

Solid carbide end mills



Solid Carbide End Mills Identification System

	 Steel, Cast Iron	P20F	P20F Endmills for General Purpose ● Suitable for steels&cast iron($\leq 48\text{HRC}$). ● High performance alcr series coating, high temperature resistance and high wear resistance. ● Variable helix angle and differential flute pitch, reduces vibration. ● Applicable to high efficiency machining of large cutting depth(ap) ● Adapt to several kinds of cooling conditions, for example oil mist,water,oil,air cooling.	Code Characteristic	
	 Stainless Steel Titanium Alloys	M20F	M20F Endmills for General Machining of Stainless steel ● Suitable for general Machining of Stainless steel($\leq 280\text{HB}$). ● Special edge design, effectively solve the crumbs. ● water cooling, oil cooling IS the best cooling method.	1	Square End\Ballnose: a. Neck Length b. Flute Length 6-06 10-10
	 Aluminium Alloy	N25UF	N25UF Endmills for General Machining of Aluminum alloy ● Suitable for aluminum alloy($\text{Si} \leq 12\%$) and copper alloy($\leq 200\text{HB}$)general processing. ● Special edge design, reduces vibration, effectively solve the crumbs. ● water cooling, is the best cooling method.	2	Cornor Radius: r0.2-02 r1-10
	 Graphite	NGK05A	NGK05A Endmills for Speed Machining of Graphite ● Special substrate with the perfect combination of diamond coating, superior wear resistance. ● Usitable for semi-finishing and finishing of graphite, apply for air cooling.	3	Miniature: a. Neck Length : 1-01 10-10 b. Flute Lengt (*10) : 0.8-08 1.6-16
	 High Hardened Material	H25UF	H25UF Endmills for Hardened steels(48-60HRC) ● High Hardeness,high toughness matrix materials, special angle design,special for hardened steels processing. ● For hardened steels(48-60HRC)finishing. ● Recommended to use air or oil mist cooling.	4	Square End with Chamfer: C0.03-03 C0.13-13



P20F S B 4- 060 09



End Profile	
S	Square
B	Ballnose
R	Cornor Radius
C	Square End with Chamfer

Length of Flute	
N	Reduce Neck
H	Long Shank
L	Long Flute
S	Short Flute
B	Double Helix
R	Rough Maching
	Blank: Standard

No. of Flutes	
	2
	3
	4

Diameter	
0.6mm	006
6mm	060
10mm	100

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder







Solid carbide end mills

Solid carbide drill & taps









Technical information

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
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- Solid carbide drill & taps
- Technical information

Guidelines to Icons

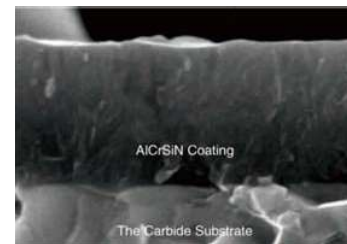
	Mark	Description
Shank		ISO Standard Shank
Coating		AlCrN Coating
		AlCrSiN Coating
		Nano Coating AlTiN
		Nano Coating AlTiN/TiSiN
		Ultra Fine Grain Diamond Coating

	Mark	Description
Endteeth Type		Square End
		Corner Radius
		Ballnose
Cutting Condition		For Side Milling
		For Slotting
		For Profile Milling

	Mark	Description
Helix		30 ° Helix
		35 ° Helix
		Variable Helix
		45 ° Helix
No. of Flutes		2 Flute Endmills
		3 Flute Endmills
		4 Flute Endmills
		6 Flute Endmills

Universal High Performance Coating AlCrSiN Characteristics and Function

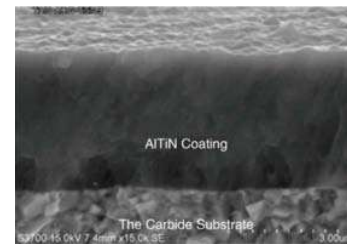
- Productivity increase due to significantly higher cutting speed and feed for applications in a wide range of materials. Significantly enhanced productivity.
- Particular design of structure brings good balance between toughness, thermo-shock stability and residual stress.



SEM Photograph of Coating

Nano Coating AlTiN Characteristics and Function

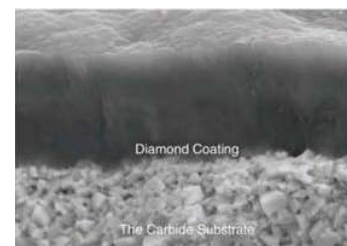
- High aluminum content provides excellent hot hardness and oxidation resistance.
- Special method optimizes the structure of coating, significantly improved stability, reducing the number of surface droplet.



SEM Photograph of Coating

Ultra Fine Grain Diamond Coating Characteristics and Function

- High purity diamond coating, with hardness up to 80GPa.
- Ultra smooth and shiny surface, low coefficient friction.
- Suitable for finish machining nonferrous materials, such as graphite, aluminium, carbon fiber, ceramic, etc.



Cross-section Image

Application Summary Of Solid Carbide Endmills

	ISO Material Group	General Machining	Roughing	High Efficiency Machining	High Speed Machining	Micro Machining
P	Carbon Steel, Alloy Steel (< 35HRC)	P20F	P20F	P20F		P20F
	Alloy Steel (35–48HRC)					
	PH, Ferritic, Martensitic Steel (< 35HRC)					
M	Stainless Steel	M20F	M20F			
K	Grey Cast Iron Nodular Cast Iron (< 32HRC)	P20F	P20F			P20F
	High-alloy Cast Iron (35–45HRC)					
N	Wrought Aluminium Alloys/Cast Aluminium Alloys (Si ≤ 12%)	N25UF			N25UF	
	Cast Aluminium Alloys (Si > 12%)					
	Copper Alloys (< 200HB)					
	Graphite Composite Material			NGK05A		
S	Heat-resistant Alloys (< 450HB)	M20F		M20F		
	Titanium Alloys (< 400HB)					
H	Hardened Steel (45–55HRC)	H25UF			H25UF	H25UF
	Hardened Steel (55–60HRC)					

Turning inserts

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Solid carbide end mills

Solid carbide drill & taps

Technical information

Case Study

Case 1: comparison of SKD61 cutting performance

Processing of common steel materials, W Japan Co. P20F series chip adhesion phenomenon, the edge state is still good.	
Tool name	4 blade rounded head
Tool series	P20F
Specifications	D10*25*R0.5
Processing of materials	SKD61(40HRC)
Cutting speed	130m/min(4140RPM)
Feed speed	0.065mm/z(1076mm/min)
Cutting mode	Side milling
Cutting depth	$a_p=10\text{mm}, a_e=1.2\text{mm}$
Cooling mode	Air cooled
The use of equipment	Vertical machining center

The performance of NiceCutt tool is 56.3% higher than that of W Japan Co.

NiceCutt	W Japan Co.
Milling of 10m	
A circular blade wear 0,036mm	A circular blade wear 0,039mm

NiceCutt	W Japan Co.
Milling of 50m	
A circular blade wear 0,065mm	A circular blade wear 0,093mm

NiceCutt	W Japan Co.
Milling of 70m	
A circular blade wear 0,078mm	A circular blade wear 0,122mm

NiceCutt cutting 70m circumferential edge tool flank wear for 0.078mm, W Japan Co. has reached 0.122mm

Case 2: high hardened steel cutting performance test

High hardened steel material processing, achieve good wear resistance	
Tool name	4 blade rounded head
Tool series	H25UF
Specifications	D8*20*R0.5
Processing of materials	SKD61(50HRC)
Cutting speed	120m/min(4777RPM)
Feed speed	0,04mm/z(764mm/min)
Cutting mode	Side milling
Cutting depth	$a_p=5.6\text{mm}, a_e=0.64\text{mm}$
Cooling mode	Air cooled
The use of equipment	Vertical machining center

The performance of NiceCutt tool is 80% higher than that of D Japan Co.

NiceCutt	D Japan Co.
Milling of 10m	
A circular blade wear 0,019mm	A circular blade wear 0,032mm

NiceCutt	D Japan Co.
Milling of 200m	
A circular blade wear 0,073mm	A circular blade wear 0,126mm

NiceCutt	D Japan Co.
Milling of 300m	
A circular blade wear 0,096mm	Cannot use

NiceCutt cutting 300m, the circle edge and flank wear 0.096mm, D company cutting 200m, circumferential edge wear has reached 0.126mm

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<p>P20F-S2/SH2</p> <p>P M K</p>  <p>2 Flute Standard Length</p> <p>P270</p>	<p>P20F-S4/SH4</p> <p>P M K</p>  <p>4 Flute Standard Length</p> <p>P271</p>	<p>P20F-SL4</p> <p>P M K</p>  <p>4 Flute Long Flute Length</p> <p>P272</p>	<p>P20F-SR4</p> <p>P M K</p>  <p>4 Flute Rough Maching</p> <p>P272</p>
<p>P20F-R2/RH2</p> <p>P M K</p>  <p>2 Flute Corner Radius</p> <p>P273</p>	<p>P20F-R4/RH4</p> <p>P M K</p>  <p>4 Flute Corner Radius</p> <p>P274</p>	<p>P20F-B2/BH2</p> <p>P M K</p>  <p>2 Flute Ballnose</p> <p>P275</p>	<p>P20F-B4/BH4</p> <p>P M K</p>  <p>4 Flute Ballnose</p> <p>P276</p>
<p>P20F-SB4</p> <p>P M K</p>  <p>4 flute double helix</p> <p>P277</p>	<p>P20F-RB4</p> <p>P M K</p>  <p>4 flute corner radius, double helix</p> <p>P277</p>	<p>H25UF-S4</p> <p>H</p>  <p>4 flute square end</p> <p>P278</p>	<p>H25UF-S6</p> <p>H</p>  <p>6 flute square end</p> <p>P278</p>
<p>H25UF-R4</p> <p>H</p>  <p>4 Flute Corner Radius</p> <p>P279</p>	<p>H25UF-R6</p> <p>H</p>  <p>6 Flute Corner Radius</p> <p>P279</p>	<p>H25UF-B2</p> <p>H</p>  <p>2 Flute Ballnose</p> <p>P280</p>	<p>H25UF-B4</p> <p>H</p>  <p>4 Flute Ballnose</p> <p>P280</p>
<p>H25UF-SN2</p> <p>H</p>  <p>2 flute micro diameter long necked, square end</p> <p>P281</p>	<p>P20F-SN2</p> <p>P M K</p>  <p>2 flute micro diameter long necked, square end</p> <p>P281</p>	<p>H25UF-BN2</p> <p>H</p>  <p>2 flute micro diameter long necked, ball nose</p> <p>P282</p>	<p>P20F-BN2</p> <p>P M K</p>  <p>2 flute micro diameter long necked, ball nose</p> <p>P282</p>
<p>M20F-S2</p> <p>M</p>  <p>2 Flute Standard Length</p> <p>P283</p>	<p>M20F-S4</p> <p>M</p>  <p>4 Flute Standard Length</p> <p>P284</p>	<p>M20F-R2</p> <p>M</p>  <p>2 Flute Corner Radius</p> <p>P285</p>	<p>M20F-R4</p> <p>M</p>  <p>4 Flute Corner Radius</p> <p>P286</p>

