



## Measuring Extruder

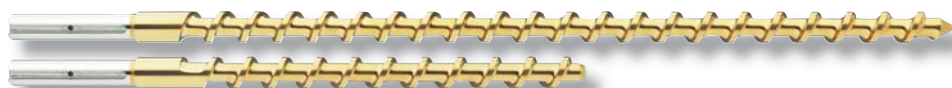
Applicational Recommendations



... where quality is measured.

# Measuring Extruder - Applicational Recommendations

Thermoplastics									
Material	Products	Barrel length L/D	Screw compression	Barrel temperatures					Remarks
				Zone 1	Zone 2	Zone 3	Zone 4	Die	
Cellulose acetate (CA)	Ribbons, blown and flat films	25	KP 3:1 DZ 3:1	175	185	195	200	210	preheat 2 h at 80 °C
Polyacetals (POM)	Ribbons, tubes, rods	20 - 25	KP 3:1 / 4:1	170	190	205	210	210	extrusion at low speeds
Polyamide PA 6 Polyamide PA 6.6	Ribbons, blown and flat films, monofilaments	25	DZ 3:1 / 4:1	230 250	240 260	250 270	255 275	260 280	preheat 3 h at 80 °C under vacuum, ring nut with heating
Polycarbonate (PC)	Ribbons, profiles	25	KP 2:1	290	280	270	260	240 - 250	preheat 3 h at 120 °C
Polyester linear	Monofilaments, films	25	DZ 4:1	250	260	270	275	280	preheat 3 - 4 h at 80 °C
Polyethylene (PE)	Ribbons, blown films, round strands, cables	20 - 25	DZ 3:1 / 4:1	190	200	210	220	220 - 230	
PE, grits (HDPE, UHMPE)	Ribbons, blown films, round strands	25	KL 1:1	160 - 220	170 - 230	180 - 240	185 - 245	190 - 250	conical, grooved feed zone
Polymethylmethacrylate (PMMA)	Sheets, profiles	20 - 25	KP 2:1 / 3:1	170	180	190 - 200	210	220	preheat 5 h at 70 - 100 °C
Polypropylene (PP)	Ribbons, blown films, tubes, round strands	20 - 25	DZ 3:1 / 4:1	210	220	230	-	240	
Polystyrene (PS)	Ribbons, profiles, blown films	20 - 25	KP 2:1 / 3:1	170	180	190	200	210	
PS copolymers ABS	Round strands, blown and flat films, ribbons and tubes	20 - 25	KP 2:1 / 3:1	170 - 190	175 - 195	185 - 200	185 - 225	185 - 225	preheat 2 h at 80 °C
Polysulfone	Ribbons, blown and flat films	20 - 25	KP 2:1	250 - 280	270 - 300	290 - 320	290 - 330	290 - 330	preheat 4 h at approx. 140 °C
Polyurethane (PUR)	Ribbons, profiles	25	KP 3:1	140 - 220	160 - 220	180 - 220	190 - 220	190 - 220	preheat 2 h at 100 - 110 °C
Polyvinyl butyral (PVB)	Ribbons, profiles	25	DZ 3:1	100	120	130	140	140	
Polyvinyl chloride (PVC) • rigid PVC pellets • rigid PVC powder • soft PVC pellets • soft PVC powder	Ribbons, profiles, blown films, tubes, round strands, cables	20 - 25 25 20 - 25 20 - 25	KP 2:1 KP 2:1 / 3:1 KP 2:1 / 3:1 KP 3:1	150 - 160 160 - 170 150 - 170 150 - 170	155 - 165 165 - 175 160 - 190 160 - 190	160 - 170 170 - 180 165 - 200 170 - 200	- 175 - 185 - 175 - 205	170 - 190 180 - 190 170 - 200 170 - 200	above $n = 45 \text{ min}^{-1}$ air cooling for barrel required



Titanium-nitrided screws for optimum protection against wear (e.g. for ceramic materials, highly mineral-filled plastics, etc.)



## Thermosets

Material	Products	Barrel length L/D	Screw compression	Barrel temperatures					Remarks
				Zone 1	Zone 2	Zone 3	Zone 4	Die	
Epoxy resins (EP)	Rods	15	KL 1:1	80	80 - 90	110 - 130	–	110 - 130	possibly liquid heating / cooling of barrel and die head
Urea resin (UF)	Rods	15	KL 1:1	80	80 - 90	110 - 130	–	110 - 130	possibly liquid heating / cooling of barrel and die head
Melamines (MF)	Rods	15	KL 1:1	80	90	110	–	130	possibly liquid heating / cooling of barrel and die head
Phenolics (PF)	Rods	15	KL 1:1	80	90	100	–	110	possibly liquid heating / cooling of barrel and die head
Polyester (UP)	Rods	15	KL 1:1	70	80	90	–	100	possibly liquid heating / cooling of barrel and die head

## Elastomers

Material	Products	Barrel length L/D	Screw compression	Barrel temperatures					Remarks
				Zone 1	Zone 2	Zone 3	Zone 4	Die	
Natural rubber compounds, ribbons of rolled sheets, pellets, NBR	Round and Garvey profiles	10	KL 1:1	80	–	–	–	100	feed roll for ribbons, feed hopper for pellets
Synthetic rubber , compounds, ribbons of rolled sheets, pellets	Round and Garvey profiles, ribbon profiles	20	KL 1:1 KP 2:1	60 - 80	70 - 90	–	–	100 - 110	feed roll for ribbons, feed hopper for pellets; for flat profiles die up to 50 x 0.5 mm, scw KP 1:3

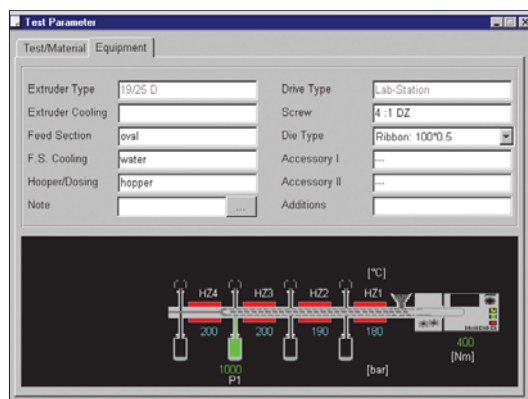
## Other materials

Material	Products	Barrel length L/D	Screw compression	Barrel temperatures					Remarks
				Zone 1	Zone 2	Zone 3	Zone 4	Die	
Electrodes	Round and flat profiles	20	KL 1:1	70	75	75	–	80	vertical feed screw; air cooling of barrel required; for flat profiles die up to 50 x 0.5 mm
Ceramics	Round and flat profiles, tubes	20	KL 1:1	40 - 60	50 - 70	60 - 80	–	80 - 100	screw and barrel made of special materials
Powder coatings	Ribbon and round profiles	25	KP 2:1 KL 1:1	70	80	90	100	100 - 120	frequently special screws with mixing section required; air cooling required

KP = screw with conical core  
 KL = screw without compression  
 DZ = metering screw 3-zones

... where quality is measured.

# Measuring Extruder



WinExt screenshot

## System configuration made easy

System configuration is easy: Just enter all pressure and temperature transducers with their measuring ranges and nominal values in the system configuration schematics from your PC. The PC automatically transmits these data to the controller.

In CAN bus operation, the measuring transducers are recognized automatically with their measuring range. Alarm limits for several measuring values like pressure, temperature, torque, etc. as well as the type of alarm can be set in a separate window.

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