

SMART

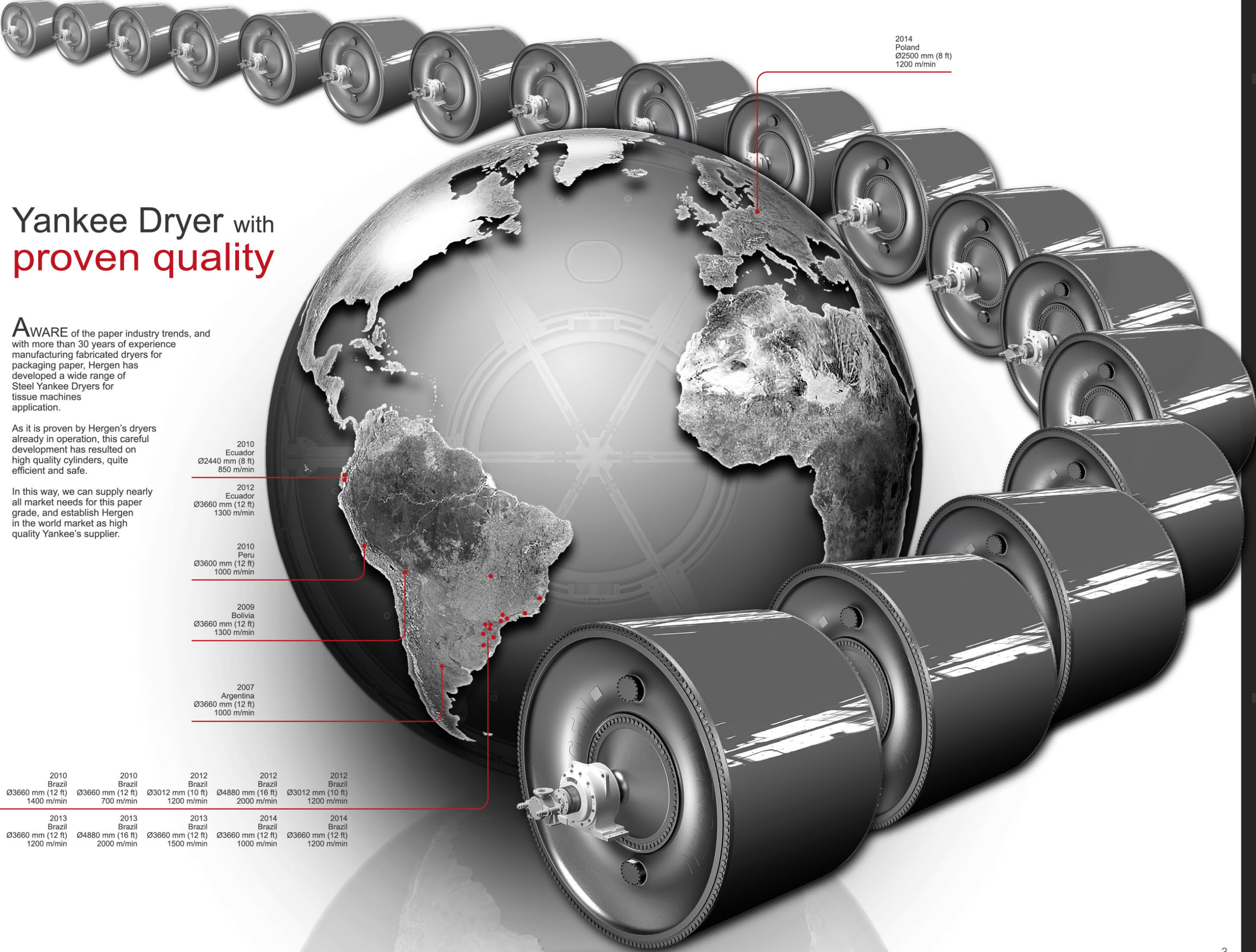
YANKEE DRYER

Steel Yankee Dryer



HERGEN
PAPER MACHINERY

2014
Poland
Ø2500 mm (8 ft)
1200 m/min



Yankee Dryer with proven quality

AWARE of the paper industry trends, and with more than 30 years of experience manufacturing fabricated dryers for packaging paper, Hergen has developed a wide range of Steel Yankee Dryers for tissue machines application.

