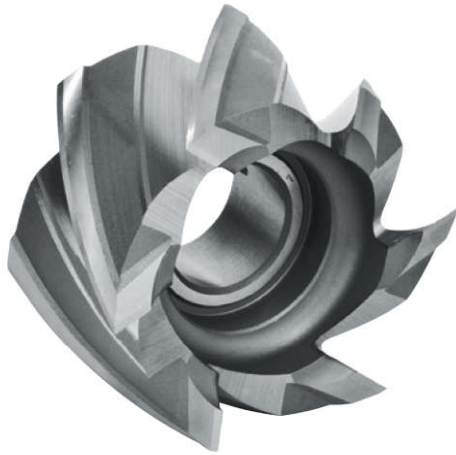
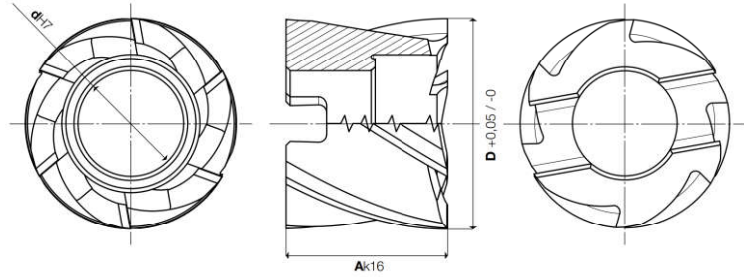


HSS-PM HSS-PM Line

Serie/Series 02135

Frese a **FINIRE** con cava di trascinamento trasversale
Finishing milling cutters with transversal driving slot



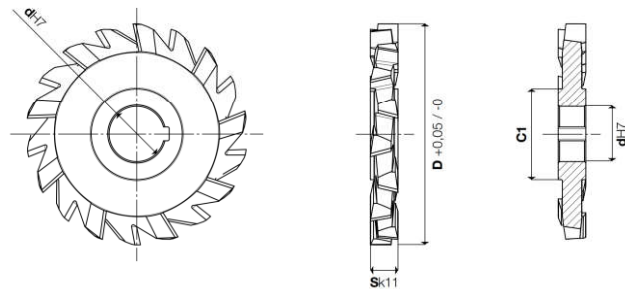
COATING Skin Alu	$\lambda^\circ \sigma$ 40	W	UNI 3903 DIN 1880 ISO 2586	Z4÷6
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Cod. Art.	M-TK (HSS-E)	X-85 (PM Co 8,5%)	COATED	D +0,05 -0	Ak16	dH7	Z
021350400 AM	AM	CM	CMX	40	32	16	4
021350500 AM	AM	CM	CMX	50	36	22	4
021350630 AM	AM	CM	CMX	63	40	27	4
021350800 AM	AM	CM	CMX	80	45	27	6
021351000 AM	AM	CM	CMX	100	50	32	6



Serie/Series 04105

Frese a disco a tre tagli elicoidali alternati
Side and face milling cutters **Staggered teeth**

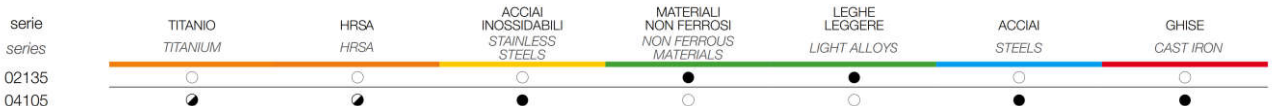


COATING Skin	H	UNI 3905A DIN 885A ISO 2587	Z16÷38
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Cod. Art.	M-TK (HSS-E)	X-85 (PM Co 8,5%)	COATED	D +0,05 -0	Sk 11	C1	dH7	$\lambda^\circ s$	Z
041051040 AM	AM	CM	CMX	50	4	26	16	20	16
041051050 AM	AM	CM	CMX	50	5	26	16	20	16
041051060 AM	AM	CM	CMX	50	6	26	16	20	16
041051070 AM	AM	CM	CMX	50	7	26	16	15	16
041051080 AM	AM	CM	CMX	50	8	26	16	15	16
041051090 AM	AM	CM	CMX	50	9	26	16	15	16
041051100 AM	AM	CM	CMX	50	10	26	16	15	16
041052040 AM	AM	CM	CMX	63	4	33	22	20	18
041052050 AM	AM	CM	CMX	63	5	33	22	15	18
041052060 AM	AM	CM	CMX	63	6	33	22	15	18

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MATERIALI LAVORABILI / WORKPIECE MATERIALS



● consigliata/recommended ● accettabile/acceptable ○ non consigliata/not recommended

