





# The greatest trust in post harvest, you find it here!

Over 55 years of history, Industrial Pagé is considered one of the largest manufacturers of grain storage and material handling equipment in Latin America.

Our industrial center is located in Araranguá city in a large and modern industrial park with a building area of 21,506 m<sup>2</sup> and total area of 94,000 m<sup>2</sup>.

Today, Industrial Pagé is focused on investing in technology and using the most modern concepts of production systems to keep a modern and updated industrial park.

The company provides a complete range postharvest of equipment, such as, storage silos, cereal dryers, cereal pre-cleaning and cleaning machines, cereal conveyors, cereal elevators, shipping bins, dust collection systems, rice parboiling systems, port equipment and spare parts





The line of flat bottom silos of Industrial Pagé has as main advantage the low cost per stored ton, being the best option of grain storage for a long period of time. The silos are manufactured in galvanized structural steel sheet, type ZAR345, with coating zinc of 350g/m², obeying the international standards of structural drawings and also attending the necessities of storing for any kind of bulk cereal. They have capacities of 98,0 m³ (73.5 ton) and 19,632.8m³ (14,7 ton). Beyond all these features in the structural conception that allows more gain in the grains quality, they also attend to the current legislation and ensure the operational safety. Pagé silos also have internal and external stairs, type sailor, and maintenance door on the sides and on the cover, which are totally sealed eliminating the fake air exit and the entrance of humidity inside the silo.

# **TECHNICAL SPECIFICATIONS**

Models:	Ø5.5 – Ø33.0 (Soybean / Corn / Rice)
Capacity (bags):	1,225 to 284,181
Volume (m³):	98 to 22734
Diameter/m:	Ø5.5 to Ø33.0
Height/m:	5.18to 29.6
Roof pitch (°):	30 and 40
Aeration:	Large channel (SAF), small channel (SA), total false bottom (SFP), square bottom
Thermometer:	Digital
Load spreader:	Kinetic or motorized
Ladders:	Fixed and winding
Safety standards:	NR-12 / NPT-027 – NBR 6123 (144 km/h) – ANSIS/SAE EP 433



#### **ACCESS AND SAFETY:**

- Rescue door: Silos from Ø7.3 (Optional)
- Internal anchor points in the silo body every 4.0 m vertically (Optional)
- ## nternal anchor points in the silo body according to the silo diameter (Optional)
- Wind rings
- Monopod support for lifting up to 140 kg: Silos from Ø7.3 (Optional)
- Access doors (roof and body)
- Guardrail on roof (Optional)
- **C** Vents



The conical bottom silos of Pagé may be used as temporary storing in the reception or drying adjusting the product flow and optimizing the equipment yield. It also can be used as road or railroader dispatching.

The silos are manufactured in galvanized structural steel sheet, type ZAR345, zinc coating of 350g/m², obeying the international standards regulations of structural drawings and also attending the necessities of storing for any kind of bulk cereal. The capacities can vary from 6 to 700 tons. They have standard discharging cones in 45° angle and galvanized metallic supporting structure. They have as options: shock absorber ramp, aeration system, coating in flat steel sheet and funnel with 60° angle.

# **TECHNICAL SPECIFICATIONS**

Models:	Ø3.6 to Ø11.0
Capacity:	384 to 23,364
Volume (m3):	29.1 to 1.770
Diameter/m:	Ø3.6 to Ø11.0
Height/m:	6.05 to 26.3
Roof pitch:	30/40
Funnel tilt:	45/60 – 45 (Ø11.0)
Aeration:	Optional (centrifugal fans and use of channels)
Ladders:	Fixed and winding (silos from Ø6.4)
Distribution:	Structure available for models Ø3.6 to Ø5.5 (5.0 m headroom)
Safety standards:	NR-12 / NPT-027 – NBR 6123 (144 km/h) – ANSIS/SAE EP 433



# **ACCESS AND SAFETY:**

- Monorail for trolley: Silos from Ø7.3 (Optional)
- Rescue door: Silos from Ø7.3 (Optional)
- ✓ Internal anchor points in the silo body every 4.0m (Optional)
- Access doors (Roof and body)
- Guardrail on roof (Optional)
- ✓ Vent





The metallic dispatching hopper Pagé has its body manufactured in galvanized panels with internal reinforced beams. They are modeled in 4X4 meters cells, each one having the storage capacity of 40 tons for products as soybean, corn, wheat, sorghum and others.

