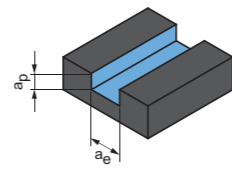# Cutting data recommendations for shoulder milling cutters

Feed and cutting speed
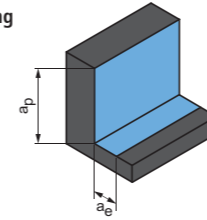
Groove milling — $a_p = 1 \times D$, $a_e = 1 \times D$
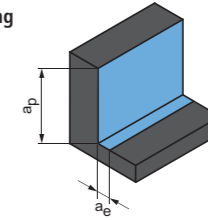
Roughing — $a_p = 1.5 \times D$, $a_e = 0.25 \times D$

Finishing — $a_p = 1.5 \times D$, $a_e = 0.1 \times D$

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MMG*			Workpiece material	Strength/hardness [N/mm²] [HRC]	Cooling MQL/Air	Dry	Coolant	v_c [m/min]	f_z [mm] Ø 3.00	4.00	6.00	8.00	10.00	12.00	16.00	20.00	v_c [m/min]	f_z [mm] Ø 3.00	4.00	6.00	8.00	10.00	12.00	16.00	20.00	v_c [m/min]	f_z [mm] Ø 3.00	4.00	6.00	8.00	10.00	12.00	16.00	20.00
M	M1	M1.1	Stainless steels, austenitic	< 700	✓		✓	70	0.011	0.013	0.019	0.025	0.030	0.035	0.044	0.051	110	0.018	0.023	0.033	0.042	0.051	0.059	0.074	0.086	160	0.028	0.036	0.051	0.066	0.080	0.093	0.117	0.135
		M1.2	Stainless steels, ferritic/austenitic (duplex)	< 1000			✓	65	0.009	0.011	0.016	0.020	0.025	0.029	0.036	0.042	105	0.015	0.019	0.027	0.035	0.042	0.049	0.061	0.071	150	0.023	0.030	0.043	0.055	0.066	0.077	0.097	0.112
	M2	M2.1	Stainless/heat-resistant cast steel, austenitic	< 700	✓		✓	75	0.011	0.015	0.021	0.027	0.032	0.038	0.047	0.055	120	0.019	0.025	0.035	0.045	0.055	0.064	0.080	0.093	180	0.031	0.039	0.056	0.072	0.087	0.101	0.127	0.147
	M3	M3.1	Stainless cast steel, ferritic/austenitic (duplex)	< 1000			✓	70	0.009	0.012	0.016	0.021	0.026	0.030	0.037	0.043	110	0.015	0.020	0.028	0.036	0.043	0.051	0.063	0.073	160	0.024	0.031	0.044	0.057	0.069	0.080	0.100	0.116

* MAPAL machining groups
** If the alloy parts Cr, Mo, Ni, V, W in total > 8%, then select the next highest MAPAL machining group.

The specified machining values are guide values.
The optimum data for the respective machining task should be determined during the test or machining.