



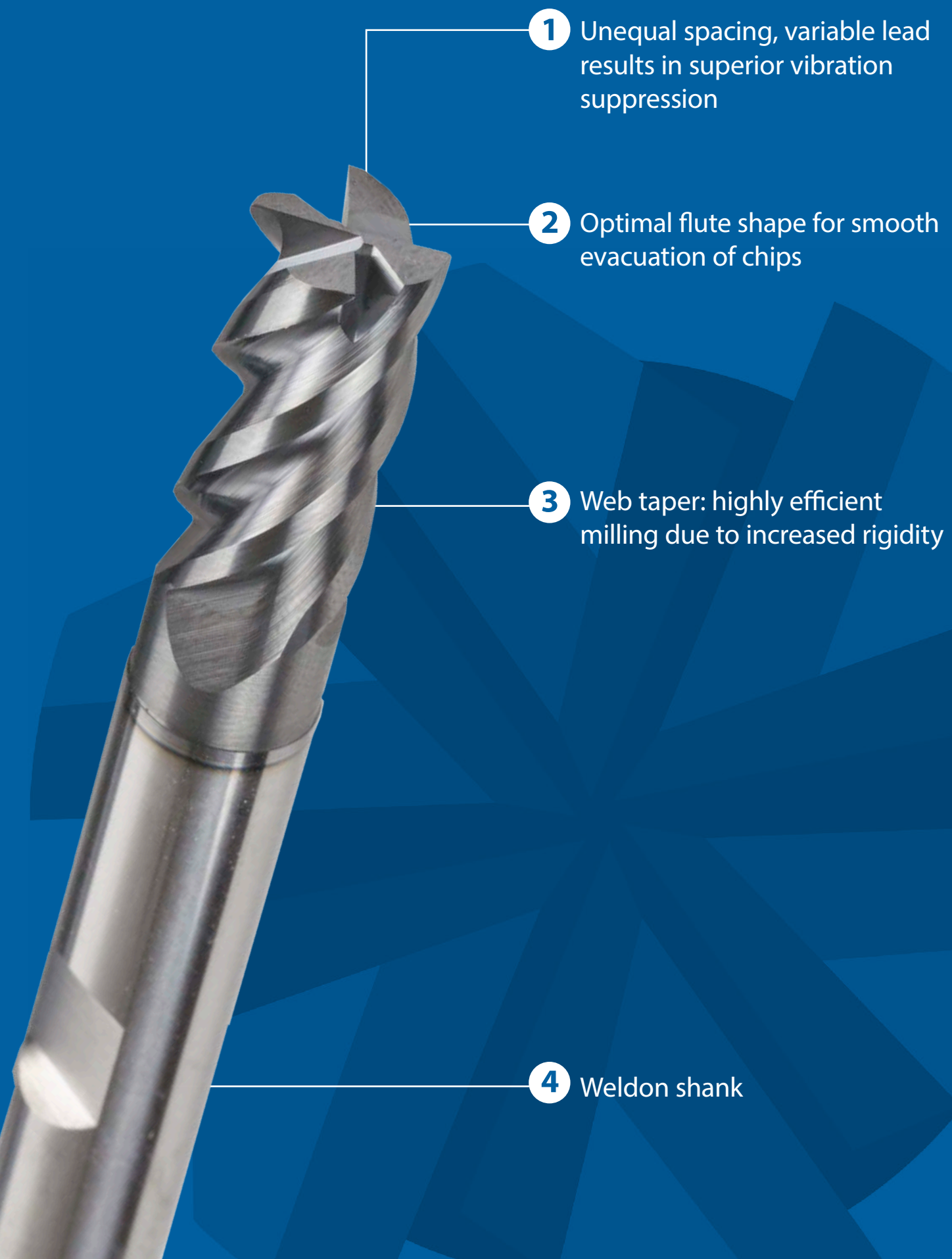
End Mills for general purpose and exotic materials

