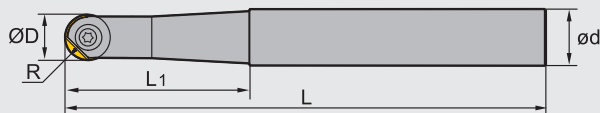


Profile milling tools

**BMR02**

Specification of tools

Type		Dimensions(inch)					
		ØD	R	ød	L	L ₁	Z (Number of teeth)
BMR02	-12-G0.472" -S	0.472	0.236	0.625	4.50	1.50	2
	-12-G0.472" -M	0.472	0.236	0.625	5.00	2.00	2
	-12-G0.472" -L	0.472	0.236	0.625	6.00	2.00	2
	-16-G0.630" -S	0.630	0.315	0.750	6.00	1.75	2
	-16-G0.630" -M	0.630	0.315	0.750	6.50	2.50	2
	-16-G0.630" -L	0.630	0.315	0.750	8.00	2.50	2
	-20-G0.787" -S	0.787	0.394	1.000	6.50	2.50	2
	-20-G0.787" -M	0.787	0.394	1.000	8.00	3.00	2
	-20-G0.787" -L	0.787	0.394	1.000	9.50	3.00	2

D

Spare parts

Diameter ØD	Insert specification	Screw	Wrench	Sketch of installation
				
Ø0.472"	ROHX1203	I70M4×10TT	WT15IS	
Ø0.630"	ROHX1604	I70M5×12TT	WT20IS	
Ø0.787"	ROHX2005	I70M5×16TT	WT20IS	

Workpiece material	Tool material									
	P	M	K	N	S	H	T	C	B	Y
P Steel		😊😊😊😊					😊😊😊😊	😊😊😊😊	😊😊😊😊	
M Stainless steel	😊😊😊😊						😊😊😊😊	😊😊😊😊	😊😊😊😊	😊😊😊😊
K Cast iron						😊😊😊😊			😊😊😊😊	😊😊😊😊
N Ferrite materials										😊😊😊😊
S Heat-resistant steel						😊😊😊😊	😊😊😊😊	😊😊😊😊		

Insert shape	Type	Dimensions(inch)				Coated grade								Uncoated grade		Adaptable tool holders	
		ØI.C	L	S	ød	YBC301	YBC302	YBM251	YBM253	YBG102	YBG205	YBG205H	YBG252	YBG302	YD101		YD201
	ROHX1203	0.472	0.335	0.118	0.157								●				Ø0.472"
	ROHX1604	0.630	0.445	0.157	0.197								●				Ø0.630"
	ROHX2005	0.787	0.555	0.197	0.197								●				Ø0.787"

● Recommended grade ○ Produce according to order

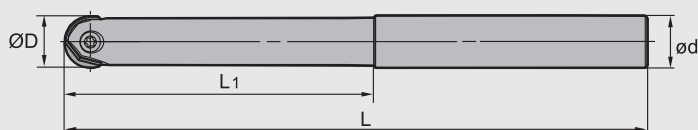
D

Workpiece material		Hardness HB	Insert grade	Cutting parameters	Diameter		
					Ø0.472"	Ø0.63"	Ø0.787"
P	Carbon steel	HB≤180	YBG252	V(SFPM)	300~650	300~650	300~650
				fz(IPT)	0.006~0.01	0.008~0.012	0.008~0.012
				a _{pmax} (inch)	0.032	0.04	0.05
				a _{emax} (inch)	0.032	0.04	0.05
	Alloy steel	HB180~280		V(SFPM)	260~600	260~600	260~600
				fz(IPT)	0.006~0.01	0.008~0.012	0.008~0.012
				a _{pmax} (inch)	0.032	0.04	0.05
				a _{emax} (inch)	0.032	0.04	0.05
	Hardened steel	HRC55~65		V(SFPM)	200~300	200~300	200~300
				fz(IPT)	0.006~0.01	0.008~0.012	0.008~0.012
				a _{pmax} (inch)	0.016	0.02	0.024
				a _{emax} (inch)	0.016	0.02	0.024
M	Stainless steel	HB≤270		V(SFPM)	230~150	230~150	230~150
				fz(IPT)	0.004~0.008	0.004~0.01	0.004~0.01
				a _{pmax} (inch)	0.024	0.032	0.04
				a _{emax} (inch)	0.024	0.032	0.04
K	Cast iron	HB180-250	V(SFPM)	500~1000	500~1000	500~1000	
			fz(IPT)	0.008~0.012	0.01~0.014	0.01~0.014	
			a _{pmax} (inch)	0.04	0.06	0.07	
			a _{emax} (inch)	0.04	0.06	0.07	

Profile milling tools

**BMR04**

Straight shank with straight neck



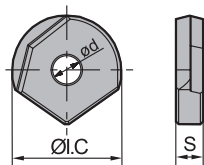
Specification of tools

Type		Dimensions(inch)				
		ØD	ød	L1	L	Z (Number of teeth)
BMR04	-0.625"-G0.625"-M	0.625	0.625	2.0	4.5	2
	-0.625"-G0.625"-L	0.625	0.625	3.0	6.5	2
	-0.75"-G0.75"-M	0.750	0.750	2.5	5.0	2
	-0.75"-G0.75"-L	0.750	0.750	3.5	7.0	2
	-1.00"-G1.00"-M	1.000	1.000	2.5	5.5	2
	-1.00"-G1.00"-L	1.000	1.000	3.5	8.0	2
	-1.00"-G1.00"-XL	1.000	1.000	5.0	10.0	2
	-1.25"-G1.25"-M	1.250	1.250	3.0	6.0	2
	-1.25"-G1.25"-L	1.250	1.250	4.0	9.0	2
	-1.25"-G1.25"-XL	1.250	1.250	5.0	12.0	2

