

Solid carbide

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide
















Solid carbide





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End mills

6020 2 Flutes  Page H.04	6120 2 Flutes (Long)  Page H.04	7405 2 Flutes  Page H.05	7415 2 Flutes (Long)  Page H.05	6915 2 Flutes  Page H.06	6030 3 Flutes  Page H.06
6130 3 Flutes (Long)  Page H.07	6040 4 Flutes  Page H.07	6041 4 Flutes  Page H.08	6140 4 Flutes (Long)  Page H.08	6137 6/8 Flutes  Page H.09	6197 6/8 Flutes  Page H.09
6060 6 Flutes  Page H.10					

Torus end mills

6327 2 Flutes  Page H.11	6337 2 Flutes (Long)  Page H.11	6427 4 Flutes  Page H.12	6437 4 Flutes (Long)  Page H.12		
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Contour end mills

7965 2 Flutes  Page H.13	7975 2 Flutes with front out  Page H.13				
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Ball nose end mills

6320 2 Flutes  Page H.14	6420 2 Flutes (Long)  Page H.14	6945 2 Flutes  Page H.15	6955 2 Flutes (Long)  Page H.15	7597 2 Flutes  Page H.16	6330 3 Flutes  Page H.16
6430 3 Flutes  Page H.17	6340 4 Flutes  Page H.17	6440 4 Flutes  Page H.18	6521 2 Flutes  Page H.19	6541 4 Flutes  Page H.19	











Drills

<p>7020 Hard-metal twist drills 2 Flutes</p>  <p>Page H.20</p>	<p>7030 Hard-metal twist drills 3 Flutes</p>  <p>Page H.21</p>	<p>7120 Hard-metal twist drills 2 Flutes (Long)</p>  <p>Page H.22</p>			
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Others

<p>80 Solid carbide center drill</p>  <p>Page H.23</p>	<p>81 Solid carbide center drill for C.N.C. 90°</p>  <p>Page H.23</p>	<p>82 Solid carbide center drill for C.N.C. 120°</p>  <p>Page H.24</p>	<p>83 Solid carbide Countersinks</p>  <p>Page H.24</p>	<p>84 Solid carbide Countersinks</p>  <p>Page H.25</p>	<p>85 Centerless ground carbide</p>  <p>Page H.25</p>
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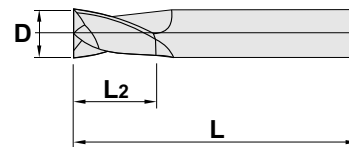
Tungsten carbide burrs

<p>90 Cylindrical</p>  <p>Page H.26</p>	<p>91 Cylindrical round top</p>  <p>Page H.26</p>	<p>92 Tree radius nose</p>  <p>Page H.27</p>	<p>93 Tree pointed</p>  <p>Page H.27</p>	<p>94 Cone</p>  <p>Page H.28</p>	<p>95 Olive (Egg)</p>  <p>Page H.28</p>
<p>96 Ball</p>  <p>Page H.29</p>	<p>97 Inverted cone</p>  <p>Page H.29</p>	<p>98 Deburring 60°</p>  <p>Page H.30</p>	<p>99 Deburring 90°</p>  <p>Page H.30</p>		

Inserts



Characteristics:
Solid carbide 2 flutes end mills



Face milling cutters

6020

Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²					
★	★	★	★	★	★	★	★	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

Square shoulder cutters

Slot cutters

Porcupine cutters

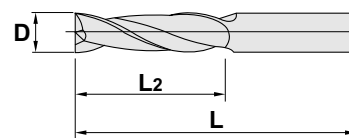
Specific applications and sets

Profile milling

Solid carbide

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
602001	2	1	40	5	○	○		○
602002	2	2	40	8	●	○		●
602003	2	3	40	12	●	○		●
602004	2	4	40	12	●	○		●
602005	2	5	50	14	●	○		●
602006	2	6	50	16	●	○		●
602007	2	7	60	20	●	○		●
602008	2	8	60	20	●	○		●
602009	2	9	60	20	●	○		●
602010	2	10	70	22	●	○		●
602011	2	11	70	22	●	○		●
602012	2	12	70	22	●	○		●
602014	2	14	75	25	●	○		○
602016	2	16	80	28	●	○		○
602018	2	18	80	28	●	○		○
602020	2	20	100	35	●	○		○
602022	2	22	100	35	○	○		
602025	2	25	100	35	○	○		○
602030	2	30	100	35	○	○		
602032	2	32	100	35	○	○		

Characteristics:
Solid carbide 2 flutes end mills (Long)



Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²					
★	★	★	★	★	★	★	★	★	★	★	★

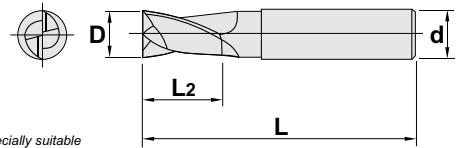
Normally available for immediate delivery ●
Only available in a limited quantity ○

6120

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
612003	2	3	60	25	○			○
612004	2	4	60	25	○			○
612005	2	5	70	30	○			○
612006	2	6	70	30	○			○
612008	2	8	80	35	○			○
612010	2	10	100	45	○			○
612012	2	12	100	45	○			○
612014	2	14	100	45	○			○
612016	2	16	100	45	○			○
612018	2	18	100	45	○			○
612020	2	20	125	55	○			○
612025	2	25	125	55	○			○
612032	2	32	125	55	○			○



Characteristics:
Solid carbide 2 flutes torus end mills for aluminium.

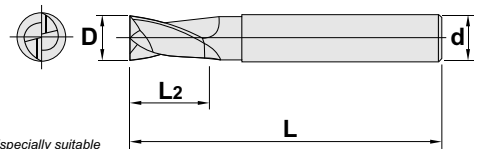


☆ Not suitable ★ Suitable ☆ Especially suitable

7405		Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	K10	TiN	TiCN	TiAlN
Ref.	Flutes	D	d	L	L2												
740503	2	3	6	57	4	○											
740504	2	4	6	57	5	○											
740505	2	5	6	57	7	○											
740506	2	6	6	57	7	○											
740508	2	8	8	63	9	○											
740510	2	10	10	72	11	○											
740512	2	12	12	83	12	○											
740516	2	16	16	92	16	○											
740520	2	20	20	104	20	○											
740525	2	25	25	106	25	○											



Characteristics:
Solid carbide 2 flutes torus end mills for aluminium. (Long)



☆ Not suitable ★ Suitable ☆ Especially suitable

7415		Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	K10	TiN	TiCN	TiAlN
Ref.	Flutes	D	d	L	L2												
741506	2	6	6	80	7	○											
741508	2	8	8	80	9	○											
741510	2	10	10	100	11	○											
741512	2	12	12	100	12	○											
741516	2	16	16	100	16	○											
741520	2	20	20	125	20	○											
741525	2	25	25	150	25	○											

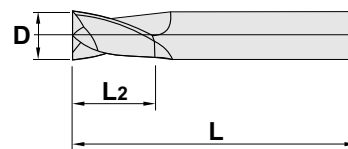
Solid carbide
Drills
Boring heads
Arbors and adaptors

Inserts



Characteristics:

Solid carbide 2 flutes end mills for aluminium.



Face milling cutters

6915

Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

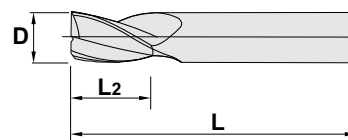
Solid carbide

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
691501	2	1,0	38	5	○			
691501.5	2	1,5	38	5	○			
691502	2	2,0	38	8	○			
691502.5	2	2,5	38	8	○			
691503	2	3,0	38	12	○			
691504	2	4,0	40	12	○			
691505	2	5,0	50	14	○			
691506	2	6,0	50	16	○			
691508	2	8,0	63	20	○			
691510	2	10,0	72	22	○			
691512	2	12,0	73	22	○			
691514	2	14,0	75	25	○			
691516	2	16,0	82	28	○			
691518	2	18,0	84	28	○			
691520	2	20,0	104	35	○			



Characteristics:

Solid carbide 3 flutes end mills.



Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★

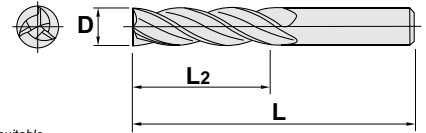
Normally available for immediate delivery ●
Only available in a limited quantity ○

6030

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
603001	3	1	40	5	○	○		○
603002	3	2	40	8	●	○		○
603003	3	3	40	12	●	○		○
603004	3	4	40	12	●	○		○
603005	3	5	50	14	●	○		○
603006	3	6	50	16	●	○		○
603007	3	7	60	20	●	○		○
603008	3	8	60	20	●	○		○
603010	3	10	70	22	●	○		○
603012	3	12	70	22	●	○		○
603014	3	14	75	25	●	○		○
603016	3	16	80	28	●	○		○
603018	3	18	80	28	●	○		○
603020	3	20	100	35	●	○		○
603025	3	25	100	35	○	○		○



Characteristics:
Solid carbide 3 flutes end mills (long)



☆ Not suitable ★ Suitable ⬤ Especially suitable

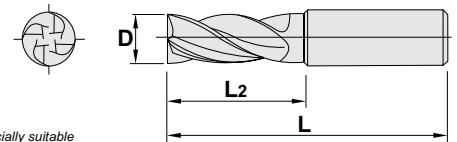
Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	☆	☆	★	☆

Normally available for immediate delivery ●
Only available in a limited quantity ○

6130		✱	D	L	L2	K10	TiN	TiCN	TiAlN
Ref.	613003	3	25	25	25	○			
	613004	3	25	25	25	○			
	613005	3	30	30	30	○			
	613006	3	30	30	30	○			
	613007	3	35	35	35	○			
	613008	3	35	35	35	○			
	613010	3	45	45	45	○			
	613012	3	45	45	45	○			
	613014	3	45	45	45	○			
	613016	3	45	45	45	○			
	613018	3	45	45	45	○			
	613020	3	55	55	55	○			
	613022	3	55	55	55	○			
	613025	3	55	55	55	○			
	613030	3	55	55	55	○			
	613032	3	55	55	55	○			



Characteristics:
Solid carbide 4 flutes end mills



☆ Not suitable ★ Suitable ⬤ Especially suitable

Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	☆	★	☆	☆	★	☆

Normally available for immediate delivery ●
Only available in a limited quantity ○

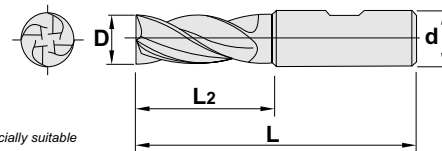
6040		✱	D	L	L2	K10	TiN	TiCN	TiAlN
Ref.	604001	4	1	40	5	○	○		○
	604002	4	2	40	8	●	●		●
	604003	4	3	40	12	●	●		●
	604004	4	4	40	12	●	●		●
	604005	4	5	50	14	●	●		●
	604006	4	6	50	16	●	●		●
	604007	4	7	60	20	●	●		●
	604008	4	8	60	20	●	●		●
	604009	4	9	60	20	●	●		●
	604010	4	10	70	22	●	●		●
	604012	4	12	70	22	●	●		●
	604014	4	14	75	25	●	●		●
	604016	4	16	80	28	●	●		●
	604018	4	18	80	28	●	●		●
	604020	4	20	100	35	●	●		●
	604022	4	22	100	35	○	○		○
	604025	4	25	100	35	○	○		○
	604030	4	30	100	35	○	○		○
	604032	4	32	100	35	○	○		○

Solid carbide
Drills
Boring heads
Arbors and adaptors

Inserts



Characteristics:
Solid carbide 4 flutes end mills
DIN 6527L 30°



Face milling cutters

6041

Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

Square shoulder cutters

Slot cutters

Porcupine cutters

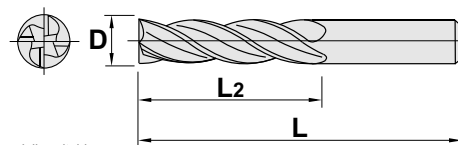
Specific applications and sets

Profile milling

Solid carbide



Characteristics:
Solid carbide 4 flutes end mills
(Long)



Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★

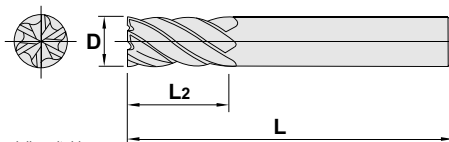
Normally available for immediate delivery ●
Only available in a limited quantity ○

6140

Ref.	Flutes	D	d	L	L2	K10	TiN	TiCN	TiAlN
614003	4	3		60	25	○			
614004	4	4		60	25	○			
614005	4	5		70	30	○			
614006	4	6		70	30	○			
614007	4	7		80	35	○			
614008	4	8		80	35	○			
614010	4	10		100	45	○			
614012	4	12		100	45	○			
614014	4	14		100	45	○			
614016	4	16		100	45	○			
614018	4	18		100	45	○			
614020	4	20		125	55	○			
614022	4	22		125	55	○			
614025	4	25		125	55	○			
614030	4	30		125	55	○			
614032	4	32		125	55	○			



Characteristics:
Solid carbide end mills (Positive rake angle).
For hard machining.

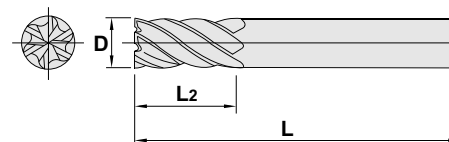


☆ Not suitable ★ Suitable ⚙ Especially suitable

6137		Steels					INOX	INOX	CAST	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²	IRON					K10	TiN	TiCN	TiAlN
Ref.	613706	6	6	6	6	6	60	20									
	613708	6	8	8	8	8	80	25									
	613710	6	10	10	10	10	80	30									
	613712	6	12	12	12	12	100	36									
	613716	6	16	16	16	16	106	46									
	613720	8	20	20	20	20	125	60									
	613725	8	25	25	25	25	150	75									



Characteristics:
Solid carbide end mills (Negative rake angle).
For hard machining.

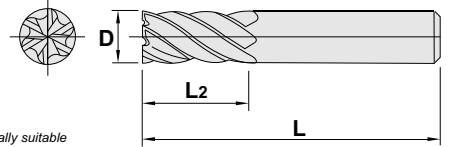


☆ Not suitable ★ Suitable ⚙ Especially suitable

6197		Steels					INOX	INOX	CAST	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²	IRON					K10	TiN	TiCN	TiAlN
Ref.	619706	6	6	6	6	6	60	20									
	619708	6	8	8	8	8	80	25									
	619710	6	10	10	10	10	80	30									
	619712	6	12	12	12	12	100	36									
	619716	6	16	16	16	16	106	46									
	619720	8	20	20	20	20	125	60									
	619725	8	25	25	25	25	150	75									

Solid carbide
Drills
Boring heads
Arbors and adaptors

Characteristics:
Solid carbide 6 flutes end mills.



☆ Not suitable ★ Suitable ♻️ Especially suitable				
Steels				
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC
★	★	★	★	★
INOX < 850 N/mm ²		INOX > 850 N/mm ²		CAST IRON
★		★		★
		Ti		Cu, Ms
		★		★
		Al		Plastics
		★		★

6060

Normally available for immediate delivery ●
Only available in a limited quantity ○

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
606003	6	3	40	12	●			○
606004	6	4	40	12	●			○
606005	6	5	50	14	●			○
606006	6	6	50	16	●			○
606007	6	7	60	20	●			○
606008	6	8	60	20	●			○
606009	6	9	60	20	●			○
606010	6	10	70	22	●			○
606011	6	11	70	22	●			○
606012	6	12	70	22	●			○
606014	6	14	75	25	●			○
606016	6	16	80	28	●			○
606018	6	18	80	28	●			○
606020	6	20	100	35	●			○
606022	6	22	100	35	●			○
606025	6	25	100	35	●			○

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

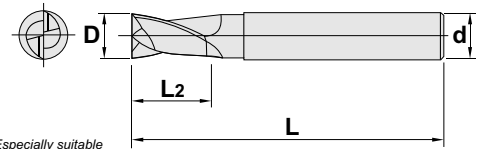
Specific applications and sets

Profile milling

Solid carbide



Characteristics:
Solid carbide 2 flutes torus end mills.

