASTIRON (Legierte Stähle / Grauguss)		ALLOY STEELS CASTIRON (Legierte Stähle / Grauguss)		STAINLESS STEELS 300SERIES (Rostfreie Stähle 300Serien)		STAINLESS STEELS 400SERIES (Rostfreie Stähle 400Serien)		TITANIUM (Titanium)		INCONEL (Inconel)	
HARDNESS	~HB 300		HB 300~HB 380									
STRENGTH	~1000N/mm2		1000N/mm2~1300N/mm2									
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
3	13475	275	9430	190	10185	195	14260	205	10185	205	2715	55
4	10105	330	7070	230	7600	250	14260	255	7600	255	2005	55
5	8085	370	5660	260	6110	310	8655	310	6110	310	1630	80
6	6735	435	4715	385	5095	360	7130	360	5095	360	1355	95
8	5050	555	3535	385	3820	435	5345	465	3280	465	1015	125
10	4455	690	3115	480	3055	590	4275	585	3055	585	815	155
12	3710	695	2600	485	2545	565	3565	565	2545	565	675	150
14	3180	620	2225	435	2180	520	3055	520	2180	520	580	140
16	2785	590	1950	410	1910	480	2670	480	1910	480	505	130
18	2475	585	1730	410	1695	475	2375	475	1695	475	450	125
20	2225	580	1560	405	1525	470	2140	470	1525	470	405	125
25	1780	450	1245	315	1215	380	1710	380	1215	380	320	110

RPM=REVOLUTION PER MIN.
FEED=mm/min.

• ALLOY STEELS CAST IRON / STAINLESS STEELS 300, 400SERIES / TITANIUM



• INCONEL



• 1.2 x D Axial cutting depth should be applied for Short length series DIA over 8mm

TOLERANCE

136123, 137123, 138123, 139123



METRIC		INCH	
MILL DIA.	SHANK DIA.	MILL DIA.	MILL DIA.
0 ~ -0.03	h 6	0 ~ -.0012	h 6