



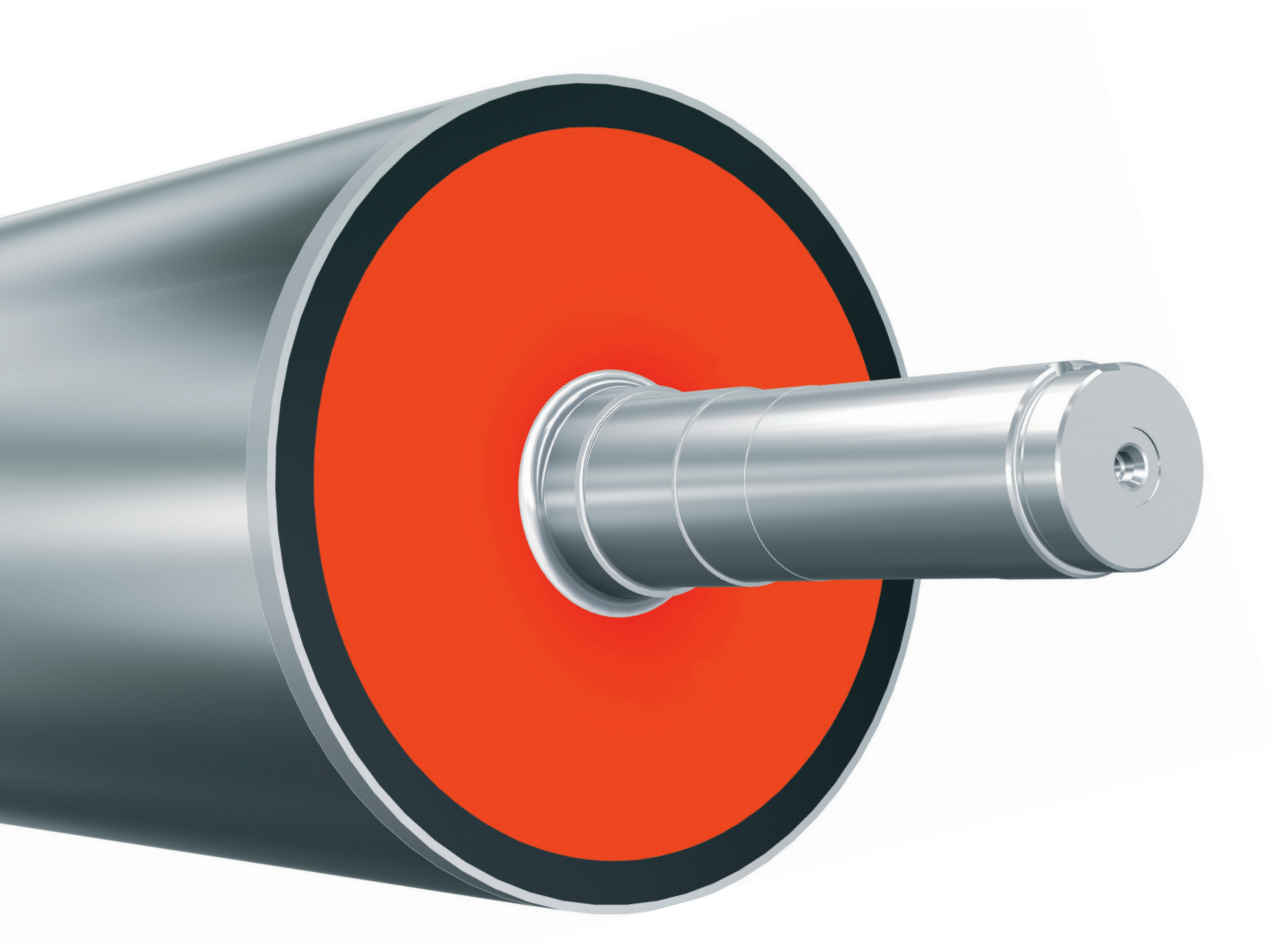
lightweight
roll systems

:CCOR

hard shell, light core.
the hybriCor
principle.

lightweight and fast.

the **hybriCor** principle.