Each cell has two discharging funnels with inclination angle of 45° with manual regulator which can be switched on from the distance. Its structure is compounded by squared tubular columns and metallic truss made of structural steel.

It has inspection door in the cover, external catwalk to the access to the regulators, sailor stairs to access the cover and internal stairs to access the body of the granary.

Special Granaries - Industrial Pagé also develops special dispatching road and railed granaries, according to the customers' necessity.

# **TECHNICAL SPECIFICATION**

Models:	Grains (35° funnel) or impurities (60° funnel)
Volume (m3):	55 to 165 (35°)   60 to 180 (60°)
Capacity:	682 to 2,666 bags (grains)
Dimensions (WxH):	5 and 16
Safety standards:	NR-12 / NPT-027







Pagé Grain Dryers were developed obeying the indispensable criteria in the drying units, such as: performance, efficiency and ease of operation.

The dryer is metallic manufactured in galvanized steel sheet, its main body has drying and cooling chambers formed by triangular ducts where the air can get into one side and exit on the other side going through the grain mass and having the drying.

They can be used with drying by system of entire column (2/3) or in drying by batch (1/3). The discharging system is executed by rotary gear or pneumatic system. According to the type of grains to be dried and the percentage of initial humidity, the dryers can work in continuous or intermittent system.

The line of grain dryers Pagé has the most advanced technology in grain drying. They are designed to preserve the physical quality of the grains reaching the least environmental impact possible. Pagé dryers are of ease operation, ease installation and of high performance at the results. They also offer some special features that only Pagé can provide, such as: More drying uniformity, Better drying yield and Better thermal energy utilization.

#### MODELS:

- Continuous dryer (Trestle tower)
- Continuous flow dryer for Rice (trestle tower)
- C Dryer of variable duct
- Continuous flow dryer of Column

# **TECHNICAL SPECIFICATIONS**

Models:	10 to 200
Airflow:	Whole column / Cooling recirculation
Capacity (th) – Flow:	10 to 200 (Soybean) / 7.5 to 150 (Corn)
Capitation:	Cyclonic
Installed power (hp):	10 to 200
Level sensors:	Minimum and maximum
Temperature sensors:	According to model
Load:	Gravity or conveyor
Safety standards:	NR-12 / NPT-027



# **FEATURES:**

- Monitoring of the operation for better drying performance
- Safe operation with drying quality
- Event alarms and preventive maintenance





Pagé pre-cleaning and cleaning machines for grain are essential for grain storage unities because they can increase the stored grain quality and decrease the power consumption of the dryers.

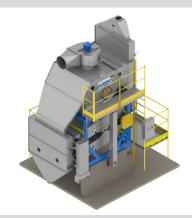
The machines are totally metallic and can support the rated capacity of hard work with less cost and without losing the final quality of cleaning. The cleaning system acts by sifting, where the large and small impurities are removed, regardless weight, and acts by aspiration, where the light impurities are eliminated by the fan.

It features dust collection system using cyclone or bag filter along with pipes to connect the machine to the collection system.

The sieves are interchangeable for easy replace and can work with different products. The impurities remaining in the sieves or in the aspiration gutters are manually collected or can have automatic collection.

