Fraisage

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IZAR®
CUTTING TOOLS

Fraisage

IZAR CUTTING TOOLS

Fraises Izarmax PMX

	Ref. Material	6420 PMX	6420 TIALN	6444 PMX	6444 TIALN	6430 PMX	6430 TIALN	6439 PMX	6439 TIALN
	DIN Elab./Manuf.	327 N		844 NR-F		844 W		844 N	
	Nº Z	2 Z		3 Z		3 Z			
	Imagen Picture								

Material

Uso Recomendado ●
Uso Alternativo ◑

1		1.1	< 850 N/mm²	●					
		1.2	< 1000 N/mm²	●		●			●
		1.3	850 - 1300 N/mm²	◑		◑			◑
2	INOX Stainless Steel	2.1	Austenítico					●	
		2.2	Martensítico			●			●
3	Fundición Cast Iron	3.1	< 700 N/mm²	●					
		3.2	700-1000 N/mm²						
4	Ti			●					
5	Cu - Bronce (Latón-Brass)	5.1	Viruta corta - Short chip.	●					
		5.2	Viruta larga - Long chip.						
6	Al - Mg	6.1	No aleado - Not alloyed	●				●	
		6.2	< 10% Si						
		6.3	> 10% Si						
7		7.1	Termo-Plásticos						
		7.2	Duro-Plásticos						

6644 PMX	6644 TIALN	6647 TIALN	6696 PMX	6696 TIALN	6640 PMX	6640 TIALN	6690 PMX	6690 TIALN	6642 PMX	6642 TIALN	6692 PMX	6692 TIALN	6666 TIALN	6600 PMX	6600 TIALN	6606 PMX	6606 TIALN	6604 PMX	6604 TIALN
844 NR-F					844 NR				844 NF				844 N						
4-6 Z					4-6 Z				4-5 Z		4 Z		HV	4-6 Z				4 Z	

Uso Recomendado ● Recommended Use

Uso Alternativo ◑ Alternative Use

					●													●	
●			●											●				◑	
◑			◑											◑					
		●																	
●			●											●					
														●					
●			●						●					●				●	
					◑									●				●	
						●									●				

Fraises HSSE 8% Co

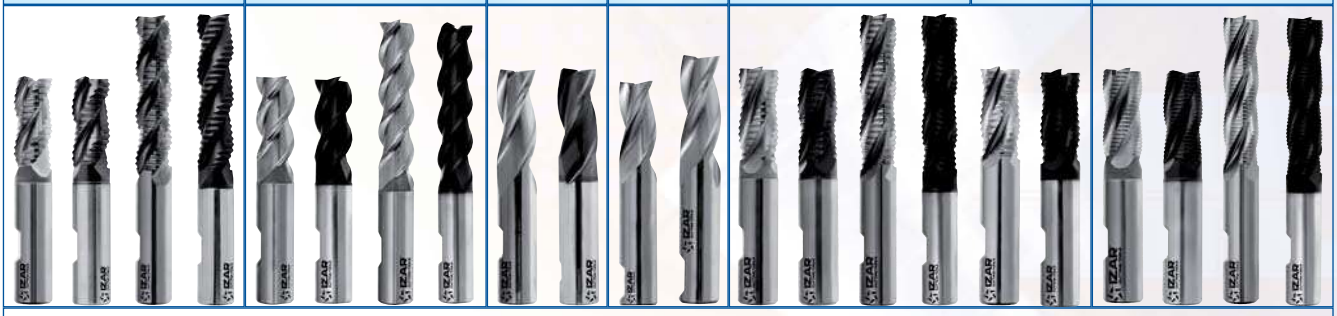
IZAR CUTTING TOOLS	Ref. Material	4410 HSSE 5%Co	4411 HSSE 5%Co	4420 HSSE 8%Co	4420 TIALN	4426 HSSE 8%Co	4426 TIALN	4454 HSSE 8%Co	4454 TIALN	4464 HSSE 8%Co	4464 TIALN	4422 HSSE 8%Co	4422 TIALN	4470 HSSE 8%Co	4470 TIALN
	DIN Elab./Manuf.	IZAR Std. W		327 N		IZAR Std. N		327 N		IZAR Std. N		327 N		IZAR Std.	
	Nº Z	1 Z		2 Z											
	Imagen Picture														