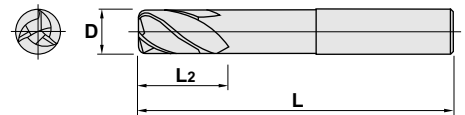


☆ Not suitable ★ Suitable ⬢ Especially suitable

Ref.	6327	Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	K10	TiN	TiCN	TiAlN
		2	D	d	L	L2											
632703	2	3	6	57	4											○	
632704	2	4	6	57	5											○	
632705	2	5	6	57	6											○	
632706	2	6	6	57	7											○	
632708	2	8	8	63	9											○	
632710	2	10	10	72	11											○	
632712	2	12	12	83	12											○	
632716	2	16	16	92	16											○	
632718	2	18	18	92	18											○	
632720	2	20	20	104	20											○	



Characteristics:
Solid carbide 2 flutes torus end mills (Long)



☆ Not suitable ★ Suitable ⬢ Especially suitable

Ref.	6337	Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	K10	TiN	TiCN	TiAlN
		2	D	L	L2												
633706	2	6	80	7												○	
633708	2	8	80	9												○	
633710	2	10	100	11												○	
633712	2	12	120	12												○	
633716	2	16	160	16												○	

Solid carbide
Drills
Boring heads
Arbors and adaptors

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

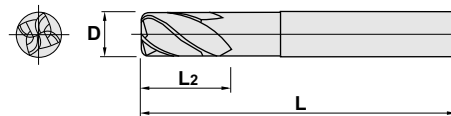
Specific applications and sets

Profile milling

Solid carbide

Characteristics:

Solid carbide 4 flutes torus end mills.



☆ Not suitable ★ Suitable ⊕ Especially suitable

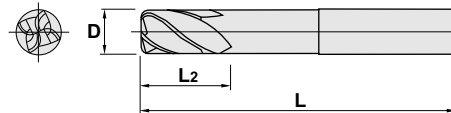
Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²					
★	★	⊕	⊕	⊕	★	★	⊕	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

6427			D	L	L2	K10	TiN	TiCN	TiAlN
Ref.	642706	4	6	57	7				○
	642708	4	8	63	9				○
	642710	4	10	72	11				○
	642712	4	12	83	12				○
	642716	4	16	92	16				○
	642718	4	18	92	18				○
	642720	4	20	104	20				○

Characteristics:

Solid carbide 4 flutes torus end mills.
(Long)



☆ Not suitable ★ Suitable ⊕ Especially suitable

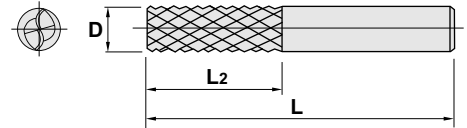
Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²					
★	★	⊕	⊕	⊕	★	★	⊕	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

6437			D	L	L2	K10	TiN	TiCN	TiAlN
Ref.	643706	4	6	80	7				○
	643708	4	8	80	9				○
	643710	4	10	100	11				○
	643712	4	12	120	12				○
	643716	4	16	160	16				○



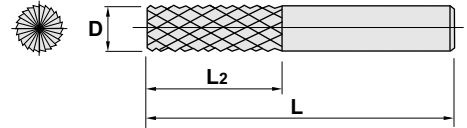
Characteristics:
Solid carbide 2 flutes contour end mills for plastics.



7965		Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	★	K10	TiN	TiCN
		✱	D	L		L2											
Ref.	796502	2	2	38		10											
	796503	2	3	38		12											
	796504	2	4	40		15											
	796505	2	5	50		16											
	796506	2	6	50		18											
	796508	2	8	63		25											
	796510	2	10	72		30											
	796512	2	12	73		30											
	796514	2	14	75		30											
	796516	2	16	82		30											
	796518	2	18	84		32											
	796520	2	20	104		35											



Characteristics:
Solid carbide 2 flutes contour end mills for plastics, with front cut.



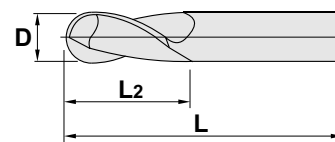
7975		Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	K10	TiN	TiCN	TiAlN
		✱	D	L		L2											
Ref.	797502	2	2	38		10											
	797503	2	3	38		12											
	797504	2	4	40		15											
	797505	2	5	50		16											
	797506	2	6	50		18											
	797508	2	8	63		25											
	797510	2	10	72		30											
	797512	2	12	73		30											
	797514	2	14	75		30											
	797516	2	16	82		30											
	797518	2	18	84		32											
	797520	2	20	104		35											

Solid carbide
Drills
Boring heads
Arbors and adaptors

Inserts



Characteristics:
Solid carbide 2 flutes ball nose end mills



Face milling cutters

6320

Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

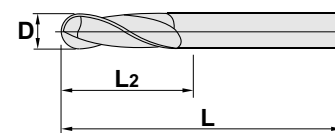
Profile milling

Solid carbide

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
632001	2	1	40	5	○	○		○
632002	2	2	40	8	●	○		●
632003	2	3	40	12	●	○		●
632004	2	4	40	12	●	○		●
632005	2	5	50	14	●	○		●
632006	2	6	50	16	●	○		●
632008	2	8	60	20	●	○		●
632010	2	10	70	22	●	○		●
632012	2	12	70	22	●	○		●
632014	2	14	75	25	○	○		○
632016	2	16	80	28	○	○		○
632018	2	18	80	28	○	○		○
632020	2	20	100	35	○	○		○
632025	2	25	100	35	○	○		○



Characteristics:
Solid carbide 2 flutes ball nose end mills (Long)



Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	★	★	★

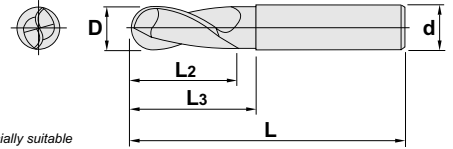
Normally available for immediate delivery ●
Only available in a limited quantity ○

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
642003	2	3	60	25	●	○		●
642004	2	4	60	25	●	○		●
642005	2	5	70	30	●	○		●
642006	2	6	70	30	●	○		●
642008	2	8	80	35	●	○		●
642010	2	10	100	45	●	○		●
642012	2	12	100	45	●	○		●
642014	2	14	100	45	○	○		○
642016	2	16	100	45	●	○		●
642018	2	18	100	45	○	○		○
642020	2	20	125	55	●	○		●
642025	2	25	125	55	○	○		○



Characteristics:

Solid carbide 2 flutes ball nose end mills for aluminium.



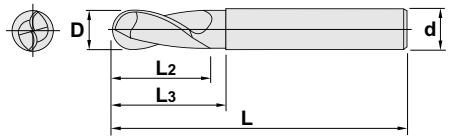
☆ Not suitable ★ Suitable ⚡ Especially suitable

Ref.	69455	Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	K10	TiN	TiCN	TiAlN
		2	D	d	L	L2	L3										
694502	2	2	6	57	4	6	○										
694503	2	3	6	57	6	9	○										
694504	2	4	6	57	8	12	○										
694505	2	5	6	57	10	15	○										
694506	2	6	6	57	12	20	○										
694508	2	8	8	63	16	20	○										
694510	2	10	10	72	20	31	○										
694512	2	12	12	83	24	37	○										
694516	2	16	16	92	32	43	○										
694520	2	20	20	104	40	53	○										



Characteristics:

Solid carbide 2 flutes ball nose end mills for aluminium. (Long)



☆ Not suitable ★ Suitable ⚡ Especially suitable

Ref.	69555	Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	K10	TiN	TiCN	TiAlN
		2	D	d	L	L2	L3										
695502	2	2	6	80	4	12	○										
695503	2	3	6	80	6	15	○										
695504	2	4	6	80	8	18	○										
695505	2	5	6	80	10	25	○										
695506	2	6	6	80	12	30	○										
695508	2	8	8	80	16	35	○										
695510	2	10	10	100	20	40	○										
695512	2	12	12	120	24	50	○										
695516	2	16	16	160	32	55	○										
695520	2	20	20	160	40	60	○										

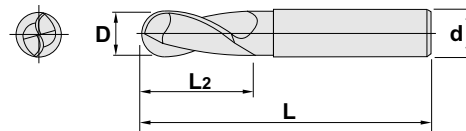
Solid carbide
Drills
Boring heads
Arbors and adaptors

Inserts



Characteristics:

Solid carbide 2 flutes ball nose end mills.



