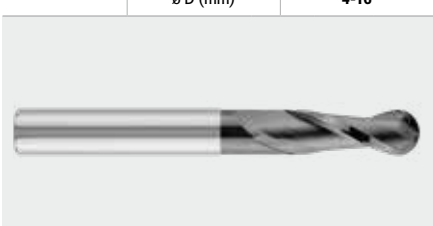
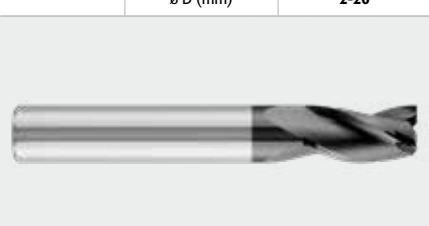
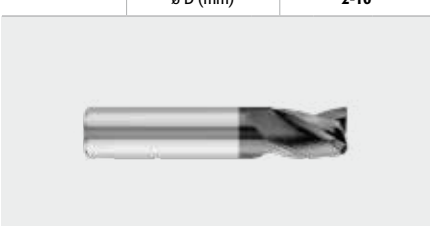


SCHUMANTOOLS®
WORK INSPIRATION

X-MILL MD

2021

FRESE MD HM MILL

XE10AL			XE12AL			XE13AL		
	ø D (mm)	2-20		ø D (mm)	4-20		ø D (mm)	3-20
								
		N			N			N
		pag 8			pag 8			pag 9
XE06c			XE06cr			XE21c		
	ø D (mm)	2-20		ø D (mm)	2-12		ø D (mm)	2-10
								
		P M K			P M K			P M K
		pag 10			pag 11			pag 12
XE79c			XE01c			XE16c		
	ø D (mm)	2-16		ø D (mm)	2-20		ø D (mm)	2-20
								
		P M K			P M K			P M K
		pag 12			pag 13			pag 14
XE81c			XE36c			XE26c		
	ø D (mm)	4-16		ø D (mm)	2-20		ø D (mm)	2-10
								
		P M K			P M K			P M K
		pag 14			pag 15			pag 15

XE76c								
ø D (mm)	4-16							
								
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P	M	K						
pag 16								

XE95c								
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pag 16								

XE92c								
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pag 17								

XE92cc/ccx								
ø D (mm)	3-20							
								
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pag 18								

XE92L								
ø D (mm)	5-20							
								
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pag 19								

XE94c								
ø D (mm)	3-20							
								
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	S							
pag 20								

XE94L								
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	S							
pag 20								

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pag 21								

XE71								
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pag 22								

XE97c								
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pag 22								

XE29								
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pag 23								

XE56								
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P	M	K						
pag 23								

XM547								
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P		K						
N	S							
pag 33								

XM548								
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N	S							
pag 34								

XM653						
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	S					
pag 36						

XM653						
ø D (mm)	3-25					
						
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P	M					
	S					
pag 37						

XM871 UNIVERSAL								
ø D (mm)	6-20							
Frese trocoidali <i>Trochoidal mill</i> 								
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P		K						
pag 38								

XM761 STAINLESS SPEED						
ø D (mm)	3-20					
Frese trocoidali <i>Trochoidal mill</i> 						
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	M					
	S					
pag 39						

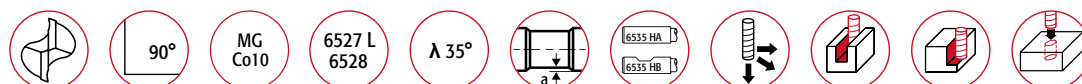
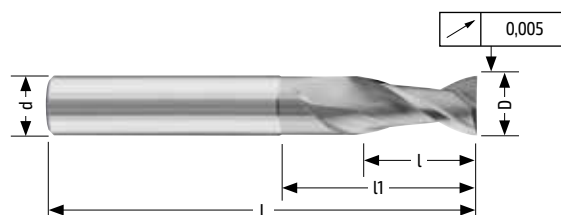
XM632								
ø D (mm)	8-25							
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P	M	K						
N	S	48 HRC						
pag 40								

XM898								
ø D (mm)	4-20							
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P	M	K						
N	S	48 HRC						
pag 41								

XE-MILL

XE10_{AL}

N



Fresa a 2 taglienti per alluminio 2 flute end mill for aluminium

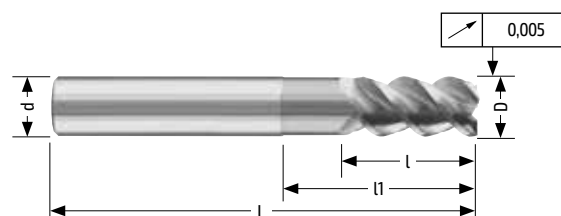
CODICE CODE	D h6	d h6	L	l ap	l1	a	Z	
XE-10 D2 AL	2,0	3	50	6	-	-	2	○
XE-10 D3 AL	3,0	3	50	7	18	0,10	2	○
XE-10 D4 AL	4,0	4	50	8	19	0,10	2	○
XE-10 D5 AL	5,0	5	50	10	21	0,10	2	○
XE-10 D6 AL	6,0	6	57	10	21	0,15	2	○
XE-10 D8 AL	8,0	8	63	16	27	0,15	2	○
XE-10 D10 AL	10,0	10	72	19	30	0,15	2	○
XE-10 D12 AL	12,0	12	83	22	38	0,20	2	○
XE-10 D14 AL	14,0	14	83	22	38	0,20	2	○
XE-10 D16 AL	16,0	16	92	26	42	0,20	2	○
XE-10 D20 AL	20,0	20	104	32	54	0,20	2	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE12_{AL}

N



Fresa a 3 taglienti per alluminio 3 flute end mill for aluminium

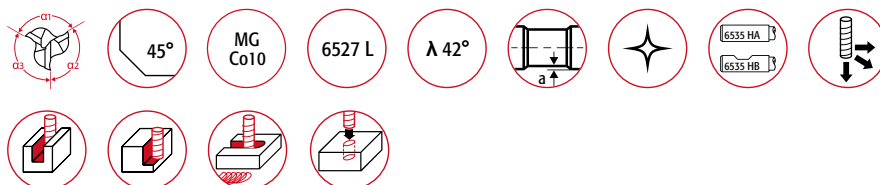
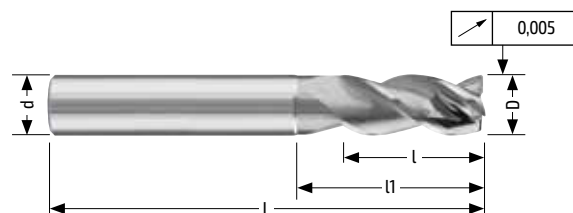
CODICE CODE	D h6	d h6	L	l ap	l1	a	Z	
XE-12 D4 AL	4,0	4	50	8	19	0,10	3	○
XE-12 D5 AL	5,0	5	50	10	21	0,10	3	○
XE-12 D6 AL	6,0	6	57	10	21	0,15	3	○
XE-12 D7 AL	7,0	7	60	13	24	0,15	3	○
XE-12 D8 AL	8,0	8	63	16	27	0,15	3	○
XE-12 D9 AL	9,0	9	67	16	27	0,15	3	○
XE-12 D10 AL	10,0	10	72	19	30	0,15	3	○
XE-12 D12 AL	12,0	12	83	22	38	0,20	3	○
XE-12 D14 AL	14,0	14	83	22	38	0,20	3	○
XE-12 D16 AL	16,0	16	92	26	42	0,20	3	○
XE-12 D20 AL	20,0	20	104	32	54	0,20	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE13_{AL}

N



Fresa 3 taglienti serie normale per alluminio con divisione irregolare
3 flute end mill with unequal flute spacing regular version

CODICE CODE	D h10	d h5	L	l ap	l1	a	45°	Z	
XE-13 D3 AL	3,0	6	57	8	-	-	0,05	3	○
XE-13 D4 AL	4,0	6	57	11	-	-	0,05	3	○
XE-13 D5 AL	5,0	6	57	13	-	-	0,10	3	○
XE-13 D6 AL	6,0	6	57	13	20	0,15	0,10	3	○
XE-13 D8 AL	8,0	8	63	19	25	0,15	0,15	3	○
XE-13 D10 AL	10,0	10	72	22	30	0,15	0,20	3	○
XE-13 D12 AL	12,0	12	83	26	36	0,20	0,25	3	○
XE-13 D16 AL	16,0	16	92	32	42	0,20	0,30	3	○
XE-13 D20 AL	20,0	20	104	38	52	0,20	0,35	3	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE-MILL

XE06c

P K M



Fresa a 2 taglienti serie normale 2 flute end mill standard series

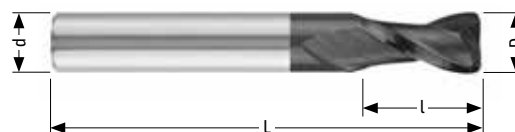
CODICE CODE	D h10	d h6	L	l ap	Z	
XE-06 D2 C	2,0	4	50	5	2	○
XE-06 D2.5 C	2,5	4	50	7	2	○
XE-06 D3 C	3,0	4	50	7	2	○
XE-06 D3.5 C	3,5	4	50	7	2	○
XE-06 D4 C	4,0	4	50	8	2	○
XE-06 D4.5 C	4,5	5	50	8	2	○
XE-06 D5 C	5,0	5	50	10	2	○
XE-06 D5.5 C	5,5	6	57	10	2	○
XE06 D6 C	6,0	6	57	10	2	○
XE-06 D7 C	7,0	7	60	13	2	○
XE-06 D8 C	8,0	8	63	16	2	○
XE-06 D9 C	9,0	9	67	16	2	○
XE-06 D10 C	10,0	10	72	19	2	○
XE-06 D11 C	11,0	11	83	22	2	○
XE-06 D12 C	12,0	12	83	22	2	○
XE-06 D13 C	13,0	13	83	22	2	○
XE-06 D14 C	14,0	14	83	22	2	○
XE-06 D15 C	15,0	15	92	26	2	○
XE-06 D16 C	16,0	16	92	26	2	○
XE-06 D17 C	17,0	17	92	26	2	○
XE-06 D18 C	18,0	18	92	26	2	○
XE-06 D19 C	19,0	19	92	26	2	○
XE-061 D20 C	20,0	20	104	32	2	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE06CR

P K M



Fresa a 2 taglienti serie normale 2 flute end mill standard series

CODICE CODE	D h10	d h6	L	l ap	Cr	Z	
XE-06CR05 D2	2,0	4	50	5	0,5	2	○
XE-06CR05 D3	3,0	4	50	7	0,5	2	○
XE-06CR05 D4	4,0	4	50	8	0,5	2	○
XE-06CR05 D6	6,0	6	57	10	0,5	2	○
XE-06CR05 D8	8,0	8	63	16	0,5	2	○
XE-06CR05 D10	10,0	10	72	19	0,5	2	○
XE-06CR05 D12	12,0	12	83	22	0,5	2	○

Fresa a 2 taglienti serie normale 2 flute end mill standard series

CODICE CODE	D h10	d h6	L	l ap	Cr	Z	
XE-06CR10 D5	5,0	5	50	10	1,0	2	○
XE-06CR10 D6	6,0	6	57	10	1,0	2	○
XE-06CR10 D8	8,0	8	63	16	1,0	2	○
XE-06CR10 D10	10,0	10	72	19	1,0	2	○
XE-06CR10 D12	12,0	12	83	22	1,0	2	○

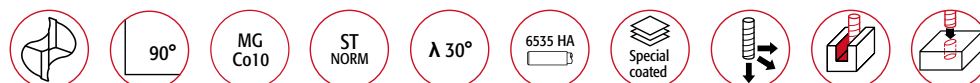
Fresa a 2 taglienti serie normale 2 flute end mill standard series

CODICE CODE	D h10	d h6	L	l ap	Cr	Z	
XE-06CR20 D10	10,0	10	72	19	2,0	2	○
XE-06CR20 D12	12,0	12	83	22	2,0	2	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE21c



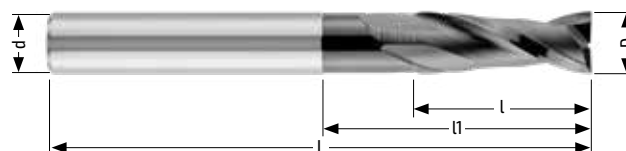
Fresa a 2 taglienti serie extra corta 2 flute end mill extra short series

CODICE CODE	D h10	d h6	L	l ap	Z	
XE-21 D2 C	2,0	6	38	3	2	○
XE-21 D3 C	3,0	6	38	4	2	○
XE-21 D4 C	4,0	6	38	5	2	○
XE-21 D5 C	5,0	6	38	6	2	○
XE-21 D6 C	6,0	6	38	7	2	○
XE-21 D7 C	7,0	8	43	9	2	○
XE-21 D8 C	8,0	8	43	9	2	○
XE-21 D9 C	9,0	10	50	11	2	○
XE-21 D10 C	10,0	10	50	11	2	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE79c



Fresa a 2 taglienti serie lunga 2 flute end mill long series

CODICE CODE	D h10	d h6	L	l ap	l1	a	Z	
XE-79 D4 C	4,0	4	62	16	-	-	2	○
XE-79 D5 C	5,0	5	62	20	-	-	2	○
XE-79 D6 C	6,0	6	78	20	30	0,15	2	○
XE-79 D8 C	8,0	8	78	25	35	0,15	2	○
XE-79 D10 C	10,0	10	105	28	48	0,15	2	○
XE-79 D12 C	12,0	12	105	32	52	0,20	2	○
XE-79 D16 C	16,0	16	130	40	60	0,20	2	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE01c

