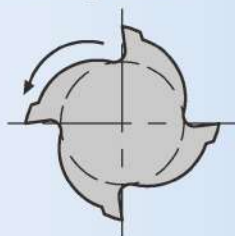


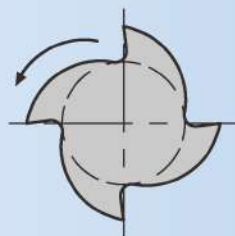
High performance universal machining

PM series

- Optimized geometry, improves chip removal and chip forming with reduced cutting force.



a) PM flute profile



b) Conventional flute profile



- Higher feed rates and improved metal removal rate for efficient machining, due to high stability of cutting edge and rigid tool structure.

Tool diameter: $\varnothing 6.0\text{mm}$

Tool type: a) PM-4E-D6.0

b) Tool from overseas manufacturer

Machine tool: Mikron UCP1000

Workpiece material: NAK80(40HRC)

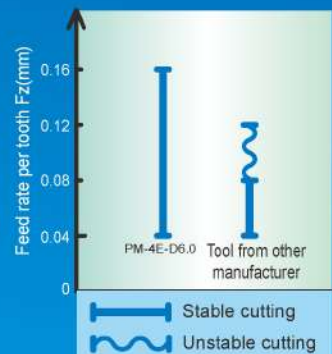
Cooling method: Air cooling

Machining operation: Side milling (down milling)

Cutting parameters: $V_c=100\text{m/min}$,

$a_p=9\text{mm}$, $a_e=0.6\text{mm}$,

$F_z=0.04\text{mm}\sim 0.16\text{mm}$

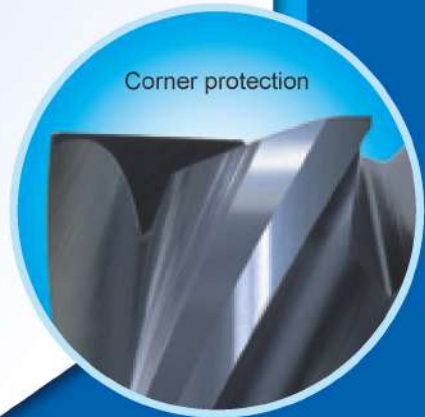
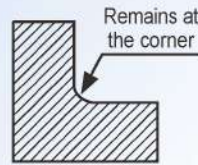


- With excellent wear resistance and toughness, high wear resistance and breakage resistance is achieved even during high performance milling.

The characteristic of corner protection end mills:

It's suitable for bad cutting condition or hardness material machining.

- It's not easy to break with high cutter edge strength.
- The sharpness of the corner is reduced, and there are residues in it.

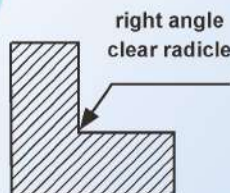


Corner protection

Updated flattened end mills

End mills series of sharp and corner protection type

Sharp



The characteristic of sharp end mill:

True 90 degree angle is obtained without material left in the corner.

The corner part is sharp; it is applicable in finishing or soft material machining. Especially, it is usually used in machining of non-ferrous material such as Al.

2-flute flattened end mills with straight shank

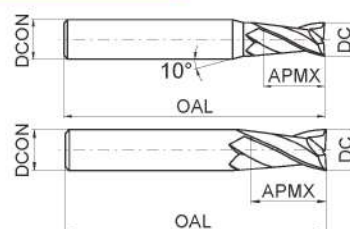


PM-2E



Very suitable for slot milling.

Wide application.



Picture 1

Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-2E-D1.0F	1.0	3	3	50	2	Picture 1	○
PM-2E-D1.0S	1.0	4	3	50	2	Picture 1	●
PM-2E-D1.0	1.0	6	3	50	2	Picture 1	●
PM-2E-D1.5S	1.5	4	4	50	2	Picture 1	●
PM-2E-D1.5	1.5	6	4	50	2	Picture 1	●
PM-2E-D2.0F	2.0	3	6	50	2	Picture 1	○
PM-2E-D2.0S	2.0	4	6	50	2	Picture 1	●
PM-2E-D2.0	2.0	6	6	50	2	Picture 1	●
PM-2E-D2.5S	2.5	4	8	50	2	Picture 1	●
PM-2E-D2.5	2.5	6	8	50	2	Picture 1	●
PM-2E-D3.0F	3.0	3	8	50	2	Picture 2	○
PM-2E-D3.0S	3.0	4	8	50	2	Picture 1	●
PM-2E-D3.0	3.0	6	8	50	2	Picture 1	●
PM-2E-D3.5S	3.5	4	10	50	2	Picture 1	○
PM-2E-D3.5	3.5	6	10	50	2	Picture 1	●
PM-2E-D4.0S	4.0	4	11	50	2	Picture 2	●
PM-2E-D4.0	4.0	6	11	50	2	Picture 1	●
PM-2E-D4.5	4.5	6	11	50	2	Picture 1	●
PM-2E-D5.0	5.0	6	13	50	2	Picture 1	●
PM-2E-D5.5	5.5	6	16	50	2	Picture 1	●
PM-2E-D6.0	6.0	6	16	50	2	Picture 2	●
PM-2E-D7.0	7.0	8	20	60	2	Picture 1	●
PM-2E-D8.0	8.0	8	20	60	2	Picture 2	●
PM-2E-D9.0	9.0	10	22	75	2	Picture 1	●
PM-2E-D10.0	10.0	10	25	75	2	Picture 2	●
PM-2E-D11.0	11.0	12	26	75	2	Picture 1	●
PM-2E-D12.0	12.0	12	30	75	2	Picture 2	●
PM-2E-D14.0	14.0	14	32	75	2	Picture 2	●
PM-2E-D16.0	16.0	16	45	100	2	Picture 2	●
PM-2E-D18.0	18.0	18	45	100	2	Picture 2	●
PM-2E-D20.0	20.0	20	45	100	2	Picture 2	●

Applicable workpiece material table

● Stock available ○ Make-to-order

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B552

Non-standard customization

B652-B653

2-flute flattened end mills with straight shank

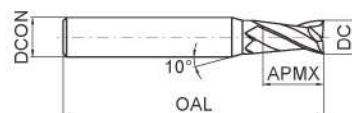


PM-2F

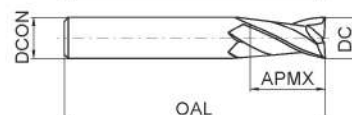


● Very suitable for slot milling.

● Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-2F-D1.0S	1.0	4	3	50	2	Picture 1	○
PM-2F-D1.0	1.0	6	3	50	2	Picture 1	○
PM-2F-D1.5S	1.5	4	4	50	2	Picture 1	○
PM-2F-D1.5	1.5	6	4	50	2	Picture 1	○
PM-2F-D2.0S	2.0	4	6	50	2	Picture 1	○
PM-2F-D2.0	2.0	6	6	50	2	Picture 1	○
PM-2F-D2.5S	2.5	4	8	50	2	Picture 1	○
PM-2F-D2.5	2.5	6	8	50	2	Picture 1	○
PM-2F-D3.0S	3.0	4	8	50	2	Picture 1	○
PM-2F-D3.0	3.0	6	8	50	2	Picture 1	○
PM-2F-D3.5	3.5	6	10	50	2	Picture 1	○
PM-2F-D4.0S	4.0	4	11	50	2	Picture 2	○
PM-2F-D4.0	4.0	6	11	50	2	Picture 1	○
PM-2F-D4.5	4.5	6	11	50	2	Picture 1	○
PM-2F-D5.0	5.0	6	13	50	2	Picture 1	○
PM-2F-D5.5	5.5	6	16	50	2	Picture 1	○
PM-2F-D6.0	6.0	6	16	50	2	Picture 2	○
PM-2F-D7.0	7.0	8	20	60	2	Picture 1	○
PM-2F-D8.0	8.0	8	20	60	2	Picture 2	○
PM-2F-D9.0	9.0	10	22	75	2	Picture 1	○
PM-2F-D10.0	10.0	10	25	75	2	Picture 2	○
PM-2F-D11.0	11.0	12	26	75	2	Picture 1	○
PM-2F-D12.0	12.0	12	30	75	2	Picture 2	○
PM-2F-D14.0	14.0	14	32	75	2	Picture 2	○
PM-2F-D16.0	16.0	16	45	100	2	Picture 2	○
PM-2F-D18.0	18.0	18	45	100	2	Picture 2	○
PM-2F-D20.0	20.0	20	45	100	2	Picture 2	○

● Stock available ○ Make-to-order

➤ Applicable workpiece material ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B553

Non-standard customization

B652-B653

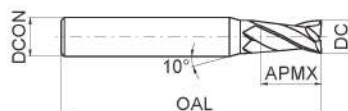
2-flute flattened end mills with straight shank and long cutting edge



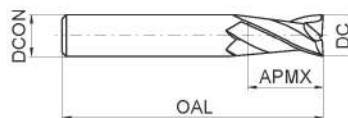
PM-2EL



PM-2E series with long cutting edge.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-2EL-D3.0	3.0	6	12	75	2	Picture 1	○
PM-2EL-D4.0	4.0	6	15	75	2	Picture 1	○
PM-2EL-D5.0	5.0	6	20	75	2	Picture 1	○
PM-2EL-D6.0	6.0	6	20	75	2	Picture 2	○
PM-2EL-D8.0	8.0	8	25	100	2	Picture 2	○
PM-2EL-D10.0	10.0	10	30	100	2	Picture 2	○
PM-2EL-D12.0	12.0	12	35	100	2	Picture 2	○
PM-2EL-D14.0	14.0	14	40	100	2	Picture 2	○
PM-2EL-D16.0	16.0	16	50	150	2	Picture 2	○
PM-2EL-D20.0	20.0	20	55	150	2	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B552

Non-standard customization

B652-B653

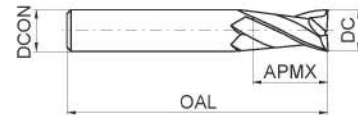
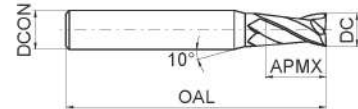
2-flute flattened end mills with straight shank and long cutting edge



PM-2FL



● PM-2F series with long cutting edge.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-2FL-D3.0	3.0	6	12	75	2	Picture 1	○
PM-2FL-D4.0	4.0	6	15	75	2	Picture 1	○
PM-2FL-D5.0	5.0	6	20	75	2	Picture 1	○
PM-2FL-D6.0	6.0	6	20	75	2	Picture 2	○
PM-2FL-D8.0	8.0	8	25	100	2	Picture 2	○
PM-2FL-D10.0	10.0	10	30	100	2	Picture 2	○
PM-2FL-D12.0	12.0	12	35	100	2	Picture 2	○
PM-2FL-D14.0	14.0	14	40	100	2	Picture 2	○
PM-2FL-D16.0	16.0	16	50	150	2	Picture 2	○
PM-2FL-D20.0	20.0	20	55	150	2	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

PM series

Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B553

Non-standard customization

B652-B653

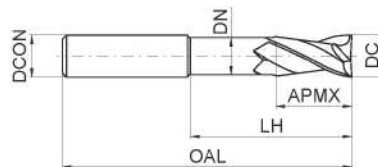
2-flute flattened end mills with straight shank, long neck and short cutting edge



PM-2EFP



● High-rigidity short cutting edge, suitable for heavy cutting and also deep cavity milling.



Type	Basic dimension(mm)						Number of teeth Z	Stock
	DC	DCON	APMX	LH	DN	OAL		
PM-2EFP-D6.0	6.0	6	9	30	5.8	75	2	○
PM-2EFP-D8.0	8.0	8	12	40	7.8	100	2	○
PM-2EFP-D10.0	10.0	10	15	50	9.6	100	2	○
PM-2EFP-D12.0	12.0	12	18	50	11.5	100	2	○
PM-2EFP-D16.0	16.0	16	24	50	15.5	150	2	○
PM-2EFP-D20.0	20.0	20	30	60	19.5	150	2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

PM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B554

Non-standard customization

B652-B653

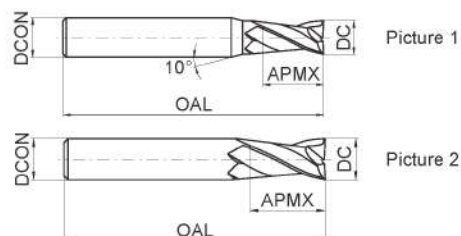
2-flute flattened end mills with long shank



PM-2EBL/X



● PM-2E series with long shank.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-2EBL-D3.0S	3.0	4	8	75	2	Picture 1	○
PM-2EBL-D3.0	3.0	6	8	75	2	Picture 1	○
PM-2EBL-D4.0S	4.0	4	11	75	2	Picture 2	○
PM-2EBL-D4.0	4.0	6	11	75	2	Picture 1	○
PM-2EBL-D6.0	6.0	6	16	75	2	Picture 2	○
PM-2EBX-D6.0	6.0	6	16	100	2	Picture 2	○
PM-2EBL-D8.0	8.0	8	20	75	2	Picture 2	○
PM-2EBX-D8.0	8.0	8	20	100	2	Picture 2	○
PM-2EBL-D10.0	10.0	10	25	100	2	Picture 2	○
PM-2EBX-D10.0	10.0	10	25	150	2	Picture 2	○
PM-2EBL-D12.0	12.0	12	30	100	2	Picture 2	○
PM-2EBX-D12.0	12.0	12	30	150	2	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

PM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B552

Non-standard customization

B652-B653

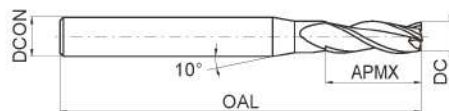
3-flute flattened end mills with straight shank



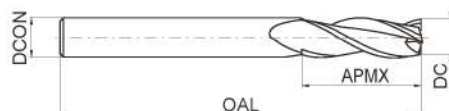
PM-3E-H



- Especially suitable for slot milling.
- Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-3E-D3.0F-H	3.0	3	8	5	3	Picture 2	○
PM-3E-D3.0S-H	3.0	4	8	50	3	Picture 1	○
PM-3E-D3.0-H	3.0	6	8	50	3	Picture 1	○
PM-3E-D3.5-H	3.5	6	10	50	3	Picture 1	○
PM-3E-D4.0S-H	4.0	4	11	50	3	Picture 2	○
PM-3E-D4.0-H	4.0	6	11	50	3	Picture 1	○
PM-3E-D4.5-H	4.5	6	11	50	3	Picture 1	○
PM-3E-D5.0-H	5.0	6	13	50	3	Picture 1	○
PM-3E-D5.5-H	5.5	6	16	50	3	Picture 1	○
PM-3E-D6.0-H	6.0	6	16	50	3	Picture 2	○
PM-3E-D7.0-H	7.0	8	20	60	3	Picture 1	○
PM-3E-D8.0-H	8.0	8	20	60	3	Picture 2	○
PM-3E-D9.0-H	9.0	10	22	75	3	Picture 1	○
PM-3E-D10.0-H	10.0	10	25	75	3	Picture 2	○
PM-3E-D11.0-H	11.0	12	26	75	3	Picture 1	○
PM-3E-D12.0-H	12.0	12	30	75	3	Picture 2	○
PM-3E-D14.0-H	14.0	14	32	75	3	Picture 2	○
PM-3E-D16.0-H	16.0	16	45	100	3	Picture 2	○
PM-3E-D18.0-H	18.0	18	45	100	3	Picture 2	○
PM-3E-D20.0-H	20.0	20	45	100	3	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B555

Non-standard customization

B652-B653

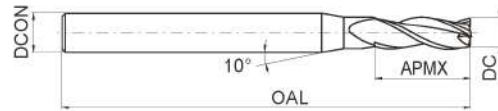
3-flute flattened end mills with straight shank and long cutting edge



PM-3EL-H



● PM-3E-H series with long shank.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-3EL-D3.0-H	3.0	6	12	75	3	Picture 1	○
PM-3EL-D4.0-H	4.0	6	15	75	3	Picture 1	○
PM-3EL-D5.0-H	5.0	6	20	75	3	Picture 1	○
PM-3EL-D6.0-H	6.0	6	20	75	3	Picture 2	○
PM-3EL-D8.0-H	8.0	8	25	100	3	Picture 2	○
PM-3EL-D10.0-H	10.0	10	30	100	3	Picture 2	○
PM-3EL-D12.0-H	12.0	12	35	100	3	Picture 2	○
PM-3EL-D14.0-H	14.0	14	40	100	3	Picture 2	○
PM-3EL-D16.0-H	16.0	16	50	150	3	Picture 2	○
PM-3EL-D20.0-H	20.0	20	55	150	3	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

PM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B555

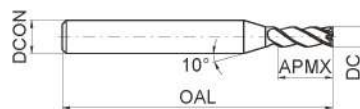
Non-standard customization

B652-B653

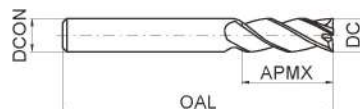
4-flute flattened end mills with straight shank



PM-4E-G



Picture 1



Picture 2

● Very suitable for side milling. ● Wide application.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4E-D1.0F-G	1.0	3	3	50	4	Picture 1	○
PM-4E-D1.0S-G	1.0	4	3	50	4	Picture 1	●
PM-4E-D1.0-G	1.0	6	3	50	4	Picture 1	●
PM-4E-D1.5F-G	1.5	3	4	50	4	Picture 1	○
PM-4E-D1.5S-G	1.5	4	4	50	4	Picture 1	●
PM-4E-D1.5-G	1.5	6	4	50	4	Picture 1	●
PM-4E-D2.0F-G	2.0	3	6	50	4	Picture 1	○
PM-4E-D2.0S-G	2.0	4	6	50	4	Picture 1	●
PM-4E-D2.0-G	2.0	6	6	50	4	Picture 1	●
PM-4E-D2.5F-G	2.5	3	8	50	4	Picture 1	○
PM-4E-D2.5S-G	2.5	4	8	50	4	Picture 1	●
PM-4E-D2.5-G	2.5	6	8	50	4	Picture 1	●
PM-4E-D3.0F-G	3.0	3	8	50	4	Picture 2	○
PM-4E-D3.0S-G	3.0	4	8	50	4	Picture 1	●
PM-4E-D3.0-G	3.0	6	8	50	4	Picture 1	●
PM-4E-D3.5S-G	3.5	4	10	50	4	Picture 1	○
PM-4E-D3.5-G	3.5	6	10	50	4	Picture 1	●
PM-4E-D4.0S-G	4.0	4	11	50	4	Picture 2	●
PM-4E-D4.0-G	4.0	6	11	50	4	Picture 1	●
PM-4E-D4.5-G	4.5	6	11	50	4	Picture 1	●
PM-4E-D5.0-G	5.0	6	13	50	4	Picture 1	●

● Stock available ○ Make-to-order

Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B556-B557

Non-standard customization

B652-B653

4-flute flattened end mills with straight shank



Side face



Step shoulder



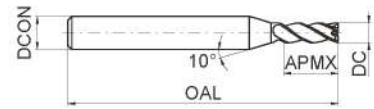
Straight slot

PM-4E-G

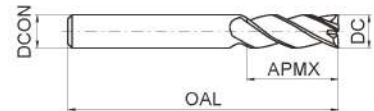


Corner protection

- Very suitable for side milling.
- Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4E-D5.5-G	5.5	6	16	50	4	Picture 1	●
PM-4E-D6.0-G	6.0	6	16	50	4	Picture 2	●
PM-4E-D7.0-G	7.0	8	20	60	4	Picture 1	●
PM-4E-D8.0-G	8.0	8	20	60	4	Picture 2	●
PM-4E-D9.0-G	9.0	10	22	75	4	Picture 1	●
PM-4E-D10.0-G	10.0	10	25	75	4	Picture 2	●
PM-4E-D10.0-G	10.0	10	25	75	4	Picture 2	●
PM-4E-D11.0-G	11.0	12	26	75	4	Picture 1	●
PM-4E-D12.0-G	12.0	12	30	75	4	Picture 2	●
PM-4E-D14.0-G	14.0	14	32	75	4	Picture 2	●
PM-4E-D16.0-G	16.0	16	45	100	4	Picture 2	●
PM-4E-D18.0-G	18.0	18	45	100	4	Picture 2	●
PM-4E-D20.0-G	20.0	20	45	100	4	Picture 2	●

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

PM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B556-B557

Non-standard customization

B652-B653

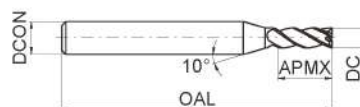
4-flute flattened end mills with straight shank



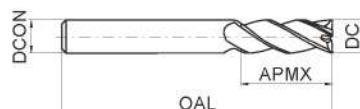
PM-4F-G



- Very suitable for side milling. ● Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4F-D1.0S-G	1.0	4	3	50	4	Picture 1	○
PM-4F-D1.0-G	1.0	6	3	50	4	Picture 1	○
PM-4F-D1.5S-G	1.5	4	4	50	4	Picture 1	○
PM-4F-D1.5-G	1.5	6	4	50	4	Picture 1	○
PM-4F-D2.0S-G	2.0	4	6	50	4	Picture 1	○
PM-4F-D2.0-G	2.0	6	6	50	4	Picture 1	○
PM-4F-D2.5S-G	2.5	4	8	50	4	Picture 1	○
PM-4F-D2.5-G	2.5	6	8	50	4	Picture 1	○
PM-4F-D3.0S-G	3.0	4	8	50	4	Picture 1	○
PM-4F-D3.0-G	3.0	6	8	50	4	Picture 1	○
PM-4F-D3.5-G	3.5	6	10	50	4	Picture 1	○
PM-4F-D4.0S-G	4.0	4	11	50	4	Picture 2	○
PM-4F-D4.0-G	4.0	6	11	50	4	Picture 1	○
PM-4F-D4.5-G	4.5	6	11	50	4	Picture 1	○
PM-4F-D5.0-G	5.0	6	13	50	4	Picture 1	○
PM-4F-D5.5-G	5.5	6	16	50	4	Picture 1	○
PM-4F-D6.0-G	6.0	6	16	50	4	Picture 2	○
PM-4F-D7.0-G	7.0	8	20	60	4	Picture 1	○
PM-4F-D8.0-G	8.0	8	20	60	4	Picture 2	○
PM-4F-D9.0-G	9.0	10	22	75	4	Picture 1	○
PM-4F-D10.0-G	10.0	10	25	75	4	Picture 2	○
PM-4F-D11.0-G	11.0	12	26	75	4	Picture 1	○
PM-4F-D12.0-G	12.0	12	30	75	4	Picture 2	○
PM-4F-D14.0-G	14.0	14	32	75	4	Picture 2	○
PM-4F-D16.0-G	16.0	16	45	100	4	Picture 2	○
PM-4F-D18.0-G	18.0	18	45	100	4	Picture 2	○
PM-4F-D20.0-G	20.0	20	45	100	4	Picture 2	○