☆ Not suitable ★ Suitable ⊕ Especially suitable

Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²					
★	★	⊕	⊕	⊕	★	★	★	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

7597

Ref.	Flutes	D	d	L	L2	K10	TiN	TiCN	TiAlN
759702	2	2	6	80	6				○
759703	2	3	6	80	7				○
759704	2	4	6	80	8				○
759705	2	5	6	80	10				○
759706	2	6	6	80	10				○
759708	2	8	8	100	16				○
759710	2	10	10	120	19				○
759712	2	12	12	120	22				○
759716	2	16	16	160	26				○
759720	2	20	20	160	32				○
759725	2	25	25	160	32				○

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

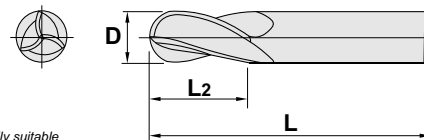
Specific applications and sets

Profile milling

Solid carbide

Characteristics:

Solid carbide 3 flutes ball nose end mills



☆ Not suitable ★ Suitable ⊕ Especially suitable

Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²					
⊕	⊕	⊕	⊕	★	★	★	⊕	★	★	★	★

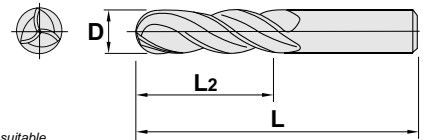
Normally available for immediate delivery ●
Only available in a limited quantity ○

6330

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
633001	3	1	40	5	○	○		
633002	3	2	40	8	○	○		
633003	3	3	40	12	○	○		
633004	3	4	40	12	○	○		
633005	3	5	50	14	○	○		
633006	3	6	50	16	○	○		
633007	3	7	60	20	○	○		
633008	3	8	60	20	○	○		
633009	3	9	60	20	○	○		
633010	3	10	70	22	○	○		
633011	3	11	70	22	○	○		
633012	3	12	70	22	○	○		
633013	3	13	75	25	○	○		
633014	3	14	75	25	○	○		
633015	3	15	75	25	○	○		
633016	3	16	80	28	○	○		
633018	3	18	80	28	○	○		
633020	3	20	100	35	○	○		
633022	3	22	100	35	○	○		
633025	3	25	100	35	○	○		
633030	3	30	100	35	○	○		
633032	3	32	100	35	○	○		



Characteristics:
Solid carbide 3 flutes ball nose end mills

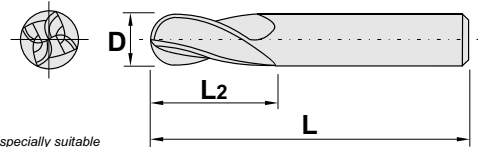


☆ Not suitable ★ Suitable ⬤ Especially suitable

6430	Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
	<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	K10	TiN	TiCN	TiAlN
Ref.	Flutes	D	L	L2												
643003	3	3	60	25	○											
643004	3	4	60	25	○											
643005	3	5	70	30	○											
643006	3	6	70	30	○											
643008	3	8	80	35	○											
643010	3	10	100	45	○											
643012	3	12	100	45	○											
643014	3	14	100	45	○											
643016	3	16	100	45	○											
643018	3	18	100	45	○											
643020	3	20	125	55	○											
643022	3	22	125	55	○											
643025	3	25	125	55	○											
643030	3	30	125	55	○											
643032	3	32	125	55	○											



Characteristics:
Solid carbide 4 flutes ball nose end mills



☆ Not suitable ★ Suitable ⬤ Especially suitable

6340	Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
	<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	★	★	★	★	★	★	★	K10	TiN	TiCN	TiAlN
Ref.	Flutes	D	L	L2												
634001	4	1	40	5	●	○										
634002	4	2	40	8	●	○										
634003	4	3	40	12	●	○										
634004	4	4	40	12	●	○										
634005	4	5	50	14	●	○										
634006	4	6	50	16	●	○										
634008	4	8	60	20	●	○										
634010	4	10	70	22	●	○										
634012	4	12	70	22	●	○										
634014	4	14	75	25	●	○										
634016	4	16	80	28	●	○										
634018	4	18	80	28	●	○										
634020	4	20	100	35	●	○										
634025	4	25	100	35	●	○										

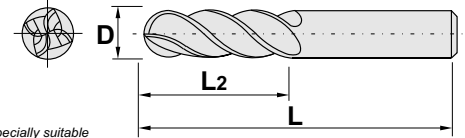
Solid carbide
Drills
Boring heads
Arbors and adaptors

Inserts



Characteristics:

Solid carbide 4 flutes ball nose end mills (Long)



☆ Not suitable ★ Suitable ♻️ Especially suitable

Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²					
★	★	★	★	★	★	★	★	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

6440

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
644003	4	3	60	25	○			○
644004	4	4	60	25	○			○
644005	4	5	70	30	○			○
644006	4	6	70	30	○			○
644008	4	8	80	35	○			○
644010	4	10	100	45	○			○
644012	4	12	100	45	○			○
644014	4	14	100	45	○			○
644016	4	16	100	45	○			○
644018	4	18	100	45	○			○
644020	4	20	125	55	○			○
644025	4	25	125	55	○			○

Face milling cutters

Square shoulder cutters

Slot cutters

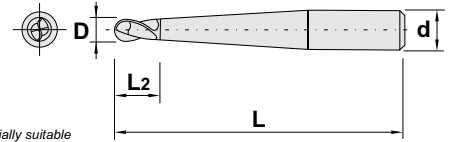
Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

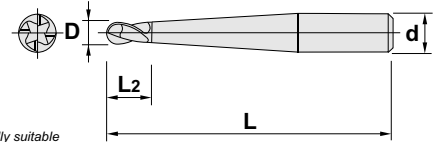
Characteristics:
Solid carbide 2 flutes ball nose copy milling cutters.



☆ Not suitable ★ Suitable ✪ Especially suitable

6521		Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○						
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	✪	★	✪	★	★	★	★	K10	TiN	TiCN	TiAlN			
		✪	D	d	L	L2														
Ref.	652103	2	3	6	57	4														●
	652104	2	4	6	57	5														●
	652105	2	5	8	63	6														●
	652106	2	6	8	63	6														●
	652108	2	8	10	72	10														●
	652110	2	10	12	73	12														●

Characteristics:
Solid carbide 4 flutes ball nose copy milling cutters.



☆ Not suitable ★ Suitable ✪ Especially suitable

6541		Steels					INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○						
		<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	✪	★	✪	★	★	★	★	K10	TiN	TiCN	TiAlN			
		✪	D	d	L	L2														
Ref.	654104	4	4	8	100	6														●
	654105	4	5	8	63	6														○
	654105L	4	5	8	100	6														●
	654106	4	6	8	63	6														○
	654106L	4	6	10	100	9														●
	654108	4	8	10	72	10														○
	654108L	4	8	10	100	12														●
	654110	4	10	12	73	12														○
	654110L	4	10	12	100	15														●
	654112	4	12	16	150	15														●

Solid carbide

Drills

Boring heads

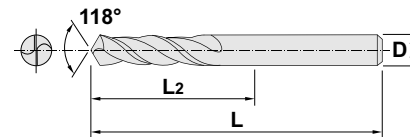
Arbors and adaptors

Inserts



Characteristics:

Hard-metal twist drills
2 Flutes
DIN 6539 3xD Z=2



☆ Not suitable ★ Suitable ⊕ Especially suitable

Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	850 N/mm ²	850 N/mm ²					
★	★	★	★	★	★	★	★	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

