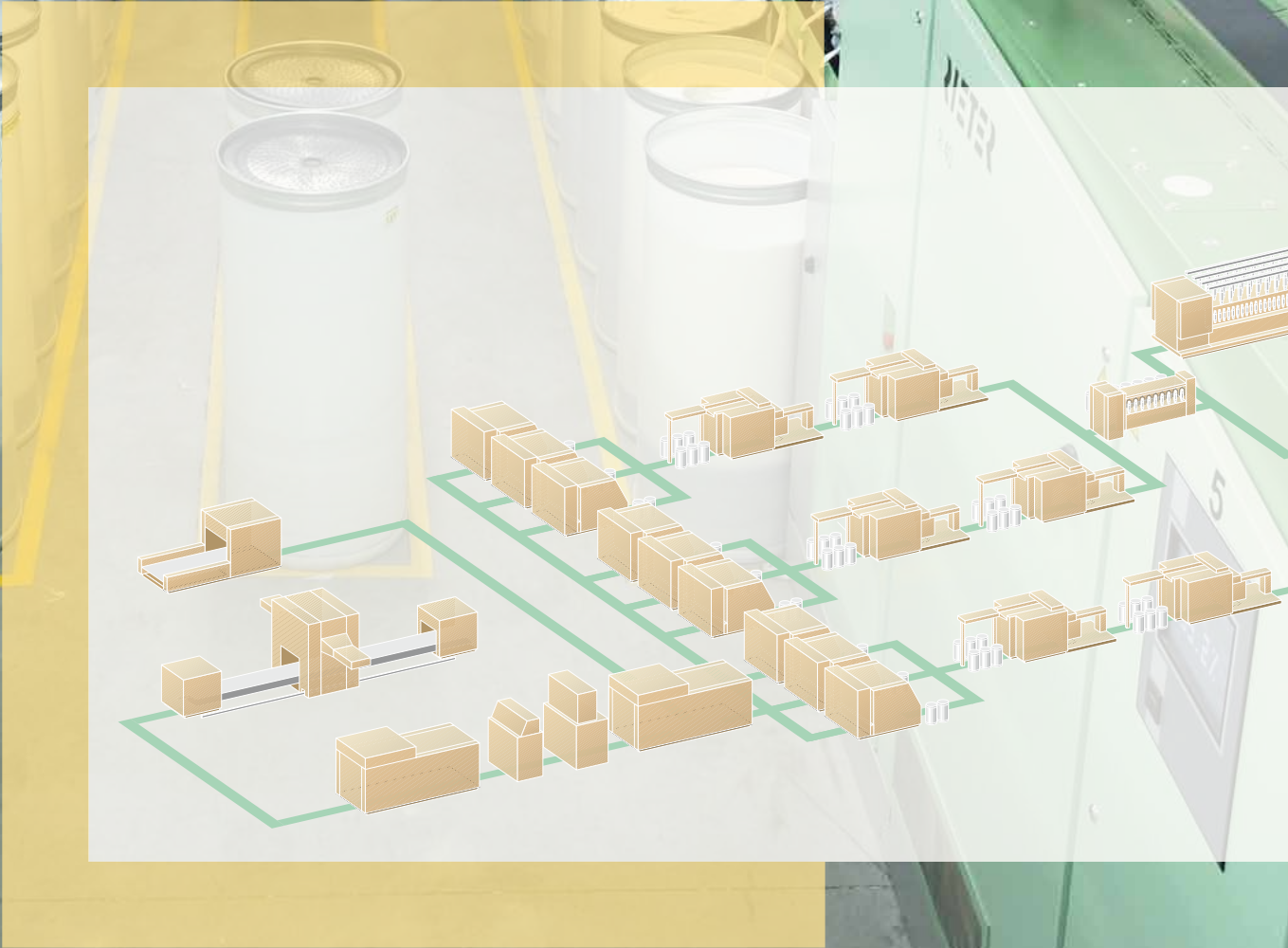


Textiles – Yarn Production

siegling belting





Ensure quality, boost productivity

In close cooperation with textile producers and manufacturers of the machinery, Forbo Siegling develops power transmission and conveyor belts for yarn and textile production. As a leading manufacturer, our products and services help make machinery and processes more flexible and productive worldwide.

The Siegling Extremultus A+E lines, with thermoplastic aramide or polyester tension members, are superb examples. These are just some of their outstanding properties that set them apart from conventional belts with polyamide tension members. Their exceptional power transmission, maximum belt speeds and reduced belt creep enable:

- efficient production
- compact machine constructions with numerous stations
- energy-efficient, environmentally-friendly operation

Our products and application technology expertise stand for:

- advanced power transmission solutions to increase performance and quality with Siegling Extremultus spindle and flat belts
- flexible solutions with Siegling Transilon conveyor and processing belts for efficient material flow from the bales to the packaging of the cross-wound bobbins.