Applicable workpiece material table

● Stock available ○ Make-to-order

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B558-B559

Non-standard customization

B652-B653

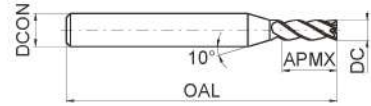
4-flute flattened end mills with straight shank and long cutting edge



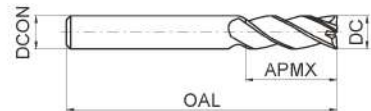
PM-4EL-G



- PM-4E-G series with long cutting edge.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4EL-D3.0-G	3.0	6	12	75	4	Picture 1	○
PM-4EL-D4.0-G	4.0	6	15	75	4	Picture 1	○
PM-4EL-D5.0-G	5.0	6	20	75	4	Picture 1	○
PM-4EL-D6.0-G	6.0	6	20	75	4	Picture 2	○
PM-4EL-D8.0-G	8.0	8	25	100	4	Picture 2	○
PM-4EL-D10.0-G	10.0	10	30	100	4	Picture 2	○
PM-4EL-D12.0-G	12.0	12	35	100	4	Picture 2	○
PM-4EL-D14.0-G	14.0	14	40	100	4	Picture 2	○
PM-4EL-D16.0-G	16.0	16	50	150	4	Picture 2	○
PM-4EL-D20.0-G	20.0	20	55	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

PM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B556-B557

Non-standard customization

B652-B653

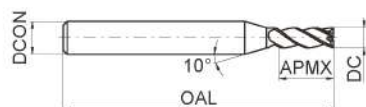
4-flute flattened end mills with straight shank and long cutting edge



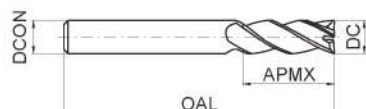
PM-4FL-G



PM-4FL-G series with long cutting edge.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4FL-D3.0-G	3.0	6	12	75	4	Picture 1	○
PM-4FL-D4.0-G	4.0	6	15	75	4	Picture 1	○
PM-4FL-D5.0-G	5.0	6	20	75	4	Picture 1	○
PM-4FL-D6.0-G	6.0	6	20	75	4	Picture 2	○
PM-4FL-D8.0-G	8.0	8	25	100	4	Picture 2	○
PM-4FL-D10.0-G	10.0	10	30	100	4	Picture 2	○
PM-4FL-D12.0-G	12.0	12	35	100	4	Picture 2	○
PM-4FL-D14.0-G	14.0	14	40	100	4	Picture 2	○
PM-4FL-D16.0-G	16.0	16	50	150	4	Picture 2	○
PM-4FL-D20.0-G	20.0	20	55	150	4	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B558-B559

Non-standard customization

B652-B653

4-flute flattened end mills with straight shank and extra long cutting edge

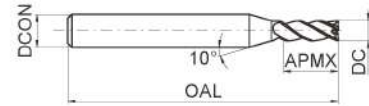


PM-4EX-G

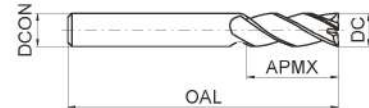
Corner protection



- Extra long cutting edge, for deep side wall machining.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4EX-D3.0-G	3.0	6	20	75	4	Picture 1	○
PM-4EX-D4.0-G	4.0	6	25	75	4	Picture 1	○
PM-4EX-D5.0-G	5.0	6	30	75	4	Picture 1	○
PM-4EX-D6.0-G	6.0	6	30	75	4	Picture 2	○
PM-4EX-D8.0-G	8.0	8	40	100	4	Picture 2	○
PM-4EX-D10.0-G	10.0	10	50	110	4	Picture 2	○
PM-4EX-D12.0-G	12.0	12	50	110	4	Picture 2	○
PM-4EX-D16.0-G	16.0	16	70	150	4	Picture 2	○
PM-4EX-D20.0-G	20.0	20	75	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

PM series

Applicable workpiece material table

● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B560

Non-standard customization

B652-B653



MILLING

Solid Carbide End Mills

High-performance general milling PM series

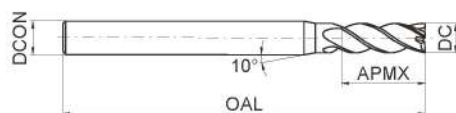
4-flute flattened endmills with long shank



PM-4EBL/X-G



PM-4E-G series with long shank.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4EBL-D3.0S-G	3.0	4	8	75	4	Picture 1	○
PM-4EBL-D3.0-G	3.0	6	8	75	4	Picture 1	○
PM-4EBL-D4.0S-G	4.0	4	11	75	4	Picture 2	○
PM-4EBL-D4.0-G	4.0	6	11	75	4	Picture 1	○
PM-4EBL-D6.0-G	6.0	6	16	75	4	Picture 2	○
PM-4EBX-D6.0-G	6.0	6	16	100	4	Picture 2	○
PM-4EBL-D8.0-G	8.0	8	20	75	4	Picture 2	○
PM-4EBX-D8.0-G	8.0	8	20	100	4	Picture 2	○
PM-4EBL-D10.0-G	10.0	10	25	100	4	Picture 2	○
PM-4EBX-D10.0-G	10.0	10	25	150	4	Picture 2	○
PM-4EBL-D12.0-G	12.0	12	30	100	4	Picture 2	○
PM-4EBX-D12.0-G	12.0	12	30	150	4	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table

Very suitable Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B556-B557

Non-standard customization

B652-B653

4-flute flattened end mills with straight shank

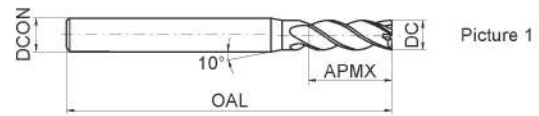


PM-4E

Corner protection



- Very suitable for side milling and shallow slot machining.
- Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4E-D1.0F	1.0	3	3	50	4	Picture 1	○
PM-4E-D1.0S	1.0	4	3	50	4	Picture 1	○
PM-4E-D1.0	1.0	6	3	50	4	Picture 1	○
PM-4E-D1.5F	1.5	3	4	50	4	Picture 1	○
PM-4E-D1.5S	1.5	4	4	50	4	Picture 1	○
PM-4E-D1.5	1.5	6	4	50	4	Picture 1	○
PM-4E-D2.0F	2.0	3	6	50	4	Picture 1	○
PM-4E-D2.0S	2.0	4	6	50	4	Picture 1	○
PM-4E-D2.0	2.0	6	6	50	4	Picture 1	○
PM-4E-D2.5F	2.5	3	8	50	4	Picture 1	○
PM-4E-D2.5S	2.5	4	8	50	4	Picture 1	○
PM-4E-D2.5	2.5	6	8	50	4	Picture 1	○
PM-4E-D3.0F	3.0	3	8	50	4	Picture 2	○
PM-4E-D3.0S	3.0	4	8	50	4	Picture 1	○
PM-4E-D3.0	3.0	6	8	50	4	Picture 1	○
PM-4E-D3.5S	3.5	4	10	50	4	Picture 1	○
PM-4E-D4.0S	4.0	4	11	50	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling toolsSolid carbide
end mills

PM series

Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B561-B562

Non-standard customization

B652-B653

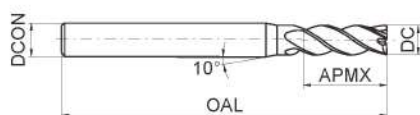
4-flute flattened end mills with straight shank



PM-4E



- Very suitable for side milling and shallow slot machining.
- Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4E-D3.5	3.5	6	10	50	4	Picture 1	○
PM-4E-D4.0	4.0	6	11	50	4	Picture 1	○
PM-4E-D4.5	4.5	6	11	50	4	Picture 1	○
PM-4E-D5.0	5.0	6	13	50	4	Picture 1	○
PM-4E-D5.5	5.5	6	16	50	4	Picture 1	○
PM-4E-D6.0	6.0	6	16	50	4	Picture 2	○
PM-4E-D7.0	7.0	8	20	60	4	Picture 1	○
PM-4E-D8.0	8.0	8	20	60	4	Picture 2	○
PM-4E-D9.0	9.0	10	22	75	4	Picture 1	○
PM-4E-D10.0	10.0	10	25	75	4	Picture 2	○
PM-4E-D11.0	11.0	12	26	75	4	Picture 1	○
PM-4E-D12.0	12.0	12	30	75	4	Picture 2	○
PM-4E-D14.0	14.0	14	32	75	4	Picture 2	○
PM-4E-D16.0	16.0	16	45	100	4	Picture 2	○
PM-4E-D18.0	18.0	18	45	100	4	Picture 2	○
PM-4E-D20.0	20.0	20	45	100	4	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B561-B562

Non-standard customization

B652-B653

4-flute flattened end mills with straight shank and long cutting edge



Side face



Step shoulder

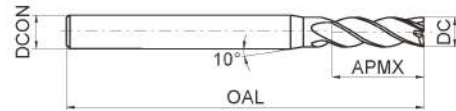


Straight slot

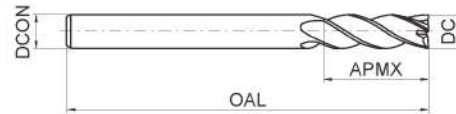
PM-4EL



Corner protection



Picture 1



Picture 2

● PM-4E series with long cutting edge.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4EL-D3.0	3.0	6	12	75	4	Picture 1	○
PM-4EL-D4.0	4.0	6	15	75	4	Picture 1	○
PM-4EL-D5.0	5.0	6	20	75	4	Picture 1	○
PM-4EL-D6.0	6.0	6	20	75	4	Picture 2	○
PM-4EL-D8.0	8.0	8	25	100	4	Picture 2	○
PM-4EL-D10.0	10.0	10	30	100	4	Picture 2	○
PM-4EL-D12.0	12.0	12	35	100	4	Picture 2	○
PM-4EL-D14.0	14.0	14	40	100	4	Picture 2	○
PM-4EL-D16.0	16.0	16	50	150	4	Picture 2	○
PM-4EL-D20.0	20.0	20	55	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

PM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B561-B562

Non-standard customization

B652-B653

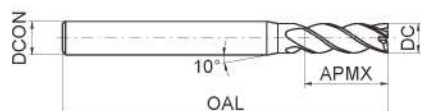
4-flute flattened end mills with straight shank



PM-4E-H



- Most suitable for slot milling.
- Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4E-D3.0S-H	3.0	4	8	50	4	Picture 1	○
PM-4E-D3.0-H	3.0	6	8	50	4	Picture 1	○
PM-4E-D3.5-H	3.5	6	10	50	4	Picture 1	○
PM-4E-D4.0S-H	4.0	4	11	50	4	Picture 2	○
PM-4E-D4.0-H	4.0	6	11	50	4	Picture 1	○
PM-4E-D4.5-H	4.5	6	11	50	4	Picture 1	○
PM-4E-D5.0-H	5.0	6	13	50	4	Picture 1	○
PM-4E-D5.5-H	5.5	6	16	50	4	Picture 1	○
PM-4E-D6.0-H	6.0	6	16	50	4	Picture 2	○
PM-4E-D7.0-H	7.0	8	20	60	4	Picture 1	○
PM-4E-D8.0-H	8.0	8	20	60	4	Picture 2	○
PM-4E-D9.0-H	9.0	10	22	75	4	Picture 1	○
PM-4E-D10.0-H	10.0	10	25	75	4	Picture 2	○
PM-4E-D11.0-H	11.0	12	26	75	4	Picture 1	○
PM-4E-D12.0-H	12.0	12	30	75	4	Picture 2	○
PM-4E-D14.0-H	14.0	14	32	75	4	Picture 2	○
PM-4E-D16.0-H	16.0	16	45	100	4	Picture 2	○
PM-4E-D18.0-H	18.0	18	45	100	4	Picture 2	○
PM-4E-D20.0-H	20.0	20	45	100	4	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B556-B557

Non-standard customization

B652-B653

4-flute flattened end mills with straight shank and long cutting edge

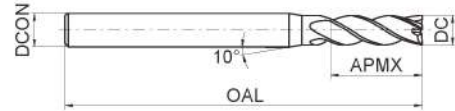


PM-4EL-H

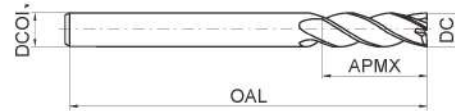
Corner protection



● PM-4E-H series with long shank.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4EL-D3.0-H	3.0	6	12	75	4	Picture 1	○
PM-4EL-D4.0-H	4.0	6	15	75	4	Picture 1	○
PM-4EL-D5.0-H	5.0	6	20	75	4	Picture 1	○
PM-4EL-D6.0-H	6.0	6	20	75	4	Picture 2	○
PM-4EL-D8.0-H	8.0	8	25	100	4	Picture 2	○
PM-4EL-D10.0-H	10.0	10	30	100	4	Picture 2	○
PM-4EL-D12.0-H	12.0	12	35	100	4	Picture 2	○
PM-4EL-D14.0-H	14.0	14	40	100	4	Picture 2	○
PM-4EL-D16.0-H	16.0	16	50	150	4	Picture 2	○
PM-4EL-D20.0-H	20.0	20	55	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling toolsSolid carbide
end mills

PM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B556-B557

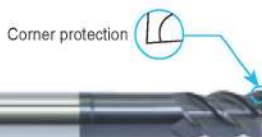
Non-standard customization

B652-B653

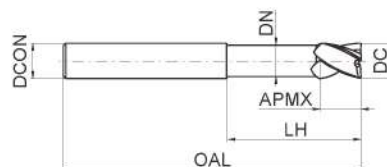
4-flute flattened end mills with straight shank, long neck and short cutting edge



PM-4EFP



- High-rigidity short cutting edge, suitable for heavy cutting and also deep cavity milling.



Type	Basic dimension(mm)						Number of teeth Z	Stock
	DC	DCON	APMX	LH	DN	OAL		
PM-4EFP-D6.0	6.0	6	9	30	5.8	75	4	○
PM-4EFP-D8.0	8.0	8	12	40	7.8	100	4	○
PM-4EFP-D10.0	10.0	10	15	50	9.6	100	4	○
PM-4EFP-D12.0	12.0	12	18	50	11.5	100	4	○
PM-4EFP-D16.0	16.0	16	24	50	15.5	150	4	○
PM-4EFP-D20.0	20.0	20	30	60	19.5	150	4	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

PM series

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B563-B564

Non-standard customization

B652-B653

4-flute flattened end mills with long shank

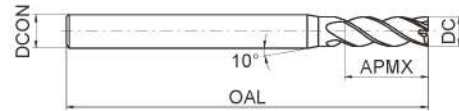


PM-4EBL/X

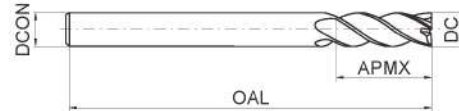
Corner protection



● PM-4E series with long shank.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
PM-4EBL-D3.0S	3.0	4	8	75	4	Picture 1	○
PM-4EBL-D3.0	3.0	6	8	75	4	Picture 1	○
PM-4EBL-D4.0S	4.0	4	11	75	4	Picture 2	○
PM-4EBL-D4.0	4.0	6	11	75	4	Picture 1	○
PM-4EBL-D6.0	6.0	6	16	75	4	Picture 2	○
PM-4EBX-D6.0	6.0	6	16	100	4	Picture 2	○
PM-4EBL-D8.0	8.0	8	20	75	4	Picture 2	○
PM-4EBX-D8.0	8.0	8	20	100	4	Picture 2	○
PM-4EBL-D10.0	10.0	10	25	100	4	Picture 2	○
PM-4EBX-D10.0	10.0	10	25	150	4	Picture 2	○
PM-4EBL-D12.0	12.0	12	30	100	4	Picture 2	○
PM-4EBX-D12.0	12.0	12	30	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling toolsSolid carbide
end mills

PM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B561-B562

Non-standard customization

B652-B653

6-flute flattened end mills with straight shank

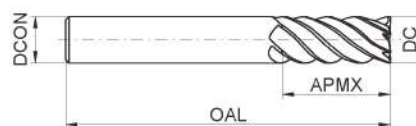


PM-6E

Corner protection



- Perfect rigidity, very suitable for side finish machining.
- High speed, high feed rate machining applicable.



Type	Basic dimension(mm)				Number of teeth Z	Stock
	DC	DCON	APMX	OAL		
PM-6E-D6.0	6.0	6	18	60	6	○
PM-6E-D8.0	8.0	8	20	60	6	○
PM-6E-D10.0	10.0	10	30	75	6	○
PM-6E-D12.0	12.0	12	32	75	6	○
PM-6E-D16.0	16.0	16	40	100	6	○
PM-6E-D20.0	20.0	20	45	100	6	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

PM series

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B565

Non-standard customization

B652-B653

6-flute flattened end mills with straight shank and long cutting edge

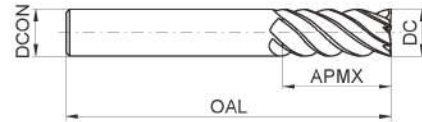


PM-6EL

Corner protection



● PM-6E series with long cutting edge.



Type	Basic dimension(mm)				Number of teeth Z	Stock
	DC	DCON	APMX	OAL		
PM-6EL-D6.0	6.0	6	24	75	6	○
PM-6EL-D8.0	8.0	8	32	75	6	○
PM-6EL-D10.0	10.0	10	40	100	6	○
PM-6EL-D12.0	12.0	12	45	100	6	○
PM-6EL-D16.0	16.0	16	64	150	6	○
PM-6EL-D20.0	20.0	20	75	150	6	○

● Stock available ○ Make-to-order

Indexable
milling toolsSolid carbide
end mills

PM series

▶▶ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B566

Non-standard customization

B652-B653

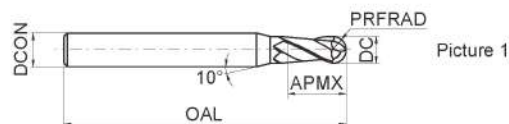
2-flute ball nose end mills with straight shank



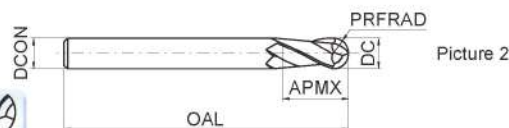
PM-2B



- For profile milling, high speed machining applicable.
- Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	PRFRAD	DCON	APMX	OAL			
PM-2B-R0.5S	1.0	0.5	4	2	50	2	Picture 1	●
PM-2B-R0.5	1.0	0.5	6	2	50	2	Picture 1	●
PM-2B-R0.75S	1.5	0.75	4	3	50	2	Picture 1	●
PM-2B-R0.75	1.5	0.75	6	3	50	2	Picture 1	●
PM-2B-R1.0F	2.0	1.0	3	4	50	2	Picture 1	●
PM-2B-R1.0S	2.0	1.0	4	4	50	2	Picture 1	●
PM-2B-R1.0	2.0	1.0	6	4	50	2	Picture 1	●
PM-2B-R1.25F	2.5	1.25	3	5	50	2	Picture 1	○
PM-2B-R1.25S	2.5	1.25	4	5	50	2	Picture 1	●
PM-2B-R1.25	2.5	1.25	6	5	50	2	Picture 1	●
PM-2B-R1.5F	3.0	1.5	3	6	50	2	Picture 2	○
PM-2B-R1.5S	3.0	1.5	4	6	50	2	Picture 1	●
PM-2B-R1.5	3.0	1.5	6	6	50	2	Picture 1	●
PM-2B-R1.75S	3.5	1.75	4	8	50	2	Picture 1	○
PM-2B-R1.75	3.5	1.75	6	8	50	2	Picture 1	●
PM-2B-R2.0S	4.0	2.0	4	8	50	2	Picture 2	●
PM-2B-R2.0	4.0	2.0	6	8	50	2	Picture 1	●
PM-2B-R2.5	5.0	2.5	6	10	50	2	Picture 1	●
PM-2B-R2.75	5.5	2.75	6	12	50	2	Picture 1	●
PM-2B-R3.0	6.0	3.0	6	12	50	2	Picture 2	●
PM-2B-R3.5	7.0	3.5	8	14	60	2	Picture 1	●
PM-2B-R4.0	8.0	4.0	8	16	60	2	Picture 2	●
PM-2B-R4.5	9.0	4.5	10	18	75	2	Picture 1	●
PM-2B-R5.0	10.0	5.0	10	20	75	2	Picture 2	●
PM-2B-R6.0	12.0	6.0	12	24	75	2	Picture 2	●
PM-2B-R7.0	14.0	7.0	14	28	75	2	Picture 2	●
PM-2B-R8.0	16.0	8.0	16	32	100	2	Picture 2	●
PM-2B-R10.0	20.0	10.0	20	40	100	2	Picture 2	●

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B567-B568

Non-standard customization

B652-B653

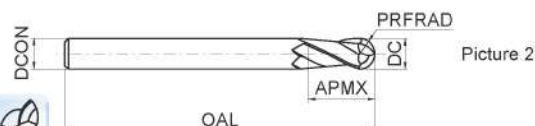
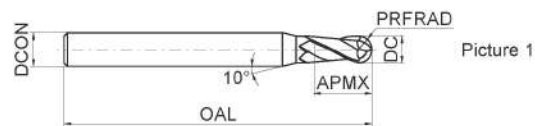
2-flute ball nose end mills with long shank



PM-2BL/M/X



● PM-2B series with long shank.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	PRFRAD	DCON	APMX	OAL			
PM-2BL-R1.0S	2.0	1.0	4	4	75	2	Picture 1	○
PM-2BL-R1.0	2.0	1.0	6	4	75	2	Picture 1	○
PM-2BL-R1.25S	2.5	1.25	4	5	75	2	Picture 1	○
PM-2BL-R1.25	2.5	1.25	6	5	75	2	Picture 1	○
PM-2BL-R1.5S	3.0	1.5	4	6	75	2	Picture 1	○
PM-2BL-R1.5	3.0	1.5	6	6	75	2	Picture 1	○
PM-2BL-R1.75S	3.5	1.75	4	8	75	2	Picture 1	○
PM-2BL-R1.75	3.5	1.75	6	8	75	2	Picture 1	○
PM-2BL-R2.0S	4.0	2.0	4	8	75	2	Picture 2	○
PM-2BL-R2.0	4.0	2.0	6	8	75	2	Picture 1	○
PM-2BL-R2.5	5.0	2.5	6	10	75	2	Picture 1	○
PM-2BL-R2.75	5.5	2.75	6	12	75	2	Picture 1	○
PM-2BL-R3.0	6.0	3.0	6	12	75	2	Picture 2	○
PM-2BX-R3.0	6.0	3.0	6	12	100	2	Picture 2	○
PM-2BL-R3.5	7.0	3.5	8	14	75	2	Picture 1	○
PM-2BM-R4.0	8.0	4.0	8	16	75	2	Picture 2	○
PM-2BL-R4.0	8.0	4.0	8	16	100	2	Picture 2	○
PM-2BL-R4.5	9.0	4.5	10	18	100	2	Picture 1	○
PM-2BL-R5.0	10.0	5.0	10	20	100	2	Picture 2	○
PM-2BX-R5.0	10.0	5.0	10	20	150	2	Picture 2	○
PM-2BL-R6.0	12.0	6.0	12	24	100	2	Picture 2	○
PM-2BX-R6.0	12.0	6.0	12	24	150	2	Picture 2	○
PM-2BL-R7.0	14.0	7.0	14	28	100	2	Picture 2	○
PM-2BL-R8.0	16.0	8.0	16	32	150	2	Picture 2	○
PM-2BL-R10.0	20.0	10.0	20	40	150	2	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

PM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B567-B568

Non-standard customization

B652-B653

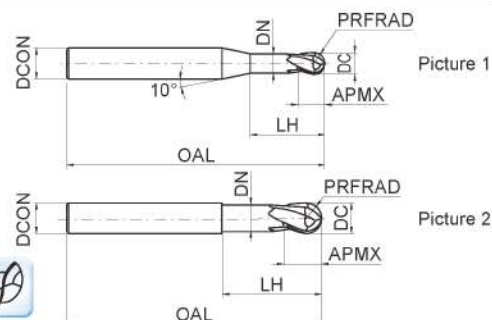
2-flute ball nose end mills with straight shank, long neck and short cutting edge



PM-2BFP



- High-rigidity short cutting edge, suitable for heavy cutting.