P K M



Fresa a 2 taglienti per sedi di chiavetta 2 flute end mill key slot

CODICE CODE	D e8	d h6	L	l ap	Z	
XE-01 D2 C	2,0	6	50	3	2	○
XE-01 D3 C	3,0	6	50	4	2	○
XE-01 D4 C	4,0	6	54	5	2	○
XE-01 D5 C	5,0	6	54	6	2	○
XE-01 D6 C	6,0	6	54	7	2	○
XE-01 D7 C	7,0	8	58	9	2	○
XE-01 D8 C	8,0	8	58	9	2	○
XE-01 D9 C	9,0	10	66	11	2	○
XE-01 D10 C	10,0	10	66	11	2	○
XE-01 D11 C	11,0	12	73	12	2	○
XE-01 D12 C	12,0	12	73	12	2	○
XE-01 D13 C	13,0	14	75	14	2	○
XE-01 D14 C	14,0	14	75	14	2	○
XE-01 D16 C	16,0	16	82	16	2	○
XE-01 D20 C	20,0	20	92	20	2	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE-MILL

XE16c

P K M



Fresa semisferica a 2 taglienti serie normale
2 flute ball nose end mill standard series

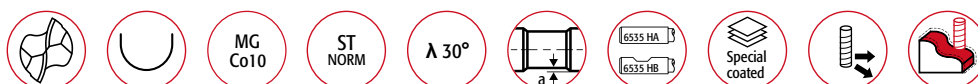
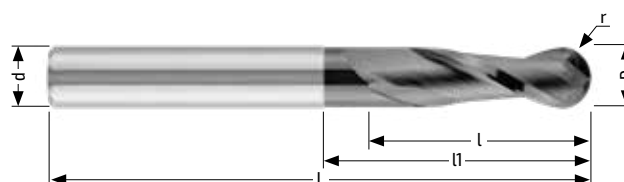
CODICE CODE	D h10	d h6	L	l ap	r	Z	
XE-16 D2 C	2,0	4	50	5	1,0	2	○
XE-16 D3 C	3,0	4	50	7	1,5	2	○
XE-16 D4 C	4,0	4	50	8	2,0	2	○
XE-16 D5 C	5,0	5	50	10	2,5	2	○
XE-16 D6 C	6,0	6	57	10	3,0	2	○
XE-16 D8 C	8,0	8	63	16	4,0	2	○
XE-16 D10 C	10,0	10	72	19	5,0	2	○
XE-16 D12 C	12,0	12	83	22	6,0	2	○
XE-16 D14 C	14,0	14	83	22	7,0	2	○
XE-16 D16 C	16,0	16	92	26	8,0	2	○
XE-16 D20 C	20,0	20	104	32	10,0	2	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE81c

P K M



Fresa semisferica a 2 taglienti serie lunga
2 flute ball nose end mill long series

CODICE CODE	D h10	d h5	L	l ap	r	l1	a	Z	
XE-81 D4 C	4,0	4	62	16	2,0	-	-	2	○
XE-81 D5 C	5,0	5	62	20	2,5	-	-	2	○
XE-81 D6 C	6,0	6	78	20	3,0	30	0,15	2	○
XE-81 D8 C	8,0	8	78	25	4,0	35	0,15	2	○
XE-81 D10 C	10,0	10	105	28	5,0	48	0,15	2	○
XE-81 D12 C	12,0	12	105	32	6,0	52	0,20	2	○
XE-81 D16 C	16,0	16	130	40	8,0	60	0,20	2	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE36c

P K M



Fresa a 3 taglienti serie normale 3 flute end mill standard series

CODICE CODE	D h10	d h6	L	l ap	Z	
XE-36 D2 C	2,0	4	50	5	3	○
XE-36 D3 C	3,0	4	50	7	3	○
XE-36 D4 C	4,0	4	50	8	3	○
XE-36 D5 C	5,0	5	50	10	3	○
XE-36 D6 C	6,0	6	57	10	3	○
XE-36 D8 C	8,0	8	63	16	3	○
XE-36 D10 C	10,0	10	72	19	3	○
XE-36 D12 C	12,0	12	83	22	3	○
XE-36 D16 C	16,0	16	92	26	3	○
XE-36 D20 C	20,0	20	104	32	3	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE26c

P K M



Fresa a 3 taglienti serie extra corta 3 flute end mill extra short series

CODICE CODE	D h10	d h6	L	l ap	Z	
XE-26 D2 C	2,0	6	38	4	3	○
XE-26 D2.5 C	2,5	6	38	4	3	○
XE-26 D3 C	3,0	6	38	5	3	○
XE-26 D3.5 C	3,5	6	38	6	3	○
XE-26 D4 C	4,0	6	38	7	3	○
XE-26 D4.5 C	4,5	6	38	8	3	○
XE-26 D5 C	5,0	6	38	8	3	○
XE-26 D6 C	6,0	6	38	8	3	○
XE-26 D7 C	7,0	8	43	11	3	○
XE-26 D8 C	8,0	8	43	11	3	○
XE-26 D9 C	9,0	10	50	13	3	○
XE-26 D10 C	10,0	10	50	13	3	○

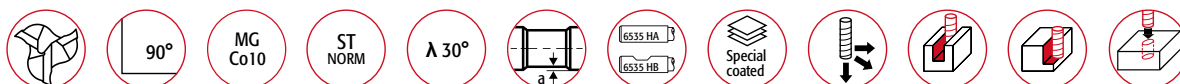
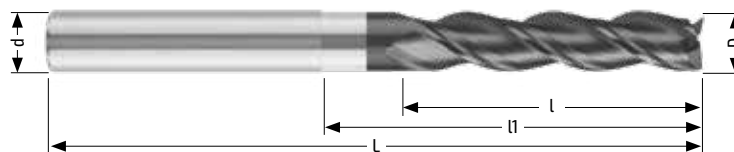
● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE-MILL

XE76c

P K M



Fresa a 3 taglienti serie lunga
3 flute end mill long series

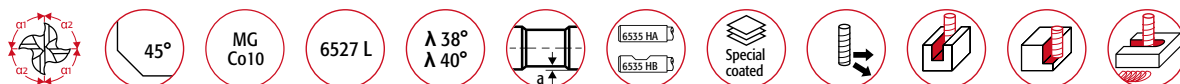
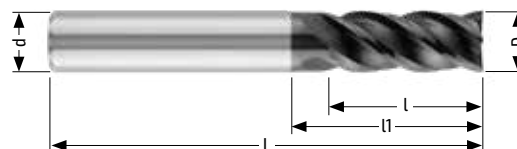
CODICE CODE	D h10	d h5	L	l ap	l1	a	Z	
XE-76 D4 C	4,0	4	62	16	-	-	3	○
XE-76 D5 C	5,0	5	62	20	-	-	3	○
XE-76 D6 C	6,0	6	78	20	30	0,15	3	○
XE-76 D8 C	8,0	8	78	25	35	0,15	3	○
XE-76 D10 C	10,0	10	105	28	48	0,15	3	○
XE-76 D12 C	12,0	12	105	32	52	0,20	3	○
XE-76 D16 C	16,0	16	130	40	60	0,20	3	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE95c

P K M



Fresa 4 taglienti serie normale con elica differenziata
4 flute end mill regular version with variable helix

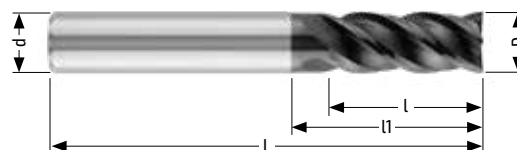
CODICE CODE	D h10	d h5	L	l ap	l1	a	45°	Z	
XE-95 D3 C	3,0	6	57	8	-	-	0,05	4	○
XE-95 D4 C	4,0	6	57	11	16	0,10	0,05	4	○
XE-95 D5 C	5,0	6	57	13	18	0,10	0,05	4	○
XE-95 D6 C	6,0	6	57	13	20	0,15	0,05	4	○
XE-95 D8 C	8,0	8	63	19	25	0,15	0,05	4	○
XE-95 D10 C	10,0	10	72	22	30	0,15	0,05	4	○
XE-95 D12 C	12,0	12	83	26	36	0,20	0,05	4	○
XE-95 D14 C	14,0	14	83	26	36	0,20	0,05	4	○
XE-95 D16 C	16,0	16	92	32	42	0,20	0,05	4	○
XE-95 D18 C	18,0	18	92	32	42	0,20	0,05	4	○
XE-95 D20 C	20,0	20	104	38	52	0,20	0,05	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE92_{C/CX}

P K M



Fresa 4 taglienti serie normale 4 flute end mill normal version

CODICE CODE	D h10	d h5	L	l ap	l1	a	45°	Z	
XE-92 D3 C	3,0	3	38	8	-	-	-	4	○
XE-92 D3 C6	3,0	6	57	8	11	0,10	0,05	4	○
XE-92 D4 C	4,0	4	50	11	16	0,10	0,10	4	○
XE-92 D4 C6	4,0	6	57	9	16	0,10	0,10	4	○
XE-92 D5 C	5,0	5	50	13	18	0,10	0,10	4	○
XE-92 D5 C6	5,0	6	57	13	18	0,10	0,10	4	○
XE-92 D6 C	6,0	6	57	13	20	0,15	0,10	4	○
XE-92 D8 C	8,0	8	63	19	25	0,15	0,15	4	○
XE-92 D10 C	10,0	10	72	22	30	0,15	0,15	4	○
XE-92 D12 C	12,0	12	83	26	36	0,20	0,15	4	○
XE-92 D14 C	14,0	14	83	26	36	0,20	0,15	4	○
XE-92 D16 C	16,0	16	92	32	42	0,20	0,20	4	○
XE-92 D18 C	18,0	18	92	32	42	0,20	0,20	4	○
XE-92 D20 C	20,0	20	104	38	52	0,20	0,20	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



Fresa 4 taglienti serie normale 4 flute end mill normal version

CODICE CODE	D h10	d h5	L	l ap	l1	a	45°	Z	
XE-92 D3 CX	3,0	3	38	8	-	-	-	4	○
XE-92 D3 CX6	3,0	6	57	8	11	0,10	-	4	○
XE-92 D4 CX	4,0	4	50	11	16	0,10	-	4	○
XE-92 D4 CX6	4,0	6	57	9	16	0,10	-	4	○
XE-92 D5 CX	5,0	5	50	13	18	0,10	-	4	○
XE-92 D5 CX6	5,0	6	57	13	18	0,10	-	4	○
XE-92 D6 CX	6,0	6	57	13	20	0,15	-	4	○
XE-92 D6 CX	8,0	8	63	19	25	0,15	-	4	○
XE-92 D10 CX	10,0	10	72	22	30	0,15	-	4	○
XE-92 D12 CX	12,0	12	83	26	36	0,20	-	4	○
XE-92 D14 CX	14,0	14	83	26	36	0,20	-	4	○
XE-92 D16 CX	16,0	16	92	32	42	0,20	-	4	○
XE-92 D18 CX	18,0	18	92	32	42	0,20	-	4	○
XE-92 D20 CX	20,0	20	104	38	52	0,20	-	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE-MILL

XE92_{CC/CCX}

P K M



Fresa 4 taglienti serie corta 4 flute end mill short version

CODICE CODE	D h10	d h5	L	l ap	45°	Z	
XE-92 D3 CC	3,0	6	54	6	0,05	4	○
XE-92 D4 CC	4,0	6	54	8	0,10	4	○
XE-92 D5 CC	5,0	6	54	9	0,10	4	○
XE-92 D6 CC	6,0	6	54	10	0,10	4	○
XE-92 D8 CC	8,0	8	57	12	0,15	4	○
XE-92 D10 CC	10,0	10	66	14	0,15	4	○
XE-92 D12 CC	12,0	12	73	16	0,15	4	○
XE-92 D14 CC	14,0	14	75	18	0,15	4	○
XE-92 D16 CC	16,0	16	82	22	0,20	4	○
XE-92 D18 CC	18,0	18	84	24	0,20	4	○
XE-92 D20 CC	20,0	20	92	26	0,20	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



Fresa 4 taglienti serie corta 4 flute end mill short version

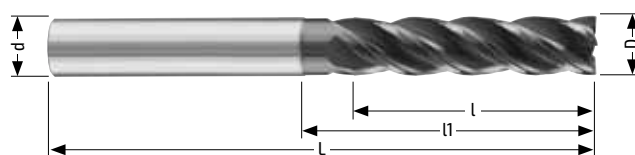
CODICE CODE	D h10	d h5	L	l ap		Z	
XE-92 D3 CCX	3,0	6	54	6	-	4	○
XE-92 D4 CCX	4,0	6	54	8	-	4	○
XE-92 D5 CCX	5,0	6	54	9	-	4	○
XE-92 D6 CCX	6,0	6	54	10	-	4	○
XE-92 D8 CCX	8,0	8	57	12	-	4	○
XE-92 D10 CCX	10,0	10	66	14	-	4	○
XE-92 D12 CCX	12,0	12	73	16	-	4	○
XE-92 D14 CCX	14,0	14	75	18	-	4	○
XE-92 D16 CCX	16,0	16	82	22	-	4	○
XE-92 D18 CCX	18,0	18	84	24	-	4	○
XE-92 D20 CCX	20,0	20	92	26	-	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE92_L