EPL-HP-SERIES

Volume 2



KEY FEATURES: EPL-HP-4FL



1 Unequal spacing, variable lead results in superior vibration suppression

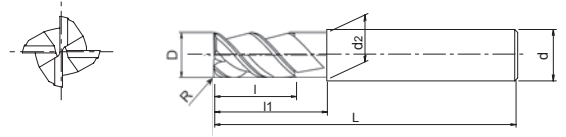
2 Optimal flute shape for smooth evacuation of chips

3 Web taper: highly efficient milling due to increased rigidity

4 Weldon shank

EPL-HP-4FL NEW

Milling | Solid carbide



- Carbide end mill with WXL coating
- For general applications and exotic materials
- 4 flutes, variable helix and unequal spacing, corner radius
- Weldon shank



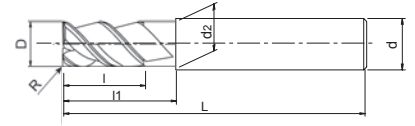
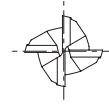
EDP	Z	D	R	L	l1	l	d1	d
EP01930499	4	4	-	57	-	11	-	6
EP01930400	4	4	0,25	57	-	11	-	6
EP01930401	4	4	0,5	57	-	11	-	6
EP01930402	4	4	1	57	-	11	-	6
EP01930599	4	5	-	57	-	13	-	6
EP01930500	4	5	0,25	57	-	13	-	6
EP01930501	4	5	0,5	57	-	13	-	6
EP01930502	4	5	1	57	-	13	-	6
EP01930699	4	6	-	57	-	13	-	6
EP01930600	4	6	0,25	57	20	13	5,8	6
EP01930601	4	6	0,5	57	20	13	5,8	6
EP01930602	4	6	1	57	20	13	5,8	6
EP01930603	4	6	1,5	57	20	13	5,8	6
EP01930899	4	8	-	63	25	19	7,8	8
EP01930800	4	8	0,25	63	25	19	7,8	8
EP01930801	4	8	0,5	63	25	19	7,8	8
EP01930802	4	8	1	63	25	19	7,8	8
EP01930803	4	8	1,5	63	25	19	7,8	8
EP01931099	4	10	-	72	30	22	9,8	10
EP01931000	4	10	0,25	72	30	22	9,8	10
EP01931001	4	10	0,5	72	30	22	9,8	10
EP01931002	4	10	1	72	30	22	9,8	10
EP01931003	4	10	1,5	72	30	22	9,8	10
EP01931004	4	10	2	72	30	22	9,8	10
EP01931006	4	10	3	72	30	22	9,8	10
EP01931299	4	12	-	83	38	26	11,8	12
EP01931200	4	12	0,25	83	38	26	11,8	12
EP01931201	4	12	0,5	83	38	26	11,8	12
EP01931202	4	12	1	83	38	26	11,8	12
EP01931204	4	12	2	83	38	26	11,8	12
EP01931206	4	12	3	83	38	26	11,8	12
EP01931207	4	12	4	83	38	26	11,8	12
EP01931499	4	14	-	83	38	26	13,8	14
EP01931400	4	14	0,25	83	38	26	13,8	14
EP01931402	4	14	1	83	38	26	13,8	14
EP01931699	4	16	-	92	45	32	15,8	16
EP01931600	4	16	0,25	92	45	32	15,8	16
EP01931601 <small>NEW</small>	4	16	0,5	92	45	32	15,8	16
EP01931602	4	16	1	92	45	32	15,8	16
EP01931604	4	16	2	92	45	32	15,8	16
EP01931606	4	16	3	92	45	32	15,8	16
EP01931607	4	16	4	92	45	32	15,8	16

Milling | Solid carbide



EPL-HP-4FL NEW

Milling | Solid carbide



- Carbide end mill with WXL coating
- For general applications and exotic materials
- 4 flutes, variable helix and unequal spacing, corner radius
- Weldon shank

P ~45 HRC

P ~55 HRC

M ~35 HRC

K ~350 HB

N

S

line Plus

CARBIDE

WXL

41°~43°

0~0.05

HB

EDP	Z	D	R	L	l1	l	d1	d
EP01932099	4	20	-	104	60	38	19,8	20
EP01932000	4	20	0,25	104	60	38	19,8	20
EP01932001	4	20	0,5	104	60	38	19,8	20
EP01932002	4	20	1	104	60	38	19,8	20
EP01932004	4	20	2	104	60	38	19,8	20
EP01932006	4	20	3	104	60	38	19,8	20
EP01932007	4	20	4	104	60	38	19,8	20

Milling | Solid carbide



OUT NOW!

