Standard cutting conditions

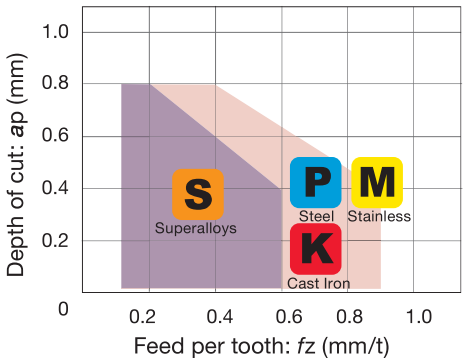
ISO	Workpiece materials	Hardness HB	Grades	Cutting Speed *Vc* (m/min)	Feed per tooth: *fz* (mm/t) MJ	HJ	AJ
P	Low carbon steels (S15C / C15E4 etc.)	< 200	**AH725**	90 - 200	0.05 - 0.1	0.4 - 0.9	-
	High carbon steels and alloyed steels (S55C / C55, SCM440 / 42CrMo4 etc.)	200 - 300	**AH725**	90 - 150	0.05 - 0.1	0.4 - 0.9	-
	Tool steels (SKD11 / X153CrMoV12 etc.)	150 - 300	**AH725**	80 - 120	0.05 - 0.1	0.4 - 0.9	-
M	Stainless steels (SUS304 / X5CrNi18-9 etc.)	-	**AH140**	90 - 150	0.05 - 0.1	0.4 - 0.9	-
K	Grey cast irons (FC250 / 250 etc.)	150 - 250	**AH725**	100 - 180	0.05 - 0.1	0.4 - 0.9	-
	Ductile cast irons (FCD450 / 450-10S etc.)	150 - 250	**AH725**	80 - 150	0.05 - 0.1	0.4 - 0.9	-
N	Aluminium alloys (Si < 13%)	-	**KS15F**	300 - 1000	-	-	0.08 - 0.2
	Aluminium alloys (Si ≥ 13%)	-	**KS15F**	100 - 200	-	-	0.08 - 0.2
S	Titanium alloys (Ti-6Al-4V etc.)	-	**AH725**	20 - 50	0.05 - 0.1	0.4 - 0.9	-
	Heat resistant alloys (Inconel718 etc.)	-	**AH725**	20 - 35	0.05 - 0.08	0.2 - 0.6	-

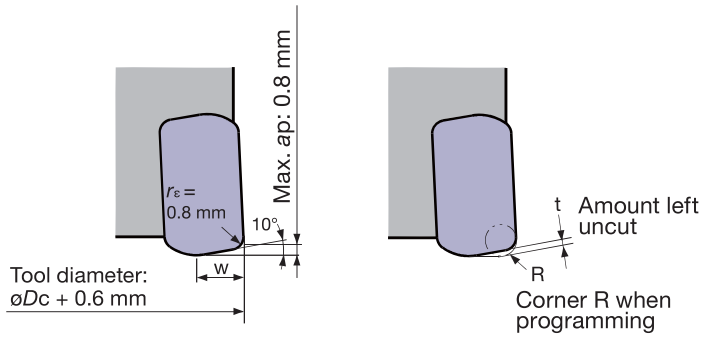
- To remove excessive chip accumulation use an air blast.
- To avoid build up edge on the cutting edges (aluminium machining), use a water soluble coolant.
- When cutting an interrupted surface or a casted skin, the feed per tooth (*fz*) should be reduced to the lower recommended value shown in the above table.
- Cutting conditions are limited by machine power, work piece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

Cautionary points when using HJ inserts

HJ type inserts are designed for high feed machining.
Please note the following when using HJ inserts:
1. The shape of HJ insert differs from that of other inserts (MJ, AJ). However the same insert pocket can be used.
2. When using HJ inserts, all the inserts on the cutter body must be HJ type. Do not use other types of inserts (MJ and AJ types) with HJ inserts on the same cutter body.
3. When using CAD/CAM, please program it as a radius cutter. The table below shows the corner R when programming and the uncut area (t).
4. With HJ inserts, the tool diameter increases by 0.6 mm over the diameter *øDc* shown in the table.

TungRec 07 type HJ inserts Standard conditions





Max. depth of cut max ap (mm)	Main cutting edge length W (mm)	Corner R when programming	Amount left uncut t (mm)
0.8	3.0	R 0.5	0.4
		R 1.0	0.3