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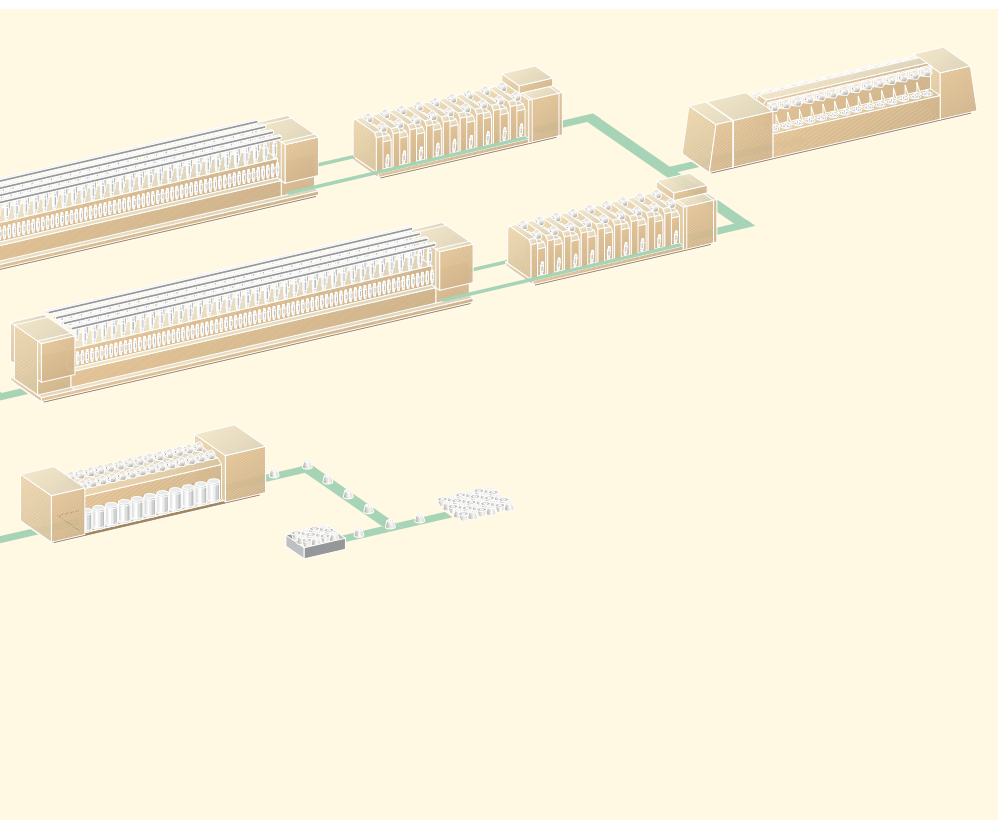
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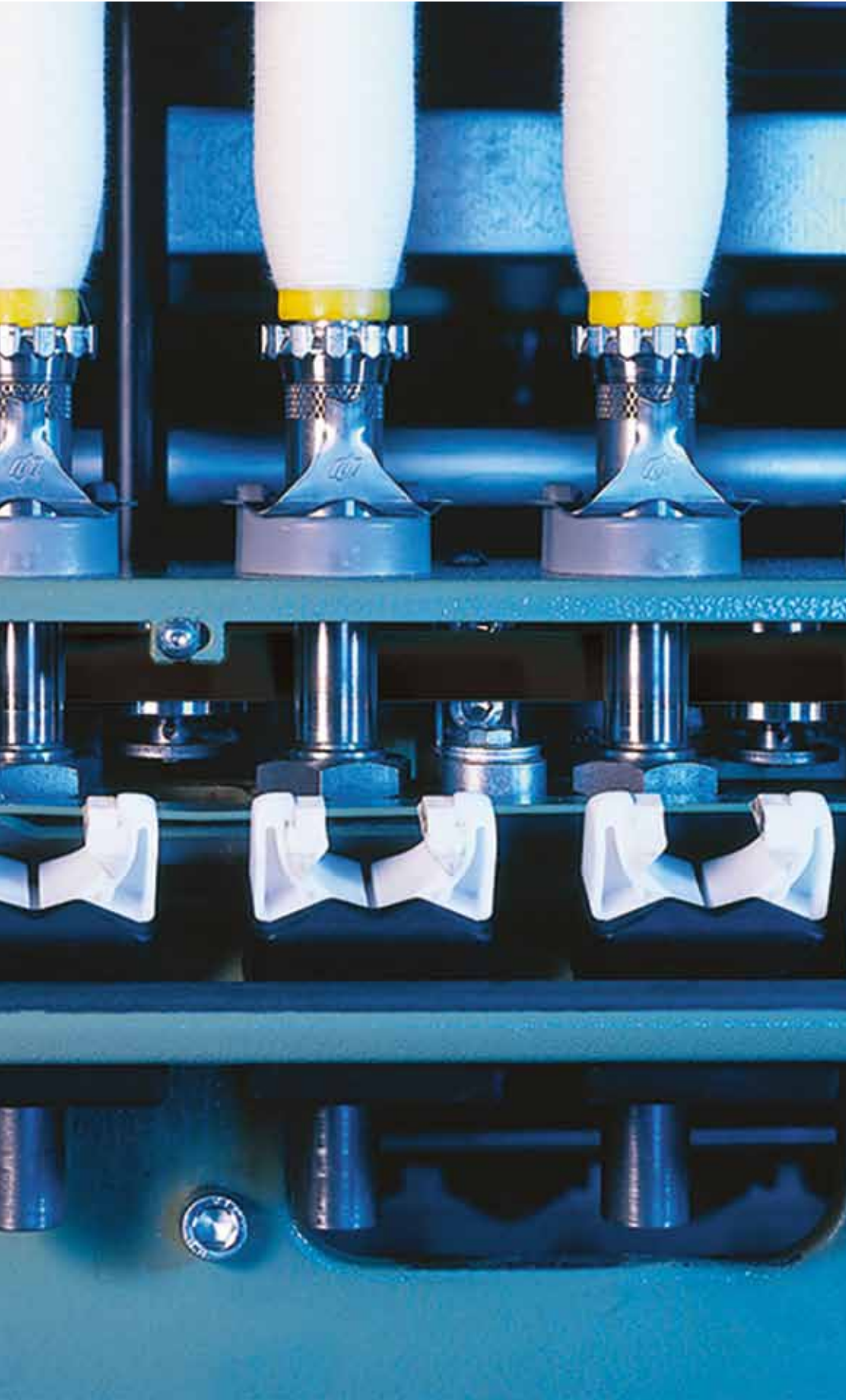
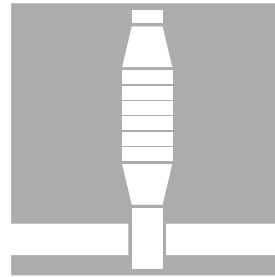
Excerpt from the product range 14



forbo

MOVEMENT SYSTEMS

Power transmission and tangential belts – a comparison of the types



❶ Top layer/
Wharve face

❷ Tension member

❸ Friction layer
(towards drive)

