

# MILLING LINE





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**PENTADEX 66**

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**TORIDEX**

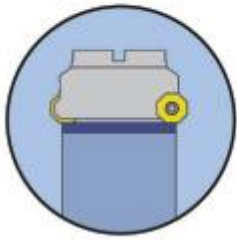
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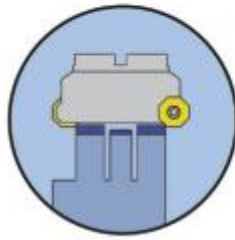
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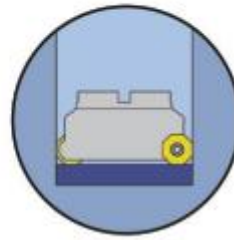




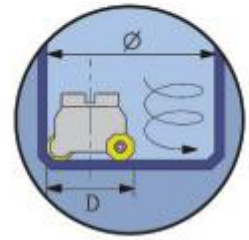
Spianatura  
Facemilling  
Planfräsen



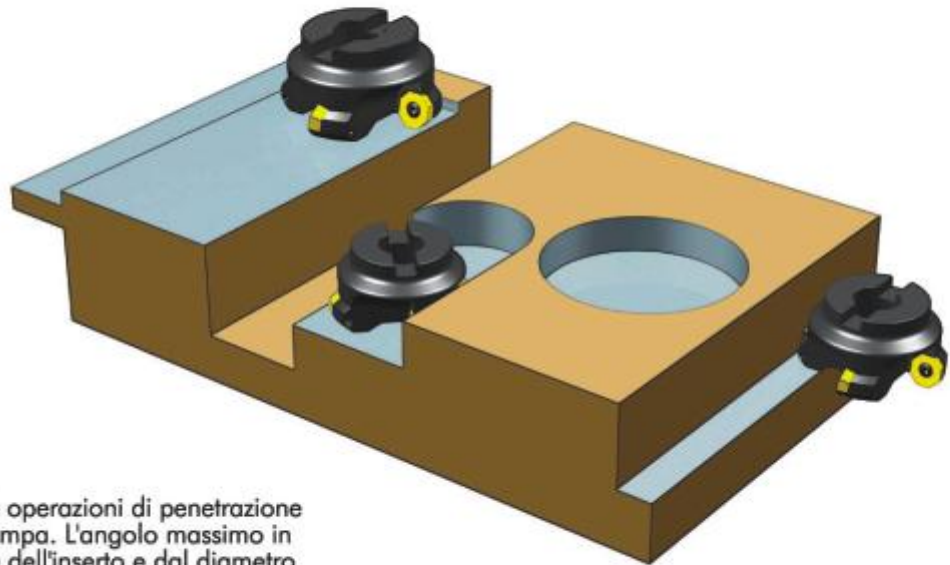
Lavorazione a taglio  
interrotto  
Demanding intermittent  
machining  
Schere Bearbeitung bei  
unterbrochenem Schnitt



Esecuzione di cave  
Full slot milling  
Vollnutenfräsen



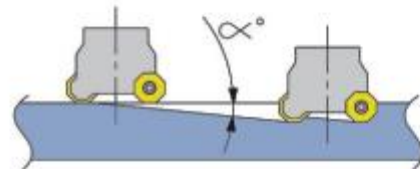
Interpolazione elicoidale  
Helical interpolation  
Zirkularfräsen



**FRESATURA IN RAMPA** Nelle operazioni di penetrazione è preferibile usare il sistema in rampa. L'angolo massimo in rampa dipende dalla dimensione dell'inserto e dal diametro della fresa. L'angolo  $\alpha^\circ$  per ogni fresa è indicato nella tabella qui di seguito.

**RAMPING** In penetrating operations ramping is preferred. The maximum ramping angle is dependent on insert size and cutter diameter. The angle  $\alpha$  for each cutter is presented in the table below.

**EINTAUCHEN ALS RAMPE** Wir empfehlen mittels einer Rampe einzutauchen. Der maximale Eintauchwinkel ist abhängig von der Plattengröße und dem Fräserdurchmesser. Der Winkel  $\alpha^\circ$  für jeden Fräser ist in der untenstehenden Tabelle angegeben.



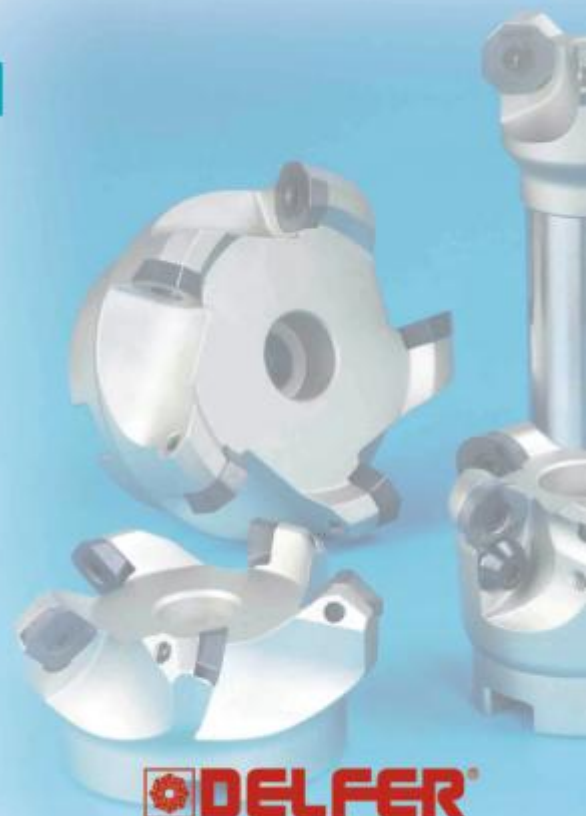
CODE N°	D	Fresatura in rampa Ramping Schräges Eintauchen $\alpha^\circ$	Interpolazione elicoidale Helical interpolation Zirkularfräsen	
			Ø MIN	Ø MAX
801222	32	12°	53	82
801523	40	9°	69	98
802023	50	7°	79	118
802030	50	7°	79	118
802140	63	5°30'	115	144
803050	80	4°	149	178
804060	100	3°	189	218
805070	125	2°	239	268





	CODE N°	D	D1	D2	L	H	Z	ap	
	801222	32	42	32	120	40	2	4,4	
801523	40	50	32	120	40	3	4,4		
802023	50	60	32	120	40	3	4,4		
	802030	50	60	22	20	40	3	4,4	ODEW150508 ODET 150508
	802140	63	73	22	20	40	4	4,4	
	803050	80	90	27	25	50	5	4,4	
	804060	100	110	32		50	6	4,4	
	805070	125	135	40		63	7	4,4	
	806080	160	170	40/40		63	8	4,4	

## RICAMBI • SPARES • ERSATZTEILE

CODE N°		
801222	VS5N (torx20)	CV5 (torx20)
801523		
802023		
802030		
802140		
803050		
804060		
805070		
806080		



## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	ODEW150508		•	•		•	•	•		
	ODET150508	•	•			•	•			

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

		Durezza Hardness Härte			Vc = m/min			
		N/mm <sup>2</sup>	HB		fz = mm			
					0,15	0,25	0,35	0,45
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK25G	235/175	180/140	130/105	105/90
				RK40G	210/180	160/130	120/100	110/80
	Acciai legati Alloy steel Vergütete Formstähle	900-1200		RK25G	160/130	125/105	115/90	
				RK40G	150/120	120/100	110/90	100/80
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200		RK40G	120/100	105/90	95/85	
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RB10	250/230	210/190	190/170	160/140
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290		190/150	170/130	140/110	110/90

# MULTIDEX 45


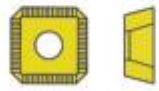


	CODE N°	D	D1	D2	H	L1	Z	ap	 SEHW1204AF SEHT 1204AF
	451030	40	52	16	40	19	3	5,5	
	452040	50	62	22	40	20	4	5,5	
	452150	63	75	22	40	20	5	5,5	
	453050	80	92	27	50	25	5	5,5	

## RICAMBI • SPARES • ERSATZTEILE

CODE N°		
451030	VS5N (torx20)	CV5 (torx20)
452040		
452150		
453050		

## INSERTI • INSERTS • WENDEPLATTEN

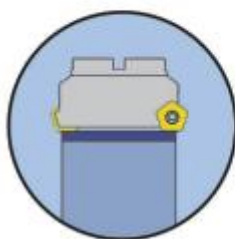
	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	SEHW1204AF	●	●		●	●	●			●
	SEHT1204AF	●	●			●	●			

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

		Durezza Hardness Härte			Vc = m/min			
		N/mm2	HB		fz = mm			
					0,10	0,20	0,30	0,40
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK25G	235/175	180/130	135/110	115/90
				RK40G	210/170	170/120	125/100	110/80
	Acciai legati Alloy steel Vergütete Formstähle	900-1200		RK25G	160/125	135/110		
				RK40G	145/125	120/105	100/90	
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200		RK40G	105/90			
	Acciaio inossidabile Stainless steel Rostfreie Stähle			RK40G	160/120	145/120		
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RB10	180/140	145/120	130/90	105/80
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290		150/110	120/90		
	Leghe di Alluminio Aluminium alloys Aluminiumlegierungen		30-100	ZH20	1000/800	870/750	760/600	620/500



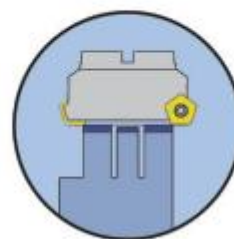
# PENTADEX 66



Profondità di passata  
sino a 10 mm.  
Depth of cut until 10 mm.  
Schnitttiefe bis 10 mm.



Sgrossatura e finitura  
speculare  
Roughing and mirror  
finishing  
Schrupp-und  
Schlichtbearbeitung



Indicato nella lavorazione  
a taglio interrotto  
Suitable for interrupted  
cut operation  
Einsetzbar für  
unterbrochenen Schnitt

Fresa a spianare per operazioni di sgrossatura e finitura con basso assorbimento di potenza.

Face cutter for finishing and roughing operation with very low power absorption.

Planfräser für Fein-und Schruppbearbeitung mit sehr geringer Kraftaufnahme.


	CODE N°	D	D1	D2	H	L1	Z	ap		
	662150	66	48	27	55	27	5	10		PDHW 120420
	663060	80	60	27	55	27	6	10		
	664070	100	80	32	55		7	10		

## RICAMBI • SPARES • ERSATZTEILE

CODE N°			
662150	VS5N (torx20)	ST30	CV5 (torx20)
663060			
664070			

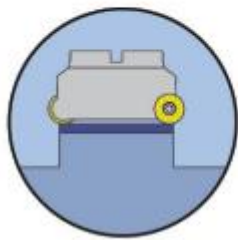
# PENTADEX 66

## INSERTI • INSERTS • WENDEPLATTEN

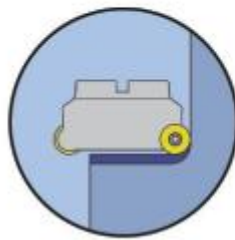
	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	PDHW120420		•		•		•			•

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

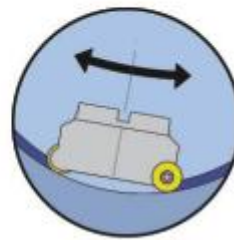
		Durezza Hardness Härte			Vc = m/min			
		N/mm2	HB		fz = mm			
					0,10	0,25	0,35	0,45
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK40G	220/180	175/140	120/100	105/85
	Acciai legati Alloy steel Vergütete Formstähle	900-1200			150/130	125/110	105/90	90/75
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200			120/100	105/90	90/75	
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RB10	230/200	205/170	160/140	130/110
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290		170/150	140/120	115/90	100/80
	Leghe di Alluminio Aluminium alloys Aluminiumlegierungen		30-100	ZH20	800/700	720/680	700/650	620/500



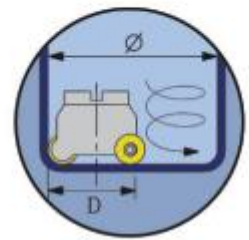
Spianatura  
Facemilling  
Planfräsen



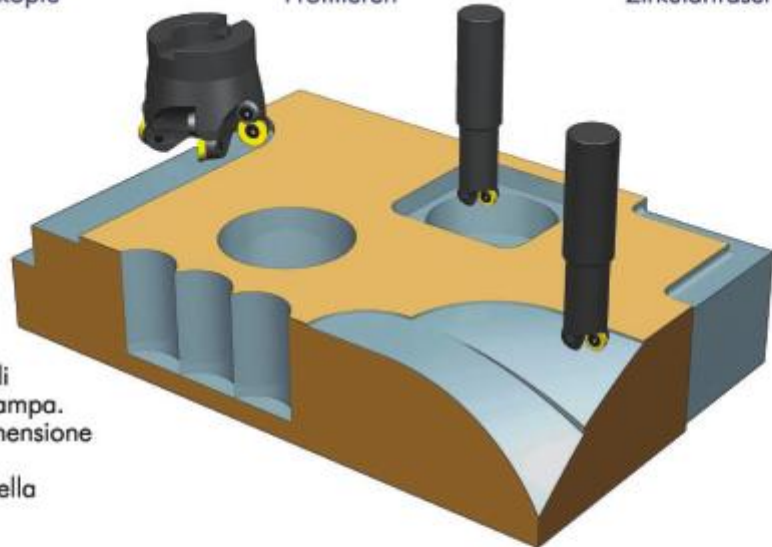
Spallamenti retti  
Shoulder milling  
Eckmesserköpfe



Profilatura  
Profiling  
Profilieren



Interpolazione elicoidale  
Helical interpolation  
Zirkularfräsen

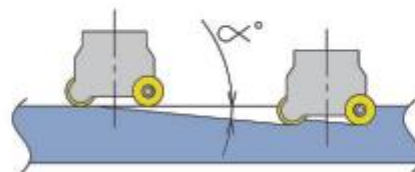


**FRESATURA IN RAMPA** Nelle operazioni di penetrazione è preferibile usare il sistema in rampa. L'angolo massimo in rampa dipende dalla dimensione dell'inserto e dal diametro della fresa. L'angolo  $\alpha^\circ$  per ogni fresa è indicato nella tabella qui di seguito.

**RAMPING** In penetrating operations ramping is preferred. The maximum ramping angle is dependent on insert size and cutter diameter. The angle  $\alpha^\circ$  for each cutter is presented in the table below.

#### EINTAUCHEN ALS RAMPE

Wir empfehlen mittels einer Rampe einzutauchen. Der maximale Eintauchwinkel ist abhängig von der Plattengröße und dem Fräserdurchmesser. Der Winkel  $\alpha^\circ$  für jeden Fräser ist in der untenstehenden Tabelle angegeben.



CODE N°	D	Fresatura in rampa Ramping Schräges Eintauchen $\alpha^\circ$	Interpolazione elicoidale Helical interpolation Zirkularfräsen			
			d=12		d=16	
			Ø MIN	Ø MAX	Ø MIN	Ø MAX
CX2532-35	25	21°	38	48		
CX3233-35	32	12°	52	62		
CX4034	40	14°			64	78
CX4015-42	42	6°30'	72	82		
CX5051	50	5°30'	88	98		
CX5042	50	10°			84	98
CX5004-52	52	10°			86	100
CX5015-52	52	5°20'	92	102		
CX6316	63	4°	114	124		
CX6325	63	7°20'			110	124
CX6506-66	66	3°50'			116	130
CX6505-66	66	7°	120	130		
CX8006	80	6°			144	158
CX10007	100	4°30'			184	198
CX12508	125	3°20'			234	248



	CODE N°	D	D2	L	L1	L2	Z	op	
	CX1231	12	16	20	40	90	2	3,5	
CX1232	12	16	20	60	110	2	3,5		
CX1233	12	16	20	80	130	2	3,5		
CX1531	15	16	40	40	90	2	3,5	RDHX0702MOT	
CX1532	15	16	40	60	110	2	3,5		
CX1533	15	20	40	80	130	2	3,5		
CX1534	15	20	40	100	150	2	3,5		
CX1535	15	25	40	120	178	2	3,5		
CX2021	20	20	40	40	92	2	5	RDH. 1003MOT RDMX1003MOT	
CX2022	20	20	60	60	112	2	5		
CX2023	20	25	60	80	138	2	5		
CX2024	20	25	60	100	158	2	5		
CX2025	20	25	60	120	178	2	5		
CX2532-35	25	25		74	130	2	6	RDH. 12T3MOT RDMX12T3MOT	
CX3233-35	32	32		90	150	3	6		
CX4034	40	32		110	170	3	8	RDH. 1604MOT RDMX1604MOT	

## RICAMBI • SPARES • ERSATZTEILE

CODE N°			
CX12..	VS2M (torx8)		CV002 (torx20)
CX15..	VS2 (torx8)		
CX20..	VS35L (torx15)		CV004 (torx15)
CX2532-35 CX3233-35		ST40	
CX4034	VS5N (torx20)	ST30	CV5 (torx20)





	CODE N°	D	D2	L1	H	Z	ap	
	CX4015-42	42	16	19	42	5	6	RDH. 12T3MOT RDMX12T3MOT
CX5051	50	22	22	50	5	6		
CX5015-52	52	22	22	50	5	6		
CX6316	63	27	27	55	6	6		
CX6506-66	66	27	27	55	6	6		
CX5042	50	22	22	50	4	8	RDH. 1604MOT RDMX1604MOT	
CX5004-52	52	22	22	50	4	8		
CX6325	63	27	27	55	5	8		
CX6505-66	66	27	27	55	5	8		
CX8006	80	27	27	55	6	8		
CX10007	100	32		55	7	8		
CX12508	125	40		55	8	8		