Serie/Series 04105

Frese a disco a tre tagli elicoidali alternati
Side and face milling cutters **Staggered teeth**

Cod. Art.	M-TK (HSS-E)	X-85 (PM Co 8,5%)	COATED	D _{+0,05} -0	Sk 11	C1	dH7	λ°s	Z
041052070 AM	CM	CMX		63	7	33	22	15	18
041052080 AM	CM	CMX		63	8	33	22	15	18
041052090 AM	CM	CMX		63	9	33	22	15	18
041052100 AM	CM	CMX		63	10	33	22	15	18
041052120 AM	CM	CMX		63	12	33	22	10	18
041052140 AM	CM	CMX		63	14	33	22	10	18
041052160 AM	CM	CMX		63	16	33	22	10	16
041052180 AM	CM	CMX		63	18	33	22	10	16
041052200 AM	CM	CMX		63	20	33	22	10	16
041053040 AM	CM	CMX		80	4	36	22	20	20
041053041 AM	CM	CMX		80	4	40	27	20	20
041053050 AM	CM	CMX		80	5	36	22	15	20
041053051 AM	CM	CMX		80	5	40	27	15	20
041053060 AM	CM	CMX		80	6	36	22	15	20
041053061 AM	CM	CMX		80	6	40	27	15	20
041053070 AM	CM	CMX		80	7	36	22	15	20
041053071 AM	CM	CMX		80	7	40	27	15	20
041053080 AM	CM	CMX		80	8	36	22	15	20
041053081 AM	CM	CMX		80	8	40	27	15	20
041053090 AM	CM	CMX		80	9	36	22	15	20
041053091 AM	CM	CMX		80	9	40	27	15	20
041053100 AM	CM	CMX		80	10	36	22	15	18
041053101 AM	CM	CMX		80	10	40	27	15	18
041053120 AM	CM	CMX		80	12	36	22	15	18
041053121 AM	CM	CMX		80	12	40	27	15	18
041053140 AM	CM	CMX		80	14	36	22	10	18
041053141 AM	CM	CMX		80	14	40	27	10	18
041053160 AM	CM	CMX		80	16	36	22	15	18
041053161 AM	CM	CMX		80	16	40	27	15	18
041053180 AM	CM	CMX		80	18	36	22	15	18
041053181 AM	CM	CMX		80	18	40	27	15	18
041054040 AM	CM	CMX		100	4	46	27	15	24
041054041 AM	CM	CMX		100	4	50	32	15	24
041054050 AM	CM	CMX		100	5	46	27	15	24
041054051 AM	CM	CMX		100	5	50	32	15	24
041054060 AM	CM	CMX		100	6	46	27	15	24
041054061 AM	CM	CMX		100	6	50	32	15	24
041054070 AM	CM	CMX		100	7	46	27	15	24
041054071 AM	CM	CMX		100	7	50	32	15	24
041054080 AM	CM	CMX		100	8	46	27	15	22
041054081 AM	CM	CMX		100	8	50	32	15	22
041054090 AM	CM	CMX		100	9	46	27	15	22
041054091 AM	CM	CMX		100	9	50	32	15	22
041054100 AM	CM	CMX		100	10	46	27	15	22
041054101 AM	CM	CMX		100	10	50	32	15	22
041054120 AM	CM	CMX		100	12	46	27	15	20
041054121 AM	CM	CMX		100	12	50	32	15	20
041054140 AM	CM	CMX		100	14	46	27	15	20
041054141 AM	CM	CMX		100	14	50	32	15	20
041054150 AM	CM	CMX		100	15	46	27	15	20
041054151 AM	CM	CMX		100	15	50	32	15	20
041054160 AM	CM	CMX		100	16	46	27	15	20
041054161 AM	CM	CMX		100	16	50	32	15	20
041054180 AM	CM	CMX		100	18	46	27	13	20
041054181 AM	CM	CMX		100	18	50	32	13	20
041054200 AM	CM	CMX		100	20	46	27	13	20
041054201 AM	CM	CMX		100	20	50	32	13	20
041054220 AM	CM	CMX		100	22	46	27	10	20



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MATERIALI LAVORABILI / WORKPIECE MATERIALS

serie series	TITANIO TITANIUM	HRSA HRSA	ACCIAI INOSSIDABILI STAINLESS STEELS	MATERIALI NON FERROSI NON FERROUS MATERIALS	LEGHE LEGGERE LIGHT ALLOYS	ACCIAI STEELS	GHISE CAST IRON
04105	●	●	●	○	○	●	●

● consigliata/recommended ● accettabile/acceptable ○ non consigliata/not recommended