Turning inserts

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Milling

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Tool holder

Solid carbide
end mills

Solid carbide
drill & taps

Technical
information

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M20F-B2

M



2 Flute
Ballnose

P287

M20F-B4

M



4 Flute
Ballnose

P287

N25UF-S2/SH2

N



2 Flute
Standard Length

P288

N25UF-S3/SH3

N



3 Flute
Standard Length

P289

N25UF-SL2

N



2 Flute
Long Flute Length

P290

N25UF-SL3

N



3 Flute
Long Flute Length

P290

N25UF-R2

N



2 Flute
Corner Radius

P291

N25UF-RH2

N



2 Flute
Corner Radius

P292

N25UF-R3

N



3 Flute
Corner Radius

P293

N25UF-RH3

N



3 Flute
Corner Radius

P294

N25UF-B2

N



2 Flute
Ballnose

P295

NGK05A-S2

N Graphite



2 Flute
Standard Length

P296

NGK05A-S3

N Graphite



3 Flute
Standard Length

P296

NGK05A-S4

N Graphite



4 Flute
Standard Length

P297

NGK05A-R2

N Graphite



2 Flute
Corner Radius

P297

NGK05A-R4

N Graphite



4 Flute
Corner Radius

P298

NGK05A-B2

N Graphite



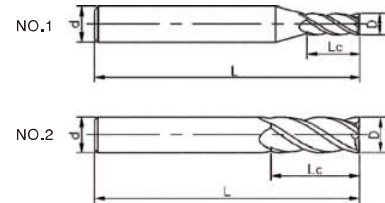
2 Flute
Ballnose

P298

P20F 2 Flute, Standard Length



HRC32-48



Standard shank

Ordering Code	Stock	D	Lc	L	d	Figure No.
P20F-S2-02006	●	2	6	50	4	1
P20F-S2-03009	●	3	9		4	
P20F-S2-63009	●	3	9		6	
P20F-S2-04011	●	4	11		4	2
P20F-S2-64011	●	4	11		6	1
P20F-S2-05013	●	5	13		6	
P20F-S2-06016	●	6	16	60	6	2
P20F-S2-08020	●	8	20		8	
P20F-S2-10025	●	10	25	75	10	
P20F-S2-12030	●	12	30		12	
P20F-S2-16036	●	16	36	100	16	
P20F-S2-20045	●	20	45		20	

Long shank

Ordering Code	Stock	D	Lc	L	d	Figure No.
P20F-SH2-02006	●	2	6	75	4	1
P20F-SH2-03009	●	3	9		4	
P20F-SH2-63009	●	3	9		6	
P20F-SH2-04011	●	4	11		4	2
P20F-SH2-64011	●	4	11		6	1
P20F-SH2-05013	●	5	13		6	
P20F-SH2-06016	●	6	16	75	6	2
P20F-SH2-08020	●	8	20		8	
P20F-SH2-10025	●	10	25	100	10	
P20F-SH2-12030	●	12	30		12	
P20F-SH2-16036	●	16	36	150	16	
P20F-SH2-20045	●	20	45		20	

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

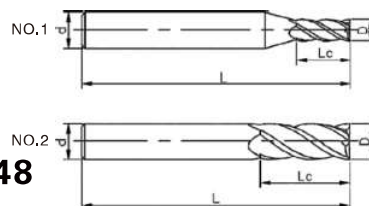
Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

P20F 4 Flute, Square End



Standard shank

Ordering Code	Stock	D	Lc	L	d	Figure No.		
P20F-S4-03009	●	3	9	50	4	1		
P20F-S4-04011	●	4	11		4	2		
P20F-S4-05013	●	5	13		6	1		
P20F-S4-06016	●	6	16		60	8	2	
P20F-S4-08020	●	8	20					
P20F-S4-10025	●	10	25	75				10
P20F-S4-12030	●	12	30					12
P20F-S4-16036	●	16	36	100				16
P20F-S4-20045	●	20	45		20			

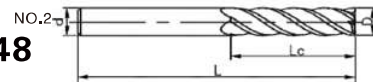
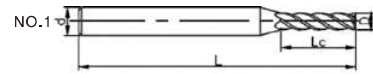
Long shank

Ordering Code	Stock	D	Lc	L	d	Figure No.		
P20F-SH4-03009	●	3	9	75	4	1		
P20F-SH4-04011	●	4	11		4	2		
P20F-SH4-05013	●	5	13		6	1		
P20F-SH4-06016	●	6	16	75	8	2		
P20F-SH4-08020	●	8	20					
P20F-SH4-10025	●	10	25				100	10
P20F-SH4-12030	●	12	30					12
P20F-SH4-16036	●	16	36				150	16
P20F-SH4-20045	●	20	45	20				

● Stock ○ Available upon Order

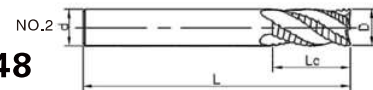
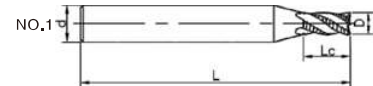
- Turning inserts
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P20F 4 Flute, Long Flute Length, Square End



Ordering Code	Stock	D	Lc	L	d	Figure No.
P20F-SL4-02010	●	2	10	50	4	1
P20F-SL4-03015	●	3	15	60		2
P20F-SL4-04020	●	4	20	75	6	1
P20F-SL4-63015	●	3	15			
P20F-SL4-64020	●	4	20	100	8	2
P20F-SL4-05025	●	5	25			
P20F-SL4-06030	●	6	30			
P20F-SL4-08035	●	8	35			
P20F-SL4-10045	●	10	45	150	10	2
P20F-SL4-12045	●	12	45			
P20F-SL4-14045	●	14	45	150	16	1
P20F-SL4-16060	●	16	60			
P20F-SL4-18070	●	18	70	150	18	2
P20F-SL4-20070	●	20	70			

P20F 4 Flute Square End, for Rough Maching



Ordering Code	Stock	D	Lc	L	d	Figure No.
P20F-SR4-06015	●	6	15	50	6	2
P20F-SR4-08020	●	8	20	60	8	
P20F-SR4-10025	●	10	25	75	10	
P20F-SR4-12030	●	12	30		12	
P20F-SR4-16036	●	16	36	100	16	
P20F-SR4-20045	●	20	45		20	

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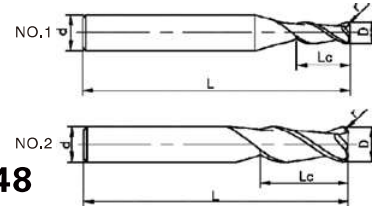
Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

P20F 2 Flute, Corner Radius



Standard shank

Ordering Code	Stock	D	Lc	r	L	d	Figure No.
P20F-R2-03005	●	3	9	0.5	50	4	1
P20F-R2-04005	●	4	11	0.5			
P20F-R2-04010	●			1			
P20F-R2-06005	●	6	16	0.5	60	6	2
P20F-R2-06010	●			1			
P20F-R2-06015	●			1.5			
P20F-R2-08005	●	8	20	0.5	75	8	
P20F-R2-08010	●			1			
P20F-R2-08015	●			1.5			
P20F-R2-10005	●	10	25	0.5	100	10	
P20F-R2-10010	●			1			
P20F-R2-10015	●			1.5			
P20F-R2-10020	●	12	30	2	150	12	
P20F-R2-12005	●			0.5			
P20F-R2-12010	●			1			
P20F-R2-12015	●			1.5			
P20F-R2-12020	●			2			
P20F-R2-12030	●			3			
P20F-R2-16005	●	16	36	0.5	200	16	
P20F-R2-16010	●			1			
P20F-R2-16020	●			2			
P20F-R2-16030	●			3			

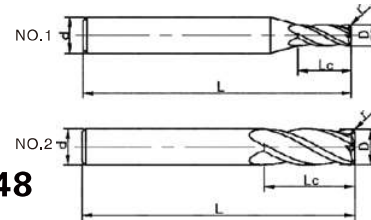
Long shank

Ordering Code	Stock	D	Lc	r	L	d	Figure No.
P20F-RH2-06005	●	6	16	0.5	75	6	2
P20F-RH2-06010	●			1			
P20F-RH2-06015	●			1.5			
P20F-RH2-08005	●	8	20	0.5	100	8	
P20F-RH2-08010	●			1			
P20F-RH2-08015	●			1.5			
P20F-RH2-10005	●	10	25	0.5	150	10	
P20F-RH2-10010	●			1			
P20F-RH2-10015	●			1.5			
P20F-RH2-10020	●	12	30	2	200	12	
P20F-RH2-12005	●			0.5			
P20F-RH2-12010	●			1			
P20F-RH2-12015	●			1.5			
P20F-RH2-12020	●			2			
P20F-RH2-12030	●			3			
P20F-RH2-16005	●	16	36	0.5	250	16	
P20F-RH2-16010	●			1			
P20F-RH2-16020	●			2			
P20F-RH2-16030	●			3			

