

# Solid carbide

Inserts

Face milling cutters

Square shoulder cutters

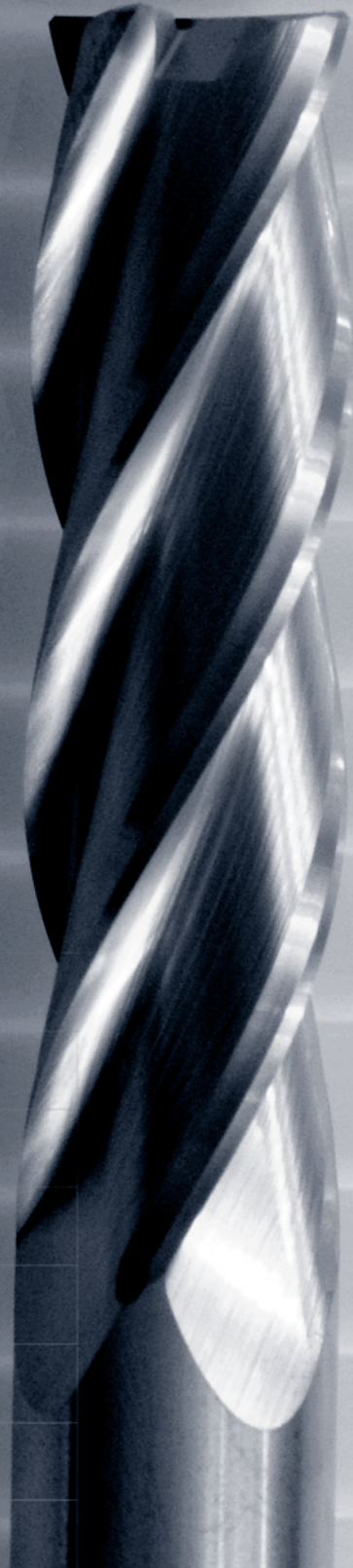
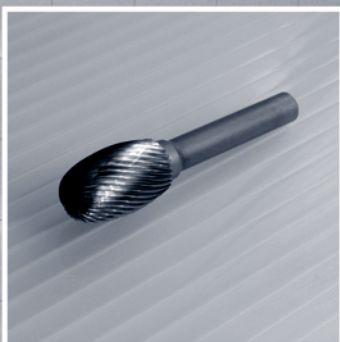
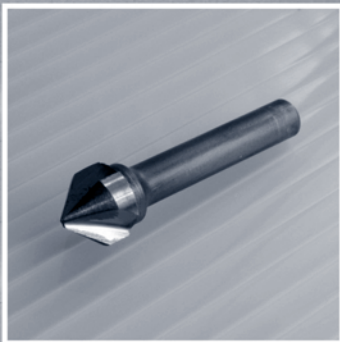
Slot cutters

Porcupine cutters

Specific applications and Sets

Profile milling














Solid carbide









# Solid carbide












Contents	H.02
End mills	H.04
Torus end mills	H.11
Contour end mills	H.13
Ball nose end mills	H.14
Drills	H.20
Others	H.23
Tungsten carbide burrs	H.26
Technical information	H.32

Inserts
Face milling cutters
Square shoulder cutters
Slot cutters
Porcupine cutters
Specific applications and Sets
Profile milling
Solid carbide

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

Torus end mills					
<b>6327</b> 2 Flutes  Page H.11	<b>6337</b> 2 Flutes (Long)  Page H.11	<b>6427</b> 4 Flutes  Page H.12	<b>6437</b> 4 Flutes (Long)  Page H.12		

Contour end mills					
<b>7965</b> 2 Flutes  Page H.13	<b>7975</b> 2 Flutes with front cut  Page H.13				