Material

Uso Recomendado ● Recommended Use

Uso Alternativo ◑ Alternative Use

1		1.1 < 850 N/mm²			●		●								
		1.2 < 1000 N/mm²													
		1.3 850 - 1300 N/mm²													
2	INOX Stainless Steel	2.1 Austenítico													
		2.2 Martensítico													
3	Fundición Cast Iron	3.1 < 700 N/mm²			●		●					◑			
		3.2 700-1000 N/mm²													
4	Ti														
5	Cu - Bronce (Latón-Brass)	5.1 Viruta corta - Short chip.			●		●					●			
		5.2 Viruta larga - Long chip.													
6	Al - Mg	6.1 No aleado - Not alloyed													
		6.2 < 10% Si	●		●										
		6.3 > 10% Si													
7		7.1 Termo-Plásticos	●												
		7.2 Duro-Plásticos													

4447 HSSE 8%Co	4447 TIALN	4497 HSSE 8%Co	4497 TIALN	4430 HSSE 8%Co	4430 TIALN	4432 HSSE 8%Co	4432 TIALN	4439 HSSE 8%Co	4439 TIALN	4435 HSSE 8%Co	4437 HSSE 8%Co	4640 HSSE 8%Co	4640 TIALN	4690 HSSE 8%Co	4690 TIALN	4440 HSSE 8%Co	4440 TIALN	4644 HSSE 8%Co	4644 TIALN	4696 HSSE 8%Co	4696 TIALN
844 WR				844 W				844 N		IZAR Std. N		844 NR						844 NR-F			
3 Z												4-6 Z						3-5 Z		4-5 Z	
																					

Uso Recomendado ● Recommended Use

Uso Alternativo ❍ Alternative Use

●				●				●		●		●									
																		●			
								❍				❍						●			
								●										●			
●								●				❍						●			
●				●																	

Fraises HSSE 8% Co

IZAR CUTTING TOOLS	Ref.	4680 HSSE 8%Co	4680 TIALN	4692 HSSE 8%Co	4692 TIALN	4600 HSSE 8%Co	4600 TIALN	4606 HSSE 8%Co	4606 TIALN	4400 HSSE 8%Co	4400 TIALN	4656 HSSE 8%Co	4656 TIALN	4666 HSSE 8%Co	4666 TIALN
	DIN Elab./Manuf.	844 NF				844 N									
	Nº Z	4-6 Z				4-8 Z									
	Imagen Picture														

Material

Uso Recomendado ● Recommended Use

Uso Alternativo ❍ Alternative Use

1		1.1	< 850 N/mm²	●		●										
		1.2	< 1000 N/mm²													
		1.3	850 - 1300 N/mm²													
2	INOX Stainless Steel	2.1	Austenítico													
		2.2	Martensítico													
3	Fundición Cast Iron	3.1	< 700 N/mm²	❍		●										
		3.2	700-1000 N/mm²													
4	Ti															
5	Cu - Bronce (Latón-Brass)	5.1	Viruta corta - Short chip.	❍		●										
		5.2	Viruta larga - Long chip.													
6	Al - Mg	6.1	No aleado - Not alloyed													
		6.2	< 10% Si													
		6.3	> 10% Si													
7		7.1	Termo-Plásticos													
		7.2	Duro-Plásticos													

Fraises HSS

IZAR CUTTING TOOLS	Ref. Material	4412 HSS	4413 HSS	4414 HSS	4415 HSS	4416 HSS	4417 HSS	4421 HSS	4401 HSS
	DIN Elab./Manuf.	IZAR Std. W						327 N	844 N
	Nº Z	1 Z						2 Z	4-8 Z
	Imagen Picture								

Material		Uso Recomendado ● / Uso Alternativo ❍
1 	1.1 < 850 N/mm²	● ●
	1.2 < 1000 N/mm²	
	1.3 850 - 1300 N/mm²	
2 INOX Stainless Steel	2.1 Austenítico	
	2.2 Martensítico	
3 Fundición Cast Iron	3.1 < 700 N/mm²	
	3.2 700-1000 N/mm²	
4 Ti		
5 Cu - Bronce (Latón-Brass)	5.1 Viruta corta - Short chip.	
	5.2 Viruta larga - Long chip.	
6 Al - Mg	6.1 No aleado - Not alloyed	
	6.2 < 10% Si	●
	6.3 > 10% Si	
7 	7.1 Termo-Plásticos	●
	7.2 Duro-Plásticos	