● Stock ○ Available upon Order

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P20F 4 Flute, Corner Radius



Standard shank

Ordering Code	Stock	D	Lc	r	L	d	Figure No.
P20F-R4-04005	●	4	11	0.5	50	4	2
P20F-R4-04010	●			1			
P20F-R4-06005	●	6	16	0.5		6	
P20F-R4-06010	●			1			
P20F-R4-06015	●			1.5			
P20F-R4-08005	●	8	20	0.5		60	
P20F-R4-08010	●			1			
P20F-R4-08015	●			1.5			
P20F-R4-08020	●			2			
P20F-R4-10005	●	10	25	0.5	75	10	
P20F-R4-10010	●			1			
P20F-R4-10015	●			1.5			
P20F-R4-10020	●			2			
P20F-R4-12005	●	12	30	0.5		12	
P20F-R4-12010	●			1			
P20F-R4-12015	●			1.5			
P20F-R4-12020	●			2			
P20F-R4-12030	●		3				
P20F-R4-16005	●	16	36	0.5	100	16	
P20F-R4-16010	●			1			
P20F-R4-16020	●			2			
P20F-R4-16030	●			3			

Long shank

Ordering Code	Stock	D	Lc	r	L	d	Figure No.
P20F-RH4-06005	●	6	16	0.5	75	6	2
P20F-RH4-06010	●			1			
P20F-RH4-08005	●	8	20	0.5	100	8	
P20F-RH4-08010	●			1			
P20F-RH4-08015	●			1.5			
P20F-RH4-08020	●			2			
P20F-RH4-10005	●	10	25	0.5	100	10	
P20F-RH4-10010	●			1			
P20F-RH4-10015	●			1.5			
P20F-RH4-10020	●			2			
P20F-RH4-12005	●	12	30	0.5		12	
P20F-RH4-12010	●			1			
P20F-RH4-12015	●			1.5			
P20F-RH4-12020	●			2			
P20F-RH4-12030	●		3				
P20F-RH4-16005	●	16	36	0.5	150	16	
P20F-RH4-16010	●			1			
P20F-RH4-16020	●			2			
P20F-RH4-16030	●			3			

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

Solid carbide end mills

Solid carbide drill & taps

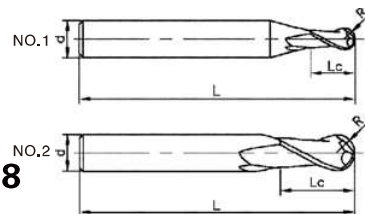
Technical information

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills
- Solid carbide drill & taps
- Technical information

P20F 2 Flute Ballnose



HRC32-48



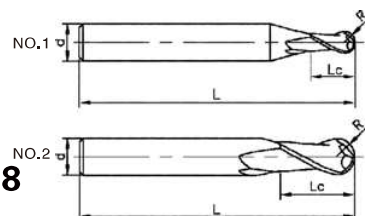
Standard shank

Ordering Code	Stock	D	R	Lc	L	d	Figure No.
P20F-B2-04008	●	4	2	8	50	4	2
P20F-B2-06012	●	6	3	12		6	
P20F-B2-08014	●	8	4	14	60	8	
P20F-B2-10018	●	10	5	18	75	10	
P20F-B2-12022	●	12	6	22		12	

P20F 2 Flute Ballnose



HRC32-48



Long shank

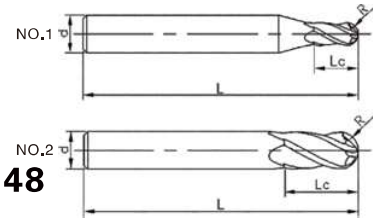
Ordering Code	Stock	D	R	Lc	L	d	Figure No.
P20F-BH2-02004	●	2	1	4	75	4	1
P20F-BH2-03006	●	3	1.5	6			2
P20F-BH2-04008	●	4	2	8		6	1
P20F-BH2-63006	●	3	1.5	6			
P20F-BH2-64008	●	4	2	8			
P20F-BH2-05010	●	5	2.5	10	100	8	2
P20F-BH2-06012	●	6	3	12			
P20F-BH2-08014	●	8	4	14		12	
P20F-BH2-10018	●	10	5	18			
P20F-BH2-12022	●	12	6	22			

● Stock ○ Available upon Order

P20F 4 Flute Ballnose



HRC32-48



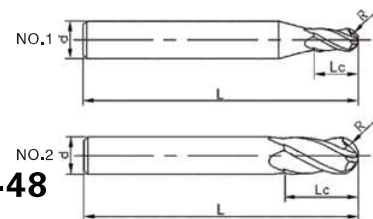
Standard shank

Ordering Code	Stock	D	R	Lc	L	d	Figure No.
P20F-B4-04008	○	4	2	8	50	4	2
P20F-B4-06012	○	6	3	12		6	
P20F-B4-08014	○	8	4	14	75	8	
P20F-B4-10018	○	10	5	18		10	
P20F-B4-12022	○	12	6	22		12	

P20F 4 Flute Ballnose



HRC32-48



Long shank

Ordering Code	Stock	D	R	Lc	L	d	Figure No.
P20F-BH4-04008	○	4	2	8	75	4	2
P20F-BH4-06012	○	6	3	12		6	
P20F-BH4-08014	○	8	4	14	100	8	
P20F-BH4-10018	○	10	5	18		10	
P20F-BH4-12022	○	12	6	22		12	

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

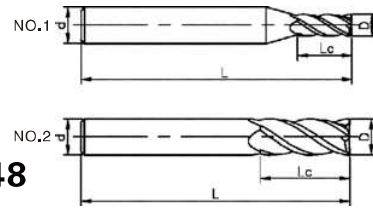
Solid carbide end mills

Solid carbide drill & taps

Technical information

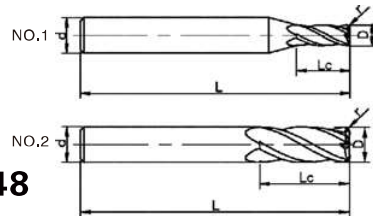
- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

P20F 4 flute, square end, double helix



Ordering Code	Stock	D	Lc	L	d	Figure No.
P20F-SB4-03009	●	3	9	50	4	1
P20F-SB4-04011	●	4	11		4	2
P20F-SB4-05013	●	5	13		6	1
P20F-SB4-06016	●	6	16			2
P20F-SB4-08020	●	8	20	60	8	2
P20F-SB4-10025	●	10	25	75	10	
P20F-SB4-12030	●	12	30		12	
P20F-SB4-16036	●	16	36	100	16	
P20F-SB4-20045	●	20	45		20	

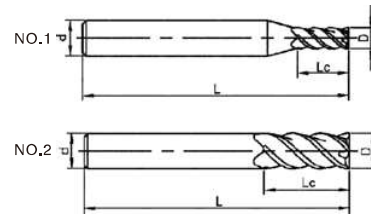
P20F 4 flute, corner radius, double helix



Ordering Code	Stock	D	Lc	r	L	d	Figure No.	
P20F-RB4-04005	●	4	11	0.5	50	4	2	
P20F-RB4-06005	●			6		0.5		6
P20F-RB4-06010	●					1.0		
P20F-RB4-06015	●	1.5						
P20F-RB4-08005	●	8	20	0.5	60	8		
P20F-RB4-08010	●			1.0				
P20F-RB4-08015	●			1.5				
P20F-RB4-08020	●			2.0				
P20F-RB4-10005	●	10	25	0.5	75	10		
P20F-RB4-10010	●			1.0				
P20F-RB4-10015	●			1.5				
P20F-RB4-10020	●			2.0				
P20F-RB4-12005	●	12	30	0.5		75	12	
P20F-RB4-12010	●			1.0				
P20F-RB4-12015	●			1.5				
P20F-RB4-12020	●			2.0				
P20F-RB4-12030	●	16	36	3.0	100	16		
P20F-RB4-16020	●			2.0				

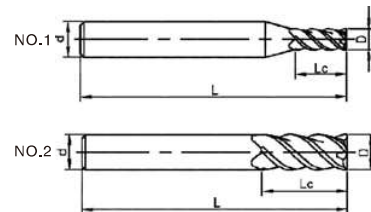
● Stock ○ Available upon Order

H25UF 4 flute, square end



Ordering Code	Stock	D	Lc	L	d	Figure No.
H25UF-S4-03009	●	3	9	50	4	1
H25UF-S4-04010	●	4	10		6	
H25UF-S4-06015	●	6	15		8	
H25UF-S4-08020	●	8	20	60	10	2
H25UF-S4-10025	●	10	25		12	
H25UF-S4-12030	●	12	30	75	16	
H25UF-S4-16036	●	16	36		20	
H25UF-S4-20045	●	20	45		100	

H25UF 6 flute, square end



Ordering Code	Stock	D	Lc	L	d	Figure No.
H25UF-S6-06015	●	6	15	50	6	2
H25UF-S6-08020	●	8	20	60	8	
H25UF-S6-10025	●	10	25	75	10	
H25UF-S6-12030	●	12	30		12	
H25UF-S6-16036	●	16	36	100	16	
H25UF-S6-20045	●	20	45		20	

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

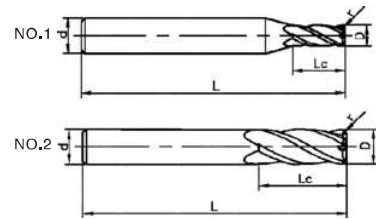
Solid carbide end mills

Solid carbide drill & taps

Technical information

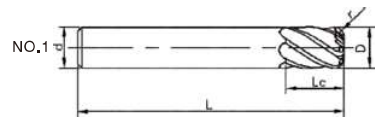
- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