P K M



Fresa 4 taglienti serie lunga 4 flute end mill long version

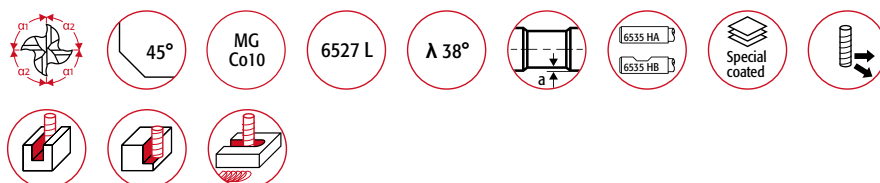
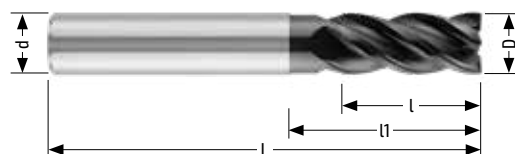
CODICE CODE	D h10	d h5	L	l ap	l1	a	45°	Z	
XE-92 D5 L	5,0	6	74	20	25	0,10	0,10	4	○
XE-92 D6 L	6,0	6	74	24	30	0,15	0,10	4	○
XE-92 D8 L	8,0	8	80	32	40	0,15	0,15	4	○
XE-92 D10 L	10,0	10	87	40	46	0,15	0,15	4	○
XE-92 D12 L	12,0	12	105	48	58	0,20	0,15	4	○
XE-92 D14 L	14,0	14	105	48	58	0,20	0,15	4	○
XE-92 D16 L	16,0	16	125	64	68	0,20	0,20	4	○
XE-92 D20 L	20,0	20	160	70	80	0,20	0,20	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE-MILL

XE94_C



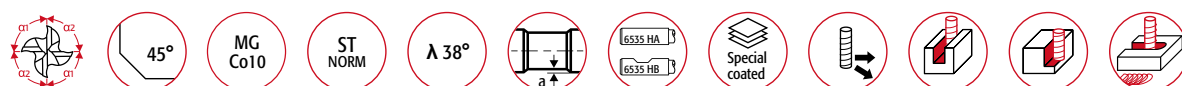
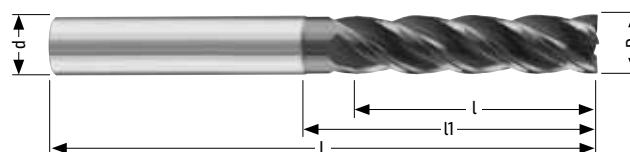
Fresa 4 taglienti serie normale per inox e acciai dolci
4 flute end mill regular version for inox and mild steel

CODICE CODE	D h10	d h5	L	l ap	l1	a	45°	Z	
XE-94 D3 C	3,0	6	57	8	11	0,10	0,10	4	○
XE-94 D4 C	4,0	6	57	9	16	0,10	0,10	4	○
XE-94 D5 C	5,0	6	57	13	18	0,10	0,10	4	○
XE-94 D6 C	6,0	6	57	13	20	0,15	0,10	4	○
XE-94 D8 C	8,0	8	63	19	25	0,15	0,15	4	○
XE-94 D10 C	10,0	10	72	22	30	0,15	0,15	4	○
XE-94 D12 C	12,0	12	83	26	36	0,20	0,15	4	○
XE-94 D14 C	14,0	14	83	26	36	0,20	0,15	4	○
XE-94 D16 C	16,0	16	92	32	42	0,20	0,20	4	○
XE-94 D18 C	18,0	18	92	32	42	0,20	0,20	4	○
XE-94 D20 C	20,0	20	104	38	52	0,20	0,20	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE94_L



Fresa 4 taglienti serie lunga per inox e acciai dolci
4 flute end mill long version for inox and mild steel

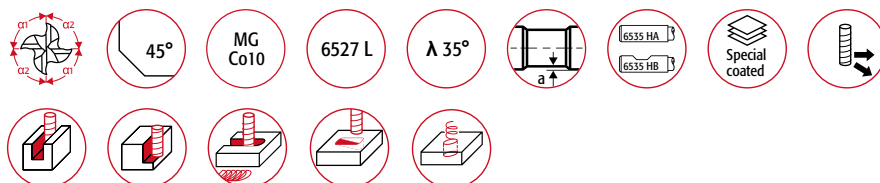
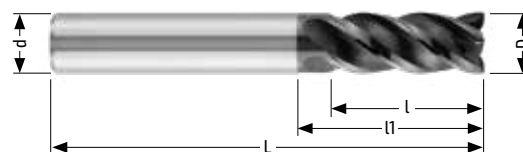
CODICE CODE	D h10	d h5	L	l ap	l1	a	45°	Z	
XE-94 D5 L	5,0	6	74	20	25	0,10	0,10	4	○
XE-94 D6 L	6,0	6	74	24	30	0,15	0,10	4	○
XE-94 D8 L	8,0	8	80	32	40	0,15	0,15	4	○
XE-94 D10 L	10,0	10	87	40	46	0,15	0,15	4	○
XE-94 D12 L	12,0	12	105	48	58	0,20	0,15	4	○
XE-94 D14 L	14,0	14	105	48	58	0,20	0,15	4	○
XE-94 D16 L	16,0	16	125	64	68	0,20	0,20	4	○
XE-94 D20 L	20,0	20	160	70	80	0,20	0,20	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE93c

P K M



Fresa universale a 4 taglienti adatta per la fresatura in rampa
4 flute multi-purpose end mill suitable for ramp milling

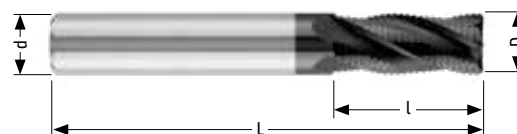
CODICE CODE	D h10	d h5	L	l ap	l1	45°	a	Z	
XE-93 D4 C	4,0	6	57	11	15	0,20	0,15	4	○
XE-93 D5 C	5,0	6	57	13	18	0,20	0,15	4	○
XE-93 D6 C	6,0	6	57	13	20	0,25	0,15	4	○
XE-93 D8 C	8,0	8	63	19	25	0,30	0,15	4	○
XE-93 D10 C	10,0	10	72	22	30	0,35	0,15	4	○
XE-93 D12 C	12,0	12	83	26	36	0,40	0,20	4	○
XE-93 D16 C	16,0	16	92	32	42	0,45	0,20	4	○
XE-93 D20 C	20,0	20	104	38	52	0,50	0,20	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE71

P K M



Fresa a sgrossare 4 taglienti con rompitruciolo serie normale 4 flute end mill for roughing with chip breaker standard series

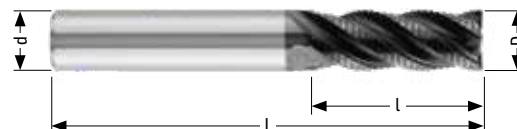
CODICE CODE	D h11	d h6	L	l ap	Z	
XE-71 D4 C	4,0	6	57	13	4	○
XE-71 D5 C	5,0	6	57	13	4	○
XE-71 D6 C	6,0	6	57	13	4	○
XE-71 D8 C	8,0	8	63	19	4	○
XE-71 D10 C	10,0	10	72	22	4	○
XE-71 D12 C	12,0	12	83	26	4	○
XE-71 D16 C	16,0	16	92	32	4	○
XE-71 D20 C	20,0	20	104	38	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE97c

P K M



Fresa a SGROSSARE 4 taglienti serie normale 4 flute end mill for ROUGHING standard series

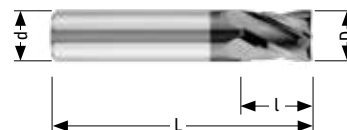
CODICE CODE	D h10	d h6	L	l ap	45°	Z	
XE-97 D4 C6	4,0	6	57	13	0,70	4	○
XE-97 D5 C6	5,0	6	57	13	0,80	4	○
XE-97 D6 C6	6,0	6	57	13	0,80	4	○
XE-97 D8 C8	8,0	8	63	19	0,80	4	○
XE-97 D10 C	10,0	10	72	22	0,80	4	○
XE-97 D12 C	12,0	12	83	26	0,90	4	○
XE-97 D16 C	16,0	16	92	32	0,90	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE29

P K M



Fresa a 4 taglienti serie extra corta 4 flute end mill extra short series

CODICE CODE	D h10	d h5	L	l ap	Z	
XE-29 D2 C	2,0	6	38	4	4	○
XE-29 D3 C	3,0	6	38	5	4	○
XE-29 D4 C	4,0	6	38	7	4	○
XE-29 D5 C	5,0	6	38	8	4	○
XE-29 D6 C	6,0	6	38	8	4	○
XE-29 D8 C	8,0	8	43	11	4	○
XE-29 D10 C	10,0	10	50	13	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE56

P K M



Fresa a 4 taglienti serie normale 4 flute end mill standard series

CODICE CODE	D h10	d h5	L	l ap	Z	
XE-56 D2 C	2,0	4	50	7	4	○
XE-56 D2.5 C	2,5	4	50	8	4	○
XE-56 D3 C	3,0	4	50	8	4	○
XE-56 D3.5 C	3,5	4	50	10	4	○
XE-56 D4 C	4,0	4	50	11	4	○
XE-56 D4.5 C	4,5	5	50	11	4	○
XE-56 D5 C	5,0	5	50	13	4	○
XE-56 D5.5 C	5,5	6	57	13	4	○
XE-56 D6 C	6,0	6	57	13	4	○
XE-56 D6.5 C	6,5	7	60	16	4	○
XE-56 D7 C	7,0	7	60	16	4	○
XE-56 D7.5 C	7,5	8	63	19	4	○
XE-56 D8 C	8,0	8	63	19	4	○
XE-56 D8.5 C	8,5	9	67	19	4	○
XE-56 D9 C	9,0	9	67	19	4	○
XE-56 D9.5 C	9,5	10	72	22	4	○
XE-56 D10 C	10,0	10	72	22	4	○
XE-56 D11 C	11,0	11	83	26	4	○
XE-56 D12 C	12,0	12	83	26	4	○
XE-56 D13 C	13,0	13	83	26	4	○
XE-56 D14 C	14,0	14	83	26	4	○
XE-56 D15 C	15,0	15	92	32	4	○
XE-56 D16 C	16,0	16	92	32	4	○
XE-56 D18 C	18,0	18	92	32	4	○
XE-56 D20 C	20,0	20	104	38	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE-MILL

XE56CR

P K M



Fresa a 4 taglienti serie normale 4 flute end mill standard series

CODICE CODE	D h10	d h6	L	l ap	Cr	Z	
XE-56CR05 D2	2,0	4	50	7	0,5	4	○
XE-56CR05 D3	3,0	4	50	8	0,5	4	○
XE-56CR05 D4	4,0	4	50	11	0,5	4	○
XE-56CR05 D6	6,0	6	57	13	0,5	4	○
XE-56CR05 D8	8,0	8	63	19	0,5	4	○
XE-56CR05 D10	10,0	10	72	22	0,5	4	○
XE-56CR05 D12	12,0	12	83	26	0,5	4	○

Fresa a 4 taglienti serie normale 4 flute end mill standard series

CODICE CODE	D h10	d h6	L	l ap	Cr	Z	
XE-56CR10 D5	5,0	5	50	13	1,0	4	○
XE-56CR10 D6	6,0	6	57	13	1,0	4	○
XE-56CR10 D8	8,0	8	63	19	1,0	4	○
XE-56CR10 D10	10,0	10	72	22	1,0	4	○
XE-56CR10 D12	12,0	12	83	26	1,0	4	○

Fresa a 4 taglienti serie normale 4 flute end mill standard series

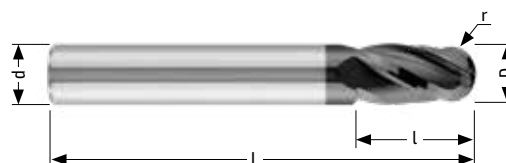
CODICE CODE	D h10	d h6	L	l ap	Cr	Z	
XE-56CR20 D10	10,0	10	72	22	2,0	4	○
XE-56CR20 D12	12,0	12	83	26	2,0	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE66

P K M



Fresa semisferica a 4 taglienti serie normale 4 flute ball nose end mill standard series

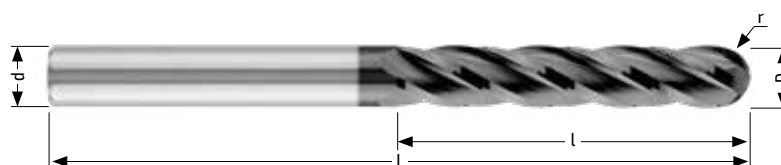
CODICE CODE	D h10	d h6	L	l ap	r	Z	
XE-66 D2 C	2,0	3	38	5	1,0	4	○
XE-66 D3 C	3,0	3	38	7	1,5	4	○
XE-66 D4 C	4,0	4	50	8	2,0	4	○
XE-66 D5 C	5,0	5	50	10	2,5	4	○
XE-66 D6 C	6,0	6	57	10	3,0	4	○
XE-66 D7 C	7,0	7	60	13	3,5	4	○
XE-66 D8 C	8,0	8	63	16	4,0	4	○
XE-66 D9 C	9,0	9	67	16	4,5	4	○
XE-66 D10 C	10,0	10	72	19	5,0	4	○
XE-66 D12 C	12,0	12	83	22	6,0	4	○
XE-66 D13 C	13,0	13	83	22	6,5	4	○
XE-66 D14 C	14,0	14	83	22	7,0	4	○
XE-66 D16 C	16,0	16	92	26	8,0	4	○
XE-66 D18 C	18,0	18	92	26	9,0	4	○
XE-66 D20 C	20,0	20	104	32	10,0	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE83