IZAR CUTTING TOOLS	Ref. Material	9411 K30F	9411 TIALN
Fraises Carbure	DIN Elab./Manuf.	W	
	Nº Z	1 Z	
	Imagen Picture		
Material			
1 	1.1 < 850 N/mm²		
	1.2 < 1000 N/mm²		
	1.3 850 - 1300 N/mm²		
2 INOX Stainless Steel	2.1 Austenítico		
	2.2 Martensítico		
3 Fundición Cast Iron	3.1 < 700 N/mm²		
	3.2 700-1000 N/mm²		
4 Ti			
5 Cu - Bronce (Latón-Brass)	5.1 Viruta corta - Short chip.		
	5.2 Viruta larga - Long chip.		
6 Al - Mg	6.1 No aleado - Not alloyed	●	
	6.2 < 10% Si		
	6.3 > 10% Si		
7 	7.1 Termo-Plásticos	●	
	7.2 Duro-Plásticos	○	

Fraises Cône Morse

Ref. Material	4550 HSSE 8%Co	4675 HSSE 8%Co	4675 TIALN	4570 HSSE 8%Co	4570 TIALN	4580 HSSE 8%Co	4580 TIALN	4610 HSSE 8%Co	4610 TIALN	4516 HSSE 8%Co	4516 TIALN	4676 HSSE 8%Co	4676 TIALN	4686 HSSE 8%Co	4686 TIALN
DIN Elab./Manuf.	326 N	845 NR-F		845 NR				845 N				845 NF			
Nº Z	2 Z	4-6 Z		4-8 Z											
Imagen Picture															

Material

Uso Recomendado ● Recommended Use
Uso Alternativo ◑ Alternative Use

			4550 HSSE 8%Co	4675 HSSE 8%Co	4675 TIALN	4570 HSSE 8%Co	4570 TIALN	4580 HSSE 8%Co	4580 TIALN	4610 HSSE 8%Co	4610 TIALN	4516 HSSE 8%Co	4516 TIALN	4676 HSSE 8%Co	4676 TIALN	4686 HSSE 8%Co	4686 TIALN
1		1.1 < 850 N/mm²	●			●				●				●			
		1.2 < 1000 N/mm²		●						●							
		1.3 850 - 1300 N/mm²															
2	INOX Stainless Steel	2.1 Austenítico	◑														
		2.2 Martensítico															
3	Fundición Cast Iron	3.1 < 700 N/mm²	◑	●		◑				●				◑			
		3.2 700-1000 N/mm²															
4	Ti			●													
5	Cu - Bronce (Latón-Brass)	5.1 Viruta corta - Short chip.	◑	●		◑				●				◑			
		5.2 Viruta larga - Long chip.															
6	Al - Mg	6.1 No aleado - Not alloyed	◑														
		6.2 < 10% Si															
		6.3 > 10% Si															
7		7.1 Termo-Plásticos															
		7.2 Duro-Plásticos															

Fraises Carbure

	Ref. Material	9406 K30F + XTIALN	9444 K30F + XTIALN	9401 K30F XTIALN	9410 K30F XTIALN	9412 K30F XTIALN	9407 K30F XTIALN	9431 K30F XTIALN	9436 K30F + XTIALN	9421 K30F XTIALN	9424 K30F XTIALN	9425 K30F XTIALN	9426 K30F XTIALN	9405 U.grano XTIALN	9415 U.grano XTIALN
	DIN Elab./Manuf.	6528 N			IZAR Std. N	6528 N	IZAR Std. N	6528 N	IZAR Std. N	6528 N	IZAR Std. N	6528 N	IZAR Std. N	6528 N	
	Nº Z	4-5 Z	4 Z					3 Z		2 Z				6-8 Z	
	Imagen Picture														

Material

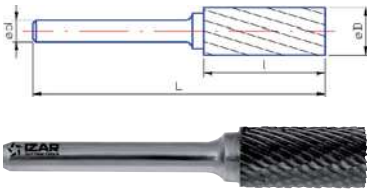
Uso Recomendado ● Recommended Use

Uso Alternativo ◑ Alternative Use

1	1.1 < 850 N/mm²				●										
	1.2 < 1000 N/mm²							●							
	1.3 850 - 1300 N/mm²	●				◑		●				◑			●
2	INOX Stainless Steel	2.1 Austenítico	●			◑					●				
		2.2 Martensítico													
3	Fundición Cast Iron	3.1 < 700 N/mm²				●						●			
		3.2 700-1000 N/mm²													
4	Ti		●				◑					●			
5	Cu - Bronce (Latón-Brass)	5.1 Viruta corta - Short chip.	◑				●					●			
		5.2 Viruta larga - Long chip.													
6	Al - Mg	6.1 No aleado - Not alloyed													
		6.2 < 10% Si				◑						●			
		6.3 > 10% Si													
7		7.1 Termo-Plásticos					◑						◑		
		7.2 Duro-Plásticos					●								