As it is proven by Hergen's dryers already in operation, this careful development has resulted on high quality cylinders, quite efficient and safe.

In this way, we can supply nearly all market needs for this paper grade, and establish Hergen in the world market as high quality Yankee's supplier.

2010
Ecuador
Ø2440 mm (8 ft)
850 m/min

2012
Ecuador
Ø3660 mm (12 ft)
1300 m/min

2010
Peru
Ø3600 mm (12 ft)
1000 m/min

2009
Bolivia
Ø3660 mm (12 ft)
1300 m/min

2007
Argentina
Ø3660 mm (12 ft)
1000 m/min

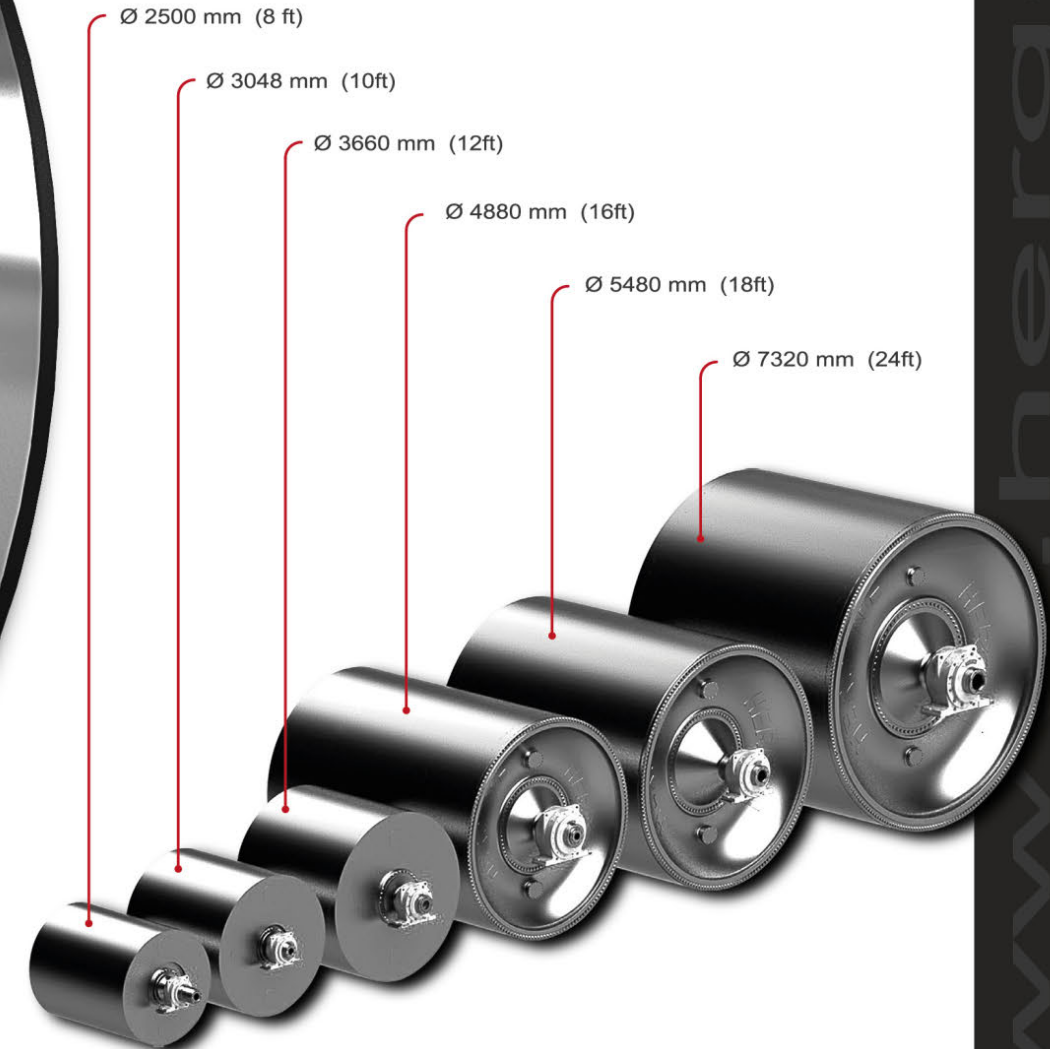
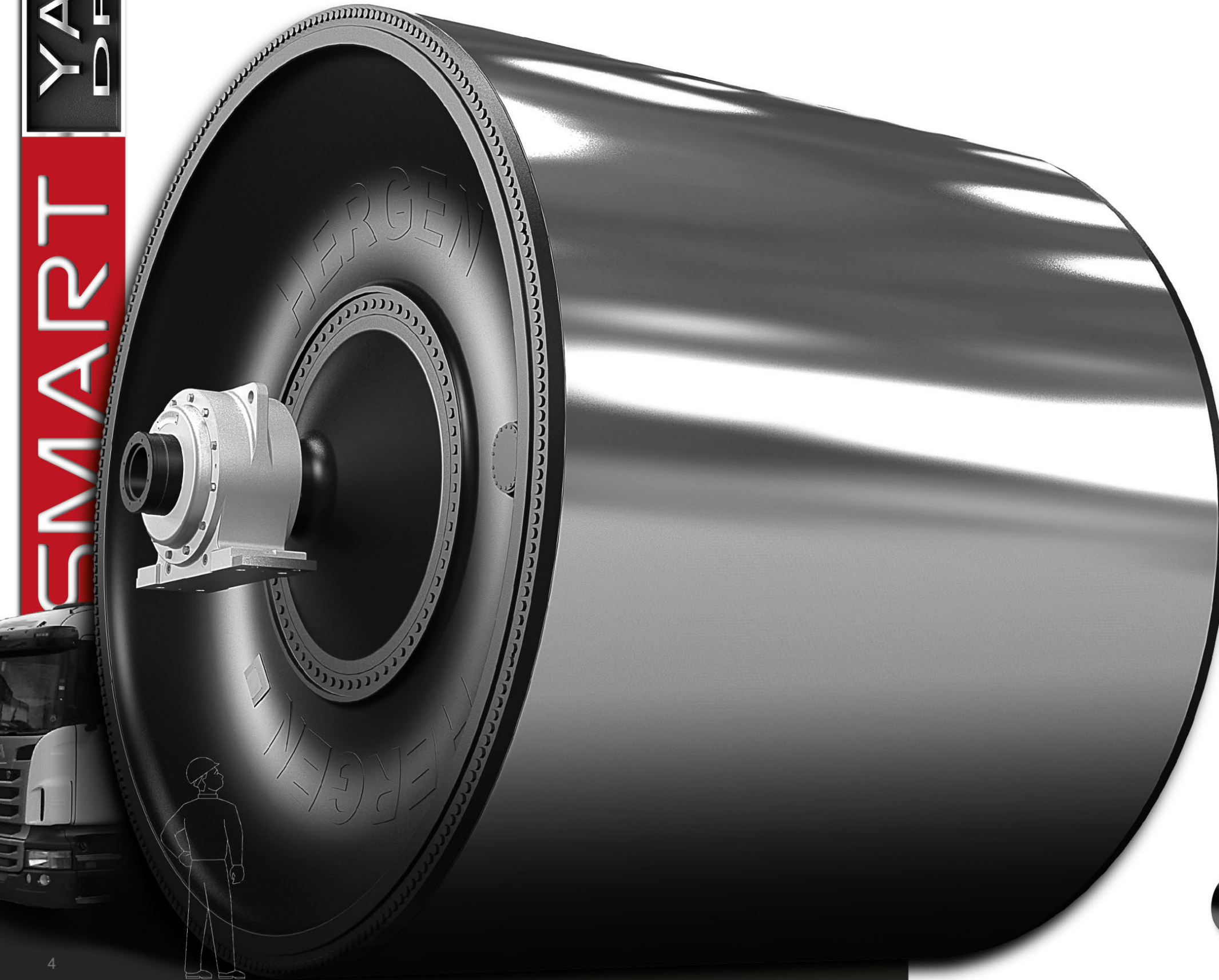
2006 Brazil Ø3660 mm (12 ft) 1000 m/min	2010 Brazil Ø3660 mm (12 ft) 1400 m/min	2010 Brazil Ø3660 mm (12 ft) 700 m/min	2012 Brazil Ø3012 mm (10 ft) 1200 m/min	2012 Brazil Ø4880 mm (16 ft) 2000 m/min	2012 Brazil Ø3012 mm (10 ft) 1200 m/min
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2013 Brazil Ø3660 mm (12 ft) 1500 m/min	2013 Brazil Ø3660 mm (12 ft) 1200 m/min	2013 Brazil Ø4880 mm (16 ft) 2000 m/min	2013 Brazil Ø3660 mm (12 ft) 1500 m/min	2014 Brazil Ø3660 mm (12 ft) 1000 m/min	2014 Brazil Ø3660 mm (12 ft) 1200 m/min
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Yankee dryers with Ø 7320 mm (24 ft) for double width machines (up to 6500 mm)