Characteristics of the
tension member

Elongation at fitting
(according to requirements)

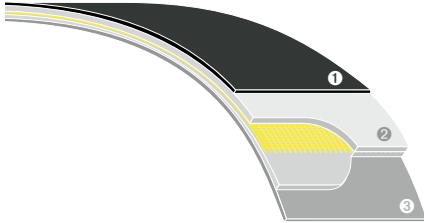
Flexibility

Damping properties
(jerky loads)

Splice type

Information about usage

siegling extremultus
flat belts



The A line

Highly wear-resistant elastomer G (black)

Thermoplastic tension member with highly modular blended fabric and aramide warp

Highly wear-resistant elastomer G (grey)

Transmission of very high pull with little elongation

Power transmission belts: 0.3% – 1.0%
Tangential belts: 0.3% – 1.0%

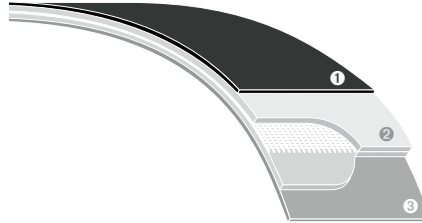
High flexibility

Low

Z-splice 110 x 11.5 mm; without adhesives

Power transmission belts with tension members made of aramide fabric are designed for high specific levels of effective pull and short take-up ranges.

Careful handling is an important prerequisite for smooth-running operation in the A line.



The E line

Highly wear-resistant friction coating made of elastomer G (black) or polyester blended fabric T (spindle belt)

Thermoplastic tension member with polyester fabric in warp and weft

Highly wear-resistant elastomer G (grey or black) or highly wear-resistant urethane (green)

Transmission of high pull with little elongation

Power transmission belts: 1.0% – 2.0%*
Tangential belts: 1.5% – 2.0%*
Spindle tape: 0.3% – 2.0%

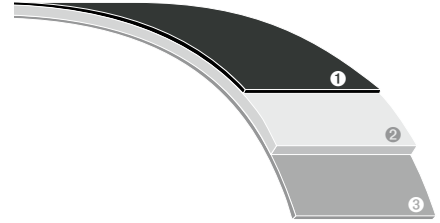
High flexibility

Good

Z-splice 110 x 11.5 mm, 70 x 11.5 mm or 35 x 11.5 mm; without adhesives

Power transmission belts with tension members made of polyester fabric are able to transmit high specific pull.

They are an optimal solution for virtually any application.



The P line

Chrome leather, highly wear-resistant elastomer G (black) or polyamide fabric

Highly oriented polyamide sheet

Chrome leather or highly wear-resistant elastomer G (black or grey)

Transmission of high pull

Power transmission belts: 1.5% – 3.0%
Tangential belts: 1.8% – 2.8%
Rotor belts: 2.5% – 3.5%
Spindle tape: 0.6% – 3.0%

Little flexibility

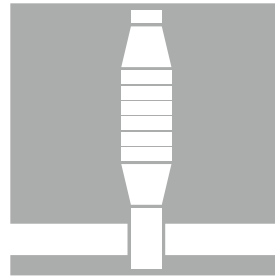
Very good

Ground wedge splice; with adhesive

Power transmission belts with polyamide tension members are rugged and laterally stiff.

The belts stand out due to their good damping properties.

The right type of belt for every application



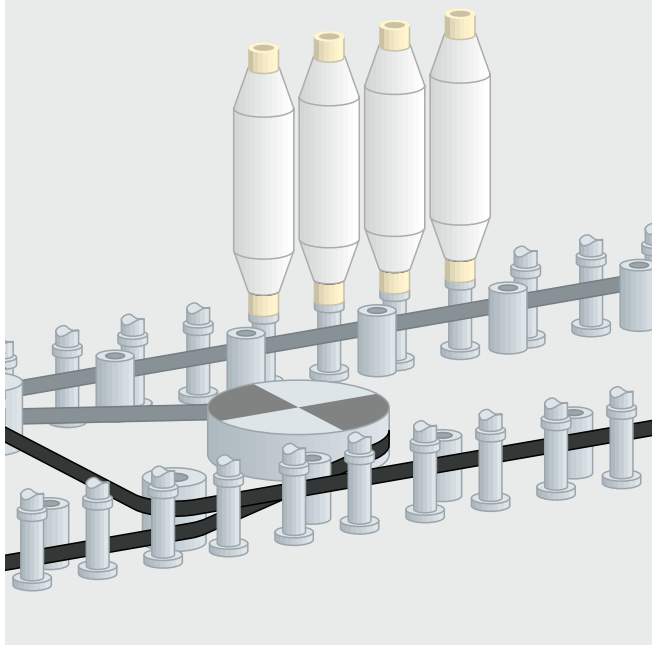
Sectional tangential belt drives

The properties of the E line are ideal for this application.

The flexible design of the belt, with a high modulus, saves energy and minimises RPM variations in the spindle section.

The precise Z-splice ensures that the belt tracks with little oscillation, treating the machinery gently, which improves yarn quality and the service life of the drive components, while decreasing energy and maintenance costs.