P K M



Fresa semisferica a 4 taglienti serie lunga 4 flute ball nose end mill long series

CODICE CODE	D h10	d h6	L	l ap	r	Z	
XE-83 D6 C	6,0	6	105	42	3,0	4	○
XE-83 D8 C	8,0	8	105	50	4,0	4	○
XE-83 D10 C	10,0	10	120	50	5,0	4	○
XE-83 D12 C	12,0	12	160	65	6,0	4	○
XE-83 D16 C	16,0	16	160	70	8,0	4	○

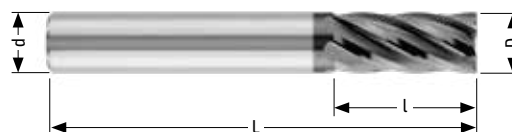
● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE-MILL

XE61

P K M



Fresa a 6 taglienti serie normale 6 flute end mill standard series

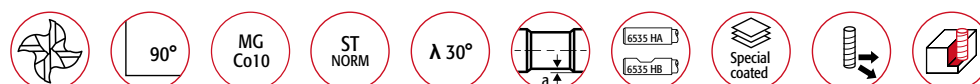
CODICE CODE	D h10	d h6	L	l ap	Z	
XE-61 D6 C	6,0	6	57	13	6	○
XE-61 D8 C	8,0	8	63	19	6	○
XE-61 D10 C	10,0	10	72	22	6	○
XE-61 D12 C	12,0	12	83	26	6	○
XE-61 D14 C	14,0	14	83	26	6	○
XE-61 D16 C	16,0	16	92	32	6	○
XE-61 D20 C	20,0	20	104	38	8	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE59

P K M



Fresa a 4 taglienti serie lunga 4 flute end mill long series

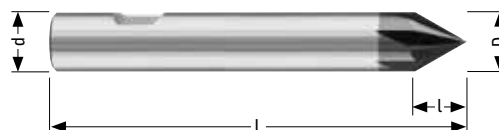
CODICE CODE	D h10	d h6	L	l ap	l1	a	Z	
XE-59 D3 C	3,0	3	62	14	-	-	4	○
XE-59 D4 C	4,0	4	62	16	-	-	4	○
XE-59 D5 C	5,0	5	62	20	-	-	4	○
XE-59 D6 C	6,0	6	78	20	30	0,15	4	○
XE-59 D8 C	8,0	8	78	25	35	0,15	4	○
XE-59 D10 C	10,0	10	105	28	48	0,15	4	○
XE-59 D12 C	12,0	12	105	32	52	0,20	4	○
XE-59 D16 C	16,0	16	130	40	60	0,20	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE41WAL

P K M



Fresa per smussi 60°
End mill for chamfer 60°

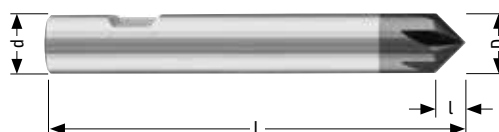
CODICE CODE	D h10	d h5	L	Z	
XE-41 D3 WAL	3,0	4	50	4	○
XE-41 D4 WAL	4,0	4	50	4	○
XE-41 D6 WAL	6,0	6	57	6	○
XE-41 D8 WAL	8,0	8	63	6	○
XE-41 D10 WAL	10,0	10	72	6	○
XE-41 D12 WAL	12,0	12	83	6	○
XE-41 D16 WAL	16,0	16	92	6	○
XE-41 D20 WAL	20,0	20	104	6	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

XE42WAL

P K M

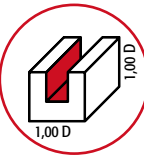
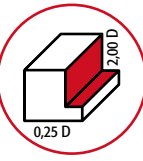
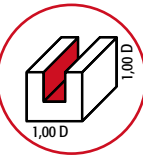
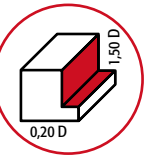
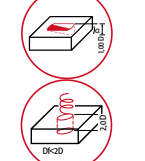
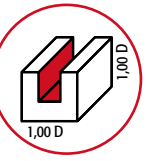
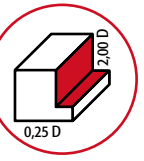


Fresa per smussi 90°
End mill for chamfer 90°

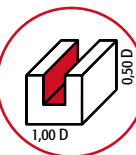
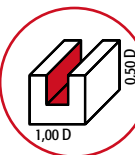
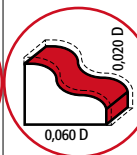
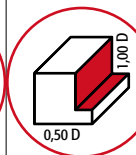
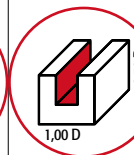
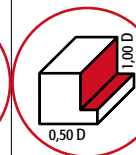
CODICE CODE	D h10	d h5	L	Z	
XE-42 D3 WAL	3,0	4	50	4	○
XE-42 D4 WAL	4,0	4	50	4	○
XE-42 D6 WAL	6,0	6	57	6	○
XE-42 D8 WAL	8,0	8	63	6	○
XE-42 D10 WAL	10,0	10	72	6	○
XE-42 D12 WAL	12,0	12	83	6	○
XE-42 D16 WAL	16,0	16	92	6	○
XE-42 D20 WAL	20,0	20	104	6	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad

		XE95C						XE92C/XE93C						XE93C			XE93C/XE95C HF					
Materiale Material	Diametro Diameter																					
Acciaio <800 N/mm² Steel <800 N/mm²	m/min	Vc=140			Vc=160			Vc = 140			Vc = 160			α=12° Vc= 140			Vc= 260			Vc= 330		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	2,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	0,010	594	14862	0,010	679	16985	0,010	594	14854	0,010	679	16977	-	-	-	-	-	-	-	-	-
	4,0	0,015	669	11146	0,015	764	12739	0,015	668	11141	0,015	764	12732	0,015	668	11141	0,013	1055	20690	0,013	1339	26261
	5,0	0,020	713	8917	0,020	815	10191	0,02	713	8913	0,020	815	10186	0,020	713	8913	0,017	1126	16552	0,017	1429	21008
	6,0	0,030	892	7431	0,030	1019	8493	0,03	891	7427	0,030	1019	8488	0,030	891	7427	0,026	1407	13793	0,026	1786	17507
	8,0	0,045	1003	5573	0,045	1146	6369	0,045	1003	5570	0,045	1146	6366	0,045	1003	5570	0,038	1583	10345	0,038	2009	13130
	10,0	0,060	1070	4459	0,060	1223	5096	0,060	1069	4456	0,060	1222	5093	0,060	1069	4456	0,051	1688	8276	0,051	2143	10504
	12,0	0,070	1040	3715	0,070	1189	4246	0,070	1040	3714	0,070	1188	4244	0,070	1040	3714	0,060	1641	6897	0,060	2083	8754
14,0	-	-	-	-	-	-	0,072	917	3183	0,072	1048	3638	-	-	-	-	-	-	-	-	-	
16,0	0,075	836	2787	0,075	955	3185	0,075	836	2785	0,075	955	3183	0,075	836	2785	0,064	1319	5173	0,064	1674	6565	
20,0	0,082	731	2229	0,090	917	2548	0,082	731	2228	0,090	917	2546	0,082	731	2228	0,070	1154	4138	0,070	1464	5252	
Acciaio <1000 N/mm² - Ghisa Steel <1000 N/mm² - Cast iron	m/min	Vc=115			Vc=130			Vc = 115			Vc = 125			α=12° Vc= 115			Vc = 220			Vc = 280		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	2,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	0,010	488	12208	0,010	552	13800	0,010	488	12202	0,010	531	13263	-	-	-	-	-	-	-	-	-
	4,0	0,015	549	9156	0,015	621	10350	0,015	549	9151	0,015	597	9947	0,015	549	9151	0,013	893	17507	0,013	1136	22282
	5,0	0,020	586	7325	0,020	662	8280	0,02	586	7321	0,020	637	7958	0,020	586	7321	0,017	952	14006	0,017	1212	17825
	6,0	0,030	732	6104	0,030	828	6900	0,03	732	6101	0,030	796	6631	0,030	732	6101	0,026	1190	11671	0,026	1515	14854
	8,0	0,045	824	4578	0,045	932	5175	0,045	824	4576	0,045	895	4974	0,045	824	4576	0,038	1339	8754	0,038	1705	11141
	10,0	0,060	879	3662	0,060	994	4140	0,060	879	3661	0,060	955	3979	0,060	879	3661	0,051	1429	7003	0,051	1818	8913
	12,0	0,070	855	3052	0,070	966	3450	0,070	854	3050	0,070	928	3316	0,070	854	3050	0,060	1389	5836	0,060	1768	7427
14,0	-	-	-	-	-	-	0,072	753	2615	0,072	819	2842	-	-	-	-	-	-	-	-	-	
16,0	0,075	687	2289	0,075	776	2588	0,075	686	2288	0,075	746	2487	0,075	686	2288	0,064	1116	4377	0,064	1420	5570	
20,0	0,082	601	1831	0,090	745	2070	0,082	600	1830	0,090	716	1989	0,082	600	1830	0,070	976	3501	0,070	1242	4456	
Acciaio <1300 N/mm² Steel <1300 N/mm²	m/min	Vc=85			Vc=100			Vc = 85			Vc = 95			α=12° Vc= 85			Vc = 180			Vc = 230		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	2,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	0,010	361	9023	0,010	425	10616	0,010	361	9019	0,010	403	10080	-	-	-	-	-	-	-	-	-
	4,0	0,015	406	6768	0,015	478	7962	0,015	406	6764	0,015	454	7560	0,015	406	6764	0,013	731	14324	0,013	933	18303
	5,0	0,020	433	5414	0,020	510	6369	0,020	433	5411	0,02	484	6048	0,020	433	5411	0,017	779	11459	0,017	996	14642
	6,0	0,030	541	4512	0,030	637	5308	0,030	541	4509	0,03	605	5040	0,030	541	4509	0,026	974	9549	0,026	1245	12202
	8,0	0,045	609	3384	0,045	717	3981	0,045	609	3382	0,045	680	3780	0,045	609	3382	0,038	1096	7162	0,038	1400	9151
	10,0	0,060	650	2707	0,060	764	3185	0,060	649	2706	0,060	726	3024	0,060	649	2706	0,051	1169	5730	0,051	1494	7321
	12,0	0,070	632	2256	0,070	743	2654	0,070	631	2255	0,070	706	2520	0,070	631	2255	0,060	1136	4775	0,060	1452	6101
14,0	-	-	-	-	-	-	0,072	557	1933	0,072	622	2160	-	-	-	-	-	-	-	-	-	
16,0	0,075	508	1692	0,075	597	1990	0,075	507	1691	0,075	567	1890	0,075	507	1691	0,064	913	3581	0,064	1167	4576	
20,0	0,082	444	1354	0,090	573	1592	0,082	444	1353	0,090	544	1512	0,082	444	1353	0,070	799	2865	0,070	1021	3661	
Acciai alloyati High alloyed tool steel	m/min	Vc=45			Vc=60			Vc = 45			Vc = 50			α=10° Vc= 45			Vc = 80			Vc = 110		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	2,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	0,010	191	4777	0,010	255	6369	0,010	191	4775	0,010	212	5305	-	-	-	-	-	-	-	-	-
	4,0	0,015	215	3583	0,015	287	4777	0,015	215	3581	0,015	239	3979	0,015	215	3581	0,013	325	6366	0,013	446	8754
	5,0	0,020	229	2866	0,020	306	3822	0,020	229	2865	0,020	255	3183	0,020	229	2865	0,017	346	5093	0,017	476	7003
	6,0	0,030	287	2389	0,030	382	3185	0,030	286	2387	0,030	318	2653	0,030	286	2387	0,026	433	4244	0,026	595	5836
	8,0	0,045	322	1791	0,045	430	2389	0,045	322	1790	0,045	358	1989	0,045	322	1790	0,038	487	3183	0,038	670	4377
	10,0	0,060	344	1433	0,060	459	1911	0,060	344	1432	0,060	382	1592	0,060	344	1432	0,051	519	2546	0,051	714	3501
	12,0	0,070	334	1194	0,070	446	1592	0,070	334	1194	0,070	371	1326	0,070	334	1194	0,060	505	2122	0,060	694	2918
14,0	-	-	-	-	-	-	0,072	295	1023	0,072	327	1137	-	-	-	-	-	-	-	-	-	
16,0	0,075	269	896	0,075	358	1194	0,075	269	895	0,075	298	995	0,075	269	895	0,064	406	1592	0,064	558	2188	
20,0	0,082	235	717	0,090	344	955	0,082	235	716	0,090	286	796	0,082	235	716	0,070	355	1273	0,070	488	1751	
Acciaio Inox Stainless Steel	m/min	Vc=95			Vc=100			Vc = 35			Vc = 45			α=8° Vc= 45			Vc = 80			Vc = 110		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	2,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	0,010	403	10085	0,010	403	10085	0,010	149	3714	0,010	191	4775	-	-	-	-	-	-	-	-	-
	4,0	0,015	454	7564	0,015	454	7564															