Expansion of manufacturing line

AIMING to further expand our line in this segment, we began a major expansion in our manufacturing facilities and we will soon be able to produce cylinders with diameters up to 7320 mm (24 ft) and double width (up to 6500 mm).



Manufacturing features

(supply option with bolted heads)

Shell

- it is built in ASTM steel plate with ultrasound inspection of the whole plate
- diagonal welding seam
- heat treatment for stress release
- ribbed internal surface
- excellent geometric precision

Rotary joint

- flexible design, which allows the assembly of mono or duo flow rotary joints, depending on application

Heads

- optimized design to ensure stiffness and reduced weight (for bolted head dryers)
- built in ASTM casted steel (for bolted head dryers)
- ultrasound inspection of the whole part
- two manholes
- effect sealing to avoid Head Tilt

Sealing

- exclusive sealing system with proven efficiency against steam leakage

Bearing housings

- built in nodular cast iron
- designed to work with oil bath or circulating oil lubrication
- bearings assembled directly on dryer journal with hydraulic mounting

Condensate removal system

- soda straw type
- designed to compensate thermal expansion
- special adjusting system for a precise control of the distance between each straw pipe and groove bottom
- all straw tips are manufactured in hardened stainless steel that features high wear resistance

Central Stay and Journals

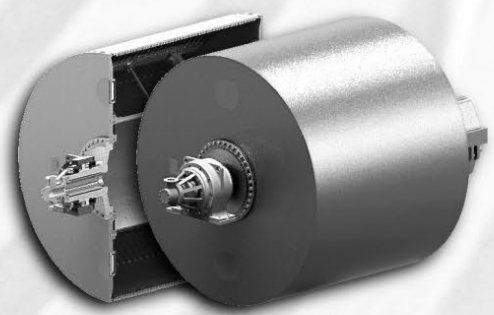
- assembled together to form a single unit. Central stay manufactured in ASTM steel plate and journals manufactured in casted steel
- high mechanical strength and geometric precision
- internal pipe for roller bearing thermal insulation

Metallization

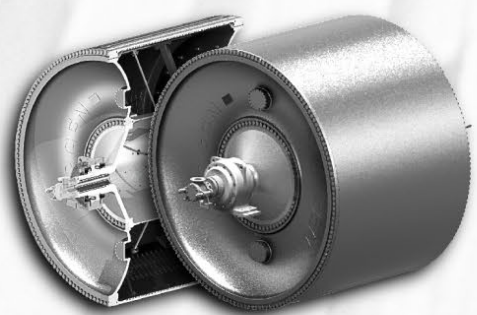
- it is done by arc spray process
- excellent wear and corrosion resistance
- it preserves the cylinder shell thickness
- possibility of superficial damage recovery
- final surface hardness from 50 - 60 HRc