Type	Basic dimension(mm)							Number of teeth Z	Geometry	Stock
	DC	PRFRAD	APMX	DN	LH	DCON	OAL			
PM-2BFP-R0.5	1.0	0.5	1.0	0.95	2.5	6	75	2	Picture 1	○
PM-2BFP-R0.75	1.5	0.75	1.5	1.45	3.0	6	75	2	Picture 1	○
PM-2BFP-R1.0	2.0	1.0	2.0	1.95	4.0	6	75	2	Picture 1	○
PM-2BFP-R1.5	3.0	1.5	3.0	2.85	6.0	6	75	2	Picture 1	○
PM-2BFP-R2.0	4.0	2.0	4.0	3.85	8.0	6	75	2	Picture 1	○
PM-2BFP-R2.5	5.0	2.5	5.0	4.85	10.0	6	75	2	Picture 1	○
PM-2BFP-R3.0	6.0	3.0	6.0	5.8	12.0	6	75	2	Picture 2	○
PM-2BFP-R4.0	8.0	4.0	8.0	7.8	16.0	8	100	2	Picture 2	○
PM-2BFP-R5.0	10.0	5.0	10.0	9.6	20.0	10	100	2	Picture 2	○
PM-2BFP-R6.0	12.0	6.0	12.0	11.5	24.0	12	100	2	Picture 2	○
PM-2BFP-R8.0	16.0	8.0	16.0	15.5	32.0	16	150	2	Picture 2	○
PM-2BFP-R10.0	20.0	10.0	20.0	19.5	40.0	20	150	2	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B567-B568

Non-standard customization

B652-B653

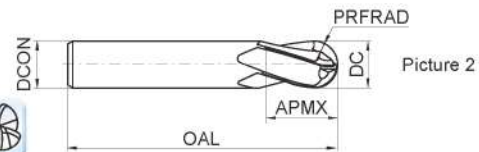
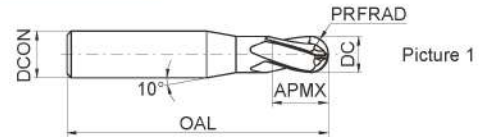
4-flute ball nose end mills with straight shank



PM-4B



- 4-flute ball nose end mill can operate with higher feed speed and machining efficiency.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	PRFRAD	DCON	APMX	OAL			
PM-4B-R1.5	3.0	1.5	6	6	50	4	Picture 1	○
PM-4B-R2.0	4.0	2.0	6	8	50	4	Picture 1	○
PM-4B-R2.5	5.0	2.5	6	10	50	4	Picture 1	○
PM-4B-R3.0	6.0	3.0	6	12	50	4	Picture 2	○
PM-4B-R4.0	8.0	4.0	8	16	60	4	Picture 2	○
PM-4B-R5.0	10.0	5.0	10	20	75	4	Picture 2	○
PM-4B-R6.0	12.0	6.0	12	24	75	4	Picture 2	○
PM-4B-R7.0	14.0	7.0	14	28	75	4	Picture 2	○
PM-4B-R8.0	16.0	8.0	16	32	100	4	Picture 2	○
PM-4B-R9.0	18.0	9.0	18	36	100	4	Picture 2	○
PM-4B-R10.0	20.0	10.0	20	40	100	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

PM series

Applicable workpiece material table

● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B569

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

High-performance general milling PM series

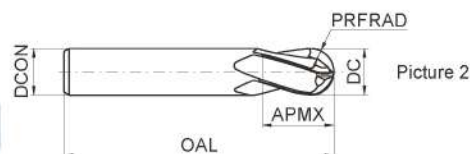
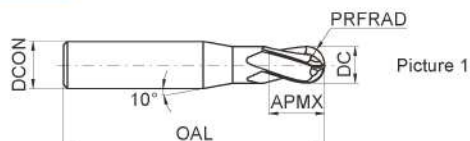
4-flute ball nose end mills wit long shank



PM-4BL/M/X



PM-4B series with long shank.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	PRFRAD	DCON	APMX	OAL			
PM-4BL-R1.5S	3.0	1.5	4	6	75	4	Picture 1	○
PM-4BL-R1.5	3.0	1.5	6	6	75	4	Picture 1	○
PM-4BL-R2.0S	4.0	2.0	4	8	75	4	Picture 2	○
PM-4BL-R2.0	4.0	2.0	6	8	75	4	Picture 1	○
PM-4BL-R2.5	5.0	2.5	6	10	75	4	Picture 1	○
PM-4BL-R3.0	6.0	3.0	6	12	75	4	Picture 2	○
PM-4BX-R3.0	6.0	3.0	6	12	100	4	Picture 2	○
PM-4BM-R4.0	8.0	4.0	8	16	75	4	Picture 2	○
PM-4BL-R4.0	8.0	4.0	8	16	100	4	Picture 2	○
PM-4BL-R5.0	10.0	5.0	10	20	100	4	Picture 2	○
PM-4BX-R5.0	10.0	5.0	10	20	150	4	Picture 2	○
PM-4BL-R6.0	12.0	6.0	12	24	100	4	Picture 2	○
PM-4BX-R6.0	12.0	6.0	12	24	150	4	Picture 2	○
PM-4BL-R7.0	14.0	7.0	14	28	100	4	Picture 2	○
PM-4BL-R8.0	16.0	8.0	16	32	150	4	Picture 2	○
PM-4BL-R9.0	18.0	9.0	18	36	150	4	Picture 2	○
PM-4BL-R10.0	20.0	10.0	20	40	150	4	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B569

Non-standard customization

B652-B653

2-flute ball nose end mills with taper neck

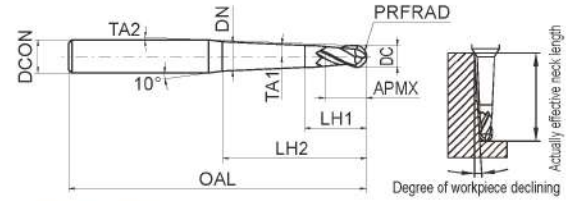


Deep ball nose slot

PM-2BC



- High-rigidity taper neck structure.



Type	Basic dimension(mm)										Number of teeth Z	Degree of workpiece declining corresponding actually effective neck length				Stock
	DC	PRFRAD	TA1	APMX	LH2	LH1	TA2	DN	OAL	DCON		0.5°	1°	2°	3°	
PM-2BC05-R0.25-M03	0.5	0.25	0.5°	0.5	3	1.5	7.8°	0.49	50	4	2	3.3	3.5	3.9	4.4	○
PM-2BC05-R0.25-M05					5		6.8°	0.53			2	5.3	5.6	6.2	7.1	○
PM-2BC10-R0.25-M03			1.0°		3		7.8°	0.52			2	-	3.4	3.8	4.3	○
PM-2BC10-R0.25-M05					5		6.9°	0.59			2	-	5.4	6.0	6.8	○
PM-2BC15-R0.25-M03			1.5°		3		7.9°	0.54			2	-	-	3.7	4.1	○
PM-2BC15-R0.25-M05					5		7.0°	0.65			2	-	-	5.8	6.6	○
PM-2BC05-R0.30-M05	0.6	0.30	0.5°	0.6	5	1.6	6.8°	0.62	50	4	2	5.3	5.6	6.2	7.1	○
PM-2BC05-R0.30-M08					8		5.7°	0.68			2	8.3	8.7	9.8	11.1	○
PM-2BC10-R0.30-M05					5		6.8°	0.68			2	-	5.4	6.0	6.8	○
PM-2BC10-R0.30-M08			8		5.8°		0.79	2			-	8.4	9.4	10.7	○	
PM-2BC10-R0.30-M10			1.0°		10		5.2°	0.86			2	-	10.4	11.6	13.2	○
PM-2BC10-R0.30-M12					12		4.8°	0.93			2	-	12.4	13.9	15.8	○
PM-2BC10-R0.30-M15					15		4.2°	1.03			2	-	15.4	17.2	19.6	○
PM-2BC15-R0.30-M05			1.5°		5		6.9°	0.74			2	-	-	5.8	6.6	○
PM-2BC15-R0.30-M08					8		5.9°	0.90			2	-	-	9.0	10.2	○
PM-2BC05-R0.40-M08	0.8	0.40	0.5°	0.8	8	1.8	5.5°	0.87	50	4	2	8.3	8.7	9.8	11.1	○
PM-2BC05-R0.40-M12					12		4.5°	0.94	60		2	12.3	13.0	14.5	16.5	○
PM-2BC10-R0.40-M08			1.0°		8		5.6°	0.98	50		2	-	8.4	9.4	10.7	○
PM-2BC10-R0.40-M12					12		4.6°	1.12	60		2	-	12.4	13.9	15.8	○
PM-2BC15-R0.40-M08			1.5°		8		5.8°	1.09	50		2	-	-	9.0	10.2	○
PM-2BC15-R0.40-M12					12		4.8°	1.30	60		2	-	-	13.2	15.0	○

● Stock available ○ Make-to-order

Applicable workpiece material

Workpiece material										
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy
		~40HRC	~50HRC	~55HRC	~68HRC					
○	○	○	○	○		○	○			○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B570-B572

Non-standard customization

B652-B653

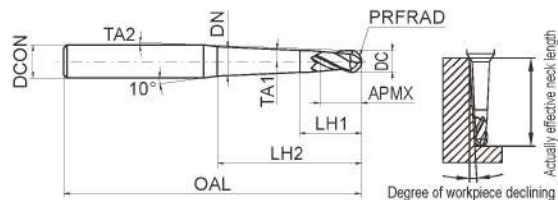
2-flute ball nose end mills with taper neck



PM-2BC



- High-rigidity taper neck structure.



Type	Basic dimension(mm)										Number of teeth Z	Degree of workpiece declining corresponding actually effective neck length				Stock
	DC	PRFRAD	TA1	APMX	LH2	LH1	TA2	DN	OAL	DCON		0.5°	1°	2°	3°	
PM-2BC05-R0.50-M10	1.0	0.50	0.5°	1.0	10	2.5	6.1°	1.08	60	6	2	10.4	10.9	12.2	13.9	○
PM-2BC05-R0.50-M15					15		5.1°	1.16	60		2	15.4	16.2	18.2	20.7	○
PM-2BC05-R0.50-M20					20		4.4°	1.25	70		2	20.4	21.5	24.1	27.4	○
PM-2BC05-R0.50-M25					25		3.8°	1.34	70		2	25.4	26.8	30.0	34.2	○
PM-2BC05-R0.50-M30					30		3.4°	1.42	70		2	30.4	32.0	35.9	41.0	○
PM-2BC10-R0.50-M10			1.0°		10		6.2°	1.21	60		2	-	10.5	11.8	13.4	○
PM-2BC10-R0.50-M15					15		5.2°	1.38	60		2	-	15.5	17.4	19.8	○
PM-2BC10-R0.50-M20					20		4.5°	1.56	70		2	-	20.5	23.0	26.2	○
PM-2BC10-R0.50-M25					25		3.9°	1.73	70		2	-	25.5	28.6	32.6	○
PM-2BC10-R0.50-M30					30		3.5°	1.91	70		2	-	30.5	34.2	39.0	○
PM-2BC10-R0.50-M35			1.5°		35		3.2°	2.08	80		2	-	35.5	39.8	45.4	○
PM-2BC15-R0.50-M10					10		6.3°	1.34	60		2	-	-	11.3	12.8	○
PM-2BC15-R0.50-M15					15		5.3°	1.60	60		2	-	-	16.6	18.9	○
PM-2BC15-R0.50-M20					20		4.6°	1.86	70		2	-	-	21.9	24.9	○
PM-2BC20-R0.50-M15					2°		15	5.4°	1.82		60	2	-	-	15.8	18.0
PM-2BC20-R0.50-M20			20				4.7°	2.17	70		2	-	-	20.8	23.7	○
PM-2BC30-R0.50-M20			3°		20		5.0°	2.78	70		2	-	-	-	21.2	○
PM-2BC50-R0.50-M20			5°		20		5.7°	4.01	70		2	-	-	-	-	○
PM-2BC05-R0.60-M12	1.2	0.60	0.5°	1.2	12	2.7	5.6°	1.31	60	6	2	12.4	13.1	14.6	16.6	○
PM-2BC05-R0.60-M24					24		3.8°	1.52	70		2	24.4	25.7	28.8	32.8	○
PM-2BC10-R0.60-M12			1.0°		12		5.7°	1.47	60		2	-	12.5	14.0	15.9	○
PM-2BC10-R0.60-M24					24		3.9°	1.89	70		2	-	24.5	27.5	31.3	○
PM-2BC15-R0.60-M12			1.5°		12		5.8°	1.63	60		2	-	-	13.4	15.2	○
PM-2BC15-R0.60-M24					24		4.1°	2.26	70		2	-	-	26.2	29.8	○

● Stock available ○ Make-to-order

Applicable workpiece material table Very suitable Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B570-B572

Non-standard customization

B652-B653

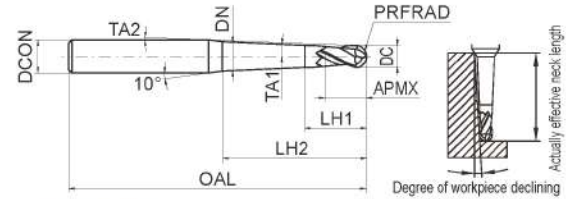
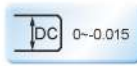
2-flute ball nose end mills with taper neck



PM-2BC



- High-rigidity taper neck structure.



Type	Basic dimension(mm)										Number of teeth Z	Degree of workpiece declining corresponding actually effective neck length				Stock
	DC	PRFRAD	TA1	APMX	LH2	LH1	TA2	DN	OAL	DCON		0.5°	1°	2°	3°	
PM-2BC05-R0.75-M10	1.5	0.75	0.5°	1.5	10	3	5.9°	1.57	60	6	2	10.4	10.9	12.2	13.8	○
PM-2BC05-R0.75-M15					15		4.9°	1.65	60		2	15.4	16.2	18.1	20.6	○
PM-2BC05-R0.75-M30					30		3.2°	1.92	70		2	30.4	32.0	35.9	40.9	○
PM-2BC10-R0.75-M10					10		6.0°	1.69	60		2	-	10.5	11.8	13.3	○
PM-2BC10-R0.75-M15			1.0°	1.5	15	3	5.0°	1.86	60	6	2	-	15.5	17.4	19.7	○
PM-2BC10-R0.75-M20					20		4.2°	2.04	70		2	-	20.5	23.0	26.1	○
PM-2BC10-R0.75-M30					30		3.3°	2.39	70		2	-	30.5	34.2	39.0	○
PM-2BC15-R0.75-M10					10		6.1°	1.81	60		2	-	-	11.3	12.8	○
PM-2BC15-R0.75-M15			1.5°	1.5	15		5.1°	2.07	60		2	-	-	16.6	18.9	○
PM-2BC15-R0.75-M30					30		3.4°	2.86	70		2	-	-	32.5	37.0	○
PM-2BC05-R1.0-M20	2.0	1.0	0.5°	2.0	20	4	3.9°	2.18	60	6	2	20.7	21.7	24.3	27.6	○
PM-2BC05-R1.0-M30					30		2.9°	2.36	70		2	30.7	32.3	36.2	non-interference	○
PM-2BC05-R1.0-M40					40		2.4°	2.53	80		2	40.7	42.8	48.0	non-interference	○
PM-2BC10-R1.0-M20			1.0°	2.0	20		4.0°	2.46	60		2	-	20.8	23.3	26.4	○
PM-2BC10-R1.0-M25					25		3.4°	2.64	60		2	-	25.8	28.9	32.9	○
PM-2BC10-R1.0-M30					30		3.0°	2.81	70		2	-	30.8	34.5	39.3	○
PM-2BC10-R1.0-M35					35		2.7°	2.99	80		2	-	35.8	40.1	non-interference	○
PM-2BC10-R1.0-M40					40		2.5°	3.16	80		2	-	40.8	45.8	non-interference	○
PM-2BC10-R1.0-M50					50		2.1°	3.51	90		2	-	50.8	57.0	non-interference	○
PM-2BC15-R1.0-M20			1.5°	2	20	4	4.1°	2.74	60	6	2	-	-	22.3	25.3	○
PM-2BC15-R1.0-M30					30		3.1°	3.27	70		2	-	-	32.9	37.4	○
PM-2BC15-R1.0-M40					40		2.6°	3.79	80		2	-	-	43.5	non-interference	○
PM-2BC20-R1.0-M30			2°	2	30	4	3.3°	3.72	70	6	2	-	-	31.3	35.5	○
PM-2BC20-R1.0-M40					40		2.7°	4.42	80		2	-	-	41.3	non-interference	○
PM-2BC30-R1.0-M30			3°	2	30	4	3.5°	4.63	70	6	2	-	-	-	31.8	○
PM-2BC30-R1.0-M40					40		2.9°	5.68	80		2	-	-	-	non-interference	○

Applicable workpiece material table ○ Very suitable ○ Suitable

● Stock available ○ Make-to-order

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B570-B572

Non-standard customization

B652-B653

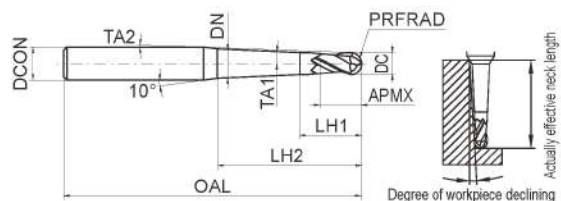
2-flute ball nose end mills with taper neck



PM-2BC



● High-rigidity taper neck structure.