Fraises Limes Rotatives

Material		Velocidad Corte Cutting Speed (m/min.) r.p.m. = Vc x 1.000 / π x ø				Uso Recomendado Recommended Use			
		Dentado 1 Teeth	Dentado 3 Teeth	Dentado 4 Teeth	Dentado 6 Teeth	1	3	4	6
1 	1.1 < 850 N/mm²	600-900	450-600		450-600	●	●		●
	1.2 < 1000 N/mm²	600-900	450-600	450-600	450-600	●	●	●	●
	1.3 850 - 1300 N/mm²	250-350	250-350		250-350	●	●		●
2 INOX Stainless Steel	2.1 Austenítico		250-350		250-350		●		●
	2.2 Martensítico				450-600				●
3 Fundición Cast Iron	3.1 < 700 N/mm²		250-350		250-350		●		●
	3.2 700-1000 N/mm²		450-600				●		
4 Ti		600-900				●			
5 Cu - Bronce (Latón-Brass)	5.1 Vir. corta - Short chip.	500-900				●			
	5.2 Vir. larga - Long chip.								
6 Al - Mg	6.1 No aleado - Not alloy.								
	6.2 < 10% Si								
	6.3 > 10% Si								
7 	7.1 Termo-Plásticos								
	7.2 Duro-Plásticos								



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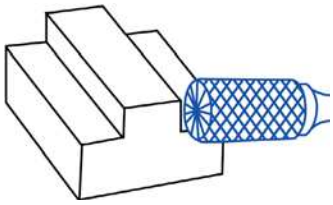
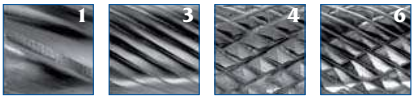
9260

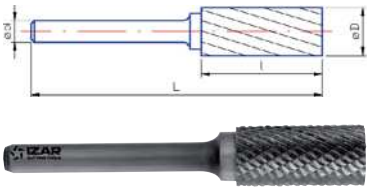


MD/HM Carb. K10

Norma ZYA-S Norm



Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
3	**3**	14	38			44072		44079		44086	
6	**3**	13	43					44080		44122	
6	**6**	16	50			44074		44081		44141	
8	**6**	20	65			44075		44082		44142	
10	**6**	20	65	44070		44076		44083		44143	
12	**6**	25	70	44071		44077		44084		44144	
16	**6**	25	70			44078		44085		44145	



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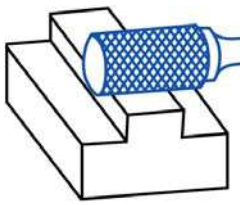
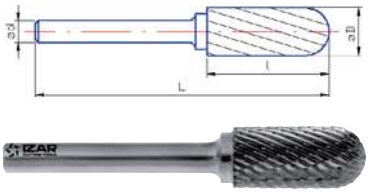


MD/HM Carb. K10

Norma ZYA Norm

Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
3	**3**	14	38			44149		44156		44245	
6	**3**	13	43			44150		44157		44301	
6	**6**	16	50			44151		44158		44417	
8	**6**	20	65			44152		44159		44418	
10	**6**	20	65	44147		44153		44160		44419	
12	**6**	25	70	44148		44154		44161		44421	
16	**6**	25	70			44155		44173		44422	



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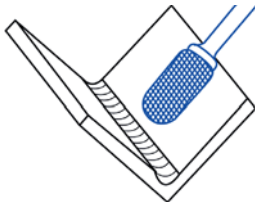
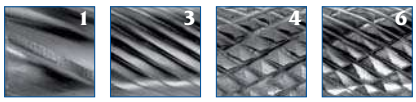
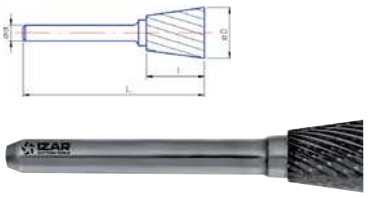