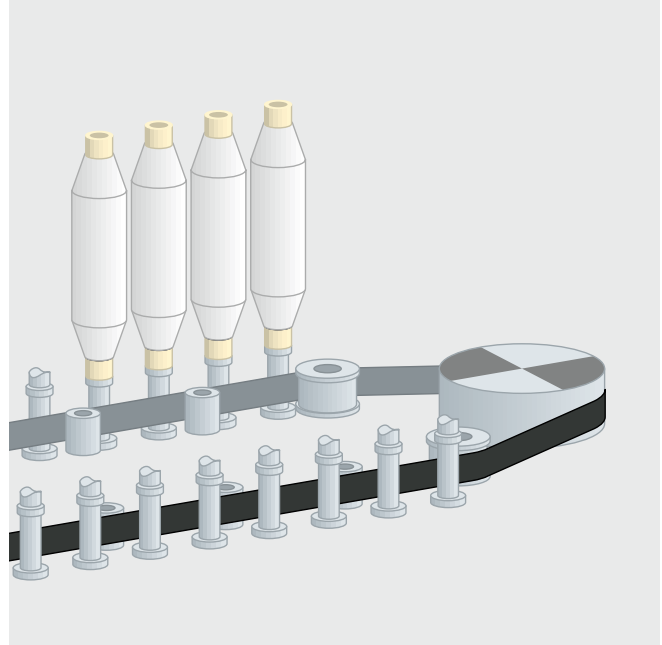
The Z-splice method ensures quick, secure splicing in the machine with low fluctuations in thickness in the splice. As a result, the belt runs smoothly and there is little wear-and-tear on the material.



Conventional tangential belt drives

The tried-and-tested, good value P line tangential belts now have enhanced elastomer coatings that last even longer and are even tougher. They guarantee consistent spindle speed over the belt's entire service life and keep noise to a minimum thanks to the finely-patterned face towards the spindle.

An alternative is the A+E line, offering tangential belts with a high modulus and level of flexibility. As a result, the belts cut energy costs significantly (on the left).

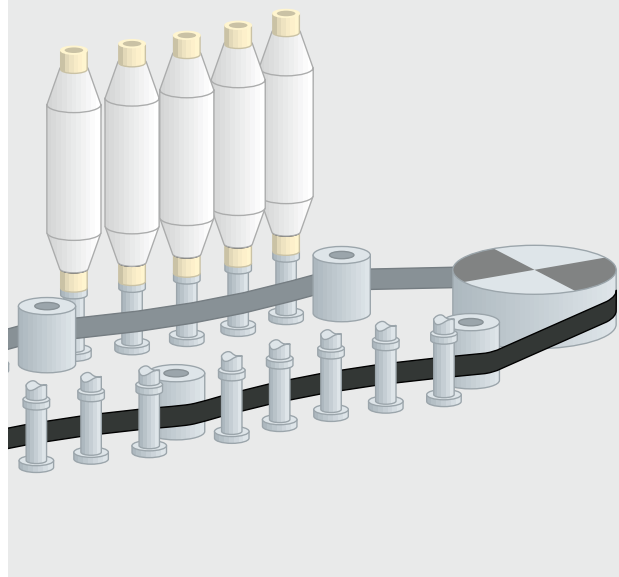


Tangential belt drives with concave/convex drive geometry

This type operates without pressure rollers.

A tension member with a high modulus, not affected by changes, is ideal for small pulley diameters, short take-up ranges and fluctuations in ambient conditions.

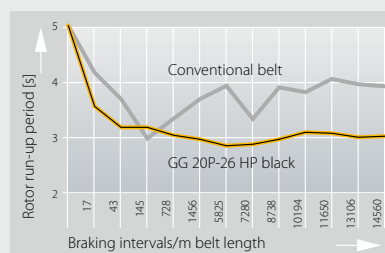
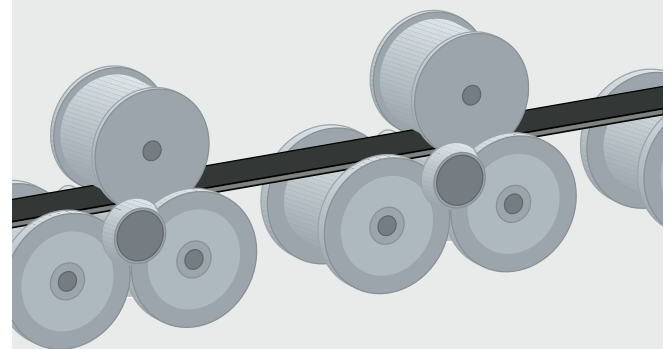
In this case, the E line can enhance the technology in the application considerably – also in terms of operating and maintenance costs.



Rotor belts for OE machines

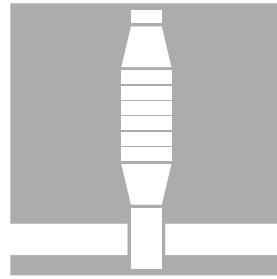
Called GG 20P-26-HP black, Forbo Siegling has created a new milestone in rotor power transmission technology: The new black elastomer coating hardens much less (does not vitrify) and will maintain constant friction during the running-in phase. As a result, consistent, short run-up periods are achieved over the belt's entire service life.

In combination with optional HP precision grinding, the belts operate particularly quietly with little vibration. This is kind to the twin disc bearing and increases efficiency and lifetime of the belt.



A belt that is a clear winner with the machinery manufacturer:
The GG 20P-26 HP black

The right type of belt for every application



Spindle tapes

Siegling Extremultus spindle tapes are designed for ring spinning frames and double twisters with two, four or eight spindle drive. They are equipped with:

- permanently antistatic properties
- a coating on the pulley face made of wear-resistant polyurethane
- impregnated, wear-resistant fabric construction of the wharve side