## RICAMBI • SPARES • ERSATZTEILE

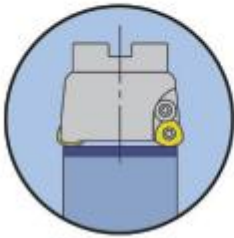
CODE N°			
CX4015-42	VS35L (torx15)	ST40	CV004 (torx15)
CX5051			
CX5015-52			
CX6316			
CX6506-66			
CX5042	VS5N (torx20)	ST30	CV5 (torx20)
CX5004-52			
CX6325			
CX6505-66			
CX8006			
CX10007			
CX12508			

## INSERTI • INSERTS • WENDEPLATTEN

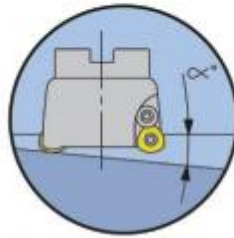
	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	RDHX0701MOT		●		●		●			●
	RDHX0702MOT		●		●		●			●
	RDHX1003MOT	●	●	●		●	●	●		
	RDMX1003MOT		●				●			
	RDHX12T3MOT	●	●		●	●	●			●
	RDMX12T3MOT		●				●			
	RDHX1604MOT		●		●	●	●			●
	RDMX1604MOT	●	●	○		●	●			○
	RDHT1003MOT			●				●		
	RDHT12T3MOT		●	●			●	●		
	RDHT1604MOT		●				●			

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

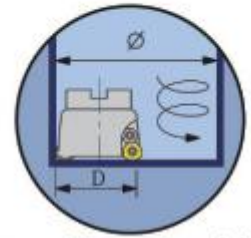
		Durezza Hardness Härte			Vc = m/min			
		N/mm2	HB		fz = mm			
					0,15	0,25	0,40	0,50
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK25G	225/165	180/140	130/100	110/90
				RK40G	200/150	160/125	120/95	105/80
	Acciai legati Alloy steel Vergütete Formstähle	900-1200		RK25G	160/130	135/110	120/100	
				RK40G	150/115	125/110	115/95	100/80
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200		RK40G	125/105	110/100	100/80	85/75
	Acciaio inossidabile Stainless steel Rostfreie Stähle			RK40G	160/120			
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RK03E RB10	210/170	180/160	165/130	150/110
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290		180/140	165/120	140/100	120/90



Spianatura  
Facemilling  
Planfräsen



Fresatura in rampa  
Ramping  
Eintauchen ais Rampe

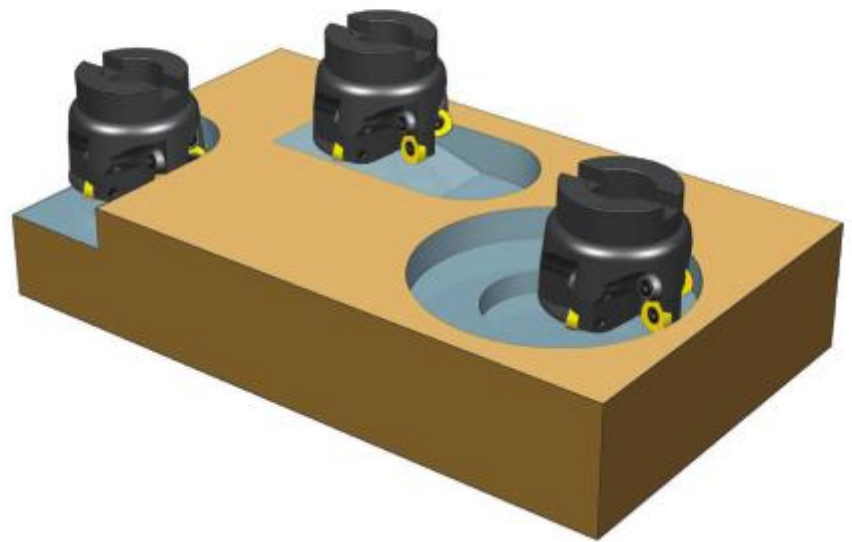


Interpolazione elicoidale  
Helical interpolation  
Zirkularfräsen

**JET MILL** offre numerosi vantaggi. Particolarmente adatta per lavori di svuotamento, non richiede preforo e consente avanzamenti molto elevati. Il sistema di doppio serraggio garantisce massima aderenza e stabilità dell'inserto.

**JET MILL** offers several advantages. It is particularly suitable for emptying operation and it allows machining with high feed rate. The double clamping system guarantees the insert maximum adherence and stability.

**JET MILL** bringt mehr Vorteile. Er ist geeignet für Ausräumoperationen, er benötigt keine Vorbohrungen und er erlaubt Bearbeitungen mit hohen Vorschüben. Das doppelte Klemmsystem garantiert beste Positionierung und Stabilität.



CODE N°	D	ap	Fresatura in rampa Ramping Schräges Eintauchen $\alpha^\circ$	Interpolazione elicoidale Helical interpolation Zirkularfräsen einer Bohrung ins Volle	
				Ø MIN	Ø MAX
JM2532	25	1,5	14°	33	47
JM3233	32	1,5	11°	47	61
JM4204	42	1,5	7°	64	79
JM5204	52	2,0	5°	76	101
JM6605	66	2,0	4°10'	104	129
JM8005	80	2,0	2°35'	132	157




	CODE N°	D	D2	H	ap	L1	L2	Z	
	JM2532	25	25		1,5	65	150	2	
JM3233	32	32		1,5	120	200	3		
	JM4204	42	16	42	1,5			4	JDHW14M520
	JM5204	52	22	50	2,0			4	
	JM6605	66	27	55	2,0			5	
	JM8005	80	27	55	2,0			5	

## RICAMBI • SPARES • ERSATZTEILE

CODE N°				
JM2532	VS35L (torx15)	ST40	CV004 (torx15)	
JM3233				
JM4204				
JM5204	VS5N (torx20)	ST30		CV5 (torx20)
JM6605				
JM8005				



## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	JDHW10T310		●		●		●			●
	JDHW14M520		●		●		●			●

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

		Durezza Hardness Härte			Vc = m/min			
		N/mm2	HB		fz = mm			
					0,70	1,0	2,0	3,0
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK40G	250/120	230/115	200/100	180/90
	Acciai legati Alloy steel Vergütete Formstähle	900-1200			200/110	185/100	170/95	155/80
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200			150/90	130/80	110/70	
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RK40G RB10	250/150	230/120	200/110	180/100
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290		230/120	200/105	170/90	150/80



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**MINIDRILL**

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**JET 90**

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	CODE N°	D	D2	ap	L1	L2	Z		
	MH1021	10	16	10	24	80	1		APKT1003PDR
	MH1221	12	16	10	26	80	1		
	MH1622	16	16	10	30	85	2		
	MH1722	17	16	10	30	85	2		
	MH2023	20	20	10	30	90	3		
	MH2123	21	20	10	30	90	3		
	MH2524	25	25	10	30	95	4		
	MH3225	32	25	10	30	95	5		





	CODE N°	D	D2	ap	L1	L2	Z		
	MH1021L	10	16	10	31	160	1		APKT1003PDR
	MH1221L	12	16	10	31	160	1		
	MH1622L	16	16	10	41	180	2		
	MH1722L	17	16	10	25	180	2		
	MH2022L	20	20	10	41	200	2		
	MH2023L	20	20	10	41	200	3		
	MH2122L	21	20	10	25	250	2		
	MH2532L	25	25	13,5	50	200	2		APKT1505PDR
	MH3233L	32	32	13,5	50	250	3		
	MH4033L	40	32	13,5	190	250	3		




	CODE N°	D	D2	ap	L1	H	Z	
	MH401006	40	22	10	20	40	6	APKT1003PDR
	MH501007	50	22	10	20	40	7	
	MH631008	63	22	10	20	40	8	
	MH501505	50	22	13,5	20	40	5	ADKT1505PDR
	MH631506	63	22	13,5	20	40	6	
	MH801507	80	27	13,5	25	50	7	
	MH401604	40	16	15	20	40	4	APKT1604PDR
	MH501605	50	22	15	20	40	5	
	MH631606	63	22	15	20	40	6	
MH801607	80	27	15	25	50	7		



## RICAMBI • SPARES • ERSATZTEILE

CODE N°				
MH1021	MH1021L	MH401006	VS2 (Torx8)	CV002 (torx8)
MH1221	MH1221L	MH501007		
MH1622	MH1622L	MH631008		
MH1722	MH1722L			
MH2023	MH2022L			
MH2123	MH2023L			
MH2524	MH2122L			
MH3225				
	MH2532L	MH501505	VS4 (Torx15)	CV004 (torx15)
	MH3233L	MH631506		
	MH4033L	MH801507		
		MH401604		
		MH501605		
		MH631606		
		MH801607		

## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	Z5M	Z56	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	APKT1003PDR		●				●			
	APKT1604PDR		●				●			
	ADKT1505PDR		●				●			

# MINIDRILL



	CODE N°	D	D2	L	L1	ap	Z	
	MN2032	20	20	106	56	6	2	1CCMW060208 1ADGW100308
	MN2032L	20	25	130	65	6	2	1CCMW060208 1ADGW100308
	MN2532L	25	25	150	80	9	2	1CCMW09T308 1ADGW130308
	MN3232L	32	32	170	90	12	2	1CCMW120408 1APGW160408

## RICAMBI • SPARES • ERSATZTEILE

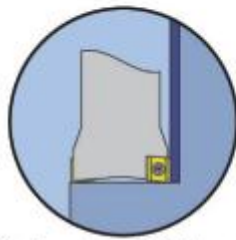
CODE N°		
MN2032 MN2032L	VS2-VS4T (torx8)-(torx15)	CV002-CV004 (torx8)-(torx15)
MN2532L	VS4-VS4T (torx15)	CV004 (torx15)
MN3232L	VS5N (torx20)	CV5 (torx20)

## INSERTI • INSERTS • WENDEPLATTEN

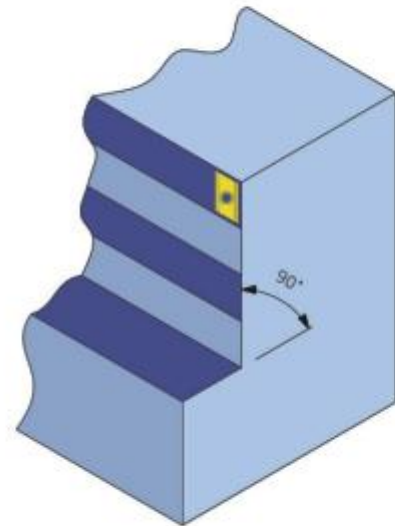
	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	CCMW060208		●				●			
	CCMW09T308		●				●			
	CCMW120408		●				●			
	ADGW100308		●		●		●			●
	ADGW130308		●				●			
	APGW160408		●				●			



Finitura spallamenti retti  
Finishing shoulder milling  
Schlichten Eckmesserköpfe



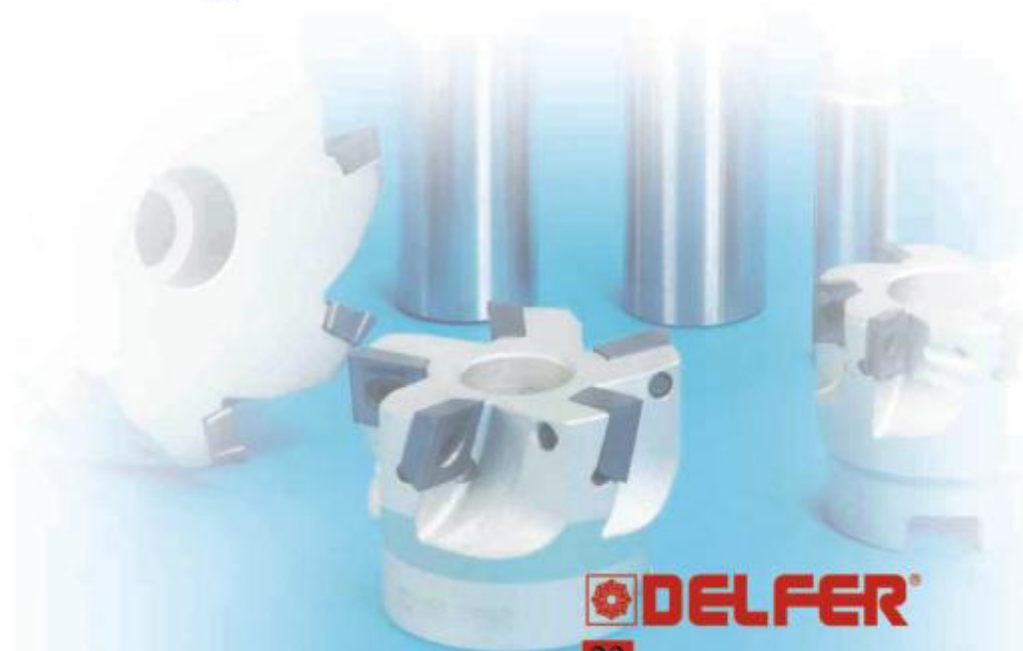
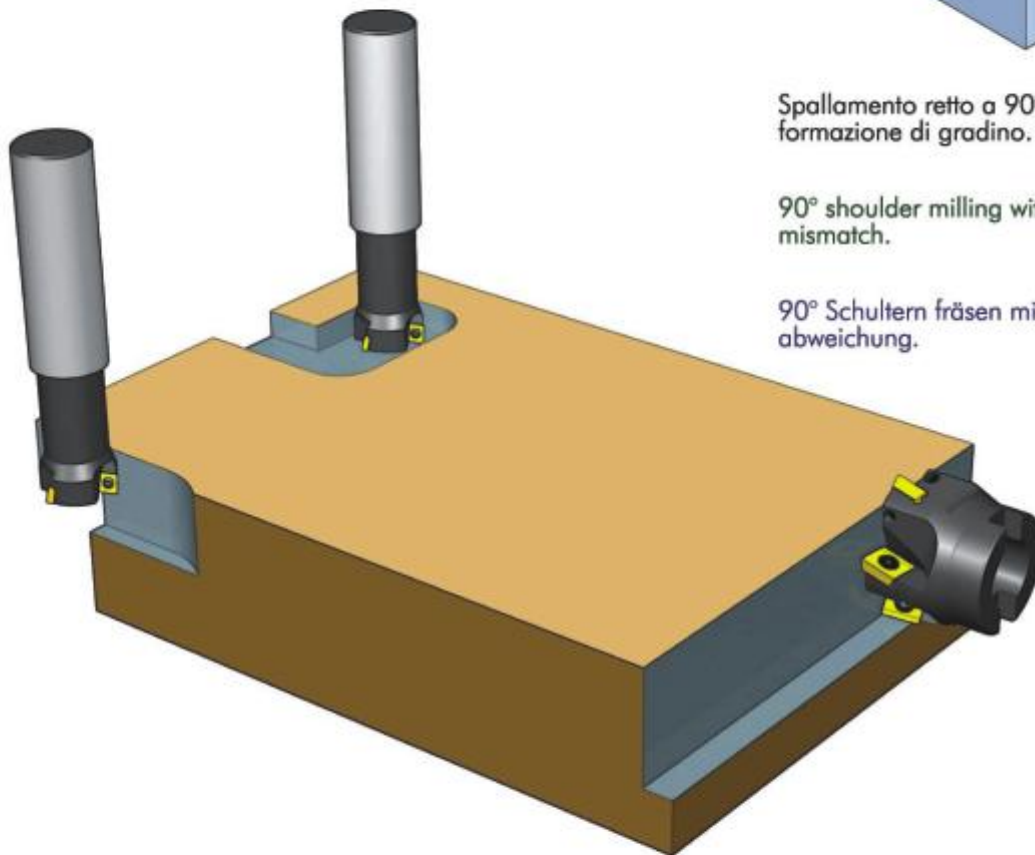
Spianatura di finitura  
Finishing facemilling  
Schlichten planfräsen



Spallamento retto a 90° con minima  
formazione di gradino.

90° shoulder milling with minimized  
mismatch.

90° Schultern fräsen mit minimaler  
abweichung.