Type	Basic dimension(mm)										Number of teeth Z	Degree of workpiece declining corresponding actually effective neck length				Stock
	DC	PRFRAD	TA1	APMX	LH2	LH1	TA2	DN	OAL	DCON		0.5°	1°	2°	3°	
PM-2BC05-R1.5-M30	3.0	1.5	0.5°	3	30	6	2.4°	3.32	70	6	2	30.7	32.3	36.2	non-interference	○
PM-2BC05-R1.5-M40					40		1.9°	3.50	80		2	40.7	42.9	non-interference	non-interference	○
PM-2BC05-R1.5-M50					50		1.6°	3.67	90		2	50.7	53.4	non-interference	non-interference	○
PM-2BC10-R1.5-M30			30		2.5°		3.74	70	2		-	31.0	34.7	non-interference	○	
PM-2BC10-R1.5-M40			40		2.0°		4.09	80	2		-	41.0	45.9	non-interference	○	
PM-2BC10-R1.5-M50			50		1.7°		4.44	90	2		-	51.0	non-interference	non-interference	○	
PM-2BC15-R1.5-M30			30		2.6°		4.16	70	2		-	-	33.1	non-interference	○	
PM-2BC15-R1.5-M40			40		2.1°		4.69	80	2		-	-	43.8	non-interference	○	
PM-2BC15-R1.5-M50			50		1.7°		5.21	90	2		-	-	non-interference	non-interference	○	
PM-2BC05-R2.0-M60	4.0	2.0	0.5°	4	60	7	1.0°	4.83	110	6	2	60.8	64.0	non-interference	non-interference	○
PM-2BC10-R2.0-M60			1.0°		60		1.0°	5.76	110		2	-	61.1	non-interference	non-interference	○

● Stock available ○ Make-to-order

Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B570-B572

Non-standard customization

B652-B653

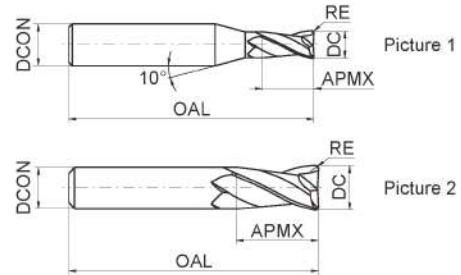
2-flute R end mills with straight shank



PM-2R



- Wide applications, applicable for several machining styles.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
PM-2R-D1.0R0.2	1.0	0.2	4	3	50	2	Picture 1	○
PM-2R-D1.5R0.2	1.5	0.2	4	4	50	2	Picture 1	○
PM-2R-D2.0R0.2	2.0	0.2	4	6	50	2	Picture 1	○
PM-2R-D2.0R0.5	2.0	0.5	4	6	50	2	Picture 1	○
PM-2R-D2.5R0.2	2.5	0.2	4	8	50	2	Picture 1	○
PM-2R-D2.5R0.5	2.5	0.5	4	8	50	2	Picture 1	○
PM-2R-D3.0R0.2	3.0	0.2	4	8	50	2	Picture 1	○
PM-2R-D3.0R0.3	3.0	0.3	4	8	50	2	Picture 1	○
PM-2R-D3.0R0.5	3.0	0.5	4	8	50	2	Picture 1	○
PM-2R-D4.0R0.2	4.0	0.2	4	11	50	2	Picture 2	○
PM-2R-D4.0R0.3	4.0	0.3	4	11	50	2	Picture 2	○
PM-2R-D4.0R0.5	4.0	0.5	4	11	50	2	Picture 2	○
PM-2R-D4.0R1.0	4.0	1.0	4	11	50	2	Picture 2	○
PM-2R-D5.0R0.2	5.0	0.2	6	13	50	2	Picture 1	○
PM-2R-D5.0R0.3	5.0	0.3	6	13	50	2	Picture 1	○
PM-2R-D5.0R0.5	5.0	0.5	6	13	50	2	Picture 1	○
PM-2R-D5.0R1.0	5.0	1.0	6	13	50	2	Picture 1	○
PM-2R-D6.0R0.2	6.0	0.2	6	16	50	2	Picture 2	○
PM-2R-D6.0R0.3	6.0	0.3	6	16	50	2	Picture 2	○
PM-2R-D6.0R0.5	6.0	0.5	6	16	50	2	Picture 2	○
PM-2R-D6.0R1.0	6.0	1.0	6	16	50	2	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

PM series

➤ Applicable workpiece material ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B573

Non-standard customization

B652-B653

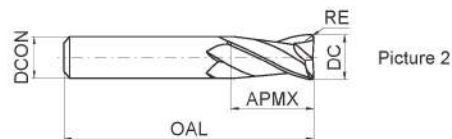
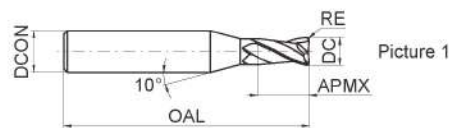
2-flute R end mills with straight shank



PM-2R



- Wide applications, applicable for several machining styles.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
PM-2R-D8.0R0.3	8.0	0.3	8	20	60	2	Picture 2	○
PM-2R-D8.0R0.5	8.0	0.5	8	20	60	2	Picture 2	○
PM-2R-D8.0R1.0	8.0	1.0	8	20	60	2	Picture 2	○
PM-2R-D10.0R0.3	10.0	0.3	10	25	75	2	Picture 2	○
PM-2R-D10.0R0.5	10.0	0.5	10	25	75	2	Picture 2	○
PM-2R-D10.0R1.0	10.0	1.0	10	25	75	2	Picture 2	○
PM-2R-D10.0R1.5	10.0	1.5	10	25	75	2	Picture 2	○
PM-2R-D10.0R2.0	10.0	2.0	10	25	75	2	Picture 2	○
PM-2R-D12.0R0.3	12.0	0.3	12	30	75	2	Picture 2	○
PM-2R-D12.0R0.5	12.0	0.5	12	30	75	2	Picture 2	○
PM-2R-D12.0R1.0	12.0	1.0	12	30	75	2	Picture 2	○
PM-2R-D12.0R1.5	12.0	1.5	12	30	75	2	Picture 2	○
PM-2R-D12.0R2.0	12.0	2.0	12	30	75	2	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○Very suitable ○Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B573

Non-standard customization

B652-B653

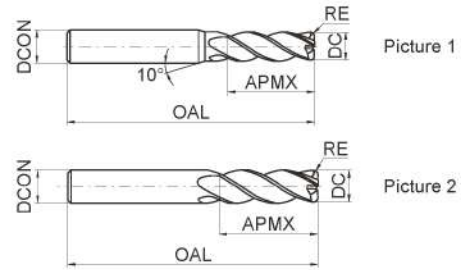
4-flute R end mills with straight shank



PM-4R



- Wide applications, applicable for several machining styles.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
PM-4R-D1.0R0.2S	1.0	0.2	4	3	50	4	Picture 1	○
PM-4R-D1.5R0.2S	1.5	0.2	4	4	50	4	Picture 1	○
PM-4R-D2.0R0.2S	2.0	0.2	4	6	50	4	Picture 1	○
PM-4R-D2.0R0.2	2.0	0.2	6	6	50	4	Picture 1	○
PM-4R-D2.0R0.5S	2.0	0.5	4	6	50	4	Picture 1	○
PM-4R-D2.0R0.5	2.0	0.5	6	6	50	4	Picture 1	○
PM-4R-D2.5R0.2S	2.5	0.2	4	8	50	4	Picture 1	○
PM-4R-D2.5R0.2	2.5	0.2	6	8	50	4	Picture 1	○
PM-4R-D2.5R0.5S	2.5	0.5	4	8	50	4	Picture 1	○
PM-4R-D2.5R0.5	2.5	0.5	6	8	50	4	Picture 1	○
PM-4R-D3.0R0.2S	3.0	0.2	4	8	50	4	Picture 1	○
PM-4R-D3.0R0.2	3.0	0.2	6	8	50	4	Picture 1	●
PM-4R-D3.0R0.5S	3.0	0.5	4	8	50	4	Picture 1	○
PM-4R-D3.0R0.5	3.0	0.5	6	8	50	4	Picture 1	○
PM-4R-D4.0R0.2S	4.0	0.2	4	10	50	4	Picture 2	●
PM-4R-D4.0R0.2	4.0	0.2	6	10	50	4	Picture 1	○
PM-4R-D4.0R0.3S	4.0	0.3	4	10	50	4	Picture 2	●
PM-4R-D4.0R0.3	4.0	0.3	6	10	50	4	Picture 1	●
PM-4R-D4.0R0.5S	4.0	0.5	4	10	50	4	Picture 2	●
PM-4R-D4.0R0.5	4.0	0.5	6	10	50	4	Picture 1	●
PM-4R-D5.0R0.2	5.0	0.2	6	13	50	4	Picture 1	●
PM-4R-D5.0R0.3	5.0	0.3	6	13	50	4	Picture 1	●
PM-4R-D5.0R0.5	5.0	0.5	6	13	50	4	Picture 1	●
PM-4R-D5.0R1.0	5.0	1.0	6	13	50	4	Picture 1	●
PM-4R-D6.0R0.2	6.0	0.2	6	16	50	4	Picture 2	●

● Stock available ○ Make-to-order

➤ Applicable workpiece material ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B574

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

High-performance general milling PM series

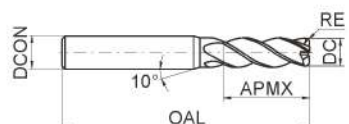
4-flute R end mills with straight shank



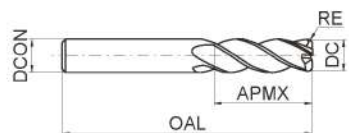
PM-4R



- Wide applications, applicable for several machining styles.



Picture 1



Picture 2

Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
PM-4R-D6.0R0.3	6.0	0.3	6	16	50	4	Picture 2	●
PM-4R-D6.0R0.5	6.0	0.5	6	16	50	4	Picture 2	●
PM-4R-D6.0R1.0	6.0	1.0	6	16	50	4	Picture 2	●
PM-4R-D8.0R0.2	8.0	0.2	8	20	60	4	Picture 2	●
PM-4R-D8.0R0.3	8.0	0.3	8	20	60	4	Picture 2	●
PM-4R-D8.0R0.5	8.0	0.5	8	20	60	4	Picture 2	●
PM-4R-D8.0R1.0	8.0	1.0	8	20	60	4	Picture 2	●
PM-4R-D10.0R0.2	10.0	0.2	10	25	75	4	Picture 2	●
PM-4R-D10.0R0.3	10.0	0.3	10	25	75	4	Picture 2	●
PM-4R-D10.0R0.5	10.0	0.5	10	25	75	4	Picture 2	●
PM-4R-D10.0R1.0	10.0	1.0	10	25	75	4	Picture 2	●
PM-4R-D10.0R2.0	10.0	2.0	10	25	75	4	Picture 2	●
PM-4R-D10.0R3.0	10.0	3.0	10	25	75	4	Picture 2	●
PM-4R-D12.0R0.2	12.0	0.2	12	30	75	4	Picture 2	●
PM-4R-D12.0R0.3	12.0	0.3	12	30	75	4	Picture 2	●
PM-4R-D12.0R0.5	12.0	0.5	12	30	75	4	Picture 2	●
PM-4R-D12.0R1.0	12.0	1.0	12	30	75	4	Picture 2	●
PM-4R-D12.0R2.0	12.0	2.0	12	30	75	4	Picture 2	●
PM-4R-D12.0R3.0	12.0	3.0	12	30	75	4	Picture 2	●

● Stock available ○ Make-to-order

Applicable workpiece material table

Very suitable Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B574

Non-standard customization

B652-B653

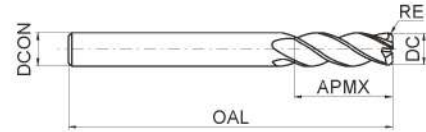
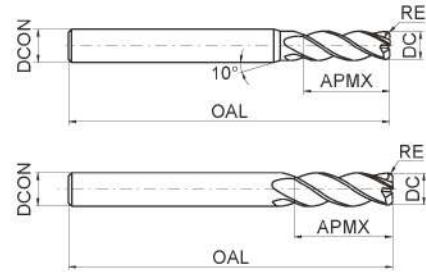
4-flute R end mills with long shank



PM-4RBL/M/X



● PM-4R series with long shank.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
PM-4RBL-D4.0R0.2S	4.0	0.2	4	10	75	4	Picture 2	●
PM-4RBL-D4.0R0.2	4.0	0.2	6	10	75	4	Picture 1	●
PM-4RBL-D4.0R0.5S	4.0	0.5	4	10	75	4	Picture 2	●
PM-4RBL-D4.0R0.5	4.0	0.5	6	10	75	4	Picture 1	●
PM-4RBL-D6.0R0.2	6.0	0.2	6	16	75	4	Picture 2	●
PM-4RBX-D6.0R0.2	6.0	0.2	6	16	100	4	Picture 2	●
PM-4RBL-D6.0R0.5	6.0	0.5	6	16	75	4	Picture 2	●
PM-4RBX-D6.0R0.5	6.0	0.5	6	16	100	4	Picture 2	●
PM-4RBL-D6.0R1.0	6.0	1.0	6	16	75	4	Picture 2	●
PM-4RBX-D6.0R1.0	6.0	1.0	6	16	100	4	Picture 2	●
PM-4RBM-D8.0R0.2	8.0	0.2	8	20	75	4	Picture 2	●
PM-4RBL-D8.0R0.2	8.0	0.2	8	20	100	4	Picture 2	●
PM-4RBM-D8.0R0.5	8.0	0.5	8	20	75	4	Picture 2	●
PM-4RBL-D8.0R0.5	8.0	0.5	8	20	100	4	Picture 2	●
PM-4RBM-D8.0R1.0	8.0	1.0	8	20	75	4	Picture 2	●
PM-4RBL-D8.0R1.0	8.0	1.0	8	20	100	4	Picture 2	●
PM-4RBL-D10.0R0.2	10.0	0.2	10	25	100	4	Picture 2	●
PM-4RBX-D10.0R0.2	10.0	0.2	10	25	150	4	Picture 2	●
PM-4RBL-D10.0R0.5	10.0	0.5	10	25	100	4	Picture 2	●
PM-4RBX-D10.0R0.5	10.0	0.5	10	25	150	4	Picture 2	●
PM-4RBL-D10.0R1.0	10.0	1.0	10	25	100	4	Picture 2	●
PM-4RBX-D10.0R1.0	10.0	1.0	10	25	150	4	Picture 2	●
PM-4RBL-D10.0R2.0	10.0	2.0	10	25	100	4	Picture 2	●
PM-4RBX-D10.0R2.0	10.0	2.0	10	25	150	4	Picture 2	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

PM series

➤ Applicable workpiece material ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B574

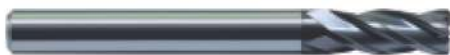
Non-standard customization

B652-B653

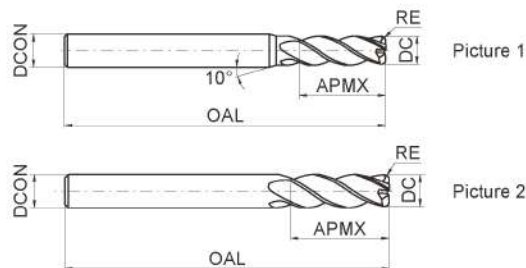
4-flute R end mills with long shank



PM-4RBL/M/X



PM-4R series with long shank.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
PM-4RBL-D12.0R0.2	12.0	0.2	12	30	100	4	Picture 2	●
PM-4RBX-D12.0R0.2	12.0	0.2	12	30	150	4	Picture 2	●
PM-4RBL-D12.0R0.5	12.0	0.5	12	30	100	4	Picture 2	●
PM-4RBX-D12.0R0.5	12.0	0.5	12	30	150	4	Picture 2	●
PM-4RBL-D12.0R1.0	12.0	1.0	12	30	100	4	Picture 2	●
PM-4RBX-D12.0R1.0	12.0	1.0	12	30	150	4	Picture 2	●
PM-4RBL-D12.0R2.0	12.0	2.0	12	30	100	4	Picture 2	●
PM-4RBX-D12.0R2.0	12.0	2.0	12	30	150	4	Picture 2	●

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B574

Non-standard customization

B652-B653

4-flute R end mills with straight shank



Radius shoulder



Profile

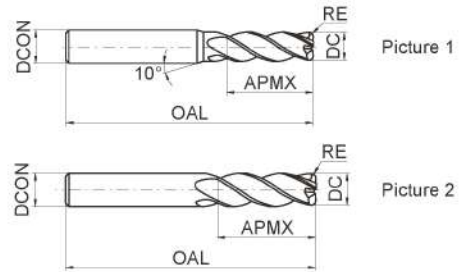


Radius corner slot

PM-4R-H



- Wide applications, applicable for several machining styles.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
PM-4R-D3.0R0.2F-H	3.0	0.2	3	8	50	4	Picture 2	●
PM-4R-D3.0R0.2S-H	3.0	0.2	4	8	50	4	Picture 1	●
PM-4R-D3.0R0.5F-H	3.0	0.5	3	8	50	4	Picture 2	●
PM-4R-D3.0R0.5S-H	3.0	0.5	4	8	50	4	Picture 1	●
PM-4R-D3.5R0.2S-H	3.5	0.2	4	10	50	4	Picture 1	●
PM-4R-D3.5R0.5S-H	3.5	0.5	4	10	50	4	Picture 1	●
PM-4R-D4.0R0.2S-H	4.0	0.2	4	10	50	4	Picture 2	●
PM-4R-D4.0R0.2-H	4.0	0.2	6	10	50	4	Picture 1	●
PM-4R-D4.0R0.3S-H	4.0	0.3	4	10	50	4	Picture 2	●
PM-4R-D4.0R0.3-H	4.0	0.3	6	10	50	4	Picture 1	●
PM-4R-D4.0R0.5S-H	4.0	0.5	4	10	50	4	Picture 2	●
PM-4R-D4.0R0.5-H	4.0	0.5	6	10	50	4	Picture 1	●
PM-4R-D5.0R0.2-H	5.0	0.2	6	13	50	4	Picture 1	●
PM-4R-D5.0R0.3-H	5.0	0.3	6	13	50	4	Picture 1	●
PM-4R-D5.0R0.5-H	5.0	0.5	6	13	50	4	Picture 1	●
PM-4R-D5.0R1.0-H	5.0	1.0	6	13	50	4	Picture 1	●
PM-4R-D6.0R0.2-H	6.0	0.2	6	16	50	4	Picture 2	●
PM-4R-D6.0R0.3-H	6.0	0.3	6	16	50	4	Picture 2	●
PM-4R-D6.0R0.5-H	6.0	0.5	6	16	50	4	Picture 2	●
PM-4R-D6.0R1.0-H	6.0	1.0	6	16	50	4	Picture 2	●

● Stock available ○ Make-to-order

Indexable
milling toolsSolid carbide
end mills

PM series

➤ Applicable workpiece material ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B574

Non-standard customization

B652-B653

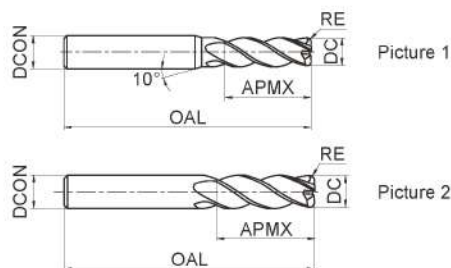
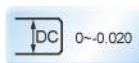
4-flute R end mills with straight shank



PM-4R-H



- Wide applications, applicable for several machining styles.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
PM-4R-D8.0R0.3-H	8.0	0.3	8	20	60	4	Picture 2	●
PM-4R-D8.0R0.5-H	8.0	0.5	8	20	60	4	Picture 2	●
PM-4R-D8.0R1.0-H	8.0	1.0	8	20	60	4	Picture 2	●
PM-4R-D10.0R0.3-H	10.0	0.3	10	25	75	4	Picture 2	●
PM-4R-D10.0R0.5-H	10.0	0.5	10	25	75	4	Picture 2	●
PM-4R-D10.0R1.0-H	10.0	1.0	10	25	75	4	Picture 2	●
PM-4R-D10.0R2.0-H	10.0	2.0	10	25	75	4	Picture 2	●
PM-4R-D10.0R3.0-H	10.0	3.0	10	25	75	4	Picture 2	●
PM-4R-D12.0R0.3-H	12.0	0.3	12	30	75	4	Picture 2	●
PM-4R-D12.0R0.5-H	12.0	0.5	12	30	75	4	Picture 2	●
PM-4R-D12.0R1.0-H	12.0	1.0	12	30	75	4	Picture 2	●
PM-4R-D12.0R2.0-H	12.0	2.0	12	30	75	4	Picture 2	●
PM-4R-D12.0R3.0-H	12.0	3.0	12	30	75	4	Picture 2	●

● Stock available ○ Make-to-order

Applicable workpiece material table ○Very suitable ○Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B574

Non-standard customization

B652-B653

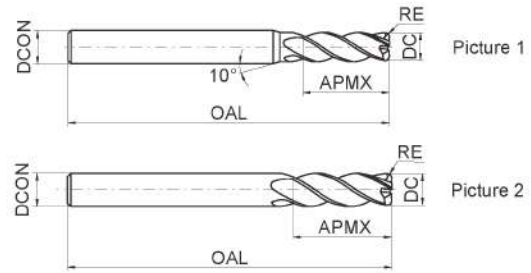
4-flute R end mills with long shank



PM-4RBL/M/X-H



● PM-4R-H series with long shank.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
PM-4RBL-D4.0R0.2S-H	4.0	0.2	4	10	75	4	Picture 2	●
PM-4RBL-D4.0R0.2-H	4.0	0.2	6	10	75	4	Picture 1	●
PM-4RBL-D4.0R0.5S-H	4.0	0.5	4	10	75	4	Picture 2	●
PM-4RBL-D4.0R0.5-H	4.0	0.5	6	10	75	4	Picture 1	●
PM-4RBL-D6.0R0.2-H	6.0	0.2	6	16	75	4	Picture 2	●
PM-4RBX-D6.0R0.2-H	6.0	0.2	6	16	100	4	Picture 2	●
PM-4RBL-D6.0R0.5-H	6.0	0.5	6	16	75	4	Picture 2	●
PM-4RBX-D6.0R0.5-H	6.0	0.5	6	16	100	4	Picture 2	●
PM-4RBL-D6.0R1.0-H	6.0	1.0	6	16	75	4	Picture 2	●
PM-4RBX-D6.0R1.0-H	6.0	1.0	6	16	100	4	Picture 2	●
PM-4RBM-D8.0R0.2-H	8.0	0.2	8	20	75	4	Picture 2	●
PM-4RBL-D8.0R0.2-H	8.0	0.2	8	20	100	4	Picture 2	●
PM-4RBM-D8.0R0.5-H	8.0	0.5	8	20	75	4	Picture 2	●
PM-4RBL-D8.0R0.5-H	8.0	0.5	8	20	100	4	Picture 2	●
PM-4RBM-D8.0R1.0-H	8.0	1.0	8	20	75	4	Picture 2	●
PM-4RBL-D8.0R1.0-H	8.0	1.0	8	20	100	4	Picture 2	●
PM-4RBL-D10.0R0.2-H	10.0	0.2	10	25	100	4	Picture 2	●
PM-4RBX-D10.0R0.2-H	10.0	0.2	10	25	150	4	Picture 2	●
PM-4RBL-D10.0R0.5-H	10.0	0.5	10	25	100	4	Picture 2	●
PM-4RBX-D10.0R0.5-H	10.0	0.5	10	25	150	4	Picture 2	●
PM-4RBL-D10.0R1.0-H	10.0	1.0	10	25	100	4	Picture 2	●
PM-4RBX-D10.0R1.0-H	10.0	1.0	10	25	150	4	Picture 2	●
PM-4RBL-D10.0R2.0-H	10.0	2.0	10	25	100	4	Picture 2	●
PM-4RBX-D10.0R2.0-H	10.0	2.0	10	25	150	4	Picture 2	●
PM-4RBL-D12.0R0.5-H	12.0	0.5	12	30	100	4	Picture 2	●
PM-4RBX-D12.0R0.5-H	12.0	0.5	12	30	150	4	Picture 2	●
PM-4RBL-D12.0R1.0-H	12.0	1.0	12	30	100	4	Picture 2	●
PM-4RBX-D12.0R1.0-H	12.0	1.0	12	30	150	4	Picture 2	●
PM-4RBL-D12.0R2.0-H	12.0	2.0	12	30	100	4	Picture 2	●
PM-4RBX-D12.0R2.0-H	12.0	2.0	12	30	150	4	Picture 2	●

● Stock available ○ Make-to-order

➤ Applicable workpiece material ● Very suitable ○ Suitable

Workpiece material										
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy
		~40HRC	~50HRC	~55HRC	~68HRC					
○	○	○	○	○		○	○			○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B574

Non-standard customization

B652-B653



MILLING / Solid Carbide End Mills

High-performance general milling PM series

4-flute R end mills with straight shank, long neck and short cutting edge



Radius shoulder



Profile

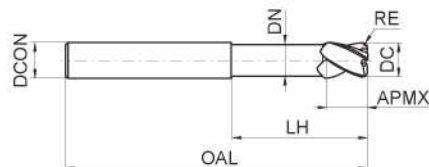


Radius corner slot

PM-4RFP



- Long shank and short cutting edge designed for deep cavity milling.