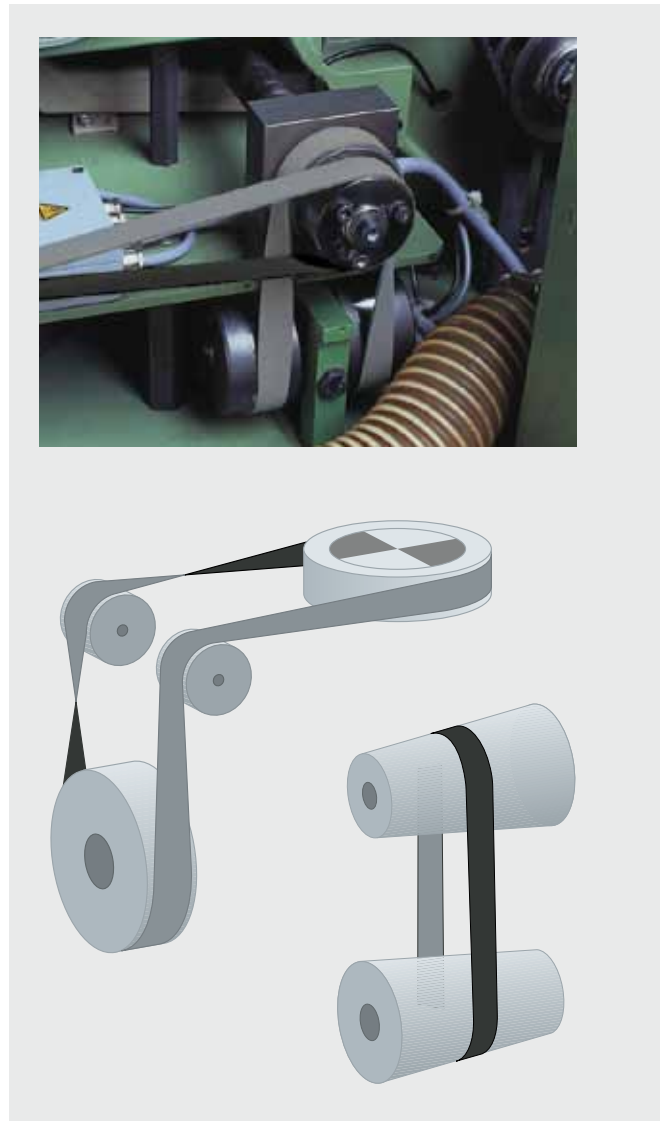
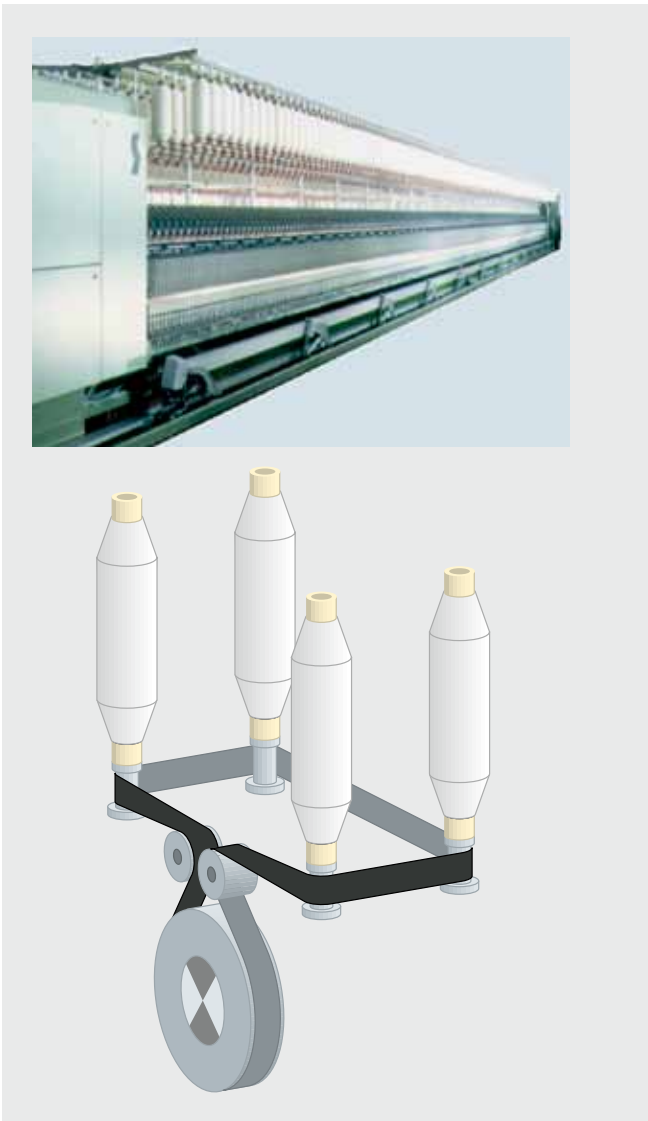
Thanks to the Z-splice, they can be made endless quickly and easily. Adhesives are not required. UT 8E requires no additional splicing film.

High-efficiency flat belts

With long service lives, efficiency of > 98% and good damping properties, Siegling Extremultus belts are an excellent choice. Several shafts can be driven simultaneously in the same and opposite directions.

Due to their extreme flexibility, E line flat belts are ideal for rotating around the axis in running direction (mule drives).

P line flat belts are perfect for conical pulley (taper-cone drives) because of their extreme lateral rigidity and strong edges.



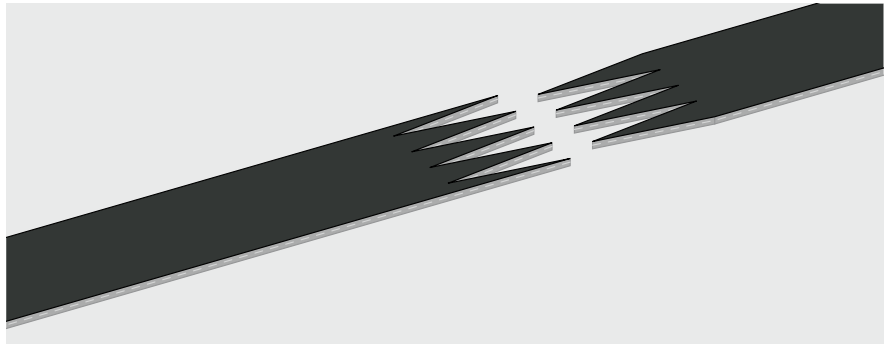
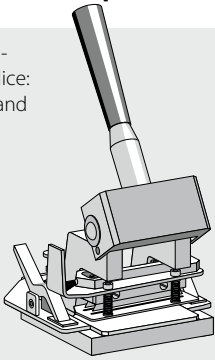
Perfect splice technology

Thanks to our splice methods and tools, Siegling Extremultus flat belts can be made endless quickly and easily – and the A+E line does not even require any adhesives. Detailed splice instructions are available on request.