Ball nose end mills					
<b>6320</b> 2 Flutes  Page H.14	<b>6420</b> 2 Flutes (Long)  Page H.14	<b>6945</b> 2 Flutes  Page H.15	<b>6955</b> 2 Flutes (Long)  Page H.15	<b>7597</b> 2 Flutes  Page H.16	<b>6330</b> 3 Flutes  Page H.16
<b>6430</b> 3 Flutes  Page H.17	<b>6340</b> 4 Flutes  Page H.17	<b>6440</b> 4 Flutes  Page H.18	<b>6521</b> 2 Flutes  Page H.19	<b>6541</b> 4 Flutes  Page H.19	

**Drills**

**7020**

Hard-metal twist drills  
2 Flutes



Page H.20

**7030**

Hard-metal twist drills  
3 Flutes



Page H.21

**7120**

Hard-metal twist drills  
2 Flutes (Long)



Page H.22

**Others**

**80**

Solid carbide center drill



Page H.23

**81**

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



Page H.23

**82**

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



Page H.24

**83**

Solid carbide  
Countersinks



Page H.24

**84**

Solid carbide  
Countersinks



Page H.25

**85**

Centerless ground  
carbide



Page H.25

**Tungsten carbide burrs**

**90**

Cylindrical



Page H.26

**91**

Cylindrical round top



Page H.26

**92**

Tree radius nose



Page H.27

**93**

Tree pointed



Page H.27

**94**

Cone



Page H.28

**95**

Olive (Egg)



Page H.28

**96**

Ball



Page H.29

**97**

Inverted cone



Page H.29

**98**

Deburring 60°



Page H.30

**99**

Deburring 90°

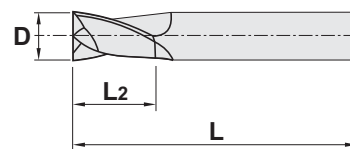


Page H.30

Inserts



**Characteristics:**  
Solid carbide 2 flutes end mills.



Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and Sets

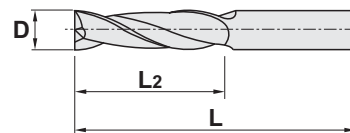
Profile milling

Solid carbide

☆ Not suitable ★ Suitable ⬠ Especially suitable

6020		Steels	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	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					
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	○	○	○	○					

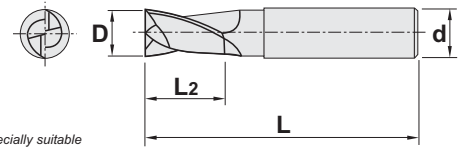
**Characteristics:**  
Solid carbide 2 flutes end mills.  
(Long)



☆ Not suitable ★ Suitable ⬠ Especially suitable

6120		Steels	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	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					
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

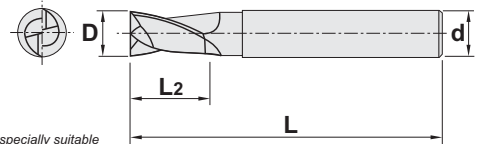
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	♻️	♻️	★

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

## 7405

Ref.	Flutes	D	d	L	L2	K10	TiN	TiCN	TiAlN
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

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

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

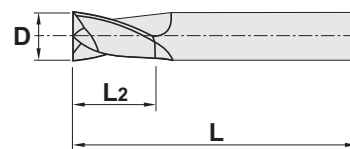
## 7415

Ref.	Flutes	D	d	L	L2	K10	TiN	TiCN	TiAlN
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	○			

Inserts



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



Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and Sets

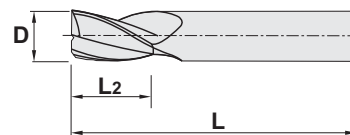
Profile milling

Solid carbide

☆ Not suitable ★ Suitable ⬠ Especially suitable

6915		Steels	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	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					
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	○								

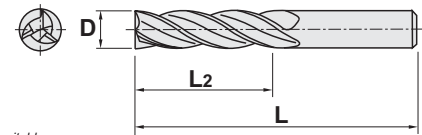
**Characteristics:**  
Solid carbide 3 flutes end mills.