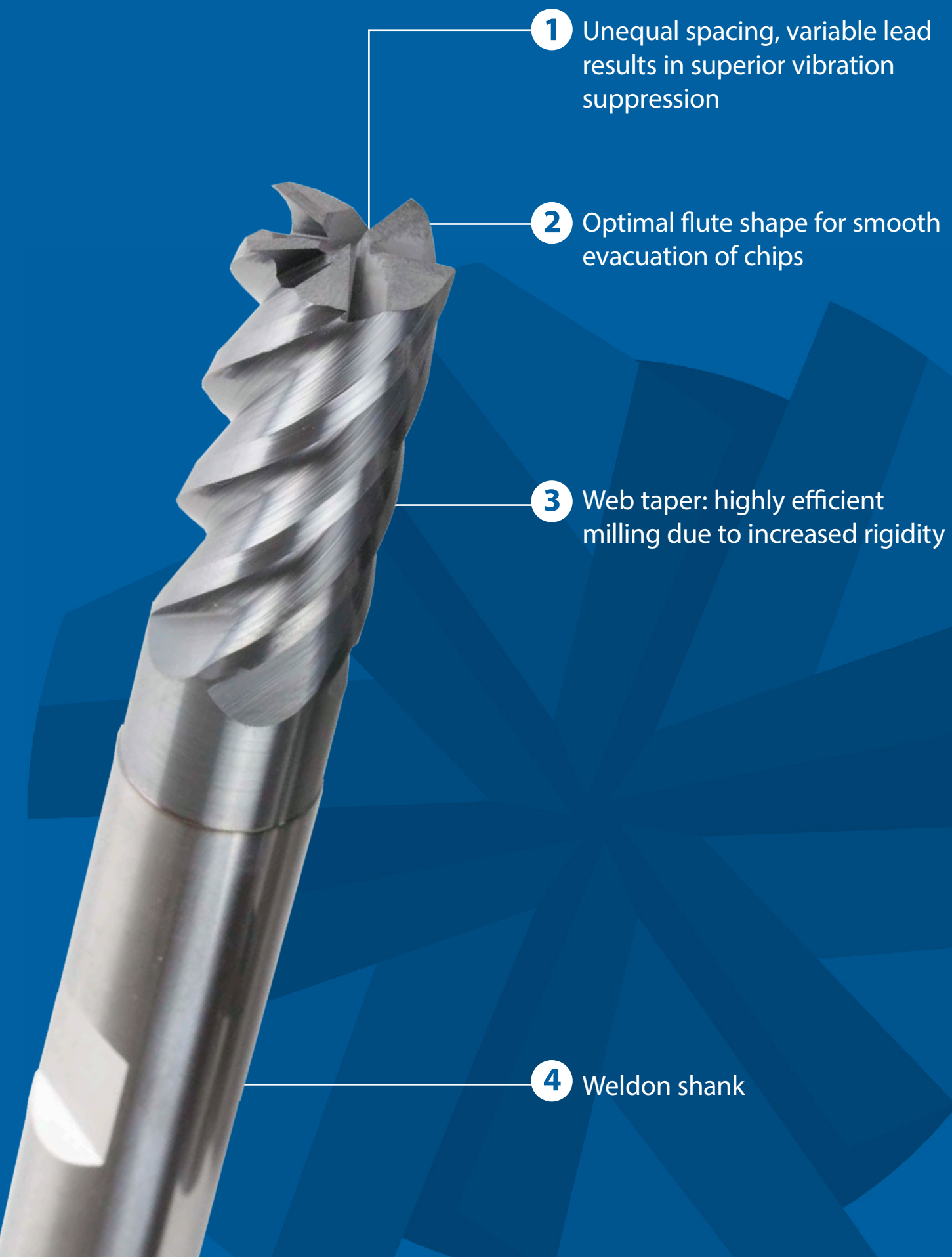


CATALOGUE V

THREADING DRILLING MILLING



KEY FEATURES: EPL-HP-5FL



1 Unequal spacing, variable lead results in superior vibration suppression

2 Optimal flute shape for smooth evacuation of chips

3 Web taper: highly efficient milling due to increased rigidity

4 Weldon shank

EPL-HP-5FL NEW

Milling | Solid carbide



- Carbide end mill with WXL coating
- For general applications and exotic materials
- 5 flutes, variable helix and unequal spacing, corner radius
- Weldon shank



EDP	Z	D	R	L	l1	l	d1	d
EP01940899	5	8	-	63	25	19	7,8	8
EP01940800	5	8	0,25	63	25	19	7,8	8
EP01940801	5	8	0,5	63	25	19	7,8	8
EP01940802	5	8	1	63	25	19	7,8	8
EP01940803	5	8	1,5	63	25	19	7,8	8
EP01941099	5	10	-	72	30	22	9,8	10
EP01941000	5	10	0,25	72	30	22	9,8	10
EP01941001	5	10	0,5	72	30	22	9,8	10
EP01941002	5	10	1	72	30	22	9,8	10
EP01941003	5	10	1,5	72	30	22	9,8	10
EP01941004	5	10	2	72	30	22	9,8	10
EP01941006	5	10	3	72	30	22	9,8	10
EP01941299	5	12	-	83	38	26	11,8	12
EP01941200	5	12	0,25	83	38	26	11,8	12
EP01941201	5	12	0,5	83	38	26	11,8	12
EP01941202	5	12	1	83	38	26	11,8	12
EP01941204	5	12	2	83	38	26	11,8	12
EP01941206	5	12	3	83	38	26	11,8	12
EP01941207	5	12	4	83	38	26	11,8	12
EP01941699	5	16	-	92	45	32	15,8	16
EP01941600	5	16	0,25	92	45	32	15,8	16
EP01941601 <small>NEW</small>	5	16	0,5	92	45	32	15,8	16
EP01941602	5	16	1	92	45	32	15,8	16
EP01941604	5	16	2	92	45	32	15,8	16
EP01941606	5	16	3	92	45	32	15,8	16
