

Gear Pelletizer GCS/GMS

Extrusion of stable cylindrical Pellets

Gear pelletizer with cantilevered shafts and gasketed cover for dust-free operation



The Working Principle

Below the feeding hopper a pair of gear type toothed rolls are counter rotating. Product is pulled in by the rolls and pressed through nozzle bores which are situated between the teeth. In the press channels the product is densified into cylinder shaped pellets. The pellets emerge at the inside of the hollow gear type toothed rolls.

The Construction

In most cases, gravity force feeding is sufficient. For extremely bad flowing products agitating elements are installed in the feed hopper. A special feed hopper with an agitator designed like a screw is used for viscoplastic feed materials.

The rolls are sealed at both sides by cheek plates against lateral material escape. For the same working principle according to the case of application the optimum roll bearing is used. The model GMS uses mill shafts, and the model GCS has cantilevered shafts.

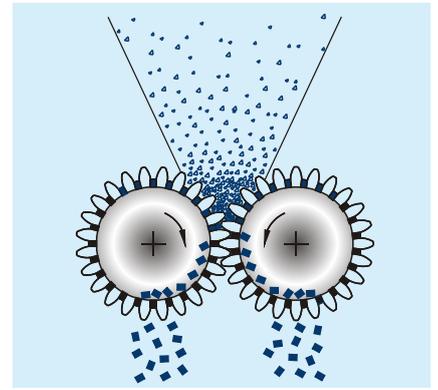
For improvement of product discharge inside the hollow rolls, adjustable cutting knives are installed, which are easily accessible.

A gasketed cover ensures dust-free operation and is especially suitable when purging is done with inert gas or solvents are present.



a Pair of rolls with press nozzles bored in solid extrusion rolls

b Pair of rolls with nozzle inserts



Toothed Rolls and Nozzle Plates

Press rolls can be designed with nozzles bored in solid extrusion rolls or with exchangeable nozzle inserts. If at product changeover a different nozzle geometry is necessary, the nozzle inserts are easily and quickly changed. Densification is determined by the relation of nozzle diameter to nozzle length. Through counterbores the nozzle length can be shortened. The appropriate choice of the press rolls, tooth shape, nozzle diameter and nozzle length depends on the charged material and on the required product properties.



The Product

The pellet diameter is determined by the diameter of the press channel. With gear type pelletizing machines stable cylindrical pellets with a diameter range of 1 to 10 mm can be produced. The cylindrical pellets dispose of a smooth surface, a constant diameter and are only rarely bent. Often the length of the single pellets is very uniform.



Technical Data

Model	Drive	Roll	
	kW	ϕ mm	Width mm
GCS 200	4,0 - 7,5	200	40 - 100
GCS 300	18,5	300	80 - 120
GMS 200	11,0	200	80 - 100
GMS 300	22,0	300	200
GMS 300	30,0	300	2 x 200

Usual nozzle design

- 1 Press nozzles bored in solid extrusion rolls
- 2 Press nozzles bored in solid extrusion rolls, shortened by counterbores
- 3 Nozzle inserts with short length (small L/D ratio)
- 4 Nozzle inserts with large length (high L/D ratio)