☆ Not suitable ★ Suitable ⬠ Especially suitable

6030		Steels	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	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					
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

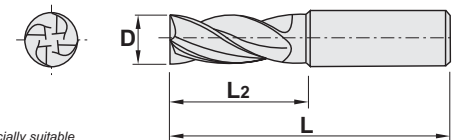
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	★	★	★

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

## 6130

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
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	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	★	★	★

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

## 6040

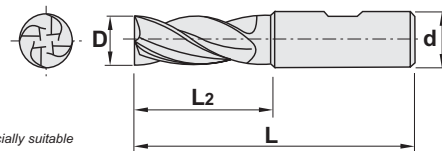
Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
604001	4	1	40	5	○	○		○
604002	4	2	40	8	●	●		●
604003	4	3	40	12	●	●		●
604004	4	4	40	12	●	●		●
604005	4	5	50	14	●	●		●
604006	4	6	50	16	●	●		●
604007	4	7	60	20	●	●		●
604008	4	8	60	20	●	●		●
604009	4	9	60	20	●	●		●
604010	4	10	70	22	●	●		●
604012	4	12	70	22	●	●		●
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	○	○		



Inserts



**Characteristics:**  
Solid carbide 4 flutes end mills.  
DIN 6527L30°



☆ Not suitable   ★ Suitable   ★ Especially suitable							
Steels	INOX < 850 N/mm²	INOX > 850 N/mm²	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm² ★ <850 N/mm² ★ <1.100 N/mm² ★ <1.300 N/mm² ★ >45 HRC ★	★	★	★	★	★	★	★

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

## 6041

Ref.	Flutes	D	d	L	L2	K10	TiN	TiCN	TiAlN
604102	4	2	6	50	6	○			
604103	4	3	6	57	7	○			
604104	4	4	6	57	8	○			
604105	4	5	6	57	10	○			
604106	4	6	6	57	10	○			
604107	4	7	8	63	13	○			
604108	4	8	8	63	16	○			
604109	4	9	10	72	16	○			
604110	4	10	10	72	19	○			
604111	4	11	12	83	22	○			
604112	4	12	12	83	22	○			
604113	4	13	14	83	22	○			
604114	4	14	14	83	22	○			
604115	4	15	16	92	26	○			
604116	4	16	16	92	26	○			
604118	4	18	18	92	26	○			
604120	4	20	20	104	32	○			
604122	4	22	25	104	32	○			
604125	4	25	25	104	32	○			
604130	4	30	32	104	32	○			
604132	4	32	32	104	32	○			

Square shoulder cutters

Slot cutters

Porcupine cutters

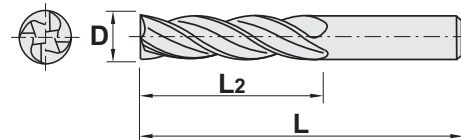
Specific applications and Sets

Profile milling

Solid carbide



**Characteristics:**  
Solid carbide 4 flutes end mills.  
(Long)



☆ Not suitable   ★ Suitable   ★ Especially suitable							
Steels	INOX < 850 N/mm²	INOX > 850 N/mm²	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm² ★ <850 N/mm² ★ <1.100 N/mm² ★ <1.300 N/mm² ★ >45 HRC ★	★	★	★	★	★	★	★

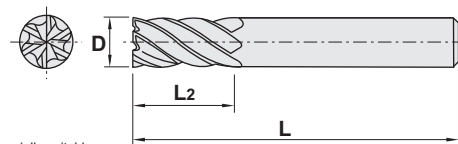
Normally available for immediate delivery ●  
Only available in a limited quantity ○

## 6140

Ref.	Flutes	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

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

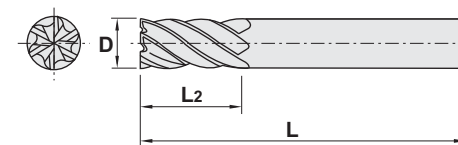
Normally available for immediate delivery ●  
Only available in a limited quantity ○