EP01941607	5	16	4	92	45	32	15,8	16
EP01942099	5	20	-	104	60	38	19,8	20
EP01942000	5	20	0,25	104	60	38	19,8	20
EP01942001 <small>NEW</small>	5	20	0,5	104	60	38	19,8	20
EP01942002	5	20	1	104	60	38	19,8	20
EP01942004	5	20	2	104	60	38	19,8	20
EP01942006	5	20	3	104	60	38	19,8	20
EP01942007	5	20	4	104	60	38	19,8	20

Milling | Solid carbide



CUTTING CONDITIONS

Milling | Endmills | Cutting conditions

EPL-HP-4FL

Slotting

Vc		Steels St-52 • C45 • GG-25			Hardened steels ~35 HRC 42CrMo4			Hardened steels ~45 HRC 1.2379			Stainless steel 1.4301			Titanium Ti6AlV4		
Vc		120 m/min			120 m/min			70 m/min			60 m/min			50 m/min		
Ø	Z	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)
4	4	9.549	1.146	0,030	9.549	1.146	0,030	5.570	668	0,030	4.775	382	0,020	3.979	318	0,020
5	4	7.639	1.146	0,038	7.639	1.146	0,038	4.456	668	0,038	3.820	382	0,025	3.183	318	0,025
6	4	6.366	1.146	0,045	6.366	1.146	0,045	3.714	668	0,045	3.183	382	0,030	2.653	318	0,030
8	4	4.775	1.146	0,060	4.775	1.146	0,060	2.785	668	0,060	2.387	382	0,040	1.989	318	0,040
10	4	3.820	1.146	0,075	3.820	1.146	0,075	2.228	668	0,075	1.910	382	0,050	1.592	318	0,050
12	4	3.183	1.146	0,090	3.183	1.146	0,090	1.857	668	0,090	1.592	382	0,060	1.326	318	0,060
14	4	2.728	1.146	0,105	2.728	1.146	0,105	1.592	668	0,105	1.364	382	0,070	1.137	318	0,070
16	4	2.387	1.146	0,120	2.387	1.146	0,120	1.393	668	0,120	1.194	382	0,080	995	318	0,080
20	4	1.910	1.146	0,150	1.910	1.146	0,150	1.114	668	0,150	955	382	0,100	796	318	0,100