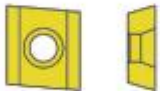
	CODE N°	D	D2	H	ap	L1	L2	Z	
	JE1632	16	16		10	30	90	2	
JE2033	20	20		10	40	110	3		
JE2533	25	25		10	45	120	3		
JE3234	32	32		10	50	120	4		
	JE4005	40	16	36	10			5	ADHT1003PER
	JE5005	50	22	40	14			5	ADHT1404PER
	JE6306	63	22	40	14			5	

## RICAMBI • SPARES • ERSATZTEILE

CODE N°			
JE1632	VS2 (torx8)	CV002 (torx8)	
JE2033			
JE2533			
JE3234			
JE4005	VS5N (torx20)		CV5 (torx20)
JE5005			
JE6306			



## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	ADHT1003PER		●				●			
	ADHT1404PER		●				●			

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

		Durezza Hardness Härte			Vc = m/min			
		N/mm <sup>2</sup>	HB		fz = mm			
					0,10	0,15	0,20	0,25
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK40G	200/140	180/130	155/120	145/115
	Acciai legati Alloy steel Vergütete Formstähle	900-1200			160/125	145/120	130/110	
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200			135/115	120/105	105/90	
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RK40G	170/110	140/100	120/85	100/70
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290		130/90	110/65		



**MILLCOP MG**

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**COPIDRILL CD**

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**COPIBALL CA**

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**JET BF**

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**COPIDRILL CARBIDE CCD - HSM**

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**COPIBALL CARBIDE CC - HSM**

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**JET CARBIDE CCBF - HSM**

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# MILLCOP MG



	CODE N°	D	D2	K	ap	L1	L2	r	Z	
	MG2532	25	25			15	60	117	12,5	
MG2532L	25	32			15	110	170	12,5	2	
MG3234	32	32			31	65	125	16	2	2RCCW230516 2SDLW090308
MG3236L	32	32			45	120	180	16	2	2RCCW230516 4SDLW090308
MG2542	25			CM3	15	60	146	12,5	2	2RCCW190412
MG2542L	25			CM4	15	110	219	12,5	2	
MG3244	32			CM4	31	65	174	16	2	2RCCW230516 2SDLW090308
MG3244L	32			CM4	31	90	199	16	2	
MG3244XL	32			CM4	45	120	228	16	2	2RCCW230516 4SDLW090308
MG3246L	32			CM5	45	120	256	16	2	



# MILLCOP MG







	CODE N°	D	D2	K	ap	L1	L2	r	Z	
	MG4035	40	32			52	95	155	20	
MG4037L	40	40			70	150	220	20	1	1 RDCW250620 1 RDEW220620 5 SPLW1204AD
MG5037L	50	40			75	160	230	25	1	1 RDCW250625 1 RDEW290625 5 SPLW1204AD
	MG4045	40		CM4	52	95	204	20	1	1 RDCW250620 1 RDEW220620 3 SPLW1204AD
	MG4057L	40		CM5	70	150	286	20	1	1 RDCW250620 1 RDEW220620 5 SPLW1204AD
	MG5055	50		CM5	58	101	237	25	1	1 RDCW250625 1 RDEW290625 3 SPLW1204AD
	MG5057L	50		CM5	75	160	296	25	1	1 RDCW250625 1 RDEW290625 5 SPLW1204AD

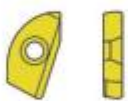
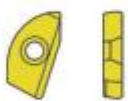






# MILLCOP MG

## RICAMBI • SPARES • ERSATZTEILE

CODE N°				
MG2532	VS40C (torx15)			CC4 (torx15)
MG2532L				
MG2542				
MG2542L				
MG3234	VS50C (torx20)	VS4T (torx15)		CC4 (torx15) CC5 (torx20)
MG3236L				
MG3244				
MG3244L				
MG3244XL				
MG3246L		VS5N (torx20)	ST30	CC5 (torx20)
MG4035				
MG4037L				
MG4045				
MG4057L				
MG5037L				
MG5055				
MG5057L				

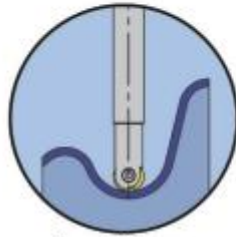
## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	RCCW190412		●				●			
	RCCW230516		●				●			
	SDLW090308	●	●			●	●			
	RDCW250620		●				●			
	RDCW250625		●				●			
	RDEW220620		●				●			
	RDEW290625		●				●			
	SPLW1204AD		●		●		●			●

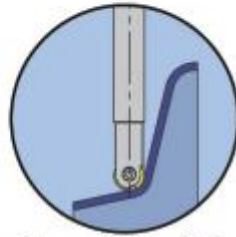
# COPIDRILL CD • COPIBALL



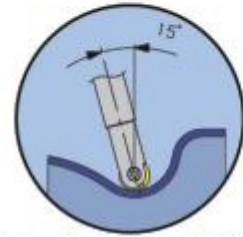
Copiatrice in generale  
General copying  
Allgemeines kopierfräsen



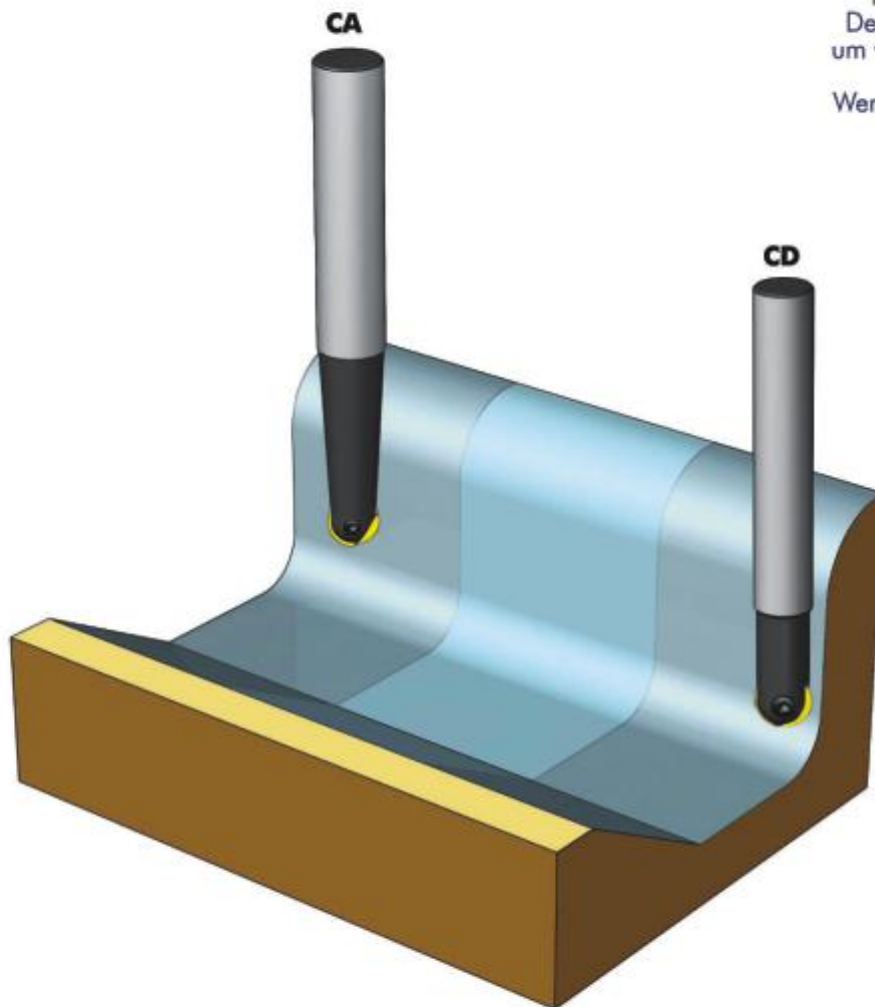
Semifinitura  
Semifinishing  
Vorschlichten



Copiatrice di Superfinitura  
Superfinishing for copy milling  
Super-Schichten für die  
Kopierbearbeitung



Inclinare l'asse fresa di 10°-15°  
elimina la Vc.0, e aumenta  
a durata dell'inserto  
Tilt the cutter axis of 10°-15°  
decrease the Vc.0 and  
increase the insert's life  
Den Fräser 10°-15° anstellen,  
um vC=0 zu vermeiden und die  
Lebensdauer der  
Wendeschneidplatte zu erhöhen



**COPIDRILL:** frese di semifinitura e finitura in copiatura, consentono di ottenere una buona finitura impiegando elevate velocità di taglio.

**COPIDRILL:** copying cutters in semi-finishing and finishing operation, permit to have a good finished surface using high cutting speed.

**COPIDRILL:** Kopierfräser für die Fein- und Feinstbearbeitung zum Erzielen von höchsten Oberflächengüten bei hohen Schnittgeschwindigkeiten.


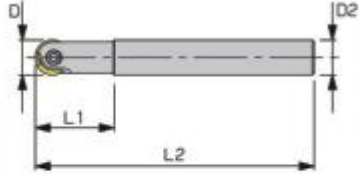
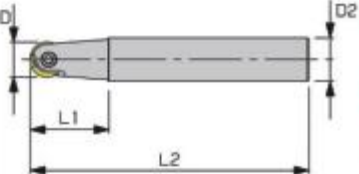
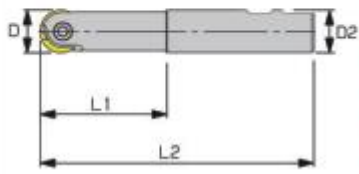
**COPIBALL:** frese di finitura e super-finitura, consentono di ottenere una superficie finita speculare impiegando un'elevata velocità di taglio.

**COPIBALL:** finishing and super-finishing cutters, permit to have the specular finished surface together with high cutting speed.



**COPIBALL:** Schlicht und Super-Schlichtfräser für höchste Oberflächengüten beim HSC-Fräsen und ökonomisches Arbeiten.

# COPI DRILL CD





	CODE N°	D	D2	L1	L2	
	CD1233	12	12	32	130	RCN12..
	CD1234	12	12	46	150	
	CD1633	16	16	36	140	
	CD1634	16	16	53	160	
	CD2033	20	20	45	160	
	CD2034	20	20	61	175	
	CD2533	25	25	45	160	
CD2534	25	25	70	190	RCN25..	
	CD0835	8	12	46	150	RCN08..
	CD1035	10	12	46	150	RCN10..
	CD1235	12	16	58,5	160	RCN12..
	CD1635	16	20	65	175	RCN16..
	CD2035	20	25	76	190	RCN20..
	CD2535	25	32	98	210	RCN25..
	CD1231	12	12	35	80	RCN12..
	CD1232	12	12	46	100	
	CD1631	16	16	35	83	RCN16..
	CD1632	16	16	53	110	
	CD2031	20	20	45	95	RCN20..
	CD2032	20	20	61	125	
	CD3232	32	32	80	140	RCN32..

## RICAMBI • SPARES • ERSATZTEILE

CODE N°		
CD08..	VS08 (torx8)	CV002 (torx8)
CD10..	VS10 (torx8)	
CD12..	VS12 (torx20)	CV005 (torx20)
CD16..	VS16 (torx20)	
CD20..	VS20 (torx20)	
CD25..	VS25 (torx20)	
CD32..	VS32 (torx20)	

## INSERTI • INSERTS • WENDEPLATTEN

CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
				●				●	●
RCN08			●				●	●	
RCN10			●				●	●	
RCN12			●				●	●	
RCN16			●				●	●	
RCN20			●				●	●	
RCN25			●				●	●	
RCN32			●				●	●	
			●				●	●	
RCN08AL			●				●	●	
RCN10AL			●				●	●	
RCN12AL			●				●	●	
RCN16AL			●				●	●	
RCN20AL			●				●	●	
RCN25AL			●				●	●	
RCN32AL			●				●	●	

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

		Durezza Hardness Härte			Vc = m/min			
		N/mm2	HB		fz = mm			
					0,10	0,20	0,30	0,40
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK03E RK03CF	250/180	220/160	200/150	180/135
	Acciai legati Alloy steel Vergütete Formstähle	900-1200			220/150	200/140	180/125	
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200			160/125	140/105	120/90	
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RK03E RK03CF	320/200	290/165	250/140	210/120
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290		270/180	240/130	200/105	150/90
	Leghe di Alluminio Aluminium alloys Aluminiumlegierungen		30-100	ZK03M	1100/900	1000/850	900/600	800/550



# COPIBALL



	CODE N°	D	D2	L1	L2	
	CA0822	8	12	35	92	RCA08
CA0823	8	12	53	110		
CA1022	10	12	35	92	RCA10	
CA1023	10	12	53	110		
CA1222	12	12	32	100	RCA12	
CA1223	12	12	36	125		
CA1224	12	12	46	150		
CA1622	16	16	32	100		
CA1623	16	16	38	125	RCA16	
CA1624	16	16	50	160		
CA2022	20	20	40	115		
CA2023	20	20	50	150	RCA20	
CA2024	20	20	60	190		
CA2522	25	25	46	125	RCA25	
CA2523	25	25	50	150		
CA2524	25	25	64	200		
CA3222	32	32	50	130		
CA3223	32	32	60	190	RCA32	
CA3224	32	32	76	250		





	CODE N°	D	D2	K	L1	L2	$\alpha^\circ$	
		CA0825	8	12		75	132	1°50'
	CA1025	10	12		75	132	1°30'	RCA10
	CA1225	12	16		60	160	1°30'	RCA12
	CA1625	16	20		57	175	1°30'	RCA16
	CA2025	20	25		80	190	1°50'	RCA20
	CA2026	20	25		80	250	1°50'	
	CA2525	25	32		100	215	1°30'	RCA25
	CA2526	25	32		100	315	1°30'	
	CA3225	32	40		110	240	1°10'	RCA32
	CA3226	32	40		110	305	1°10'	
	CA1252	12		CM2	53	121		RCA12
	CA1652	16		CM2	63	131		RCA16
	CA2052	20		CM2	75	143		RCA20
	CA2552	25		CM3	90	175		RCA25
	CA3252	32		CM4	106	214		RCA32

## RICAMBI • SPARES • ERSATZTEILE

CODE N°			
CA08..	VSA08 (torx7)	CV015 (torx7)	
CA10..	VSA10 (torx8)	CV002 (torx8)	
CA12..	VSA12 (torx10)	CV003 (torx10)	
CA16..	VSA16 (torx15)	CV004 (torx15)	
CA20..	VSA20 (torx20)	CV005 (torx20)	
CA25..	VSA25 (torx30)		CC6
CA32..	VSA32 (torx30)		(torx30)

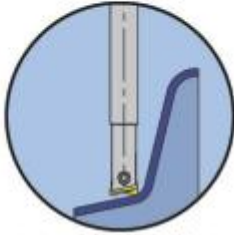
## INSERTI • INSERTS • WENDEPLATTEN

CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	RCA08			●				●	●
RCA10			●				●	●	
RCA12			●				●	●	
RCA16			●				●	●	
RCA20			●				●	●	
RCA25			●				●	●	
RCA32			●				●	●	

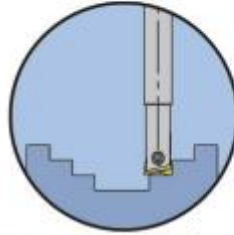


## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

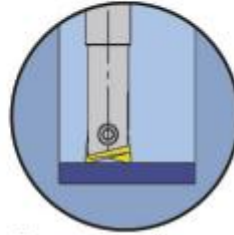
		Durezza Hardness Härte			Vc = m/min			
		N/mm2	HB		fz = mm			
					0,10	0,20	0,30	0,40
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK03E RK03CF	250/180	220/160	200/150	180/135
	Acciai legati Alloy steel Vergütete Formstähle	900-1200			200/150	180/130	160/110	140/90
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200			160/120	140/105	110/80	
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RK03E RK03CF	330/200	290/160	240/130	200/115
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290		260/170	220/120	190/100	125/85
	Leghe di Alluminio Aluminium alloys Aluminiumlegierungen		30-100	ZK03M	1100/900	1000/850	900/600	800/550
	Grafite - Graphite - Graphit			RK03E	400/200	300/150		



Copiatura di Superfinitura  
Super-finishing for copy milling  
Super-Schlichten für die  
Kopierbearbeitung



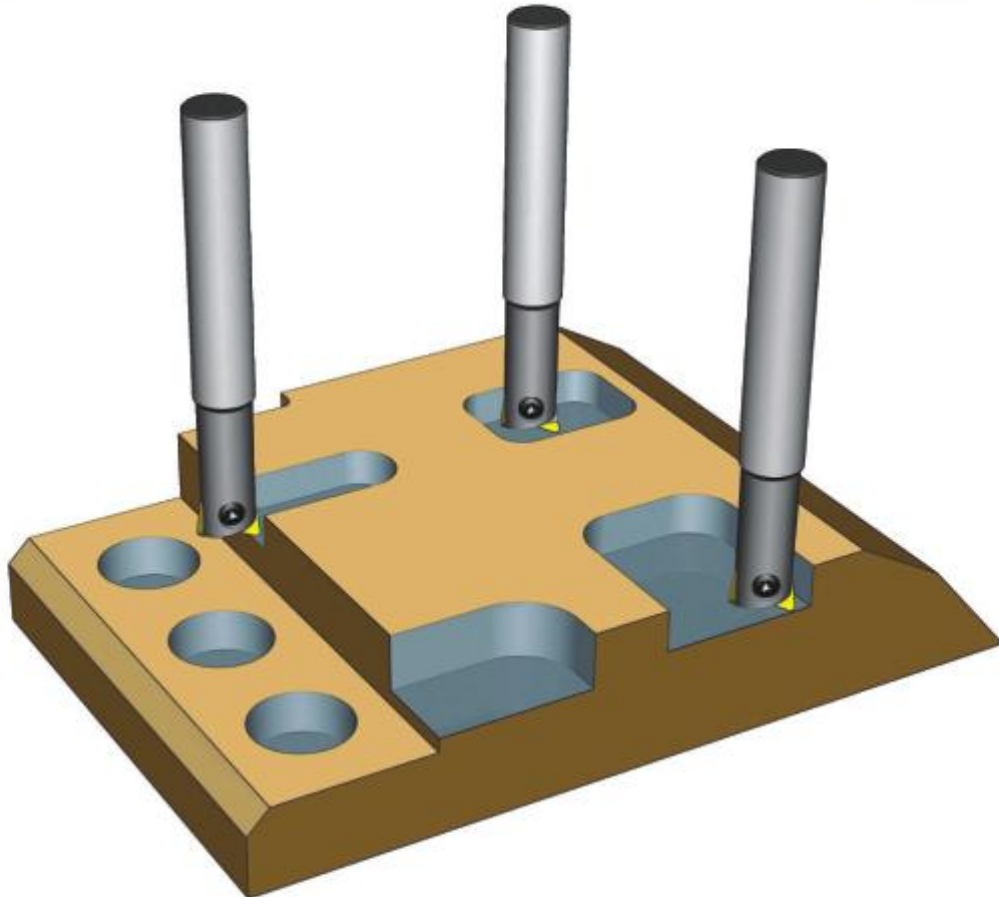
Copiatura per interpolazione  
Interpolation copying  
Zirkularkopierfräsen



Esecuzione di cave  
Full slot milling  
Vollnutenfräsen



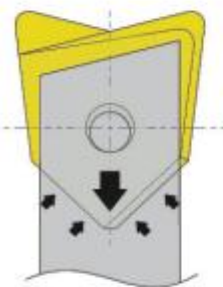
Avanzamento per piani  
inclinati  
Ramping  
Eintauchen als rampe



**JET BF** Si utilizzano per operazioni di svuotamento e copiatura stampi, permettendo lavorazioni di foratura e fresatura. La particolare geometria di taglio permette forti avanzamenti anche nelle lavorazioni più difficili. Notevole la robustezza di questa fresa grazie alla chiusura perfetta garantita da una base prismatica.