H25UF 4 flute, corner radius



Ordering Code	Stock	D	Lc	r	L	d	Figure No.
H25UF-R4-04005	●	3	9	0.5	50	4	1
H25UF-R4-06005	●	4	10	0.5			
H25UF-R4-06010	●			1			
H25UF-R4-06015	●	6	15	0.5	60	6	2
H25UF-R4-08005	●			1			
H25UF-R4-08010	●	8	20	0.5			
H25UF-R4-08015	●			1			
H25UF-R4-08020	●	10	25	0.5	75	10	
H25UF-R4-10005	●			1			
H25UF-R4-10010	●			1.5			
H25UF-R4-10015	●			2			
H25UF-R4-10020	●			0.5			
H25UF-R4-12005	●	12	30	1	75	12	
H25UF-R4-12010	●			1.5			
H25UF-R4-12015	●			2			

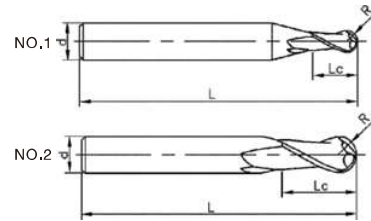
H25UF 6 flute, corner radius



Ordering Code	Stock	D	Lc	r	L	d	Figure No.
H25UF-R6-12005	●	12	30	0.5	75	12	1
H25UF-R6-16010	●	16	36	1	100	16	
H25UF-R6-20010	●	20	45			20	

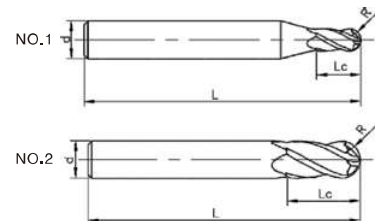
● Stock ○ Available upon Order

H25UF 2 flute ballnose



Ordering Code	Stock	D	R	Lc	L	d	Figure No.
H25UF-B2-02004	●	2	1	4	50	4	1
H25UF-B2-03006	●	3	1.5	6			
H25UF-B2-04008	●	4	2	8			
H25UF-B2-06012	●	6	3	12			
H25UF-B2-08014	●	8	4	14	60	8	2
H25UF-B2-10018	●	10	5	18	75		
H25UF-B2-12022	●	12	6	22			
H25UF-B2-16026	●	16	8	26	100		

H25UF 4 flute ballnose



Ordering Code	Stock	D	R	Lc	L	d	Figure No.
H25UF-B4-04008	●	4	2	8	50	4	2
H25UF-B4-06012	●	6	3	12		6	
H25UF-B4-08014	●	8	4	14	60	8	
H25UF-B4-10018	●	10	5	18	75	10	
H25UF-B4-12022	●	12	6	22		12	
H25UF-B4-16026	●	16	8	26	100	16	

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

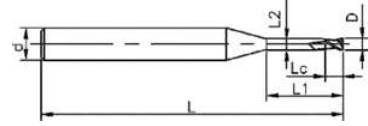
Solid carbide end mills

Solid carbide drill & taps

Technical information

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

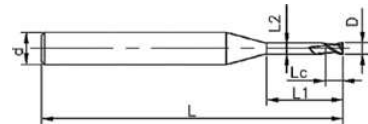
H25UF 2 flute,micro diameter,long necked,square end



HRC45-60

Ordering Code	Stock	D	Lc	d2	L1	L	d						
H25UF-SN2-00401	●	0.4	0.6	0.36	1	50	4						
H25UF-SN2-00402	●				2								
H25UF-SN2-00404	●				4								
H25UF-SN2-00602	●	0.6	0.8	0.56	2			50	4				
H25UF-SN2-00604	●				4								
H25UF-SN2-00606	●				6								
H25UF-SN2-00802	●	0.8	1.2	0.75	2					50	4		
H25UF-SN2-00804	●				4								
H25UF-SN2-00806	●				6								
H25UF-SN2-01006	●	1	1.5	0.95	6							50	4
H25UF-SN2-01008	●				8								
H25UF-SN2-01010	●				10								
H25UF-SN2-01508	●	1.5	2	1.44	8	50	4						
H25UF-SN2-01510	●				10								
H25UF-SN2-01512	●				12								
H25UF-SN2-02008	●	2	3	1.92	8			50	4				
H25UF-SN2-02010	●				10								
H25UF-SN2-02012	●				12								

P20F 2 flute,micro diameter,long necked,square end

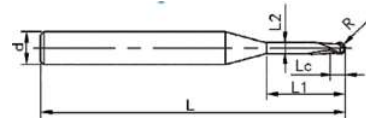


HRC35-48

Ordering Code	Stock	D	Lc	d2	L1	L	d						
P20F-SN2-00802	●	0.8	1.2	0.75	2	50	4						
P20F-SN2-00804	●				4								
P20F-SN2-00806	●				6								
P20F-SN2-01006	●	1	1.5	0.95	6			50	4				
P20F-SN2-01008	●				8								
P20F-SN2-01010	●				10								
P20F-SN2-01508	●	1.5	2	1.44	8					50	4		
P20F-SN2-01510	●				10								
P20F-SN2-01512	●				12								
P20F-SN2-02008	●	2	3	1.92	8							50	4
P20F-SN2-02010	●				10								
P20F-SN2-02012	●				12								

● Stock ○ Available upon Order

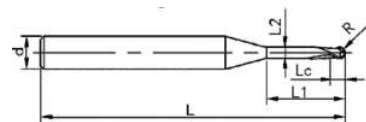
H25UF 2 flute,micro diameter,long necked,ball nose



HRC45-60

Ordering Code	Stock	D	r	Lc	d2	L1	L
H25UF-BN2-00401	●	0.4	0.2	0.3	0.35	1	50
H25UF-BN2-00402	●					2	
H25UF-BN2-00403	●					3	
H25UF-BN2-00601	●	0.6	0.3	0.4	0.55	1	
H25UF-BN2-00602	●					2	
H25UF-BN2-00603	●					3	
H25UF-BN2-00802	●	0.8	0.4	0.6	0.75	2	
H25UF-BN2-00804	●					4	
H25UF-BN2-00806	●					6	
H25UF-BN2-01006	●	1	0.5	0.8	0.95	6	
H25UF-BN2-01008	●					8	
H25UF-BN2-01010	●					10	
H25UF-BN2-01206	●	1.2	0.6	1	1.15	6	
H25UF-BN2-01208	●					8	
H25UF-BN2-01210	●					10	
H25UF-BN2-01508	●	1.5	0.75	1.4	1.44	8	
H25UF-BN2-01510	●					10	
H25UF-BN2-01512	●					12	
H25UF-BN2-02008	●	2	1	1.6	1.92	8	
H25UF-BN2-02010	●					10	
H25UF-BN2-02012	●					12	

P20F 2 flute,micro diameter,long necked,ball nose



HRC35-48

Ordering Code	Stock	D	r	Lc	d2	L1	L
P20F-BN2-00802	●	0.8	0.4	0.6	0.75	2	50
P20F-BN2-00804	●					4	
P20F-BN2-00806	●					6	
P20F-BN2-01006	●	1	0.5	0.8	0.95	6	
P20F-BN2-01008	●					8	
P20F-BN2-01010	●					10	
P20F-BN2-01206	●	1.2	0.6	1	1.15	6	
P20F-BN2-01208	●					8	
P20F-BN2-01210	●					10	
P20F-BN2-01508	●	1.5	0.75	1.4	1.44	8	
P20F-BN2-01510	●					10	
P20F-BN2-01512	●					12	
P20F-BN2-02008	●	2	1	1.6	1.92	8	
P20F-BN2-02010	●					10	
P20F-BN2-02012	●					12	

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

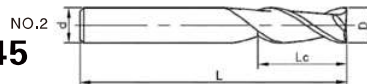
Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

M20F 2 flute standard length, square end

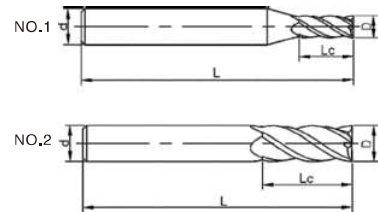


Ordering Code	Stock	D	Lc	L	d	Figure No.
M20F-S2-00501	●	0.5	1	50	4	1
M20F-S2-00802	●	0.8	2			
M20F-S2-01003	●	1	3			
M20F-S2-01504	●	1.5	4			
M20F-S2-02006	●	2	6			
M20F-S2-02508	●	2.5	8		6	1
M20F-S2-63008	●	3	8			
M20F-S2-03009	●	3	9		4	2
M20F-S2-03510	●	3.5	10			
M20F-S2-04011	●	4	11			
M20F-S2-64011	●	4	11	6	1	
M20F-S2-05013	●	5	13			
M20F-S2-06016	●	6	16	60	8	2
M20F-S2-08020	●	8	20			
M20F-S2-10025	●	10	25	75	10	
M20F-S2-12030	●	12	30			
M20F-S2-16036	●	16	36	100	16	
M20F-S2-20045	●	20	45			

● Stock ○ Available upon Order

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

M20F 4 flute standard length, square end



Ordering Code	Stock	D	Lc	L	d	Figure No.
M20F-S4-01003	●	1	3	50	4	1
M20F-S4-01504	●	1.5	4			
M20F-S4-02006	●	2	6			
M20F-S4-02508	●	2.5	8			
M20F-S4-63008	●	3	8		4	2
M20F-S4-03009	●	3	9			
M20F-S4-04011	●	4	11		6	1
M20F-S4-64011	●	4	11			
M20F-S4-05013	●	5	13			
M20F-S4-06016	●	6	16			
M20F-S4-08020	●	8	20	60	8	2
M20F-S4-10025	●	10	25	75	10	
M20F-S4-12030	●	12	30		12	
M20F-S4-16036	●	16	36	100	16	
M20F-S4-20045	●	20	45		20	

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

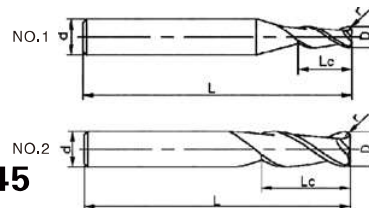
Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

