Brevini, with its power transmission division, is among the world’s top five manufacturers in the sector of mechanical transmissions and gear drives, thanks to growing market shares in industrial applications (steel industry, plastics production, materials handling) and in innovative systems such as wind turbines, waste recycling plants, and energy production. Brevini is a major player also in the mining sector and in marine technologies. Established in 1960 by the brothers Renato, Luciano and Corrado, Brevini was the first Italian company to manufacture planetary gearboxes. The acquisition of PIV Drives Gmbh in the 2002 has widened the portfolio with helical and bevel-helical products.

Many ingredients can change overtime to make a recipe more and more tasty, but some others need to stay. For Brevini, those are passion for products and people. The evolution of the core technologies and the related know-how spread around the world have had a key role in transforming in few decades an idea in a global multinational manufacturing and selling more than 150.000 gearboxes and 1 million hydraulic components per year. Moreover, the 2 divisions together are able to provide fully integrated solutions.

Brevini has enlarged its business scope to hydraulic components since the 70s. The fluid power division has been established by the merge of companies from the fluid power sector with over forty years of experience. It is a main hub for made-in-Italy businesses in the mechatronics sector which includes, besides Brevini Fluid Power in Reggio Emilia, OT Oil Technology in Parma, as well as BPE Electronics in Novellara and VPS Brevini in Bologna.

Last but not least customer proximity comes. The closeness to the customer, in the double meaning of geography and deep understanding of dilemmas and needs, has always been a leitmotif in our values. The coverage is ensured by a footprint of 40 subsidiaries, a strong distributors network and production plants in 4 continents.
Brevini Winches - Our History

1970 - RAF Series
Brevini Riduttori

1980 - Winches
Brevini Engineering Products

1990 - BW Series
Brevini Winches

2007
Brevini Power Transmission

2016
INTEGRATED SYSTEM
Brevini
Since 1970

Over the years, our **reliability and technological evolution** have always been at the service of our costumers.

We will continue along this path in the **future** to ensure even greater customer satisfaction.

**Winches: a pillar of our portfolio**

Brevini Riduttori, thanks to its wide experience in gearboxes development, began designing and manufacturing its first range of “RAF” winch drives in the seventies. In the eighties, the company started producing complete winches. The design was handled initially by BEP, Brevini Engineering Products, Brevini Riduttori’s engineering firm responsible for testing and the development of special projects. The products were such a success that it was decided to establish a company called Brevini Winches dedicated to the development of these devices. Led by Stefano Brevini, the son of the President of Brevini Riduttori, the new company presented its first winch range – the BW – in the nineties, confirming the success of the predecessors.

The characteristics that made this range so successful were its easy installation and compact footprint, made possible thanks to the use of integrated piston motors. The geometry of the winch structure ensured multiple installation options that customers immediately appreciated. Brevini Winches S.p.A. was also a pioneer in the testing area: it had several test benches and a testing tower simulating real working conditions. The company turnover grew each year, and the customized projects designed in cooperation with customers became the company battle horse. A well-organized warehouse ensured fast response times to satisfy market demands.

In early 2007, Brevini Winches S.p.A. was merged into Brevini Power Transmission S.p.A., becoming a vital part of the mother organization and the related product portfolio.

Even further towards integrated systems

Brevini’s winch development potential has grown over the years substantially due to the synergies and collaboration established between the power transmission unit with the hydraulic and electronics units.

In the recent past, Brevini started a program to merge its daughter divisions Brevini Power Transmission and Brevini Fluid Power and to propose to the market 360° integrated solutions. Thanks to this union within a single group, the company know-how will be exploited at 100% and the worldwide market presence even strengthened.

Besides manufacturing winches, Brevini also designs and produces orbital and axial hydraulic motors, valves, manifolds and electronic devices. All the expertise acquired by BPE (electronic branch within the group) is used to monitor machinery functioning for controlling load, speed, positioning, pressure, etc.
The **Winches** are a perfect example of combined solution developed thanks to Brevini’s mechanical, hydraulics and electronics know-how and capabilities.

The full development process, from the idea to the design, from the prototype to the mass production, is managed internally and monitored according to high-demanding quality protocols. All the phases as assembly, painting, rope mounting and testing are internally managed.

Very relevant the **Testing phase**:

Not only the finished goods are checked 100% at the end of the assembly line, some pieces are collected and deeply tested using the “17 ton testing tower”. Thanks to this testing tower, the technicians can reproduce different working conditions, even tougher than the real ones, and evaluate the winch behavior.