MD/HM Carb. K10

Norma WRC Norm



Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.	€	Dentado 3 Teeth N Art.	€	Dentado 4 Teeth N Art.	€	Dentado 6 Teeth N Art.	€
3	**3**	14	38			44425		44431		44437	
6	**6**	16	50			44426		44432		44438	
8	**6**	20	63			44427		44433		44439	
10	**6**	20	65	44423		44428		44434		44440	
12	**6**	25	70	44424		44429		44435		44441	
16	**6**	25	70			44430		44436		44442	



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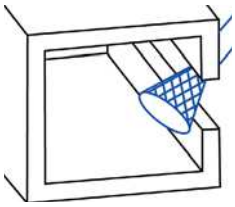
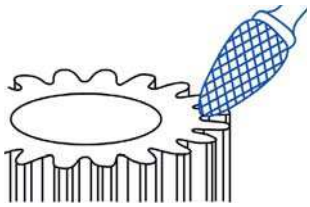


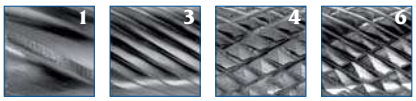
MD/HM Carb. K10 | Cono Invertido | Inverted Cone | Norma WKN Norm

Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
3	**3**	3	38			44443		44450		44455	
6	**3**	6	36			44445					
6	**6**	6	50			44447		44452			
12	**6**	12	57			44448		44453		44460	

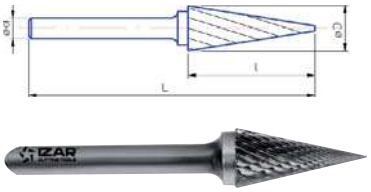
ref.
9254



MD/HM Carb. K10 | Ojiva | Tree | Norma SPG Norm



Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
3	**3**	12	38			44466		44472		44487	
6	**6**	16	50			44467		44473		44488	
8	**6**	18	63			44468		44474		44494	
10	**6**	20	65	44463		44469		44475		44500	
12	**6**	25	70	44464		44470		44476		44512	
16	**6**	30	75	44465		44471		44482		44518	



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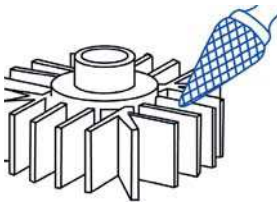
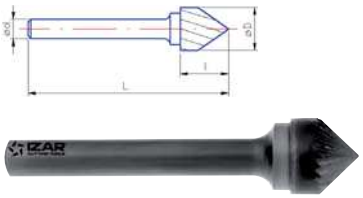


MD/HM Carb. K10 |  | Norma SKM Norm

Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.	€	Dentado 3 Teeth N Art.	€	Dentado 4 Teeth N Art.	€	Dentado 6 Teeth N Art.	€
6	**3**	13	42			44524		44595		44613	
6	**6**	16	50			44530		44598		44616	
8	**6**	18	63			44583		44601		44617	
10	**6**	20	66			44586		44604		44619	
12	**6**	25	70			44589		44607		44620	
16	**6**	25	70			44592		44610		44622	



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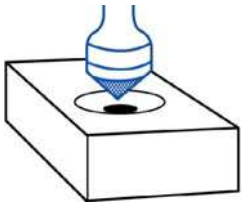
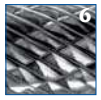
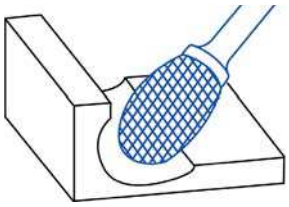


MD/HM Carb. K10 | 90º | Norma KSK Norm

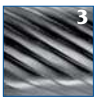


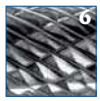
Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
4	**6**	3	50			44625					
12	**6**	12	57			44626				44632	

ref.
9257

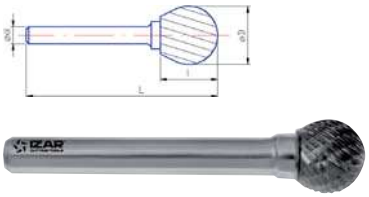


MD/HM Carb. K10 | Forma Gota (Oval) | Oval | Norma TRE Norm

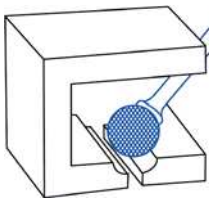




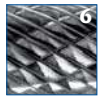
Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
3	**3**	6	38			44637		44648		44655	
6	**3**	9	39			44638		44649		44656	
6	**6**	10	50			44640		44650		44657	
8	**6**	13	58			44643		44651		44658	
10	**6**	16	61	44634		44644		44652		44659	
12	**6**	20	65			44646		44653		44660	
16	**6**	28	70			44647		44654		44661	



