

# HSS-PM HSS-PM Line

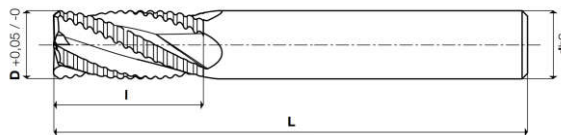
## Serie/Series 21105

Frese a **SGROSSARE**  
Roughing end mills

ALTE PRESTAZIONI  
HIGH PERFORMANCE

## 21105

Frese a **SEMIFINIRE** tagliente al centro  
Semi-finishing end mills center cutting

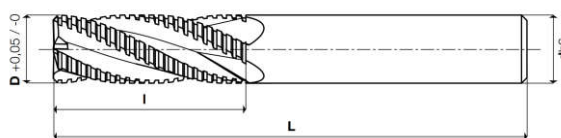


COATING **Skin** W A RICHIESTA ON REQUEST F A RICHIESTA ON REQUEST  $\lambda^{\circ}s$  28 NR UNI 8244 DIN 844A ISO 1641/1

Cod. Art.	X-105 (PM Co 10,5%)	D +0,05 -0	I	L	dh6	Z
211050603	EMX	6	13	57	6	3
211050803	EMX	8	19	69	10	4
211051003	EMX	10	22	72	10	4
211051203	EMX	12	26	83	12	4
211051403	EMX	14	26	83	12	4
211051603	EMX	16	32	92	16	4
211051803	EMX	18	32	92	16	4
211052007	EMX	20	38	104	20	4
211052203	EMX	22	38	104	20	4
211052503	EMX	25	45	121	25	5
211052603	EMX	26	45	121	25	5
211052803	EMX	28	45	121	25	5
211053003	EMX	30	45	121	25	5
211053203	EMX	32	53	133	32	5



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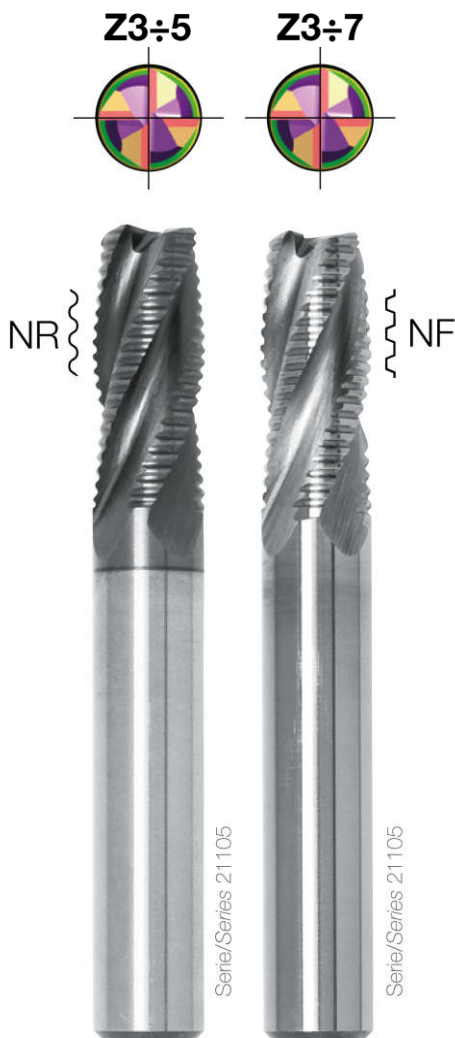
COATING **Skin** W A RICHIESTA ON REQUEST F A RICHIESTA ON REQUEST  $\lambda^{\circ}s$  28 NF UNI 8244 DIN 844A ISO 1641/1

Cod. Art.	X-85 (PM Co 8,5%)	COATED	D +0,05 -0	I	L	dh6	Z
211050601	CM	CMX	6	13	57	6	3
211050701	CM	CMX	7	16	66	10	3
211050801	CM	CMX	8	19	69	10	4
211050901	CM	CMX	9	19	69	10	4
211051001	CM	CMX	10	22	72	10	4
211051101	CM	CMX	11	22	79	12	4
211051201	CM	CMX	12	26	83	12	4
211051301	CM	CMX	13	26	83	12	4
211051401	CM	CMX	14	26	83	12	4
211051501	CM	CMX	15	32	92	16	4
211051601	CM	CMX	16	32	92	16	4
211051701	CM	CMX	17	32	92	16	4
211051801	CM	CMX	18	32	92	16	4
211051805	CM	CMX	18	32	98	20	4
211052001	CM	CMX	20	38	98	16	4
211052005	CM	CMX	20	38	104	20	4
211052201	CM	CMX	22	38	104	20	4
211052205	CM	CMX	22	38	114	25	4
211052401	CM	CMX	24	45	121	25	5
211052501	CM	CMX	25	45	121	25	5
211052601	CM	CMX	26	45	121	25	5
211052801	CM	CMX	28	45	121	25	5
211053001	CM	CMX	30	45	121	25	5
211053201	CM	CMX	32	53	133	32	5
211053601	CM	CMX	36	53	133	32	6
211054001	CM	CMX	40	63	143	32	6
211054501	CM	CMX	45	63	143	32	6
211055001	CM	CMX	50	75	155	32	7