# 6137

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
613706	6	6	60	20				○
613708	6	8	80	25				○
613710	6	10	80	30				○
613712	6	12	100	36				○
613716	6	16	106	46				○
613720	8	20	125	60				○
613725	8	25	150	75				○

**Characteristics:**

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



☆ Not suitable ★ Suitable ♻️ Especially suitable

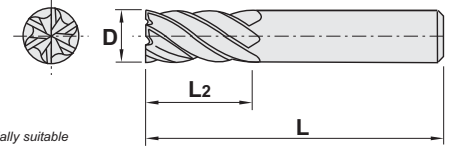
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	♻️	♻️	★	★	♻️	★	★	★	★

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

# 6197

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
619706	6	6	60	20				○
619708	6	8	80	25				○
619710	6	10	80	30				○
619712	6	12	100	36				○
619716	6	16	106	46				○
619720	8	20	125	60				○
619725	8	25	150	75				○

**Characteristics:**  
Solid carbide 6 flutes end mills.



☆ Not suitable   ★ Suitable   ✦ Especially suitable

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

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

6060			D	L	L2	K10	TiN	TiCN	TiAlN
Ref.	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

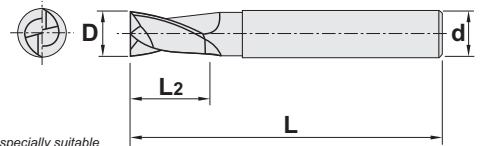
Porcupine cutters

Specific applications and Sets

Profile milling

Solid carbide

**Characteristics:**  
Solid carbide 2 flutes torus end mills.



☆ Not suitable ★ Suitable ♣ Especially suitable

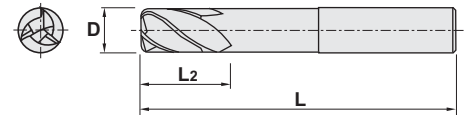
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	♣	♣	♣	♣	★	♣	☆	☆	★	☆

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

## 6327

Ref.	Flutes	D	d	L	L2	K10	TiN	TiCN	TiAlN
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

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

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

## 6337

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
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				○

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

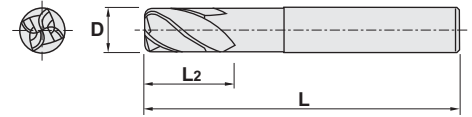
Porcupine cutters

Specific applications and Sets

Profile milling

Solid carbide

**Characteristics:**  
Solid carbide 4 flutes torus end mills.



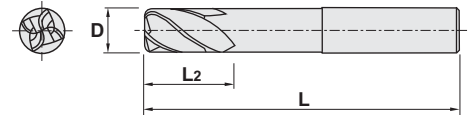
☆ Not suitable ★ Suitable ⚙ Especially suitable

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

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)



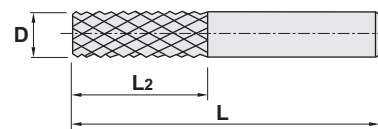
☆ Not suitable ★ Suitable ⚙ Especially suitable

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

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.



☆ Not suitable ★ Suitable ⚙ Especially suitable

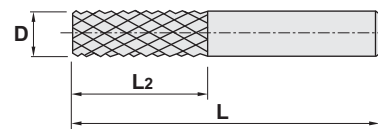
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	★	★	⚙

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

## 7965

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
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.



☆ Not suitable ★ Suitable ⚙ Especially suitable

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

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

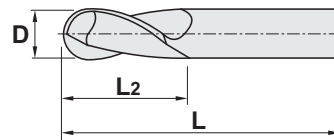
## 7975

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
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	○			

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

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

## 6320

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	○	○	●	○

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

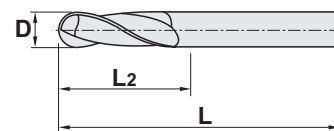
Specific applications and Sets

Profile milling

Solid carbide



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



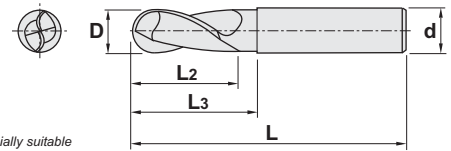
☆ Not suitable   ★ Suitable   ⬠ Especially suitable											
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al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

