Cutting Conditions

X's-Mill Geo Ball L9340

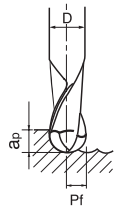
NACHI นาชิ

• Conventional Condition : X's Mill GEO Ball L9340

Work Material / Milling Condition / Ball Radius mm		S C, FC Carbon Steels, Cast Irons (~250 HB)		SCM, SKD Alloy Steels, Mold Steels		Hardened Steels, Pre Hardened Steels (30~38 HRC)		Stainless Steels, Hardened Steels (38~45 HRC)		Hardened Steels (45~55 HRC)		Hardened Steels (55~60 HRC)	
		Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min
R0.5		32000	820	31000	620	25000	440	22000	330	19000	240	14000	130
R1		16000	920	15000	680	13000	510	11000	380	9600	280	7200	160
R2		8000	1000	7600	760	6400	560	5600	430	4800	310	3600	170
R3		5300	1000	5100	770	4200	550	3700	420	3200	310	2400	170
R5		3200	1000	3100	780	2500	550	2200	420	1900	300	1400	170
R8		2000	920	1900	680	1600	510	1400	380	1200	280	900	160
R10		1600	820	1500	600	1300	460	1100	330	960	250	720	140
R15		1100	740	1000	530	850	390	700	280	640	220	480	120
Depth of Cut	ap	0.05D (R<0.5) 0.1D (R≥0.5)								0.05D			
	Pf	0.2D								0.1D			

• High Speed Condition : X's Mill GEO Ball L9340

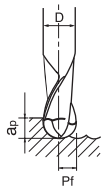
Work Material / Milling Condition / Ball Radius mm		S C, FC Carbon Steels, Cast Irons (~250 HB)		SCM, SKD Alloy Steels, Mold Steels		Hardened Steels, Pre Hardened Steels (30~38 HRC)		Stainless Steels, Hardened Steels (38~45 HRC)		Hardened Steels (45~55 HRC)		Hardened Steels (55~60 HRC)	
		Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min
R0.5		60000	3600	60000	3600	60000	3000	60000	3000	60000	2400	48000	1900
R1		51000	5100	48000	4800	40000	3200	37000	3000	35000	2100	24000	1400
R2		25000	5000	24000	4800	20000	3200	18000	2500	18000	2200	12000	1400
R3		17000	4100	16000	3800	13000	2900	12000	2200	12000	1900	8000	1300
R5		10200	3100	9600	2500	8000	1900	7300	1500	7000	1400	4800	960
R8		6400	1900	6000	1800	5000	1200	4600	1000	4400	900	3000	600
R10		5100	1600	4800	1400	4000	1000	3700	890	3500	700	2400	480
R15		3400	1100	3200	960	2700	650	2400	600	2300	460	1600	320
Depth of Cut	ap	0.05D											
	Pf	0.1D								0.05D			



1. Use highly rigid machining center and holder.
2. Recommend air blow or oil mist process.
3. When using Pencil Neck Type End Mills, reduce the feed to 70% of table values.
4. When using Long Shank Type End Mills, reduce milling condition according to it's over hang length.
5. Use in wet condition in case of Stainless Steels.

GS MILL Hard Ball L9422

Work Material / Milling Condition / Ball Radius mm		Pre-Hardened Steels Mold Steels (40~50 HRC)		Hardened Steels (50~55 HRC)		Hardened Steels, (55~60 HRC)		Hardened Steels (60~65 HRC)	
		Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min	Rotation min^{-1}	Feed mm/min
R0.2		50000	530	50000	530	50000	500	50000	450
R0.3		50000	830	50000	830	50000	760	50000	690
R0.5		50000	1360	50000	1360	50000	1250	41970	960
R0.75		50000	2040	50000	2040	37310	1400	27980	960
R1		38130	2070	38130	2070	27980	1400	20990	960
R1.25		30510	2070	30510	2070	22390	1400	16790	960
R1.5		25420	2070	25420	2070	18660	1400	13990	960
R2		19070	2070	19070	2070	13990	1400	10490	960
R2.5		15250	2070	15250	2070	11190	1400	8390	960
R3		12710	2070	12710	2070	9330	1400	7000	960
R4		9530	2070	9530	2070	7000	1400	5250	960
R5		7630	2070	7630	2070	5600	1400	4200	960
R6		6360	2070	6360	2070	4660	1400	3500	960
Depth of Cut	ap	0.08D				0.05D			
	Pf	0.25D				0.15D			



1. Use highly rigid machining center and holder.
2. Recommend air blow or oil mist process.
3. Recommend oil mist process. (Most recommended)
4. When depth of the cut is small, can increase feed speed more.