# **TECHNICAL SPECIFICATIONS**

Models:	MPL 40 to MPL 240 / ML 40 to MPL 240
Power:	5.0 hp to 12.5 hp
Pre-cleaning capacity (t/h):	40 to 240 metric tons/h
Cleaning capacity (t/h):	40 to 240 metric tons/h
Height (m):	3.5 to 6.7 m
Width (m):	2.2 to 3.3 m
Sieve opening area (m2):	15.8 to 35 m <sup>2</sup>



The purpose of the cereal pre-cleaning and cleaning machine is to eliminate the greatest possible number of impurities to provide good drying and/or storage, being one of the equipment of fundamental importance in grain storage units, as well as increasing quality of stored grains, reduce the energy consumption of dryers.



The bucket elevators Pagé are designed to work in vertical position of solid bulk in continuous operation. Totally made of galvanized steel sheet, the capacity can vary from 5 to 1,500 ton/hour and the electrical drive is by gearmotor

# **COMPONENTS**

#### Standard module

Manufactured in galvanized steel sheet, they are connected by a system called CLINCH, without welding process, and have flange in galvanized structural profile. We have models in different heights, such, as 1.0, 1.5 and 2.0 meters, they have stairs with handrail accordingly with the safety international standards.

#### **Bottom module**

Manufactured in galvanized steel sheet and structural profiles, they have loading hopper in SAE1045 steel which is resistant to the corrosion. Its cleaning system is by drawer, pulley and axle mounted on the bearing.

#### Drive module

Its head is totally made in galvanized steel sheet, it has reinforced beam made of SAE 1045 at the points that are in touch with the grain, which ensures the lifetime against the corrosion. The drive system is compounded by pulley. It has catwalk for maintenance with baseboard, handrail and nonslip floor.

## **Buckets**

The buckets from Pagé can be plastic (Polyethylene) or metallic (normal steel or stainless steel) depending on the use of the product to be transported and the model of the elevator. They have the formal models, "seed" and "leaked" (high flow) and provide a big range of volumetric capacities.

# **TECHNICAL SPECIFICATIONS**

Models:	4010 - 5013 - 6018 - 6028 - 6034 - 8040 - 10050 - 10060 - 10090
Capacity (t/h) – grains:	5 to 800 metric tons/h (0.75 t/m³) / 4 to 640 metric tons/h (0.60 t/m³)
Capacity (t/h) – seeds:	5 to 450 metric tons/h (0.75 t/m³) / 4 to 365 metric tons/h (0.60 t/m³)
Capacity (t/h) – bran:	5 to 490 metric tons/h
Speed (m/s):	1,5 ro 3 m/s
Chute modulation (m):	0.5 - 1.0 - 1.5 - 2.0 - 2.5 - 3.0
Drives:	2.0 hp to 300 hp
Belts:	5" to 34"
Sensors:	filling, speed, misalignment and temperature.
Ladders:	NR-12
Safety standards:	NR-12 NPT027





Pagé grain conveyors are designed to the horizontal transport of solid bulk, aiming high capacity of transport and preserving the physical integrity of the grains with low power consumption.

# **CHAIN CONVEYORS**

Pagé chain conveyors are an efficiency and flexible mode for the bulk transport in the short distance. These conveyors are made in galvanized steel sheet and with steel chain of high abrasion resistance. Its electrical drive is by gearmotor and can have many loading and unloading points at the same conveyor, besides the possibility of working in a reversible mode. They are totally closed, eliminating the water infiltration and avoiding the exit of particles that comes from the moving of the grain to the environment. Due to its constructive way, becomes very safe for the operation and physical integrity of the workers.

Models:	200; 250; 300; 350; 400; 500; 600; 700
Capacity (t/h):	72 to 600
Speed (m/s):	0.50 to 0.72
Modulation (m):	modular 1 m; 1.5 m; 2 m; 2.5 m, 3 m
Tilt operation:	maximum 14°
Tilt operation: Sensors:	maximum 14° filling, speed and temperature.