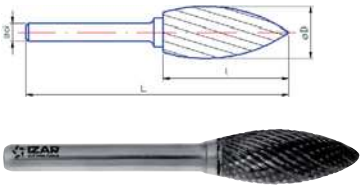
ref.
9258



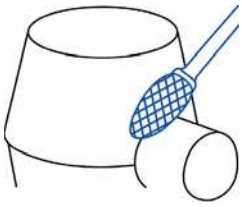
MD/HM Carb. K10 | Esférica | Ball | Norma KVD Norm



Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
3	**3**	2,50	38			44705		44712		44719	
6	**3**	5,00	35			44706		44713		44720	
6	**6**	5,00	50			44707		44714		44721	
8	**6**	7,00	52			44708		44715		44722	
10	**6**	9,00	54	44662		44709		44716		44723	
12	**6**	10,00	55	44671		44710		44717		44724	
16	**6**	14,00	59			44711		44718		44725	

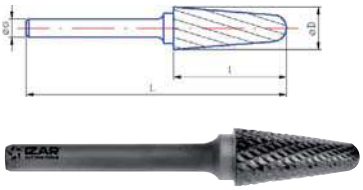


ref. 9266



MD/HM Carb. K10	Llama	Flame	Norma B Norm
3	4	6	

Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
6	6	20	57							44763	
8	6	20	65			44731		44738		44766	
10	6	25	70			44732		44739		44769	
12	6	30	75			44733		44740		44771	
16	6	32	77					44742		44772	



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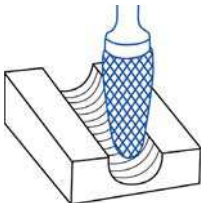
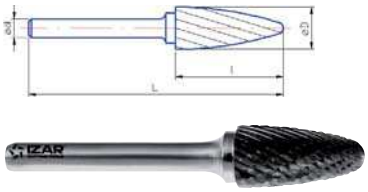


MD/HM Carb. K10	Cónica Redon-deada	Ball Nosed Cone	Norma KEL Norm
1	3	4	6

Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
3	3	14	38			44776		44783		44790	
6	3	18	48			44777		44784			
6	6	20	50			44778		44785		44792	
8	6	20	65			44779		44786		44793	
10	6	20	65			44780		44787		44794	
12	6	25	70	44774		44781		44788		44795	
16	6	30	75	44775		44782		44789		44796	



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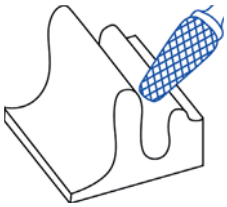


MD/HM Carb. K10	Ojiva Redon-deada	Ball Nosed Tree	Norma RBF Norm
3	4	6	

Ø D mm	Ø d mm	l mm	L mm	Dentado 1 Teeth N Art.		Dentado 3 Teeth N Art.		Dentado 4 Teeth N Art.		Dentado 6 Teeth N Art.	
6	6	18	50			44797		44802		44808	
8	6	18	63			44798		44803		44809	
10	6	20	65			44799		44804		44811	
12	6	25	70			44800		44805		44814	
16	6	30	75			44801		44806		44817	

IZAR CUTTING TOOLS

Fraises Speciales

Ref. Material	4800 HSSE 8%Co	4800 TIALN	4802 HSSE 8%Co	4802 TIALN	4834 HSSE 8%Co	4834 TIALN	4810 HSSE 8%Co	4812 HSSE 8%Co	4330 HSSE 8%Co	4330 TIALN	4340 HSSE 8%Co	4740 HSSE 8%Co	4782 HSSE 8%Co	5080 HSSE 8%Co	5080 TIALN
DIN Elab./Manuf.	851 N		851 NR		850 N		851 N	851 NR	1833 N-A		1833 N-B	1889 N	IZAR Std. N	6518 N	
Nº Z	6-10 Z		4-6 Z		6-14 Z		8-12 Z	4-6 Z	8-12 Z			4-5 Z	2 Z	4-6 Z	
Imagen Picture															