The GS-certified Siegling Extremultus SM-HC 50/40 and SM-HC 50/60 heat presses are also available with complete accessories as sets in a practical case.

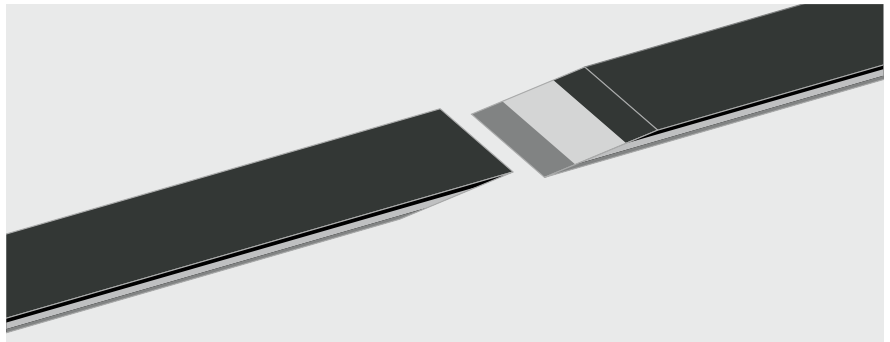
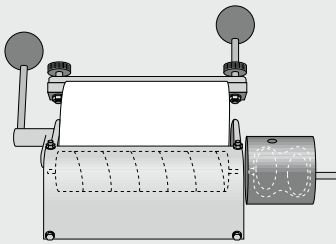
Preparing the Z-splice (A+E line)

Manual punch-cutter for Z-splice:
PP-ZP-V/40/3 and
PP-ZP-V/80/6

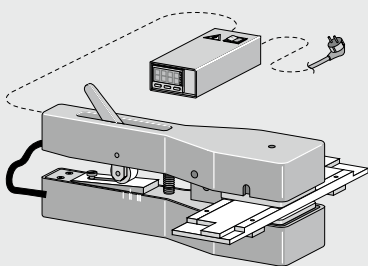


Preparing the wedge splice (P line)

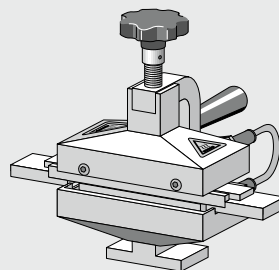
PG-GM-V/130 grinder
for the ground wedge splice



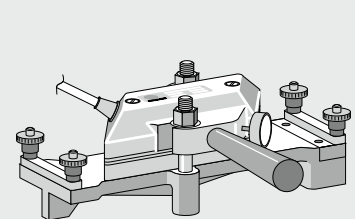
Heating tools



SM-HC-50/40 and SM-HC-80/60 heating clamp for the E line (Z-splice, splice length 70 mm and 35 mm)



SMX-HC-140/40 heating device for the A+E line (Z-splice, splice length 110 and 70 mm)



SB-HP-120/50 heating device for the P line (wedge splice)

Excerpt from the product range

	Technical data									Splice	
	Article number	Belt thickness approx. [mm]	d _{min} [mm]*	Nominal effective pull, approx. [N/mm width]**	Nominal working elongation [% of belt length]	Max. transmittable effective pull [N/mm belt width]	Elongation at fitting [% of belt length]	Weight approx. [kg/m ²]	Permissible operating temperatures [°C] (long-term temperature)	Z-Splice splice length [mm]***	Ground wedge splice****
A line											
GG 25A-25 NSTR/FSTR grey/black	822130	2.5	40	25	1.0	28	0.3 – 1.0	2.7	-20/+70	110	
GG 40A-32 NSTR/FSTR grey/black	822131	3.2	60	40	1.0	42	0.3 – 1.0	3.45	-20/+70	110	
E line											
GG 20E-20 NSTR/FSTR grey/black ¹⁾	822145	2.0	24	20	2.0	20	1.0 – 2.0	2.2	-20/+70	35/70/110	
GG 30E-25 NSTR/FSTR grey/black ¹⁾	822126	2.5	30	30	2.0	30	0.3 – 2.0	2.75	-20/+70	35/70/110	
GG 30E-30 NSTR/NSTR black	822127	3.2	60	30	2.0	35	0.5 – 2.0	3.25	-20/+70	70/110	
GG 40E-32 NSTR/FSTR grey/black	822128	3.2	60	40	2.0	44	0.5 – 2.5	3.45	-20/+70	110	
GG 40E-37 NSTR/NSTR black	822129	3.7	60	40	2.0	44	0.5 – 2.5	4.15	-20/+70	110	
P line											
GG 10P-20 NSTR/FSTR grey/black	855604	2.0	30	10	2.0	12.5	1.5 – 3.0	2.15	-20/+80		●
GG 15P-22 NSTR/FSTR grey/black	855605	2.2	40	15	2.0	19	1.5 – 3.0	2.3	-20/+80		●
GG 20P-25 NSTR/FSTR grey/black	855606	2.5	60	20	2.0	25	1.5 – 3.0	2.8	-20/+80		●
GG 20P-26 HP black ²⁾	855615	2.6	90	20	2.0	25	1.5 – 3.5	3.0	-20/+80		●
GG 30P-32 NSTR/FSTR grey/black	855607	3.2	125	30	2.0	37.5	1.5 – 3.0	3.5	-20/+80		●
GG 30P-37 NSTR/NSTR black	855603	3.7	125	30	2.0	37.5	1.5 – 3.0	3.9	-20/+80		●
GT 6P black	850044	1.3	20	6	2.0	7.5	1.5 – 3.0	1.3	-20/+80		●
GT 10P black	850045	1.6	30	10	2.0	12.5	1.5 – 3.0	1.6	-20/+80		●
GT 14P black	850046	1.8	40	14	2.0	17.5	1.5 – 3.0	1.8	-20/+80		●
GT 20P black	850047	2.5	60	20	2.0	25	1.5 – 3.0	2.65	-20/+80		●
GT 28P black	850048	3.0	120	28	2.0	35	1.5 – 3.0	3.3	-20/+80		●
LL 10P	800016	3.1	40	10	2.0	12.5	1.5 – 3.0	3.1	-40/+80		●
LL 14P	800017	3.5	60	14	2.0	17.5	1.5 – 3.0	3.5	-40/+80		●
LL 20P	800018	4.4	90	20	2.0	25	1.5 – 3.0	4.2	-40/+80		●
LT 10P	800008	2.2	30	10	2.0	12.5	1.5 – 3.0	2.5	-40/+80		●
LT 14P	800009	2.4	60	14	2.0	17.5	1.5 – 3.0	2.6	-40/+80		●
LT 20P	800010	3.4	90	20	2.0	25	1.5 – 3.0	3.4	-40/+80		●
Spindle tapes											
UT 5P green	995381	0.7	14	5	2.0	-	0.5 – 2.0	0.5	-20/+80	35	●
UT 8E green	822060	0.7	10	8	2.0	-	0.3 – 2.0	0.6	-20/+80	35	
Endless line											
LT 14E	810002	2.1	40	14	1.0	14	0.5 – 1.5	2.2	-20/+70	truly endless	
LT 20E	810003	2.3	80	20	1.0	20	0.5 – 1.5	2.5	-20/+70	truly endless	
LT 28E	810004	2.9	130	28	1.0	28	0.5 – 1.5	3.2	-20/+70	truly endless	
GG 54A NSTR/NSTR black	811055	2.8	150	54	1.0	54	0.3 – 1.0	2.8	-20/+60	truly endless	