**JET BF** Are designed for both emptying and mould copying operation, and allow milling and drilling machining. The cutting geometry permits high feed rates in even the most difficult materials to machine. This tool is very strenght, thanks to the perfect lock, guranteed by a prismatic seat.

**JET BF** ist ausgelegt für die Bearbeitungen: Ausräumen und Kopierfräsen und es erlaubt die Fräs-und Bohrbearbeitung. Die Schneidengeometrie ermöglicht hohe Vorschübe in der Bearbeitung von schwerzerspanbaren Werkstoffen. Das Werkzeug hat eine hohe Festigkeit, dank der perfekten Klemmung, garantiert durch den prismatischen Sitz.






	CODE N°	D	D2	L1	L2	
	BF1221	12	12	36	125	RBF1210
BF1222	12	12	46	190		
BF1621	16	16	50	160	RBF1613	
BF1622	16	20	57	190		
BF2021	20	20	50	150	RBF2016	
BF2022	20	20	61	200		
BF2521	25	25	50	150	RBF2520	
BF2522	25	25	64	200		

## RICAMBI • SPARES • ERSATZTEILE

CODE N°			
BF122.VSB12	(Tonx15)	CV004 (Tonx15)	
BF162.VS16	(Tonx20)	CV005 (Tonx20)	
BF202.VS20	(Tonx20)	CV005 (Tonx20)	
BF252.VSB25	(Tonx30)		CC6 (Tonx30)

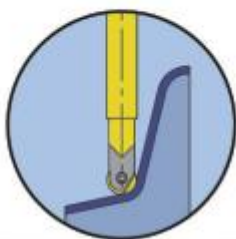
## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	RBF1210			●				●	●	
	RBF1613			●				●	●	
	RBF2016			●				●	●	
	RBF2520			●				●	●	

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

		Durezza Hardness Härte			Vc = m/min			
		N/mm <sup>2</sup>	HB		fz = mm			
					0,10	0,20	0,30	0,40
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK03E	200/170	180/150	160/135	140/120
	Acciai legati Alloy steel Vergütete Formstähle	900-1200		RK03E	170/130	145/120	130/110	115/95
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200		RK03CF	140/110	125/100	110/90	100/80
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RK03E	230/180	210/160	180/140	150/120
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290	RK03E RK03CF	190/120	160/100	140/90	120/85
	Grafite - Graphite - Graphit			RK03CF	300/200	250/150		

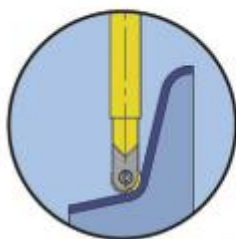
# CARBIDE SHANK



**COPIBALL CARBIDE CC:**  
copiatra di superfinitura  
con alta velocità di taglio  
per macchine HSC.

**COPIBALL CARBIDE CC:**  
copying superfiniting  
operation with high speed cut  
and for HSC machine.

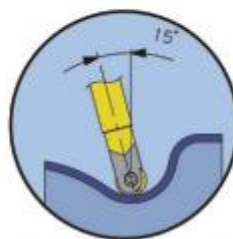
**COPIBALL CARBIDE CC:**  
Feinstbearbeitung mit hohen  
Schnittgeschwindigkeiten  
und HSC Bearbeitung



**COPIDRILL CARBIDE CCD:**  
copiatra di finitura  
con alta velocità di  
taglio per macchine HSC.

**COPIDRILL CARBIDE CCD:**  
copying finishing operation  
with high speed cut and  
for HSC machine.

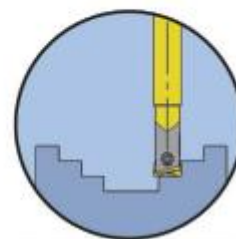
**COPIDRILL CARBIDE CCD:**  
Kopierfräsen mit hohen  
Schnittgeschwindigkeiten  
und HSC Bearbeitung.



Inclinare l'asse fresa di  
10°-15° elimina la Vc.0,  
e aumenta la  
durata dell'inserto.

Tilt the cutter axis of 10°-15°  
decrease the Vc.0 and  
increase the insert's life.

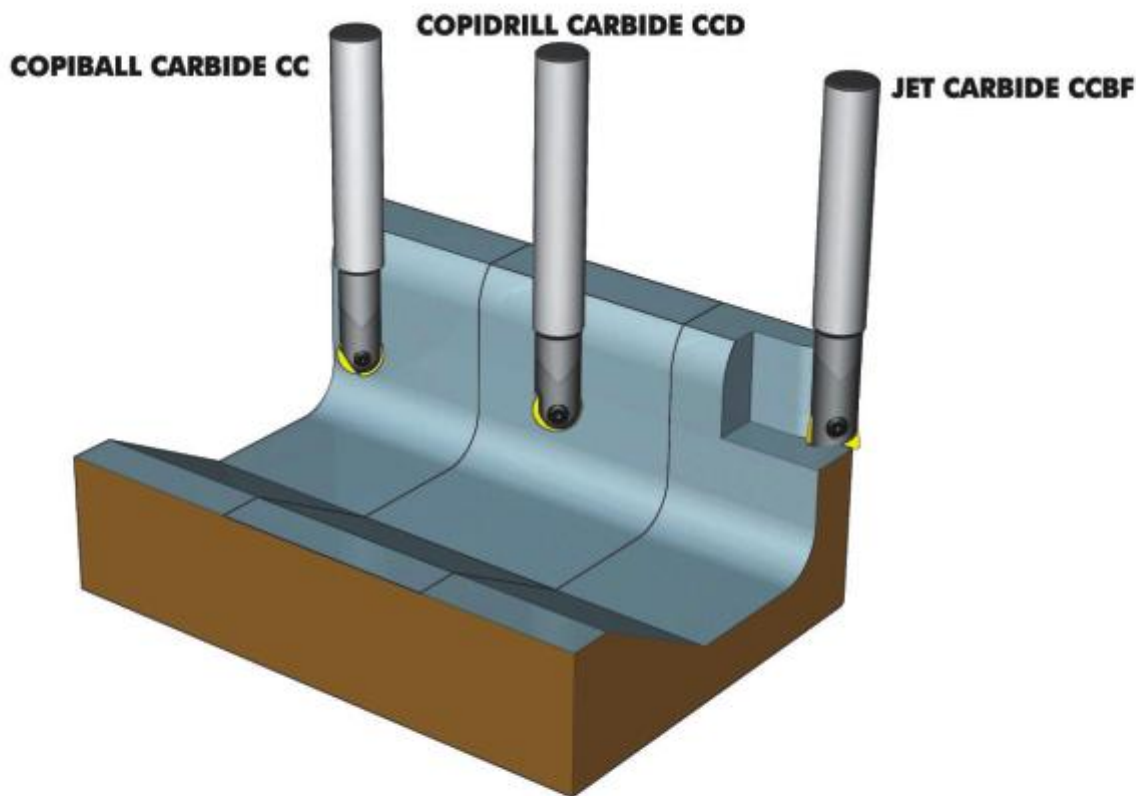
Den Fräser 10°-15° anstellen,  
um vC=0 zu vermeiden und  
die Lebensdauer der  
Wendeschneidplatte zu erhöhen.



**JET CARBIDE CCBF**  
Copiatra per  
interpolazione.

**JET CARBIDE CCBF**  
Interpolation copying.

**JET CARBIDE CCBF**  
Jet Hartmetall zum  
Zirkularkopierfräsen.



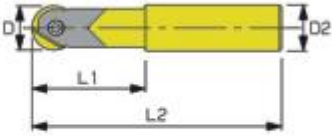

Il corpo in metallo duro riduce al minimo la vibrazioni  
aumentando notevolmente la vita dell'inserto e permettendo  
una lavorazione in maggiore profondità.

The Carbide body minimizes the vibrations, with a great increase  
of the insert's life and allowing a deeper machining.

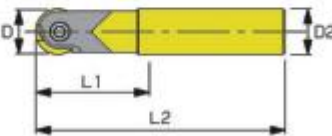


Dieser Hartmetallkörper reduziert Vibrationen, steigert die Standzeit  
der Wendeschneidplatten und erlaubt eine höhere Bearbeitung.

# COPIBALL CARBIDE CC • COPIDRILL CARBIDE CCD





<b>COPIBALL CC</b> 	CODE N°	D	D2	L1	L2	
	CC1223	12	12	35	120	RCA12
	CC1224	12	12	50	145	
	CC1623	16	16	40	140	RCA16
	CC1624	16	16	89	195	
	CC2023	20	20	50	140	RCA20
	CC2024	20	20	125	240	






<b>COPIDRILL CCD</b> 	CODE N°	D	D2	L1	L2		
	CCD1232	12	12	35	120	RCN12	RCN12AL
	CCD1231	12	12	50	145		
	CCD1632	16	16	40	140	RCN16	RCN16AL
	CCD1631	16	16	89	195		
	CCD2032	20	20	50	140	RCN20	RCN20AL
	CCD2031	20	20	125	240		

## RICAMBI • SPARES • ERSATZTEILE

CODE N°		
CC1223 CC1224	VSA12 (torx10)	CV003 (torx10)
CC1623 CC1624	VSA16 (torx15)	CV004 (torx15)
CC2023 CC2024	VSA20 (torx20)	CV005 (torx20)
CCD1231 CCD1232 CCD1631 CCD1632 CCD2031 CCD2032	VS12 VS16 (torx20) VS20	CV005 (torx20)



## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
			RCA12 RCA16 RCA20			•				•
	RCN12 RCN16 RCN20			•				•	•	
	RCN12AL RCN16AL RCN20AL			•				•		

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

		Durezza Hardness Härte			V <sub>c</sub> = m/min			
		N/mm <sup>2</sup>	HB		f <sub>z</sub> = mm			
					0,10	0,20	0,30	0,40
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK03E RK03CF	400/300	370/280	320/210	280/180
	Acciai legati Alloy steel Vergütete Formstähle	900-1200			320/260	290/220	260/190	200/140
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200			290/190	230/145	180/110	
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RK03E RK03CF	420/330	370/290	310/200	270/170
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290		340/260	280/200	240/180	190/130
	Leghe di Alluminio Aluminium alloys Aluminiumlegierungen		30-100	ZK03M	1250/1200	1100/900	1000/700	900/650
	Grafite - Graphite - Graphit			RK03E RK03CF	450/300	420/280		

# JET CARBIDE CCBF




	CODE N°	D	D2	L1	L2	
	CCBF1221	12	12	35	120	
CCBF1222	12	12	50	145		
CCBF1621	16	16	40	140	RBF1613	
CCBF1622	16	16	89	195		
CCBF2021	20	20	50	140	RBF2016	
CCBF2022	20	20	125	240		

## RICAMBI • SPARES • ERSATZTEILE

CODE N°		
BF122.VSB12 (torx15)		CV004 (torx15)
BF162.VS16 (torx20)		CV005 (torx20)
BF202.VS20 (torx20)		

# JET CARBIDE CCBF

## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	RBF1210			●				●	●	
	RBF1613			●				●	●	
	RBF2016			●				●	●	

## PARAMETRI DI TAGLIO • CUTTING PARAMETERS • SCHNITTPARAMETER

		Durezza Hardness Härte			Vc = m/min			
		N/mm <sup>2</sup>	HB		fz = mm			
					0,10	0,20	0,30	0,40
Acciaio - Steel - Stähle	Acciai poco legati Low alloy steel Unlegierter Werkzeugstähle	400-900		RK03E	360/270	330/250	290/190	250/150
	Acciai legati Alloy steel Vergütete Formstähle	900-1200		RK03E	300/240	280/215	240/170	180/125
	Acciai per stampi Mould steel Durchgehärtete Werkzeugstähle	>1200		RK03E RK03CF	260/165	215/130	165/105	
Ghisa - Cast iron - Guß	Ghisa grigia Gray cast iron Grauguß		190-220	RK03E	400/305	345/265	295/180	255/160
	Ghisa nodulare Nodular cast iron Kugelgraphitguß		230-290	RK03E RK03CF	310/245	250/185	210/160	165/110
	Grafite - Graphite - Graphit			RK03CF	450/300	410/280		



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	CODE N°	D	D2	H	ap	L1	L2	Z	
	CR1022	10	10			4	60	160	
CR1222	12	10			4	30	160	2	
CR1622	16	12			6	30	200	2	XDHW060210
CR2023	20	16			6	30	200	3	
CR2523	25	20			6	30	200	3	
CR3223	32	25			10	30	250	3	XDHW10T310
	CR5005-52	52	22	50	10			5	XDHW10T310
	CR6506-66	66	27	50	10			6	
	CR8007	80	27	50	10			7	

## RICAMBI • SPARES • ERSATZTEILE

CODE N°			
CR1022	VS1 (torx6)		CV001 (torx6)
CR1222			
CR1622	VS2 (torx8)		CV002 (torx8)
CR2023			
CR2523			
CR3223	VS35L (torx15)	ST40	CV004 (torx15)
CR5005-52			
CR6506-66			
CR8007			

## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	XDHW040110		●			●	●			
XDHW060210		●			●	●				●
XDHW10T310		●			●	●				●



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**PRISMADEX • FRESE PRISMATICHE•PRISMATIC CUTTERS•PRISMENFRÄSER**

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**GIDEX • FRESE A SMUSSARE E BISELLARE•COUNTERSINK AND CHAMFERING CUTTERS•ZENTRIER- UND FRÄSENFRÄSER**

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# INDEX TR









	CODE N°	D	D2	K	L1	L2	L	D1	Z	
	TR2511C	25	20			11	20	88	12	
TR3012C	30	20			12	25	93	13	4	
TR3214C	32	25			14	26	104,5	15	4	CCM. 09T308
TR3716C	37	25			16	30	109	17	4	
	TR2511	25		CM2	11	20	105	12	4	CCM. 060208
	TR3012	30		CM2	12	25	110	13	4	
	TR3214	32		CM3	14	26	133	15	4	CCM. 09T308
	TR3716	37		CM3	16	30	138	17	4	
	TR4018	40		CM3	18	31	140	19	4	CCM. 120408
	TR4620	46		CM4	20	35	170	24	4	
	TR4922	49		CM4	22	38	175	25	4	



## RICAMBI • SPARES • ERSATZTEILE

CODE N°		
TR2511C TR3012C	VS2 (torx8)	CV002 (torx8)
TR3214C TR3716C	VS4 (torx15)	CV004 (torx15)
TR4018 TR4620 TR4922	VS5N (torx20)	CV005 (torx20)

## INSERTI • INSERTS • WENDEPLATTEN

 	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	 	CCMW060208		•				•		
CCMW09T308			•				•			
CCMW120408			•				•			
 	CCMT060208		•		•		•			•
	CCMT09T308		•				•			
	CCMT120408		•		•		•			•



# PRISMADEX



	CODE N°	D	D2	L1	L2	$\alpha^\circ$	Z	
	AR08060	80	16	25	36	60°	8	ARG2560
AR10060	100	22	33	45	60°	8	ARG3360	

## RICAMBI • SPARES • ERSATZTEILE

CODE N°			
AR08060	TAR60/80	M6 (ch 3)	HV3 (ch 3)
AR10060	TAR60		

## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	ARG2560			●	●					
ARG3360			●	●						



	CODE N°	D	D1	K	L1	L2	Z	
	G1932	19	8	CM2	20,5	90	2	TPM0511
	G3232	32	11	CM3	30,5	117	2	TPM0911

## RICAMBI • SPARES • ERSATZTEILE





CODE N°		
G1932VS2 (torx8)	CV002 (torx8)	
G3232VS4 (torx15)	CV004 (torx15)	

## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	TPM0511	●			●					
	TPM0911	●			●					

