WSG - PRIMO E & S



SIETES

Dry-cut Strand Pelletizing System

WSG - Strand Pelletizing of Compounds

Flexible Production

WSG - water bath pelletizing plants with pelletizers **PRIMO E** or **PRIMO S** are started up manually in the conventional manner. They are characterized by maximum flexibility.

Application area

The WSG plant configuration offers maximum flexibility for product changeover, e.g. in the production of small to medium-sized lots of masterbatch and standard compounds.

With this system **throughputs up to 3,300 kg/h** can be achieved for all polymers extrudable to strands.

Your benefits with WSG

- Maximum flexibility regarding:
 - Positioning of system components
 - Selection of materials
 - Pellet diameter and length
 - Process control
- Very high machine availability due to highly wear-resistant cutting tools
- Simple efficient cleaning and maintenance as well as fast product changeover





Process Sequence and Materials

Functioning of WSG Plants



- Polymer strands extruded from a die head [a] pass through the cooling trough [b] where they are cooled.
- 2 The air knife [c] ensures effective strand drying prior to cutting.
- The residual moisture after strand drying evaporates in the evaporation section.
- The intake device takes hold of the polymer strands and passes them to the cutting device [d], where they are cut into pellets.
- The pellets can be classified, cooled and conveyed in subsequent operations [e].
- The cooling water is filtered and tempered in a process water unit [f] and then returned to the cooling trough.

Materials application area

Compounds, blends and masterbatches based on:

Polyolefins, e.g. PP, PE Styrene polymers, e.g. ABS Polycarbonates, e.g. PC Polyesters, e.g. PET, PBT, PEN Polyamides, e.g. PA 6, PA 6.6 Thermoplastic elastomers, e.g. TPE, TPU

Other polymers available on request: sales.pm@rieter-automatik.de

WSG System Components

From Die Heads to Classifiers - Customized



Die head



Cooling trough

Die head

- Electric heating, divided up into several heating zones
- Guarantees uniform and homogeneous melt distribution
- For abrasive products die plate with wear protection
- Swivel joint for fast access to extruder screws
- Die head widths from 100 to 600 mm

Cooling trough

- Longitudinal adjustment of cooling trough possible by using a crank handle
- Mobile with rollers for precise alignment
- Supporting rollers stationary or swivelling, turnable and slidable
- Widths from 160 to 800 mm, length from 2 to 10 m

Process water unit

- Cooling via plate heat exchanger
- Process water conveyed with stainless steel pump
- Water tank with filling level control as buffer on system start-up optional
- With small systems treatment of process water integrated in the base frame of cooling trough
- Cooling capacity up to 525 kW, process water throughput up to 30 m³/h



Pelletizer PRIMO E



Process water unit

Air knife

- Required vacuum produced by blower with high suction capacity
- Dehumidification of air and feedback of water
- Space-saving positioning behind or alongside cooling trough
- Efficient sound encapsulation
- Suction die moveable and heightadjustable
- Working widths: 100, 200 and 400 mm

SIELES

Solutions for Your Requirements ...





Pelletizer PRIMO S

- Simple access for cleaning and maintenance ensured by cantilevered bearing system of PRIMO E
- PRIMO E lower feed roll can be driven by a separate motor and belt drive as optional feature enabling a variable adjustment of pellet length.
- A small classifier can be attached directly to machine frame of PRIMO 60 E
- The double side bearing of the robust PRIMO S assures highly constant cutting gap and long service life of cutting tools

Cutting tools

- Long service life of cutting tools depending on the selection of materials, e.g. cutting rotor for PA with 15 - 50 % glassfibre > 1,000 hours
- Wide range of materials, e.g. stainless tool steel, tungsten carbide, ceramic, diamond
- Wedged cutting rotor with positive interlock available (patented!)



Cutting head PRIMO E



Classifier on PRIMO 60 E



Cutting tools



Cutting head PRIMO S

Strand pelletizer

- PRIMO E: for small lots and laboratory applications
- PRIMO S: for small to medium-sized lots
- Little effort involved for cleaning and adjustment
- Start-up assistance for soft strands
- Shifting of operating range possible through selection of drive motors

Other Components

... Everything from a Single Source

Classifier

- Single decker for screening out overlengths
- Double decker for screening out fines
 and overlengths
- Very low vertical acceleration, thus avoiding stand-up of overlengths on
 screening surface
- Fast replacement of sieve insert

Plant control

- Adjustment of pellet length via frequency inverter with PRIMO E
- Function of other system components integrated in control system of pelletizer (e.g. air knife, classifier etc.)
- Data exchange with higher-level control systems

Spiral conveyor

- Cools and dries the pellets
- Low-maintenance
- Easy to clean





Classifier

Control panel



Dry Cut Strand Pelletizing System WSG with PRIMO E or PRIMO S

Technical Data

Pelletizer, type		PRIMO 60 E	PRIMO 120 E	PRIMO 100 S	PRIMO 200 S	PRIMO 300 S
Operating width (mm)		60	120	100	200	300
Drive system		AC-motor with belt drive		AC-gear motor with coupling		
Motor power pelletizer (kW)		2.2	4.0	3 - 7.5	3 - 11.5	3 - 15
Line speed (m/min) at pellet length 3 mm		20 - 90		30 - 70		
Number of strands at pellet diameter of 3 mm		10	20	25	50	75
Throughput rate (kg/h) at pellet length and -diameter of 3 mm and maximum number of strands (different numbers in brackets)						
Product	Density (g/cm³)					
PP, PE	0.91	350	700	850	1,700	2,550
GPPS, SAN	1.04	400	800	1,000	2,000	3,000
ABS, HIPS	1.04	400	800	1,000	2,000	3,000
PMMA	1.18	450	900	1,100	2,200	3,300
PET, PBT	1.31	500	1,000	1,200	2,200	3,000
PA 6, PA 66	1.14	425	750 (17)	1,100	1,900	2,200 (65)
PET, PBT, PA, PP, PC +	1.00	375	625 (16)	850	1,600	1,800 (60)
15 - 50 % glass fiber	1.55	500	800 (16)	1,250	2,300	2,750 (60)
Thermopl. Elastomers	1.10	425	850	1,050	2,100	3,150
Masterbatch > 40 % fillers	1.30	500	1,000	1,050	2,100	3,150

For research testing and product development an efficient and well-equipped tech-center is available in Grossostheim.

And when can we welcome you there?

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ARAM3001en-AKAE-LM-Printed in Germany



