MAAG Group
a DOVER company

PELLETIZING SYSTEMS ›
› UNDERWATER PELLETIZING

High capacity centrifugal dryers

Pellet Processing Systems for the Plastics Industry

GALA

Design innovations for high capacity centrifugal dryers

- Segmented Rotor Designs
- Wedge Wire Rotor Screens
- Circular Wedge Wire Feed Screen
- Wedge Wire Dewatering Screens (Model 70, 100 & 150)
- Heavy Duty Housings (Model 70, 100 & 150)
- Proven designs from full scale testing
- Positive (Face) Seal Agglomerate Catcher
- Four (4) Year Warranty (from time of shipment)

Machinery and systems made by MAAG/Gala stand for cost effectiveness, flexibility, and reliability worldwide. With over six decades of experience and an installed base of currently more than 8,000 pelletizing and drying systems, MAAG/Gala helps its customers achieve maximum profitability.

Your benefits

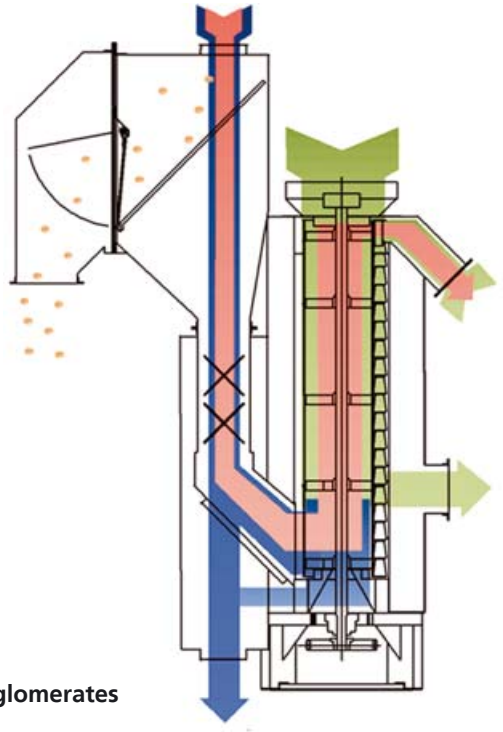
- Safety — timed door interlocks
- Easy access
- FEA supported design
- Vibration monitoring available
- Low noise emissions
- Low energy consumption
- Suitable for various applications
- Minimum floor space
- Proven reliability
- Customization available
- Full scale demonstration available

High capacity centrifugal dryers

Function and Application

Functioning of the Gala centrifugal drying systems

The pellets emerging from the pelletizer are carried by the process water through piping to an agglomerate catcher at the inlet of the centrifugal dryer. The agglomerate catcher protects the dryer by removing larger pellet clusters (agglomerates) that may be produced during startup before they enter the dryer rotor. Large systems are equipped with a pre-dewatering system in which up to 95% of the process water is separated from the pellets. The pellets and residual water flow into the rotor section of the dryer. Both the speed of rotation and the design of the lifters inside the rotor cause the pellets to move between lifters and screens while being conveyed by centrifugal action in a helical path up the dryer rotor. The water is separated through the screens, and the pellets are continuously conveyed into the upper section of the dryer where they are discharged from the resin outlet.



Red = Pellets
Green = Air
Blue = Water
Orange = Agglomerates

The drying process reduces the residual moisture, depending on the polymer. Final drying is achieved in the upper two-thirds of the screen surface and in the pellet outlet chute of the dryer. Dry, countercurrent air flow, generated by an external exhaust fan, removes the residual surface moisture from the pellets, assisted by the pellets' latent heat.