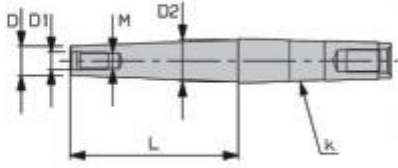
# EXTENSION SYSTEM



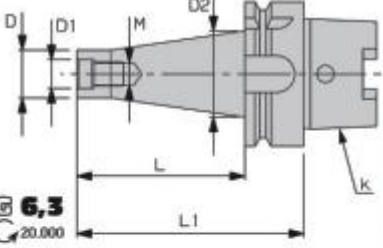
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<b>JET 90</b>	pag. 54	
<b>MINIDRILL</b>	pag. 54	
<b>HELIDEX</b>	pag. 54	
<b>JETMILL</b>	pag. 54	
<b>TORIDEX</b>	pag. 56	
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<b>COPIDRILL CD</b>	pag. 56	
<b>COPIBALL CA</b>	pag. 56	
<b>JET BF</b>	pag. 56	

# EXTENSION SYSTEM



	CODE N°	L	K	D	D1	D2	M
	CK2380D	80	CM3	13	8,5	23	M8
CK3380D	80	CM3	18	10,5	23	M10	
CK365D	30	CM3	21	12,5	23	M12	
CK395D	60	CM3	21	12,5	23	M12	
CK3120D	85	CM3	21	12,5	23	M12	
CK3130D	95	CM3	21	12,5	23	M12	
CK4155D	120	CM4	21	12,5	30	M12	
CK480D	35	CM4	29	17	30	M16	
CK4110D	65	CM4	29	17	30	M16	
CK4140D	95	CM4	29	17	30	M16	
CK5165D	120	CM5	29	17	43	M16	
CK5195D	150	CM5	29	17	43	M16	
CK5225D	180	CM5	29	17	43	M16	

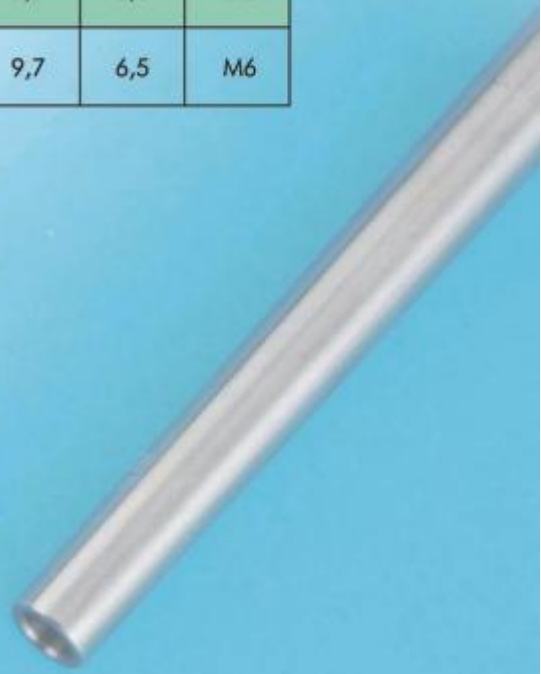


	CODE N°	L	L1	K	D	D1	D2	M	$\alpha^\circ$
	CI40152D	130	150	ISO40/DIN2080	21	12,5	35	M12	2°30'
CV40152D	130	160	ISO40/DIN69871	21	12,5	35	M12	2°30'	
CI40156D	150	170	ISO40/DIN2080	29	17	43	M16	2°30'	
CV40156D	150	180	ISO40/DIN69871	29	17	43	M16	2°30'	
CI50152D	130	150	ISO50/DIN2080	21	12,5	35	M12	2°30'	
CV50152D	130	160	ISO50/DIN69871	21	12,5	35	M12	2°30'	
CI50156D	150	170	ISO50/DIN2080	29	17	43	M16	2°30'	
CV50156D	150	180	ISO50/DIN69871	29	17	43	M16	2°30'	
CHA315.50.06	49	75	HSK - A50	10	6,5	26	M6		
CHA315.50.08	49	75	HSK - A50	13	8,5	25	M8		
CHA315.50.10	49	75	HSK - A50	18	10,5	25	M10		
CHA315.50.12	74	100	HSK - A50	21	12,5	38	M12		
CHA315.63.06	49	75	HSK - A63	10	6,5	26	M6		
CHA315.63.08	49	75	HSK - A63	13	8,5	25	M8		
CHA315.63.10	49	75	HSK - A63	18	10,5	30	M10		
CHA315.63.12	74	100	HSK - A63	21	12,5	38	M12		
CHA315.63.16	74	100	HSK - A63	29	17	40	M16		


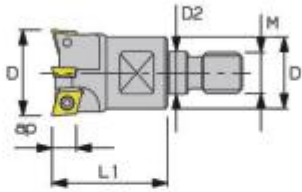

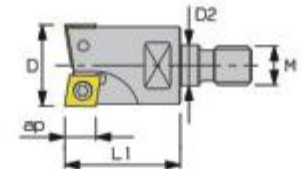

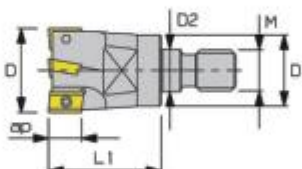

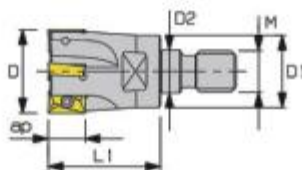

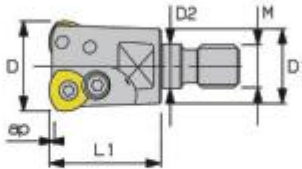
# EXTENSION SYSTEM HEAVY METAL



	CODE N°	L	L1	D2	D	D1	M
	PD12125D	80	12512	9,7	6,5	M6	
	PD16090D	40	90	16	13	8,5	M8
	PD16110D	60	110	16	13	8,5	M8
	PD16130D	80	130	16	13	8,5	M8
	PD16170D	120	170	16	13	8,5	M8
	PD20090D	40	90	20	18	10,5	M10
	PD20110D	60	110	20	18	10,5	M10
	PD20130D	80	130	20	18	10,5	M10
	PD20170D	120	170	20	18	10,5	M10
		PDC10080D	40	80	10	9,7	6,5
PDC10100D		60	100	10	9,7	6,5	M6
PDC10120D		80	120	10	9,7	6,5	M6






# EXTENSION SYSTEM







<b>CONTUR</b>		CODE N°	D	D1	D2	ap	L1	M	Z	INSERTI INSERTS WENDEPLATTEN
 	MSCR10D	10	9,7	6,5	4	18	M6	2	XDHW040110	
	MSCR12D	12	9,7	6,5	4	18	M6	2		
	MSCR16D	16	13	8,5	6	23	M8	2	XDHW060210	
	MSCR20D	20	19	10,5	6	30	M10	3		
	MSCR25D	25	21	12,5	6	35	M12	3		
	MSCR35D	35	29	17	10	43	M16	3	XDHW10T310	
	MSCR42D	42	29	17	10	43	M16	4		
 	MSMN25D	25	24	12,5	9	35	M12	2	1 ADGW130308 1 CCMW09T308	
	MSMN32D	32	30	17	12	40	M16	2	1 APGW160408 1 CCMW120408	
	MSMN36D	36	34	17	12	40	M16	2	1 APGW190408 1 CCMW120408	
 	MSJE16D	16	13	8,5	10	23	M8	2	ADHT1003PER	
	MSJE20D	20	18	10,5	10	26	M10	3		
	MSJE25D	25	21	12,5	10	33	M12	3		
	MSJE32D	32	29	17	10	43	M16	4		
 	MSMH20D	20	18	10,5	10	26	M10	3	APKT1003PDR	
	MSMH25D	25	21	12,5	10	33	M12	4		
	MSMH32D	32	29	17	10	43	M16	5		
 	MSJM25D	25	21	12,5	1,5	32	M12	2	JDHW10T310	
	MSJM323D	32	29	17	1,5	40	M16	3		

# EXTENSION SYSTEM

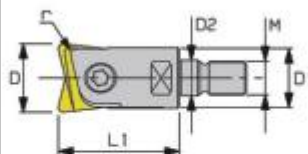
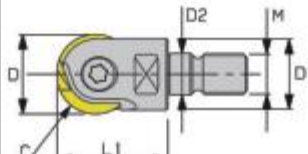
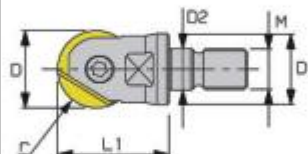
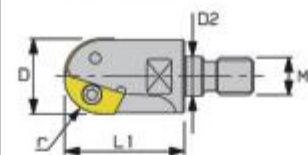
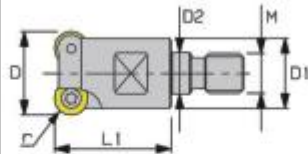
## RICAMBI • SPARES • ERSATZTEILE

CODE N°			
MSCR10D MSCR12D	VS1 (torx6)		CV001 (torx6)
MSCR16D MSCR20D MSCR25D MSJE16D MSJE20D MSJE25D MSJE32D MSMH20D MSMH25D MSMH32D			CV002 (torx8)
MSCR35D MSCR42D MSJM25D MSJM323D	VS35L(torx15)	ST40	CV004 (torx15)
MSMN25D	VS4-VS4T(torx15)		CV005 (torx20)
MSMN32D MSMN36D	VS5N(torx20)		

## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
	XDHW040110 XDHW060210 XDHW10T310	•			•	•				•
	ADGW130308 APGW160408 APGW190408		•		•		•			•
	CCMW060208 CCMW09T308 CCMW120408		•				•			
	ADHT1003PER		•				•			
	APKT1003PDR		•				•			
	JDHW10T310		•		•		•			•

# EXTENSION SYSTEM








<b>TORIDEX</b>	CODE N°	D	D1	D2	r	L1	M	Z	INSERTI INSERTS WENDEPLATTEN
	MSCX15D	15	13	8,5	3,5	23	M8	2	RDHX0702MOT
	MSCX20D	20	19	10,5	5	30	M10	2	RD..1003MOT
	MSCX24D	24	21	12,5	6	35	M12	2	RD..12T3MOT
	MSCX253D	25	21	12,5	5	35	M12	3	RD..1003MOT
	MSCX255D	25	21	12,5	5	35	M12	2	RD..1003MOT
	MSCX32D	32	29	17	6	43	M16	3	RD..12T3MOT
	MSCX328D	32	29	17	8	43	M16	2	RD..1604MOT
	MSCX35D	35	29	17	6	43	M16	3	RD..12T3MOT
	MSCX42D	42	29	17	6	43	M16	4	RD..12T3MOT
<b>MILLCOP MG</b>	MSMG25D	25	23	12,5	12,5	35	M12	2	RCCW190412
	MSMG32D	32	29	17	16	40	M16	2	RCCW230516
<b>COPIBALL</b>	MSCA08D	8	9,7	6,5	4	23	M6	2	RCA08
	MSCA10D	10	9,7	6,5	5	23	M6	2	RCA10
	MSCA12D	12	9,7	6,5	6	23	M6	2	RCA12
	MSCA16D	16	13	8,5	8	28	M8	2	RCA16
	MSCA20D	20	18	10,5	10	28	M10	2	RCA20
<b>COPIDRILL</b>	MSCD12D6	12	9,7	6,5	6	23	M6	2	RCN12..
	MSCD16D8	16	13	8,5	8	28	M8	2	RCN16..
	MSCD20D10	20	18	10,5	10	28	M10	2	RCN20..
	MSCD25D12	25	23,7	12,5	12,5	83	M12	2	RCN25..
<b>JET BF</b>	MSBF12D	12	9,7	6,5	1,0	27	M6	2	RBF1210
	MSBF16D	16	13	8,5	1,3	31	M8	2	RBF1613
	MSBF20D	20	18	10,5	1,6	36	M10	2	RBF2016



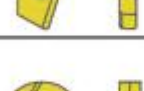






# EXTENSION SYSTEM

## RICAMBI • SPARES • ERSATZTEILE

CODE N°					
MSCX15D	VS2 (torx8)				CV002(torx8)
MSCX20D	VS35L(torx15)	ST40			CV004(torx15)
MSCX253D					
MSCX255D					
MSCX24D					
MSCX32D					
MSCX35D					
MSCX42D					
MSCX328D	VS5N(torx20)	ST30			CV005(torx20)
MMSG25D			VS40C(torx15)		CV004(torx15)
MMSG32D			VS50C(torx20)		CV005(torx20)
MSCA08D				VSA08(torx7)	CV015(torx7)
MSCA10D				VSA10(torx8)	CV002(torx8)
MSCA12D				VSA12(torx10)	CV003(torx10)
MSCA16D				VSA16(torx15)	CV004(torx15)
MSCA20D				VSA20(torx20)	
MSCD12D6				VS12 VS16 VS20 (torx20) VS25	CV005 (torx20)
MSCD16D8					
MSCD20D10					
MSCD25D12					
MSBF12D				VSB12(torx15)	CV004 (torx15)
MSBF16D				VS16 VS20 (torx20)	CV005 (torx20)
MSBF20D					

## INSERTI • INSERTS • WENDEPLATTEN

	CODE N°	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10
			RDHX0702MOT RDHX1003MOT RDMX1003MOT RDHX12T3MOT RDMX12T3MOT RDHX1604MOT RDMX1604MOT	•	•	•	•	•	•	•
	RDHT1003MOT RDHT12T3MOT RDHT1604MOT		•	•			•	•		
	RCCW190412 RCCW230516		•				•			
	RCA08 RCA10 RCA12 RCA16 RCA20			•				•	•	
	RCN12 RCN16 RCN20 RCN25			•				•	•	
	RCN12AL RCN16AL RCN20AL RCN25AL			•				•	•	
	RBF1210 RBF1613 RBF2016			•				•	•	

# PIN 69871 AD



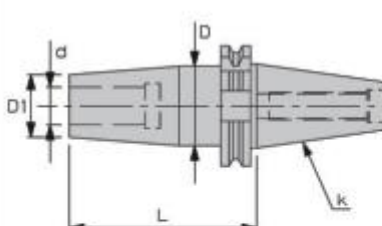
**G 2,5**

ISO.40 = 18.000  
ISO.50 = 12.000

**MANDRINI PER CALETTAMENTO TERMICO**  
per utensili con attacco cilindrico.

**SHRINK FIT CHUCK** for cutters  
with cylindrical shank.

**SCHRUMPFUTTER** für fräser  
mit zylinderschaft.

	CODE N°	K	d	D	D1	L
	DM403.25.06	ISO40	6	27	21	80
	DM403.25.08	ISO40	8	27	21	80
	DM403.25.10	ISO40	10	32	24	80
	DM403.25.12	ISO40	12	32	24	80
	DM403.25.14	ISO40	14	34	27	80
	DM403.25.16	ISO40	16	34	27	80
	DM403.25.18	ISO40	18	42	33	80
	DM403.25.20	ISO40	20	42	33	80
	DM403.25.25	ISO40	25	53	44	100
	DM503.25.06	ISO50	6	27	21	80
	DM503.25.08	ISO50	8	27	21	80
	DM503.25.10	ISO50	10	32	24	80
	DM503.25.12	ISO50	12	32	24	80
	DM503.25.14	ISO50	14	34	27	80
	DM503.25.16	ISO50	16	34	27	80
	DM503.25.18	ISO50	18	42	33	80
	DM503.25.20	ISO50	20	42	33	80
	DM503.25.25	ISO50	25	53	44	100
	DM503.25.32	ISO50	32	53	44	100

# DIN 69871 AD



## MANDRINI PORTAFRESE TIPO WELDON

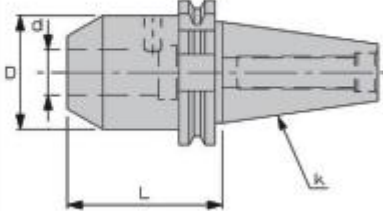
per utensili con attacco cilindrico e piano di trascinamento DIN 1835-B.

## END MILL ADAPTORS

for cutters with cylindrical shank and weldon flat DIN 1835-B.

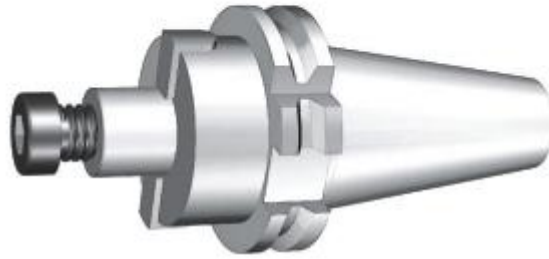
## FRÄSERAUFNAHMEN

für fräser mit zylinderschaft und mitnahmefläche DIN 1835-B.