M20F 2 flute, corner radius

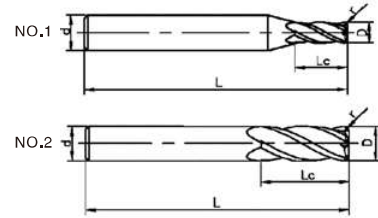


Ordering Code	Stock	D	Lc	r	L	d	Figure No.
M20F-R2-03003	●	3	9	0.3	50	4	1
M20F-R2-03005	●			0.5			
M20F-R2-04002	●	4	11	0.2		6	1
M20F-R2-64002	●			0.3		4	2
M20F-R2-04003	●			0.5			
M20F-R2-64003	●						
M20F-R2-64005	●	5	13	0.2		6	1
M20F-R2-05002	●			0.3			
M20F-R2-05003	●			0.5			
M20F-R2-05005	●	6	16	0.2		60	8
M20F-R2-06002	●			0.3			
M20F-R2-06003	●			0.5			
M20F-R2-08005	●	8	20	1	75		10
M20F-R2-08010	●			0.5			
M20F-R2-10005	●	10	25	1	75		12
M20F-R2-10010	●			1.5			
M20F-R2-10015	●			0.5			
M20F-R2-12005	●	12	30	1	100		16
M20F-R2-12010	●			1.5			
M20F-R2-12015	●			0.5			
M20F-R2-16005	●	16	36	1	100	16	
M20F-R2-16010	●			2			
M20F-R2-16020	●			3			
M20F-R2-16030	●						

● Stock ○ Available upon Order

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

M20F 4 flute, corner radius



Ordering Code	Stock	D	Lc	r	L	d	Figure No.	
M20F-R4-02002	●	2	6	0.2	50	4	1	
M20F-R4-03003	●	3	9	0.3		6		
M20F-R4-64002	●	4	11	0.2		4		2
M20F-R4-64003	●			0.3		6	1	
M20F-R4-04003	●	5	13	0.5		60	8	2
M20F-R4-05005	●	6	16	0.2			10	
M20F-R4-06005	●	8	20	0.5	75	12		
M20F-R4-08002	●			10		25	100	
M20F-R4-68005	●	10	25	1	20			
M20F-R4-10005	●				12	30		
M20F-R4-10010	●	16	36	1	100	20		
M20F-R4-12010	●	20	45			12		
M20F-R4-16010	●							
M20F-R4-20010	●							

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

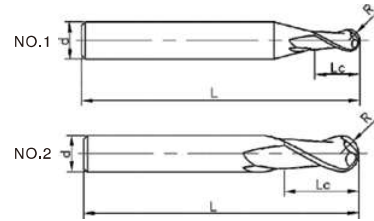
Solid carbide end mills

Solid carbide drill & taps

Technical information

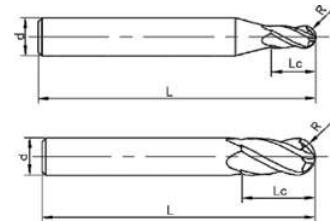
- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

M20F 2 flute, ball nose



Ordering Code	Stock	D	R	Lc	L	d	Figure No.
M20F-B2-01002	●	1	0.5	2	50	4	1
M20F-B2-01503	●	1.5	0.75	3			
M20F-B2-02004	●	2	1	4			
M20F-B2-03006	●	3	1.5	6		6	
M20F-B2-63006	●						
M20F-B2-04008	●						
M20F-B2-64008	●	4	2	8	4	2	
M20F-B2-05010	●	5	2.5	10	60	6	1
M20F-B2-06012	●	6	3	12			
M20F-B2-08014	●	8	4	14	75	8	2
M20F-B2-10018	●	10	5	18			
M20F-B2-12022	●	12	6	22			
M20F-B2-16026	●	16	8	26	100	10	
M20F-B2-20038	●	20	10	38			
						16	
						20	

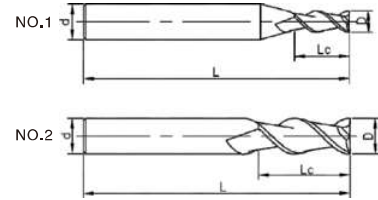
M20F 4 flute, ball nose



Ordering Code	Stock	D	R	Lc	L	d	Figure No.
M20F-B4-01002	●	1	0.5	2	50	4	1
M20F-B4-01503	●	1.5	0.75	3			
M20F-B4-02004	●	2	1	4			
M20F-B4-03006	●	3	1.5	6		6	
M20F-B4-63006	●	3	1.5				
M20F-B4-04008	●	4	2	8		4	
M20F-B4-64008	●	4	2	8	60	6	1
M20F-B4-05010	●	5	2.5	10			
M20F-B4-06012	●	6	3	12	75	8	2
M20F-B4-08014	●	8	4	14			
M20F-B4-10018	●	10	5	18			
M20F-B4-12022	●	12	6	22	100	10	
M20F-B4-16026	●	16	8	26			
M20F-B4-20038	●	20	10	38		16	
						20	

● Stock ○ Available upon Order

N25UF 2 flute, corner radius



Standard shank

Ordering Code	Stock	D	Lc	L	d	Figure No.	
N25UF-S2-01003	●	1	3	50	4	1	
N25UF-S2-02006	●	2	6				
N25UF-S2-03009	●	3	9				6
N25UF-S2-63009	●				4		2
N25UF-S2-04011	●	4	11		6		1
N25UF-S2-64011	●						2
N25UF-S2-05013	●	5	13	60	8	1	
N25UF-S2-06016	●	6	16			2	
N25UF-S2-07020	●	7	20	75	10	1	
N25UF-S2-08020	●	8	20			2	
N25UF-S2-09023	●	9	23	100	12	2	
N25UF-S2-10025	●	10	25				
N25UF-S2-12030	●	12	30				
N25UF-S2-16036	●	16	36	150	16	2	
N25UF-S2-20045	●	20	45				

Long shank

Ordering Code	Stock	D	Lc	L	d	Figure No.
N25UF-SH2-02006	●	2	6	75	4	1
N25UF-SH2-03009	●	3	9			
N25UF-SH2-04010	●	4	10			
N25UF-SH2-06015	●	6	15	100	8	2
N25UF-SH2-08020	●	8	20			
N25UF-SH2-10025	●	10	25			
N25UF-SH2-12030	●	12	30	150	12	2
N25UF-SH2-16036	●	16	36			
N25UF-SH2-20045	●	20	45			

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

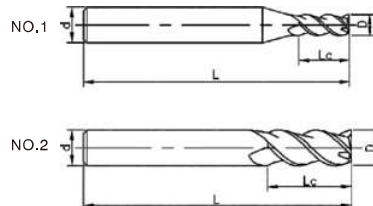
Solid carbide end mills

Solid carbide drill & taps

Technical information

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

N25UF 3 flute, square end



Standard shank

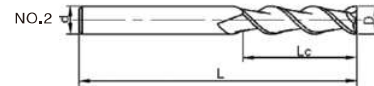
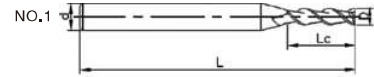
Ordering Code	Stock	D	Lc	L	d	Figure No.	
N25UF-S3-02006	●	2	6	50	4	1	
N25UF-S3-03009	●	3	9			2	
N25UF-S3-04011	●	4	11		6	1	
N25UF-S3-05013	●	5	13			2	
N25UF-S3-06016	●	6	16	60	8	1	
N25UF-S3-07020	●	7	20			2	
N25UF-S3-08020	●	8	20	75	10	1	
N25UF-S3-09023	●	9	23			2	
N25UF-S3-10025	●	10	25		100		16
N25UF-S3-12030	●	12	30			18	
N25UF-S3-16036	●	16	36	20	20		
N25UF-S3-18038	●	18	38				
N25UF-S3-20045	●	20	45				

Long shank

Ordering Code	Stock	D	Lc	L	d	Figure No.
N25UF-SH3-02020	●	2	20	75	4	1
N25UF-SH3-03025	●	3	25			2
N25UF-SH3-04030	●	4	30		6	1
N25UF-SH3-05030	●	5	30			100
N25UF-SH3-06035	●	6	35	10		
N25UF-SH3-08040	●	8	40		12	
N25UF-SH3-10045	●	10	45	150		
N25UF-SH3-12050	●	12	50		20	
N25UF-SH3-16060	●	16	60			
N25UF-SH3-20070	●	20	70			

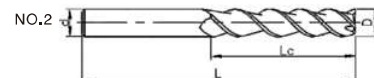
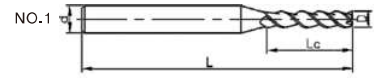
● Stock ○ Available upon Order

N25UF 2 flute, long flute length, square end



Ordering Code	Stock	D	Lc	L	d	Figure No.
N25UF-SL2-02020	○	2	20	75	4	1
N25UF-SL2-03025	○	3	25			2
N25UF-SL2-04030	○	4	30		6	1
N25UF-SL2-05030	○	5	30			100
N25UF-SL2-06035	○	6	35			
N25UF-SL2-08040	○	8	40			
N25UF-SL2-10045	○	10	45			
N25UF-SL2-12050	○	12	50	150	16	2
N25UF-SL2-16060	○	16	60			
N25UF-SL2-20070	○	20	70	20		

N25UF 3 flute, long flute length, square end



Ordering Code	Stock	D	Lc	L	d	Figure No.
N25UF-SL3-02020	●	2	20	75	4	1
N25UF-SL3-03025	●	3	25			2
N25UF-SL3-04030	●	4	30		6	1
N25UF-SL3-05030	●	5	30			100
N25UF-SL3-06035	●	6	35			
N25UF-SL3-08040	●	8	40			
N25UF-SL3-10045	●	10	45			
N25UF-SL3-12050	●	12	50	150	16	2
N25UF-SL3-16060	●	16	60			
N25UF-SL3-20070	●	20	70	20		

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

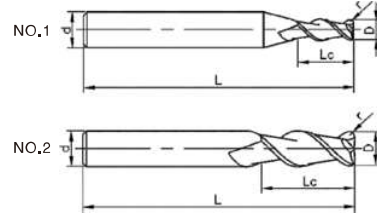
Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