		XE56C				XE29C				XE61C				XE66C				XE97C						XE71C				XE06C					
Materiale Material	Diametro Diameter																																
Acciaio <800 N/mm² Steel <800 N/mm²	m/min	Vc = 175				Vc = 150				Vc = 175				Vc = 360				Vc = 140				Vc = 160				Vc = 140				Vc = 120			
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm					
	2,0	0,002	223	27852	0,002	191	23885	-	-	-	0,035	8021	57296	-	-	-	-	-	-	-	-	-	-	-	-	0,002	76	1909					
	3,0	0,007	520	18568	0,004	255	15924	-	-	-	0,059	9015	38197	-	-	-	-	-	-	-	-	-	-	-	-	0,003	76	12732					
	4,0	0,012	668	13926	0,007	334	11943	-	-	-	0,117	13407	28648	0,025	1114	11141	0,025	1273	12732	0,018	802	11141	0,004	76	9549								
	5,0	0,017	758	11141	0,012	459	9554	-	-	-	0,162	14851	22918	0,030	1070	8913	0,030	1222	10186	0,020	713	8913	0,007	107	7639								
	6,0	0,022	817	9284	0,016	510	7962	0,022	1225	9284	0,198	15126	19099	0,040	1188	7427	0,040	1358	8488	0,028	832	7427	0,009	115	6366								
	8,0	0,029	808	6963	0,020	478	5971	0,029	1212	6963	0,256	14668	14324	0,060	1337	5570	0,060	1528	6366	0,039	869	5570	0,016	153	4775								
	10,0	0,035	780	5570	0,025	478	4777	0,035	1170	5570	0,300	13751	11459	0,070	1248	4456	0,070	1426	5093	0,048	856	4456	0,022	168	3820								
	12,0	0,039	724	4642	-	-	-	0,039	1086	4642	0,337	12872	9549	0,080	1188	3714	0,080	1358	4244	0,055	817	3714	0,026	166	3183								
14,0	0,043	684	3979	-	-	-	0,043	1027	3979	0,367	12016	8185	-	-	-	-	-	-	-	0,061	777	3183	0,030	164	2728								
16,0	0,047	655	3482	-	-	-	0,047	1309	3482	0,394	11287	7162	0,085	947	2785	0,085	1082	3183	0,067	746	2785	0,033	158	2387									
20,0	0,052	579	2785	-	-	-	0,052	1159	2785	0,420	9626	5730	-	-	-	-	-	-	-	0,076	677	2228	0,039	149	1910								
Acciaio <1000 N/mm² - Ghisa Steel <1000 N/mm² - Cast iron	m/min	Vc = 145				Vc = 125				Vc = 145				Vc = 295				Vc = 115				Vc = 125				Vc = 115				Vc = 100			
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm					
	2,0	0,002	185	23077	0,002	159	19904	-	-	-	0,035	6573	46951	-	-	-	-	-	-	-	-	-	-	-	-	0,002	64	15915					
	3,0	0,007	431	15385	0,004	212	13270	-	-	-	0,059	7387	31300	-	-	-	-	-	-	-	-	-	-	-	-	0,003	64	10610					
	4,0	0,012	554	11539	0,007	279	9952	-	-	-	0,117	10986	23475	0,025	915	9151	0,025	995	9947	0,018	659	9151	0,004	64	7958								
	5,0	0,017	628	9231	0,012	382	7962	-	-	-	0,162	12170	18780	0,030	879	7321	0,030	955	7958	0,02	586	7321	0,007	89	6366								
	6,0	0,022	677	7692	0,016	425	6635	0,022	1015	7692	0,198	12395	15650	0,040	976	6101	0,040	1061	6631	0,028	683	6101	0,009	95	5305								
	8,0	0,029	669	5769	0,02	398	4976	0,029	1004	5769	0,256	12019	11738	0,060	1098	4576	0,060	1194	4974	0,039	714	4576	0,016	127	3979								
	10,0	0,035	646	4615	0,025	398	3981	0,035	969	4615	0,300	11268	9390	0,070	1025	3661	0,070	1114	3979	0,048	703	3661	0,022	140	3183								
	12,0	0,039	600	3846	-	-	-	0,039	900	3846	0,337	10548	7825	0,080	976	3050	0,080	1061	3316	0,055	671	3050	0,026	138	2653								
14,0	0,043	567	3297	-	-	-	0,043	851	3297	0,367	9846	6707	-	-	-	-	-	-	-	0,061	638	2615	0,030	136	2274								
16,0	0,047	542	2885	-	-	-	0,047	1085	2885	0,394	9249	5869	0,085	778	2288	0,085	846	2487	0,067	613	2288	0,033	131	1989									
20,0	0,052	480	2308	-	-	-	0,052	960	2308	0,420	7888	4695	-	-	-	-	-	-	-	0,076	556	1830	0,039	124	1592								
Acciaio <1300 N/mm² Steel <1300 N/mm²	m/min	Vc = 110				Vc = 90				Vc = 110				Vc = 225				Vc = 85				Vc = 95				Vc = 90				Vc = 75			
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm					
	2,0	0,002	140	17507	0,002	115	14331	-	-	-	0,035	5013	35810	-	-	-	-	-	-	-	-	-	-	-	-	0,002	48	11937					
	3,0	0,007	327	11671	0,004	153	9554	-	-	-	0,059	5634	23873	-	-	-	-	-	-	-	-	-	-	-	-	0,003	48	7958					
	4,0	0,012	420	8754	0,007	201	7166	-	-	-	0,117	8380	17905	0,025	676	6764	0,025	756	7560	0,018	516	7162	0,004	48	5968								
	5,0	0,017	476	7003	0,012	275	5732	-	-	-	0,162	9282	14324	0,030	649	5411	0,03	726	6048	0,02	458	5730	0,007	67	4775								
	6,0	0,022	514	5836	0,016	306	4777	0,022	770	5836	0,198	9454	11937	0,040	721	4509	0,04	806	5040	0,028	535	4775	0,009	72	3979								
	8,0	0,029	508	4377	0,02	287	3583	0,029	762	4377	0,256	9167	8952	0,060	812	3382	0,06	907	3780	0,039	559	3581	0,016	95	2984								
	10,0	0,035	490	3501	0,025	287	2866	0,035	735	3501	0,300	8594	7162	0,070	758	2706	0,070	847	3024	0,048	550	2865	0,022	105	2387								
	12,0	0,039	455	2918	-	-	-	0,039	683	2918	0,337	8045	5968	0,080	722	2255	0,080	806	2520	0,055	525	2387	0,026	103	1989								
14,0	0,043	430	2501	-	-	-	0,043	645	2501	0,367	7510	5116	-	-	-	-	-	-	-	0,061	499	2046	0,030	102	1705								
16,0	0,047	411	2188	-	-	-	0,047	823	2188	0,394	7055	4476	0,085	575	1691	0,085	643	1890	0,067	480	1790	0,033	98	1492									
20,0	0,052	364	1751	-	-	-	0,052	728	1751	0,420	6016	3581	-	-	-	-	-	-	-	0,076	435	1432	0,039	93	1194								
Acciai altolegati High alloyed tool steel	m/min	Vc = 55				Vc = 40				Vc = 55				Vc = 115				Vc = 45				Vc = 50				Vc = 45				Vc = 40			
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm					
	2,0	0,002	70	8754	0,002	51	6369	-	-	-	0,035	2562	18303	-	-	-	-	-	-	-	-	-	-	-	-	0,002	25	6366					
	3,0	0,007	163	5836	0,004	68	4246	-	-	-	0,059	2880	12202	-	-	-	-	-	-	-	-	-	-	-	-	0,003	25	4244					
	4,0	0,012	210	4377	0,007	89	3185	-	-	-	0,117	4283	9151	0,025	358	3581	0,025	398	3979	0,018	258	3581	0,004	25	3183								
	5,0	0,017	238	3501	0,012	122	2548	-	-	-	0,162	4744	7321	0,030	344	2865	0,030	382	3183	0,02	229	2865	0,007	36	2546								
	6,0	0,022	257	2918	0,016	136	2123	0,022	385	2918	0,198	4832	6101	0,040	382	2387	0,040	424	2653	0,028	267	2387	0,009	38	2122								
	8,0	0,029	254	2188	0,02	127	1592	0,029	381	2188	0,256	4686	4576	0,060	430	1790	0,060	477	1989	0,039	279	1790	0,016	51	1592								
	10,0	0,035	245	1751	0,025	127	1274	0,035	368	1751	0,300	4393	3661	0,070	401	1432	0,070	446	1592	0,048	275	1432	0,022	56	1273								
	12,0	0,039	228	1459	-	-	-	0,039	341	1459	0,337	4112	3050	0,080	382	1194	0,080	424	1326	0,055	263	1194	0,026	55	1061								
14,0	0,043	215	1251	-	-	-	0,043	323	1251	0,367	3838	2615	-	0	1023	-	0	1137	0,061	250	1023	0,030	55	909									
16,0	0,047	206	1094	-	-	-	0,047	411	1094	0,394	3606	2288	0,085	304																			