CODE N°	K	d	D	L
DM402.04.20.0	ISO40	20	45	35
DM402.04.25.0	ISO40	25	50	35
DM402.04.32.0	ISO40	32	50	65
DM502.04.20	ISO50	20	52	63
DM502.04.25	ISO50	25	65	80
DM502.04.32	ISO50	32	72	100
DM502.04.40	ISO50	40	80	100

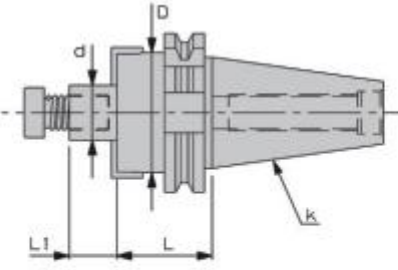
# DIN 69871 AD



**MANDRINI PORTAFRESE**  
per frese con trascinatore frontale.

**SHELL MILL ADAPTORS**  
for cutters with driving slot.

**AUFSTECKFRÄSDORN**  
für fräser mit quernut.



CODE N°	K	d	D	L	L1
DM402.11.16	ISO40	16	38	35	17
DM402.11.22	ISO40	22	48	35	19
DM402.11.27	ISO40	27	58	40	21
DM402.11.32	ISO40	32	78	50	24
DM502.11.22	ISO50	22	48	35	19
DM502.11.27	ISO50	27	58	40	21
DM502.11.32	ISO50	32	78	50	24
DM502.11.40	ISO50	40	88	50	27



# DIN 69871

**G 6,3**

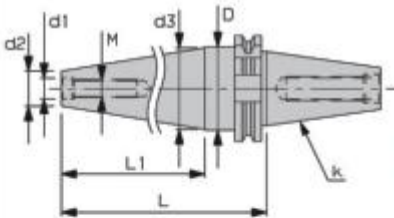
ISO 40 = 15.000  
ISO 50 = 10.000



**MANDRINI ANTIVIBRANTI**  
per frese filettate.

**THREADED CUTTERS**  
adaptors anti vibration.

**EINSCHRAUBFRÄSDORN**  
anti vibration.

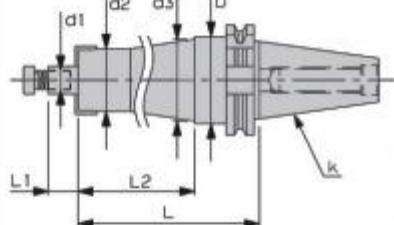
	CODE N°	L	L1	K	D	d1	d2	M	d3
	MA1.315.40.12/30	300	266	ISO40	50	12,5	21	M12	49
	MA1.315.40.16/30	300	266	ISO40	50	17	29	M16	50
	MA1.315.50.12/30	300	266	ISO50	80	12,5	21	M12	49
	MA1.315.50.16/30	300	266	ISO50	80	17	29	M16	57
	MA1.315.50.16/50	500	466	ISO50	80	17	29	M16	78

**MANDRINI PORTA FRESE**  
**ANTIVIBRANTI** fissi per frese con  
trascinatore frontale DIN 138.

**SHELL MILL ADAPTORS**  
**ANTI VIBRATION**  
for cutters with driving slot Din 138.

**EINSCHRAUBFRÄSDORN**  
für fräser mit quernut din 138.



	CODE N°	L	L1	K	L2	D	d1	d2	d3
	A1.160.40.16/20	200	17	ISO40	166	50	16	36	47
	A1.160.40.16/30	300	17	ISO40	266	50	16	36	47
	A1.160.40.22/15	150	19	ISO40	116	50	22	44	47
	A1.160.40.22/30	300	19	ISO40	266	50	22	44	47
	A1.160.40.27/15	150	21	ISO40	116	50	27	54	54
	A1.160.40.27/30	300	21	ISO40	266	50	27	54	54
	A1.160.50.22/25	250	19	ISO50	216	80	22	44	78
	A1.160.50.22/50	500	19	ISO50	466	80	22	44	78
	A1.160.50.27/25	250	21	ISO50	216	80	27	54	78
	A1.160.50.27/50	500	21	ISO50	466	80	27	54	78
	A1.160.50.32/25	250	24	ISO50	216	80	32	64	78
	A1.160.50.32/50	500	24	ISO50	466	80	32	64	78

# DIN 69893-A



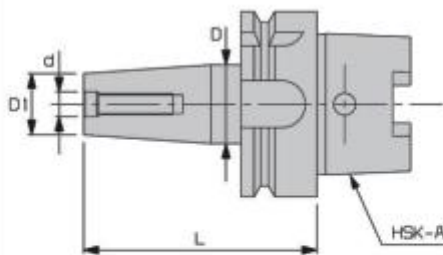
**G 2,5**  
**C 22.000**

**MANDRINI PER CALETTAMENTO TERMICO** per utensili con attacco cilindrico.

**SHRINK FIT CHUCK** for cutters with cylindrical shank.

**SCHRUMPFUTTER** für fräser mit zylinderschaft.

	CODE N°	HSK	d	D	D1	L
	DMA50.25.06	HSK-A50	6	27	21	80
	DMA50.25.08	HSK-A50	8	27	21	80
	DMA50.25.10	HSK-A50	10	32	24	85
	DMA50.25.12	HSK-A50	12	32	24	90
	DMA50.25.14	HSK-A50	14	34	27	90
	DMA50.25.16	HSK-A50	16	34	27	95
	DMA50.25.18	HSK-A50	18	42	33	95
	DMA50.25.20	HSK-A50	20	42	33	100
	DMA63.25.03	HSK-A63	3	18	10	80
	DMA63.25.031b	HSK-A63	3	31	10	160
	DMA63.25.04	HSK-A63	4	18	10	80
	DMA63.25.0416	HSK-A63	4	31	10	160
	DMA63.25.05	HSK-A63	5	18	10	80
	DMA63.25.0516	HSK-A63	5	31	10	160
	DMA63.25.06	HSK-A63	6	27	21	80
	DMA63.25.08	HSK-A63	8	27	21	80
	DMA63.25.10	HSK-A63	10	32	24	85
	DMA63.25.12	HSK-A63	12	32	24	90
	DMA63.25.14	HSK-A63	14	34	27	90
	DMA63.25.16	HSK-A63	16	34	27	95
	DMA63.25.18	HSK-A63	18	42	33	95
	DMA63.25.20	HSK-A63	20	42	33	100
	DMA63.25.25	HSK-A63	25	53	44	115
	DMA63.25.32	HSK-A63	32	53	44	120





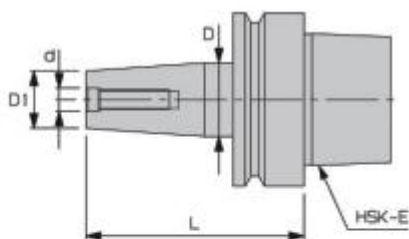
**G 2,5**  
**C 22.000**

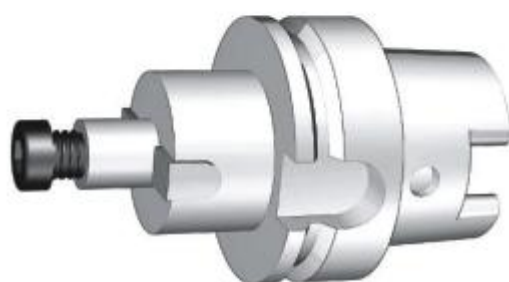
**MANDRINI PER CALETTAMENTO TERMICO**  
per utensili con attacco cilindrico.

**SHRINK FIT CHUCK** for cutters  
with cylindrical shank.

**SCHRUMPFUTTER** für fräser  
mit zylinderschaft.

	CODE N°	HSK	d	D	D1	L
	DME50.25.03	HSK-E50	3	18,4	9	80
	DME50.25.04	HSK-E50	4	18,4	9	80
	DME50.25.05	HSK-E50	5	18,4	9	80
	DME50.25.06	HSK-E50	6	27	21	80
	DME50.25.08	HSK-E50	8	27	21	80
	DME50.25.10	HSK-E50	10	32	24	85
	DME50.25.12	HSK-E50	12	32	24	90
	DME50.25.14	HSK-E50	14	34	27	90
	DME50.25.16	HSK-E50	16	34	27	95
	DME50.25.18	HSK-E50	18	42	33	95
	DME50.25.20	HSK-E50	20	42	33	100
	DME63.25.06	HSK-E63	6	27	21	80
	DME63.25.08	HSK-E63	8	27	21	80
	DME63.25.10	HSK-E63	10	32	24	85
	DME63.25.12	HSK-E63	12	32	24	90
	DME63.25.14	HSK-E63	14	34	27	90
	DME63.25.16	HSK-E63	16	34	27	95
	DME63.25.18	HSK-E63	18	42	33	95
	DME63.25.20	HSK-E63	20	42	33	100
	DME63.25.25	HSK-E63	25	53	44	115
	DME63.25.32	HSK-E63	32	53	44	120





**G 2,5**  
**C 20.000**

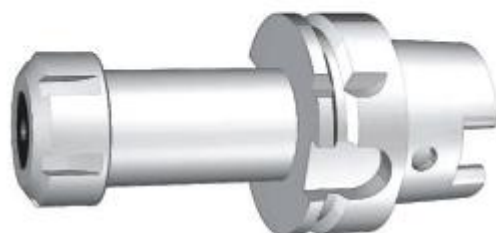
**MANDRINI PORTAFRESE FISSI** per frese con trascinatore frontale.

**SHELL MILL ADAPTORS** for cutters with driving slot.

**AUFSTECKFRÄSDORN** für fräser mit quernut.

	CODE N°	HSK	d	D	L	L1
	DMA50.11.16	HSK-A50	16	38	50	17
	DMA50.11.22	HSK-A50	22	48	60	19
	DMA50.11.27	HSK-A50	27	58	60	21
	DMA50.11.32	HSK-A50	32	78	60	24
	DMA63.11.16	HSK-A63	16	38	50	17
	DMA63.11.22	HSK-A63	22	48	50	19
	DMA63.11.27	HSK-A63	27	58	60	21
	DMA63.11.32	HSK-A63	32	78	60	24
	DMA63.11.40	HSK-A63	40	88	60	27
	DME50.11.16	HSK-E50	16	38	50	17
	DME50.11.22	HSK-E50	22	48	60	19
	DME63.11.16	HSK-E63	16	38	50	17
	DME63.11.22	HSK-E63	22	48	50	19





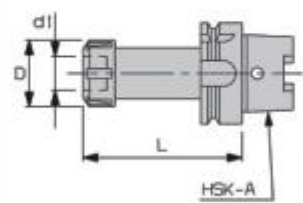
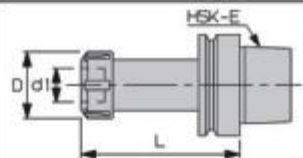
**G 2,5**

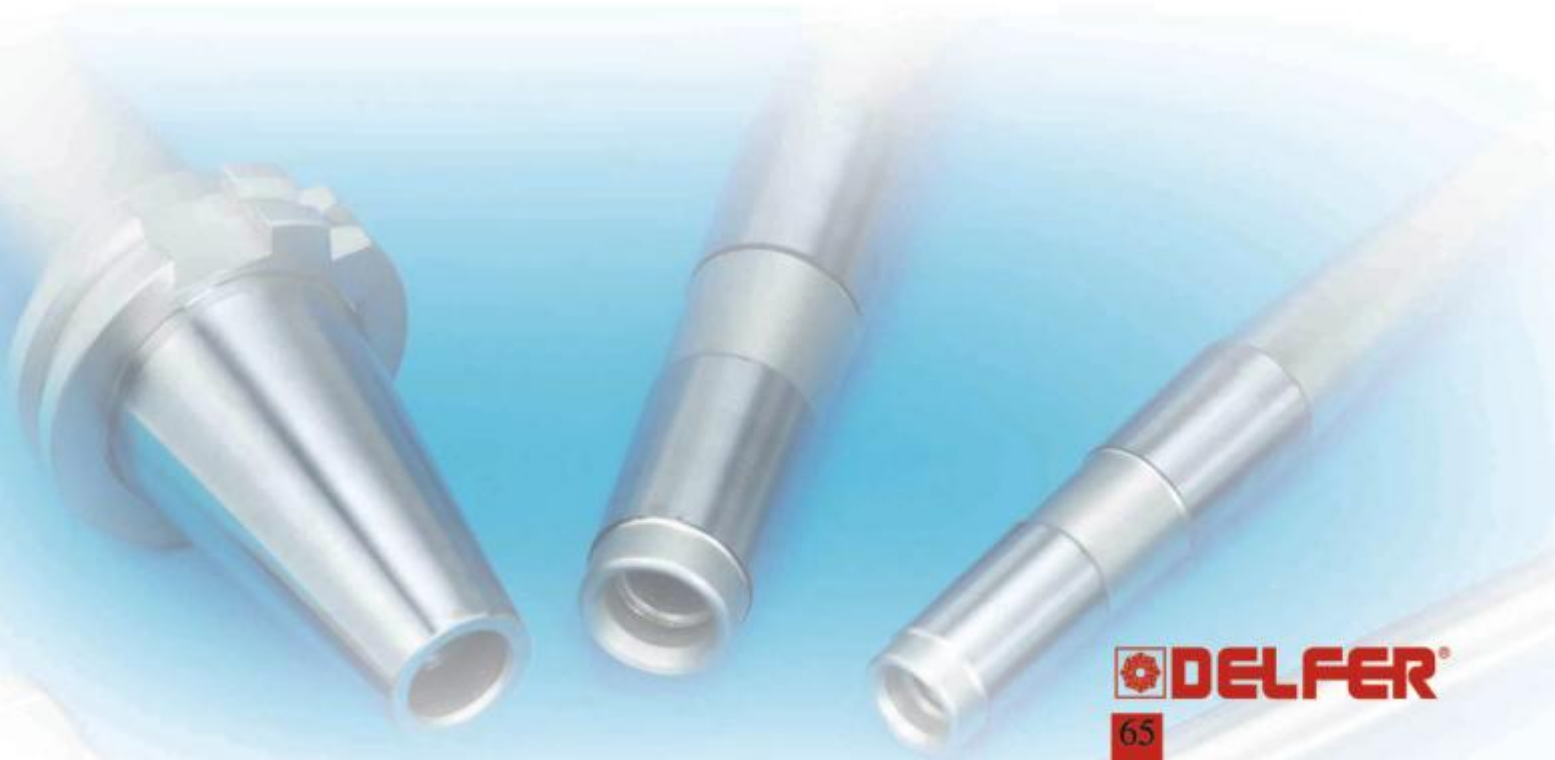
**C 20.000**

**MANDRINI PORTAFRESE PER PINZE  
DIN 6499 (ER)** per utensili con gambo  
cilindrico.

**COLLET CHUCKS FOR COLLETS DIN 6499 (ER)**  
for tools with cylindrical shank.

**FRÄSERSPANNFUTTER FÜR DIN 6499 (ER)  
SPANNZANGEN** für werkzeuge mit zylinderschaft.

	CODE N°	HSK	d1	D	L
	MDA50.02.16	HSK-A50	ER25 2-16	42	100
	MDA63.02.20	HSK-A63	ER32 2-20	50	100
	MDE50.02.16	HSK-E50	ER25 2-16	42	70
	MDE63.02.20	HSK-E63	ER32 2-20	50	75





**SPEEDCUT** FRESE SFERICHE • BALL NOSE CUTTERS • RADIUSFRÄSER

pag. 67



**SPEEDCUT** FRESE TORICHE • RADIUSCUTTERS • TORISCHERFRÄSER

pag. 69

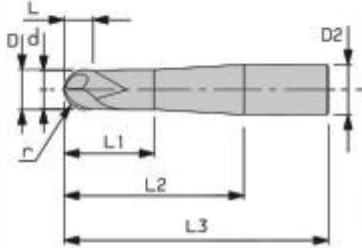
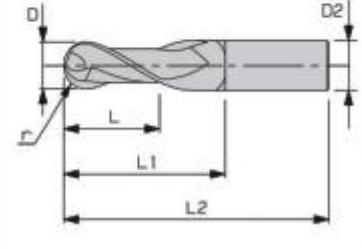


**SPEEDCUT** FRESE PIATTE • SOLID CARBIDE MULTI FLUTE  
VOLLHARTMETALL MEHRSCNEIDER

pag. 70

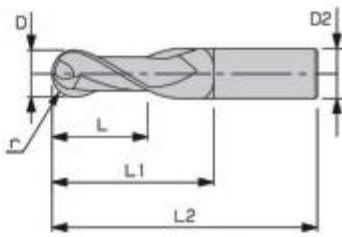
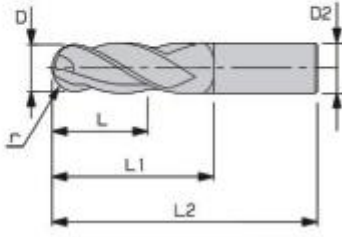




<b>BH</b>		CODE N°	D <sup>e8</sup>	D2 <sup>h6</sup>	d	L	L1	L2	L3	r	Z
	BH0380	3	6	2,8	3,5	12	40	80	1,5	2	
	BH0480	4	6	3,8	4	15	40	80	2,0	2	
	BH0580	5	6	4,7	5	18	40	80	2,5	2	
	BH06100	6	8	5,6	6	20	60	100	3,0	2	
	BH08120	8	10	7,6	7	25	75	120	4,0	2	
	BH10122	10	12	9,6	8	30	70	120	5,0	2	
	BH12150	12	16	11,5	10	35	90	150	6,0	2	
	BHL0150	1	4		4	9	50		0,5	2	
	BHL01550	1,5	4		4	9	50		0,75	2	
	BHL0250	2	6		5	9	50		1	2	
	BHL0380	3	6		6	9	80		1,5	2	
	BHL0480	4	6		8	11	80		2	2	
	BHL0590	5	6		10	13	90		2,5	2	
	BHL0690	6	6		12		90		3	2	
	BHL08100	8	8		14		100		4	2	
	BHL10100	10	10		18		100		5	2	
	BHL12110	12	12		22		110		6	2	
	BHL16140	16	16		30		140		8	2	
	BHL20160	20	20		38		160		10	2	