:CCOR

lightweight
roll systems

Paper Industry
Film and Foil
Industry
Printing Industry
Textile Industry
Non-Woven-
Industry
Metal industry

manufactured by
Schäfer MWN GmbH



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Features and benefits at a glance

significantly reduced weight

compared to rolls made of steel

high energy efficiency

through reduced drive power

low upfront investment

due to use of smaller drives,
bearings and journals

reduced maintenance costs

due to less wear and extended service
life of mechanical components

Application areas:

Drive rolls

Transport rolls

Paper/felt guide rolls

Wire guide rolls

Measuring rolls

hybriCor

easy handling

during installation and servicing

thermal stability

due to unique material combination

fast startup

due to reduced run-in period

wider web width and

higher machine speeds

at same diameters

delicate surface structures

and patterns

due to variable design of the
hybriCor shell



a new **hybrid design** for high-speed rolls

The best of both worlds

The new, patent-pending hybriCor roll design takes advantage of the combined properties of steel and carbon fibre for the design of high-speed rolls.

As a result, the runability and performance can be optimised to match a specific position.

The core of a hybriCor roll is made of a stiff, lightweight CFRP tube. Journal and head units which in most cases are completely integrated, provide for continuous load transfer, as well as increased safety tolerance and reproducibility.

The hybriCor shell is made of steel or stainless steel, which can be equipped with delicate surface structures and patterns optimised for a specific installation position of the roll. In this way, the hybriCor concept brings together the unique properties of carbon fibre and steel in one.

Making life easier

Carbon fibre is a lightweight material that is characterised by high specific stiffness, excellent dynamic properties and a low thermal expansion coefficient. These unique properties open up new possibilities for roll design, impossible with conventional metal rolls. The high specific stiffness means higher critical speed and reduced vibration; hybriCor rolls can thus run significantly faster than conventional rolls of the same dimensions.

Wider webs are now possible while retaining the same roll diameter. Additional advantages include shorter run-in period and smoother operation. Because of the significantly lower weight of hybriCor rolls, it is possible to reduce drive power and thus raise energy efficiency. Lower loads on bearings, journals and base structures reduce wear and increase the service life of the mechanical components in the peripheral machine equipment. Less weight also means easier and faster handling of the roll during installation and servicing.

The steel materials used for the shell further enhance the performance features of hybriCor rolls; stainless or chrome-plated steel makes hybriCor resistant to any environment. hybriCor rolls can be operated in moist, wet or aggressive chemicals, even in combination with doctor blades. The roll surface is also suited for machining, making it possible to adapt the surface design by adding grooves, rhombus shapes or spiral patterns.

The idea of the hybriCor principle is to exploit the advantages offered by allowing materials, design and production to interplay. This gives machine designers and operators a variety of technological selling arguments and business cases, which is ultimately reflected in reliable operation and system efficiency.