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

## 6420

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

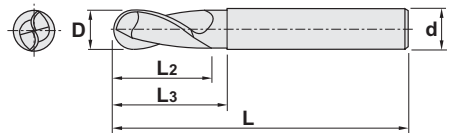
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	✦	✦	★

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

## 6945

Ref.	Flutes	D	d	L	L2	L3	K10	TiN	TiCN	TiAlN
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

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

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

## 6955

Ref.	Flutes	D	d	L	L2	L3	K10	TiN	TiCN	TiAlN
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	○			



Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

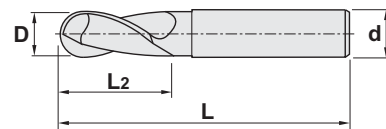
Specific applications and Sets

Profile milling

Solid carbide

**Characteristics:**

Solid carbide 2 flutes ball nose end mills.



☆ Not suitable ★ Suitable ⬠ Especially suitable

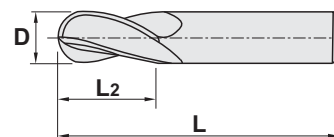
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>					
★	★	⬠	⬠	⬠	★	★	★	★	★	★	★

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

7597			D	d	L	L2	K10	TiN	TiCN	TiAlN
Ref.	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				○

**Characteristics:**

Solid carbide 3 flutes ball nose end mills.



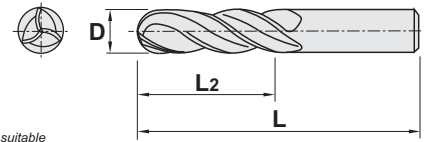
☆ Not suitable ★ Suitable ⬠ Especially suitable

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

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

6330			D	L	L2	K10	TiN	TiCN	TiAlN
Ref.	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

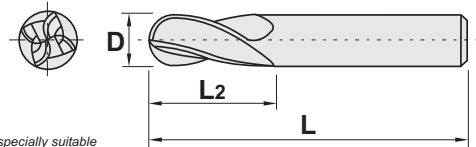
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>					
★	★	★	★	★	★	★	★	★	★	★	★

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

## 6430

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
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

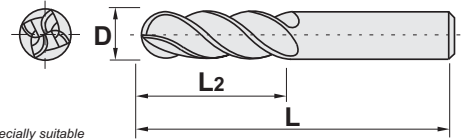
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>					
★	★	★	★	★	★	★	★	★	★	★	★

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

## 6340

Ref.	Flutes	D	L	L2	K10	TiN	TiCN	TiAlN
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	●	○		○

**Characteristics:**  
Solid carbide 4 flutes ball nose end mills.  
(Long)



☆ Not suitable ★ Suitable ⬠ Especially suitable

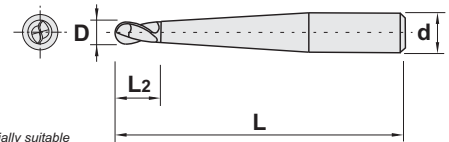
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
⬠	⬠	⬠	⬠	⬠	★	☆	⬠	☆	☆	⬠	☆

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

6440			D	L	L2	K10	TiN	TiCN	TiAlN
Ref.	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	○			○

- Inserts
- Face milling cutters
- Square shoulder cutters
- Slot cutters
- Porcupine cutters
- Specific applications and Sets
- Profile milling
- Solid carbide

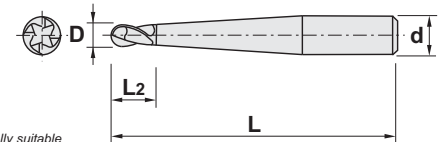
**Characteristics:**  
Solid carbide 2 flutes ball nose copy milling cutters.