ap x d F(fz) correction		ap	Fakt.
		0,5	1,0
		1,0	0,7
		1,5	0,5
		2,0	0,3

The above stated application data are as per **RED** marked parameters.

EPL-HP-4FL

Side milling

Vc		Steels St-52 • C45 • GG-25			Hardened steels ~35 HRC 42CrMo4			Hardened steels ~45 HRC 1.2379			Stainless steel 1.4301			Titanium Ti6AlV4		
Vc		140 m/min			140 m/min			80 m/min			70 m/min			60 m/min		
Ø	Z	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)
4	4	11.141	3.565	0,080	11.141	3.565	0,080	6.366	2.037	0,080	5.570	891	0,040	4.775	764	0,040
5	4	8.913	3.565	0,100	8.913	3.565	0,100	5.093	2.037	0,100	4.456	891	0,050	3.820	764	0,050
6	4	7.427	3.565	0,120	7.427	3.565	0,120	4.244	2.037	0,120	3.714	891	0,060	3.183	764	0,060
8	4	5.570	3.565	0,160	5.570	3.565	0,160	3.183	2.037	0,160	2.785	891	0,080	2.387	764	0,080
10	4	4.456	3.565	0,200	4.456	3.565	0,200	2.546	2.037	0,200	2.228	891	0,100	1.910	764	0,100
12	4	3.714	3.565	0,240	3.714	3.565	0,240	2.122	2.037	0,240	1.857	891	0,120	1.592	764	0,120
14	4	3.183	3.565	0,280	3.183	3.565	0,280	1.819	2.037	0,280	1.592	891	0,140	1.364	764	0,140
16	4	2.785	3.565	0,320	2.785	3.565	0,320	1.592	2.037	0,320	1.393	891	0,160	1.194	764	0,160
20	4	2.228	3.565	0,400	2.228	3.565	0,400	1.273	2.037	0,400	1.114	891	0,200	955	764	0,200

ap x d F(fz) correction		ap	Fakt.
		0,5	1,3
		1,0	1,2
		1,5	1,0
		2,0	0,8

ap	Fakt.		
		0,5	1,2
		1,0	1,0
		1,5	0,7
		2,0	0,5

The above stated application data are as per **RED** marked parameters.

CUTTING CONDITIONS

Milling | Endmills | Cutting conditions

EPL-HP-5FL

Slotting

Vc		Steels St-52 · C45 · GG-25			Hardened steels ~35 HRC 42CrMo4			Hardened steels ~45 HRC 1.2379			Stainless steel 1.4301			Titanium Ti6AlV4		
Vc		120 m/min			120 m/min			70 m/min			60 m/min			50 m/min		
Ø	Z	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)
8	5	4.775	1.432	0,060	4.775	1.432	0,060	2.785	836	0,060	2.387	477	0,040	1.989	398	0,040
10	5	3.820	1.432	0,075	3.820	1.432	0,075	2.228	836	0,075	1.910	477	0,050	1.592	398	0,050
12	5	3.183	1.432	0,090	3.183	1.432	0,090	1.857	836	0,090	1.592	477	0,060	1.326	398	0,060
16	5	2.387	1.432	0,120	2.387	1.432	0,120	1.393	836	0,120	1.194	477	0,080	995	398	0,080
20	5	1.910	1.432	0,150	1.910	1.432	0,150	1.114	836	0,150	955	477	0,100	796	398	0,100