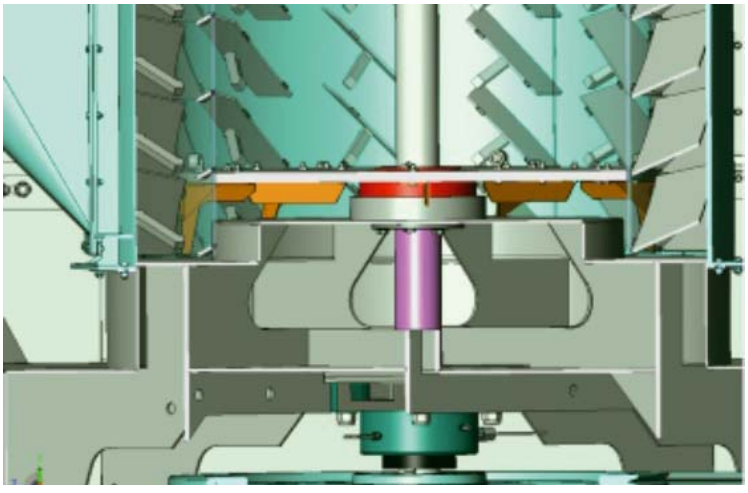
The pellets are targeted to exit the dryer continuously at a residual moisture of 0.05% (LDPE). The length of the water transport line impacts the residual moisture of the pellets and determines the pellet temperature entering the dryer. Additional factors that influence residual moisture are pellet size and shape, pellet surface, and hygroscopic characteristics. In some cases, additional cooling, post-drying, or classification may be utilized. Materials of construction are offered in 304L stainless steel (which is standard), 316L Stainless Steel, 2205 duplex Stainless Steel and Hastalloy.

Labyrinth seal of bottom bearing

- Leak proof design tested and proven at full rate testing facility
- No mechanical seal required
- Eliminates costly seal maintenance

B-10 bearing life

The bearings used on Gala dryers (Rexnord / Sealmaster®) have a calculated B-10 bearing life that meets and exceeds 50,000 hours. The B-10 calculations were performed by following the bearing manufacturer's instructions.



Labyrinth Seal

High capacity centrifugal dryers

System components

Advantages of the solid rotor on model 100 and 150 dryers

- Stronger construction
- Ability to run higher rotor speeds
- One-piece solid shaft
- Easier shaft replacement and alignment
- More efficient conveying from feed section; more pellets flow into rotor
- Built to feed in up to 150 t/h into rotor

Solid Rotor

Dryer rotor screens

The screens are an integral part of the centrifugal dryer and serve to retain the pellets in the rotor area as they travel up the rotor to the pellet outlet. The surface moisture escapes through the screen openings and drains back into the process water tank. Wedge wire screens are used on high capacity centrifugal dryers for their strength, durability and simplification of the pellet flow path by eliminating screen mounting rings that can impede pellet flow.

Wedge wire screens have continuous slots, which have more usable open area, are stronger, and more durable than wire mesh or perforated metal screens. Each intersection of rod and wire is welded, resulting in longer wear life. Greater strength and durability of these screens reduces the chance of screen failure and loss of pellets, combined with construction features that minimize potential for contamination.

Advantages of wedge wire feed screens and dewatering screens on Models 70, 100 and 150 dryer:

- Cylindrical design absent of support structures
- Greater dewatering ability due to wedge wire construction
- All welded S/S construction = greater strength and extended service life

Benefits:

- More usable dewatering area than punched screens, as center support rings are eliminated
- Better air flow = more efficient pellet drying
- Designed with removable panels = easy access to dryer rotor

Model 12 Pneumatically Actuated Face Seal Agglomerate Catcher

Model 4 Manually Operated Agglomerate Catcher

Pneumatically Actuated Pellet Diverter Valve

Pellet diverter valve

The purpose of the pellet diverter valve is to divert product (pellets) from the pellet outlet of the centrifugal dryer during start-up, for product sampling, or for filling containers.

The pneumatically actuated pellet diverter valve bolts to the pellet outlet of the dryer and is constructed of 304L stainless steel.

Positive (Face) seal agglomerate catcher (PSAC)

The positive seal agglomerate catcher is bolted to the dryer inlet and is designed to catch and discard oversized pellet clusters (agglomerates) before they engage the dryer rotor. Constructed of 304L stainless steel, the agglomerate catcher includes an inclined grate and a gasketed, pneumatically actuated access door for cleaning. Sealing is outside the pellet path. Features include a recessed flapper door, extended agglomerate grate, and removable grate.