Type	Basic dimension(mm)							Number of teeth Z	Stock
	DC	RE	DCON	DN	APMX	LH	OAL		
PM-4RFP-D6.0R0.2	6.0	0.2	6	5.8	6	18	75	4	○
PM-4RFP-D6.0R0.5	6.0	0.5	6	5.8	6	18	75	4	○
PM-4RFP-D6.0R1.0	6.0	1.0	6	5.8	6	18	75	4	○
PM-4RFP-D8.0R0.2	8.0	0.2	8	7.8	8	24	100	4	○
PM-4RFP-D8.0R0.5	8.0	0.5	8	7.8	8	24	100	4	○
PM-4RFP-D8.0R1.0	8.0	1.0	8	7.8	8	24	100	4	○
PM-4RFP-D10.0R0.2	10.0	0.2	10	9.6	10	30	100	4	○
PM-4RFP-D10.0R0.5	10.0	0.5	10	9.6	10	30	100	4	○
PM-4RFP-D10.0R1.0	10.0	1.0	10	9.6	10	30	100	4	○
PM-4RFP-D10.0R2.0	10.0	2.0	10	9.6	10	30	100	4	○
PM-4RFP-D12.0R0.2	12.0	0.2	12	11.5	12	36	100	4	○
PM-4RFP-D12.0R0.5	12.0	0.5	12	11.5	12	36	100	4	○
PM-4RFP-D12.0R1.0	12.0	1.0	12	11.5	12	36	100	4	○
PM-4RFP-D12.0R2.0	12.0	2.0	12	11.5	12	36	100	4	○
PM-4RFP-D16.0R0.2	16.0	0.2	16	15.5	16	40	150	4	○
PM-4RFP-D16.0R1.0	16.0	1.0	16	15.5	16	40	150	4	○
PM-4RFP-D16.0R2.0	16.0	2.0	16	15.5	16	40	150	4	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B574

Non-standard customization

B652-B653

4-flute end mills with high feed rate



Radius shoulder



Profile

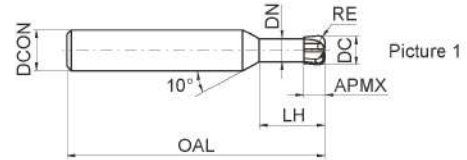


Radius corner slot

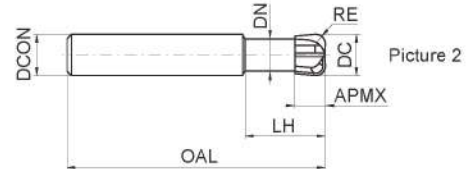
PM-4H



- High-rigidity short cutting edge, suitable for machining with high feed rate.



Picture 1



Picture 2

Type	Basic dimension(mm)							Number of teeth Z	Geometry	Stock
	DC	RE	DCON	DN	APMX	LH	OAL			
PM-4H-D3.0R0.8	3.0	0.8	6	2.7	1.2	8.0	50	4	Picture 1	○
PM-4H-D4.0R1.0	4.0	1.0	6	3.6	1.6	10.0	50	4	Picture 1	○
PM-4H-D5.0R1.2	5.0	1.2	6	4.5	2.0	12.5	50	4	Picture 1	○
PM-4H-D6.0R1.0	6.0	1.0	6	5.4	2.5	12.0	50	4	Picture 2	○
PM-4H-D6.0R1.5	6.0	1.5	6	5.4	2.5	12.0	50	4	Picture 2	○
PM-4H-D8.0R1.0	8.0	1.0	8	7.0	3.5	16.0	60	4	Picture 2	○
PM-4H-D8.0R2.0	8.0	2.0	8	7.0	3.5	16.0	60	4	Picture 2	○
PM-4H-D10.0R1.0	10.0	1.0	10	9.0	4.0	20.0	75	4	Picture 2	○
PM-4H-D10.0R2.0	10.0	2.0	10	9.0	4.0	20.0	75	4	Picture 2	○
PM-4H-D12.0R2.0	12.0	2.0	12	11.0	5.0	24.0	75	4	Picture 2	○
PM-4H-D12.0R3.0	12.0	3.0	12	11.0	5.0	24.0	75	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

PM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material										
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy
		~40HRC	~50HRC	~55HRC	~68HRC					
○	○	○	○	○		○	○			○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B575-B576

Non-standard customization

B652-B653

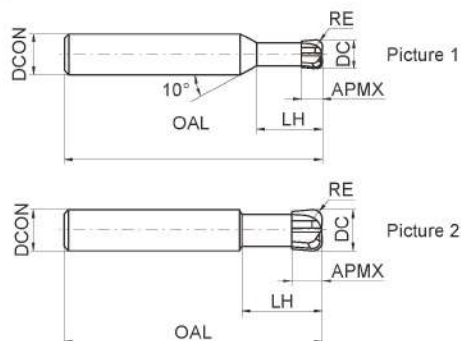
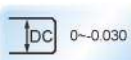
4-flute end mills with high feed rate



PM-4HL



● PM-4H series with long shank.



Type	Basic dimension(mm)							Number of teeth Z	Geometry	Stock
	DC	RE	DCON	d ₁	APMX	LH	OAL			
PM-4HL-D4.0R1.0	4.0	1.0	6	3.6	1.6	10.0	75	4	Picture 1	○
PM-4HL-D5.0R1.2	5.0	1.2	6	4.5	2.0	12.5	75	4	Picture 1	○
PM-4HL-D6.0R1.0	6.0	1.0	6	5.4	2.5	12.0	75	4	Picture 2	○
PM-4HL-D6.0R1.5	6.0	1.5	6	5.4	2.5	12.0	75	4	Picture 2	○
PM-4HL-D8.0R1.0	8.0	1.0	8	7.0	3.5	16.0	100	4	Picture 2	○
PM-4HL-D8.0R2.0	8.0	2.0	8	7.0	3.5	16.0	100	4	Picture 2	○
PM-4HL-D10.0R1.0	10.0	1.0	10	9.0	4.0	20.0	100	4	Picture 2	○
PM-4HL-D10.0R2.0	10.0	2.0	10	9.0	4.0	20.0	100	4	Picture 2	○
PM-4HL-D12.0R2.0	12.0	2.0	12	11.0	5.0	24.0	100	4	Picture 2	○
PM-4HL-D12.0R3.0	12.0	3.0	12	11.0	5.0	24.0	100	4	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○	○		○	○			○	○

Code key

B294

Graphics category and identification

B295

Cutting parameters

B575-B576

Non-standard customization

B652-B653

GM

series general end mills

Wide application

High efficiency machining can be achieved ranging from common steel to pre-hardened steel machining.

Optimized structure

Appropriate combination of sharp cutting edge and tool strength makes cutting easier and faster, extending tool life.

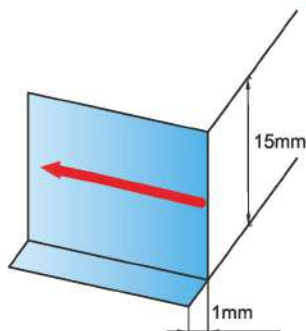
Versatile product series

Suitable for rough machining with high metal removal rate to finish machining with high surface quality.

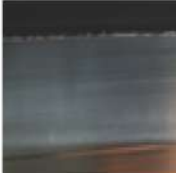
Complete diameter range

Minimum diameter of 0.3mm for machining of the smallest parts.

Tool type: GM-4E-D10.0
 Dimensions: Ø10.0mm
 Workpiece material: NAK80(40HRC)
 Rotating speed: 3200r/min(100m/min)
 Feed rate: 640mm/min(0.2mm/r)
 Axial cutting depth: $a_p=15\text{mm}$
 Radial cutting depth: $a_e=1.0\text{mm}$
 Cutting style: side milling (down milling)
 Cooling system: air blow
 Machine tool: MIKRON UCP 1000



Cutting edge abrasion and workpiece surface quality

End mill	GM-4E-D10.0	Similar product of company A	Similar product of company B
Cutting length	60m	20m	60m
Cutting edge abrasion			
Workpiece surface quality			



Excellent performance, super cost-effective!

The series is further completed specification, which better meet various machining needs.

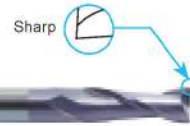
Flattened end mills series with sharp corner or corner protection

GM-2E(Corner protection)



GM-□E

GM-2F(Sharp)



GM-□F

4-flute unequal helical angle flattened end mills

(30° or 45° helical angle end mills for various work conditions and machined materials)



GM-4E-G



GM-4E

Super short flutes and long neck series

(provide various kinds neck length end mills for cavity, straight slot, etc., work conditions)



GM-□EFP



GM-2BFP

Super long flutes series

(Only one step for high side wall machining, without cutting steps mark)



GM-2EX



GM-4EX-G

3-flute flattened end mills

(3-flute flattened end mills with excellent vibration resistance, which are available to realize slotting, side milling, etc., various machining processing.)



GM-3E



GM-3EL

Long shank series

(suitable for deep cavity machining)



GM-2EBL/X



GM-4EBL/X

2-flute flattened end mills with straight shank



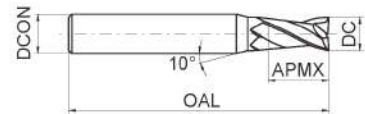
GM-2E

Corner protection

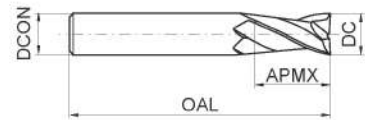


● Very suitable for slot milling.

● Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCN	APMX	OAL			
GM-2E-D1.0F	1.0	3	3	50	2	Picture 1	○
GM-2E-D1.0S	1.0	4	3	50	2	Picture 1	●
GM-2E-D1.0	1.0	6	3	50	2	Picture 1	●
GM-2E-D1.5F	1.5	3	4	50	2	Picture 1	○
GM-2E-D1.5S	1.5	4	4	50	2	Picture 1	●
GM-2E-D1.5	1.5	6	4	50	2	Picture 1	●
GM-2E-D2.0F	2.0	3	6	50	2	Picture 1	○
GM-2E-D2.0S	2.0	4	6	50	2	Picture 1	●
GM-2E-D2.0	2.0	6	6	50	2	Picture 1	●
GM-2E-D2.5S	2.5	4	8	50	2	Picture 1	●
GM-2E-D2.5	2.5	6	8	50	2	Picture 1	●
GM-2E-D3.0F	3.0	3	8	50	2	Picture 2	○
GM-2E-D3.0S	3.0	4	8	50	2	Picture 1	●
GM-2E-D3.0	3.0	6	8	50	2	Picture 1	●
GM-2E-D3.5S	3.5	4	10	50	2	Picture 1	○
GM-2E-D3.5	3.5	6	10	50	2	Picture 1	●
GM-2E-D4.0S	4.0	4	11	50	2	Picture 2	●
GM-2E-D4.0	4.0	6	11	50	2	Picture 1	●
GM-2E-D4.5	4.5	6	11	50	2	Picture 1	●
GM-2E-D5.0	5.0	6	13	50	2	Picture 1	●
GM-2E-D5.5	5.5	6	16	50	2	Picture 1	●
GM-2E-D6.0	6.0	6	16	50	2	Picture 2	●
GM-2E-D7.0	7.0	8	20	60	2	Picture 1	●
GM-2E-D8.0	8.0	8	20	60	2	Picture 2	●
GM-2E-D9.0	9.0	10	22	75	2	Picture 1	●
GM-2E-D10.0	10.0	10	25	75	2	Picture 2	●
GM-2E-D11.0	11.0	12	26	75	2	Picture 1	●
GM-2E-D12.0	12.0	12	30	75	2	Picture 2	●
GM-2E-D14.0	14.0	14	32	75	2	Picture 2	●
GM-2E-D16.0	16.0	16	45	100	2	Picture 2	●
GM-2E-D18.0	18.0	18	45	100	2	Picture 2	●
GM-2E-D20.0	20.0	20	45	100	2	Picture 2	●

● Stock available ○ Make-to-order

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B577

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

GM series for general machining

2-flute flattened end mills with straight shank

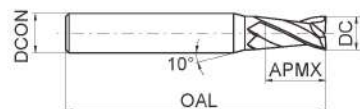


GM-2F



Slot milling.

Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-2F-D1.0S	1.0	4	3	50	2	Picture 1	○
GM-2F-D1.0	1.0	6	3	50	2	Picture 1	○
GM-2F-D1.5S	1.5	4	4	50	2	Picture 1	○
GM-2F-D1.5	1.5	6	4	50	2	Picture 1	○
GM-2F-D2.0S	2.0	4	6	50	2	Picture 1	○
GM-2F-D2.0	2.0	6	6	50	2	Picture 1	○
GM-2F-D2.5S	2.5	4	8	50	2	Picture 1	○
GM-2F-D2.5	2.5	6	8	50	2	Picture 1	○
GM-2F-D3.0S	3.0	4	8	50	2	Picture 1	○
GM-2F-D3.0	3.0	6	8	50	2	Picture 1	○
GM-2F-D3.5	3.5	6	10	50	2	Picture 1	○
GM-2F-D4.0S	4.0	4	11	50	2	Picture 2	○
GM-2F-D4.0	4.0	6	11	50	2	Picture 1	○
GM-2F-D4.5	4.5	6	11	50	2	Picture 1	○
GM-2F-D5.0	5.0	6	13	50	2	Picture 1	○
GM-2F-D5.5	5.5	6	16	50	2	Picture 1	○
GM-2F-D6.0	6.0	6	16	50	2	Picture 2	○
GM-2F-D7.0	7.0	8	20	60	2	Picture 1	○
GM-2F-D8.0	8.0	8	20	60	2	Picture 2	○
GM-2F-D9.0	9.0	10	22	75	2	Picture 1	○
GM-2F-D10.0	10.0	10	25	75	2	Picture 2	○
GM-2F-D11.0	11.0	12	26	75	2	Picture 1	○
GM-2F-D12.0	12.0	12	30	75	2	Picture 2	○
GM-2F-D14.0	14.0	14	32	75	2	Picture 2	○
GM-2F-D16.0	16.0	16	45	100	2	Picture 2	○
GM-2F-D18.0	18.0	18	45	100	2	Picture 2	○
GM-2F-D20.0	20.0	20	45	100	2	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B578

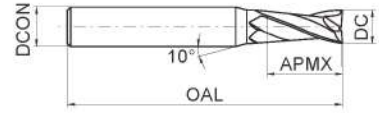
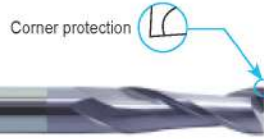
Non-standard customization

B652-B653

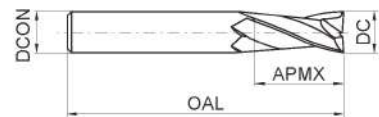
2-flute flattened end mills with straight shank and long cutting edge



GM-2EL



Picture 1



Picture 2

- GM-2E series with long cutting edge.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DOCN	APMX	OAL			
GM-2EL-D3.0	3.0	6	12	75	2	Picture 1	●
GM-2EL-D4.0	4.0	6	15	75	2	Picture 1	●
GM-2EL-D5.0	5.0	6	20	75	2	Picture 1	●
GM-2EL-D6.0	6.0	6	20	75	2	Picture 2	●
GM-2EL-D8.0	8.0	8	25	100	2	Picture 2	●
GM-2EL-D10.0	10.0	10	30	100	2	Picture 2	●
GM-2EL-D12.0	12.0	12	35	100	2	Picture 2	●
GM-2EL-D14.0	14.0	14	40	100	2	Picture 2	●
GM-2EL-D16.0	16.0	16	50	150	2	Picture 2	●
GM-2EL-D20.0	20.0	20	55	150	2	Picture 2	●

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

GM series

Applicable workpiece material table

● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B577

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

GM series for general machining

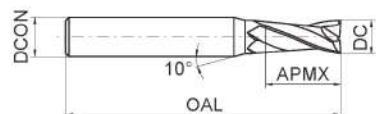
2-flute flattened end mills with straight shank and long cutting edge



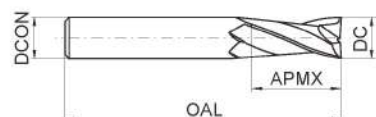
GM-2FL



● GM-2F series with long cutting edge.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-2FL-D3.0	3.0	6	12	75	2	Picture 1	○
GM-2FL-D4.0	4.0	6	15	75	2	Picture 1	○
GM-2FL-D5.0	5.0	6	20	75	2	Picture 1	○
GM-2FL-D6.0	6.0	6	20	75	2	Picture 2	○
GM-2FL-D8.0	8.0	8	25	100	2	Picture 2	○
GM-2FL-D10.0	10.0	10	30	100	2	Picture 2	○
GM-2FL-D12.0	12.0	12	35	100	2	Picture 2	○
GM-2FL-D14.0	14.0	14	40	100	2	Picture 2	○
GM-2FL-D16.0	16.0	16	50	150	2	Picture 2	○
GM-2FL-D20.0	20.0	20	55	150	2	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B578

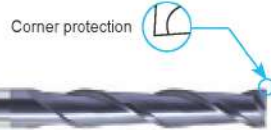
Non-standard customization

B652-B653

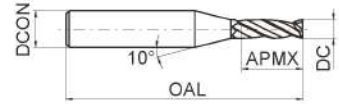
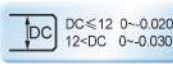
2-flute flattened end mills with straight shank and extra long cutting edge



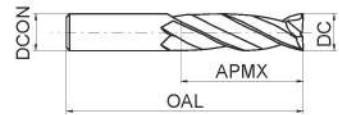
GM-2EX



- Extra long cutting edge, for deep side wall machining.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-2EX-D3.0	3.0	6	20	75	2	Picture 1	○
GM-2EX-D4.0	4.0	6	25	75	2	Picture 1	○
GM-2EX-D5.0	5.0	6	30	75	2	Picture 1	○
GM-2EX-D6.0	6.0	6	30	75	2	Picture 2	○
GM-2EX-D8.0	8.0	8	40	100	2	Picture 2	○
GM-2EX-D10.0	10.0	10	50	110	2	Picture 2	○
GM-2EX-D12.0	12.0	12	50	110	2	Picture 2	○
GM-2EX-D16.0	16.0	16	70	150	2	Picture 2	○
GM-2EX-D20.0	20.0	20	75	150	2	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

Applicable workpiece material table

○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B579

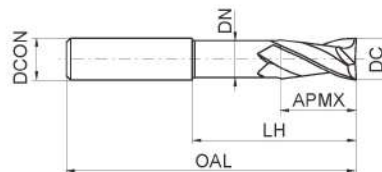
Non-standard customization

B652-B653

2-flute flattened end mills with straight shank, long neck and short cutting edge



GM-2EFP



- High-rigidity short cutting edge, suitable for heavy cutting and also deep cavity milling.



Type	Basic dimension(mm)						Number of teeth Z	Stock
	DC	DCON	APMX	LH	DN	OAL		
GM-2EFP-D6.0	6.0	6	9	30	5.8	75	2	○
GM-2EFP-D8.0	8.0	8	12	40	7.8	100	2	○
GM-2EFP-D10.0	10.0	10	15	50	9.6	100	2	○
GM-2EFP-D12.0	12.0	12	18	50	11.5	100	2	○
GM-2EFP-D16.0	16.0	16	24	50	15.5	150	2	○
GM-2EFP-D20.0	20.0	20	30	60	19.5	150	2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B580

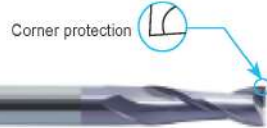
Non-standard customization

B652-B653

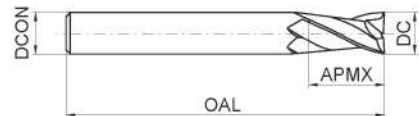
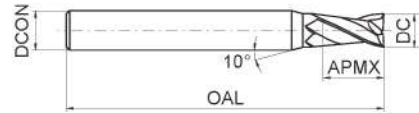
2-flute flattened end mills with long shank



GM-2EBL/X



● GM-2E series with long shank.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DOCN	APMX	OAL			
GM-2EBL-D3.0S	3.0	4	8	75	2	Picture 1	○
GM-2EBL-D3.0	3.0	6	8	75	2	Picture 1	○
GM-2EBL-D4.0S	4.0	4	11	75	2	Picture 2	○
GM-2EBL-D4.0	4.0	6	11	75	2	Picture 1	○
GM-2EBL-D6.0	6.0	6	16	75	2	Picture 2	○
GM-2EBX-D6.0	6.0	6	16	100	2	Picture 2	○
GM-2EBL-D8.0	8.0	8	20	75	2	Picture 2	○
GM-2EBX-D8.0	8.0	8	20	100	2	Picture 2	○
GM-2EBL-D10.0	10.0	10	25	100	2	Picture 2	○
GM-2EBX-D10.0	10.0	10	25	150	2	Picture 2	○
GM-2EBL-D12.0	12.0	12	30	100	2	Picture 2	○
GM-2EBX-D12.0	12.0	12	30	150	2	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B577

Non-standard customization

B652-B653

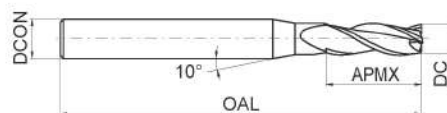
3-flute flattened end mills with straight shank



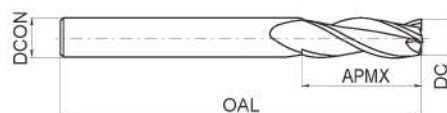
GM-3E



● Excellent vibration resistance, able to achieve various machining operations such as slot milling, side milling, drilling, etc.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-3E-D1.0F	1.0	3	3	50	3	Picture 1	○
GM-3E-D1.0S	1.0	4	3	50	3	Picture 1	○
GM-3E-D1.0	1.0	6	3	50	3	Picture 1	○
GM-3E-D1.5F	1.5	3	4	50	3	Picture 1	○
GM-3E-D1.5S	1.5	4	4	50	3	Picture 1	○
GM-3E-D1.5	1.5	6	4	50	3	Picture 1	○
GM-3E-D2.0F	2.0	3	6	50	3	Picture 1	○
GM-3E-D2.0S	2.0	4	6	50	3	Picture 1	○
GM-3E-D2.0	2.0	6	6	50	3	Picture 1	○
GM-3E-D2.5F	2.5	3	8	50	3	Picture 1	○
GM-3E-D2.5S	2.5	4	8	50	3	Picture 1	○
GM-3E-D2.5	2.5	6	8	50	3	Picture 1	○
GM-3E-D3.0F	3.0	3	8	50	3	Picture 2	○
GM-3E-D3.0S	3.0	4	8	50	3	Picture 1	○
GM-3E-D3.0	3.0	6	8	50	3	Picture 1	○
GM-3E-D3.5S	3.5	4	10	50	3	Picture 1	○
GM-3E-D3.5	3.5	6	10	50	3	Picture 1	○
GM-3E-D4.0S	4.0	4	11	50	3	Picture 2	○
GM-3E-D4.0	4.0	6	11	50	3	Picture 1	○
GM-3E-D4.5	4.5	6	11	50	3	Picture 1	○
GM-3E-D5.0	5.0	6	13	50	3	Picture 1	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B581

Non-standard customization

B652-B653

3-flute flattened end mills with straight shank



Side face



Step shoulder

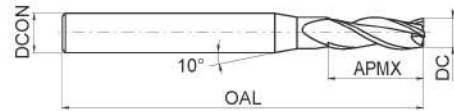
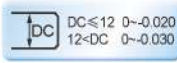


Straight slot

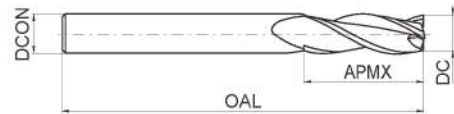
GM-3E



- Excellent vibration resistance, able to achieve various machining operations such as slot milling, side milling, drilling, etc.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-3E-D5.5	5.5	6	16	50	3	Picture 1	○
GM-3E-D6.0	6.0	6	16	50	3	Picture 2	○
GM-3E-D7.0	7.0	8	20	60	3	Picture 1	○
GM-3E-D8.0	8.0	8	20	60	3	Picture 2	○
GM-3E-D9.0	9.0	10	22	75	3	Picture 1	○
GM-3E-D10.0	10.0	10	25	75	3	Picture 2	○
GM-3E-D11.0	11.0	12	26	75	3	Picture 1	○
GM-3E-D12.0	12.0	12	30	75	3	Picture 2	○
GM-3E-D14.0	14.0	14	32	75	3	Picture 2	○
GM-3E-D16.0	16.0	16	45	100	3	Picture 2	○
GM-3E-D18.0	18.0	18	45	100	3	Picture 2	○
GM-3E-D20.0	20.0	20	45	100	3	Picture 2	○

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

GM series

Applicable workpiece material table

○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B581

Non-standard customization

B652-B653

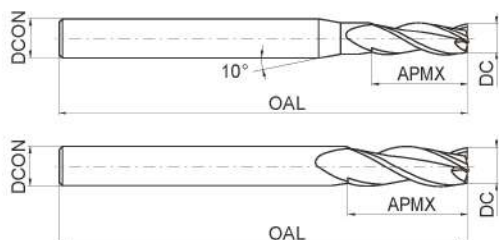
3-flute flattened end mills with straight shank and long cutting edge



GM-3EL



● GM-3E series with long cutting edge.