N25UF 2 flute, corner radius

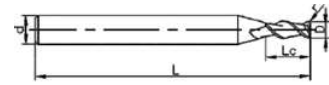


Ordering Code	Stock	D	Lc	r	L	d	Figure No.	
N25UF-R2-01001	●	1	3	0.1	50	4	1	
N25UF-R2-02002	●	2	6	0.2				
N25UF-R2-03002	●	3	9	0.3				6
N25UF-R2-03003	●							4
N25UF-R2-03005	●							6
N25UF-R2-63005	●							4
N25UF-R2-04002	●	4	11	0.2		4	2	
N25UF-R2-04003	●					6	1	
N25UF-R2-64003	●					4	2	
N25UF-R2-04005	●					6	1	
N25UF-R2-64005	●					4	2	
N25UF-R2-04010	●					5	13	0.2
N25UF-R2-05002	●	0.2						
N25UF-R2-05003	●	0.2						
N25UF-R2-05005	●	0.5						
N25UF-R2-05010	●	1						
N25UF-R2-05015	●	1.5						
N25UF-R2-06005	●	6	16	0.5	6	2		
N25UF-R2-06010	●						1	
N25UF-R2-06015	●						1.5	
N25UF-R2-06020	●						2	
N25UF-R2-08005	●						0.5	
N25UF-R2-08010	●						1	
N25UF-R2-08015	●	8	20	1.5	60	8		
N25UF-R2-08020	●						2	
N25UF-R2-10005	●						0.5	
N25UF-R2-10010	●	10	25	1	75	10		
N25UF-R2-10015	●						1.5	
N25UF-R2-10020	●						2	
N25UF-R2-10025	●						2.5	
N25UF-R2-12005	●						0.5	
N25UF-R2-12010	●						1	
N25UF-R2-12015	●	12	30	1.5	75	12		
N25UF-R2-12020	●						2	
N25UF-R2-12025	●						2.5	
N25UF-R2-16005	●						0.5	
N25UF-R2-16010	●	16	36	1	100	16		
N25UF-R2-16015	●						1.5	
N25UF-R2-16020	●						2	
N25UF-R2-16025	●						2.5	
N25UF-R2-20005	●						0.5	
N25UF-R2-20010	●						1	
N25UF-R2-20015	●	20	45	1.5	100	20		
N25UF-R2-20020	●						2	
N25UF-R2-20030	●						3	

● Stock ○ Available upon Order

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Toolholder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

N25UF 2 flute corner radius, with long shank length



Ordering Code	Stock	D	Lc	r	L	d	Figure No.
N25UF-RH2-06005	●	6	15	0.5	75	6	2
N25UF-RH2-06010	●			1			
N25UF-RH2-06015	●			1.5			
N25UF-RH2-06020	●			2			
N25UF-RH2-08005	●	8	20	0.5	100	8	
N25UF-RH2-08010	●			1			
N25UF-RH2-08015	●			1.5			
N25UF-RH2-08020	●			2			
N25UF-RH2-10005	●	10	25	0.5	150	10	
N25UF-RH2-10010	●			1			
N25UF-RH2-10015	●			1.5			
N25UF-RH2-10020	●			2			
N25UF-RH2-10025	●			2.5			
N25UF-RH2-12005	●	12	30	0.5	200	12	
N25UF-RH2-12010	●			1			
N25UF-RH2-12015	●			1.5			
N25UF-RH2-12020	●			2			
N25UF-RH2-12025	●			2.5			
N25UF-RH2-16005	●	16	36	0.5	225	16	
N25UF-RH2-16010	●			1			
N25UF-RH2-16015	●			1.5			
N25UF-RH2-16020	●			2			
N25UF-RH2-16025	●			2.5			
N25UF-RH2-20005	●	20	45	0.5	300	20	
N25UF-RH2-20010	●			1			
N25UF-RH2-20015	●			1.5			
N25UF-RH2-20020	●			2			
N25UF-RH2-20030	●			3			

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

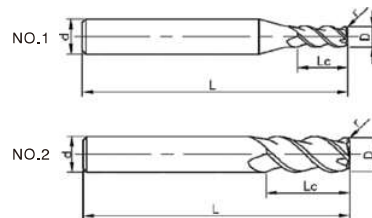
Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

N25UF 3 flute, corner radius

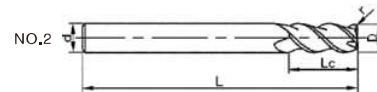
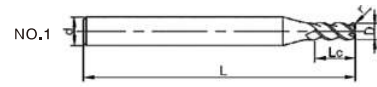


Ordering Code	Stock	D	Lc	r	L	d	Figure No.		
N25UF-R3-01001	●	1	3	0.1	50	4	1		
N25UF-R3-02002	●	2	6	0.2					
N25UF-R3-03002	●	3	9	0.3					
N25UF-R3-03003	●			0.5					
N25UF-R3-04002	●			0.2					
N25UF-R3-04003	●	4	11	0.3		2			
N25UF-R3-04005	●			0.5					
N25UF-R3-04010	●			1					
N25UF-R3-05002	●	5	13	0.2		60	6	1	
N25UF-R3-05003	●			0.3					
N25UF-R3-05005	●			0.5					
N25UF-R3-05010	●			1					
N25UF-R3-05015	●			1.5					
N25UF-R3-06005	●	6	16	0.5	75		10	2	
N25UF-R3-06010	●			1					
N25UF-R3-06015	●			1.5					
N25UF-R3-06020	●			2					
N25UF-R3-08005	●			8					20
N25UF-R3-08010	●	1							
N25UF-R3-08015	●	1.5							
N25UF-R3-08020	●	2							
N25UF-R3-10005	●	10	25	0.5		16	16		
N25UF-R3-10010	●			1					
N25UF-R3-10015	●			1.5					
N25UF-R3-10020	●			2					
N25UF-R3-10025	●			2.5					
N25UF-R3-12005	●	12	30	0.5	20		20		
N25UF-R3-12010	●			1					
N25UF-R3-12015	●			1.5					
N25UF-R3-12020	●			2					
N25UF-R3-12025	●			2.5					
N25UF-R3-16005	●	16	36	0.5		45	20		
N25UF-R3-16010	●			1					
N25UF-R3-16015	●			1.5					
N25UF-R3-16020	●			2					
N25UF-R3-16025	●			2.5					
N25UF-R3-20005	●	20	45	0.5	3				
N25UF-R3-20010	●			1					
N25UF-R3-20015	●			1.5					
N25UF-R3-20020	●			2					
N25UF-R3-20030	●			3					

● Stock ○ Available upon Order

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

N25UF 3 flute corner radius, with long shank length



Ordering Code	Stock	D	Lc	r	L	d	Figure No.
N25UF-RH3-06005	●	6	15	0.5	75	6	2
N25UF-RH3-06010	●			1			
N25UF-RH3-06015	●			1.5			
N25UF-RH3-06020	●			2			
N25UF-RH3-08005	●	8	20	0.5	100	8	
N25UF-RH3-08010	●			1			
N25UF-RH3-08015	●			1.5			
N25UF-RH3-08020	●			2			
N25UF-RH3-10005	●	10	25	0.5	150	10	
N25UF-RH3-10010	●			1			
N25UF-RH3-10015	●			1.5			
N25UF-RH3-10020	●			2			
N25UF-RH3-10025	●			2.5			
N25UF-RH3-12005	●	12	30	0.5	150	12	
N25UF-RH3-12010	●			1			
N25UF-RH3-12015	●			1.5			
N25UF-RH3-12020	●			2			
N25UF-RH3-12025	●			2.5			
N25UF-RH3-16005	●	16	36	0.5	150	16	
N25UF-RH3-16010	●			1			
N25UF-RH3-16015	●			1.5			
N25UF-RH3-16020	●			2			
N25UF-RH3-16025	●			2.5			
N25UF-RH3-20005	●	20	45	0.5	150	20	
N25UF-RH3-20010	●			1			
N25UF-RH3-20015	●			1.5			
N25UF-RH3-20020	●			2			
N25UF-RH3-20030	●			3			

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

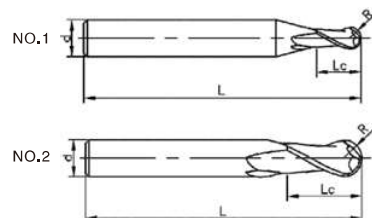
Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

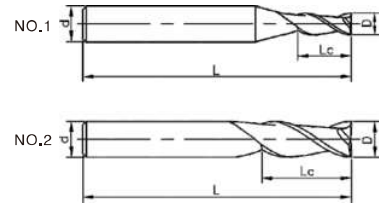
N25UF 2 flute, ballnose



Ordering Code	Stock	D	R	Lc	L	d	Figure No.
N25UF-B2-01002	●	1	0.5	2	50	4	1
N25UF-B2-02004	●	2	1	4			
N25UF-B2-03006	●	3	1.5	6			
N25UF-B2-63006	●					4	2
N25UF-B2-04008	●	4	2	8		8	1
N25UF-B2-64008	●						2
N25UF-B2-05010	●	5	2.5	10	60	10	1
N25UF-B2-06012	●	6	3	12			2
N25UF-B2-07014	●	7	3.5	14	75	12	1
N25UF-B2-08014	●	8	4				2
N25UF-B2-09016	●	9	4.5	16	100	16	2
N25UF-B2-10018	●	10	5	18			
N25UF-B2-12022	●	12	6	22			
N25UF-B2-16026	●	16	8	26			

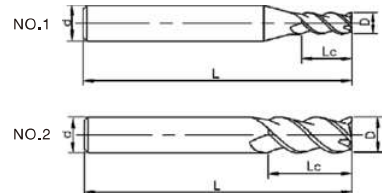
● Stock ○ Available upon Order

NGK05A 2 flute, standard length, square end



Ordering Code	Stock	D	Lc	L	d	Figure No.
NGK05A-S2-02006	○	2	6	50	4	1
NGK05A-S2-03009	○	3	9			2
NGK05A-S2-04010	○	4	10		6	1
NGK05A-S2-05013	○	5	13			2
NGK05A-S2-06015	○	6	15	60	8	
NGK05A-S2-08020	○	8	20		75	
NGK05A-S2-10025	○	10	25	12		
NGK05A-S2-12030	○	12	30			