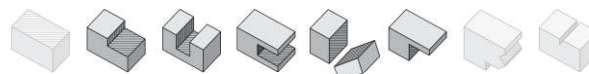
Serie/Series

04105

Frese a disco a tre tagli elicoidali alternati
Side and face milling cutters **Staggered teeth**



Cod. Art.	M-TK (HSS-E)	X-85 (PM Co 8,5%)	COATED	D +0,05 -0	Sk 11	C1	dH7	λ°s	Z
041054221 AM	CM	CMX	CMX	100	22	50	32	10	20
041054250 AM	CM	CMX	CMX	100	25	46	27	10	20
041054251 AM	CM	CMX	CMX	100	25	50	32	10	20
041055050 AM	CM	CMX	CMX	125	5	52	32	15	26
041055060 AM	CM	CMX	CMX	125	6	52	32	15	26
041055080 AM	CM	CMX	CMX	125	8	52	32	15	26
041055100 AM	CM	CMX	CMX	125	10	52	32	15	24
041055120 AM	CM	CMX	CMX	125	12	52	32	15	22
041055140 AM	CM	CMX	CMX	125	14	52	32	15	22
041055160 AM	CM	CMX	CMX	125	16	52	32	15	22
041055180 AM	CM	CMX	CMX	125	18	52	32	15	22
041055200 AM	CM	CMX	CMX	125	20	52	32	10	22
041055220 AM	CM	CMX	CMX	125	22	52	32	10	22
041055250 AM	CM	CMX	CMX	125	25	52	32	10	22
041055280 AM	CM	CMX	CMX	125	28	52	32	10	22
041056060 AM	CM	CMX	CMX	160	6	58	32	15	28
041056061 AM	CM	CMX	CMX	160	6	66	40	15	28
041056080 AM	CM	CMX	CMX	160	8	58	32	15	28
041056081 AM	CM	CMX	CMX	160	8	66	40	15	28
041056100 AM	CM	CMX	CMX	160	10	58	32	15	26
041056101 AM	CM	CMX	CMX	160	10	66	40	15	26
041056120 AM	CM	CMX	CMX	160	12	58	32	15	26
041056121 AM	CM	CMX	CMX	160	12	66	40	15	26
041056140 AM	CM	CMX	CMX	160	14	58	32	15	24
041056141 AM	CM	CMX	CMX	160	14	66	40	15	24
041056160 AM	CM	CMX	CMX	160	16	58	32	15	24
041056161 AM	CM	CMX	CMX	160	16	66	40	15	24
041056180 AM	CM	CMX	CMX	160	18	58	32	15	24
041056181 AM	CM	CMX	CMX	160	18	66	40	15	24
041056200 AM	CM	CMX	CMX	160	20	58	32	15	24
041056201 AM	CM	CMX	CMX	160	20	66	40	15	24
041056220 AM	CM	CMX	CMX	160	22	58	32	13	24
041056221 AM	CM	CMX	CMX	160	22	66	40	13	24
041056250 AM	CM	CMX	CMX	160	25	58	32	13	24
041056251 AM	CM	CMX	CMX	160	25	66	40	13	24
041056280 AM	CM	CMX	CMX	160	28	58	32	10	24
041056281 AM	CM	CMX	CMX	160	28	66	40	10	24
041056320 AM	CM	CMX	CMX	160	32	58	32	10	24
041056321 AM	CM	CMX	CMX	160	32	66	40	10	24
041057080 AM	CM	CMX	CMX	200	8	80	40	16	34
041057100 AM	CM	CMX	CMX	200	10	80	40	16	32
041057120 AM	CM	CMX	CMX	200	12	80	40	16	30
041057140 AM	CM	CMX	CMX	200	14	80	40	16	30
041057160 AM	CM	CMX	CMX	200	16	80	40	16	30
041057180 AM	CM	CMX	CMX	200	18	80	40	16	30
041057200 AM	CM	CMX	CMX	200	20	80	40	16	30
041057220 AM	CM	CMX	CMX	200	22	80	40	16	30
041057250 AM	CM	CMX	CMX	200	25	80	40	16	30
041057280 AM	CM	CMX	CMX	200	28	80	40	14	30
041057320 AM	CM	CMX	CMX	200	32	80	40	14	30
041058140 AM	CM	CMX	CMX	250	14	90	50	15	38
041058160 AM	CM	CMX	CMX	250	16	90	50	15	36
041058180 AM	CM	CMX	CMX	250	18	90	50	15	34
041058200 AM	CM	CMX	CMX	250	20	90	50	15	34
041058250 AM	CM	CMX	CMX	250	25	90	50	15	30
041058280 AM	CM	CMX	CMX	250	28	90	50	15	28
041058300 AM	CM	CMX	CMX	250	30	90	50	15	26
041058320 AM	CM	CMX	CMX	250	32	90	50	15	26

