TXN03 / EXN03 / HXN03 type

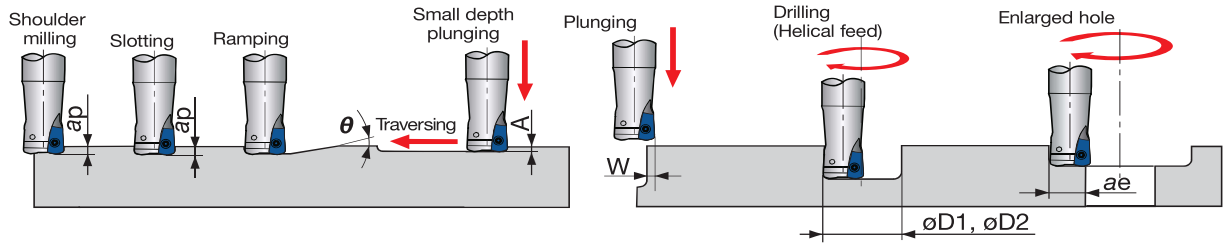
STANDARD CUTTING CONDITIONS

ISO	Workpiece material		Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool dia: ø*Dc* (in) ø0.625 - ø0.875	ø1.0 - ø1.25	Plunging
P	Carbon steel (1045, 1055, etc.)		- 300HB	First choice	AH725	MJ	330 - 980	0.020 - 0.050	0.020 - 0.060	0.004
				For low cutting force	AH725	ML	330 - 980	0.020 - 0.030	0.020 - 0.040	0.004
				For impact resistance	AH3035	MJ	330 - 980	0.020 - 0.050	0.020 - 0.060	0.004
	Alloy steel (4140, SCr415, etc.)		- 300HB	First choice	AH725	MJ	330 - 660	0.020 - 0.050	0.020 - 0.060	0.004
				For low cutting force	AH725	ML	330 - 660	0.020 - 0.030	0.020 - 0.040	0.004
				For impact resistance	AH3035	MJ	330 - 660	0.020 - 0.050	0.020 - 0.060	0.004
	Prehardened steel (NAK80, PX5, etc.)		30 - 40HRC	-	AH3035	ML	330 - 660	0.020 - 0.030	0.020 - 0.040	0.004
M	Stainless steel (SUS304, SUS316, etc. 304, 316, etc.)		- 200HB	First choice	AH130	ML	330 - 490	0.012 - 0.020	0.012 - 0.030	0.003
				For impact resistance	AH130	MJ	330 - 490	0.012 - 0.031	0.012 - 0.031	0.003
K	Gray cast iron (GG25, GG30, etc.)		150 - 250HB	First choice	AH725	MJ	330 - 980	0.020 - 0.050	0.020 - 0.060	0.004
				For low cutting force	AH725	ML	330 - 980	0.020 - 0.030	0.020 - 0.040	0.004
	Ductile cast iron (GGG40, etc.)		150 - 250HB	First choice	AH725	MJ	330 - 660	0.020 - 0.050	0.020 - 0.060	0.004
				For low cutting force	AH725	ML	330 - 660	0.020 - 0.030	0.020 - 0.040	0.004
S	Titanium alloys (Ti-6Al-4V, etc.)		- 40HRC	-	AH725	ML	100 - 200	0.012 - 0.020	0.012 - 0.030	0.003
	Heat-resistant alloys (Inconel, Hastelloy, etc.)		- 40HRC	-	AH725	MJ	60 - 160	0.004 - 0.008	0.004 - 0.012	0.002
H	Hardened steel	X40CrMoV5-1, etc.	40 - 50HRC	First choice	AH3035	MJ	260 - 430	0.004 - 0.008	0.004 - 0.012	0.002
				For wear resistance	AH725	MJ	260 - 430	0.004 - 0.008	0.004 - 0.012	0.002
		X153CrMoV12, etc.	50 - 60HRC	First choice	AH725	MJ	160 - 230	0.001 - 0.002	0.001 - 0.003	0.001
				For impact resistance	AH3035	MJ	160 - 230	0.001 - 0.002	0.001 - 0.003	0.001

· When chips stay in the cutting zone during slotting or pocketing, use air blast to remove chips from the work area.

· Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed.

MACHINING APPLICATIONS



Designation	Max. depth of cut (in) *ap*	ø*Dc*	Max. ramping angle θ	Max. plunging (in) A	Max. cutting width in plunging (in) *W*	Min. machining (in) ø*D1*	Max. machining (in) ø*D2*	Max. cutting width in enlarging (in) *ae*
EXN03R062U0062-...	0.039	0.625	2.1°	0.012	0.138	0.866	1.181	0.492
EXN03R068U0062-...	0.039	0.688	1.7°	0.012	0.138	1.024	1.339	0.571
EXN03R075U0075-...	0.039	0.750	1.4°	0.012	0.138	1.181	1.496	0.650
EXN03R087U0075-...	0.039	0.875	1.2°	0.012	0.138	1.339	1.654	0.728
EXN03R100U0100-...	0.039	1.000	1.0°	0.012	0.138	1.575	1.890	0.846
EXN03R112U0100-...	0.039	1.125	0.8°	0.012	0.138	1.811	2.126	0.965
EXN03R125U0125-...	0.039	1.250	0.7°	0.012	0.138	2.126	2.441	1.122

- For ø*Dc* above ø1.3", slot milling, ramping or contouring is not recommended as chips may be re-cut.