NGK05A 3 flute, long flute length, square end



Ordering Code	Stock	D	Lc	L	d	Figure No.
NGK05A-S3-02006	○	2	6	50	4	1
NGK05A-S3-03009	○	3	9			2
NGK05A-S3-04010	○	4	10		6	1
NGK05A-S3-05013	○	5	13			2
NGK05A-S3-06015	○	6	15	60	8	
NGK05A-S3-08020	○	8	20		75	
NGK05A-S3-10025	○	10	25	12		
NGK05A-S3-12030	○	12	30			

For high productivity edge-finishing and finishing in graphite. Diamond coating for longer tool life

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

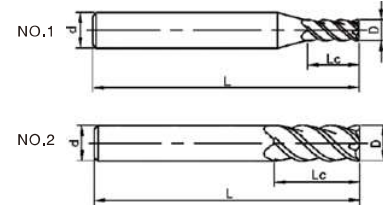
Solid carbide end mills

Solid carbide drill & taps

Technical information

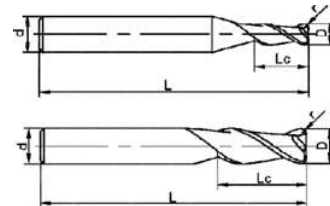
- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

NGK05A 4 flute, standard length, square end



Ordering Code	Stock	D	Lc	L	d	Figure No.
NGK05A-S4-02006	○	2	6	50	4	1
NGK05A-S4-03009	○	3	9			2
NGK05A-S4-04010	○	4	10		6	1
NGK05A-S4-05013	○	5	13			2
NGK05A-S4-06015	○	6	15	60	8	2
NGK05A-S4-08020	○	8	20			
NGK05A-S4-10025	○	10	25	75	10	
NGK05A-S4-12030	○	12	30		12	

NGK05A 2 flute, corner radius

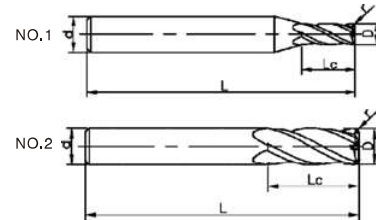


Ordering Code	Stock	D	Lc	r	L	d	Figure No.	
NGK05A-R2-06003	○	6	16	0.3	50	6	2	
NGK05A-R2-06005	○			0.5				
NGK05A-R2-08005	○	8	20	1	60	8		
NGK05A-R2-08010	○			0.5				
NGK05A-R2-10005	○	10	25	1	75	10		
NGK05A-R2-10010	○			1.5				
NGK05A-R2-10015	○			0.5				
NGK05A-R2-12005	○	12	30	1		75		12
NGK05A-R2-12010	○			1.5				
NGK05A-R2-12015	○			0.5				
NGK05A-R2-16005	○	16	36	1	100	16		
NGK05A-R2-16010	○			2				
NGK05A-R2-16020	○			0.5				

For high productivity edge-finishing and finishing in graphite. Diamond coating for longer tool life

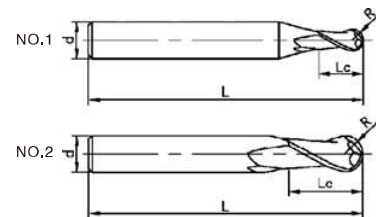
● Stock ○ Available upon Order

NGK05A 4 flute, corner radius



Ordering Code	Stock	D	Lc	r	L	d	Figure No.
NGK05A-R4-06005	○	6	16	0.5	50	6	2
NGK05A-R4-08002	○	8	20	0.2	60	8	
NGK05A-R4-08005	○			0.5			
NGK05A-R4-10005	○	10	25	1	75	10	
NGK05A-R4-10010	○					12	
NGK05A-R4-12010	○					30	
NGK05A-R4-16010	○	16	36	100	16	20	
NGK05A-R4-20010	○	20	45				

NGK05A 2 flute, Ballnose



Ordering Code	Stock	D	R	Lc	L	d	Figure No.
NGK05A-B2-02004	○	2	1	4	50	4	1
NGK05A-B2-03006	○	3	1.5	6			2
NGK05A-B2-04008	○	4	2	8			
NGK05A-B2-05010	○	5	2.5	10	60	6	1
NGK05A-B2-06012	○	6	3	12			
NGK05A-B2-08014	○	8	4	14	75	8	2
NGK05A-B2-10018	○	10	5	18			
NGK05A-B2-12022	○	12	6	22			
					12		

For high productivity edge-finishing and finishing in graphite, Diamond coating for longer tool life

● Stock ○ Available upon Order

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

P20F recommended cutting parameters

For Steels, Cast Iron—Side Milling

Workpiece Material		Cutting Speed(m/min)			Tool Diameter(mm)										
		a_p	a_e	Min	Optimum	Max	mm	3	4	6	8	10	12	16	20
P	P1	1.5 × D	0.15 × D	150	180	210	Fz	0.028	0.036	0.048	0.065	0.08	0.09	0.12	0.15
	P2	1.5 × D	0.15 × D	150	180	210	Fz	0.028	0.036	0.048	0.065	0.08	0.09	0.12	0.15
	P3	1.5 × D	0.15 × D	130	150	170	Fz	0.025	0.032	0.042	0.063	0.073	0.084	0.095	0.12
	P4	1 × D	0.15 × D	130	150	170	Fz	0.025	0.032	0.042	0.063	0.073	0.084	0.095	0.12
M	M1	1.5 × D	0.15 × D	120	150	180	Fz	0.028	0.036	0.048	0.066	0.085	0.09	0.12	0.13
	M2	1.5 × D	0.15 × D	110	130	160	Fz	0.025	0.032	0.043	0.063	0.074	0.085	0.095	0.11
	M3	1 × D	0.12 × D	100	120	140	Fz	0.021	0.027	0.038	0.054	0.06	0.065	0.07	0.08
K	K1	1.5 × D	0.15 × D	150	180	210	Fz	0.03	0.037	0.053	0.064	0.075	0.085	0.1	0.12
	K2	1.5 × D	0.15 × D	130	160	190	Fz	0.025	0.032	0.048	0.059	0.069	0.08	0.095	0.11

For Steels, Cast Iron—Slotting

Workpiece Material		Cutting Speed(m/min)			Tool Diameter(mm)									
		a_p	Min	Optimum	Max	mm	3	4	6	8	10	12	16	20
P	P1	0.8 × D	60	80	95	Fz	0.025	0.042	0.052	0.062	0.072	0.082	0.125	0.16
	P2	0.8 × D	60	80	95	Fz	0.025	0.042	0.052	0.062	0.072	0.082	0.125	0.16
	P3	0.5 × D	55	75	90	Fz	0.022	0.037	0.047	0.052	0.062	0.072	0.105	0.13
	P4	0.5 × D	55	70	85	Fz	0.022	0.037	0.047	0.052	0.062	0.072	0.105	0.13
M	M1	0.3 × D	40	55	65	Fz	0.015	0.022	0.038	0.049	0.06	0.07	0.083	0.095
	M2	0.3 × D	40	55	65	Fz	0.012	0.018	0.035	0.046	0.056	0.066	0.078	0.09
	M3	0.3 × D	35	50	60	Fz	0.01	0.017	0.032	0.042	0.053	0.064	0.075	0.085
K	K1	0.5 × D	50	60	70	Fz	0.022	0.037	0.047	0.052	0.063	0.074	0.105	0.13
	K2	0.5 × D	45	55	65	Fz	0.018	0.028	0.043	0.05	0.06	0.07	0.085	0.096

For Steels, Cast Iron—Profiling

Workpiece Material		Cutting Speed(m/min)			Tool Diameter(mm)											
		a_p	a_e	Min	Optimum	Max	mm	4	5	6	7	8	9	10	11	12
P	P1	0.2 × D	0.3 × D	120	160	200	Fz	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11	0.12
	P2	0.2 × D	0.3 × D	120	160	200	Fz	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11	0.12
	P3	0.2 × D	0.3 × D	110	140	170	Fz	0.035	0.045	0.055	0.063	0.072	0.08	0.09	0.1	0.11
	P4	0.2 × D	0.3 × D	110	140	170	Fz	0.035	0.045	0.055	0.063	0.072	0.08	0.09	0.1	0.11
M	M1	0.2 × D	0.2 × D	80	110	130	Fz	0.035	0.045	0.055	0.063	0.072	0.08	0.09	0.1	0.11
	M2	0.2 × D	0.2 × D	80	110	130	Fz	0.035	0.045	0.055	0.063	0.072	0.08	0.09	0.1	0.11
	M3	0.1 × D	0.1 × D	70	85	100	Fz	0.032	0.042	0.052	0.058	0.065	0.072	0.08	0.087	0.095
K	K1	0.2 × D	0.2 × D	110	140	170	Fz	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11	0.12
	K2	0.2 × D	0.2 × D	110	140	170	Fz	0.035	0.045	0.055	0.063	0.072	0.08	0.09	0.1	0.11

This series tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

M20F recommended cutting parameters

Stainless Steels—Side Milling

Workpiece Material				Cutting Speed(m/min)			Tool Diameter(mm)									
							mm	1	2	4	6	8	10	12	16	20
M	M1	1 × D	0.1 × D	100	120	150	Fz	0.011	0.018	0.03	0.042	0.059	0.071	0.08	0.105	0.113
	M2	1 × D	0.1 × D	90	110	130	Fz	0.008	0.013	0.028	0.038	0.057	0.066	0.076	0.085	0.095
	M3	1 × D	0.1 × D	80	100	110	Fz	0.006	0.01	0.022	0.032	0.046	0.052	0.057	0.062	0.072
S	S1	1 × D	0.05 × D	25	35	45	Fz	0.007	0.01	0.015	0.022	0.03	0.034	0.04	0.05	0.06
	S2	1 × D	0.05 × D	25	35	45	Fz	0.007	0.01	0.015	0.022	0.03	0.034	0.04	0.05	0.06
	S3	1 × D	0.05 × D	25	35	45	Fz	0.007	0.01	0.015	0.022	0.03	0.034	0.04	0.05	0.06
	S4	1 × D	0.08 × D	50	60	80	Fz	0.01	0.015	0.023	0.032	0.045	0.052	0.058	0.07	0.08

