



 **revolution**
ENERGY-RECOVERY HYBRID BRAKE



revolution

ENERGY-RECOVERY HYBRID BRAKE

renova-srl.com
renova
WE NEVER LOSE CONTROL

CE

PATENTED
made in Italy



revolution

ENERGY-RECOVERY HYBRID BRAKE

We care about our customers and our planet, so we constantly research innovative solutions that improve the plant's productivity and sustainability.

For this purpose we designed and patented a revolutionary braking system that partially replaces the pneumatic energy and recovers this energy, normally transformed into heat and dust, by returning it to the power line of the plant: Revolution hybrid brake.

In addition, Revolution brings many other benefits:

- splicing without paper tearing
- splicing at least 25% faster line speed
- higher product quality
- constant web tension control
- zero maintenance
- higher safety level

Revolution is a 4.0 Industry product.

Click on the “play” icons in this catalog to watch the videos!



MOST COMMON ROLL STAND PROBLEMS



1. DOWNTIMES DUE TO PAPER TEARING

When splicing, it's the web tension that sets the roll in motion. The web is pulled while the roll is still stationary. Thus the paper sometimes yields and breaks.

MONEY WASTE



2. SLOWDOWNS TO AVOID PAPER TEARING

Because of the reduction of the splicing speed, the linear feet output that is produced each shift is drastically reduced. During this slowdown period, temperature and starch parameters are kept unchanged.

LOST PROFIT AND
POOR PRODUCT QUALITY



3. HEAT EMISSION OF THE BRAKES

Rollstand brakes emit thermal energy that remains dispersed. Furthermore, heat leads to component wear, replacement part requirements and loss of tension consistency.



ENERGY WASTE AND
PERFORMANCE DROP

4. SAFETY HAZARDS

During roll preparation, the reel needs manual tensioning by the operator. After splicing, the roll needs also to be rewound. These actions require physical effort for the operator.



POSSIBLE INJURIES



THE BRAKING REVOLUTION IS HERE



HYBRID REGULATION

Revolution's patented design is the combination of a **pneumatic brake** and a **regenerative motor**, which operate with *hybrid regulation* always guaranteeing the required braking performances.

Brake and motor always work together but combining efforts in variable ways over time.

Revolution is 100% Plug & Play as it fits all roll stands with an easy and fast installation and no modifications to the splicer or to the roll stand are required.

DEMO

PATENTED HYBRID BRAKE



PNEUMATIC BRAKE

SUPPORT FUNCTION

Revolution is equipped with an eco-friendly, HD multidisc pneumatic brake. This pneumatic brake serves primarily as a support function, to the motor, in daily operations or in the event of an emergency stop.



REGENERATIVE MOTOR

LEADING FUNCTION

The Revolution's motor takes the lead in daily operations. It carries out the web tension control while providing great sensitivity as it does not suffer performance drop due to the heat.



TOP PERFORMANCE

Great sensitivity, constant web tension control, and no performance drop due to the heat.



ZERO MAINTENANCE

The brake works the least, hence the brake pad wear and pad replacement are eliminated.



THE MOST ECO-FRIENDLY

No pad wear, no dust emissions for a safer working environment, and a higher product quality.



ENERGY SAVING CONCEPT

The brake's kinetic energy is transformed into electrical energy reusable in the plant's electrical line.

INCREASED PRODUCTIVITY



SMOOTH SPLICING WITHOUT PAPER TEARING

No more downtimes. When splicing, the **Revolution's motor accelerates the roll on its axis** in the direction of the splice, thus overcoming its initial inertia instead of pulling the paper web. This reduces paper tearing and missed splices.

FASTER SPLICING SPEED OF AT LEAST 25%

No more slowdowns to avoid paper tearing when splicing. By accelerating the roll on its axis, the motor allows for faster splicing, and to work with lower-weight papers. This leads to a **direct increase in the linear footage output that is produced each shift.**

HIGHER QUALITY ON FINAL PRODUCT

Guaranteeing a higher splicing speed and reaching faster than desired line speed makes it possible to work with proper starch and temperature parameters that can be kept unchanged for the whole process.

ENERGY RECOVERY

2KWH PAYBACK PER ROLL STAND

The motor transforms the thermal energy of the brake, otherwise lost as heat, into 2kWh per roll stand of electrical **energy that can be reused in the plant's electrical line.**

This is possible thanks to the Revolution's certified system that corrects the power factor and allows the plant to instantly benefit from the energy saved.

PLUG & PLAY

Just connect the original plug provided with Revolution to the socket to enter the electrical energy into the plant's electrical line and re-use it.