Construction features

Welded and bolted heads



Welded heads



Bolted heads

Ribbed or smooth internal surface

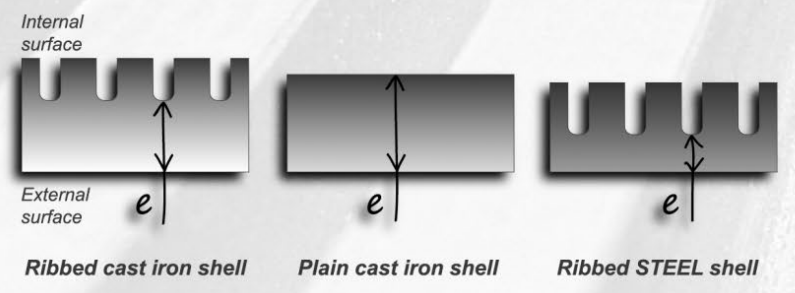
We can supply cylinders with ribbed or plain internal surface. The ribbed construction offers a series of advantages compared to the smooth one. When the ribbed construction is combined with the mechanical benefits of steel the gains are even bigger.

Advantages of ribbed steel dryer

Due to the high strength of steel, its wall thickness can be significantly smaller compared to the one of cast iron dryers, considering the same working conditions.

This is a very important advantage on a Yankee Dryer, once that a thinner wall presents less resistance to heat flow.

When the Yankee Dryer is built in steel and features a ribbed internal surface, the heat transfer is even higher, due to the thinner shell thickness at the bottom of the ribs.



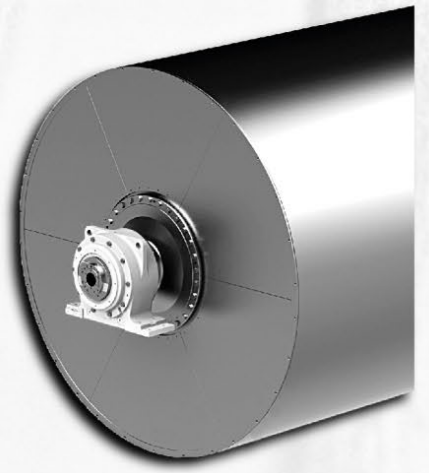
Head insulation

The Yankee Dryer loses heat through its heads; this means a constant energy waste. Insulating the heads, it is possible to minimize this loss, resulting in considerable energy savings.

Besides, the insulation also enhances operator safety, because the external temperature of the insulation is much lower.

Benefits

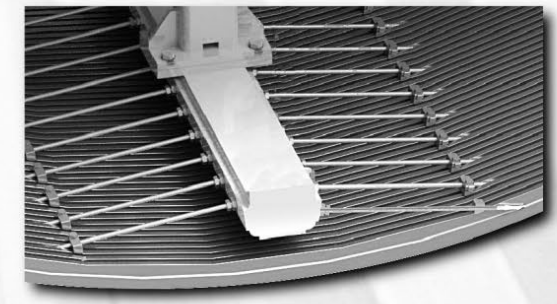
- steam savings on the range from 3 to 5%
- safety for operators
- low cost



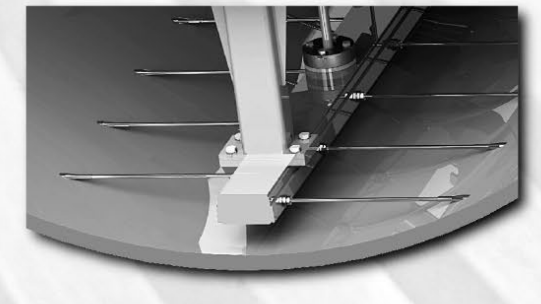
Condensate removal system

The condensate removal system is supported by heavy construction frames that guarantee the required stiffness. All system is designed to compensate the thermal expansion and to ensure high wear resistance.