		XE21C				XE01C				XE16C				XE36C				XE26C				XE41/42WALL											
Materiale Material	Diametro Diameter																																
Acciaio <800 N/mm² Steel <800 N/mm²	m/min	Vc = 120				Vc = 120				Vc = 360				Vc = 130				Vc = 120				Vc = 130				Vc = 120				Vc=90			
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm					
	2,0	0,002	76	19108	0,002	76	19108	0,022	2521	57296	0,002	124	20701	0,002	115	19108	0,002	124	20701	0,002	115	19108	-	-	-	0,020	764	9554					
	3,0	0,004	102	12739	0,004	102	12739	0,081	6188	38197	0,004	166	13800	0,004	153	12739	0,004	166	13800	0,004	153	12739	0,030	860	7166	-	-	-					
	4,0	0,009	172	9554	0,009	172	9554	0,139	7964	28648	0,009	279	10350	0,009	258	9554	0,009	279	10350	0,009	258	9554	0,040	764	4777	0,050	717	3583					
	5,0	0,014	214	7643	0,014	214	7643	0,184	8434	22918	0,014	348	8280	0,014	321	7643	0,014	348	8280	0,014	321	7643	-	-	-	-	-	-					
	6,0	0,018	229	6369	0,018	229	6369	0,220	8403	19099	0,018	373	6900	0,018	344	6369	0,018	373	6900	0,018	344	6369	0,040	764	4777	0,050	717	3583					
	8,0	0,023	220	4777	0,023	220	4777	0,278	7964	14324	0,023	357	5175	0,023	330	4777	0,023	357	5175	0,023	330	4777	0,060	688	2866	0,070	669	2389					
	10,0	0,028	214	3822	0,028	214	3822	0,322	7380	11459	0,028	348	4140	0,028	321	3822	0,028	348	4140	0,028	321	3822	0,070	669	2389	0,080	459	1433					
	12,0	-	-	-	0,032	204	3185	0,359	6856	9549	0,032	331	3450	0,032	306	3185	-	-	-	-	-	-	-	-	-	-	-	-					
14,0	-	-	-	0,034	186	2730	0,389	6368	8185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
16,0	-	-	-	0,038	182	2389	0,416	5959	7162	0,038	295	2588	0,038	272	2389	-	-	-	-	-	-	-	-	-	-	-	-						
20,0	-	-	-	0,042	161	1911	-	-	-	0,042	261	2070	0,042	241	1911	-	-	-	-	-	-	-	-	-	-	-	-						
Acciaio <1000 N/mm² - Ghisa Steel <1000 N/mm² - Cast iron	m/min	Vc = 100				Vc = 100				Vc = 295				Vc = 110				Vc = 100				Vc = 110				Vc = 100				Vc=70			
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm					
	2,0	0,002	64	15924	0,002	64	15924	0,022	2066	46951	0,002	105	17516	0,002	96	15924	0,002	105	17516	0,002	96	15924	-	-	-	0,020	594	7431					
	3,0	0,004	85	10616	0,004	85	10616	0,081	5071	31300	0,004	140	11677	0,004	127	10616	0,004	140	11677	0,004	127	10616	0,030	669	5573	-	-	-					
	4,0	0,009	143	7962	0,009	143	7962	0,139	6526	23475	0,009	236	8758	0,009	215	7962	0,009	236	8758	0,009	215	7962	0,040	594	3715	0,050	557	2787					
	5,0	0,014	178	6369	0,014	178	6369	0,184	6911	18780	0,014	294	7006	0,014	268	6369	0,014	294	7006	0,014	268	6369	-	-	-	-	-	-					
	6,0	0,018	191	5308	0,018	191	5308	0,22	6886	15650	0,018	315	5839	0,018	287	5308	0,018	315	5839	0,018	287	5308	0,040	594	3715	0,050	557	2787					
	8,0	0,023	183	3981	0,023	183	3981	0,278	6526	11738	0,023	302	4379	0,023	275	3981	0,023	302	4379	0,023	275	3981	0,060	535	2229	0,070	520	1858					
	10,0	0,028	178	3185	0,028	178	3185	0,322	6047	9390	0,028	294	3503	0,028	268	3185	0,028	294	3503	0,028	268	3185	0,060	535	2229	0,070	520	1858					
	12,0	-	-	-	0,032	170	2654	0,359	5618	7825	0,032	280	2919	0,032	255	2654	-	-	-	-	-	-	-	-	-	-	-	-					
14,0	-	-	-	0,034	155	2275	0,389	5218	6707	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
16,0	-	-	-	0,038	151	1990	0,416	4883	5869	0,038	250	2189	0,038	227	1990	-	-	-	-	-	-	-	-	-	-	-	-						
20,0	-	-	-	0,042	134	1592	-	-	-	0,042	221	1752	0,042	201	1592	-	-	-	-	-	-	-	-	-	-	-	-						
Acciaio <1300 N/mm² Steel <1300 N/mm²	m/min	Vc = 75				Vc = 75				Vc = 225				Vc = 80				Vc = 75				Vc = 80				Vc = 75				Vc=60			
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm					
	2,0	0,002	48	11943	0,002	48	11943	0,022	1576	35810	0,002	76	12739	0,002	72	11943	0,002	76	12739	0,002	72	11943	-	-	-	0,020	510	6369					
	3,0	0,004	64	7962	0,004	64	7962	0,081	3867	23873	0,004	102	8493	0,004	96	7962	0,004	102	8493	0,004	96	7962	0,030	573	4777	-	-	-					
	4,0	0,009	107	5971	0,009	107	5971	0,139	4978	17905	0,009	172	6369	0,009	161	5971	0,009	172	6369	0,009	161	5971	0,040	510	3185	0,050	478	2389					
	5,0	0,014	134	4777	0,014	134	4777	0,184	5271	14324	0,014	214	5096	0,014	201	4777	0,014	214	5096	0,014	201	4777	-	-	-	-	-	-					
	6,0	0,018	143	3981	0,018	143	3981	0,220	5252	11937	0,018	229	4246	0,018	215	3981	0,018	229	4246	0,018	215	3981	0,040	510	3185	0,050	478	2389					
	8,0	0,023	137	2986	0,023	137	2986	0,278	4978	8952	0,023	220	3185	0,023	206	2986	0,023	220	3185	0,023	206	2986	0,060	459	1911	0,070	446	1592					
	10,0	0,028	134	2389	0,028	134	2389	0,322	4612	7162	0,028	214	2548	0,028	201	2389	0,028	214	2548	0,028	201	2389	0,060	459	1911	0,070	446	1592					
	12,0	-	-	-	0,032	127	1990	0,359	4285	5968	0,032	204	2123	0,032	191	1990	-	-	-	-	-	-	-	-	-	-	-	-					
14,0	-	-	-	0,034	116	1706	0,389	3980	5116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
16,0	-	-	-	0,038	113	1493	0,416	3724	4476	0,038	182	1592	0,038	170	1493	-	-	-	-	-	-	-	-	-	-	-	-						
20,0	-	-	-	0,042	100	1194	-	-	-	0,042	161	1274	0,042	150	1194	-	-	-	-	-	-	-	-	-	-	-	-						
Acciai alloyati High alloyed tool steel	m/min	Vc = 40				Vc = 40				Vc = 115				Vc = 40				Vc = 40				Vc = 40				Vc = 40				Vc=40			
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm					
	2,0	0,002	25	6369	0,002	25	6369	0,022	805	18303	0,002	38	6369	0,002	38	6369	0,002	38	6369	0,002	38	6369	-	-	-	-	-	-					
	3,0	0,004	34	4246	0,004	34	4246	0,081	1977	12202	0,004	51	4246	0,004	51	4246	0,004	51	4246	0,004	51	4246	0,020	340	4246	-	-	-					
	4,0	0,009	57	3185	0,009	57	3185	0,139	2544	9151	0,009	86	3185	0,009	86	3185	0,009	86	3185	0,009	86	3185	0,030	382	3185	-	-	-					
	5,0	0,014	71	2548	0,014	71	2548	0,184	2694	7321	0,014	107	2548	0,014	107	2548	0,014	107	2548	0,014	107	2548	-	-	-	-	-	-					
	6,0	0,018	76	2123	0,018	76	2123	0,220	2684	6101	0,018	115	2123	0,018	115	2123	0,018	115	2123	0,018	115	2123	0,040	340	2123	-	-	-					
	8,0	0,023	73	1592	0,023	73	1592	0,278	2544	4576	0,023	110	1592	0,023	110	1592	0,023	110	1592	0,023	110	1592	0,050	318	1592	-	-	-					
	10,0	0,028	71	1274	0,028	71	1274	0,322	2357	3661	0,028	107	1274	0,028	107	1274	0,028	107	1274	0,028	107	1274	0,060	306	1274	-	-	-					
	12,0	-	-	-	0,032	68	1062	0,359	2190	3050	0,032	102	1062	0,032	102	1062	-	-	-														

Materiale Material	Diametro Diameter	XE10AL						XE12AL						XE13AL					
Alluminio e leghe < 6% Si Aluminium and alloys < 6% Si	m/min	Vc = 600			Vc = 795			Vc = 600			Vc = 795			Vc=600			Vc=800		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	2,0	0,010	1910	95493	0,010	2531	126528	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	0,014	1783	63662	0,014	2362	84352	-	-	-	-	-	-	0,012	2292	63662	0,012	3056	84883
	4,0	0,024	2292	47746	0,024	3037	63264	0,021	3008	47746	0,021	3986	63264	0,020	2865	47746	0,020	3820	63662
	5,0	0,044	3361	38197	0,044	4454	50611	0,035	4011	38197	0,035	5314	50611	0,035	4011	38197	0,035	5348	50930
	6,0	0,060	3820	31831	0,060	5061	42176	0,050	4775	31831	0,050	6326	42176	0,050	4775	31831	0,050	6366	42441
	8,0	0,086	4106	23873	0,086	5441	31632	0,073	5228	23873	0,073	6927	31632	0,070	5013	23873	0,070	6685	31831
	10,0	0,106	4049	16099	0,106	5365	25306	0,091	5214	19099	0,091	6908	25306	0,090	5157	19099	0,090	6875	25465
	12,0	0,122	3883	15915	0,122	5145	21088	0,105	5013	15915	0,105	6643	21088	0,105	5013	15915	0,105	6685	21221
	14,0	0,136	3711	13642	0,136	4917	18075	0,118	4829	13642	0,118	6399	18075	0,110	4502	13642	0,110	6002	18189
	16,0	0,148	3533	11937	0,148	4682	15816	0,128	4584	11937	0,128	6073	15816	0,130	4655	11937	0,130	6207	15915
	20,0	0,160	3056	9549	0,160	4049	12653	0,140	4011	9549	0,140	5314	12653	0,160	4584	9549	0,160	6112	12732
Alluminio e leghe > 6% Si Aluminium and alloys > 6% Si	m/min	Vc = 225			Vc = 300			Vc = 225			Vc = 300			Vc=600			Vc=800		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	2,0	0,010	716	35810	0,010	955	47746	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	0,014	668	23873	0,014	891	31831	-	-	-	-	-	-	0,012	2292	63662	0,012	3056	84883
	4,0	0,024	859	17905	0,024	1146	23873	0,021	1128	17905	0,021	1504	23873	0,020	2865	47746	0,020	3820	63662
	5,0	0,044	1261	14324	0,044	1681	19099	0,035	1504	14324	0,035	2005	19099	0,035	4011	38197	0,035	5348	50930
	6,0	0,060	1432	11937	0,060	1910	15915	0,050	1790	11937	0,050	2387	15915	0,050	4775	31831	0,050	6366	42441
	8,0	0,086	1540	8952	0,086	2053	11937	0,073	1961	8952	0,073	2614	11937	0,070	5013	23873	0,070	6685	31831
	10,0	0,106	1518	7162	0,106	2024	9549	0,091	1955	7162	0,091	2607	9549	0,090	5157	19099	0,090	6875	25465
	12,0	0,122	1456	5968	0,122	1942	7958	0,105	1880	5968	0,105	2057	7958	0,105	5013	15915	0,105	6685	21221
	14,0	0,136	1391	5116	0,136	1855	6821	0,118	1811	5116	0,118	2415	6821	0,110	4502	13642	0,110	6002	18189
	16,0	0,148	1325	4476	0,148	1767	5968	0,128	1719	4476	0,128	2292	5968	0,130	4655	11937	0,130	6207	15915
	20,0	0,160	1146	3581	0,160	1528	4775	0,140	1504	3581	0,140	2005	4775	0,160	4584	9549	0,160	6112	12732
Rame e leghe Copper and alloys	m/min	Vc = 375			Vc = 495			Vc = 375			Vc = 495			Vc=350			Vc=500		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	2,0	0,010	1194	59683	0,010	1576	78782	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	0,014	1114	39789	0,014	1471	52521	-	-	-	-	-	-	0,012	1337	37136	0,012	1910	53052
	4,0	0,024	1432	29842	0,024	1891	39391	0,021	1880	29842	0,021	2482	39391	0,020	1671	27852	0,020	2387	39789
	5,0	0,044	2101	23873	0,044	2773	31513	0,035	2507	23873	0,035	3309	31513	0,035	2340	22282	0,035	3342	31831
	6,0	0,060	2387	19894	0,060	3151	26261	0,050	2984	19894	0,050	3939	26261	0,050	2785	18568	0,050	3979	26526
	8,0	0,086	2566	14921	0,086	3388	19695	0,073	3268	14921	0,073	4313	19695	0,070	2924	13926	0,070	4178	19894
	10,0	0,106	2531	11937	0,106	3340	15756	0,091	3259	11937	0,091	4301	15756	0,090	3008	11141	0,090	4297	15915
	12,0	0,122	2427	9947	0,122	3204	13130	0,105	3133	9947	0,105	4136	13130	0,105	2924	9284	0,105	4178	13263
	14,0	0,136	2319	8526	0,136	3061	11255	0,118	3018	8526	0,118	3984	11255	0,110	2626	7958	0,110	3752	11368
	16,0	0,148	2208	7460	0,148	2915	9848	0,128	2865	7460	0,128	3782	9848	0,130	2716	6963	0,130	3879	9947
	20,0	0,160	1910	5968	0,160	2521	7878	0,140	2507	5968	0,140	3309	7878	0,160	2674	5570	0,160	3820	7958
Resina termoplastica Thermoplastics	m/min	Vc = 450			Vc = 595			Vc = 450			Vc = 595			Vc=450			Vc=600		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	2,0	0,010	1432	71620	0,010	1894	94697	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	0,014	1337	47746	0,014	1768	63131	-	-	-	-	-	-	0,012	1719	47746	0,012	2292	63662
	4,0	0,024	1719	35810	0,024	2273	47349	0,021	2256	35810	0,021	2983	47349	0,020	2149	35810	0,020	2865	47746
	5,0	0,044	2521	28648	0,044	3333	37879	0,035	3008	28648	0,035	3977	37879	0,035	3008	28648	0,035	4011	38197
	6,0	0,060	2865	23873	0,060	3788	31566	0,050	3581	23873	0,050	4735	31566	0,050	3581	23873	0,050	4775	31831
	8,0	0,086	3080	17905	0,086	4072	23674	0,073	3921	17905	0,073	5185	23674	0,070	3760	17905	0,070	5013	23873
	10,0	0,106	3037	14324	0,106	4015	18939	0,091	3910	14324	0,091	5170	18939	0,090	3867	14324	0,090	5157	19099
	12,0	0,122	2913	11937	0,122	3851	15783	0,105	3760	11937	0,105	4972	15783	0,105	3760	11937	0,105	5013	15915
	14,0	0,136	2783	10231	0,136	3680	13528	0,118	3622	10231	0,118	4789	13528	0,110	3376	10231	0,110	4502	13642
	16,0	0,148	2650	8952	0,148	3504	11837	0,128	3438	8952	0,128	4545	11837	0,130	3491	8952	0,130	4655	11937
	20,0	0,160	2292	7162	0,160	3030	9470	0,140	3008	7162	0,140	3977	9470	0,160	3438	7162	0,160	4584	9549

XM547

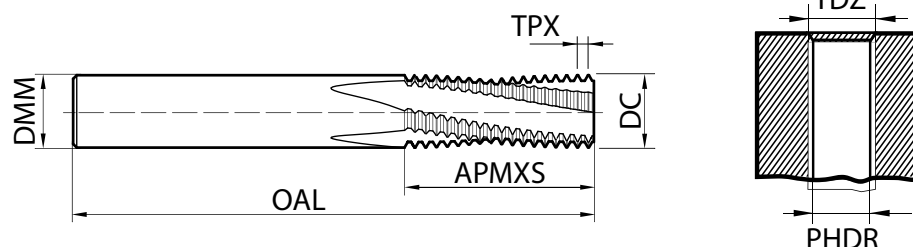


Fresa a filettare in metallo duro/Solid carbide thread milling cutters

CODICE CODE	TDZ	TPX*60°	DC	DMM	PHDR	OAL	APMXS	Z	
XM-547 M6 Z3-WE	M6	1,00	4,80	6	5	54	13,50	3	●
XM-547 M8 Z3-WE	M8	1,25	6,40	8	6,8	62	18,10	3	●
XM-547 M10 Z3-WE	M10	1,50	7,95	10	8,5	74	21,80	3	●
XM-547 M12 Z4-WE	M12	1,75	9,95	10	10,2	74	25,40	4	●
XM-547 M14 Z4-WE	M14	2,00	11,20	12	12	90	31,00	4	●
XM-547 M16 Z4-WE	M16	2,00	12,80	14	14	90	35,00	4	●
XM-547 M20 Z4-WE	M20	2,50	14,95	16	17,5	102	41,30	4	●

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



Frese a filettare in metallo duro adatte a tutti i materiali senza fori di lubrificazione, attacco weldon. Possibilità di fare filetti destri e sinistri con un'unica fresa, tolleranze regolabili a piacere. Con lo stesso passo è possibile fare filetti di diametri diversi.