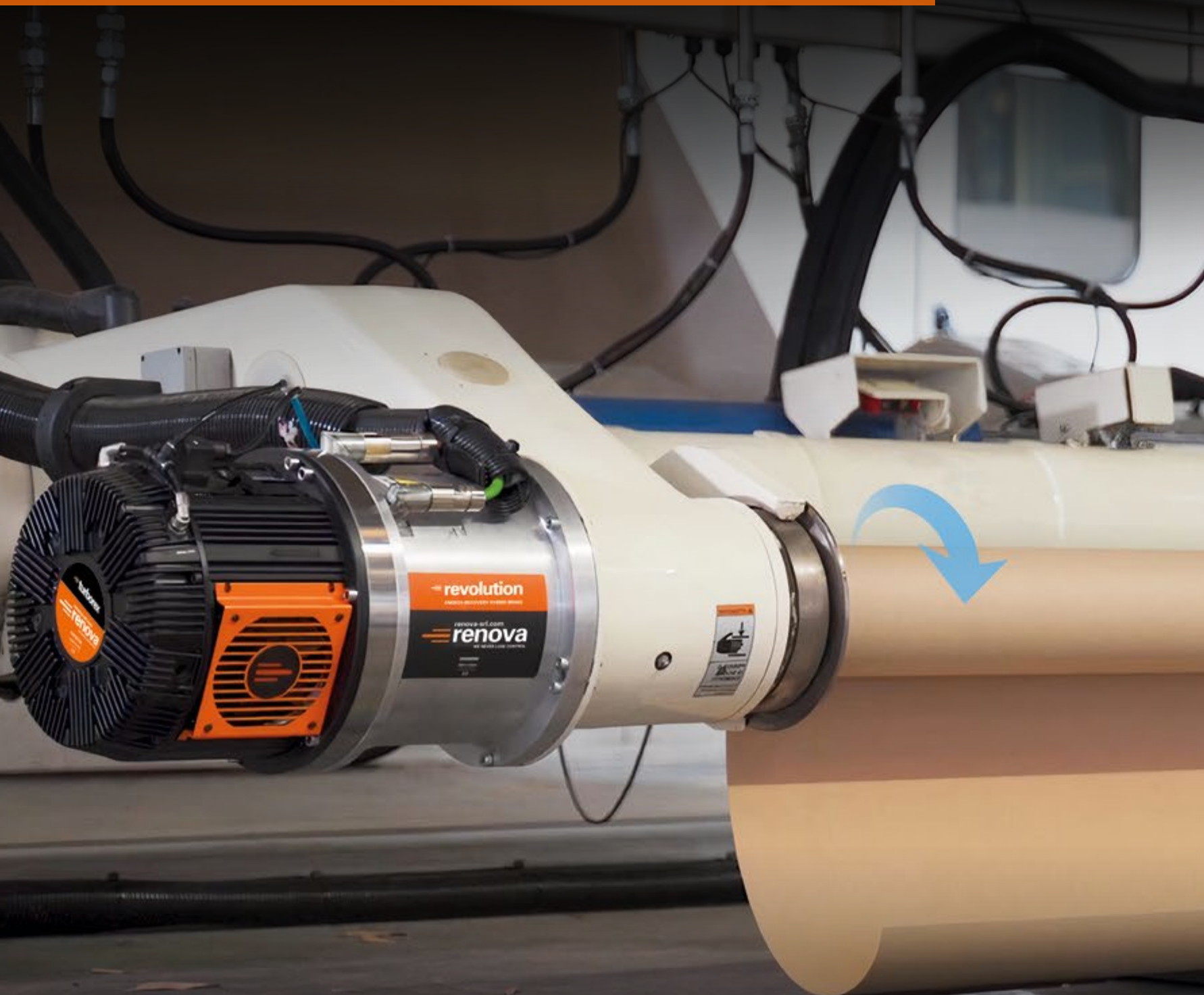
INDUSTRY 4.0



USER INTERFACE WITH COLOR TOUCH SCREEN

Revolution's integrated system enables to establish a **direct dialog with production systems in a plant's ERP.**