for ribbed dryers



for smooth dryers



Benefits

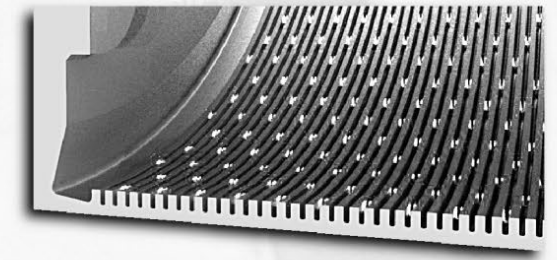
Steady condensate extraction, resulting in:

- uniform temperature profile
- uniform cure/maintenance of the organic coating
- high stability of the drying and creping process
- drying capacity increase

Turbulence blocks and bars

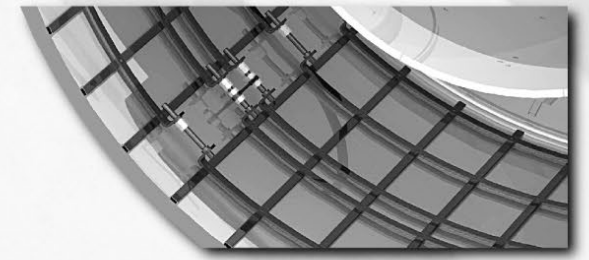
The turbulence blocks and bars target is to break the condensate film at dryer internal surface, thus increasing the convection between condensate layer and dryer.

for ribbed dryers



Turbulence blocks installed on a ribbed dryer

for smooth dryers












Turbulence bars installed on a smooth dryer

Benefits

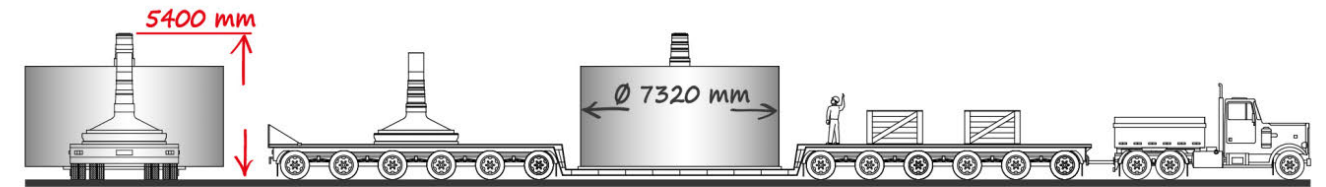
- increase of drying capacity
- improvement of drying/moisture profile
- easy to install
- low cost

Quality control

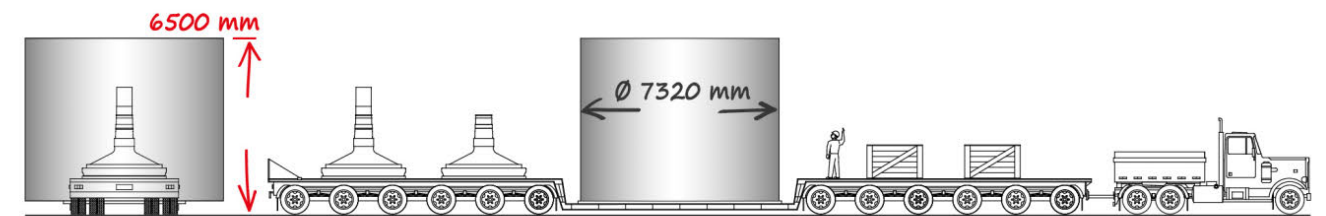
- 
 Quality certificate of all steel plates used on its manufacturing – mechanical and chemical properties
- 
 Casting quality certificate – mechanical and chemical properties and metallographic structure
- 
 Cylinder design and manufacturing under the strictest pressure vessels standards (ASME and PED)
- 
 Ultrasound inspection of shell and heads plates
- 
 Ultrasound inspection of all welding seams
- 
 Heat treatment for stress relieve
- 
 Strict dimensional control throughout the whole manufacturing process
- 
 Hydrostatic test in accordance to ASME and PED standards
- 
 Ultrasound inspection of all bolts used on its construction

Easy transport

The dryer's journals can be transported dismantled from the dryer. After dryer's arrival at customer's site, our team assembles them to dryer again. This makes the dryer transportation easier, reducing considerably the maximum load height.