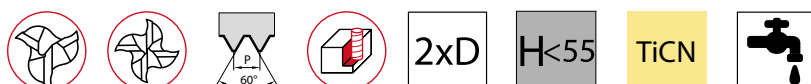
Carbide thread drills suitable for all materials without lubrication holes, weldon connection. Right and left threads with a single milling cutter, adjustable tolerances. With the same step it is possible to make threads of different diameters.

XM-MILL

XM548



P K N S

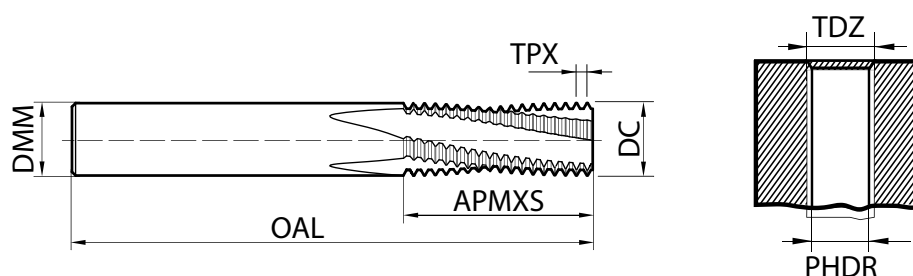


Fresa a filettare in metallo duro/Solid carbide thread milling cutters

CODICE CODE	TDZ	TPX*60°	DC	DMM	PHDR	OAL.	APMXS	Z	
XM-548 M6-A Z3-C	M6	1,00	4,80	6	5	54	13,50	3	●
XM-548 M8-A Z3-C	M8	1,25	6,40	8	6,8	62	18,10	3	●
XM-548 M10-A Z3-C	M10	1,50	7,95	10	8,5	74	21,80	3	●
XM-548 M12-A Z4-C	M12	1,75	9,95	10	10,2	74	25,40	4	●
XM-548 M14-A Z4-C	M14	2,00	11,20	12	12	90	31,00	4	●
XM-548 M16-A Z4-C	M16	2,00	12,80	14	14	90	35,00	4	●
XM-548 M20-A Z4-C	M20	2,50	14,95	16	17,5	102	41,30	4	●

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



Frese a filettare in metallo duro adatte a tutti i materiali con fori di lubrificazione, attacco cilindrico. Possibilità di fare filetti destri e sinistri con un'unica fresa, tolleranze regolabili a piacere. Con lo stesso passo è possibile fare filetti di diametri diversi.

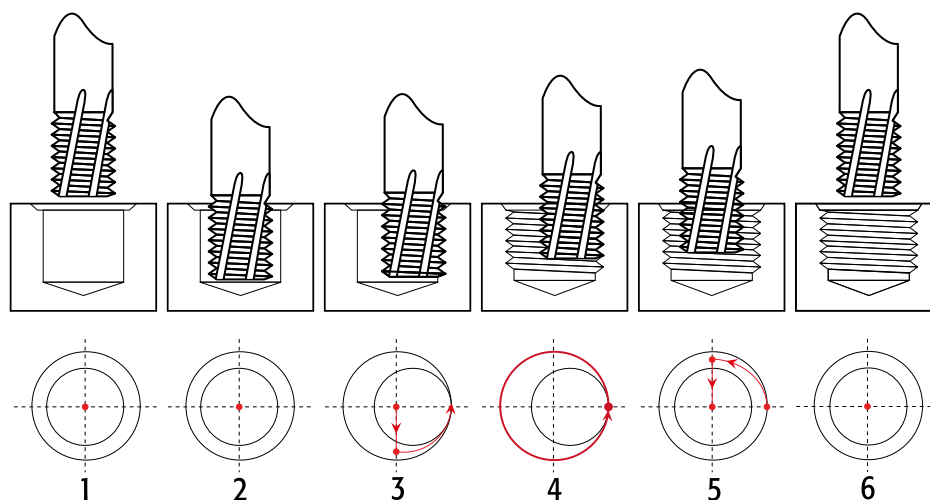
Carbide thread drills suitable for all materials with lubrication holes, cylindrical connection. Right and left threads with a single milling cutter, adjustable tolerances. With the same step it is possible to make threads of different diameters.

INFORMAZIONI TECNICHE/TECHNICAL INFORMATION

Dati di taglio/Cutting data

MATERIALE MATERIAL	Vc (m/min)	Fz=DC x coeff. Coeff.	Lavorazione consigliata
Acciaio basso legato/Low alloy steel	120/160	0,0020	●
Acciaio medio legato/Medium alloy steel	80/120	0,0020	●
Acciaio legato, per stampi-utensili/Alloy steel for dies-tools	60/100	0,0015	○
Inox/ss	50/90	0,0015	○
Duplex, leghe titanio, inconel 625/Duplex steel, titanium alloys, Inconel 625	40/70	0,0010	○
Ghisa/Cast iron	90/140	0,0020	●
Materiali non ferrosi, alluminio/Aluminium	160/200	0,0020	○

Esempio di ciclo di lavorazione



- 1 Posizionamento centro foro e avvio rotazione mandrino, inserimento lavoro incrementale.
- 2 Avvicinamento in Z alla profondità di lavoro, inserimento compensazione raggio.
- 3 Ingresso dolce con rotazione di 180° e incremento Z metà passo.
- 4 Ciclo di lavorazione con rotazione di 360° e incremento in Z pari al passo del filetto.
- 5 Uscita dolce con rotazione 180°, incremento Z metà passo e disattivazione compensazione raggio.
- 6 Uscita dal foro, disattivazione lavoro incrementale e fine ciclo.

- 1 Center hole positioning and spindle rotation start, incremental job insertion.
- 2 Approach in Z to the working depth, insertion of radius compensation.
- 3 Sweet input with 180 ° rotation and Z increment half step.
- 4 Machining cycle with 360 ° rotation and Z increment equal to thread pitch.
- 5 Soft output with 180 ° rotation, Z increment half step and radius compensation deactivation.
- 6 Exit from the hole, deactivate incremental work and end cycle.

Per i CNC che non calcolano automaticamente l'avanzamento dal centro dell'utensile, deve essere preso in considerazione il valore Vfm.

$$V_f = f_z \times Z \times n \quad \text{avanzamento in contornatura}$$

$$V_{fm} = \frac{V_f \times (TDZ-DC)}{TDZ} \quad \text{avanzamento dal centro fresa}$$

Esempio indicativo parametri per M12 acciai medio legato

Vc.	100	S (n° giri):	$\frac{100 \times 1000}{9,95 \times 3,14} = 3200$
DC	9,95		
Z	4		
M	12	Fz (mm) = DC x coeff. :	$9,95 \times 0,002 = 0,02$
		Vf periferico (mm/min):	$3200 \times 0,02 \times 4 = 256$
		Vfm centro fresa (mm/min):	$\frac{256 \times (12-9,95)}{12} = 44$

XM-MILL

XM653

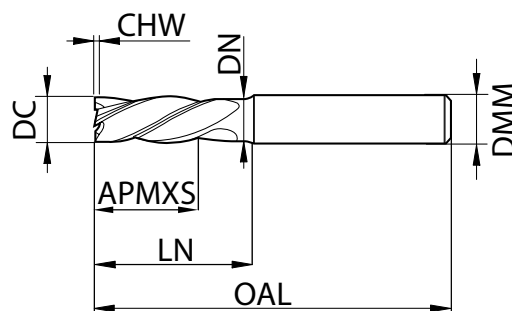


Fresa MD per lavorazioni universali/Solid carbide for general machining

CODICE CODE	D h10	DMM h6	DN	OAL	APMXS	LN	CHW	Z	
XM-653 D3.00 Z4-C	3	6	2,8	57	8	15	0,1X45°	4	●
XM-653 D4.00 Z4-C	4	6	3,8	57	11	18	0,15X45°	4	●
XM-653 D5.00 Z4-C	5	6	4,8	57	13	18	0,15X45°	4	●
XM-653 D6.00 Z4-C	6	6	5,7	57	13	20	0,2X45°	4	●
XM-653 D8.00 Z4-C	8	8	7,7	63	19	26	0,25X45°	4	●
XM-653 D10.00 Z4-C	10	10	9,5	72	22	30	0,3X45°	4	●
XM-653 D12.00 Z4-C	12	12	11,5	83	26	36	0,35X45°	4	●
XM-653 D14.00 Z4-C	14	14	13,5	83	26	36	0,4X45°	4	●
XM-653 D16.00 Z4-C	16	16	15,5	92	32	42	0,5X45°	4	●
XM-653 D18.00 Z4-C	18	18	17,5	92	32	42	0,6X45°	4	●
XM-653 D20.00 Z4-C	20	20	19,5	104	38	52	0,6X45°	4	●
XM-653 D25.00 Z4-C	25	25	24	121	45	63	0,75X45°	4	●

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



Frese MD Z4 **elica e passo differenziati**. Con attacco cilindrico, disponibili anche con attacco weldon.
Solid carbide mills Z4 differentiated helix and pitch. Cylindrical and weldon connection available.

INFORMAZIONI TECNICHE/TECHNICAL INFORMATION

Dati di taglio/Cutting data

MATERIALE MATERIAL	FINITURA IN CONTORNATURA/CONTOURING FINISHING				
	N/mm ²	vc	ap	ae	fz
Acciai basso legati/Low alloy steel	<800	170/210	1,5 x D	0,25 x D	0,006 x D
Acciai medio legati/Medium alloy steel	<1000	150/180	1,5 x D	0,25 x D	0,006 x D
Acciai legati, per utensili/Alloy steel tools	<1300	90/120	1,5 x D	0,20 x D	0,005 x D
Acciai al cromo, inox/SS Cr Steel		50/100	1,5 x D	0,15 x D	0,005 x D
Duplex, leghe titanio, inconel 625		40/60			0,0045 x D
Materiali non ferrosi, alluminio/Aluminium		120/150	1,5 x D	0,03 x D	0,008 x D

FINITURA IN CONTORNATURA

Impegno laterale radiale Ae : mm. 0,03 x D

Aumentare o ridurre Fz per ottenere il grado di finitura richiesto

Contouring finishing

Radial cutting width Ae : mm. 0,03 x D

Increase decrease the Fz for satisfactory surface quality



XM654

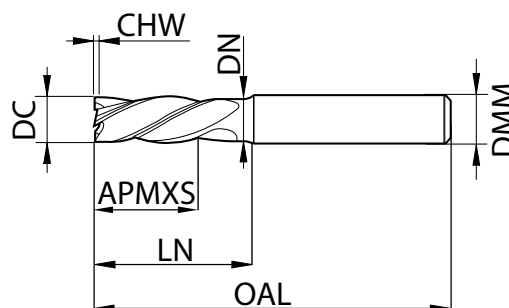


Fresa MD per lavorazioni universali/Solid carbide for general machining

CODICE CODE	D h10	DMM h6	DN	OAL	APMXS	LN	CHW	Z	
XM-654 D3.00 Z4-WE	3	6	2,8	57	8	15	0,1X45°	4	○
XM-654 D4.00 Z4-WE	4	6	3,8	57	11	18	0,15X45°	4	○
XM-654 D5.00 Z4-WE	5	6	4,8	57	13	18	0,15X45°	4	○
XM-654 D6.00 Z4-WE	6	6	5,7	57	13	20	0,2X45°	4	○
XM-654 D8.00 Z4-WE	8	8	7,7	63	19	26	0,25X45°	4	○
XM-654 D10.00 Z4-WE	10	10	9,5	72	22	30	0,3X45°	4	○
XM-654 D12.00 Z4-WE	12	12	11,5	83	26	36	0,35X45°	4	○
XM-654 D14.00 Z4-WE	14	14	13,5	83	26	36	0,4X45°	4	○
XM-654 D16.00 Z4-WE	16	16	15,5	92	32	42	0,5X45°	4	○
XM-654 D18.00 Z4-WE	18	18	17,5	92	32	42	0,6X45°	4	○
XM-654 D20.00 Z4-WE	20	20	19,5	104	38	52	0,6X45°	4	○
XM-654 D25.00 Z4-WE	25	25	24	121	45	63	0,75X45°	4	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



Frese MD Z4 **elica e passo differenziati**. Con attacco weldon, disponibili anche con attacco cilindrico.
Solid carbide mills Z4 differentiated helix and pitch. Weldon and cylindrical connection available.