7020

Ref.	D	L	L2	K10	Ref.	D	L	L2	K10
702000.5	0.5	26	6	●	702006.8	6.8	74	34	●
702000.6	0.6	26	6	●	702006.9	6.9	74	34	●
702000.7	0.7	26	6	●	702007.0	7.0	74	34	●
702000.8	0.8	26	6	●	702007.1	7.1	74	34	●
702000.9	0.9	26	6	●	702007.2	7.2	74	34	●
702001.0	1.0	26	6	●	702007.3	7.3	74	34	●
702001.1	1.1	28	7	●	702007.4	7.4	74	34	●
702001.2	1.2	30	8	●	702007.5	7.5	74	34	●
702001.3	1.3	30	8	●	702007.6	7.6	79	36	●
702001.4	1.4	32	9	●	702007.7	7.7	79	36	●
702001.5	1.5	32	9	●	702007.8	7.8	79	36	●
702001.6	1.6	34	10	●	702007.9	7.9	79	36	●
702001.7	1.7	34	10	●	702008.0	8.0	79	36	●
702001.8	1.8	36	11	●	702008.1	8.1	79	36	●
702001.9	1.9	36	11	●	702008.2	8.2	79	36	●
702002.0	2.0	38	12	●	702008.3	8.3	79	36	●
702002.1	2.1	38	12	●	702008.4	8.4	79	36	●
702002.2	2.2	40	13	●	702008.5	8.5	79	36	●
702002.3	2.3	40	13	●	702008.6	8.6	84	40	●
702002.4	2.4	43	14	●	702008.7	8.7	84	40	●
702002.5	2.5	43	14	●	702008.8	8.8	84	40	●
702002.6	2.6	43	14	●	702008.9	8.9	84	40	●
702002.7	2.7	46	16	●	702009.0	9.0	84	40	●
702002.8	2.8	46	16	●	702009.1	9.1	84	40	●
702002.9	2.9	46	16	●	702009.2	9.2	84	40	●
702003.0	3.0	46	16	●	702009.3	9.3	84	40	●
702003.1	3.1	49	18	●	702009.4	9.4	84	40	●
702003.2	3.2	49	18	●	702009.5	9.5	84	40	●
702003.3	3.3	49	18	●	702009.6	9.6	86	43	●
702003.4	3.4	52	20	●	702009.7	9.7	86	43	●
702003.5	3.5	52	20	●	702009.8	9.8	86	43	●
702003.6	3.6	52	20	●	702009.9	9.9	86	43	●
702003.7	3.7	52	20	●	702010.0	10.0	86	43	●
702003.8	3.8	55	22	●	702010.2	10.2	86	43	●
702003.9	3.9	55	22	●	702010.5	10.5	86	43	●
702004.0	4.0	55	22	●	702011.0	11.0	95	47	●
702004.1	4.1	55	22	●	702011.5	11.5	95	47	●
702004.2	4.2	55	22	●	702012.0	12.0	102	51	●
702004.3	4.3	58	24	●	702012.5	12.5	102	51	●
702004.4	4.4	58	24	●	702013.0	13.0	102	51	●
702004.5	4.5	58	24	●	702013.5	13.5	107	54	●
702004.6	4.6	58	24	●	702014.0	14.0	107	54	●
702004.7	4.7	58	24	●	702014.5	14.5	111	56	●
702004.8	4.8	62	26	●	702015.0	15.0	111	56	●
702004.9	4.9	62	26	●	702015.5	15.5	115	58	●
702005.0	5.0	62	26	●	702016.0	16.0	115	58	●
702005.1	5.1	62	26	●	702016.5	16.5	119	60	●
702005.2	5.2	62	26	●	702017.0	17.0	119	60	●
702005.3	5.3	62	26	●	702017.5	17.5	123	62	●
702005.4	5.4	66	28	●	702018.0	18.0	123	62	●
702005.5	5.5	66	28	●	702018.5	18.5	127	64	●
702005.6	5.6	66	28	●	702019.0	19.0	127	64	●
702005.7	5.7	66	28	●	702019.5	19.5	131	66	●
702005.8	5.8	66	28	●	702020.0	20.0	131	66	●
702005.9	5.9	66	28	●					
702006.0	6.0	66	28	●					
702006.1	6.1	70	31	●					
702006.2	6.2	70	31	●					
702006.3	6.3	70	31	●					
702006.4	6.4	70	31	●					
702006.5	6.5	70	31	●					
702006.6	6.6	70	31	●					
702006.7	6.7	70	31	●					

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

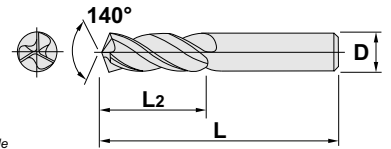
Specific applications and sets

Profile milling

Solid carbide



Characteristics:
 Hard-metal twist drills
 3 Flutes
 DIN 6539 3xD Z=3



☆ Not suitable ★ Suitable ✦ Especially suitable

Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²					
✦	✦	✦	✦	★	★	★	✦	★	✦	✦	★

Normally available for immediate delivery ●
 Only available in a limited quantity ○

7030									
Ref.	D	L	L2	K10	Ref.	D	L	L2	K10
703003.0	3.0	46	16	●	703009.3	9.3	84	40	○
703003.1	3.1	49	18	○	703009.4	9.4	84	40	○
703003.2	3.2	49	18	○	703009.5	9.5	84	40	○
703003.3	3.3	49	18	○	703009.6	9.6	89	43	○
703003.4	3.4	52	20	○	703009.7	9.7	89	43	○
703003.5	3.5	52	20	○	703009.8	9.8	89	43	○
703003.6	3.6	52	20	○	703009.9	9.9	89	43	○
703003.7	3.7	52	20	○	703010.0	10.0	89	43	●
703003.8	3.8	55	22	○	703010.2	10.2	89	43	○
703003.9	3.9	55	22	○	703010.5	10.5	89	43	○
703004.0	4.0	55	22	●	703011.0	11.0	95	47	●
703004.1	4.1	55	22	○	703011.5	11.5	95	47	○
703004.2	4.2	55	22	○	703012.0	12.0	102	51	●
703004.3	4.3	58	24	○	703012.5	12.5	102	51	○
703004.4	4.4	58	24	○	703013.0	13.0	102	51	●
703004.5	4.5	58	24	○	703013.5	13.5	107	54	○
703004.6	4.6	58	24	○	703014.0	14.0	107	54	●
703004.7	4.7	58	24	○	703014.5	14.5	111	56	○
703004.8	4.8	62	26	○	703015.0	15.0	111	56	●
703004.9	4.9	62	26	○	703015.5	15.5	115	58	○
703005.0	5.0	62	26	●	703016.0	16.0	115	58	●
703005.1	5.1	62	26	○	703016.5	16.5	119	60	○
703005.2	5.2	62	26	○	703017.0	17.0	119	60	●
703005.3	5.3	62	26	○	703017.5	17.5	123	62	○
703005.4	5.4	66	28	○	703018.0	18.0	123	62	●
703005.5	5.5	66	28	○	703018.5	18.5	127	64	○
703005.6	5.6	66	28	○	703019.0	19.0	127	64	●
703005.7	5.7	66	28	○	703019.5	19.5	131	66	○
703005.8	5.8	66	28	○	703020.0	20.0	131	66	●
703005.9	5.9	66	28	○					
703006.0	6.0	66	28	●					
703006.1	6.1	70	31	○					
703006.2	6.2	70	31	○					
703006.3	6.3	70	31	○					
703006.4	6.4	70	31	○					
703006.5	6.5	70	31	○					
703006.6	6.6	70	31	○					
703006.7	6.7	70	31	○					
703006.8	6.8	74	34	○					
703006.9	6.9	74	34	○					
703007.0	7.0	74	34	●					
703007.1	7.1	74	34	○					
703007.2	7.2	74	34	○					
703007.3	7.3	74	34	○					
703007.4	7.4	74	34	○					
703007.5	7.5	74	34	○					
703007.6	7.6	79	36	○					
703007.7	7.7	79	36	○					
703007.8	7.8	79	36	○					
703007.9	7.9	79	36	○					
703008.0	8.0	79	36	●					
703008.1	8.1	79	36	○					
703008.2	8.2	79	36	○					
703008.3	8.3	79	36	○					
703008.4	8.4	79	36	○					
703008.5	8.5	79	36	○					
703008.6	8.6	84	40	○					
703008.7	8.7	84	40	○					
703008.8	8.8	84	40	○					
703008.9	8.9	84	40	○					
703009.0	9.0	84	40	●					
703009.1	9.1	84	40	○					
703009.2	9.2	84	40	○					

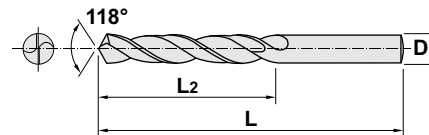
Solid carbide
Drills
Boring heads
Arbors and adaptors

Inserts



Characteristics:

