

Recommended Cutting Conditions

Dry Cutting

Work Material	Hardness	Grade	vc (SFM)	fz (IPT)
M	Austenitic Stainless Steel	MC7020	720 (560–885)	.008 (.004–.014)
		MP7130	655 (490–820)	.008 (.004–.014)
	Austenitic Stainless Steel	MC7020	620 (460–785)	.008 (.004–.014)
		MP7130	560 (395–720)	.008 (.004–.014)
	Duplex Stainless Steel	MC7020	590 (425–755)	.008 (.004–.014)
		MP7130	525 (360–690)	.008 (.004–.014)
	Ferritic and Martensitic Stainless Steel	MC7020	785 (620–950)	.008 (.004–.014)
		MP7130	655 (490–820)	.008 (.004–.014)
	Ferritic and Martensitic Stainless Steel	MC7020	785 (620–950)	.008 (.004–.014)
		MP7130	655 (490–820)	.008 (.004–.014)
	Hardened Stainless Steel	MC7020	560 (395–720)	.008 (.004–.014)
		MP7130	490 (330–655)	.008 (.004–.014)

Wet Cutting

Work Material	Hardness	Grade	vc (SFM)	fz (IPT)
M	Austenitic Stainless Steel	MC7020	490 (330–655)	.008 (.004–.014)
		MP7130	425 (260–590)	.008 (.004–.014)
	Austenitic Stainless Steel	MC7020	395 (230–560)	.008 (.004–.014)
		MP7130	330 (260–490)	.008 (.004–.014)
	Duplex Stainless Steel	MC7020	395 (230–560)	.008 (.004–.014)
		MP7130	330 (260–490)	.008 (.004–.014)
	Ferritic and Martensitic Stainless Steel	MC7020	560 (395–720)	.008 (.004–.014)
		MP7130	425 (260–590)	.008 (.004–.014)
	Ferritic and Martensitic Stainless Steel	MC7020	560 (395–720)	.008 (.004–.014)
		MP7130	425 (260–590)	.008 (.004–.014)
	Hardened Stainless Steel	MC7020	360 (195–525)	.008 (.004–.014)
		MP7130	295 (165–460)	.008 (.004–.014)
S	Titanium Alloy	MP9130	150 (100–180)	.004 (.002–.006)
	Heat Resistant Alloy	MP9130	115 (50–150)	.004 (.002–.006)

Notes:

- * Actual cutting conditions are estimated to avoid chatter vibration with high rigidity of a machine or workpiece. Make appropriate adjustments when chatter and/or insert chipping occurs during cutting. Use with lowered conditions when there is a big overhang and/or when pocket-cutting.
- * Feed rate for Recommended Cutting Conditions table above based when axial depth of cut is $ap=.098''$ with ARP5, and when depth of cut is $ap=.118''$ with ARP6.
- * Due to the chip thinning effect when the axial depth of cut fluctuates, Feed rate compensation table below shows (correction values "F") to help calculate correct feed.
- * Example: Feed recommended for ARP5, 304 Stainless steel, MP7130, $ap=.039''$ is $.008IPT \times 1.5$ (correction values "F") = $.012IPT$.
- * For slotting, use 70% of the recommended feed rate listed above. For ramping, helical cutting, and plunging, use 50% of the recommended feed rate listed above.
- * Internal coolant is recommended in titanium alloy and heat resistant alloy machining.

Feed rate compensation table, (correction values "F") based on axial depth of cut "ap" fluctuation.

Holder	$ap = .020''$	$ap = .039''$	$ap = .059''$	$ap = .079''$	$ap = .098''$	$ap = .118''$	$ap = .138''$	$ap = .157''$	$ap = .197''$	$ap = .236''$
ARP5	2.3	1.5	1.2	1.1	1.0	.9	.8	.8	.8	–
ARP6	2.5	1.7	1.3	1.1	1.0	1.0	.9	.9	.8	.8

- * Tool body durability may weaken, when the amount of axial cutting exceeds $ARP5=.197''$ and $ARP6=.236''$.