<b>BHXL</b>		CODE N°	$D_e^8$	$D_2^{h6}$	L	L1	L2	r	Z
		BHXL0280	2	3	6	8	80	1	2
		BHXL03100	3	3	8		100	1,5	2
		BHXL04100	4	4	8		100	2	2
		BHXL05120	5	6	10	11	120	2,5	2
		BHXL06120	6	6	10		120	3	2
		BHXL08140	8	8	14		140	4	2
		BHXL10180	10	10	18		180	5	2
		BHL40360	3	6	8	13	60	1,5	4
		BHL40470	4	6	8	13	70	2	4
		BHL40580	5	6	10	13	80	2,5	4
		BHL40690	6	6	12		90	3	4
		BHL408100	8	8	14		100	4	4
		BHL410100	10	10	18		100	5	4
		BHL412110	12	12	22		110	6	4
		BHL416140	16	16	30		140	8	4
		BHL420160	20	20	38		160	10	4



**RH**

CODE N°	D <sup>e8</sup>	D2 <sup>h6</sup>	d	L	L1	L2	L3	r	Z
RH0380	3	6	2,8	3,5	12	40	80	0,5	2
RH0480	4	6	3,8	4	15	40	80	1,0	2
RH0680	6	6	5,6	6	18	40	80	2,0	2
RH06100	6	8	5,6	6	40	60	100	2,0	2
RH08100	8	8	7,6	7	50	60	100	2,0	2
RH08120	8	10	7,6	7	30	75	120	2,0	2
RH10120	10	10	9,6	8	60	75	120	3,0	2
RH10122	10	12	9,6	8	30	70	120	3,0	2
RH12120	12	12	11,5	10	70	70	120	4,0	2
RH12150	12	16	11,5	10	35	100	150	4,0	2

**HMUR**

CODE N°	D <sup>e8</sup>	D2 <sup>h6</sup>	L	L1	L2	r	Z
HMUR406005	6	6	15		60	0,5	4
HMUR406010	6	6	15		60	1,0	4
HMUR408005	8	8	20		75	0,5	4
HMUR408010	8	8	20		75	1,0	4
HMUR401005	10	10	25		80	0,5	4
HMUR401010	10	10	25		80	1,0	4
HMUR401210	12	12	30		100	1,0	4
HMUR401215	12	12	30		100	1,5	4
HMUR401610	16	16	40		110	1,0	4
HMUR401615	16	16	40		110	1,5	4

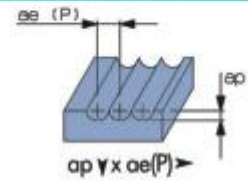


HMU	CODE N°	D <sup>e8</sup>	D2 <sup>h6</sup>	L	L1	L2	r	Z
	HMU4040	4	6	12	15	60		4
	HMU4060	6	6	15		60		4
	HMU4080	8	8	20		75		4
	HMU4100	10	10	25		80		4
	HMU4120	12	12	30		100		4
	HMU4160	16	16	40		110		4
	HMH2020	2	4	8		40		2
	HMH2030	3	6	12		50		2
	HMH2040	4	6	15		50		2
	HMH2050	5	6	20		60		2
	HMH2060	6	6	20		60		2
	HMH2080	8	8	25		70		2
	HMH2100	10	10	30		90		2
	HMH2120	12	12	30		90		2
	HMH2160	16	16	50		110		2
	HMH2200	20	20	55		110		2
	HMHC2020	2	4	6		40		2
	HMHC2030	3	6	8		45		2
	HMHC2040	4	6	10		50		2
	HMHC2050	5	6	12		50		2
	HMHC2060	6	6	12		50		2
	HMHC2080	8	8	20		60		2
	HMHC2100	10	10	22		70		2
	HMHC2120	12	12	25		75		2
	HMHC2160	16	16	30		85		2
	HMHC2200	20	20	38		100		2



<b>HMH</b>		CODE N°	D <sup>e8</sup>	D2 <sup>h6</sup>	L	L1	Z
	HMH4030	3	6	7	55	4	
	HMH4040	4	6	10	60	4	
	HMH4050	5	6	13	60	4	
	HMH6060	6	6	15	60	6	
	HMH6080	8	8	19	75	6	
	HMH6100	10	10	24	80	6	
	HMH6120	12	12	29	100	6	
	HMH6160	16	16	32	110	6	
	HMH6200	20	20	40	125	6	
<b>HMHL</b>		HMHL6060	6	6	26	70	6
	HMHL6080	8	8	36	90	6	
	HMHL6100	10	10	46	100	6	
	HMHL6120	12	12	56	110	6	
	HMHL6160	16	16	66	130	6	
	HMHL6200	20	20	76	140	6	

## PARAMETRI TAGLIO • CUTTING DATA • SCHNITTPARAMETER



**BH**



**BHL**

**BHXL**



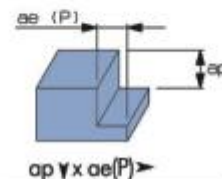
**BHL4**

Materiali Materials Materialien	Acciaio al carbonio Ghisa (GG)			Acciaio legato Acciaio da costruzione Ghisa malleabile (GGG) Alloy steel Construction steel Ductile cast iron (GGG) Legierte stähle Baustähle Schmiedbares Gußeisen (GGG)			Acciaio legato Alloy steel Legierte stähle			Acciaio per utensili Tool steel Werkzeugstähle			Acciaio per utensili Tool steel Werkzeugstähle		
	Carbon steel Cast iron (GG) Kohlenstoffstähle Gußeisen (GG)			200 ÷ 300 HB			30 ÷ 45 HRC			45 ÷ 55 HRC			55 ÷ 70 HRC		
Durezza Hardness Härte	150 ÷ 200 HB			200 ÷ 300 HB			30 ÷ 45 HRC			45 ÷ 55 HRC			55 ÷ 70 HRC		
Finitura • Finishing • Schlichten															
Vc	240			200			180			150			120		
ap x ae	0,05D x P 0,05D														
D	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz
1	76400	3820	0,025	63700	3185	0,025	57300	2870	0,025	47800	2390	0,025	38200	1910	0,025
1,5	51000	3060	0,030	42500	2550	0,030	38200	2290	0,030	31900	1910	0,030	25500	1530	0,030
2	38200	3050	0,040	31900	2550	0,040	28700	2290	0,040	23900	1910	0,040	19100	1530	0,040
3	25500	2800	0,055	21200	2340	0,055	19100	2100	0,055	15900	1750	0,055	12700	1400	0,055
4	19100	2670	0,070	15900	2230	0,070	14300	2010	0,070	11900	1670	0,070	9550	1340	0,070
5	15300	2450	0,080	12700	2040	0,080	11500	1830	0,080	9550	1530	0,080	7640	1220	0,080
6	12700	2290	0,090	10600	1910	0,090	9550	1720	0,090	7960	1430	0,090	6370	1150	0,090
8	9550	2100	0,110	7960	1750	0,110	7170	1580	0,110	5970	1310	0,110	4780	1050	0,110
10	7640	1990	0,130	6370	1660	0,130	5730	1490	0,130	4780	1240	0,130	3820	990	0,130
12	6370	1910	0,150	5300	1590	0,150	4780	1430	0,150	3980	1190	0,150	3180	960	0,150
16	4780	1620	0,170	3980	1350	0,170	3580	1220	0,170	2990	1020	0,170	2390	810	0,170
20	3820	1300	0,170	3180	1080	0,170	2870	970	0,170	2390	810	0,170	1910	650	0,170
Superfinitura • Superfinishing • Super-schlichten															
Vc	400			350			300			250			200		
ap x ae	0,05D x P 0,05D														
D	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz
1	127400	6370	0,025	111500	5575	0,025	95500	3980	0,025	79600	3980	0,025	63700	3180	0,025
1,5	85000	5100	0,030	74300	4450	0,030	63700	3820	0,030	53000	3180	0,030	42500	2550	0,030
2	63700	5090	0,040	55700	4450	0,040	47700	3820	0,040	39800	3180	0,040	31900	2550	0,040
3	42400	4660	0,055	37100	4080	0,055	31800	3500	0,055	26500	2920	0,055	21200	2330	0,055
4	31800	4450	0,070	27900	3910	0,070	23900	3350	0,070	19900	2790	0,070	15900	2330	0,070
5	25500	4080	0,080	22300	3570	0,080	19100	3060	0,080	15900	2540	0,080	12700	2030	0,080
6	21200	3820	0,090	18600	3350	0,090	15900	2860	0,090	13300	2390	0,090	10600	1910	0,090
8	15900	3500	0,110	13900	3060	0,110	11900	2620	0,110	9950	2190	0,110	7960	1750	0,110
10	12700	3300	0,130	11100	2890	0,130	9550	2480	0,130	7960	2070	0,130	6370	1660	0,130
12	10600	3180	0,150	9280	2780	0,150	7960	2390	0,150	6630	1990	0,150	5310	1590	0,150
16	7960	2710	0,170	6960	2370	0,170	5970	2030	0,170	4970	1690	0,170	3980	1350	0,170
20	6370	2170	0,170	5570	1890	0,170	4780	1625	0,170	3980	1350	0,170	3180	1080	0,170



## PARAMETRI TAGLIO METALLO DURO INTEGRALE • SOLID CARBIDE CUTTING DATA • VOLLHARTMETALL SCHNITTPARAMETER

**RH**



Materiali Materials Materialien	Acciaio al carbonio Ghisa (GG)		Acciaio legato Acciaio da costruzione Ghisa malleabile (GGG) Alloy steel Construction steel Ductile cast iron (GGG) Legierte stähle Baustähle Schmiedbares Gußeisen (GGG)			Acciaio legato Alloy steel Legierte stähle			Acciaio per utensili Tool steel Werkzeugstähle			Acciaio per utensili Tool steel Werkzeugstähle			
	Carbon steel Cast iron (GG)		Kohlenstoffstähle Gußeisen (GG)			30 ÷ 45 HRC			45 ÷ 55 HRC			55 ÷ 70 HRC			
Durezza Hardness Härte	150 ÷ 200 HB		200 ÷ 300 HB			30 ÷ 45 HRC			45 ÷ 55 HRC			55 ÷ 70 HRC			
Finitura • Finishing • Schlichten															
Vc	150		120			100			100			80			
ap x ae	1D x 0,1D		1D x 0,1D			1D x 0,1D			1D x 0,05D			1D x 0,05D			
D	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz
3	15900	950	0,030	12700	760	0,030	10600	430	0,020	10600	320	0,015	8490	255	0,015
4	11900	1190	0,050	9550	955	0,050	7960	400	0,025	7960	320	0,020	6370	255	0,020
6	7960	1270	0,080	6370	1020	0,080	5310	425	0,040	5310	320	0,030	4240	255	0,030
8	5970	1250	0,105	4770	1000	0,105	3980	400	0,050	3980	320	0,040	3180	255	0,040
10	4770	1150	0,120	3820	920	0,120	3180	380	0,060	3180	320	0,050	2550	255	0,050
12	3980	1040	0,130	3180	830	0,130	2650	370	0,070	2650	320	0,060	2120	255	0,060

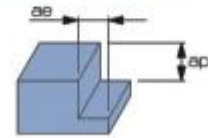
**HMHC2  
HMH2**



Materiali Materials Materialien	Acciaio al carbonio Ghisa (GG)		Acciaio legato Acciaio da costruzione Ghisa malleabile (GGG) Alloy steel Construction steel Ductile cast iron (GGG) Legierte stähle Baustähle Schmiedbares Gußeisen (GGG)			Acciaio legato Alloy steel Legierte stähle			Acciaio per utensili Tool steel Werkzeugstähle			Acciaio per utensili Tool steel Werkzeugstähle			
	Carbon steel Cast iron (GG)		Kohlenstoffstähle Gußeisen (GG)			30 ÷ 45 HRC			45 ÷ 55 HRC			55 ÷ 70 HRC			
Durezza Hardness Härte	150 ÷ 200 HB		200 ÷ 300 HB			30 ÷ 45 HRC			45 ÷ 55 HRC			55 ÷ 70 HRC			
Finitura • Finishing • Schlichten															
Vc	80		70			50			30			20			
ap	0,5D		0,5D			0,5D			0,5D			0,5D			
D	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz
2	12740	255	0,010	11150	220	0,010	7960	130	0,008	4780	0,006	57	3180	38	0,006
3	8490	340	0,020	7430	300	0,020	5310	160	0,015	3180	0,010	64	2120	42	0,010
4	6370	380	0,030	5570	330	0,030	3980	200	0,025	2390	0,020	100	1590	64	0,020
5	5090	410	0,040	4460	360	0,040	3180	220	0,035	1910	0,030	110	1270	80	0,030
6	4240	420	0,050	3710	370	0,050	2650	210	0,040	1590	0,035	110	1060	70	0,035
8	3180	450	0,070	2790	390	0,070	1990	200	0,050	1190	0,045	110	800	70	0,045
10	2550	410	0,080	2230	360	0,080	1590	190	0,060	950	0,055	100	640	70	0,055
12	2120	380	0,090	1860	330	0,090	1330	190	0,070	800	0,060	100	530	64	0,060
16	1590	320	0,100	1390	280	0,100	990	170	0,085	600	0,070	80	400	56	0,070
20	1270	300	0,120	1110	270	0,120	800	160	0,100	480	0,080	80	320	51	0,080

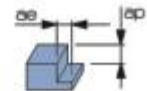
## PARAMETRI TAGLIO METALLO DURO INTEGRALE • SOLID CARBIDE CUTTING DATA • VOLLHARTMETALL SCHNITTPARAMETER

### HMH • HMHL

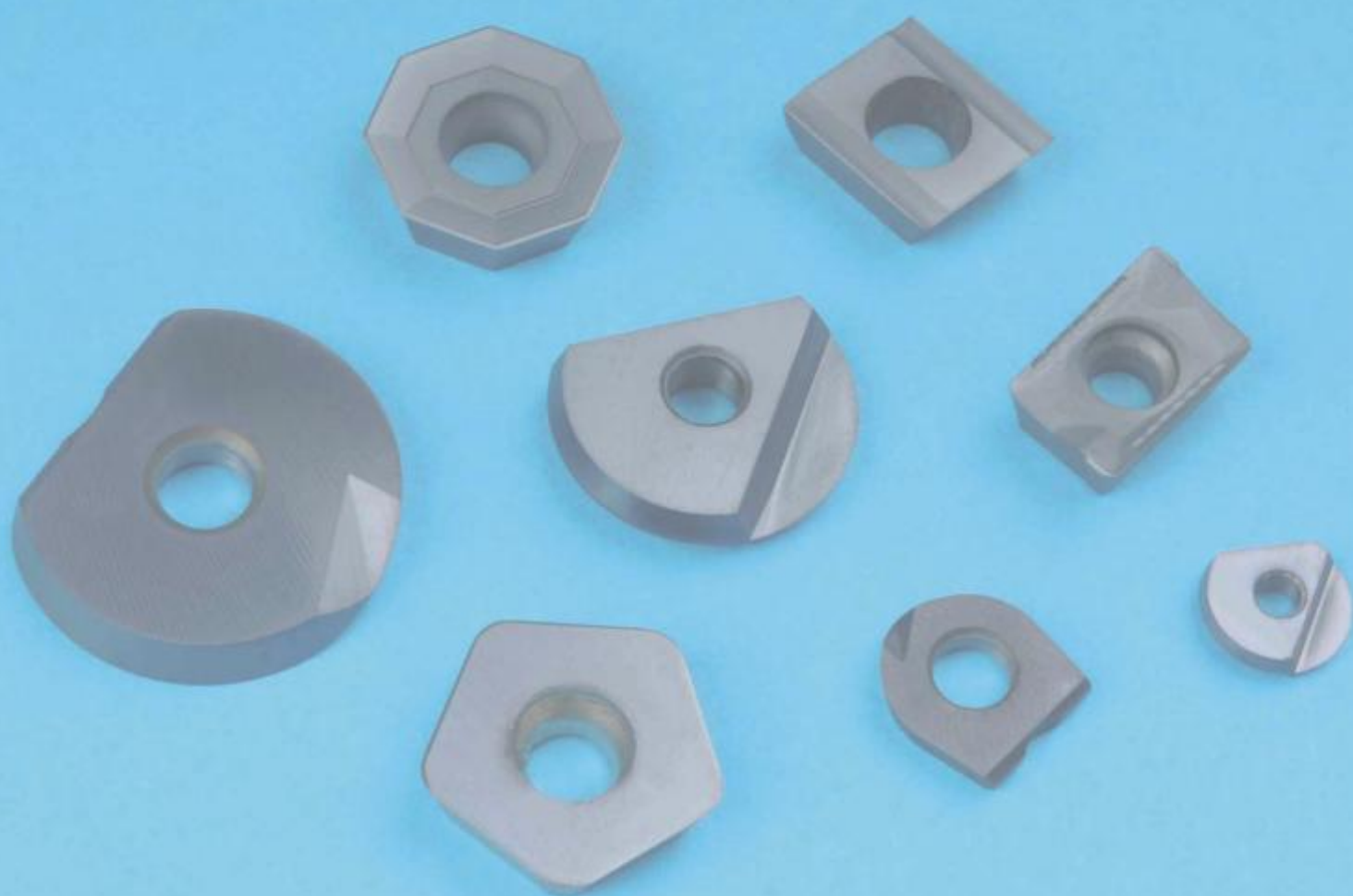


Materiali Materials Materialien	Acciaio al carbonio Ghisa (GG)	Acciaio legato Acciaio da costruzione Ghisa malleabile (GGG) Alloy steel Construction steel Ductile cast iron (GGG) Legierte stähle Baustähle Schmiedbares Gußeisen (GGG)	Acciaio legato Alloy steel Legierte stähle	Acciaio per utensili Tool steel Werkzeugstähle	Acciaio per utensili Tool steel Werkzeugstähle										
	Carbon steel Cast iron (GG)														
Durezza Hardness Härte	150 ±200 HB	200 ±300 HB	30 ±45 HRC	45 ±55 HRC	55 ±70 HRC										
Finitura • Finishing • Schlichten															
Vc	150	120	100	100	80										
ap x ae	1D x 0,1D	1D x 0,1D	1D x 0,1D	1D x 0,05D	1D x 0,05D										
D	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz
3	15900	1910	0,030	12700	1520	0,030	10600	850	0,020	10600	640	0,015	8490	510	0,015
4	11900	2380	0,050	9550	1910	0,050	7960	800	0,025	7960	640	0,020	6370	510	0,020
5	9550	2480	0,065	7640	1990	0,065	6370	760	0,030	6370	640	0,025	5090	510	0,025
6	7960	3820	0,080	6370	3060	0,080	5310	1270	0,040	5310	960	0,030	4240	760	0,030
8	5670	3760	0,105	4770	3010	0,105	3980	1190	0,050	3980	960	0,040	3180	760	0,040
10	4770	3430	0,120	3820	2750	0,120	3180	1140	0,060	3180	950	0,050	2550	770	0,050
12	3980	3100	0,130	3180	2480	0,130	2650	1110	0,070	2650	950	0,060	2120	760	0,060
16	2980	2590	0,145	2390	2080	0,145	1990	960	0,080	1990	840	0,070	1590	670	0,070
20	2390	2290	0,160	1910	1830	0,160	1590	860	0,090	1590	760	0,080	1270	610	0,080