Advantages:

- Pneumatically actuated gasket seal around the agglomerate catcher gate provides a solid seal to eliminate moisture leaks.
- Gasketed, pneumatically actuated gate seal prevents accidental operator exposure to hot process water.

Centrifugal dryers

Support and technical specifications

Supported by 24-hour Service Worldwide!

Technical Support:
Gala has earned its reputation for providing prompt, dependable service – before, during and after the sale. The mobile phone number of every technician is published on our website so they are available 24 hours a day. Every Customer call is handled with priority.

Training:
Customers are able to order classroom and hands-on training for operators and maintenance personnel on all of our Gala-manufactured equipment, either at the Customer's facility or at Gala's Technical Center.

Technical Centers:
Gala's technical centers are available to Customers who wish to evaluate the suitability of a Gala System for purchase, for assistance in product development, R&D, or for product market sampling.

	Model 60	Model 70	Model 100	Model 150
Drying Capacity (1)	60,000 kg/h (130,000 lbs/hr)	70,000 kg/h (150,000 lbs/hr)	100,000 kg/h (220,000 lbs/hr)	150,000 kg/h (330,000 lbs/hr)
Dewatering Capacity Max. BF (GPM)	90 m^3/h (400 GPM)	90 m^3/h (400 GPM)	90 m^3/h (400 GPM)	90 m^3/h (400 GPM)
Dewatering Capacity Max. DW (GPM)	685 m^3/h (3,000 GPM)	910 m^3/h (4,000 GPM)	1,360 m^3/h (6,000 GPM)	1,360 m^3/h (6,000 GPM)
Air Flow (CFM)	18,700 Nm^3/h (11,000 CFM)	18,700 Nm^3/h (11,000 CFM)	21,875 Nm^3/h (12,800 CFM)	21,875 Nm^3/h (12,800 CFM)
Motor Size	55 kW (75 HP)	55 Kw (75 HP)	93 kW (125 HP)	112 kW (150 HP)
Rotor Screens	wedge wire 1.4mm (0.055") slotted openings	wedge wire 1.4mm (0.055") slotted openings	wedge wire 1.4mm (0.055") slotted openings	wedge wire 1.4mm (0.055") slotted openings
Dewatering Screens	punched 1.9mm (0.075") round openings	wedge wire 1.4 mm (0.055") slotted openings	wedge wire 1.4mm (0.055") slotted openings	wedge wire 1.4mm (0.055") slotted openings
Feed Screen	circular wedge wire 1.4mm (0.055") slotted openings	circular wedge wire 1.4mm (0.055") slotted openings	circular wedge wire 1.4mm (0.055") slotted openings	circular wedge wire 1.4mm (0.055") slotted openings
Rotor Speed	385 RPM	385 RPM	385 RPM	385 RPM
Housing Design	easy access (2)	heavy duty (4)	heavy duty (4)	heavy duty (4)
Rotor Removal	through top (3)	through side (5)	through side (5)	through side (5)
Agglomerate Catcher	Model 18 PSAG	Model 20 PSAG	Model 28 PSAG	Model 28 PSAG
Pellet Diverter Valve	Model 7.14	Model 9.20	Model 9.20	Model 9.20

Specifications are subject to change without notice when products are improved in quality of performance.
(1) Capacity is based on 1/8" (3 mm x 3 mm) round, smooth LDPE pellet
(2) Must be shipped vertically
(3) Needs overhead clearance for rotor removal
(4) Can be shipped horizontally
(5) Needs minimum overhead clearance for rotor removal

MAAG/GALA is the leading manufacturer of centrifugal dryers in the world.

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PUMP & FILTRATION SYSTEMS › MAAG ETTLINGER
PELLETIZING SYSTEMS › GALA SCHEER AUTOMATIK REDUCTION
PULVERIZING SYSTEMS › REDUCTION
RECYCLING SYSTEMS › ETTLINGER

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