INFORMAZIONI TECNICHE/TECHNICAL INFORMATION

Dati di taglio/Cutting data

MATERIALE MATERIAL	FINITURA IN CONTORNATURA/CONTOURING FINISHING				
	N/mm ²	vc	ap	ae	fz
Acciai basso legati/Low alloy steel	<800	170/210	1,5 x D	0,25 x D	0,006 x D
Acciai medio legati/Medium alloy steel	<1000	150/180	1,5 x D	0,25 x D	0,006 x D
Acciai legati, per utensili/Alloy steel tools	<1300	90/120	1,5 x D	0,20 x D	0,005 x D
Acciai al cromo, inox/SS Cr Steel		50/100	1,5 x D	0,15 x D	0,005 x D
Duplex, leghe titanio, inconel 625		40/60			0,0045 x D
Materiali non ferrosi, alluminio/Aluminium		120/150	1,5 x D	0,03 x D	0,008 x D

FINITURA IN CONTORNATURA

Impegno laterale radiale Ae : mm. 0,03 x D

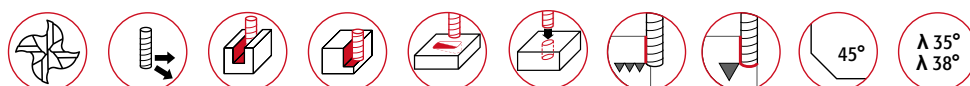
Aumentare o ridurre Fz per ottenere il grado di finitura richiesto

Contouring finishing

Radial cutting width Ae : mm. 0,03 x D

Increase decrease the Fz for satisfactory surface quality

XM871 UNIVERSAL

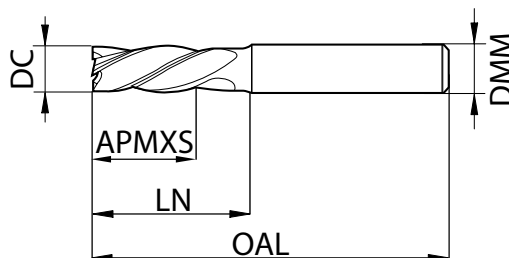


Fresa MD per lavorazioni trocoidali Z4, gambo con attacco weldon
Solid carbide milling cutter Z4 for trochoidal machining with weldon connection

CODICE CODE	D h10	DMM h6	OAL	APMXS	LN	Z	
XM-871 D6.00 Z4 WE	6	6	65	18	28	4	●
XM-871 D8.00 Z4 WE	8	8	75	24	38	4	●
XM-871 D10.00 Z4 WE	10	10	80	30	38	4	●
XM-871 D12.00 Z4 WE	12	12	93	36	46	4	●
XM-871 D16.00 Z4 WE	16	16	108	48	58	4	●
XM-871 D20.00 Z4 WE	20	20	126	60	74	4	●

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



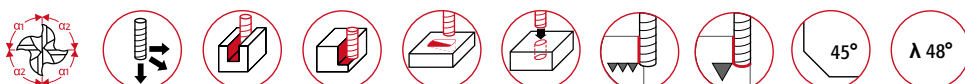
Frese MD Z4 **elica differenziata**. Con angolo smussato per una lavorazione stabile.
Solid carbide mills Z4 differentiated helix angle. Corner protection chamfer and face protection.

INFORMAZIONI TECNICHE/TECHNICAL INFORMATION

Dati di taglio/Cutting data

ISO	Hardness	vc	fz (mm/z) ø							vc	fz (mm/z) ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			ap = l2		Sgros.	Finit.		ae max. = 0,10 x D			ap = l2			ae max.= 0,02 x D			
P	≤ 850 N/MM2	340	0,036	0,072	0,096	0,138	0,17	0,22	0,28	360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
	≥ 850 N/MM2	250	0,031	0,062	0,083	0,115	0,14	0,18	0,23	270	0,015	0,030	0,040	0,055	0,07	0,09	0,11
K	≤ 240 HB	300	0,038	0,076	0,101	0,150	0,18	0,24	0,30	320	0,018	0,036	0,048	0,072	0,09	0,11	0,14
	> 240 HB	260	0,035	0,069	0,092	0,127	0,15	0,20	0,25	280	0,017	0,033	0,044	0,061	0,07	0,10	0,12

XM761 STAINLESS SPEED

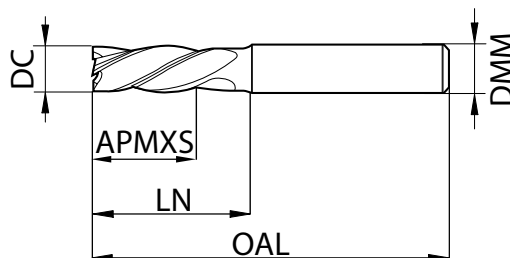


Fresa MD per lavorazioni trocoidali Z4 con elica e passo differenziato, gambo con attacco weldon
Solid carbide milling cutter Z4 for trochoidal machining with weldon connection

CODICE CODE	D h10	DMM h6	OAL	APMXS	LN	Z	
XM-761 D3.00 Z4 WE	3	6	57	12	14,9	4	○
XM-761 D4.00 Z4 WE	4	6	65	16	18,9	4	○
XM-761 D5.00 Z4 WE	5	6	65	20	22,9	4	○
XM-761 D6.00 Z4 WE	6	6	65	24	29,0	4	●
XM-761 D8.00 Z4 WE	8	8	75	32	39,0	4	●
XM-761 D10.00 Z4 WE	10	10	90	40	50,0	4	●
XM-761 D12.00 Z4 WE	12	12	100	46	55,0	4	●
XM-761 D16.00 Z4 WE	16	16	108	55	60,0	4	●
XM-761 D20.00 Z4 WE	20	20	126	65	76,0	4	●

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



Frese MD Z4 **passo differenziato**. Con vani evacuazione truciolo profondi per maggiore asportazione, angolo smussato per una lavorazione stabile, rompi truciolo aggiuntivo lungo filo tagliente e ampia varietà di materiali.
Solid carbide mills Z4 differentiated helix pitch. Deepened flute on front cutting edge area for improved chip evacuation, corner protection chamfer and face protection, extra length's chip breakers in the cutting edges ensure short chips for secure evacuation and wide variety of materials.

INFORMAZIONI TECNICHE/TECHNICAL INFORMATION

Dati di taglio/Cutting data

ISO	Hardness	vc	fz (mm/z) ø							vc	fz (mm/z) ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			ap = l2		Sgros.	Finit.		ae max. = 0,10 x D			ap = l2			ae max.= 0,02 x D			
M	≤ 750 N/MM2	220	0,031	0,062	0,083	0,115	0,14	0,18	0,23	240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
	≥ 750 N/MM2	110	0,024	0,048	0,064	0,092	0,11	0,15	0,18	120	0,011	0,021	0,028	0,040	0,05	0,06	0,08
S	Ni-based	60	0,019	0,039	0,052	0,074	0,09	0,12	0,15	60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
	Ti-based	110	0,028	0,055	0,074	0,104	0,12	0,17	0,21	120	0,013	0,026	0,035	0,050	0,06	0,08	0,10

XM632

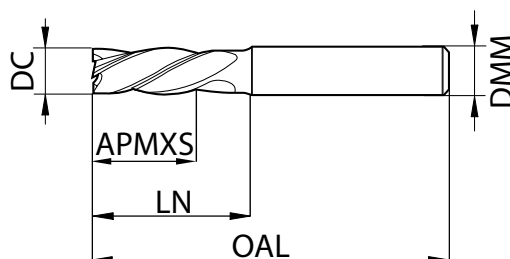


Fresa MD per lavorazioni trocoidali Z6, gambo con attacco weldon
Solid carbide milling cutter Z6 for trochoidal machining with weldon connection

CODICE CODE	D h10	DMM h6	OAL	APMXS	LN	Z	
XM-632 D8.00 Z6 WE	8	8	63	19	26	6	●
XM-632 D10.00 Z6 WE	10	10	72	22	30	6	●
XM-632 D12.00 Z6 WE	12	12	83	26	36	6	●
XM-632 D16.00 Z6 WE	16	16	92	32	42	6	●
XM-632 D20.00 Z6 WE	20	20	104	38	52	6	●
XM-632 D25.00 Z6 WE	25	25	121	45	63	6	○

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



Frese MD Z6 **elica differenziata**. Con angolo smussato per una lavorazione stabile e ampia varietà di materiali.
Solid carbide mills Z6 differentiated helix angle. Corner protection chamfer and face protection and wide variety of materials.

INFORMAZIONI TECNICHE/TECHNICAL INFORMATION

Dati di taglio/Cutting data

ISO	Hardness	vc	fz (mm/z) ø							vc	fz (mm/z) ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			ap = l2		Sgros.	Finit.		ae max. = 0,10 x D			ap = l2			ae max.= 0,02 x D			
P	≤ 850 N/MM2	340	0,036	0,072	0,096	0,138	0,17	0,22	0,28	360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
	≥ 850 N/MM2	250	0,031	0,062	0,083	0,115	0,14	0,18	0,23		270	0,015	0,030	0,040	0,055	0,07	0,09
M	≤ 750 N/MM2	220	0,031	0,062	0,083	0,115	0,14	0,18	0,23	240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
	≥ 750 N/MM2	110	0,024	0,048	0,064	0,092	0,11	0,15	0,18		120	0,011	0,021	0,028	0,040	0,05	0,06
S	Ni-based	60	0,019	0,039	0,052	0,074	0,09	0,12	0,15	60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
	Ti-based	110	0,028	0,055	0,074	0,104	0,12	0,17	0,21		120	0,013	0,026	0,035	0,050	0,06	0,08
K	≤ 240 HB	300	0,038	0,076	0,101	0,150	0,18	0,24	0,30	320	0,018	0,036	0,048	0,072	0,09	0,11	0,14
	≥ 240 HB	260	0,035	0,069	0,092	0,127	0,15	0,20	0,25		280	0,017	0,033	0,044	0,061	0,07	0,10
N	≤ 7 % Si	900	0,045	0,090	0,120	0,184	0,22	0,29	0,37	1000	0,021	0,043	0,057	0,088	0,11	0,14	0,18
	≥ 7 % Si	430	0,038	0,076	0,101	0,138	0,17	0,22	0,28		460	0,018	0,036	0,048	0,066	0,08	0,11

XM898

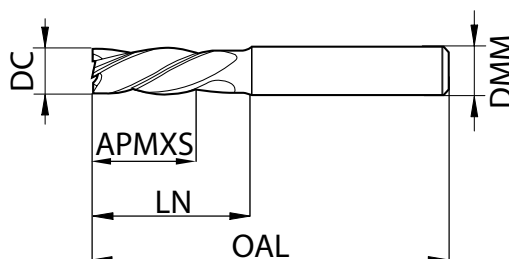


Fresa MD per lavorazioni trocoidali Z5, gambo con attacco weldon
Solid carbide milling cutter Z5 for trochoidal machining with weldon connection

CODICE CODE	D h10	DMM h6	OAL	APMXS	LN	Z	
XM-898 D4.00 Z5 WE	4	6	65	12	26	5	○
XM-898 D5.00 Z5 WE	5	6	65	15	26	5	○
XM-898 D6.00 Z5 WE	6	6	65	18	28	5	○
XM-898 D8.00 Z5 WE	8	8	75	24	38	5	○
XM-898 D10.00 Z5 WE	10	10	80	30	38	5	○
XM-898 D12.00 Z5 WE	12	12	93	36	46	5	●
XM-898 D16.00 Z5 WE	16	16	108	48	58	5	●
XM-898 D20.00 Z5 WE	20	20	126	60	74	5	●

● Stock Italia/Warehouse in Italy

○ Stock Estero/Warehouse abroad



Frese MD Z5 con angolo smussato per una lavorazione stabile e ampia varietà di materiali.
Solid carbide mills Z5 with corner protection chamfer and face protection, wide variety of materials.

INFORMAZIONI TECNICHE/TECHNICAL INFORMATION

Dati di taglio/Cutting data

ISO	Hardness	vc	fz (mm/z) ø							vc	fz (mm/z) ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			ap = l2		Sgros.	Finit.		ae max. = 0,10 x D			ap = l2			ae max.= 0,02 x D			
P	≤ 850 N/MM2	340	0,036	0,072	0,096	0,138	0,17	0,22	0,28	360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
	≥ 850 N/MM2	250	0,031	0,062	0,083	0,115	0,14	0,18	0,23		270	0,015	0,030	0,040	0,055	0,07	0,09
M	≤ 750 N/MM2	220	0,031	0,062	0,083	0,115	0,14	0,18	0,23	240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
	≥ 750 N/MM2	110	0,024	0,048	0,064	0,092	0,11	0,15	0,18		120	0,011	0,021	0,028	0,040	0,05	0,06
S	Ni-based	60	0,019	0,039	0,052	0,074	0,09	0,12	0,15	60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
	Ti-based	110	0,028	0,055	0,074	0,104	0,12	0,17	0,21		120	0,013	0,026	0,035	0,050	0,06	0,08
K	≤ 240 HB	300	0,038	0,076	0,101	0,150	0,18	0,24	0,30	320	0,018	0,036	0,048	0,072	0,09	0,11	0,14
	≥ 240 HB	260	0,035	0,069	0,092	0,127	0,15	0,20	0,25		280	0,017	0,033	0,044	0,061	0,07	0,10
N	≤ 7 % Si	900	0,045	0,090	0,120	0,184	0,22	0,29	0,37	1000	0,021	0,043	0,057	0,088	0,11	0,14	0,18
	≥ 7 % Si	430	0,038	0,076	0,101	0,138	0,17	0,22	0,28		460	0,018	0,036	0,048	0,066	0,08	0,11



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Contatti