hybriCor roll systems

Diameter up to

1,500 mm

Working width up to

13,000 mm

Weight up to

20 t

Material

**CFRP & steel/
stainless steel**

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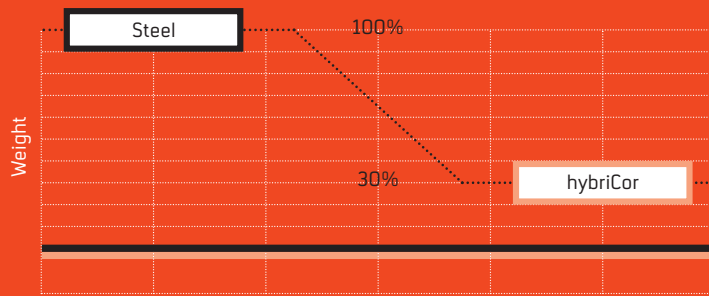
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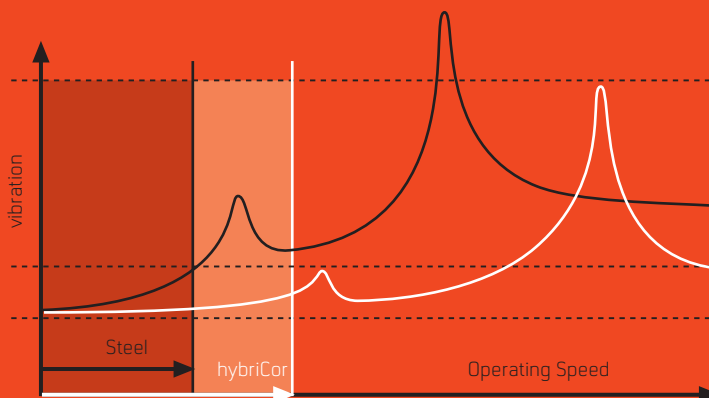
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lightweight

Weight comparison:
Mass reduction of up to 70% compared
to steel at the same dimensions



fast

Increase in the critical speed compared to steel.
hybriCor rolls can run significantly faster than
conventional rolls of the same dimensions.

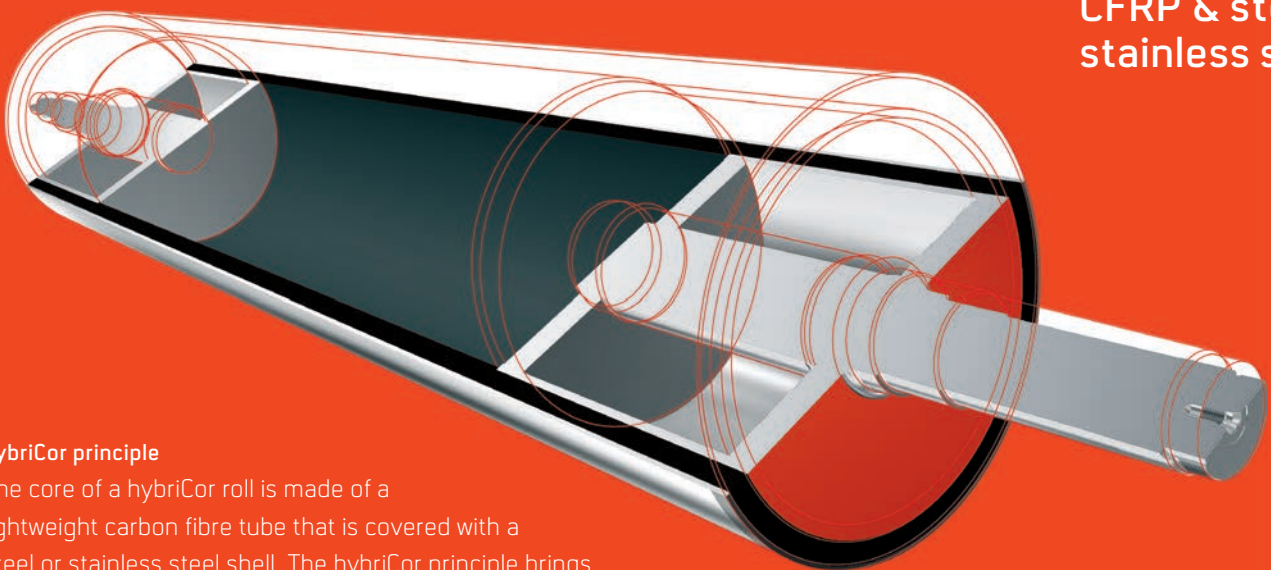
hybriCor
roll systems

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Working width up to
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Weight up to
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Material
**CFRP & steel/
stainless steel**



hybriCor principle

The core of a hybriCor roll is made of a
lightweight carbon fibre tube that is covered with a
steel or stainless steel shell. The hybriCor principle brings
together the best properties of CFRP and steel in a single component.