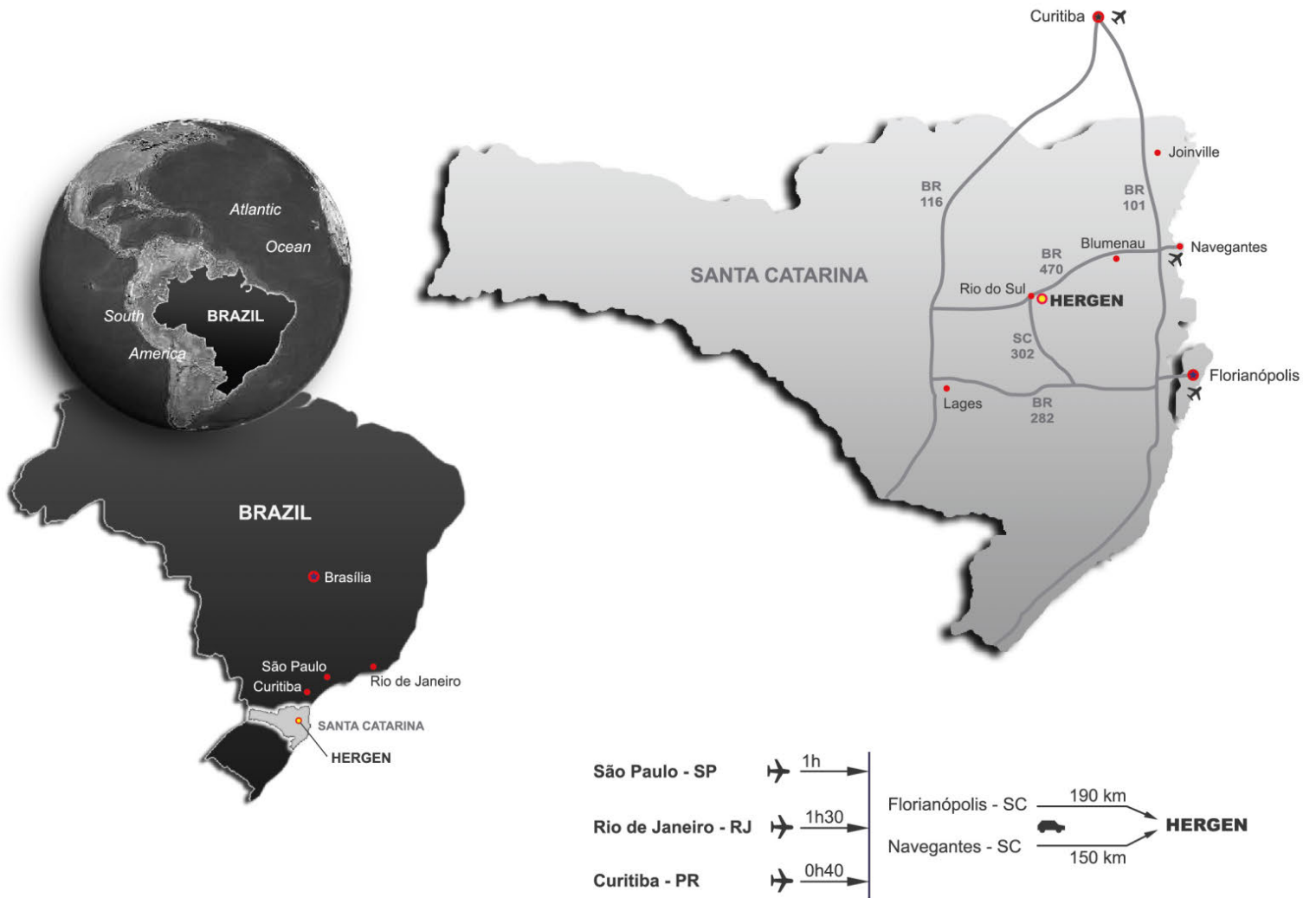


Yankee Dryer Ø 7320mm and face length of 3700mm being transported without drive side journal



Yankee Dryer Ø 7320mm and face length of 6000mm being transported without both journals





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