Picture 1

Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-3EL-D3.0	3.0	6	12	75	3	Picture 1	○
GM-3EL-D4.0	4.0	6	15	75	3	Picture 1	○
GM-3EL-D5.0	5.0	6	20	75	3	Picture 1	○
GM-3EL-D6.0	6.0	6	20	75	3	Picture 2	○
GM-3EL-D8.0	8.0	8	25	100	3	Picture 2	○
GM-3EL-D10.0	10.0	10	30	100	3	Picture 2	○
GM-3EL-D12.0	12.0	12	35	100	3	Picture 2	○
GM-3EL-D14.0	14.0	14	40	100	3	Picture 2	○
GM-3EL-D16.0	16.0	16	50	150	3	Picture 2	○
GM-3EL-D20.0	20.0	20	55	150	3	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B581

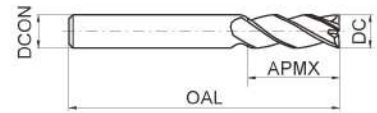
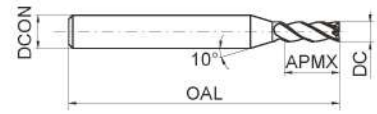
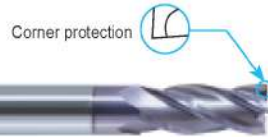
Non-standard customization

B652-B653

4-flute flattened end mills with straight shank



GM-4E-G



● Very suitable for side milling.

● Wide application.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4E-D1.0F-G	1.0	3	3	50	4	Picture 1	○
GM-4E-D1.0S-G	1.0	4	3	50	4	Picture 1	●
GM-4E-D1.0-G	1.0	6	3	50	4	Picture 1	●
GM-4E-D1.5F-G	1.5	3	4	50	4	Picture 1	○
GM-4E-D1.5S-G	1.5	4	4	50	4	Picture 1	●
GM-4E-D1.5-G	1.5	6	4	50	4	Picture 1	●
GM-4E-D2.0F-G	2.0	3	6	50	4	Picture 1	○
GM-4E-D2.0S-G	2.0	4	6	50	4	Picture 1	●
GM-4E-D2.0-G	2.0	6	6	50	4	Picture 1	●
GM-4E-D2.5F-G	2.5	3	8	50	4	Picture 1	○
GM-4E-D2.5S-G	2.5	4	8	50	4	Picture 1	●
GM-4E-D2.5-G	2.5	6	8	50	4	Picture 1	●
GM-4E-D3.0F-G	3.0	3	8	50	4	Picture 2	○
GM-4E-D3.0S-G	3.0	4	8	50	4	Picture 1	●
GM-4E-D3.0-G	3.0	6	8	50	4	Picture 1	●
GM-4E-D3.5S-G	3.5	4	10	50	4	Picture 1	○
GM-4E-D3.5-G	3.5	6	10	50	4	Picture 1	●
GM-4E-D4.0S-G	4.0	4	11	50	4	Picture 2	●
GM-4E-D4.0-G	4.0	6	11	50	4	Picture 1	●
GM-4E-D4.5-G	4.5	6	11	50	4	Picture 1	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B582

Non-standard customization

B652-B653

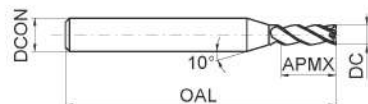
4-flute flattened end mills with straight shank

GM-4E-G

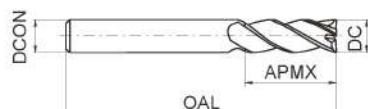


● Very suitable for side milling.

● Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCN	APMX	OAL			
GM-4E-D5.0-G	5.0	6	13	50	4	Picture 1	●
GM-4E-D5.5-G	5.5	6	16	50	4	Picture 1	●
GM-4E-D6.0-G	6.0	6	16	50	4	Picture 2	●
GM-4E-D7.0-G	7.0	8	20	60	4	Picture 1	●
GM-4E-D8.0-G	8.0	8	20	60	4	Picture 2	●
GM-4E-D9.0-G	9.0	10	22	75	4	Picture 1	●
GM-4E-D10.0-G	10.0	10	25	75	4	Picture 2	●
GM-4E-D11.0-G	11.0	12	26	75	4	Picture 1	●
GM-4E-D12.0-G	12.0	12	30	75	4	Picture 2	●
GM-4E-D14.0-G	14.0	14	32	75	4	Picture 2	●
GM-4E-D16.0-G	16.0	16	45	100	4	Picture 2	●
GM-4E-D18.0-G	18.0	18	45	100	4	Picture 2	●
GM-4E-D20.0-G	20.0	20	45	100	4	Picture 2	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B582

Non-standard customization

B652-B653

4-flute unequal pitch flattened end mills with straight shank

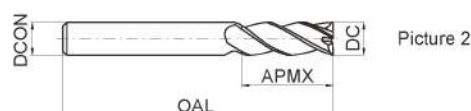
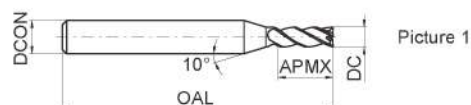


GM-4F-G



● Very suitable for side milling.

● Wide application.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4F-D1.0S-G	1.0	4	3	50	4	Picture 1	○
GM-4F-D1.0-G	1.0	6	3	50	4	Picture 1	○
GM-4F-D1.5S-G	1.5	4	4	50	4	Picture 1	○
GM-4F-D1.5-G	1.5	6	4	50	4	Picture 1	○
GM-4F-D2.0S-G	2.0	4	6	50	4	Picture 1	○
GM-4F-D2.0-G	2.0	6	6	50	4	Picture 1	○
GM-4F-D2.5S-G	2.5	4	8	50	4	Picture 1	○
GM-4F-D2.5-G	2.5	6	8	50	4	Picture 1	○
GM-4F-D3.0S-G	3.0	4	8	50	4	Picture 1	○
GM-4F-D3.0-G	3.0	6	8	50	4	Picture 1	○
GM-4F-D3.5-G	3.5	6	10	50	4	Picture 1	○
GM-4F-D4.0S-G	4.0	4	11	50	4	Picture 2	○
GM-4F-D4.0-G	4.0	6	11	50	4	Picture 1	○
GM-4F-D4.5-G	4.5	6	11	50	4	Picture 1	○
GM-4F-D5.0-G	5.0	6	13	50	4	Picture 1	○
GM-4F-D5.5-G	5.5	6	16	50	4	Picture 1	○
GM-4F-D6.0-G	6.0	6	16	50	4	Picture 2	○
GM-4F-D7.0-G	7.0	8	20	60	4	Picture 1	○
GM-4F-D8.0-G	8.0	8	20	60	4	Picture 2	○
GM-4F-D9.0-G	9.0	10	22	75	4	Picture 1	○
GM-4F-D10.0-G	10.0	10	25	75	4	Picture 2	○
GM-4F-D11.0-G	11.0	12	26	75	4	Picture 1	○
GM-4F-D12.0-G	12.0	12	30	75	4	Picture 2	○
GM-4F-D14.0-G	14.0	14	32	75	4	Picture 2	○
GM-4F-D16.0-G	16.0	16	45	100	4	Picture 2	○
GM-4F-D18.0-G	18.0	18	45	100	4	Picture 2	○
GM-4F-D20.0-G	20.0	20	45	100	4	Picture 2	○

Indexable milling tools

Solid carbide end mills

GM series

● Stock available ○ Make-to-order

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B583

Non-standard customization

B652-B653

4-flute flattened end mills with straight shank and long cutting edge

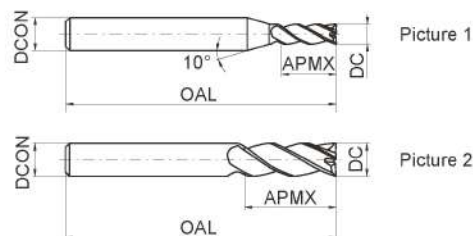


GM-4EL-G



Corner protection

● GM-4E-G series with long cutting edge.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4EL-D3.0-G	3.0	6	12	75	4	Picture 1	○
GM-4EL-D4.0-G	4.0	6	15	75	4	Picture 1	○
GM-4EL-D5.0-G	5.0	6	20	75	4	Picture 1	○
GM-4EL-D6.0-G	6.0	6	20	75	4	Picture 2	○
GM-4EL-D8.0-G	8.0	8	25	100	4	Picture 2	○
GM-4EL-D10.0-G	10.0	10	30	100	4	Picture 2	○
GM-4EL-D12.0-G	12.0	12	35	100	4	Picture 2	○
GM-4EL-D14.0-G	14.0	14	40	100	4	Picture 2	○
GM-4EL-D16.0-G	16.0	16	50	150	4	Picture 2	○
GM-4EL-D20.0-G	20.0	20	55	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B582

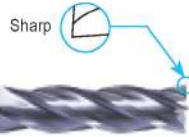
Non-standard customization

B652-B653

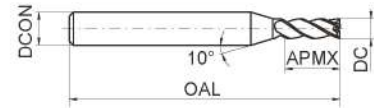
4-flute flattened end mills with straight shank and long cutting edge



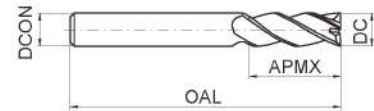
GM-4FL-G



● GM-4FL-G series with long cutting edge.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4FL-D3.0-G	3.0	6	12	75	4	Picture 1	○
GM-4FL-D4.0-G	4.0	6	15	75	4	Picture 1	○
GM-4FL-D5.0-G	5.0	6	20	75	4	Picture 1	○
GM-4FL-D6.0-G	6.0	6	20	75	4	Picture 2	○
GM-4FL-D8.0-G	8.0	8	25	100	4	Picture 2	○
GM-4FL-D10.0-G	10.0	10	30	100	4	Picture 2	○
GM-4FL-D12.0-G	12.0	12	35	100	4	Picture 2	○
GM-4FL-D14.0-G	14.0	14	40	100	4	Picture 2	○
GM-4FL-D16.0-G	16.0	16	50	150	4	Picture 2	○
GM-4FL-D20.0-G	20.0	20	55	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

GM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B583

Non-standard customization

B652-B653

4-flute flattened end mills with straight shank and extra long cutting edge

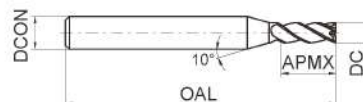


GM-4EX-G

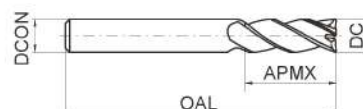


Corner protection

- Extra long cutting edge, for deep side wall machining.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4EX-D3.0-G	3.0	6	20	75	4	Picture 1	○
GM-4EX-D4.0-G	4.0	6	25	75	4	Picture 1	○
GM-4EX-D5.0-G	5.0	6	30	75	4	Picture 1	○
GM-4EX-D6.0-G	6.0	6	30	75	4	Picture 2	○
GM-4EX-D8.0-G	8.0	8	40	100	4	Picture 2	○
GM-4EX-D10.0-G	10.0	10	50	110	4	Picture 2	○
GM-4EX-D12.0-G	12.0	12	50	110	4	Picture 2	○
GM-4EX-D16.0-G	16.0	16	70	150	4	Picture 2	○
GM-4EX-D20.0-G	20.0	20	75	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B584

Non-standard customization

B652-B653

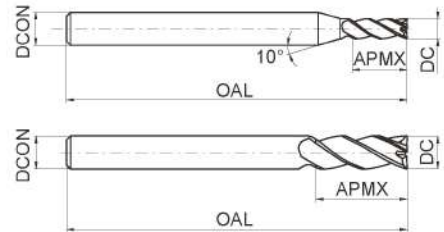
4-flute flattened end mills with long shank



GM-4EBL/X-G



Corner protection



Picture 1

Picture 2

● GM-4E-G series with long shank.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DOCN	APMX	OAL			
GM-4EBL-D3.0S-G	3.0	4	8	75	4	Picture 1	○
GM-4EBL-D3.0-G	3.0	6	8	75	4	Picture 1	○
GM-4EBL-D4.0S-G	4.0	4	11	75	4	Picture 2	○
GM-4EBL-D4.0-G	4.0	6	11	75	4	Picture 1	○
GM-4EBL-D6.0-G	6.0	6	16	75	4	Picture 2	○
GM-4EBX-D6.0-G	6.0	6	16	100	4	Picture 2	○
GM-4EBL-D8.0-G	8.0	8	24	75	4	Picture 2	○
GM-4EBX-D8.0-G	8.0	8	24	100	4	Picture 2	○
GM-4EBL-D10.0-G	10.0	10	30	100	4	Picture 2	○
GM-4EBX-D10.0-G	10.0	10	30	150	4	Picture 2	○
GM-4EBL-D12.0-G	12.0	12	36	100	4	Picture 2	○
GM-4EBX-D12.0-G	12.0	12	36	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling toolsSolid carbide
end mills

GM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B582

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

GM series for general machining

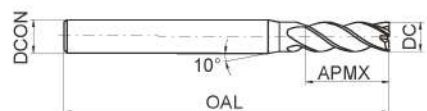
4-flute flattened end mills with straight shank



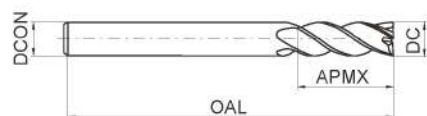
GM-4E



- Very suitable for side milling and shallow slot machining.
- Wide application.



Picture 1



Picture 2

Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4E-D1.0F	1.0	3	3	50	4	Picture 1	○
GM-4E-D1.0S	1.0	4	3	50	4	Picture 1	●
GM-4E-D1.0	1.0	6	3	50	4	Picture 1	●
GM-4E-D1.5F	1.5	3	4	50	4	Picture 1	○
GM-4E-D1.5S	1.5	4	4	50	4	Picture 1	●
GM-4E-D1.5	1.5	6	4	50	4	Picture 1	●
GM-4E-D2.0F	2.0	3	6	50	4	Picture 1	○
GM-4E-D2.0S	2.0	4	6	50	4	Picture 1	●
GM-4E-D2.0	2.0	6	6	50	4	Picture 1	●
GM-4E-D2.5F	2.5	3	8	50	4	Picture 1	○
GM-4E-D2.5S	2.5	4	8	50	4	Picture 1	●
GM-4E-D2.5	2.5	6	8	50	4	Picture 1	●
GM-4E-D3.0F	3.0	3	8	50	4	Picture 2	○
GM-4E-D3.0S	3.0	4	8	50	4	Picture 1	●
GM-4E-D3.0	3.0	6	8	50	4	Picture 1	●
GM-4E-D3.5S	3.5	4	10	50	4	Picture 1	○
GM-4E-D3.5	3.5	6	10	50	4	Picture 1	●
GM-4E-D4.0S	4.0	4	11	50	4	Picture 2	●
GM-4E-D4.0	4.0	6	11	50	4	Picture 1	●
GM-4E-D4.5	4.5	6	11	50	4	Picture 1	●
GM-4E-D5.0	5.0	6	13	50	4	Picture 1	●

● Stock available ○ Make-to-order

Applicable workpiece material table

Very suitable Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B585

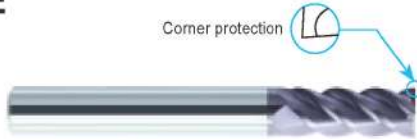
Non-standard customization

B652-B653

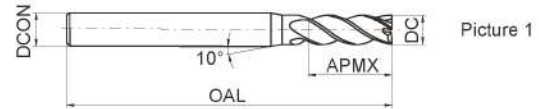
4-flute flattened end mills with straight shank



GM-4E



- Very suitable for side milling and shallow slot machining.
- Wide application.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4E-D5.5	5.5	6	16	50	4	Picture 1	●
GM-4E-D6.0	6.0	6	16	50	4	Picture 2	●
GM-4E-D7.0	7.0	8	20	60	4	Picture 1	●
GM-4E-D8.0	8.0	8	20	60	4	Picture 2	●
GM-4E-D9.0	9.0	10	22	75	4	Picture 1	●
GM-4E-D10.0	10.0	10	25	75	4	Picture 2	●
GM-4E-D11.0	11.0	12	26	75	4	Picture 1	●
GM-4E-D12.0	12.0	12	30	75	4	Picture 2	●
GM-4E-D14.0	14.0	14	32	75	4	Picture 2	●
GM-4E-D16.0	16.0	16	45	100	4	Picture 2	●
GM-4E-D18.0	18.0	18	45	100	4	Picture 2	●
GM-4E-D20.0	20.0	20	45	100	4	Picture 2	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B585

Non-standard customization

B652-B653

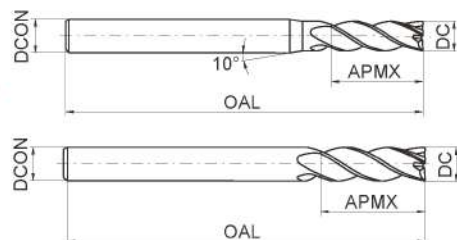
4-flute flattened end mills with straight shank and long cutting edge



GM-4EL



Corner protection



Picture 1

Picture 2

● GM-4E series with long cutting edge.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4EL-D3.0	3.0	6	12	75	4	Picture 1	●
GM-4EL-D4.0	4.0	6	15	75	4	Picture 1	●
GM-4EL-D5.0	5.0	6	20	75	4	Picture 1	●
GM-4EL-D6.0	6.0	6	20	75	4	Picture 2	●
GM-4EL-D8.0	8.0	8	25	100	4	Picture 2	●
GM-4EL-D10.0	10.0	10	30	100	4	Picture 2	●
GM-4EL-D12.0	12.0	12	35	100	4	Picture 2	●
GM-4EL-D14.0	14.0	14	40	100	4	Picture 2	●
GM-4EL-D16.0	16.0	16	50	150	4	Picture 2	●
GM-4EL-D20.0	20.0	20	55	150	4	Picture 2	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B585

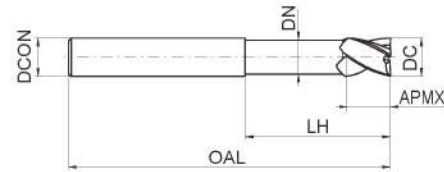
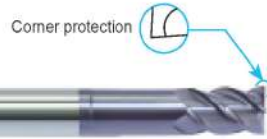
Non-standard customization

B652-B653

4-flute flattened end mills with straight shank, long neck and short cutting edge



GM-4EFP



- High-rigidity short cutting edge, suitable for heavy cutting and also deep cavity milling.



Type	Basic dimension(mm)						Number of teeth Z	Stock
	DC	DCON	APMX	LH	DN	OAL		
GM-4EFP-D6.0	6.0	6	9	30	5.8	75	4	○
GM-4EFP-D8.0	8.0	8	12	40	7.8	100	4	○
GM-4EFP-D10.0	10.0	10	15	50	9.6	100	4	○
GM-4EFP-D12.0	12.0	12	18	50	11.5	100	4	○
GM-4EFP-D16.0	16.0	16	24	50	15.5	150	4	○
GM-4EFP-D20.0	20.0	20	30	60	19.5	150	4	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

Applicable workpiece material table

● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B586

Non-standard customization

B652-B653

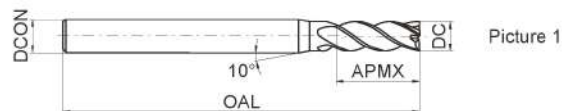
4-flute flattened end mills with long shank



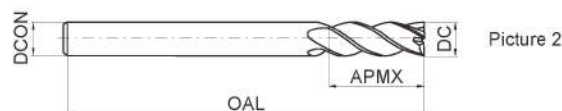
GM-4EBL/X



Corner protection



Picture 1



Picture 2

● GM-4E series with long shank.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4EBL-D3.0S	3.0	4	8	75	4	Picture 1	○
GM-4EBL-D3.0	3.0	6	8	75	4	Picture 1	○
GM-4EBL-D4.0S	4.0	4	11	75	4	Picture 2	○
GM-4EBL-D4.0	4.0	6	11	75	4	Picture 1	○
GM-4EBL-D6.0	6.0	6	16	75	4	Picture 2	○
GM-4EBX-D6.0	6.0	6	16	100	4	Picture 2	○
GM-4EBL-D8.0	8.0	8	24	75	4	Picture 2	○
GM-4EBX-D8.0	8.0	8	24	100	4	Picture 2	○
GM-4EBL-D10.0	10.0	10	30	100	4	Picture 2	○
GM-4EBX-D10.0	10.0	10	30	150	4	Picture 2	○
GM-4EBL-D12.0	12.0	12	36	100	4	Picture 2	○
GM-4EBX-D12.0	12.0	12	36	150	4	Picture 2	○

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B585

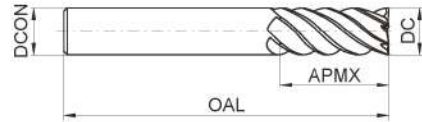
Non-standard customization

B652-B653

6-flute flattened end mills with straight shank



GM-6E



- Perfect rigidity, very suitable for side finish machining.
- High speed, high feed rate machining applicable.