Legend

* Minimum drum diameter was determined at room temperature. Lower temperatures require larger drum diameters. For the P line, this also applies in the case of low humidity.

** Nominal effective pull specifies the power transmission in N per mm belt width possible for the belt type (standard operating environment).

¹⁾ 35 mm Z-splice possible for certain applications

²⁾ HP precision ground texture on both sides available only as endless belt

● yes/suitable

□ please inquire

A = Aramide
E = Polyester
G = Elastomer G
P = Polyamide
T = Blended or polyamide fabric
U = Polyurethane

FSTR = Fine pattern
HP = Precise ground texture
NSTR = Normal pattern

NSTR/NSTR = symmetrical structure for same operating conditions on both sides (e.g. texturing machines.)

Applications for conveyor and processing belts



Siegling Transilon conveyor and processing belts optimise the economical, automated flow of material and also make a significant contribution to quality control and flexibility in production processes, thanks to:

- little wear and tear on the material in the delivery of the bale, in the blending and cleaning of the flock, in conveying the fibres to the cards and drawing frames or in feeding the fibre to the ring spinning frame
- the reliable removal of waste and debris and cross-wound bobbins in OE spinning frames
- increased productivity in the material flow of empty bobbins, cops or cop trays in fully automatic, linked systems, on winders and twisters right up to the intermediate storage and packaging of cross-wound bobbins.

Siegling Transilon often crosses the line between simple conveyor functions and the active participation in the production process. This product range is a versatile top performer. Excellent examples of its usage are printing blankets on rotary and silk-screen printing machines, or cross lapper belts for lapping fine, light web layers.

The table on the following pages includes an overview, sorted according to industry, of types available for yarn production.

Please do not hesitate to contact us if you would like information on our complete range of products and special processing belt applications.

Depending on the belt type and coating, Siegling Transilon is

- antistatic
- ISO/DIN and ATEX compliant
- low-noise
- resistant to oil mist and other chemical effects
- adhesive or with low drag
- smooth or patterned
- wear-resistant
- kind to materials
- resistant to soiling
- flame retardant in accordance with ISO/ASTM



The properties

extensive range of types



ideal solutions for efficient material flow

low elongation



short take-up ranges, easy to adjust, no re-tensioning required

dimensionally stable and low-noise



reliable tracking even in changes in ambient conditions, reduced noise

antistatic and with cleanly cut edges



long service life and minimal cleaning should fluff accumulate

light and flexible



easy to fit, low energy consumption

wide range of practical accessories



belts easy for customers to make endless themselves

The advantages

For further relevant Forbo Siegling products in the textile industry please see the following brochures:

No.	Title
224	Siegling Transilon conveyor and processing belts
278	Textiles – Textile printing
295	Textiles – Nonwovens