# **BELT CONVEYORS**

Used for the horizontal or inclined transport of bulk grain, Pagé belt conveyors are products of efficiency operation that aims to preserve the integrity of the product to be transported. Are manufactured in galvanized steel sheet, with electrical drive by gearmotor and have a capacity up to 1,500 ton/hour. They have low cost for maintenance and excellent operational return, because they avoid the damage from the grain shock. They can work with many points of loading and unloading at the same conveyor and have accessories that ensure the quality of grain transport: Fixed load board, Mobile load board, Fixed tripper, Mobile tripper, Electrical tripper, Cover and Automatic stretchers.

Models:	12"; 16"; 20"; 24"; 30" ; 36"; 42" ; 48" ; 54"	
Capacity (t/h):	24 to 1500 t/h	
Speed (m/s):	2,4 to 3,5 m/s	
Modulation (m):	modular, 1 m; 2 m; 3 m	
Tilt operation:	maximum 12°	
···· operationi	maximum 12	
Sensors:	filling, speed, misalignment, emergency switch, temperature.	





# **SCREW CONVEYORS**

The screw conveyors Pagé are made for the continuous horizontal transport, and with maximum inclination of 25°, with low-cost and easy applicability. The electrical drive is by gearmotor and can have its body in folded sheet or in U shape.

Each module has gutter, cover of steel sheet, spiral and other components that changes accordingly with the type of the module, as manual or pneumatic regulator, inspection cover and others.

Models:	200; 250; 300; 350; 400; 500; 600; 700.
Capacity (t/h):	72 to 600 ton/h (0,75 ton/m³)
Speed (m/s):	0,50 to 0,72.
Modulation (m):	modular 1m; 1,5m; 2m; 2,5m, 3m.
Tilt operation:	maximum 14°
Sensors:	filling, speed and mancais temperature.
Registration:	manual/pneumatic
Safety standards:	NR-12 / NPT-027



# **BULK-FLOW TYPE CHAIN CONVEYORS**

Pagé Chain Conveyors "Bulk-Flow Type" are an efficient, safe and versatile way to move bulk goods over short and medium distances. Due to the features of its design, it allows these conveyors to operate at angles from 0 to 75 degrees. These conveyors are made of galvanized steel sheet and with a high abrasion resistant steel chain. It is driven by a gearmotor and can have several loading and unloading points at the same conveyor. They are completely closed, eliminating the infiltration of water and preventing the release of particulates from the moving grains into the environment. Due to its constructive shape, it is very safe for the operation and physical integrity of workers.

Models:	200; 250; 300; 350; 400; 500; 600; 700.	
Capacity (t/h):	75 to 275 ton / h (0.75 ton / $\mathrm{m}^3$ ) (with 45 graus inclination)	
Speed (m/s):	0,4 to 0,6.	
Modulation (m):	modular 0,5m; 1m; 1,5m; 2m.	
Tilt operation:	maximum 75°	
Sensors:	filling, speed and mancais temperature.	
Registration:	manual/pneumatic	
Safety standards:	NR-12 / NPT-027	







# **CENTRIFUGAL COLECTOR**

Its function is to reduce quantity of particles in the air during the dryer exhausting process, without using water. Industrial Pagé has developed two lines of centrifugal collector: the centrifugal collector without propeller and the ones with propeller.

These kinds of collector have high efficiency at removing thick particles from the air and medium efficiency at removing light particles from the air.

# **BAG FILTERS**

Pagé bag filters are made of steel sheet, galvanized or painted. The bags are made of polyester which helps the equipment to have a better efficiency in removing particles from the contaminated air which come from some equipment, such as, conveyors, pre cleaning machines and others. They can be manufactured using cleaning system by air pulse (automatic) or manual cleaning.

The retained impurities are eliminated through rotating valve which is reinforced. In bigger models, there is an internal screw conveyor that takes the material to the valve.

In all types of bag filters, the access to the bags is easy and the changes can be made in a fast way, avoiding stopping for long periods.

# **DUST WASHER**

It is used to retain the particles, which come from grain dryers, from the air. The dust washer is the equipment of better efficiency existing in the market for retaining thin and thick particles.

It is a centrifugal capitation system combined to the water sprinkler system.