Material

Material	Vc - Cs (m/min.) HSSE 5% Co	Vc - Cs (m/min.) TIALN	4800 HSSE 8%Co	4800 TIALN	4802 HSSE 8%Co	4802 TIALN	4834 HSSE 8%Co	4834 TIALN	4810 HSSE 8%Co	4812 HSSE 8%Co	4330 HSSE 8%Co	4330 TIALN	4340 HSSE 8%Co	4740 HSSE 8%Co	4782 HSSE 8%Co	5080 HSSE 8%Co	5080 TIALN
1.1 Aceros < 850 N/mm² Steels	20-30	28-40	●								●			●		●	
1.2 Aceros < 1000 N/mm² Steels	15-20	20-25	❍								❍			❍		❍	
3.1 Fundición < 700 N/mm² Cast Iron	15-20	20-25	❍								❍			❍		❍	
3.2 Fund. 700-1000 N/mm² Cast Iron	12-18	16-25															
5.1 Cu-Bronce Vir. corta - Short chip.	60-100	80-130	❍								❍			❍		❍	
5.2 Cu-Bronce Vir. larga - Long chip.																	
6.1 Al-Mg No aleado - Not alloy.	160 - 200	190 - 240	❍								❍			❍		❍	
6.2 Al-Mg < 10% Si																	
6.3 Al-Mg > 10% Si	50-80	60-90	●								●			●		●	

Uso Recomendado ● Recommended Use

Uso Alternativo ❍ Alternative Use

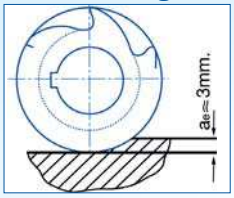
Material Avances (mm/min.)

Grupo / Subgrupo	Ø 4	Ø 6	Ø 8	Ø 10	Ø 12	Ø 16	Ø 20	Ø 25	Ø 32	Ø 40	Ø 50	Ø 63
1.1 Aceros < 850 N/mm² Steels	0,020	0,030	0,035	0,050	0,060	0,100	0,100	0,100	0,100	0,100	0,100	0,100
1.2 Aceros < 1000 N/mm² Steels	0,014	0,030	0,035	0,050	0,060	0,100	0,100	0,100	0,100	0,100	0,100	0,100
3.1 Fundición < 700 N/mm² Cast Iron	0,020	0,030	0,035	0,050	0,060	0,100	0,100	0,100	0,100	0,100	0,100	0,100
3.2 Fund. 700-1000 N/mm² Cast Iron	0,014	0,030	0,035	0,050	0,060	0,100	0,100	0,100	0,100	0,100	0,100	0,100
5.1 Cu-Bronce Vir. corta - Short chip.	0,020	0,030	0,035	0,050	0,060	0,100	0,100	0,100	0,100	0,100	0,100	0,100
5.2 Cu-Bronce Vir. larga - Long chip.	0,020	0,030	0,035	0,050	0,060	0,100	0,100	0,100	0,100	0,100	0,100	0,100
6.1 Al-Mg No aleado - Not alloy.	0,025	0,042	0,062	0,067	0,080	0,100	0,130	0,130	0,130	0,130	0,130	0,130
6.2 Al-Mg < 10% Si	0,025	0,042	0,062	0,067	0,080	0,100	0,130	0,130	0,130	0,130	0,130	0,130
6.3 Al-Mg > 10% Si	0,020	0,030	0,035	0,050	0,060	0,100	0,100	0,100	0,100	0,100	0,100	0,100

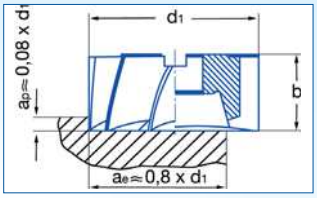
Fraises à Trou

Groupes Travail

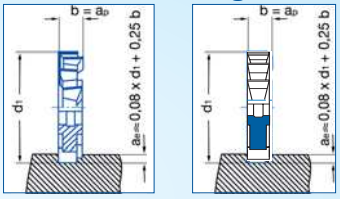
Grupo1: **Fr. Planear**
Plain Milling Cut.