The **Winch range** covers the most important Applications:

- **Mining**
- **Off-Shore and Marine**
- **Truck mounted cranes**

Models can be standard or highly customized, leveraging on different Competence Centers (Reggio Emilia, USA, Nederland, Brazil, China and Australia) that Brevini can proudly count on.
A **Belt conveyor** is an arrangement of mechanical components that supports and propels a conveyor belt, which in turn carries bulk material. Used wherever necessary handling bulk material through conveyors, Belt conveyors are present in many application sectors as: mining plants, port installation, sugarcane plants, cement plants. The transmission of the motion from the prime mover to the belt is by friction between a drum connected to the motor and the belt itself. A Take-up device provides the means to maintain the proper tension on and to adjust the length of the belt to compensate for stretch ensuring the continuity of transmission.

**Gravity take-up**

A Winch was applied instead of Crane to lift up the counterweight block to relief the belt tension for maintenance events. Usually the Winch is placed close to the counterbalance tower. The rope is connected to the counterbalance block by a hook connected directly to the rope or through a set of pulleys.
**Automatic Take-up Winch**

In Take-up Winch solution the Winch performs both the function: replaces the counterweight, keeping the belt tensioned, and is used during maintenance operation.

Take-ups solution can be considered the most flexible one, due to the easy installation and easy handling, fundamental in case of mobile conveyor that are constantly relocated. The significantly reduction of space is a key benefit in case of tight spaces like the underground mining.

**Take-up Winch Solution** has many vantages compare to the counterbalance tower even in application where it’s not necessary to be re-lockable:

- **Safety increase**: the lifting operation of a counterbalance block during maintenance it’s a dangerous intervention. Many accidents were registered in the past;

- **Costs reduction**: a Take-up Winch is less expensive than a complete counterbalance tower;

- **Time saved**: the necessary time to install the Winch is so short in comparison of counterbalance tower. The Winch could be totally tested in our facility saving time;

- **Longer belt life**: the belt stretch value during the start and stop of the belt conveyor is a parameter value of the PLC and this resource makes that the tension used to stretch the belt can be the minimum possible value. It’s is important to make the belt life longer.
The Standard Brevini Take-up Range starts with 5 ton and can reach up to 20 ton line pull on first layer. The line pull capacity can be improved by the use of pulley arrangements according to each application requirements. For special requirements, it is available custom design Winches according to each application.
How it’s made

The **Winch** is connected on the belt tensioner roll by cable steel, directly or through a pulley arrangement, accordingly to the customer needs.

The Load cell provides the current value of belt tension to the PLC command. The PLC controls the inverter which drives the Electric motor, if the tension value is near of the upper or lower value admitted, the Electric motor rewinds or winds the cable to the proper tension.

For operations start up the Winch is operated manually (Manual Mode) in order to set the belt tension range signals for the load cell and PLC Controller. After the tension range is defined, the Winch starts to work on Automatic Operation Mode.

The Winch Manual Operation Mode remains available at any time and can be used for manual Winding or Unwinding of the Winch drum in case of need or due to any extraordinary maintenance.

Hydraulic Take-up winch

In the **Hydraulic** configuration the Winch is driven by the Hydraulic motor.

The Load cell is installed in the cable to give the feedback to the PLC which commands the Hydraulic valves (to command the Hydraulic motor and Hydraulic brake) to wind or rewind the cable to proper tension value.

**Brevini Take-up** could have a communication with the belt conveyor PLC under whichever protocol as Profibus, Profinet, Canbus.

This configuration allows to reduce the space and the costs, having less power installed.
Electric Take-up Winch

In the Electric configuration the Winch is driven directly by the electric motor, controlled by the Inverter. The coupling between the motor shaft and the input shaft of the gearbox transmits the rotation. The safety is guaranteed by caliper brake that acts on the drum flange.

The Grooved Drum and the Pressure Roller ensure the proper winding of the rope while the max and min. rotation of the drum is controlled by the Electric Limit Switch operating opposite side of input shaft.

The tension is constantly monitored and adjusted through the Inverter controlled by the PLC system, though the signal sent by the load cell.
Electronic Take-up Winch components:

A. Electric motor
B. Coupling
C. Caliper brake and Pressure roller
D. Limit switch
E. Electronic cabin for manual control
F. Load cell
Global Winch Expertise

The global network of Brevini production sites is composed by eleven plants, with the headquarters and main facilities in Italy (Reggio Emilia), the German company PIV, two sites in China (Brevini Power Transmission and Brevini Fluid Power in Yancheng), the American site in Yorktown and the one in Brazil, in Limeira.

BHQ (Brevini Head Quarter), Brevini USA, Brevini Benelux, Brevini Latino Americana, Brevini Shanghai and Brevini Australia are the main subsidiary specialized in the design and production of winches.

The worldwide direct presence is our strength, with “centers of expertise”, capable to ensure engineering know-how, product customization, widespread sales support and after-sales services.