EPL-HP-5FL

Side milling











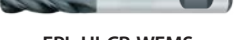


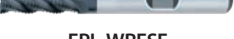












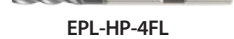




Vc		Steels St-52 · C45 · GG-25			Hardened steels ~35 HRC 42CrMo4			Hardened steels ~45 HRC 1.2379			Stainless steel 1.4301			Titanium Ti6AlV4		
Vc		140 m/min			140 m/min			80 m/min			70 m/min			60 m/min		
Ø	Z	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)	S (min ⁻¹)	F (mm/min)	fz (mm)
8	5	5.570	4.456	0,160	5.570	4.456	0,160	3.183	2.546	0,160	2.785	1.114	0,080	2.387	955	0,080
10	5	4.456	4.456	0,200	4.456	4.456	0,200	2.546	2.546	0,200	2.228	1.114	0,100	1.910	955	0,100
12	5	3.714	4.456	0,240	3.714	4.456	0,240	2.122	2.546	0,240	1.857	1.114	0,120	1.592	955	0,120
16	5	2.785	4.456	0,320	2.785	4.456	0,320	1.592	2.546	0,320	1.393	1.114	0,160	1.194	955	0,160
20	5	2.228	4.456	0,400	2.228	4.456	0,400	1.273	2.546	0,400	1.114	1.114	0,200	955	955	0,200

ap x d	F(fz) correction	ap	Fakt.
		0,5	1,3
		1	1,2
		1,5	1,0
		2	0,8
		2	0,8

ap	Fakt.
0,5	1,2
1,0	1,0
1,5	0,7
2,0	0,5

The above stated application data are as per **RED** marked parameters.

ALSO AVAILABLE FROM PLUS-LINE

Type	Coating	Material	Hardened Steel					SUS	GG								Range	
			~40 HRC	~45 HRC	~55 HRC	~60 HRC	~65 HRC			~35 HRC	~350 HB	Cu	Al	Graphite	Ti	HRS		Plast.
 EPL-ETS			⊙	⊙	○				⊙	⊙	○	○				⊙	⊙	4 ~ 16
 EPL-SB-EBD			⊙	⊙	○	○			○	⊙	○	○			○	○		R0,5 ~ R10
 EPL-SB-LN-EBD			⊙	⊙	○	○			○	⊙	○	○			○	○		R0,5 ~ R10
 EPL-SB-EBM			⊙	⊙	○	○			○	⊙	○	○			○	○		R2 ~ R6
 EPL-HI-EMS			⊙	⊙	⊙	○			⊙	⊙	○	○			⊙	⊙		4 ~ 20
 EPL-HI-WEMS			⊙	⊙	⊙	○			⊙	⊙	○	○			⊙	⊙		4 ~ 20
 EPL-HI-CR-EMS			⊙	⊙	⊙	○			⊙	⊙	○	○			⊙	⊙		4 ~ 16
 EPL-HI-CR-WEMS			⊙	⊙	⊙	○			⊙	⊙	○	○			⊙	⊙		4 ~ 20
 EPL-WRESF			⊙	⊙	⊙				○	○	○	○						4 ~ 25
 EPL-PC-EBD			⊙	⊙	○	○			⊙	⊙	⊙	○			○	○		R0,5 ~ R4
 EPL-PC-EBD-DIA			⊙	⊙					⊙	⊙	⊙	○			○	○		R0,5 ~ R4
 EPL-LN-EBD			⊙	⊙	○	○			⊙	⊙	⊙	○			○	○		R0,15 ~ R3
 EPL-CPR			⊙	⊙	⊙	⊙	○		○	○					○	○		2 ~ 8
 EPL-CPR-DIA			⊙	⊙	⊙	⊙			⊙									4 ~ 8
 EPL-HP-4FL			⊙	⊙					⊙	⊙	○	○			⊙			4 ~ 20
 EPL-HP-5FL			⊙	⊙					⊙	⊙	○	○			⊙			8 ~ 20



www.osgeurope.com





shaping your dreams

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