Constructed in carbon steel sheet, galvanized or painted.



Industrial Pagé Ltda, operates in the agricultural market, producing, in addition to equipment for storage, transport and processing of grains and cereals, replacement components for all equipment produced by the company and by other manufacturers.

At Industrial Pagé you will find original spare parts for silos, dryers, pre-cleaning machines and all necessary loading and unloading movements that complete the equipment, in addition to complete plumbing, tubes, discharges, shock absorbers, rings and clips.

All products are manufactured with the quality and technology that only Industrial Pagé has, to serve customers in Brazil and abroad.







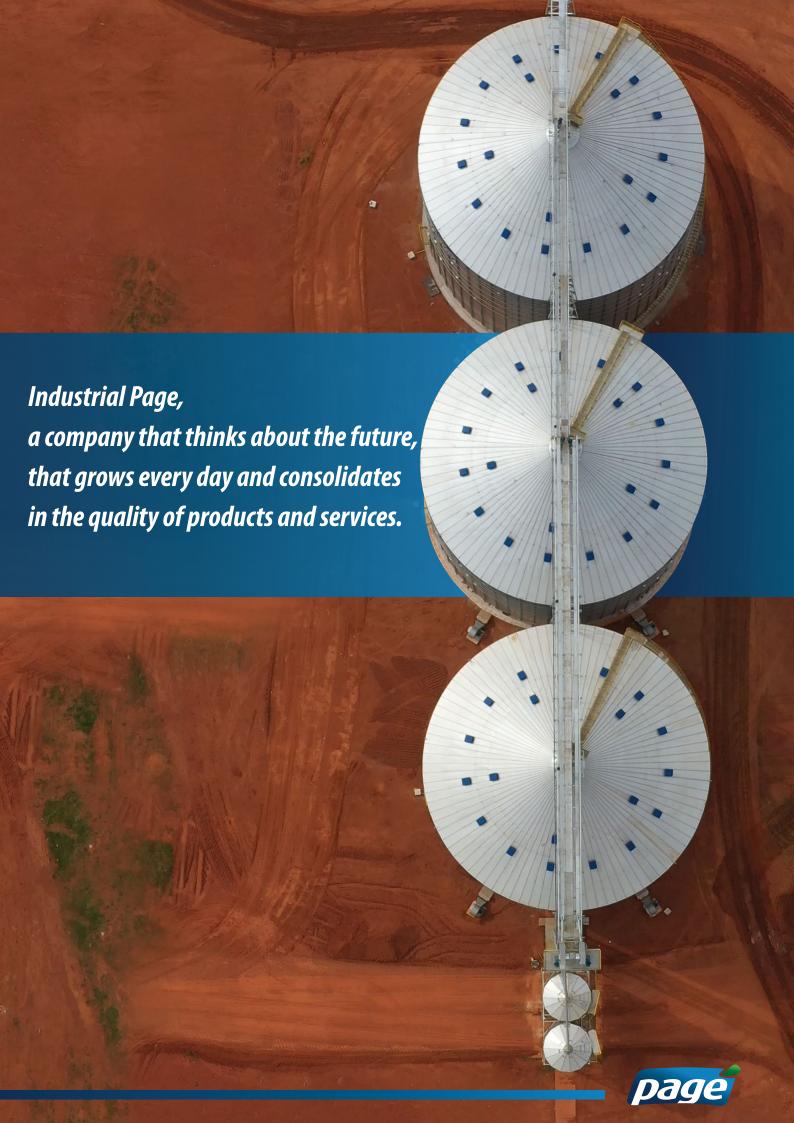


# NATIONAL AND INTERNATIONAL MARKET

The equipment manufactured by Industrial Pagé has consolidated in the national and international market. In the national territory Pagé has sellers, supervisors and representatives strategically located throughout Brazil.

In the international market, it has a strong global presence in the countries of South America, Central America, the Caribbean and Africa, as well as Mexico, the United States, Ukraine, Turkey and Cambodia, among others.







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