HIGHER SAFETY LEVEL

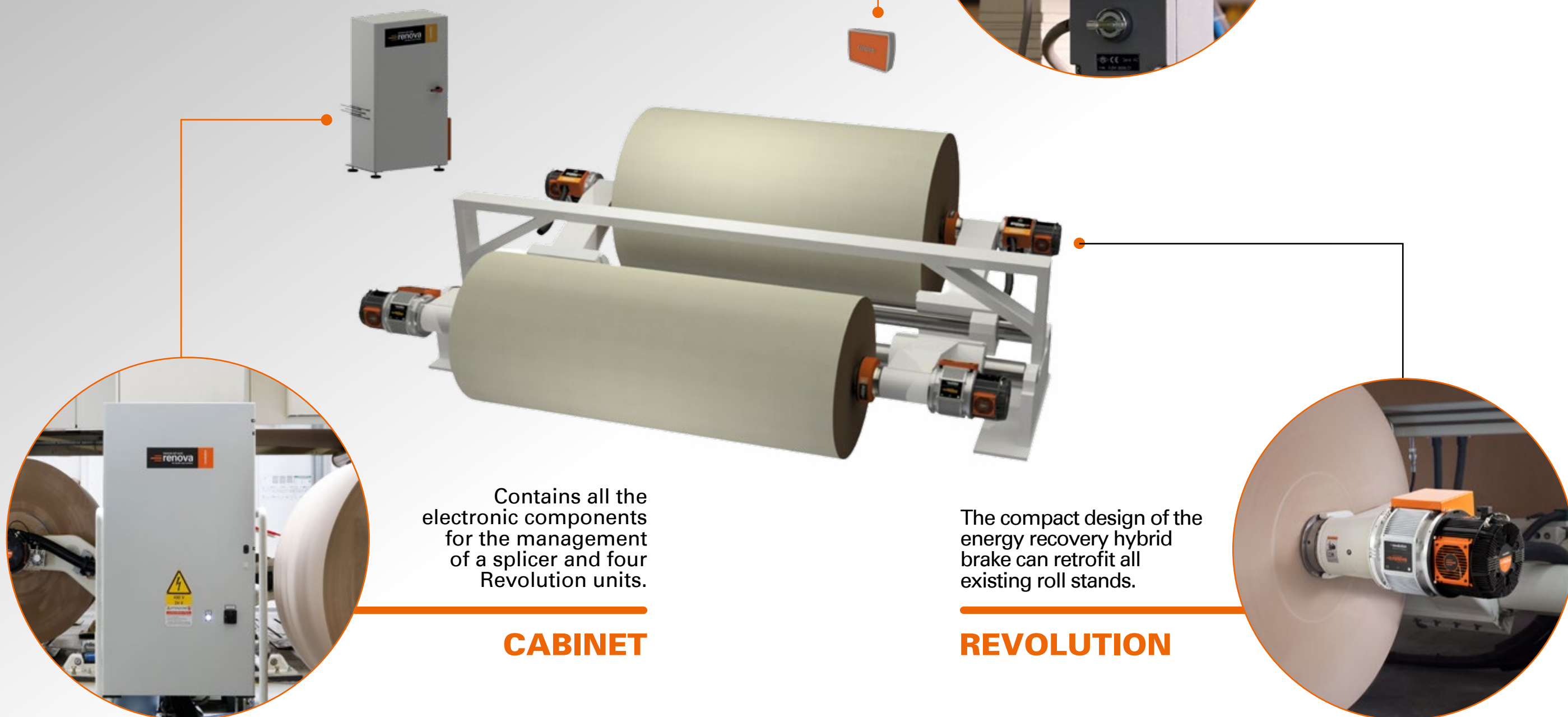


MOTORIZED REWIND OF THE ROLL

The motorized rewind of the reel is possible through the control panel. This **eliminates any injuries** by eliminating the manual intervention and **ensures a higher safety level** for the operator according to the Technical Standards ISO 11228 Ergonomics – Manual Handling, “Lifting and Carrying” and “Handling of low loads at high frequency”.