### HMU • HMUR



Durezza Hardness Härte	150 ±200 HB	200 ±300 HB	30 ±45 HRC	45 ±55 HRC	55 ±70 HRC										
Vc	150	120	100	100	80										
ap x ae	1,5 D x 0,1D	1,5 D x 0,1D	1,5 D x 0,1D	1,5 D x 0,05D	1,5 D x 0,05D										
D	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz
4	11900	2380	0,050	9550	1910	0,050	7960	800	0,025	7960	640	0,020	6370	510	0,020
6	7960	2550	0,080	6370	2040	0,080	5310	800	0,040	5310	640	0,030	4240	510	0,030
8	5970	2510	0,105	4770	2000	0,105	3980	800	0,050	3980	640	0,040	3180	510	0,040
10	4770	2290	0,120	3820	1830	0,120	3180	760	0,060	3180	640	0,050	2550	510	0,050
12	3980	2070	0,130	3180	1650	0,130	2650	740	0,070	2650	640	0,060	2120	510	0,060
16	2980	1730	0,145	2390	1390	0,145	1990	640	0,080	1990	560	0,070	1590	450	0,070
Durezza Hardness Härte	150 ±200 HB	200 ±300 HB	30 ±45 HRC	45 ±55 HRC	55 ±70 HRC										
Vc	120	100	50												
ap	1D	1D	0,5D												
D	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz	rpm	vf	fz
4	9550	1530	0,040	7960	960	0,030	3980	400	0,025						
6	6370	1530	0,060	5310	1060	0,050	2650	420	0,040						
8	4770	1530	0,080	3980	1030	0,065	1990	400	0,050						
10	3820	1530	0,100	3180	1020	0,080	1590	380	0,060						
12	3180	1400	0,110	2650	950	0,090	1330	350	0,065						
16	2390	1150	0,120	1990	800	0,100	990	320	0,080						



# INSERTI • INSERTS • WENDEPLATTEN

	ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10	L1 mm	L2 mm	S mm	r mm	b mm	B mm	$\alpha^\circ$
	•	•			•	•				15	9,52	3,18	0,8			15°
		•		•		•			•	10,6 13,5		3,18 3,18	0,8 0,8			15° 15°
		•				•				16,6 19,6		4,76 4,76	0,8 0,8			11° 11°
		•		•		•				15,88 15,88 20	12,70 12,70 12,70	4,76 4,76 4,76		1,94 1,94 1,1		11° 11° 11°
	•	•			•	•				15	9,52	3,18	0,8			15°
	•	•			•	•				15,88	12,70	4,76		1,94		11°
		•				•				10,4 14	6,60 11,80	3,18 4,76	0,5 0,6		1,2 1,4	15° 15°
		•				•				15	9,52	5	0,8		1,6	15°
		•				•				10,5 16,3	6,70 9,45	3,5 5,3	0,5 0,8		1,2 1,8	11° 11°
		•		•						25 33	12,70 12,70	4,76 4,76		1,4 1,4		11° 11°

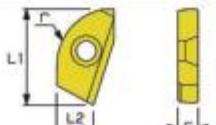
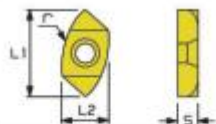
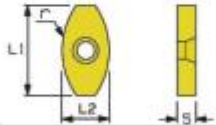
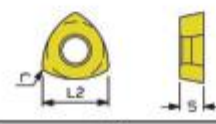
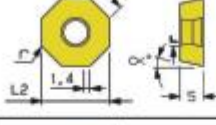
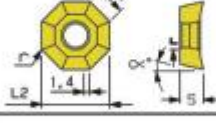
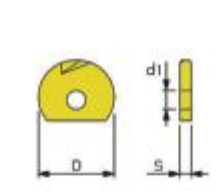
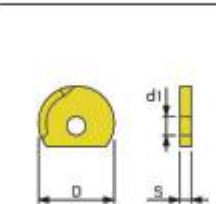
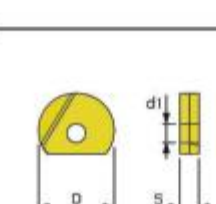
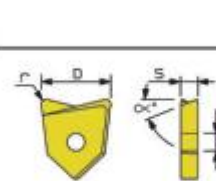
# INSERTI • INSERTS • WENDEPLATTEN

		ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10	L mm	D mm	S mm	r mm	b mm	m mm	$\alpha^\circ$
	CCMW060208	●					●				6,40	6,35	2,38	0,8		1,319	7°
	CCMW09T308	●					●				9,70	9,52	3,97	0,8		2,206	7°
	CCMW120408	●					●				12,90	12,70	4,76	0,8		3,080	7°
	CCMT060208	●			●		●			●	6,40	6,35	2,38	0,8		1,319	7°
	CCMT080308	●			●		●			●	8,05	7,97	3,18	0,8		1,765	7°
	CCMT09T308	●			●		●			●	9,70	9,52	3,97	0,8		2,206	7°
	CCMT120408	●			●		●			●	12,90	12,70	4,76	0,8		3,080	7°
	XDHW040110	●			●	●				●	4		1,59	1,0			15°
	XDHW060210	●			●	●				●	6,50		2,38	1,0			15°
	XDHW10T310	●			●	●				●	10		3,97	1,0			15°
	SPLW1204AD		●		●		●			●	12,70	12,70	4,76		0,5		11°
	SPEW1204AD						○				12,70	12,70	4,76		0,5		11°
	SPLT1204AD		●				●				12,70	12,70	4,76		0,5		11°
	SEHW1204AF	●	●		●	●	●			●	12,70		4,76		2,75	1,25	20°
	SEHW1504AF	●	●		●	●	●			●	15,88		4,76		2,85	1,86	20°
	SEHT1204AF	●	●			●	●				12,70		4,76		2,75	1,25	20°
	SDLW090308	●	●			●	●				9,52		3,18	0,8		1,644	15°
	SDLT090308						●				9,52		3,18	0,8		1,644	15°
	SEAN1203AFN	●	●		○	●	●			●	12,70		3,18		1,6		20°
	SEKN1203AFN	●	●		○	●	●			●	12,70		3,18		1,6		20°
	SEKN1504AFN	●	●		●	●	●			●	15,88		4,76		1,6		20°
	PDHW120420		●		●		●			●	12	16,54	4,76	2	1,4		15°










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		ZSM	ZS6	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10	L mm	D mm	S mm	r mm	b mm	$\alpha^\circ$
	SFAN1203EFR	●									12,70		3,18		1,4~	26°
	SFAN1203EFL				●						12,70		3,18		1,4~	26°
	SPKN1203EDR	●	●			●	●				12,70		3,18		1,4~	11°
	SPKN1203EDL	●	●			●	●		●		12,70		3,18		1,4~	11°
	SPKN1504EDR	○	○		●		○			●	15,88		4,76		1,4~	11°
	SPKN1504EDL	●	●			●	●				15,88		4,76		1,4~	11°
	RDHX0701MOT		●							●		7	1,99			15°
	RDHX0702MOT		●							●		7	2,38			15°
	RDHX0802MOT		●							●		8	2,38			15°
	RDHX1003MOT	●	●	●		●	●	●				10	3,18			15°
	RDHX12T3MOT	●	●		●	●	●			●		12	3,97			15°
	RDHX1604MOT	●	●		●	●	●			●		16	4,76			15°
	RDMX1003MOT		●				●					10	3,18			15°
	RDMX12T3MOT		●				●					12	3,97			15°
	RDMX1604MOT	●	●		○	●	●		○			16	4,76			15°
	RDHT1003MOT			●								10	3,18			15°
	RDHT12T3MOT		●	●			●	●				12	3,97			15°
	RDHT1604MOT		●				●	●				16	4,76			15°
	RDEW10T3MO		●				●					10	3,97			15°
	RPEW1204MO		●				●					12	4,76			11°
	RDMT10T3MO		●				●					10	3,97			15°
	RPMT1204MO		●				●					12	4,76			11°
	TPM0511	●			●						9,60	5,55	2,50	0,8		8°
	TPM0911	●			●						16,50	9,52	3,18	0,8		11°
	TPKN1603PDR	●	●		●	●	●		●		16,50	9,52	3,18		1,0~	11°
	TPKN1603PDL		●		●	●	●		●		16,50	9,52	3,18		1,0~	11°
	TPKN2204PDR	●	●		●	●	●		●		22	12,70	4,76		1,5~	11°
	TPKN2204PDL		○		●	●	●		●		22	12,70	4,76		1,5~	11°
	TPKR2204PDR	●			●						22	12,70	4,76		1,5~	11°

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		Z5M	Z56	ZK03M	ZH20	RK25G	RK40G	RK03E	RK03CF	RB10	L1 mm	L2 mm	S mm	r mm	d1 mm	D mm	$\alpha^\circ$
	RCCW190412 RCCW230516		• •				• •				12 25	7,5 10,5	4,5 5,5	12,5 16,0			7° 9°
	RDCW250620 RDCW250625		• •				• •				19 19	12,4 13,4	6,0 6,0	20 25			15° 15°
	RDEW220620 RDEW290625		• •				• •				22 29	13,6 15	6,0 6,0	20 25			15° 15°
	JDHW10T310 JDHW14M520		• •	• •			• •			• •		10,4 14,4	3,97 5,00	1,0 2,0			15° 15°
	ODEW150508	•	•	•			•			•	6,0	15,88	5,50	0,8			15°
	ODET150508	•	•				•				6,0	15,88	5,50	0,8			15°
	RCN08 RCN10 RCN12 RCN16 RCN20 RCN25 RCN32			• • • • • • •			• • • • • • •	• • • • • • •					2 2,4 2,5 3 3 4 5	2,5 3 5 5 5 6 8	8 10 12 16 20 25 32	12° 12° 12° 12° 12° 12° 12°	
	RCN08 AL RCN10 AL RCN12 AL RCN16 AL RCN20 AL RCN25 AL RCN32 AL			• • • • • • •			• • • • • • •						2 2,4 2,5 3 3 4 5	2,5 3 5 5 5 6 8	8 10 12 16 20 25 32	12° 12° 12° 12° 12° 12° 12°	
	RCA08 RCA10 RCA12 RCA16 RCA20 RCA25 RCA32			• • • • • • •			• • • • • • •	• • • • • • •					2,4 2,6 3 4 5 6 7	2,5 3 3,5 4 5 6 8	8 10 12 16 20 25 32		
	RBF1210 RBF1613 RBF2016 RBF2520			• • • •			• • • •	• • • •				2,5 4,2 5 5	1,0 1,3 1,6 2,0	3,7 5,3 5,3 9	12 16 20 25	11° 11° 11° 11°	

# METALLO DURO PER FRESATURA • MILLING CARBIDE GRADE SELECTION • HARTMETALL FRÄSSORTEN

ZSM		<p>Qualità in metallo duro non rivestita. ZSM è particolarmente adatto per lavorazioni di fresature leggere e medie d'acciaio.</p> <p>Uncoated carbide grade. ZSM is an universal grade for use in light and medium machining of steel.</p> <p>ZSM unbeschichtetes Hartmetall ist besonders geeignet für die leichte und mittlere Bearbeitung von Stahl.</p>
ZS6		<p>Qualità in metallo duro non rivestita. ZS6 è una qualità universale per le lavorazioni medie e pesanti d'acciaio.</p> <p>Uncoated carbide grade. ZS6 is an universal grade for use in medium and heavy machining of steel.</p> <p>ZS6 unbeschichtetes Hartmetall ist ein universal einsetzbares Hartmetall für die mittlere bis schwere Zerspaltung von Stahl.</p>
ZK03M		<p>Qualità in metallo duro non rivestita. ZK03M è particolarmente adatto per lavorazioni di copiatura leggere e medie dei materiali non ferrosi.</p> <p>Uncoated carbide grade. ZK03M is particularly suitable for use in light and medium copying operation of non-ferrous metals.</p> <p>ZK03M unbeschichtetes Hartmetall ist besonders geeignet bei leichten und mittleren Kopierfräsen von NE - Metallen.</p>
ZH20		<p>Qualità in metallo duro non rivestita. ZH20 è una qualità universale per le lavorazioni pesanti e medie dei materiali non ferrosi.</p> <p>Uncoated carbide grade. ZH20 is an universal grade for use in medium and heavy machining of non-ferrous metals.</p> <p>ZH20 unbeschichtetes Hartmetall ist ein universal einsetzbares Hartmetall für die mittlere bis schwere Zerspaltung von NE - Metallen.</p>
RK25G	 TiAIN	<p>RK25G è una nuova qualità rivestita ideale per le lavorazioni a secco. Il substrato è estremamente resistente all'usura. Particolarmente indicata nelle lavorazioni leggere e medie di acciaio.</p> <p>RK25G is a new coated grade ideal for dry operation. The substrate resists built-up edge. Particularly suitable in light and medium machining of steel.</p> <p>RK25G ist mit neuer Beschichtung ideal für die Trockenbearbeitung. Das Substrat ist resistent gegen Aufbauschneiden - Bildung. Einsetzbar für die leichte und mittlere Bearbeitung von Stahl.</p>
RK40G	 TiAIN	<p>Qualità in metallo duro TiAIN (PVD) spessore 4 µm. RK40G è una nuova qualità ad alto rendimento sia per la fresatura di acciaio, acciaio stampi, acciaio inossidabile e ghisa.</p> <p>Coated carbide grade TiAIN (PVD) thickness 4 µm. RK40G is a grade with high performance ideal for milling steel, mould steel, stainless steel and cast iron.</p> <p>Hartmetall mit einer 4 µm dicken TiAIN (PVD) Beschichtung. RK40G ist eine Sorte mit hoher Eigenschaft, ideal zum Fräsen von Stahl, Gesenkschmiedestahl, rostfreiem Stahl und Guß.</p>
RK03E	 TiAIN	<p>Qualità in metallo duro rivestito (PVD) in TiAIN spessore 3 µm. Particolarmente indicato nelle lavorazioni di copiatura in finitura e superfinitura.</p> <p>Coated carbide grade TiAIN (PVD) thickness 3 µm. Particularly suitable for finishing and superfinishing copying operation.</p> <p>Hartmetall mit einer 3 µm dicken TiAIN (PVD) Beschichtung. Besonders geeignet für die Fein- und Feinstbearbeitung beim Kopierfräsen.</p>
RK03CF	 TiAIN Monolayer	<p>Qualità in metallo duro rivestito in TiAIN (PVD) spessore 3 µm. Particolarmente indicato in copiatura in lavorazioni di finitura e superfinitura ed HSC.</p> <p>Coated carbide grade TiAIN (PVD) thickness 3 µm. Particularly suitable for copying operation in finishing, superfinishing and HSC.</p> <p>Einlagiges TiAIN beschichtetes Hartmetall mit einer 3 µm dicken TiAIN (PVD) Beschichtung. Besonders geeignet zum Kopierfräsen bei der Fein, Feinstbearbeitung und bei der HSC - Bearbeitung.</p>
RB10	 TiAIN	<p>Qualità in metallo duro rivestito in (PVD) in TiAIN spessore 4 µm. Grado appositamente studiato per le lavorazioni medie della ghisa.</p> <p>Coated carbide grade TiAIN (PVD) thickness 4 µm. Grade suitable for medium machining of cast iron.</p> <p>Hartmetall mit einer 4 µm dicken TiAIN (PVD) Beschichtung Geeignet für die mittlere Bearbeitung von Grauguß.</p>