Spare parts

Diameter ØD	Insert specification	Insert screw	Wrench	Sketch of installation
				
Ø0.625"	ZOHX5-□□	I70M5×12TT	WT15IP	
Ø0.75"	ZOHX6-□□	I70M5×16TT	WT20IP	
Ø1.00"	ZOHX8-□□	I70M6×20TT	WT20IP	
Ø1.25"	ZOHX10-□□	I70M8×25TT	WT30IT	

Selection of inserts



😊 Good working conditions 😐 General working conditions 😞 Adverse working conditions

[illegible]

Insert shape	Type	Dimensions(inch)			Coated grade								Uncoated grade		Adaptable tool holders
		ØI.C	ød	S	YBC302	YBM251	YBM253	YBG102	YBG205	YBG205H	YBG252	YBG302	YD101	YD201	
	ZOHX5-GF	0.625	0.197	0.157							●				D0.625"
	ZOHX6-GF	0.750	0.197	0.197							●				D0.75"
	ZOHX8-GF	1.000	0.236	0.236							●				D1.00"
	ZOHX10-GF	1.250	0.315	0.276							●				D1.25"
	ZOHX5-GM	0.625	0.197	0.157							●				D0.625"
	ZOHX6-GM	0.750	0.197	0.197							●				D0.75"
	ZOHX8-GM	1.000	0.236	0.236							●				D1.00"
	ZOHX10-GM	1.250	0.315	0.276							●				D1.25"

● Recommended grade ○ Produce according to order

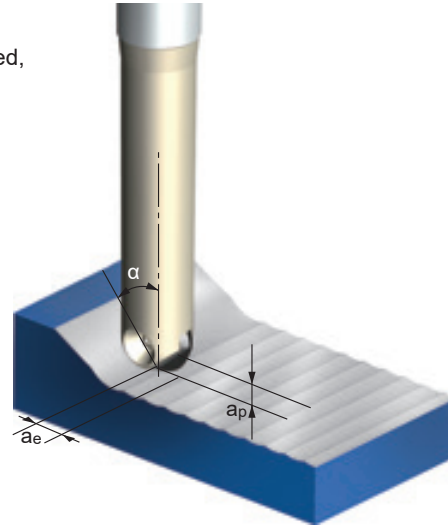
Calculation of cutting speed for BMR02/04 series ball nose end mills

1. When the tool axial line is vertical to the surface being machined,

$$N = \frac{1000 V_c}{\pi D c} (r/min)$$

$$D c = 2 \sqrt{a_p (D - a_p)}$$

N: rotating speed
 Vc: actual cutting speed
 Dc: effective cutting diameter
 D: tool nominal diameter
 ap: axial cutting depth



2. When there is an inclined angle between the tool axial line and the surface being machined, the recommended cutting speed should be multiplied by a factor in the table below to obtain the cutting speed used for programming.

Diameter (inch)		Ø0.625		Ø0.75		Ø1.00		Ø1.25	
Cutting depth ap(inch)		0.008	0.020	0.020	0.039	0.020	0.039	0.020	0.060
Inclined angle α	15°	1.00	1.00	1.00	1.02	1.00	1.01	1.00	1.00
	30°	1.05	1.01	1.02	1.04	1.03	1.04	1.04	1.00
	45°	1.18	1.10	1.12	1.06	1.14	1.08	1.16	1.06
	60°	1.47	1.30	1.34	1.21	1.38	1.25	1.43	1.22
	75°	2.14	1.73	1.83	1.53	1.93	1.62	2.04	1.55
	90°	4.48	2.87	3.20	2.29	3.57	2.55	4.03	2.37

Recommended cutting parameters

Workpiece material	Hardness HB	Insert grade	Cutting parameters	Diameter			
				Ø0.625	Ø0.75	Ø1.00	Ø1.25
P	Carbon steel	HB≤180	V(SFPM)	300~650	300~650	300~650	300~650
			fz(IPT)	0.008~0.012	0.008~0.012	0.01~0.014	0.01~0.014
			a _{pmax} (inch)	0.04	0.05	0.06	0.08
			a _{emax} (inch)	0.04	0.05	0.06	0.08
	Alloy steel	HB180~280	V(SFPM)	260~600	260~600	260~600	260~600
			fz(IPT)	0.008~0.012	0.008~0.012	0.01~0.014	0.01~0.014
			a _{pmax} (inch)	0.04	0.05	0.06	0.08
			a _{emax} (inch)	0.04	0.05	0.06	0.08
	Hardened steel	HRC55~65	V(SFPM)	200~300	200~300	200~300	200~300
			fz(IPT)	0.008~0.012	0.008~0.012	0.01~0.014	0.01~0.014
			a _{pmax} (inch)	0.02	0.024	0.032	0.04
			a _{emax} (inch)	0.02	0.024	0.032	0.04
M	Stainless steel	HB≤270	V(SFPM)	230~500	230~500	230~500	230~500
			fz(IPT)	0.004~0.01	0.004~0.01	0.008~0.012	0.008~0.012
			a _{pmax} (inch)	0.032	0.04	0.05	0.06
			a _{emax} (inch)	0.032	0.04	0.05	0.06
K	Cast iron	HB180~250	V(SFPM)	500~1000	500~1000	500~1000	500~1000
			fz(IPT)	0.01~0.014	0.01~0.014	0.012~0.016	0.012~0.016
			a _{pmax} (inch)	0.06	0.07	0.08	0.1
			a _{emax} (inch)	0.06	0.07	0.08	0.1