☆ Not suitable ★ Suitable ♻️ Especially suitable

6521		Steels					INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	★	★	♻️	★	★	★	★	K10	TiN	TiCN	TiAlN
Ref.	Flutes	D	d	L	L2												
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.



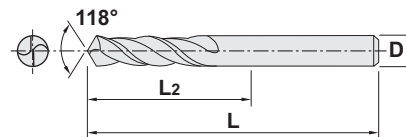
☆ Not suitable ★ Suitable ♻️ Especially suitable

6541		Steels					INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	★ <th>★ <th>♻️</th> <th>★</th> <th>★</th> <th>★</th> <th>★</th> <th>K10</th> <th>TiN</th> <th>TiCN</th> <th>TiAlN</th> </th>	★ <th>♻️</th> <th>★</th> <th>★</th> <th>★</th> <th>★</th> <th>K10</th> <th>TiN</th> <th>TiCN</th> <th>TiAlN</th>	♻️	★	★	★	★	K10	TiN	TiCN	TiAlN
Ref.	Flutes	D	d	L	L2												
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	★	★	♻️	★	★	★	★					●

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 <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	< 850 N/mm <sup>2</sup>	> 850 N/mm <sup>2</sup>					
⬤	⬤	⬤	⬤	★	★	★	⬤	⬤	⬤	⬤	⬤

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	●					

Square shoulder cutters

Slot cutters

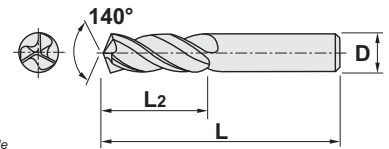
Porcupine cutters

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 <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	< 850 N/mm <sup>2</sup>	> 850 N/mm <sup>2</sup>					
★	★	★	★	★	★	★	♣	★	♣	♣	★

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

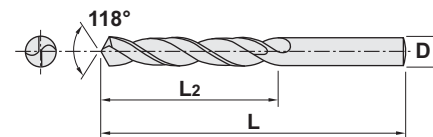
# 7030

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	○					

Inserts



**Characteristics:**  
Hard-metal twist drills 2 flutes  
(Long)  
DIN 338 5xZ Z=2



☆ Not suitable ★ Suitable ⬤ Especially suitable

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

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

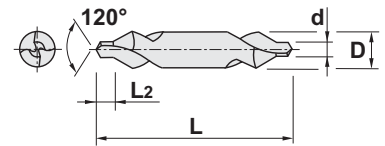
Porcupine cutters

Specific applications and Sets

Profile milling

Solid carbide

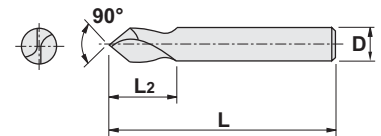
**Characteristics:**  
Solid carbide center drill.



☆ 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 <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	< 850 N/mm <sup>2</sup>	> 850 N/mm <sup>2</sup>									
		D	d	L	L2	K10	TiN	TiCN	TiAlN								
Ref.	800000.80	3,15	0,80	38	1,3	●											
	800001.00	3,15	1,00	38	1,6	●											
	800001.25	3,15	1,25	38	1,9	●											
	800001.60	4,00	1,60	38	2,4	●											
	800002.00	5,00	2,00	50	2,9	●											
	800002.50	6,00	2,50	50	3,6	●											
	800003.15	8,00	3,15	60	4,4	○											
	800004.00	10,00	4,00	60	5,6	○											
	800005.00	12,00	5,00	60	6,0	○											

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



☆ Not suitable ★ Suitable ✦ Especially suitable

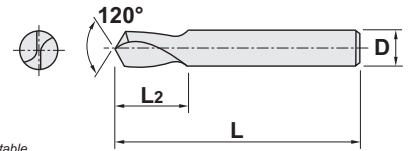
81		Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics	Normally available for immediate delivery ● Only available in a limited quantity ○			
		<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	< 850 N/mm <sup>2</sup>	> 850 N/mm <sup>2</sup>									
		D	L	L2	K10	TiN	TiCN	TiAlN									
Ref.	810006	6	50	16	●												
	810008	8	60	20	●												
	810010	10	70	22	●												
	810012	12	70	22	●												
	810014	14	75	25	○												
	810016	16	80	25	○												
	810020	20	100	30	○												