Type	Basic dimension(mm)				Number of teeth Z	Stock
	DC	DCON	APMX	OAL		
GM-6E-D6.0	6.0	6	18	60	6	●
GM-6E-D8.0	8.0	8	20	60	6	●
GM-6E-D10.0	10.0	10	30	75	6	●
GM-6E-D12.0	12.0	12	32	75	6	●
GM-6E-D16.0	16.0	16	40	100	6	●
GM-6E-D20.0	20.0	20	45	100	6	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B587

Non-standard customization

B652-B653

6-flute flattened end mills with straight shank and long cutting edge



Side face

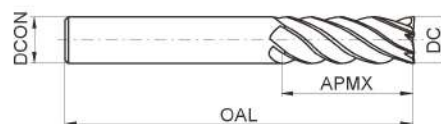
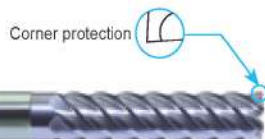


Step shoulder



Straight slot

GM-6EL



- GM-6E series with long cutting edge.



Type	Basic dimension(mm)				Number of teeth Z	Stock
	DC	DCON	APMX	OAL		
GM-6EL-D6.0	6.0	6	24	75	6	●
GM-6EL-D8.0	8.0	8	32	75	6	●
GM-6EL-D10.0	10.0	10	40	100	6	●
GM-6EL-D12.0	12.0	12	45	100	6	●
GM-6EL-D16.0	16.0	16	64	150	6	●
GM-6EL-D20.0	20.0	20	75	150	6	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
⊙	⊙	⊙	○			○	⊙				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B588

Non-standard customization

B652-B653

2-flute flattened end mills with straight shank, long neck and short cutting edge

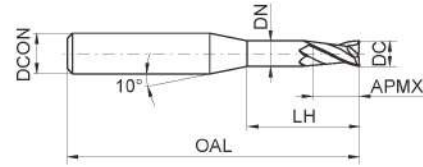


Deep flattened slot

GM-2EP



- Suitable for narrow slot milling or milling of fine parts that could generate interference.



Type	Basic dimension(mm)						Number of teeth Z	Stock
	DC	DCON	APMX	LH	DN	OAL		
GM-2EP-D0.3-M02	0.3	4	0.4	2	0.25	50	2	●
GM-2EP-D0.3-M04	0.3	4	0.4	4	0.25	50	2	●
GM-2EP-D0.4-M02	0.4	4	0.6	2	0.35	50	2	●
GM-2EP-D0.4-M04	0.4	4	0.6	4	0.35	50	2	●
GM-2EP-D0.5-M04	0.5	4	0.7	4	0.45	50	2	●
GM-2EP-D0.5-M06	0.5	4	0.7	6	0.45	50	2	●
GM-2EP-D0.5-M08	0.5	4	0.7	8	0.45	50	2	●
GM-2EP-D0.6-M04	0.6	4	0.9	4	0.55	50	2	●
GM-2EP-D0.6-M06	0.6	4	0.9	6	0.55	50	2	●
GM-2EP-D0.7-M04	0.7	4	1.0	4	0.65	50	2	●
GM-2EP-D0.7-M06	0.7	4	1.0	6	0.65	50	2	●
GM-2EP-D0.7-M08	0.7	4	1.0	8	0.65	50	2	●
GM-2EP-D0.8-M04	0.8	4	1.2	4	0.75	50	2	●
GM-2EP-D0.8-M06	0.8	4	1.2	6	0.75	50	2	●
GM-2EP-D0.8-M08	0.8	4	1.2	8	0.75	50	2	●
GM-2EP-D0.8-M10	0.8	4	1.2	10	0.75	50	2	●
GM-2EP-D1.0-M04	1.0	4	1.5	4	0.95	50	2	●
GM-2EP-D1.0-M06	1.0	4	1.5	6	0.95	50	2	●
GM-2EP-D1.0-M08	1.0	4	1.5	8	0.95	50	2	●
GM-2EP-D1.0-M10	1.0	4	1.5	10	0.95	50	2	●
GM-2EP-D1.0-M12	1.0	4	1.5	12	0.95	50	2	●
GM-2EP-D1.0-M14	1.0	4	1.5	14	0.95	50	2	●
GM-2EP-D1.2-M06	1.2	4	1.8	6	1.15	50	2	●
GM-2EP-D1.2-M08	1.2	4	1.8	8	1.15	50	2	●
GM-2EP-D1.2-M10	1.2	4	1.8	10	1.15	50	2	●
GM-2EP-D1.2-M12	1.2	4	1.8	12	1.15	50	2	●
GM-2EP-D1.5-M06	1.5	4	2.3	6	1.45	50	2	●
GM-2EP-D1.5-M08	1.5	4	2.3	8	1.45	50	2	●

● Stock available ○ Make-to-order

Applicable workpiece material table

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B589-B590

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

GM series for general machining

2-flute flattened end mills with straight shank, long neck and short cutting edge

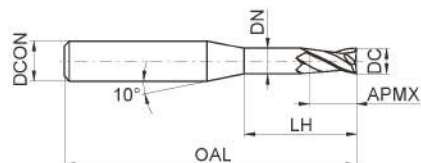


Deep flattened slot

GM-2EP



- Suitable for narrow slot milling or milling of fine parts that could generate interference.



Type	Basic dimension(mm)						Number of teeth Z	Stock
	DC	DCON	APMX	LH	DN	OAL		
GM-2EP-D1.5-M10	1.5	4	2.3	10	1.45	50	2	●
GM-2EP-D1.5-M12	1.5	4	2.3	12	1.45	50	2	●
GM-2EP-D1.5-M14	1.5	4	2.3	14	1.45	50	2	●
GM-2EP-D2.0-M06	2.0	4	3.0	6	1.95	50	2	●
GM-2EP-D2.0-M08	2.0	4	3.0	8	1.95	50	2	●
GM-2EP-D2.0-M10	2.0	4	3.0	10	1.95	50	2	●
GM-2EP-D2.0-M12	2.0	4	3.0	12	1.95	50	2	●
GM-2EP-D2.0-M14	2.0	4	3.0	14	1.95	50	2	●
GM-2EP-D2.0-M16	2.0	4	3.0	16	1.95	50	2	●
GM-2EP-D2.5-M08	2.5	4	3.7	8	2.4	50	2	●
GM-2EP-D2.5-M10	2.5	4	3.7	10	2.4	50	2	●
GM-2EP-D2.5-M12	2.5	4	3.7	12	2.4	50	2	●
GM-2EP-D2.5-M14	2.5	4	3.7	14	2.4	50	2	●
GM-2EP-D2.5-M16	2.5	4	3.7	16	2.4	60	2	●
GM-2EP-D2.5-M18	2.5	4	3.7	18	2.4	60	2	●
GM-2EP-D2.5-M20	2.5	4	3.7	20	2.4	60	2	●
GM-2EP-D3.0-M06	3.0	6	4.5	6	2.85	50	2	●
GM-2EP-D3.0-M08	3.0	6	4.5	8	2.85	50	2	●
GM-2EP-D3.0-M10	3.0	6	4.5	10	2.85	50	2	●
GM-2EP-D3.0-M12	3.0	6	4.5	12	2.85	50	2	●
GM-2EP-D3.0-M14	3.0	6	4.5	14	2.85	60	2	●
GM-2EP-D3.0-M16	3.0	6	4.5	16	2.85	60	2	●
GM-2EP-D3.0-M18	3.0	6	4.5	18	2.85	60	2	●
GM-2EP-D3.0-M20	3.0	6	4.5	20	2.85	60	2	●
GM-2EP-D4.0-M12	4.0	6	6.0	12	3.85	50	2	●
GM-2EP-D4.0-M16	4.0	6	6.0	16	3.85	60	2	●
GM-2EP-D4.0-M20	4.0	6	6.0	20	3.85	60	2	●
GM-2EP-D4.0-M25	4.0	6	6.0	25	3.85	60	2	●
GM-2EP-D5.0-M16	5.0	6	7.5	16	4.85	60	2	●
GM-2EP-D5.0-M25	5.0	6	7.5	25	4.85	70	2	●

➤ Applicable workpiece material ● Very suitable ○ Suitable

● Stock available ○ Make-to-order

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B589-B590

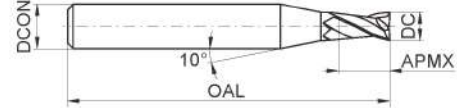
Non-standard customization

B652-B653

2-flute flattened end mills with straight shank and tiny diameter



GM-2ES



● Tiny diameter end mills can fully display high speed and high precision performances of machining center, often used for machining of precision components such as electronic part, etc.



Type	Basic dimension(mm)				Number of teeth Z	Stock
	DC	DCON	APMX	OAL		
GM-2ES-D0.3	0.3	4	0.6	50	2	●
GM-2ES-D0.4	0.4	4	0.8	50	2	●
GM-2ES-D0.5	0.5	4	1.0	50	2	●
GM-2ES-D0.6	0.6	4	1.2	50	2	●
GM-2ES-D0.7	0.7	4	1.4	50	2	●
GM-2ES-D0.8	0.8	4	1.6	50	2	●
GM-2ES-D0.9	0.9	4	1.8	50	2	●
GM-2ES-D1.0	1.0	4	2.0	50	2	●
GM-2ES-D1.1	1.1	4	2.0	50	2	●
GM-2ES-D1.2	1.2	4	2.5	50	2	●
GM-2ES-D1.3	1.3	4	2.5	50	2	●
GM-2ES-D1.4	1.4	4	3.0	50	2	●
GM-2ES-D1.5	1.5	4	3.0	50	2	●
GM-2ES-D1.6	1.6	4	3.5	50	2	●
GM-2ES-D1.7	1.7	4	3.5	50	2	●
GM-2ES-D1.8	1.8	4	4.0	50	2	●
GM-2ES-D1.9	1.9	4	4.0	50	2	●
GM-2ES-D2.0	2.0	4	4.0	50	2	●
GM-2ES-D2.1	2.1	4	4.0	50	2	●
GM-2ES-D2.2	2.2	4	4.5	50	2	●
GM-2ES-D2.3	2.3	4	4.5	50	2	●
GM-2ES-D2.4	2.4	4	5.0	50	2	●
GM-2ES-D2.5	2.5	4	5.0	50	2	●
GM-2ES-D2.6	2.6	4	5.0	50	2	●
GM-2ES-D2.7	2.7	4	5.5	50	2	●
GM-2ES-D2.8	2.8	4	5.5	50	2	●
GM-2ES-D2.9	2.9	4	6.0	50	2	●
GM-2ES-D3.0	3.0	4	6.0	50	2	●

● Stock available ○ Make-to-order

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B591

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

GM series for general machining

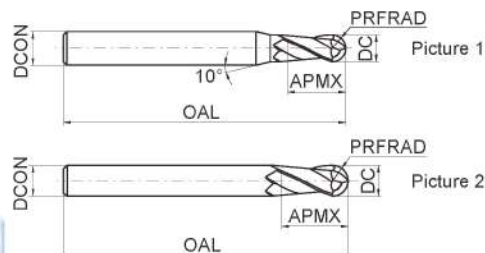
2-flute ball nose end mills with straight shank



GM-2B



- For profile milling, high speed machining applicable.
- Wide application.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	PRFRAD	DCON	APMX	OAL			
GM-2B-R0.5S	1.0	0.5	4	2	50	2	Picture 1	●
GM-2B-R0.5	1.0	0.5	6	2	50	2	Picture 1	●
GM-2B-R0.75S	1.5	0.75	4	3	50	2	Picture 1	●
GM-2B-R0.75	1.5	0.75	6	3	50	2	Picture 1	●
GM-2B-R1.0F	2.0	1.0	3	4	50	2	Picture 1	●
GM-2B-R1.0S	2.0	1.0	4	4	50	2	Picture 1	●
GM-2B-R1.0	2.0	1.0	6	4	50	2	Picture 1	●
GM-2B-R1.25F	2.5	1.25	3	5	50	2	Picture 1	●
GM-2B-R1.25S	2.5	1.25	4	5	50	2	Picture 1	●
GM-2B-R1.25	2.5	1.25	6	5	50	2	Picture 1	●
GM-2B-R1.5F	3.0	1.5	3	6	50	2	Picture 2	●
GM-2B-R1.5S	3.0	1.5	4	6	50	2	Picture 1	●
GM-2B-R1.5	3.0	1.5	6	6	50	2	Picture 1	●
GM-2B-R1.75S	3.5	1.75	4	8	50	2	Picture 1	●
GM-2B-R1.75	3.5	1.75	6	8	50	2	Picture 1	●
GM-2B-R2.0S	4.0	2.0	4	8	50	2	Picture 2	●
GM-2B-R2.0	4.0	2.0	6	8	50	2	Picture 1	●
GM-2B-R2.5	5.0	2.5	6	10	50	2	Picture 1	●
GM-2B-R2.75	5.5	2.75	6	12	50	2	Picture 1	●
GM-2B-R3.0	6.0	3.0	6	12	50	2	Picture 2	●
GM-2B-R3.5	7.0	3.5	8	14	60	2	Picture 1	●
GM-2B-R4.0	8.0	4.0	8	16	60	2	Picture 2	●
GM-2B-R4.5	9.0	4.5	10	18	75	2	Picture 1	●
GM-2B-R5.0	10.0	5.0	10	20	75	2	Picture 2	●
GM-2B-R6.0	12.0	6.0	12	24	75	2	Picture 2	●
GM-2B-R7.0	14.0	7.0	14	28	75	2	Picture 2	●
GM-2B-R8.0	16.0	8.0	16	32	100	2	Picture 2	●
GM-2B-R10.0	20.0	10.0	20	40	100	2	Picture 2	●

● Stock available ○ Make-to-order

Applicable workpiece material table

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B592

Non-standard customization

B652-B653

GM series for general machining

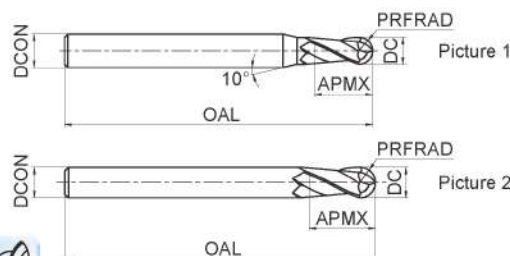
2-flute ball nose end mills with long shank



GM-2BL/M/X



● GM-2B series with long shank.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	PRFRAD	DCON	AMPX	OAL			
GM-2BL-R1.0S	2.0	1.0	4	4	75	2	Picture 1	●
GM-2BL-R1.0	2.0	1.0	6	4	75	2	Picture 1	●
GM-2BL-R1.25F	2.5	1.25	3	5	50	2	Picture 1	●
GM-2BL-R1.25S	2.5	1.25	4	5	75	2	Picture 1	●
GM-2BL-R1.25	2.5	1.25	6	5	75	2	Picture 1	●
GM-2BL-R1.5F	3.0	1.5	3	6	50	2	Picture 2	●
GM-2BL-R1.5S	3.0	1.5	4	6	75	2	Picture 1	●
GM-2BL-R1.5	3.0	1.5	6	6	75	2	Picture 1	●
GM-2BL-R1.75S	3.5	1.75	4	8	75	2	Picture 1	●
GM-2BL-R1.75	3.5	1.75	6	8	75	2	Picture 1	●
GM-2BL-R2.0S	4.0	2.0	4	8	75	2	Picture 2	●
GM-2BL-R2.0	4.0	2.0	6	8	75	2	Picture 1	●
GM-2BL-R2.5	5.0	2.5	6	10	75	2	Picture 1	●
GM-2BL-R2.75	5.5	2.75	6	12	75	2	Picture 1	●
GM-2BL-R3.0	6.0	3.0	6	12	75	2	Picture 2	●
GM-2BX-R3.0	6.0	3.0	6	12	100	2	Picture 2	●
GM-2BL-R3.5	7.0	3.5	8	14	75	2	Picture 1	●
GM-2BM-R4.0	8.0	4.0	8	16	75	2	Picture 2	●
GM-2BL-R4.0	8.0	4.0	8	16	100	2	Picture 2	●
GM-2BL-R4.5	9.0	4.5	10	18	100	2	Picture 1	●
GM-2BL-R5.0	10.0	5.0	10	20	100	2	Picture 2	●
GM-2BX-R5.0	10.0	5.0	10	20	150	2	Picture 2	●
GM-2BL-R6.0	12.0	6.0	12	24	100	2	Picture 2	●
GM-2BX-R6.0	12.0	6.0	12	24	150	2	Picture 2	●
GM-2BL-R7.0	14.0	7.0	14	28	100	2	Picture 2	●
GM-2BL-R8.0	16.0	8.0	16	32	150	2	Picture 2	●
GM-2BL-R10.0	20.0	10.0	20	40	150	2	Picture 2	●

● Stock available ○ Make-to-order

➤ Applicable workpiece material ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B592

Non-standard customization

B652-B653

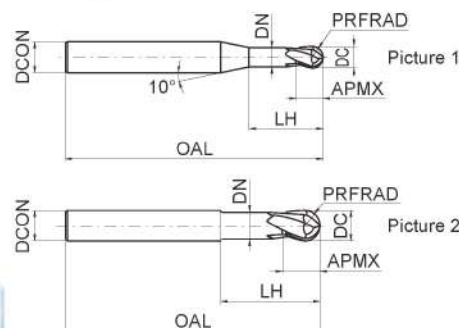
2-flute ballnose end mills with long neck and short cutting edge



GM-2BFP



- High rigidity short cutting edge, suitable for heavy cutting.



Type	Basic dimension(mm)							Number of teeth Z	Geometry	Stock
	DC	PRFRAD	APMX	DN	LH	DCON	OAL			
GM-2BFP-R0.5	1.0	0.5	1	0.95	2.5	6	75	2	Picture 1	○
GM-2BFP-R0.75	1.5	0.75	1	1.45	3.0	6	75	2	Picture 1	○
GM-2BFP-R1.0	2.0	1.0	2	1.95	4.0	6	75	2	Picture 1	○
GM-2BFP-R1.5	3.0	1.5	3	2.85	6.0	6	75	2	Picture 1	○
GM-2BFP-R2.0	4.0	2.0	4	3.85	8.0	6	75	2	Picture 1	○
GM-2BFP-R2.5	5.0	2.5	5	4.85	10.0	6	75	2	Picture 1	○
GM-2BFP-R3.0	6.0	3.0	6	5.8	12.0	6	75	2	Picture 2	○
GM-2BFP-R4.0	8.0	4.0	8	7.8	16.0	8	100	2	Picture 2	○
GM-2BFP-R5.0	10.0	5.0	10	9.6	20.0	10	100	2	Picture 2	○
GM-2BFP-R6.0	12.0	6.0	12	11.5	24.0	12	100	2	Picture 2	○
GM-2BFP-R8.0	16.0	8.0	16	15.5	32.0	16	150	2	Picture 2	○
GM-2BFP-R10.0	20.0	10.0	20	19.5	40.0	20	150	2	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table Very suitable Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B592

Non-standard customization

B652-B653

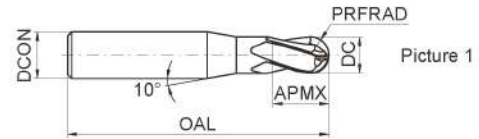
4-flute ball nose end mills with straight shank



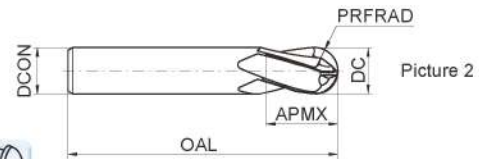
GM-4B



4-flute ball nose end mill can operate with higher feed speed and machining efficiency, extending tool life in machining high-hardness workpiece.



Picture 1



Picture 2

Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	PRFRAD	DCON	APMX	OAL			
GM-4B-R1.5S	3.0	1.5	4	6	50	4	Picture 1	●
GM-4B-R1.5	3.0	1.5	6	6	50	4	Picture 1	●
GM-4B-R2.0S	4.0	2.0	4	8	50	4	Picture 2	●
GM-4B-R2.0	4.0	2.0	6	8	50	4	Picture 1	●
GM-4B-R2.5	5.0	2.5	6	10	50	4	Picture 1	●
GM-4B-R3.0	6.0	3.0	6	12	50	4	Picture 2	●
GM-4B-R4.0	8.0	4.0	8	16	60	4	Picture 2	●
GM-4B-R5.0	10.0	5.0	10	20	75	4	Picture 2	●
GM-4B-R6.0	12.0	6.0	12	24	75	4	Picture 2	●
GM-4B-R7.0	14.0	7.0	14	28	75	4	Picture 2	●
GM-4B-R8.0	16.0	8.0	16	32	100	4	Picture 2	●
GM-4B-R9.0	18.0	9.0	18	36	100	4	Picture 2	●
GM-4B-R10.0	20.0	10.0	20	40	100	4	Picture 2	●

● Stock available ○ Make-to-order

Indexable milling tools

Solid carbide end mills

GM series

Applicable workpiece material ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B593

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

GM series for general machining

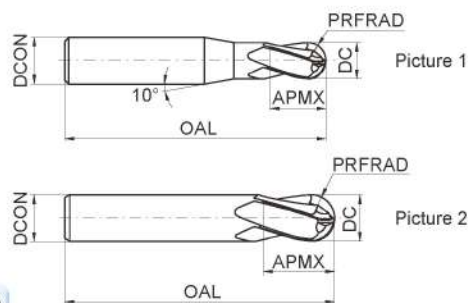
4-flute ball nose end mills with long shank



GM-4BL/M/X



● GM-4B series with long shank.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	PRFRAD	DCON	APMX	OAL			
GM-4BL-R1.5S	3.0	1.5	4	6	75	4	Picture 1	○
GM-4BL-R1.5	3.0	1.5	6	6	75	4	Picture 1	○
GM-4BL-R2.0S	4.0	2.0	4	8	75	4	Picture 2	○
GM-4BL-R2.0	4.0	2.0	6	8	75	4	Picture 1	○
GM-4BL-R2.5	5.0	2.5	6	10	75	4	Picture 1	○
GM-4BL-R3.0	6.0	3.0	6	12	75	4	Picture 2	○
GM-4BX-R3.0	6.0	3.0	6	12	100	4	Picture 2	○
GM-4BM-R4.0	8.0	4.0	8	16	75	4	Picture 2	○
GM-4BL-R4.0	8.0	4.0	8	16	100	4	Picture 2	○
GM-4BL-R5.0	10.0	5.0	10	20	100	4	Picture 2	○
GM-4BX-R5.0	10.0	5.0	10	20	150	4	Picture 2	○
GM-4BL-R6.0	12.0	6.0	12	24	100	4	Picture 2	○
GM-4BX-R6.0	12.0	6.0	12	24	150	4	Picture 2	○
GM-4BL-R7.0	14.0	7.0	14	28	100	4	Picture 2	○
GM-4BL-R8.0	16.0	8.0	16	32	150	4	Picture 2	○
GM-4BL-R9.0	18.0	9.0	18	36	150	4	Picture 2	○
GM-4BL-R10.0	20.0	10.0	20	40	150	4	Picture 2	○

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B593

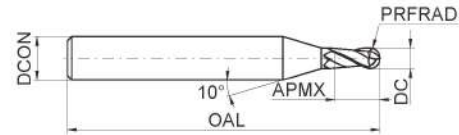
Non-standard customization

B652-B653

2-flute tiny ball nose end mills with straight shank



GM-2BS



● Tiny diameter end mills can fully display high speed and high precision performances of machining center, often used for machining of precision components such as electronic part, etc.