Excerpt from the product range

		Technical Data							Splice
Article number	Top face coating	Permanently antistatic	Total thickness approx. [mm]	Weight approx. [kg/m ²]	Effective pull at 1% elongation (K _{1%} relaxed) [N/mm width]*	d _{min} approx. [mm]**	Permissible operating temperature [C]**	Mechanical fastener, type	
Tension member of polyester fabric									
E 3/2 U0/U0 transparent FDA ^{1) 5)}	Urethane impregnated	●	1.2	1.1	5.0	40	-30/+100	HS-02	
E 3/2 U0/U2 HACCP white FDA ^{1) 5)}	0.2 mm Urethane	●	1.45	1.6	5.5	40	-30/+100	HS-01	
E 4/1 P2/P2 MT/MT-HC black	0.2 mm Polyamide	HC	0.75	0.8	3.5	60	-30/+100	HS-02	
E 4/1 U0/V5H MT green	0.5 mm Hard PVC	●	1.1	1.2	3.5	30	-10/+70	HS-01	
E 4/1 V4H/V4H MT/STR green	0.5 mm Hard PVC	●	1.4	1.7	3.5	30	-10/+70	HS-02	
E 4/2 U0/P2 MT-HC black	0.2 mm Polyamide	HC	1.0	1.0	4.0	60	-30/+100	HS-01	
E 5/2 0/V5H MT black ²⁾	0.5 mm Hard PVC	●	1.9	2.2	3.5	20	-10/+70	HS-13	
E 10/1 V1/Z30-Q white	3.0 mm Polyester felt	●	4.2	1.9	8.0	40	-30/+100	HS-11	
E 8/2 0/R10 S/LG black	1.0 mm High Grip	●	2.5	2.3	7.5	40	-30/+100	HS-15	
E 8/2 U0/V/U2H MT green	0.2 mm Hard Urethane	●	1.6	1.8	7.5	40/60	-10/+70	HS-02	
E 8/2 U0/U2 green FDA ^{3) 4)}	0.2 mm Urethane	●	1.4	1.6	6.5	24	-30/+100	HS-02	
E 8/2 Y0/V4 GSTR black	0.4 mm PVC	●	2.1	2.25	5.5	40	-10/+70	HS-13	
E 8/2 U0/V5 green ³⁾	0.5 mm PVC	●	2.2	2.5	7.5	30	-10/+70	HS-13	
E 8/2 U0/V5H MT black ^{2) 5)}	0.5 mm Hard PVC	●	2.2	2.5	7.5	40	-10/+70	HS-13	
E 8/2 U0/V5 STR green	0.5 mm PVC	●	2.4	2.7	6.0	30	-10/+70	HS-13	
E 8/2 U0/V10 SG green ⁴⁾	1.0 mm PVC	●	2.6	2.85	7.0	40	-10/+70	HS-13	
E 8/2 U0/V15 LG green ⁴⁾	1.5 mm PVC	●	3.1	3.4	8.0	40	-10/+70	HS-05	
E 8/2 U0/V20 AR green ⁴⁾	2.0 mm PVC	●	4.9	4.0	6.0	40	-10/+70	HS-05	
E 8/2 V1/V1 blue FDA	0.1 mm PVC	●	2.0	2.35	5.5	50	-10/+70	HS-14	
E 8/2 V5/V5 STR/GL green ⁴⁾	0.5 mm PVC	●	2.65	3.2	7.0	40	-10/+70	HS-11	
E 12/2 U0/V/U0 transparent	Urethane impregnated	●	1.5	1.55	11.0	60	-10/+70	HS-03	
E 12/2 U0/V7 green	0.7 mm PVC	●	2.85	3.4	12.0	60	-10/+70	HS-05	
E 12/2 V5/V10 STR/GL green	1.0 mm PVC	●	3.25	3.9	11.5	60	-10/+70	HS-05	
E 18/H U0/U2 MT white FDA	0.2 mm PVC	●	1.75	1.75	19.0	20	-30/+100	KS	

Legend

* Established in line with ISO 21181:2005

** Minimum drum diameters were determined at room temperature and do not apply to conveyor belts with mechanical fasteners. Lower temperatures require larger drum diameters. Belts with profiles or sidewalls may require larger drum diameters. Please see brochure ref. no. 318, Siegling Transilon Technical Information 2.

*** Maximum permissible operating temperature may be exceeded short term by 20 °C/36 °F

¹⁾ Suitable for knife edge applications

²⁾ Also available in green

³⁾ Also available in white FDA

⁴⁾ Also available in black

⁵⁾ Also available in blue

● Yes/suitable

□ Please inquire

E = Polyester
P = Polyamide
U = Urethane
UH = Hard urethane
V = PVC
VH = Hard PVC
O = Uncoated
UO = Urethane impregnated

AR = Anti-skid pattern
GSTR = Coarse textured pattern
GL = Smooth surface
LG = Longitudinal groove
MT = Matt surface
SG = Lattice pattern
STR = Normal textured pattern

C = Laterally flexible, suitable for curved belts

FDA = FDA-compliant
HACCP = Supports the concept HACCP

HC = Highly-conductive
M = Particularly stiff laterally
Q = Laterally soft tension member, not for curved belts

Supplied as

– Endless belts****

– Belts prepared for hot or cold-pressing on site****

– Roll material for customer to fabricate belt

– Belts with mechanical fasteners

– Belts with sealed edges

– Belts with profiles welded on (longitudinal, lateral, diagonal, half-round)

– Belts with sidewall profiles

– Belts with perforations or eyelets

– Belts with special coatings

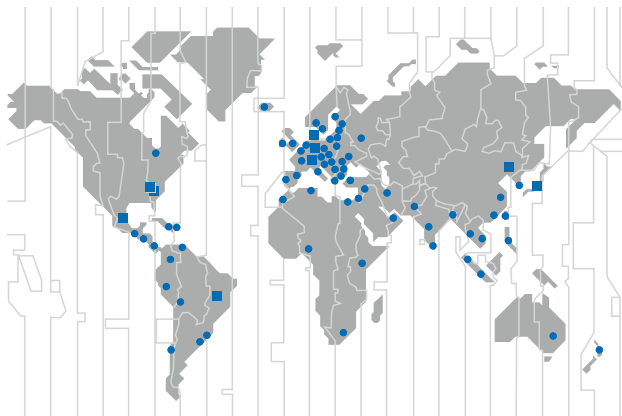
**** Z-splice is standard

Please specify if other splice is desired.

Siegling – total belting solutions

Committed staff, quality-orientated organisation and production processes ensure the constantly high standards of our products and services. The Forbo Siegling Quality Management System is certified in accordance with ISO 9001.

In addition to product quality, environmental protection is an important corporate goal. Early on we also introduced an environmental management system, certified in accordance with ISO 14001.



Forbo Siegling service – anytime, anywhere

The Forbo Siegling Group employs more than 2,000 people. Our products are manufactured in nine production facilities across the world. You can find companies and agencies with warehouses and workshops in over 80 countries. Forbo Siegling service points are located in more than 300 places worldwide.