Hard-metal twist drills 2 flutes
(Long)
DIN 338 5xD Z=2



☆ Not suitable ★ Suitable ⊕ Especially suitable

Steels				INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>850 N/mm ²	>850 N/mm ²					
⊕	⊕	⊕	⊕	★	★	⊕	⊕	⊕	★	⊕

Normally available for immediate delivery ●
Only available in a limited quantity ○

7120

Ref.	D	L	L2	K10	Ref.	D	L	L2	K10
712001.0	1.0	34	12	●	712007.3	7.3	109	69	○
712001.1	1.1	36	14	○	712007.4	7.4	109	69	○
712001.2	1.2	38	16	○	712007.5	7.5	109	69	○
712001.3	1.3	38	16	●	712007.6	7.6	117	75	○
712001.4	1.4	40	18	○	712007.7	7.7	117	75	○
712001.5	1.5	40	18	○	712007.8	7.8	117	75	○
712001.6	1.6	43	20	○	712007.9	7.9	117	75	○
712001.7	1.7	43	20	○	712008.0	8.0	117	75	●
712001.8	1.8	46	22	○	712008.1	8.1	117	75	○
712001.9	1.9	46	22	○	712008.2	8.2	117	75	○
712002.0	2.0	49	24	●	712008.3	8.3	117	75	○
712002.1	2.1	49	24	○	712008.4	8.4	117	75	○
712002.2	2.2	53	27	○	712008.5	8.5	117	75	○
712002.3	2.3	53	27	○	712008.6	8.6	125	81	○
712002.4	2.4	57	30	○	712008.7	8.7	125	81	○
712002.5	2.5	57	30	○	712008.8	8.8	125	81	○
712002.6	2.6	57	30	○	712008.9	8.9	125	81	○
712002.7	2.7	60	33	○	712009.0	9.0	125	81	●
712002.8	2.8	60	33	○	712009.1	9.1	125	81	○
712002.9	2.9	60	33	○	712009.2	9.2	125	81	○
712003.0	3.0	60	33	●	712009.3	9.3	125	81	○
712003.1	3.1	65	33	○	712009.4	9.4	125	81	○
712003.2	3.2	65	36	○	712009.5	9.5	125	81	○
712003.3	3.3	65	36	○	712009.6	9.6	133	87	○
712003.4	3.4	70	36	○	712009.7	9.7	133	87	○
712003.5	3.5	70	39	○	712009.8	9.8	133	87	○
712003.6	3.6	70	39	○	712009.9	9.9	133	87	○
712003.7	3.7	70	39	○	712010.0	10.0	133	87	●
712003.8	3.8	75	43	○	712010.2	10.2	133	87	○
712003.9	3.9	75	43	○	712010.5	10.5	133	87	○
712004.0	4.0	75	43	●	712010.8	10.8	142	94	○
712004.1	4.1	75	43	○	712011.0	11.0	142	94	●
712004.2	4.2	75	43	○	712011.5	11.5	142	94	○
712004.3	4.3	80	47	○	712012.0	12.0	151	101	●
712004.4	4.4	80	47	○	712012.5	12.5	151	101	○
712004.5	4.5	80	47	○	712013.0	13.0	151	101	●
712004.6	4.6	80	47	○	712013.5	13.5	160	108	○
712004.7	4.7	80	47	○	712014.0	14.0	160	108	●
712004.8	4.8	86	52	○	712014.5	14.5	169	114	○
712004.9	4.9	86	52	○	712015.0	15.0	169	114	●
712005.0	5.0	86	52	●	712015.5	15.5	178	120	○
712005.1	5.1	86	52	○	712016.0	16.0	178	120	●
712005.2	5.2	86	52	○					
712005.3	5.3	86	52	○					
712005.4	5.4	93	57	○					
712005.5	5.5	93	57	○					
712005.6	5.6	93	57	○					
712005.7	5.7	93	57	○					
712005.8	5.8	93	57	○					
712005.9	5.9	93	57	○					
712006.0	6.0	93	57	●					
712006.1	6.1	101	63	○					
712006.2	6.2	101	63	○					
712006.3	6.3	101	63	○					
712006.4	6.4	101	63	○					
712006.5	6.5	101	63	○					
712006.6	6.6	101	63	○					
712006.7	6.7	101	63	○					
712006.8	6.8	109	69	○					
712006.9	6.9	109	69	○					
712007.0	7.0	109	69	●					
712007.1	7.1	109	69	○					
712007.2	7.2	109	69	○					

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

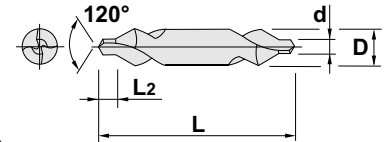
Specific applications and sets

Profile milling

Solid carbide



Characteristics:
Solid carbide center drill.

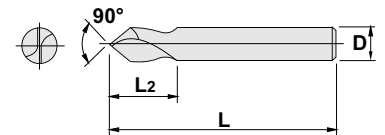


☆ Not suitable ★ Suitable ✪ Especially suitable

80	Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○							
	<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²						D	d	L	L2	K10	TiN	TiCN	TiAlN
Ref. 800000.80	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
800001.00	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
800001.25	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
800001.60	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
800002.00	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
800002.50	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
800003.15	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					○			
800004.00	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					○			
800005.00	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					○			



Characteristics:
Solid carbide center drill for C.N.C.
90°



☆ Not suitable ★ Suitable ✪ Especially suitable

81	Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○							
	<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²						D	L	L2	K10	TiN	TiCN	TiAlN	
Ref. 810006	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
810008	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
810010	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
810012	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					●			
810014	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					○			
810016	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					○			
810020	✪	✪	✪	✪	★	✪	✪	✪	✪	✪	✪	★					○			

Solid carbide

Drills

Boring heads

Arbors and adaptors

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

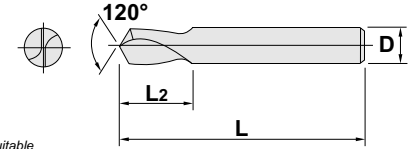
Specific applications and sets

Profile milling

Solid carbide

Characteristics:

Solid carbide center drill for C.N.C.
120°



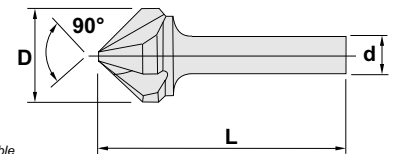
☆ Not suitable ★ Suitable ⊕ Especially suitable											
Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

82		D	L	L2	K10	TiN	TiCN	TiAlN
Ref.	820006	6	50	16	●			
	820008	8	60	20	●			
	820010	10	70	22	●			
	820012	12	70	22	●			
	820014	14	75	25	○			
	820016	16	80	25	○			
	820020	20	100	30	○			

Characteristics:

Solid carbide countersinks 3 flutes



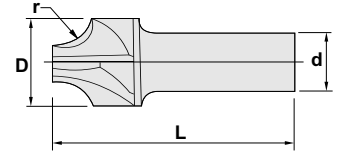
☆ Not suitable ★ Suitable ⊕ Especially suitable											
Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	INOX < 850 N/mm ²	INOX > 850 N/mm ²	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	★	★	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

83		D	d	L	Z	K10	TiN	TiCN	TiAlN
Ref.	833005.3	5,3	6	50	3	○			
	833005.8	5,8	6	50	3	○			
	833006.3	6,3	6	50	3	○			
	833007.3	7,3	6	50	3	○			
	833008.3	8,3	6	50	3	○			
	833009.4	9,4	8	50	3	○			
	833010.4	10,4	6	50	3	○			
	833012.4	12,4	8	56	3	○			
	833013.4	13,4	8	60	3	○			
	833014.4	14,4	8	60	3	○			
	833016.5	16,4	10	60	3	○			
	833019.5	19,5	10	60	3	○			
	833020.5	20,5	10	60	3	○			
	833025.0	25,0	10	67	3	○			
	833031.0	31,0	12	71	3	○			



Characteristics:
Solid carbide countersinks with radius



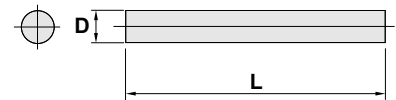
☆ Not suitable ★ Suitable ⊛ Especially suitable

Steels					INOX <	INOX >	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm ²	<850 N/mm ²	<1.100 N/mm ²	<1.300 N/mm ²	>45 HRC	< 850 N/mm ²	> 850 N/mm ²					
⊛	⊛	⊛	★	★	⊛	★	⊛	★	★	⊛	★