Stainless Steels—Side Slotting

Workpiece Material				Cutting Speed(m/min)			Tool Diameter(mm)									
							mm	1	2	4	6	8	10	12	16	20
M	M1	0.3 × D		40	50	60	Fz	0.009	0.012	0.02	0.036	0.047	0.058	0.068	0.08	0.09
	M2	0.3 × D		40	50	60	Fz	0.007	0.01	0.017	0.033	0.044	0.054	0.064	0.075	0.085
	M3	0.3 × D		35	45	55	Fz	0.006	0.009	0.015	0.03	0.04	0.05	0.06	0.07	0.08
S	S1	0.25 × D		20	30	40	Fz	0.005	0.01	0.015	0.022	0.025	0.03	0.035	0.045	0.055
	S2	0.25 × D		20	30	40	Fz	0.005	0.01	0.015	0.022	0.025	0.03	0.035	0.045	0.055
	S3	0.25 × D		20	30	40	Fz	0.005	0.01	0.015	0.022	0.025	0.03	0.035	0.045	0.055
	S4	0.3 × D		30	50	70	Fz	0.008	0.013	0.018	0.025	0.03	0.035	0.04	0.05	0.06

Stainless Steels—Side Profiling

Workpiece Material				Cutting Speed(m/min)			Tool Diameter(mm)									
							mm	1	2	4	6	8	10	12	16	20
M	M1	0.2 × D	0.2 × D	80	110	130	Fz	0.007	0.015	0.032	0.052	0.07	0.085	0.105	0.13	0.16
	M2	0.2 × D	0.2 × D	80	110	130	Fz	0.007	0.015	0.032	0.052	0.07	0.085	0.105	0.13	0.16
	M3	0.1 × D	0.1 × D	70	85	100	Fz	0.006	0.013	0.03	0.05	0.06	0.076	0.09	0.12	0.15
S	S1	0.15 × D	0.15 × D	30	40	50	Fz	0.006	0.013	0.03	0.05	0.068	0.082	0.1	0.12	0.15
	S2	0.15 × D	0.15 × D	30	40	50	Fz	0.006	0.013	0.03	0.05	0.068	0.082	0.1	0.12	0.15
	S3	0.15 × D	0.15 × D	30	40	50	Fz	0.006	0.013	0.03	0.05	0.068	0.082	0.1	0.12	0.15
	S4	0.3 × D	0.2 × D	60	70	80	Fz	0.01	0.02	0.04	0.06	0.08	0.1	0.12	0.16	0.2

This serie tools are most suitable for stainless steels, and also versatile for other materials listed above.

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information

- Turning inserts
- External turning
- Internal turning
- Grooving & parting
- Threading
- Milling
- Boring & drilling
- Tool holder
- Solid carbide end mills**
- Solid carbide drill & taps
- Technical information

H25UF recommended cutting parameters

Hardened Steels(Miniature,deep grooving)—Side Milling

Workpiece Material			Cutting Speed(m/min)	Tool Diameter(mm)							
	a_p	a_e		mm	0.4	0.6	0.8	1	1.5	2	
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #0070C0; color: white; padding: 2px;">P</div> <div style="background-color: #FFD700; color: black; padding: 2px;">M</div> <div style="background-color: #DC143C; color: white; padding: 2px;">K</div> <div style="background-color: #808080; color: white; padding: 2px;">H</div> </div>	H1	$1 \times D$	$0.1 \times D$	Max.Speed Of Machine	Fz	0,009	0,012	0,015	0,021	0,023	0,028
	H2	$0.7 \times D$	$0.08 \times D$	Max.Speed Of Machine	Fz	0,011	0,014	0,017	0,023	0,028	0,033
	H3	$0.5 \times D$	$0.05 \times D$	Max.Speed Of Machine	Fz	0,012	0,015	0,019	0,025	0,03	0,035

Hardened Steels(Miniature,deep grooving)—Slotting

Workpiece Material			Cutting Speed(m/min)	Tool Diameter(mm)						
	a_p			mm	0.4	0.6	0.8	1	1.5	2
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #0070C0; color: white; padding: 2px;">P</div> <div style="background-color: #FFD700; color: black; padding: 2px;">M</div> <div style="background-color: #DC143C; color: white; padding: 2px;">K</div> <div style="background-color: #808080; color: white; padding: 2px;">H</div> </div>	H1	$0.2 \times D$	Max.Speed Of Machine	Fz	0,006	0,009	0,012	0,018	0,02	0,025
	H2	$0.1 \times D$	Max.Speed Of Machine	Fz	0,008	0,011	0,014	0,02	0,025	0,03
	H3	$0.05 \times D$	Max.Speed Of Machine	Fz	0,009	0,012	0,016	0,022	0,027	0,032

Hardened Steels(Miniature,deep grooving)—Profiling

Workpiece Material			Cutting Speed(m/min)	Tool Diameter(mm)								
	a_p	a_e		mm	0.4	0.6	0.8	1	1.2	1.5	2	
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: #0070C0; color: white; padding: 2px;">P</div> <div style="background-color: #FFD700; color: black; padding: 2px;">M</div> <div style="background-color: #DC143C; color: white; padding: 2px;">K</div> <div style="background-color: #808080; color: white; padding: 2px;">H</div> </div>	H1	$0.04 \times D$	$0.03 \times D$	Max.Speed Of Machine	Fz	0,015	0,018	0,022	0,024	0,026	0,03	0,04
	H2	$0.03 \times D$	$0.03 \times D$	Max.Speed Of Machine	Fz	0,018	0,021	0,024	0,026	0,03	0,035	0,045
	H3	$0.02 \times D$	$0.02 \times D$	Max.Speed Of Machine	Fz	0,021	0,024	0,026	0,028	0,034	0,04	0,05

This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

- 1、Maximum T.I.R.in when tool is chucked is 0.01mm(0.01mm maximum recommended).
- 2、Make sure work piece and machine are stable and use a precision holder.
- 3、Please adjust the speed, feed and cutting depth according to actual cutting conditons.
- 4、The milling conditions are for an Endmills where the tool overhang length is less than $4 \times D$ (mill dia).
When the tool overhang length is longer, please adjust the speed, feed and cutting depth.

N25UF/NGK recommended cutting parameters

Aluminium Alloy—Side Milling

Workpiece Material				Cutting Speed(m/min)			Tool Diameter(mm)									
							a _p	a _e	Min	Optimum	Max	mm	1	2	4	6
N	N1	1.5 × D	0.2 × D	300	500	700	Fz	0.02	0.03	0.055	0.065	0.075	0.1	0.14	0.2	0.25
	N2	1.5 × D	0.2 × D	300	500	700	Fz	0.02	0.03	0.055	0.065	0.075	0.1	0.14	0.2	0.25
	N3	1.5 × D	0.15 × D	200	350	550	Fz	0.015	0.025	0.045	0.055	0.065	0.08	0.12	0.16	0.2
	N4	1.5 × D	0.2 × D	280	450	650	Fz	0.018	0.028	0.05	0.06	0.07	0.09	0.13	0.18	0.22
		a _p	a _e	Min	Optimum	Max	mm	1	2	4	6	8	10	12		
Graphite	N3	1 × D	0.15 × D	150	200	300	Fz	0.02	0.03	0.05	0.06	0.07	0.085	0.13		
	N5	1.5 × D	0.5 × D	150	250	400	Fz	0.03	0.05	0.07	0.09	0.11	0.15	0.18		

Aluminium Alloy—Slotting

Workpiece Material				Cutting Speed(m/min)			Tool Diameter(mm)									
							a _p	Min	Optimum	Max	mm	1	2	4	6	8
N	N1	0.8 × D		180	250	300	Fz	0.015	0.025	0.045	0.058	0.07	0.08	0.095	0.16	0.19
	N2	0.8 × D		180	250	300	Fz	0.015	0.025	0.045	0.058	0.07	0.08	0.095	0.16	0.19
	N3	0.5 × D		150	200	250	Fz	0.01	0.018	0.035	0.045	0.055	0.065	0.078	0.13	0.16
	N4	0.8 × D		160	220	280	Fz	0.012	0.02	0.04	0.05	0.06	0.07	0.084	0.14	0.17
		a _p		Min	Optimum	Max	mm	1	2	4	6	8	10	12		
Graphite	N3	0.5 × D		120	180	250	Fz	0.012	0.02	0.04	0.05	0.06	0.07	0.09		
	N5	0.5 × D		120	200	300	Fz	0.018	0.03	0.045	0.065	0.085	0.11	0.15		

Aluminium Alloy—Profiling

Workpiece Material				Cutting Speed(m/min)			Tool Diameter(mm)									
							a _p	a _e	Min	Optimum	Max	mm	1	2	4	6
N	N1	0.3 × D	0.3 × D	320	450	600	Fz	0.025	0.05	0.08	0.12	0.16	0.2	0.24	0.32	
	N2	0.3 × D	0.3 × D	320	450	600	Fz	0.025	0.05	0.08	0.12	0.16	0.2	0.24	0.32	
	N3	0.3 × D	0.3 × D	250	320	400	Fz	0.02	0.04	0.06	0.1	0.14	0.18	0.22	0.25	
	N4	0.3 × D	0.3 × D	300	400	500	Fz	0.022	0.045	0.07	0.11	0.15	0.19	0.23	0.28	
		a _p	a _e	Min	Optimum	Max	mm	0.5	1	2	4	6	8	10	12	
Graphite	N3	0.3 × D	0.3 × D	150	200	300	Fz	0.008	0.018	0.032	0.045	0.06	0.08	0.11	0.13	
	N5	0.4 × D	0.5 × D	150	250	400	Fz	0.01	0.02	0.035	0.05	0.07	0.09	0.12	0.15	

This serie tools are most suitable for stainless steels, and also versatile for other materials listed above.

Turning inserts

External turning

Internal turning

Grooving & parting

Threading

Milling

Boring & drilling

Tool holder

Solid carbide end mills

Solid carbide drill & taps

Technical information