Inserts



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

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

82

Ref.	D	L	L2	K10	TiN	TiCN	TiAlN
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	○			

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

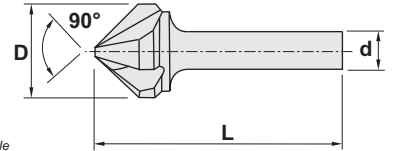
Specific applications and Sets

Profile milling

Solid carbide



**Characteristics:**  
Solid carbide countersinks 3 flutes.



☆ Not suitable ★ Suitable ⬠ Especially suitable

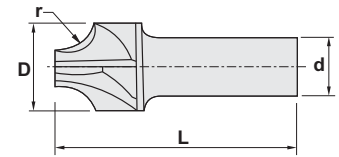
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	★	★	★

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

83

Ref.	D	d	L	z	K10	TiN	TiCN	TiAlN
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

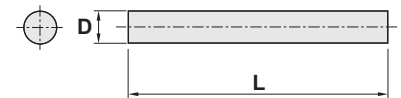
Steels					INOX	INOX	CAST IRON	Ti	Cu, Ms	Al	Plastics
<400 N/mm <sup>2</sup>	<850 N/mm <sup>2</sup>	<1.100 N/mm <sup>2</sup>	<1.300 N/mm <sup>2</sup>	>45 HRC	INOX < 850 N/mm <sup>2</sup>	INOX > 850 N/mm <sup>2</sup>	CAST IRON	Ti	Cu, Ms	Al	Plastics
★	★	★	★	★	★	★	★	★	★	★	★

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

# 84

Ref.	D	d	r	L	z	K10	TiN	TiCN	TiAlN
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	○			
844005.50	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.

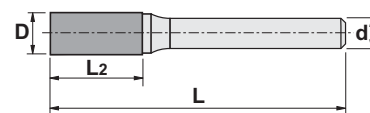


# 85

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

Ref.	D	L	K10	TiN	TiCN	TiAlN
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	○			

Inserts



Face milling cutters

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

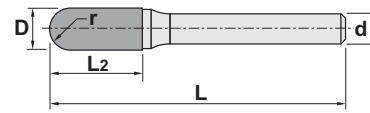
Square shoulder cutters

Slot cutters

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

Porcupine cutters

Specific applications and Sets

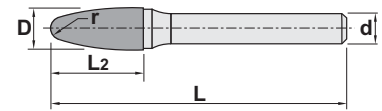
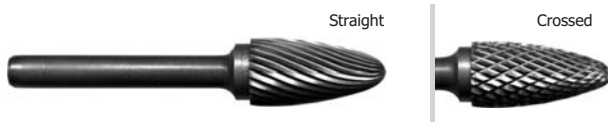


Profile milling

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

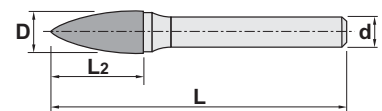
Solid carbide

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

Inserts

Face milling cutters

Square shoulder cutters

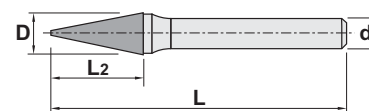
Slot cutters

Porcupine cutters

Specific applications and Sets

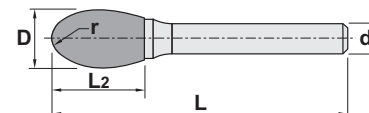
Profile milling

Solid carbide



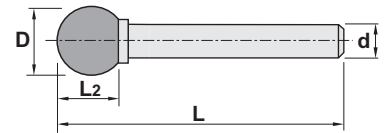
		Characteristics: Cone - Straight					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	<b>94003</b>	3	3	50	12	-	●			
	<b>94006</b>	6	3	44	14	-	●			
	<b>94008</b>	8	6	62	16	-	●			
	<b>94010</b>	10	6	63	18	-	●			
	<b>94012</b>	12	6	65	20	-	●			
	<b>94016</b>	16	8	70	25	-	●			

