

# HSS-PM HSS-PM Line

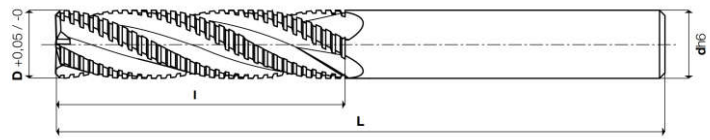
Serie/Series

## 21120

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

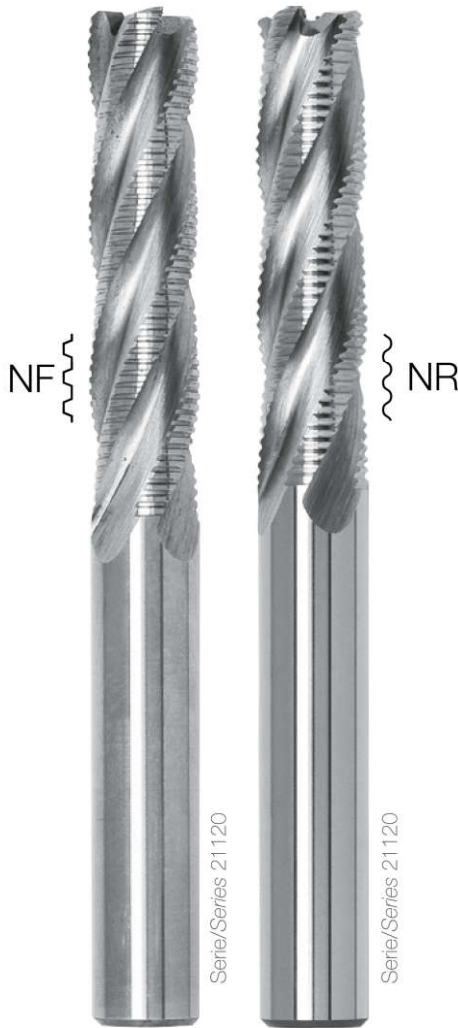
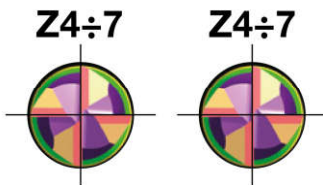
## 21120

Frese a **SGROSSARE** tagliente al centro  
Roughing end mills center cutting

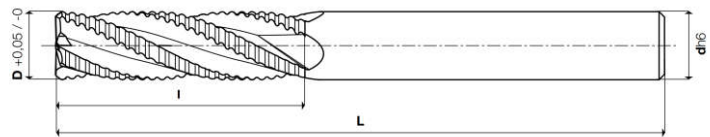


COATING: **Skin**  
W: A RICHIESTA ON REQUEST  
F: A RICHIESTA ON REQUEST  
 $\lambda^{\circ}s$ : 28  
NF  
UNI 8244  
DIN 844A  
ISO 1641/I

Cod. Art.	X-85 (PM Co 8,5%)	COATED	D +0,05 -0	I	L	dh6	Z
211200801	CM	CMX	8	38	88	10	4
211201001	CM	CMX	10	45	95	10	4
211201201	CM	CMX	12	53	110	12	4
211201401	CM	CMX	14	53	110	12	4
211201501	CM	CMX	15	63	123	16	4
211201601	CM	CMX	16	63	123	16	4
211201801	CM	CMX	18	63	123	16	4
211201805	CM	CMX	18	63	129	20	4
211202001	CM	CMX	20	75	135	16	4
211202005	CM	CMX	20	75	141	20	4
211202201	CM	CMX	22	75	141	20	4
211202205	CM	CMX	22	75	151	25	4
211202401	CM	CMX	24	90	166	25	5
211202501	CM	CMX	25	90	166	25	5
211202801	CM	CMX	28	90	166	25	5
211203001	CM	CMX	30	90	166	25	5
211203201	CM	CMX	32	106	186	32	5
211203601	CM	CMX	36	106	186	32	6
211204001	CM	CMX	40	125	205	32	6
211204501	CM	CMX	45	125	205	32	6
211205001	CM	CMX	50	150	230	32	7



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

Cod. Art.	X-85 (PM Co 8,5%)	COATED	D +0,05 -0	I	L	dh6	Z
211200803	CM	CMX	8	38	88	10	4
211201003	CM	CMX	10	45	95	10	4
211201203	CM	CMX	12	53	110	12	4
211201403	CM	CMX	14	53	110	12	4
211201503	CM	CMX	15	63	123	16	4
211201603	CM	CMX	16	63	123	16	4
211201803	CM	CMX	18	63	123	16	4
211201807	CM	CMX	18	63	129	20	4
211202003	CM	CMX	20	75	135	16	4
211202007	CM	CMX	20	75	141	20	4
211202203	CM	CMX	22	75	141	20	4
211202207	CM	CMX	22	75	151	25	4
211202403	CM	CMX	24	90	166	25	5
211202503	CM	CMX	25	90	166	25	5
211202803	CM	CMX	28	90	166	25	5
211203003	CM	CMX	30	90	166	25	5
211203203	CM	CMX	32	106	186	32	5
211203603	CM	CMX	36	106	186	32	6
211204003	CM	CMX	40	125	205	32	6
211204503	CM	CMX	45	125	205	32	6
211205003	CM	CMX	50	150	230	32	7





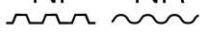
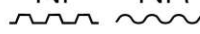
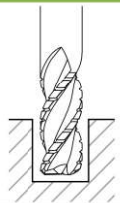
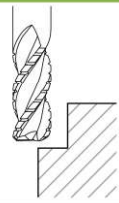
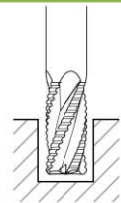
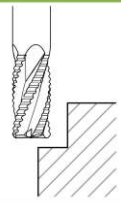
parametri tecnici a pag. / for technical parameters see page 124

MATERIALI LAVORABILI / WORKPIECE MATERIALS

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
21120	●	●	●	○	○	●	●
21120	●	●	●	○	○	●	●

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

# Parametri di taglio/Cutting parameters

		15105 15120* WF 	15105 15120* WF 	21105 <b>21120*</b> NF NR 	19105 - 20105 20120* - 21105 <b>21120*</b> NF NR 		
<b>Materiali</b> <i>Materials</i>		Cava Slotting $ap = 1\phi$ $ae = 1\phi$	Sgrossatura Roughing $ap = 1,5\phi$ $ae = 0,5\phi$	Cava Slotting $ap = 1\phi$ $ae = 1\phi$	Sgrossatura Roughing $ap = 1,5\phi$ $ae = 0,5\phi$		
							
<b>Gruppo e descrizione</b> <i>Group and description</i>		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
	Super Duplex F55	-	-	-	-	5 - 10	5 - 10
Superleghe resistenti al calore Heat Resistant Super Alloys	HRSA Hastelloy	-	-	-	-	5 - 10	5 - 10
	HRSA Inconel 625	-	-	-	-	5 - 10	5 - 10
	HRSA Inconel 718	-	-	-	-	5 - 10	5 - 10
	HRSA Nimonic	-	-	-	-	5 - 10	5 - 10
Ti	Titanio - Titanium	-	-	-	-	10 - 15	10 - 15
	Leghe di titanio Titanium alloys	-	-	-	-	10 - 15	10 - 15
Materiali non ferrosi Leghe leggere Non ferrous materials Light alloys	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%