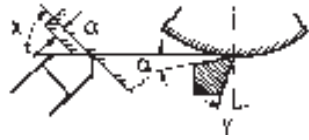


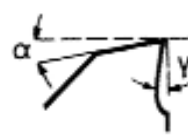
machining guidelines

Turning



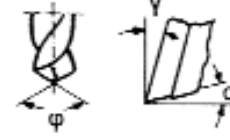
- α Setting angle
 - γ Rake angle
 - χ Recessing angle
 - v Cutting speed (m/mN)
 - s Feed (mm/U)
- Note: peak radius r to be min. 0.5 mm

Milling



- α Setting angle
 - γ Rake angle
 - v Cutting speed (m/mN)
- Note: allow feed up to 0.5 mm/tooth

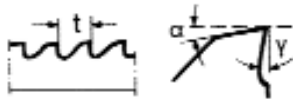
Drilling



- α Setting angle
 - γ Rake angle
 - φ Peak angle
 - v Cutting speed (m/mN)
 - s Feed (mm/U)
- Note: twisting angle β to be ca. 12° bis 16°

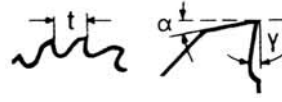
	α	γ	χ	v	s	α	γ	v	α	γ	φ	v	s
PVC	8 - 10	0 - 5	50 - 60	200 - 750	0.3 - 0.5	5 - 10	0 - 15	300 - 1000	5 - 10	3 - 5	60 - 100	30 - 120	0.1 - 0.5
PP / PE-HD	6 - 10	0 - 5	45 - 60	250 - 500	0.1 - 0.5	10 - 20	5 - 15	250 - 500	5 - 15	10 - 20	60 - 90	50 - 150	0.1 - 0.3
ABS	5 - 15	25 - 30	15	200 - 500	0.2 - 0.5	5 - 10	0 - 10	300 - 500	8 - 12	10 - 30	60 - 90	50 - 200	0.2 - 0.3
PMMA	5 - 10	0 - 4	15	200 - 300	0.1 - 0.2	2 - 10	2 - 10	2000	3 - 8	0 - 4	60 - 90	20 - 60	0.1 - 0.5
PC / PPE	5 - 12	6 - 8	45 - 60	200 - 350	0.1 - 0.5	5 - 20	5 - 15	250 - 350	8 - 10	10 - 20	90	50 - 100	0.1 - 0.3
PA	6 - 10	0 - 5	45 - 60	200 - 500	0.1 - 0.4	10 - 20	5 - 15	250 - 500	5 - 15	10 - 25	90	50 - 150	0.1 - 0.3
POM	6 - 8	0 - 5	45 - 60	300 - 600	0.1 - 0.4	5 - 15	5 - 15	250 - 500	5 - 10	5 - 30	90	50 - 200	0.1 - 0.3
PET	5 - 15	0 - 15	45 - 60	200 - 500	0.1 - 0.5	5 - 15	0 - 15	250 - 500	5 - 16	10 - 30	90 - 110	50 - 100	0.1 - 0.3
PVDF	5 - 12	5 - 15	10	150 - 500	0.1 - 0.3	5 - 15	5 - 15	250 - 500	10 - 16	5 - 20	110 - 130	150 - 300	0.1 - 0.3
E-CTFE	6 - 10	0 - 5	45 - 60	250 - 500	0.1 - 0.5	10 - 20	5 - 15	250 - 500	5 - 15	10 - 20	60 - 90	50 - 150	0.1 - 0.3
PSU / PPSU	5 - 10	0 - 5	45 - 60	250 - 400	0.2 - 0.3	5 - 15	0 - 10	250 - 500	5 - 15	10 - 20	60 - 90	30 - 90	0.1 - 0.3
PEI	5 - 10	0 - 10	45 - 60	300 - 400	0.2 - 0.3	5 - 15	0 - 10	200 - 400	5 - 15	10 - 20	60 - 90	30 - 90	0.1 - 0.4
PEEK	5 - 10	3 - 8	45 - 60	200 - 500	0.1 - 0.4	5 - 15	5 - 15	180 - 450	5 - 15	10 - 25	90 - 120	70 - 200	0.1 - 0.3
GF mod	6 - 8	2 - 8	45 - 60	150 - 200	0.1 - 0.5	15 - 30	6 - 10	80 - 100	6	5 - 10	90 - 120	80 - 100	0.1 - 0.3

Belt saw



- α Setting angle
- γ Rake angle
- v Cutting speed (m/mN)
- t Tooth pitch (mm)

Circular saw



- α Setting angle
- γ Rake angle
- v Cutting speed (m/mN)
- t Tooth pitch (mm)

	α	γ	v	t	α	γ	v	t
PVC	30 - 40	0 - 5	1200	3	5 - 10	0 - 5	3000 - 4000	3 - 5
PP / PE-HD	20 - 30	2 - 5	500	3 - 8	20 - 30	6 - 10	2000	3 - 8
ABS	15 - 30	0 - 5	300	2 - 8	5 - 10	0 - 5	1000	2 - 5
PMMA	30 - 40	0 - 5	1200	3	5 - 10	0 - 5	1500 - 2000	3 - 5
PC / PPE	15 - 30	5 - 8	300 - 500	2 - 8	15 - 30	5 - 8	1800 - 2500	2 - 8
PA	15 - 30	0 - 5	300 - 500	2 - 8	15 - 30	0 - 8	1800 - 2500	2 - 8
POM	20 - 30	0 - 5	500 - 800	2 - 5	5 - 10	0 - 10	1000 - 2500	2 - 5
PET	15 - 40	0 - 8	300	2 - 8	10 - 15	0 - 15	1000 - 3000	2 - 5
PVDF	20 - 30	5 - 8	300 - 500	2 - 5	5 - 10	0 - 10	1000 - 2500	2 - 5
E-CTFE	20 - 30	2 - 8	500	3 - 8	20 - 30	6 - 10	2000	3 - 8
PSU / PPSU	15 - 30	0 - 4	500	2 - 5	15 - 30	0 - 15	2000	2 - 5
PEI	15 - 30	0 - 4	500	2 - 5	15 - 25	0 - 15	2000	2 - 5
PEEK	15 - 30	0 - 5	500 - 800	3 - 5	15 - 30	0 - 10	1800 - 2500	2 - 5
GF mod	15 - 30	10 - 15	200 - 300	3 - 5	15 - 30	10 - 15	500 - 1500	3 - 5

Due to the dangers of stress cracking we do recommend to use no oil based cooling agents (or to clean the parts well after machining). Amorphous materials should be annealed during machining.

To avoid treatment problems we recommend a heating up of the materials on approx 120°C. Use only sharpened tools with small feed.

With these materials attention should be paid to ensure good ventilation of the machining area.



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