INTEGRATED SYSTEM

Integrated system for 1 complete roll stand



REVOLUTION MODELS

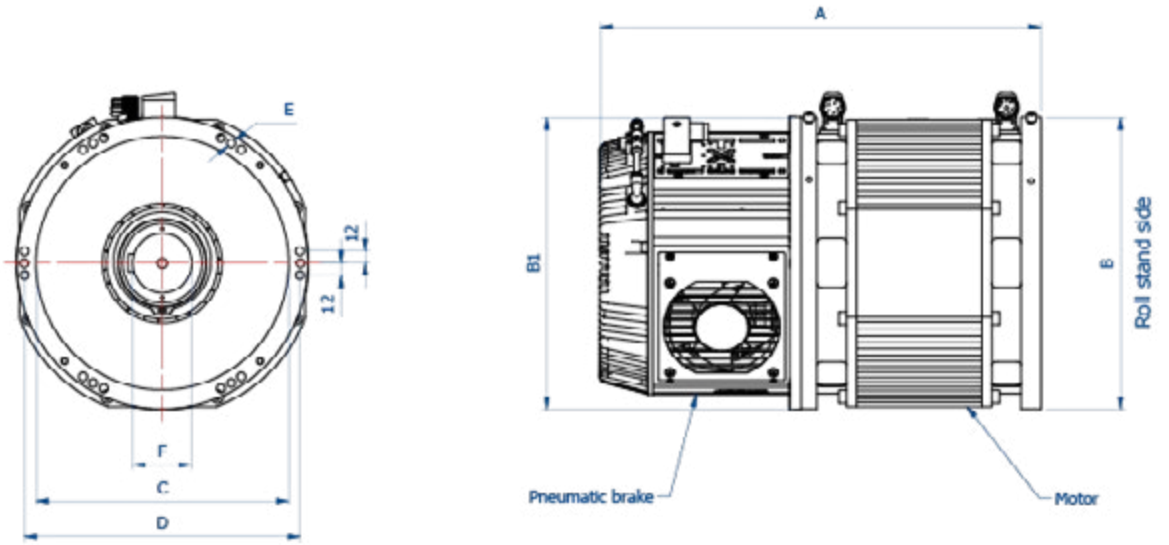


PERFORMANCE

CARDBOARD	RVTX 160.40	RVTX 180.75
min torque Nm (0,2 bar)	10	25
max torque Nm (6 bar)	498	866
emergency torque Nm (max 20 sec)	556	924

PAPER	RVTX 240.210
min torque Nm (0,2 bar)	70
max torque Nm (6 bar)	3350
emergency torque Nm (max 20 sec)	3500

DIMENSIONS

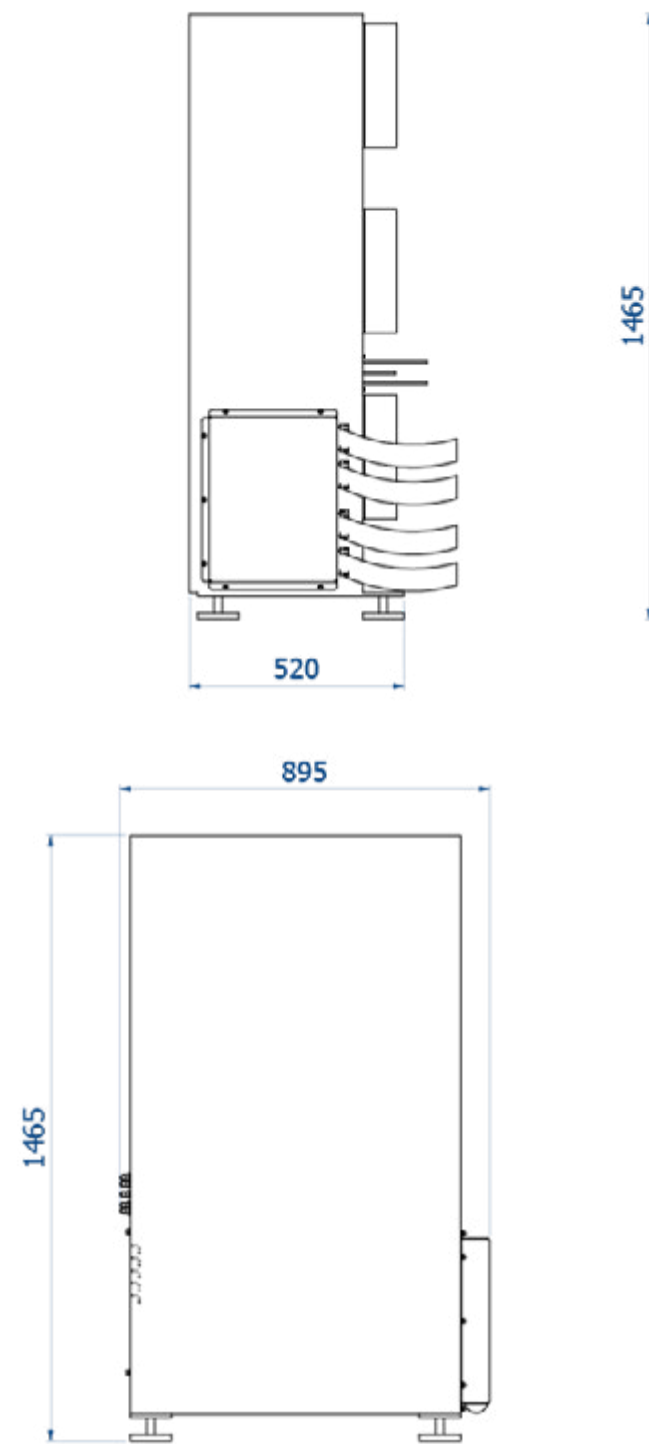


CARDBOARD	RVTX 160	RVTX 180
A	411	451
B	295	295
B1	295	295
C	256	256
D	280	280
E	8.5	8.5
F max	60	60

PAPER	RVTX 240
A	540
B	500
B1	340
C	450
D	475
E	12.5
F max	90

All measurements listed in this table are in millimeters.

CABINET DIMENSIONS



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APPLICATION





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