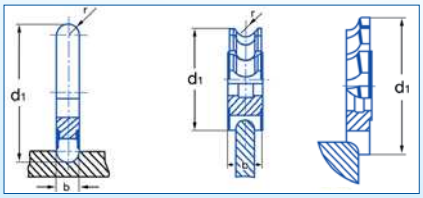
Gr. 2: **Fr. Cilíndricas Frontales**
Shell End Mills



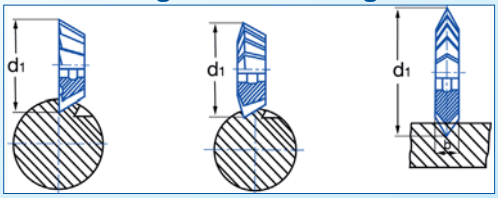
Gr. 3: **Fresas Fresadas Agujero**
Side & Face Milling Cutters



Grupo 4: **Convexas y Concavas**
Convex & Concave Half Circle

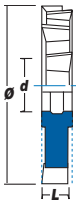


Grupo 5: **Cónicas Frontales e Isósceles**
Angular & Double Angle



Material

			Velocidad Corte Cutting Speed (m/min.) r.p.m. = Vc x 1.000 / π x ϕ		Avance (disminuir hasta 0,35 x fz al incrementar ap) Feed (reduce up to 0,35 x fz when growing ap) (fz/rev.)				
			HSSE 5% Co	TIALN	Grupo 1	Grupo 2	Grupo 3	Grupo 4	Grupo 5
1		1.1 < 850 N/mm²	20-30	24-35	0,18	0,15	0,06	0,04	0,06
		1.2 < 1000 N/mm²	15-20	18-24	0,15	0,12	0,07	0,04	0,04
		1.3 850 - 1300 N/mm²	12-16	14-19	0,10	0,08	0,04	0,04	0,03
2	INOX Stainless Steel	2.1 Austenítico	15-20	18-24	0,12	0,10	0,08	0,06	0,03
		2.2 Martensítico			0,10	0,08	0,04	0,04	0,03
3	Fundición Cast Iron	3.1 < 700 N/mm²	12-18	14-20	0,25	0,22	0,08	0,08	0,01
		3.2 700-1000 N/mm²			0,20	0,18	0,06	0,06	0,06
4	Ti		20-30	24-35	0,13	0,11	0,07	0,05	0,04
5	Cu - Bronce (Latón-Brass)	5.1 Vir. corta - Short chip.	25-32	30-38	0,20	0,15	0,10	0,08	0,05
		5.2 Vir. larga - Long chip.	60-100	70-120	0,25	0,20	0,10	0,08	0,08
6	Al - Mg	6.1 No aleado - Not alloy.	180 - 250	210 - 300	0,20	0,15	0,07	0,05	0,07
		6.2 < 10% Si							
		6.3 > 10% Si	50-60	60-70	0,12	0,10	0,07	0,04	0,06
7		7.1 Termo-Plásticos	100-150	120-180	0,16	0,12	0,06	0,05	0,06
		7.2 Duro-Plásticos							



ref. 4120

HSSE 5%Co (TIALN)	DIN 885 A	ISO 2587	3 Cortes Cut Side 3 Tailles
Tol. ø (js16) d (H7) L (k11)		Mejor Desalojo Viruta	Better Chip Off

Ø mm	L mm	d mm	Z	Nº Art. 5% Co		Nº Art. TIALN	
50	4	16	12	52584			
	5			52587			
	6			52590			
	8			52593			
	10			52596			
63	4	22	12	52611		57477	
	5			52614		57483	
	6			52620		57492	
	8			52623		57495	
	10			52626		57498	
	12			52629			
	14			52632			
	16			52635			
	18			52638			
80	5	27	14	52644		57516	
	6			52647		57519	
	8			52650		57522	
	10			52653		57528	
	12			52656			
	14			52659			
	16			52662			
	18			52665			
	20			52668			
100	6	32	16	52674		57570	
	8			52677		57576	
	10			52680		57582	
	12			52683		57588	
	14			52686			
	16			52689			
	18			52692			
	20			52698			
	22			52701			
	25			52707			
125	8	32	18	52725		57684	
	10			52728		57690	
	12			52731		57696	
	14			52734		57702	
	16			52737			
	18			52740			
	20			52743			
	22			52746			
	25			52749			
	28			52752			

Ø mm	L mm	d mm	Z	Nº Art. 5% Co		Nº Art. TIALN	
160	10	40	22	52758		57726	
	12			52761		57729	
	14			52764		57732	
	16			52767		57735	
	18			52770			
	20			52773			
	22			52776			
	25			52779			
	28			52782			
	32			52785			
200	12	40	24	52788			
	14			52791			
	16			52794			
	18			52797			
	20			52800			
	22			52803			
	25			52806			
	28			52809			
	32			52812