Normally available for immediate delivery ●
Only available in a limited quantity ○

84		D	d	r	L	z	K10	TiN	TiCN	TiAlN
Ref.	844001.00	8,0	8	1,00	50	4	●			
	844001.25	8,0	8	1,25	50	4	○			
	844001.50	10,0	10	1,50	50	4	○			
	844001.75	10,0	10	1,75	50	4	○			
	844002.00	12,0	12	2,00	50	4	●			
	844002.25	12,0	12	2,25	50	4	○			
	844002.50	12,0	12	2,50	50	4	○			
	844003.00	14,0	12	3,00	55	4	●			
	844003.50	16,0	12	3,50	55	4	○			
	844004.00	16,0	12	4,00	60	4	●			
	844004.50	18,0	12	4,50	60	4	○			
	844005.00	20,0	16	5,00	65	4	●			
	844006.00	21,0	16	6,00	65	4	●			
	844008.00	26,5	20	8,00	70	4	●			
	844010.00	32,0	20	10,00	70	4	○			
	844012.00	38,0	20	12,00	75	6	○			

Characteristics:
Centerless ground carbide



85		D	L	K10	TiN	TiCN	TiAlN
Ref.	850002	2	100	●			
	850003	3	100	●			
	850004	4	100	●			
	850005	5	100	●			
	850006	6	100	●			
	850007	7	100	●			
	850008	8	100	●			
	850009	9	100	●			
	850010	10	100	●			
	850012	12	100	●			
	850014	14	100	○			
	850016	16	100	○			
	850018	18	100	○			
	850020	20	100	○			

Normally available for immediate delivery ●
Only available in a limited quantity ○

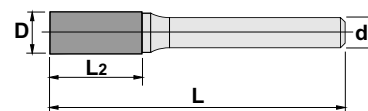
Solid carbide

Drills

Boring heads

Arbors and adaptors

Inserts



Face milling cutters

900		Characteristics: Cylindrical - Straight					Normally available for immediate delivery ● Only available in a limited quantity ○			
Ref.		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
90003		3	3	40	14	-	●			
90006		6	3	44	14	-	●			
90008		8	6	63	18	-	●			
90010		10	6	65	20	-	●			
90012		12	6	70	25	-	●			
90016		16	8	70	25	-	●			

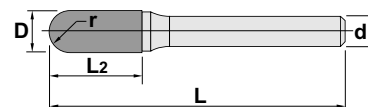
Square shoulder cutters

Slot cutters

901		Characteristics: Cylindrical - Crossed					Normally available for immediate delivery ● Only available in a limited quantity ○			
Ref.		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
90106		6	3	44	14	-	●			
90108		8	6	63	18	-	●			
90110		10	6	65	20	-	●			
90112		12	6	70	25	-	●			
90116		16	8	70	25	-	●			

Porcupine cutters

Specific applications and sets

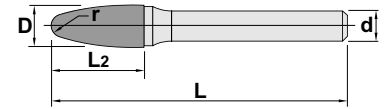


Profile milling

910		Characteristics: Cylindrical round top - Straight					Normally available for immediate delivery ● Only available in a limited quantity ○			
Ref.		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
91003		3	3	40	14	1,5	●			
91006		6	3	44	14	3,0	●			
91008		8	6	63	18	4,0	●			
91010		10	6	65	20	5,0	●			
91012		12	6	70	25	6,0	●			
91016		16	8	70	25	8,0	●			

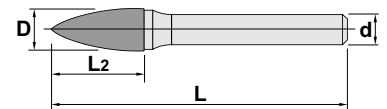
Solid carbide

911		Characteristics: Cylindrical round top - Crossed					Normally available for immediate delivery ● Only available in a limited quantity ○			
Ref.		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
91106		6	3	44	14	3,0	●			
91108		8	6	63	18	4,0	●			
91110		10	6	65	20	5,0	●			
91112		12	6	70	25	6,0	●			
91116		16	8	70	25	8,0	●			



920		Characteristics: Tree radius nose - Straight					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	92003	3	3	40	12	0,8	●			
	92006	6	3	44	14	1,5	●			
	92008	8	6	61	16	2,0	●			
	92010	10	6	65	20	2,5	●			
	92012	12	6	70	25	3,0	●			
	92016	16	8	70	25	5,0	●			

921		Characteristics: Tree radius nose - Crossed					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	92106	6	3	44	14	1,5	●			
	92108	8	6	61	16	2,0	●			
	92110	10	6	65	20	2,5	●			
	92112	12	6	70	25	3,0	●			
	92116	16	8	70	25	5,0	●			

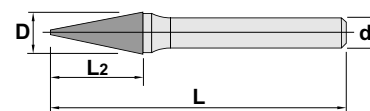


930		Characteristics: Tree pointed - Straight					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	93003	3	3	40	12	-	●			
	93006	6	3	44	14	-	●			
	93008	8	6	62	16	-	●			
	93010	10	6	65	20	-	●			
	93012	12	6	70	25	-	●			
	93016	16	8	72	27	-	●			

931		Characteristics: Tree pointed - Crossed					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	93106	6	3	44	14	-	●			
	93108	8	6	62	16	-	●			
	93110	10	6	65	20	-	●			
	93112	12	6	70	25	-	●			
	93116	16	8	72	27	-	●			

Solid carbide
Drills
Boring heads
Arbors and adaptors

Inserts



Face milling cutters

940

Characteristics: Cone - Straight

Normally available for immediate delivery ●

Only available in a limited quantity ○

Ref.	D	d	L	L2	r	K10	TiN	TiCN	TiAlN
94003	3	3	50	12	-	●			
94006	6	3	44	14	-	●			
94008	8	6	62	16	-	●			
94010	10	6	63	18	-	●			
94012	12	6	65	20	-	●			
94016	16	8	70	25	-	●			

Square shoulder cutters

Slot cutters

941

Characteristics: Cone - Crossed

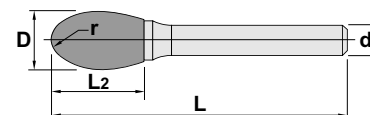
Normally available for immediate delivery ●

Only available in a limited quantity ○

Ref.	D	d	L	L2	r	K10	TiN	TiCN	TiAlN
94106	6	3	44	14	-	●			
94108	8	6	62	16	-	●			
94110	10	6	63	18	-	●			
94112	12	6	65	20	-	●			
94116	16	8	70	25	-	●			

Porcupine cutters

Specific applications and sets



Profile milling

950

Characteristics: Olive (Egg) - Straight

Normally available for immediate delivery ●

Only available in a limited quantity ○

Ref.	D	d	L	L2	r	K10	TiN	TiCN	TiAlN
95003	3	3	40	6	1,2	●			
95006	6	3	39	9	2,5	●			
95008	8	6	59	14	3,7	●			
95010	10	6	61	16	4,0	●			
95012	12	6	65	20	5,0	●			
95016	16	8	70	25	6,5	●			

Solid carbide

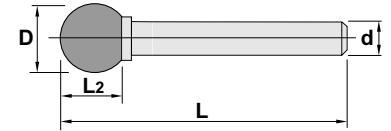
951

Characteristics: Olive (Egg) - Crossed

Normally available for immediate delivery ●

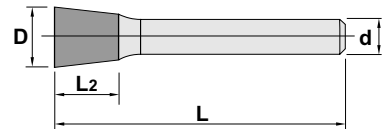
Only available in a limited quantity ○

Ref.	D	d	L	L2	r	K10	TiN	TiCN	TiAlN
95106	6	3	39	9	2,5	●			
95108	8	6	59	14	3,7	●			
95110	10	6	61	16	4,0	●			
95112	12	6	65	20	5,0	●			
95116	16	8	70	25	6,5	●			



960		Characteristics: Ball - Straight					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	96003	3	3	40	3	-	●			
	96006	6	3	35	5	-	●			
	96008	8	6	52	7	-	●			
	96010	10	6	54	9	-	●			
	96012	12	6	56	11	-	●			
	96016	16	8	59	14	-	●			

961		Characteristics: Ball - Crossed					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	96106	6	3	35	5	-	●			
	96108	8	6	52	7	-	●			
	96110	10	6	54	9	-	●			
	96112	12	6	56	11	-	●			
	96116	16	8	59	14	-	●			