		Characteristics: Cone - Crossed					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	<b>94106</b>	6	3	44	14	-	●			
	<b>94108</b>	8	6	62	16	-	●			
	<b>94110</b>	10	6	63	18	-	●			
	<b>94112</b>	12	6	65	20	-	●			
	<b>94116</b>	16	8	70	25	-	●			



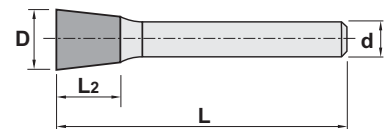
		Characteristics: Olive (Egg) - Straight					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	<b>95003</b>	3	3	40	6	1,2	●			
	<b>95006</b>	6	3	39	9	2,5	●			
	<b>95008</b>	8	6	59	14	3,7	●			
	<b>95010</b>	10	6	61	16	4,0	●			
	<b>95012</b>	12	6	65	20	5,0	●			
	<b>95016</b>	16	8	70	25	6,5	●			

		Characteristics: Olive (Egg) - Crossed					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	<b>95106</b>	6	3	39	9	2,5	●			
	<b>95108</b>	8	6	59	14	3,7	●			
	<b>95110</b>	10	6	61	16	4,0	●			
	<b>95112</b>	12	6	65	20	5,0	●			
	<b>95116</b>	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	-	●			

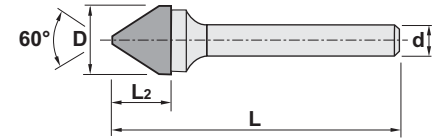
961		Characteristics: Ball - Crossed					Normally available for immediate delivery ● Only available in a limited quantity ○			
		D	d	L	L2	r	K10	TiN	TiCN	TiAlN
Ref.	96106	6	3	35	5	-	●			
	96108	8	6	52	7	-	●			
	96110	10	6	54	9	-	●			
	96112	12	6	56	11	-	●			
	96116	16	8	59	14	-	●			



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	-	●			

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

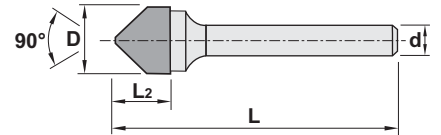
Slot cutters

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



Inserts

Face milling  
cuttersSquare shoulder  
cutters

Slot cutters

Porcupine cutters

Specific applications  
and Sets

Profile milling

Solid carbide

## 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 40-60 30-50
	R.600/1000	0.01	0.015	0.02	0.03	0.04	0.06		
	R.1000/1400	0.01	0.01	0.02	0.03	0.04	0.06		
Tool steel	HB 230	0.01	0.01	0.02	0.03	0.04	0.06	Emulsion	30-50 30-40
	HB 230/285	0.01	0.01	0.02	0.03	0.04	0.06		
Stainless steel	Cr. Mo	0.01	0.01	0.02	0.03	0.04	0.04	Emulsion cutting oil	30-50 20-40
	Cr. Ni	0.01	0.01	0.02	0.02	0.03	0.05		
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	500-800 250-500
	18% SI	0.01	0.02	0.03	0.05	0.07	0.10		
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 70-100 60-90 50-70
		0.01-0.03	0.02-0.04	0.04-0.07	0.07-0.10		
		0.01-0.02	0.02-0.03	0.03-0.06	0.06-0.08		
		0.01-0.02	0.02-0.03	0.03-0.04	0.04-0.06		
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 20-30
		0.01-0.02	0.02-0.03	0.03-0.04	0.04-0.07		
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 50-60
		0.01-0.04	0.04-0.06	0.06-0.09	0.09-0.12		
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.



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