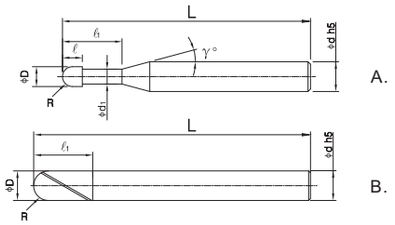
HGX SERIES

HGXB4 – Highlights

- Excellent surface finish with HGX coating.
- For both roughing and finishing.
- Suitable for materials up to 55HRC.
- Stable milling in corner by optimized chip pocket.
- High preicision thanks to dual edge chisel design.

≤55HRC

HGXB 4-Flute Ball End Mill



UMG ATX 4 30° Spiral Angle Arc Back Angle ≤55 HRC

Ø D	D Tol. (mm)
D<3	0~-0.010
3<D<6	0~-0.012
6<D<10	0~-0.015
10<D<12	0~-0.018

Ø D	R Tol. (mm)
1<D<12	±0.005

Unit : mm

Type No.	Dia.	Radius	Length of Cut	Under Neck Length	Neck Dia.	Neck Taper Angle	Overall Length	Shank Dia.	
	ϕD	R	ℓ	ℓ1	ϕd1	γ/°	L	ϕd	
HGXB4010 0450	1	R0.5	0.75	2	0.95	12	50	4	A
HGXB4010 0650	1	R0.5	0.75	2	0.95	12	50	6	A
HGXB4015 0450	1.5	R0.75	1.2	3	1.42	11	50	4	A
HGXB4015 0650	1.5	R0.75	1.2	4	1.42	11	50	6	A
HGXB4020 0450	2	R1	2	4	1.9	11	50	4	A
HGXB4020 0650	2	R1	2	6	1.9	11	50	6	A
HGXB4025 0450	2.5	R1.25	2	5	2.4	11	50	4	A
HGXB4025 0650	2.5	R1.25	2	7	2.4	11	50	6	A
HGXB4030 0450	3	R1.5	2.4	6	2.9	11	50	4	A
HGXB4030 0660	3	R1.5	2.4	8	2.9	11	60	6	A
HGXB4040 0450	4	R2	3.2	–	–	–	50	4	B
HGXB4040 0660	4	R2	3.2	10	3.9	11	60	6	A
HGXB4050 0660	5	R2.5	4	12	4.85	11	60	6	A
HGXB4060 0660	6	R3	9	–	–	–	60	6	B
HGXB4060 0675	6	R3	9	–	–	–	75	6	B
HGXB4080 0875	8	R4	12	–	–	–	75	8	B
HGXB4080 08100	8	R4	12	–	–	–	100	8	B
HGXB4100 1075	10	R5	15	–	–	–	75	10	B
HGXB4100 10100	10	R5	15	–	–	–	100	10	B
HGXB4120 1275	12	R6	18	–	–	–	75	12	B
HGXB4120 12100	12	R6	18	–	–	–	100	12	B

TABLE OF RECOMMENDED MILLING MATERIALS

○ Very suitable ○ Suitable

CARBON STEELS	ALLOY STEELS	PREHARDENED STEELS	HARDENED STEELS				CAST IRON	COPPER ALLOYS	ALUMINUM ALLOY	GRAPHITE	TITANIUM ALLOY	HEAT RESISTANT ALLOYS	PLASTIC
			~55HRC	~60HRC	~65HRC	~70HRC	DUCTILE CAST IRON						
○	○	○	○					○					

Cutting Parameter

HGXB 4-Flute Ball End Mill 3D Milling Finishing

Workpiece	Carbon Steels、Alloy Steels (30~40HRC)				Pre-Hardened Steels (35~45HRC)				High Speed Steels、Hardened Steels (46-52HRC)			
Type No.	n min⁻¹	Vf mm/min	ap mm	ae mm	n min⁻¹	Vf mm/min	ap mm	ae mm	n min⁻¹	Vf mm/min	ap mm	ae mm
HGXB4010 0450	27000	2160	0.03	0.05	27000	2040	0.03	0.05	24300	1920	0.02	0.02
HGXB4010 0650	27000	2160	0.03	0.05	27000	2040	0.03	0.05	24300	1920	0.02	0.02
HGXB4015 0450	24000	2700	0.03	0.05	24000	2550	0.03	0.05	21600	2400	0.02	0.03
HGXB4015 0650	24000	2700	0.03	0.05	24000	2550	0.03	0.05	21600	2400	0.02	0.03
HGXB4020 0450	22200	2808	0.04	0.06	22200	2650	0.04	0.06	19980	2496	0.03	0.04
HGXB4020 0650	22200	2808	0.04	0.06	22200	2650	0.04	0.06	19980	2496	0.03	0.04
HGXB4025 0650	21600	3024	0.04	0.06	21600	2856	0.04	0.06	19940	2688	0.03	0.06
HGXB4030 0460	19500	3600	0.05	0.08	19500	3400	0.05	0.08	17550	3200	0.03	0.08
HGXB4030 0660	19500	3600	0.05	0.08	19500	3400	0.05	0.08	17550	3200	0.03	0.08
HGXB4040 0460	18000	4320	0.05	0.1	18000	4080	0.05	0.1	16200	3840	0.05	0.1
HGXB4040 0660	18000	4320	0.05	0.1	18000	4080	0.05	0.1	16200	3840	0.05	0.1
HGXB4050 0660	15000	4500	0.05	0.1	15000	4250	0.05	0.1	13500	4000	0.05	0.12
HGXB4060 0660	13500	5040	0.05	0.15	13500	4760	0.05	0.15	12150	4480	0.05	0.15
HGXB4060 0675	13500	5040	0.05	0.15	13500	4760	0.05	0.15	12150	4480	0.05	0.15
HGXB4080 0875	12000	5400	0.08	0.2	12000	5100	0.08	0.2	10800	5000	0.05	0.2
HGXB4080 08100	12000	5400	0.08	0.2	12000	5100	0.08	0.2	10800	5000	0.05	0.2
HGXB4100 1075	10000	5400	0.08	0.25	10000	5100	0.08	0.2	9000	5000	0.05	0.25
HGXB4100 10100	10000	5400	0.08	0.25	10000	5100	0.08	0.2	9000	5000	0.05	0.25
HGXB4120 12100	10204	5760	0.1	0.25	10204	5440	0.1	0.25	9180	5120	0.08	0.25