Type	Basic dimension(mm)					Number of teeth Z	Stock
	DC	PRFRAD	DCON	APMX	OAL		
GM-2BS-R0.15	0.30	0.15	4	0.5	50	2	●
GM-2BS-R0.20	0.40	0.20	4	0.6	50	2	●
GM-2BS-R0.25	0.50	0.25	4	0.8	50	2	●
GM-2BS-R0.30	0.60	0.30	4	0.9	50	2	●
GM-2BS-R0.35	0.70	0.35	4	1.0	50	2	●
GM-2BS-R0.40	0.80	0.40	4	1.2	50	2	●
GM-2BS-R0.45	0.90	0.45	4	1.3	50	2	●
GM-2BS-R0.50	1.00	0.50	4	1.5	50	2	●
GM-2BS-R0.60	1.20	0.60	4	1.8	50	2	●
GM-2BS-R0.70	1.40	0.70	4	2.0	50	2	●
GM-2BS-R0.75	1.50	0.75	4	2.3	50	2	●
GM-2BS-R0.80	1.60	0.80	4	2.5	50	2	●
GM-2BS-R0.90	1.80	0.90	4	2.7	50	2	●
GM-2BS-R1.00	2.00	1.00	4	3.0	50	2	●
GM-2BS-R1.25	2.50	1.25	4	3.7	50	2	●
GM-2BS-R1.50	3.00	1.50	4	4.5	50	2	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B594

Non-standard customization

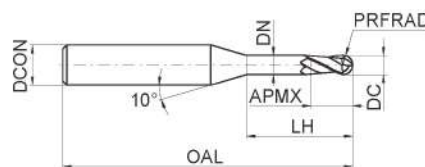
B652-B653

2-flute ball nose end mills with straight shank, long neck and short cutting edge

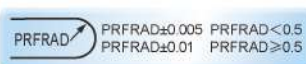
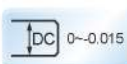


Deep ball nose slot

GM-2BP



- Suitable for machining narrow slot and free-form surface.



Type	Basic dimension(mm)							Number of teeth Z	Stock
	DC	PRFRAD	APMX	DN	LH	DCON	OAL		
GM-2BP-R0.15-M02	0.3	0.15	0.4	0.25	2	4	50	2	●
GM-2BP-R0.15-M04	0.3	0.15	0.4	0.25	4	4	50	2	●
GM-2BP-R0.2-M02	0.4	0.2	0.6	0.35	2	4	50	2	●
GM-2BP-R0.2-M04	0.4	0.2	0.6	0.35	4	4	50	2	●
GM-2BP-R0.25-M04	0.5	0.25	0.7	0.45	4	4	50	2	●
GM-2BP-R0.25-M06	0.5	0.25	0.7	0.45	6	4	50	2	●
GM-2BP-R0.3-M04	0.6	0.3	0.9	0.55	4	4	50	2	●
GM-2BP-R0.3-M06	0.6	0.3	0.9	0.55	6	4	50	2	●
GM-2BP-R0.3-M08	0.6	0.3	0.9	0.55	8	4	50	2	●
GM-2BP-R0.4-M04	0.8	0.4	1.2	0.75	4	4	50	2	●
GM-2BP-R0.4-M06	0.8	0.4	1.2	0.75	6	4	50	2	●
GM-2BP-R0.4-M08	0.8	0.4	1.2	0.75	8	4	50	2	●
GM-2BP-R0.4-M10	0.8	0.4	1.2	0.75	10	4	50	2	●
GM-2BP-R0.5-M04	1.0	0.5	1.5	0.95	4	4	50	2	●
GM-2BP-R0.5-M06	1.0	0.5	1.5	0.95	6	4	50	2	●
GM-2BP-R0.5-M08	1.0	0.5	1.5	0.95	8	4	50	2	●
GM-2BP-R0.5-M10	1.0	0.5	1.5	0.95	10	4	50	2	●
GM-2BP-R0.5-M12	1.0	0.5	1.5	0.95	12	4	50	2	●
GM-2BP-R0.6-M06	1.2	0.6	1.8	1.15	6	4	50	2	●
GM-2BP-R0.6-M08	1.2	0.6	1.8	1.15	8	4	50	2	●
GM-2BP-R0.6-M12	1.2	0.6	1.8	1.15	12	4	50	2	●
GM-2BP-R0.6-M16	1.2	0.6	1.8	1.15	16	4	50	2	●
GM-2BP-R0.75-M08	1.5	0.75	2.3	1.45	8	4	50	2	●
GM-2BP-R0.75-M12	1.5	0.75	2.3	1.45	12	4	50	2	●
GM-2BP-R0.75-M16	1.5	0.75	2.3	1.45	16	4	50	2	●

● Stock available ○ Make-to-order

Applicable workpiece material ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B595-B596

Non-standard customization

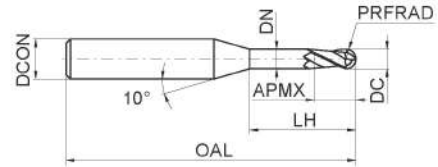
B652-B653

2-flute ball nose end mills with straight shank, long neck and short cutting edge

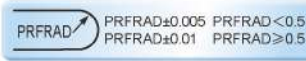


Deep ball nose slot

GM-2BP



- Suitable for machining narrow slot and free-form surface.



Type	Basic dimension(mm)							Number of teeth Z	Stock
	DC	PRFRAD	APMX	DN	LH	DCON	OAL		
GM-2BP-R1.0-M06	2.0	1.0	3.0	1.95	6	4	50	2	●
GM-2BP-R1.0-M08	2.0	1.0	3.0	1.95	8	4	50	2	●
GM-2BP-R1.0-M10	2.0	1.0	3.0	1.95	10	4	50	2	●
GM-2BP-R1.0-M12	2.0	1.0	3.0	1.95	12	4	50	2	●
GM-2BP-R1.0-M16	2.0	1.0	3.0	1.95	16	4	50	2	●
GM-2BP-R1.0-M20	2.0	1.0	3.0	1.95	20	4	50	2	●
GM-2BP-R1.25-M08	2.5	1.25	3.7	2.4	8	4	50	2	●
GM-2BP-R1.25-M12	2.5	1.25	3.7	2.4	12	4	50	2	●
GM-2BP-R1.25-M16	2.5	1.25	3.7	2.4	16	4	60	2	●
GM-2BP-R1.25-M20	2.5	1.25	3.7	2.4	20	4	60	2	●
GM-2BP-R1.5-M08	3.0	1.5	4.5	2.85	8	6	50	2	●
GM-2BP-R1.5-M10	3.0	1.5	4.5	2.85	10	6	50	2	●
GM-2BP-R1.5-M12	3.0	1.5	4.5	2.85	12	6	50	2	●
GM-2BP-R1.5-M16	3.0	1.5	4.5	2.85	16	6	60	2	●
GM-2BP-R1.5-M20	3.0	1.5	4.5	2.85	20	6	60	2	●
GM-2BP-R2.0-M10	4.0	2.0	6.0	3.85	10	6	60	2	●
GM-2BP-R2.0-M16	4.0	2.0	6.0	3.85	16	6	60	2	●
GM-2BP-R2.0-M20	4.0	2.0	6.0	3.85	20	6	60	2	●
GM-2BP-R2.0-M25	4.0	2.0	6.0	3.85	25	6	60	2	●
GM-2BP-R2.5-M16	5.0	2.5	7.5	4.85	16	6	60	2	●
GM-2BP-R2.5-M25	5.0	2.5	7.5	4.85	25	6	70	2	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B595-B596

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

GM series for general machining

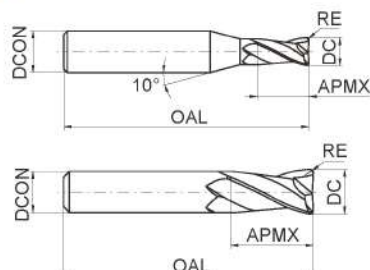
2-flute R end mills with straight shank



GM-2R



- Wide applications, applicable for several machining styles.



Picture 1

Picture 2

Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
GM-2R-D1.0R0.2	1.0	0.2	4	3	50	2	Picture 1	●
GM-2R-D1.5R0.2	1.5	0.2	4	4	50	2	Picture 1	●
GM-2R-D2.0R0.2	2.0	0.2	4	6	50	2	Picture 1	●
GM-2R-D2.0R0.5	2.0	0.5	4	6	50	2	Picture 1	●
GM-2R-D2.5R0.2	2.5	0.2	4	8	50	2	Picture 1	●
GM-2R-D2.5R0.5	2.5	0.5	4	8	50	2	Picture 1	●
GM-2R-D3.0R0.2	3.0	0.2	4	8	50	2	Picture 1	●
GM-2R-D3.0R0.3	3.0	0.3	4	8	50	2	Picture 1	●
GM-2R-D3.0R0.5	3.0	0.5	4	8	50	2	Picture 1	●
GM-2R-D4.0R0.2	4.0	0.2	4	11	50	2	Picture 2	●
GM-2R-D4.0R0.3	4.0	0.3	4	11	50	2	Picture 2	●
GM-2R-D4.0R0.5	4.0	0.5	4	11	50	2	Picture 2	●
GM-2R-D4.0R1.0	4.0	1.0	4	11	50	2	Picture 2	●
GM-2R-D5.0R0.3	5.0	0.3	6	13	50	2	Picture 1	●
GM-2R-D5.0R0.5	5.0	0.5	6	13	50	2	Picture 1	●
GM-2R-D5.0R1.0	5.0	1.0	6	13	50	2	Picture 1	●
GM-2R-D6.0R0.3	6.0	0.3	6	16	50	2	Picture 2	●
GM-2R-D6.0R0.5	6.0	0.5	6	16	50	2	Picture 2	●
GM-2R-D6.0R1.0	6.0	1.0	6	16	50	2	Picture 2	●
GM-2R-D8.0R0.3	8.0	0.3	8	20	60	2	Picture 2	●
GM-2R-D8.0R0.5	8.0	0.5	8	20	60	2	Picture 2	●
GM-2R-D8.0R1.0	8.0	1.0	8	20	60	2	Picture 2	●
GM-2R-D10.0R0.5	10.0	0.5	10	25	75	2	Picture 2	●
GM-2R-D10.0R1.0	10.0	1.0	10	25	75	2	Picture 2	●
GM-2R-D10.0R1.5	10.0	1.5	10	25	75	2	Picture 2	●
GM-2R-D10.0R2.0	10.0	2.0	10	25	75	2	Picture 2	●
GM-2R-D12.0R0.5	12.0	0.5	12	30	75	2	Picture 2	●
GM-2R-D12.0R1.0	12.0	1.0	12	30	75	2	Picture 2	●
GM-2R-D12.0R1.5	12.0	1.5	12	30	75	2	Picture 2	●
GM-2R-D12.0R2.0	12.0	2.0	12	30	75	2	Picture 2	●

● Stock available ○ Make-to-order

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B597

Non-standard customization

B652-B653

4-flute R end mills with straight shank



Radius shoulder



Profile

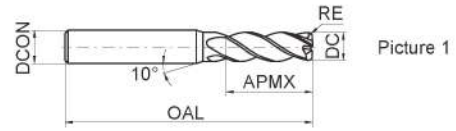
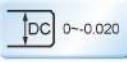


Radius corner slot

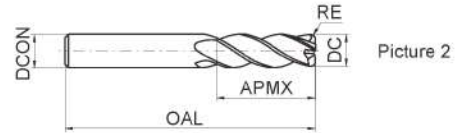
GM-4R



- Wide applications, applicable for several machining styles.



Picture 1



Picture 2

Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
GM-4R-D1.0R0.2	1.0	0.2	4	3	50	4	Picture 1	○
GM-4R-D1.5R0.2	1.5	0.2	4	4	50	4	Picture 1	○
GM-4R-D2.0R0.2	2.0	0.2	4	6	50	4	Picture 1	○
GM-4R-D2.0R0.5	2.0	0.5	4	6	50	4	Picture 1	○
GM-4R-D2.5R0.2	2.5	0.2	4	8	50	4	Picture 1	○
GM-4R-D2.5R0.5	2.5	0.5	4	8	50	4	Picture 1	○
GM-4R-D3.0R0.2	3.0	0.2	4	8	50	4	Picture 1	●
GM-4R-D3.0R0.5	3.0	0.5	4	8	50	4	Picture 1	○
GM-4R-D4.0R0.2	4.0	0.2	4	10	50	4	Picture 2	○
GM-4R-D4.0R0.3	4.0	0.3	4	10	50	4	Picture 2	●
GM-4R-D4.0R0.5	4.0	0.5	4	10	50	4	Picture 2	●
GM-4R-D5.0R0.2	5.0	0.2	6	13	50	4	Picture 2	○
GM-4R-D5.0R0.5	5.0	0.5	6	13	50	4	Picture 1	●
GM-4R-D5.0R1.0	5.0	1.0	6	13	50	4	Picture 1	●
GM-4R-D6.0R0.3	6.0	0.3	6	16	50	4	Picture 2	○
GM-4R-D6.0R0.5	6.0	0.5	6	16	50	4	Picture 2	●
GM-4R-D6.0R1.0	6.0	1.0	6	16	50	4	Picture 2	●
GM-4R-D8.0R0.3	8.0	0.3	8	20	60	4	Picture 2	○
GM-4R-D8.0R0.5	8.0	0.5	8	20	60	4	Picture 2	●
GM-4R-D8.0R1.0	8.0	1.0	8	20	60	4	Picture 2	●
GM-4R-D10.0R0.3	10.0	0.3	10	25	75	4	Picture 2	○
GM-4R-D10.0R0.5	10.0	0.5	10	25	75	4	Picture 2	●
GM-4R-D10.0R1.0	10.0	1.0	10	25	75	4	Picture 2	●
GM-4R-D10.0R2.0	10.0	2.0	10	25	75	4	Picture 2	●
GM-4R-D10.0R3.0	10.0	3.0	10	25	75	4	Picture 2	●
GM-4R-D12.0R0.3	12.0	0.3	12	30	75	4	Picture 2	○
GM-4R-D12.0R0.5	12.0	0.5	12	30	75	4	Picture 2	●
GM-4R-D12.0R1.0	12.0	1.0	12	30	75	4	Picture 2	●
GM-4R-D12.0R2.0	12.0	2.0	12	30	75	4	Picture 2	●
GM-4R-D12.0R3.0	12.0	3.0	12	30	75	4	Picture 2	●

➤ Applicable workpiece material table ● Very suitable ○ Suitable

● Stock available ○ Make-to-order

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B598

Non-standard customization

B652-B653



B MILLING / Solid Carbide End Mills

GM series for general machining

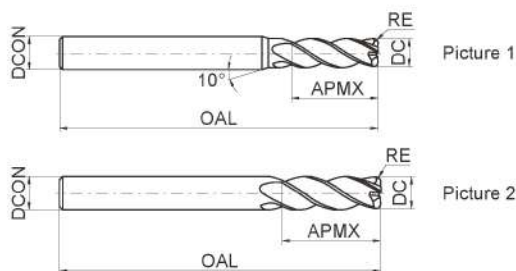
4-flute R end mills with long shank



GM-4RL/M/X



● GM-4R series with long shank.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
GM-4RL-D4.0R0.2S	4.0	0.2	4	10	75	4	Picture 2	●
GM-4RL-D4.0R0.2	4.0	0.2	6	10	75	4	Picture 1	●
GM-4RL-D4.0R0.5S	4.0	0.5	4	10	75	4	Picture 2	●
GM-4RL-D4.0R0.5	4.0	0.5	6	10	75	4	Picture 1	●
GM-4RL-D6.0R0.2	6.0	0.2	6	16	75	4	Picture 2	●
GM-4RX-D6.0R0.2	6.0	0.2	6	16	100	4	Picture 2	●
GM-4RL-D6.0R0.5	6.0	0.5	6	16	75	4	Picture 2	●
GM-4RX-D6.0R0.5	6.0	0.5	6	16	100	4	Picture 2	●
GM-4RL-D6.0R1.0	6.0	1.0	6	16	75	4	Picture 2	●
GM-4RX-D6.0R1.0	6.0	1.0	6	16	100	4	Picture 2	●
GM-4RM-D8.0R0.2	8.0	0.2	8	20	75	4	Picture 2	●
GM-4RL-D8.0R0.2	8.0	0.2	8	20	100	4	Picture 2	●
GM-4RM-D8.0R0.5	8.0	0.5	8	20	75	4	Picture 2	●
GM-4RL-D8.0R0.5	8.0	0.5	8	20	100	4	Picture 2	●
GM-4RM-D8.0R1.0	8.0	1.0	8	20	75	4	Picture 2	●
GM-4RL-D8.0R1.0	8.0	1.0	8	20	100	4	Picture 2	●
GM-4RL-D10.0R0.2	10.0	0.2	10	25	100	4	Picture 2	●
GM-4RX-D10.0R0.2	10.0	0.2	10	25	150	4	Picture 2	●
GM-4RL-D10.0R0.5	10.0	0.5	10	25	100	4	Picture 2	●
GM-4RX-D10.0R0.5	10.0	0.5	10	25	150	4	Picture 2	●
GM-4RL-D10.0R1.0	10.0	1.0	10	25	100	4	Picture 2	●
GM-4RX-D10.0R1.0	10.0	1.0	10	25	150	4	Picture 2	●

● Stock available ○ Make-to-order

➤ Applicable workpiece material table ● Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B598

Non-standard customization

B652-B653

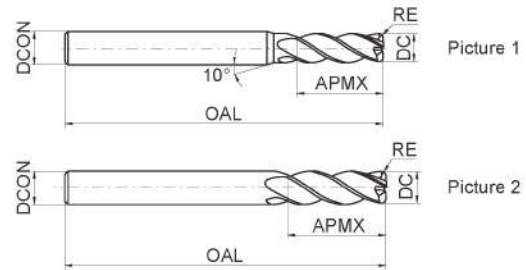
4-flute R end mills with long shank



GM-4RL/M/X



● GM-4R series with long shank.



Type	Basic dimension(mm)					Number of teeth Z	Geometry	Stock
	DC	RE	DCON	APMX	OAL			
GM-4RL-D10.0R2.0	10.0	2.0	10	25	100	4	Picture 2	●
GM-4RX-D10.0R2.0	10.0	2.0	10	25	150	4	Picture 2	●
GM-4RL-D12.0R0.2	12.0	0.2	12	30	100	4	Picture 2	●
GM-4RX-D12.0R0.2	12.0	0.2	12	30	150	4	Picture 2	●
GM-4RL-D12.0R0.5	12.0	0.5	12	30	100	4	Picture 2	●
GM-4RX-D12.0R0.5	12.0	0.5	12	30	150	4	Picture 2	●
GM-4RL-D12.0R1.0	12.0	1.0	12	30	100	4	Picture 2	●
GM-4RX-D12.0R1.0	12.0	1.0	12	30	150	4	Picture 2	●
GM-4RL-D12.0R2.0	12.0	2.0	12	30	100	4	Picture 2	●
GM-4RX-D12.0R2.0	12.0	2.0	12	30	150	4	Picture 2	●
GM-4RL-D16.0R1.0	16.0	1.0	16	45	150	4	Picture 2	●
GM-4RL-D16.0R2.0	16.0	2.0	16	45	150	4	Picture 2	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

➤ Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B598

Non-standard customization

B652-B653

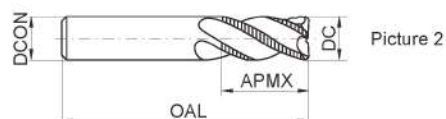
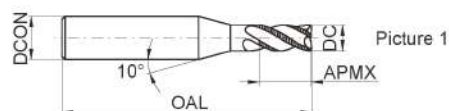
4-flute flattened end mills with straight shank and corrugated edges



GM-4W



Very suitable for high-efficiency rough machining.



Type	Basic dimension(mm)				Number of teeth Z	Geometry	Stock
	DC	DCON	APMX	OAL			
GM-4W-D6.0	6.0	6	16	50	4	Picture 2	●
GM-4W-D7.0	7.0	8	20	60	4	Picture 1	●
GM-4W-D8.0	8.0	8	20	60	4	Picture 2	●
GM-4W-D9.0	9.0	10	22	75	4	Picture 1	●
GM-4W-D10.0	10.0	10	25	75	4	Picture 2	●
GM-4W-D11.0	11.0	12	26	75	4	Picture 1	●
GM-4W-D12.0	12.0	12	30	75	4	Picture 2	●
GM-4W-D16.0	16.0	16	45	100	4	Picture 2	●
GM-4W-D20.0	20.0	20	45	100	4	Picture 2	●

● Stock available ○ Make-to-order

Indexable
milling tools

Solid carbide
end mills

GM series

Applicable workpiece material table ○ Very suitable ○ Suitable

Workpiece material											
Carbon steel	Alloy steel	Pre-hardened steel, Hardened steel				Stainless steel	Cast iron, Nodular cast iron	Copper alloy	Aluminum alloy	Titanium alloy	Heat resistant alloy
		~40HRC	~50HRC	~55HRC	~68HRC						
○	○	○	○			○	○				

Code key

B294

Graphics category and identification

B295

Cutting parameters

B599-B600

Non-standard customization

B652-B653