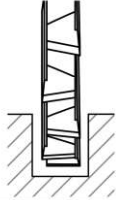
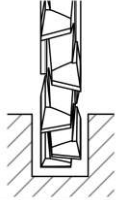
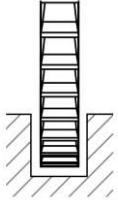


parametri tecnici a pag. / for technical parameters see page 128

MATERIALI LAVORABILI / WORKPIECE MATERIALS



Parametri di taglio/Cutting parameters

		04110*		04105*		04105**	
Materiali Materials		Cava Slotting $ap = 0,1\phi$ $ae = S$		Cava Slotting $ap = 0,1\phi$ $ae = S$		Cava Slotting $ap = 0,1\phi$ $ae = S$	
							
Gruppo e descrizione Group and description		Vc (mt/min.)		Vc (mt/min.)		Vc (mt/min.)	
		X-85 NON RIVESTITA UNCOATED	X-85 Skin	X-85 NON RIVESTITA UNCOATED	X-85 Skin	X-85 NON RIVESTITA UNCOATED	X-85 Skin
Ghisa Cast Iron	Grigia e sferoidale Grey and spheroidal	20 - 25	45 - 50	20 - 25	45 - 50	20 - 25	45 - 50
	Basso contenuto di C Low carbon content	30 - 35	70 - 80	30 - 35	70 - 80	30 - 35	70 - 80
	Medio contenuto di C Medium carbon content	30 - 35	70 - 80	30 - 35	70 - 80	30 - 35	70 - 80
Acciaio Steel	Basso legato Low alloyed	25 - 30	70 - 75	25 - 30	70 - 75	25 - 30	70 - 75
	Alto legato High alloyed	20 - 30	60 - 70	20 - 30	60 - 70	20 - 30	60 - 70
	Acciaio da stampi e utensili Die/tool steel	15 - 20	30 - 40	15 - 20	30 - 40	15 - 20	30 - 40
Acciaio Inossidabile Stainless Steel	AISI 304 - 416 - 420	-	15 - 20	-	15 - 20	-	15 - 20
	AISI 316 - 440	-	15 - 20	-	15 - 20	-	15 - 20
	17-4 ph 15-5 ph	-	10 - 15	-	10 - 15	-	10 - 15
	Leghe Cr - Co Cr - Co alloys	-	10 - 15	-	10 - 15	-	10 - 15
	Duplex F51	-	5 - 10	-	5 - 10	-	5 - 10
	Super Duplex F55	-	5 - 10	-	5 - 10	-	5 - 10

D	s	Avanzamento fz mm/giro FEED mm/rpm					
63	1,6+3,5	0,035 ÷ 0,038	0,035 ÷ 0,038	-	-	-	-
80	2+3,5	0,041 ÷ 0,044	0,041 ÷ 0,044	-	-	-	-
100	2+3,5	0,047 ÷ 0,050	0,047 ÷ 0,050	-	-	-	-
125	2+4	0,055 ÷ 0,060	0,055 ÷ 0,060	-	-	-	-
160	3+5	0,065	0,065	-	-	-	-
200	÷6	0,070	0,070	-	-	-	-
250	6+12	0,075	0,075	-	-	-	-
50	4+10	-	-	0,040	0,040	0,025 ÷ 0,030	0,025 ÷ 0,030
63	4+20	-	-	0,050 ÷ 0,060	0,050 ÷ 0,060	0,035 ÷ 0,040	0,035 ÷ 0,040
80	4+20	-	-	0,065 ÷ 0,070	0,065 ÷ 0,070	0,042 ÷ 0,046	0,042 ÷ 0,046
100	4+25	-	-	0,075 ÷ 0,085	0,075 ÷ 0,085	0,048 ÷ 0,054	0,048 ÷ 0,054
125	5+28	-	-	0,090 ÷ 0,100	0,090 ÷ 0,100	0,056 ÷ 0,060	0,056 ÷ 0,060
160	6+32	-	-	0,105 ÷ 0,115	0,105 ÷ 0,115	0,066 ÷ 0,078	0,066 ÷ 0,078
200	8+32	-	-	0,120 ÷ 0,125	0,120 ÷ 0,125	0,084 ÷ 0,096	0,084 ÷ 0,096
250	14+32	-	-	0,128 ÷ 0,140	0,128 ÷ 0,140	0,105	0,105

* frese a disco a 3 tagli elicoidali alternati | SIDE AND FACE MILLING CUTTERS STAGGERED TEETH

** frese a disco a 3 tagli dritti | SIDE AND FACE MILLING CUTTERS STRAIGH TEETH