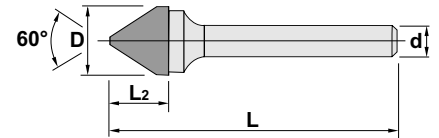


970		Characteristics: Inverted cone - Straight					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	97003	3	3	40	3	-	●			
	97006	6	3	36	6	-	●			
	97008	8	6	53	8	-	●			
	97010	10	6	55	10	-	●			
	97012	12	6	57	12	-	●			
	97016	16	8	60	15	-	●			

971		Characteristics: Inverted cone - Crossed					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	97106	6	3	36	6	-	●			
	97108	8	6	53	8	-	●			
	97110	10	6	55	10	-	●			
	97112	12	6	57	12	-	●			
	97116	16	8	60	15	-	●			

Solid carbide
Drills
Boring heads
Arbors and adaptors

Inserts



Face milling cutters

98

Characteristics: Deburring 60°

Normally available for immediate delivery ●

Only available in a limited quantity ○

Ref.		D	d	L	L2	K10	TiN	TiCN	TiAlN
98006		6	3	50	6	●			
98008		8	6	53	8	●			
98010		10	6	55	10	●			
98012		12	6	57	12	●			
98016		16	6	61	16	●			

Square shoulder cutters

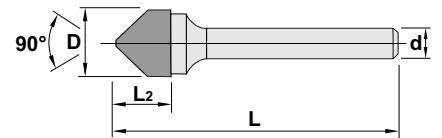
Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide



99

Characteristics: Deburring 90°

Normally available for immediate delivery ●

Only available in a limited quantity ○

Ref.		D	d	L	L2	K10	TiN	TiCN	TiAlN
99006		6	6	50	6	●			
99008		8	6	53	8	●			
99010		10	6	55	10	●			
99012		12	6	57	12	●			
99016		16	6	61	16	●			



Solid carbide

Drills

Boring heads

Arbors and adaptors

Cutting data for solid carbide

Material	Condition	Feed rate S=mm/2 Ø						Coolant	Cutting speed m/min
		2-3	4-6	7-10	11-15	16-20	21-32		
Structural steel	R.400/600	0.015	0.02	0.03	0.04	0.05	0.07	Emulsion	60-80
	R.600/1000	0.01	0.015	0.02	0.03	0.04	0.06		40-60
	R.1000/1400	0.01	0.01	0.02	0.03	0.04	0.06		30-50
Tool steel	HB 230	0.01	0.01	0.02	0.03	0.04	0.06	Emulsion	30-50
	HB 230/285	0.01	0.01	0.02	0.03	0.04	0.06		30-40
Stainless steel	Cr. Mo	0.01	0.01	0.02	0.03	0.04	0.04	Emulsion cutting oil	30-50
	Cr. Ni	0.01	0.01	0.02	0.03	0.03	0.05		20-40
Semi-steel	To 220	0.01	0.02	0.04	0.06	0.07	0.09	Dry-emulsion	80-100
Malleable cast iron	Over 220	0.01	0.02	0.03	0.04	0.05	0.07	Dry-emulsion	60-90
Cast steel	R. 800	0.01	0.02	0.03	0.04	0.05	0.07	Emulsion	70-130
Titanium and titanium alloys	456	0.01	0.02	0.02	0.03	0.04	0.06	Emulsion	30-60
Aluminium & alloys	10% SI	0.02	0.03	0.05	0.07	0.10	0.12	Emulsion	500-800
	18% SI	0.01	0.02	0.03	0.05	0.07	0.10		250-500
Brass, copper, bronze	456	0.01	0.02	0.03	0.05	0.07	0.10	Dry-emulsion	140-250
Layered plastics	456	0.02	0.03	0.05	0.07	0.10	0.13	Dry with suction	100-200

Cutting data for solid carbide drills

Material	Condition	Feed rate S=mm/2 Ø				Coolant	Cutting speed m/min
		1 - 3	4 - 7	8 - 13	14 - 20		
Structural steel	R.800 R.800-1000 R.1000-1200 R.1200-1400	0.01-0.03	0.02-0.05	0.05-0.08	0.08-0.12	Emulsion	80-100
		0.01-0.03	0.02-0.04	0.04-0.07	0.07-0.10		70-100
		0.01-0.02	0.02-0.03	0.03-0.06	0.06-0.08		60-90
		0.01-0.02	0.02-0.03	0.03-0.04	0.04-0.06		50-70
Tool steel HRC 20/30	HB 230 HB 230/285	0.01-0.02	0.02-0.03	0.03-0.06	0.06-0.08	Emulsion	30-40
		0.01-0.02	0.02-0.03	0.03-0.04	0.04-0.07		20-30
Steel HRC 50		0.005-0.01	0.01-0.02	0.02-0.03	0.03	Emulsion	8-12
Stainless steel	To 230	0.01-0.02	0.02-0.05	0.05-0.08	0.08-0.10	Emulsion	25-40
Semi-steel	To 285	0.02	0.03-0.06	0.06-0.09	0.10-0.16	Dry	60-90
Malleable cast iron	R. 700	0.02	0.02-0.04	0.04-0.08	0.09-0.15	Dry	70-100
Cast steel		0.01-0.02	0.02-0.05	0.05-0.08	0.08-0.14	Emulsion	60-90
Titanium & titanium alloys		0.005-0.01	0.01-0.03	0.04-0.08	0.8-0.10	Emulsion cutting oil	30-60
Aluminium & alloys	10% SI 12% SI	0.03-0.06	0.06-0.08	0.08-0.13	0.14-0.20	Emulsion	100-140
		0.01-0.04	0.04-0.06	0.06-0.09	0.09-0.12		50-60
Brass, Copper, Bronze		0.03-0.06	0.06-0.10	0.10-0.15	0.15-0.20	Dry	60-120
Layered plastics		0.02-0.04	0.04-0.06	0.06-0.08	0.08-0.12	Dry	60-120

Cutting data for tungsten carbide burrs

Material	Condition	HB	Kind of teeth		Cutting speed m/min
			Straight cut	Crossed cut	
Unalloyed steel	C<0,25% C<1<0,80% C,40%	110-310	● ● ●	● ● ●	800-1200 800-1200 800-1200
Low alloyed steel	Annealed Hardened	125-225 220-450	●	● ●	700-1000 600-800
High alloyed steel	Annealed Hardened	150-250 250-500	●	● ●	600-800 600-800
High alloyed steel	Annealed high speed steel (HSS) Hardened tool steel	150-250 250-350	●	● ●	600-800 600-800
Stainless steel	Ferritic-martensitic	150-270	●	●	600-800
Steel casting	Unalloyed Low alloyed High alloyed	150-250	● ● ●	● ● ●	600-800 600-800 600-800
Stainless steel	Austenitic	150-270	●	●	600-800
Stainless steel castings	Ferritic-Martensitic Austenitic Manganese steel	200 200 250	● ● ●	● ● ●	400 300 160
Malleable cast iron	Ferritic - Short chip Pearlitic - Long chip	110-145 200-230	● ●	● ●	750 650
Grey cast iron	High traction resistant Low traction resistant	180 260	● ●	● ●	950 700
Nodular cast iron	Ferritic Pearlitic	160 250	● ●	● ●	650 550
Shell cast iron		400	●	●	160

Practical advice

- The indicated data are recommended for manual applications with a strength of 5-25N.
- Increase the cutting speed for light deburring.
- For heavy operations, for instance by a robot, the cutting speed must be reduced.

Straight cutting flutes burrs

- Best surface finishing.
- Maximum chip removal in soft materials.
- Excellent tool life.
- Produce needle chips.



Crossed cutting flutes burrs

- Allow a lower spindle speed.
- Smoother operation, even allow speeds.
- High chip removal in hard and soft materials.
- Produce short and rounded chips.



Type 90 Surfaces and smooth edges	Type 91 Radius and surfaces	Type 92 General shapes	Type 93 Curved shapes with narrow spaces	Type 94 Narrow spaces
Type 95 Complicated shapes	Type 96 Welded shapes and holes in curved surfaces	Type 97 Inverted cone shape	Type 98 30° Degrees chamfering	Type 99 45° Degrees chamfering

Solid carbide

Drills

Boring heads

Arbors and adaptors