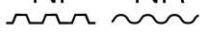
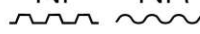
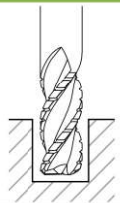
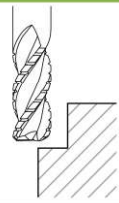
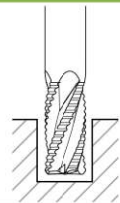
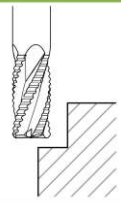
MATERIALI LAVORABILI / WORKPIECE MATERIALS

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serie	TITANIO	HRSA	ACCIAI INOSSIDABILI	MATERIALI NON FERROSI	LEGHE LEGGERE	ACCIAI	GHISE
series	TITANIUM	HRSA	STAINLESS STEELS	NON FERROUS MATERIALS	LIGHT ALLOYS	STEELS	CAST IRON
21105 EMX	●	●	●	○	○	●	●
21105 CM/CMX	●	●	●	○	○	●	●

# Parametri di taglio/Cutting parameters

		15105 15120* WF 	15105 15120* WF 	21105 21120* NF NR 	19105 - 20105 20120* - 21105 21120* NF NR 		
Materiali Materials		Cava Slotting $ap = 1\sigma$ $ae = 1\sigma$	Sgrossatura Roughing $ap = 1,5\sigma$ $ae = 0,5\sigma$	Cava Slotting $ap = 1\sigma$ $ae = 1\sigma$	Sgrossatura Roughing $ap = 1,5\sigma$ $ae = 0,5\sigma$		
							
Gruppo e descrizione Group and description		Vc (mt/min.)		Vc (mt/min.)		Vc (mt/min.)	
		X-85 NON RIVESTITA UNCOATED	X-85 <b>Skin</b> Alu	X-85 NON RIVESTITA UNCOATED	X-85 <b>Skin</b>	X-85 NON RIVESTITA UNCOATED	X-85 <b>Skin</b>
Ghisa Cast Iron	Grigia e sferoidale Grey and spheroidal	-	-	-	-	20 - 25	45 - 50
	Basso contenuto di C Low carbon content	-	-	-	-	30 - 35	60 - 70
Acciaio Steel	Medio contenuto di C Medium carbon content	-	-	-	-	30 - 35	50 - 60
	Basso legato Low alloyed	-	-	-	-	25 - 30	50 - 60
	Alto legato High alloyed	-	-	-	-	20 - 30	40 - 50
	Acciaio da stampi e utensili Die/tool steel	-	-	-	-	15 - 20	30 - 40
Acciaio Inossidabile Stainless Steel	AISI 304 - 416 - 420	-	-	-	-	15 - 20	15 - 20
	AISI 316 - 440	-	-	-	-	15 - 20	15 - 20
	17-4 ph 15-5 ph	-	-	-	-	10 - 15	10 - 15
	Leghe Cr - Co Cr - Co alloys	-	-	-	-	10 - 15	10 - 15
	Duplex F51	-	-	-	-	5 - 10	5 - 10
Superleghe resistenti al calore Heat Resistant Super Alloys	Super Duplex F55	-	-	-	-	5 - 10	5 - 10
	HRSA Hastelloy	-	-	-	-	5 - 10	5 - 10
	HRSA Inconel 625	-	-	-	-	5 - 10	5 - 10
	HRSA Inconel 718	-	-	-	-	5 - 10	5 - 10
Ti	HRSA Nimonic	-	-	-	-	5 - 10	5 - 10
	Titanio - Titanium	-	-	-	-	10 - 15	10 - 15
Materiali non ferrosi Leghe leggere Non ferrous materials Light alloys	Leghe di titanio Titanium alloys	-	-	-	-	10 - 15	10 - 15
	Alluminio non legato Unalloyed aluminium	110 - 120	250 - 260	110 - 120	250 - 260	-	-
	Alluminio Si < 6% si < 6% aluminium	70 - 80	170 - 180	70 - 80	170 - 180	-	-
	Materiali termoplastici Thermoplastic materials	130 - 140	270 - 280	130 - 140	270 - 280	-	-
	Rame/Ottone Copper/Brass	30 - 35	75 - 80	30 - 35	75 - 80	-	-
<b>D</b>		<b>Avanzamento fz mm/tagliente FEED mm/tooth</b>					
6		0,012	0,025	0,012	0,012	0,020	0,020
8		0,016	0,035	0,016	0,016	0,026	0,026
10		0,022	0,045	0,022	0,022	0,030	0,030
12		0,026	0,055	0,026	0,026	0,040	0,040
16		0,036	0,070	0,036	0,036	0,060	0,060
20		0,045	0,085	0,045	0,045	0,080	0,080

\* series fz consigliato | RECOMMENDED -50%