

STARCLEAN®
Sustainability by Innovation



HEROES OF SPILLAGE CONTROL





"SOLUTIONS - CLEAN AND GREEN" WHAT DOES THIS ACTUALLY MEAN?

It is important to ensure the efficient and considerate use of limited resources. With our products and processes, we safeguard the increasingly important factor of sustainability. In the area of bulk material handling equipment, for example, we ensure optimized conveyor belt cleaning and material flow control.

CONSERVING RAW MATERIALS



WE STAND FOR:

- ◆ Optimum material flow planning for raw materials
- ◆ Modular set-up of machine and system components
- ◆ High operational safety
- ◆ Intelligent material flow planning
- ◆ Efficient use of materials

**THIS IS MADE POSSIBLE BY
HEROES OF SPILLAGE CONTROL**

WHY IS SPILLAGE CONTROL ESSENTIAL FOR BELT CONVEYORS IN THE BULK MATERIALS SECTOR?

REDUCING EMISSIONS DUST-FREE CONVEYING

- ◆ Belt conveyors are complex systems whose ability to operate smoothly influences the entire production process
- ◆ Efficiency is strongly dependent on the effectiveness of the components and the way in which they interact
- ◆ Dust emissions influence efficiency, the environment, and the health of employees



SAMPLE CALCULATION TROUGHED BELT CONVEYORS AND ASSOCIATED DUST PROBLEMS

A layer with a thickness of 0.1 mm that is not cleaned off and instead falls under the belt conveyor on a belt measuring 1200 mm wide traveling at a **speed of 3m/s results in a material loss of 10m³ in 8 hours.**

This Material:

- ◆ Must be removed
- ◆ Causes wear to idler pulleys and belt
- ◆ Has only limited potential for reintroduction into the process
- ◆ Contributes to dust and environmental pollution
- ◆ Represents a waste of raw material



PROBLEM AREAS



Conveyor belt already cutting into the supporting structure



Heavy **dust** accumulation; full enclosure required



Aggressive **dust** that adheres to and accumulates on components



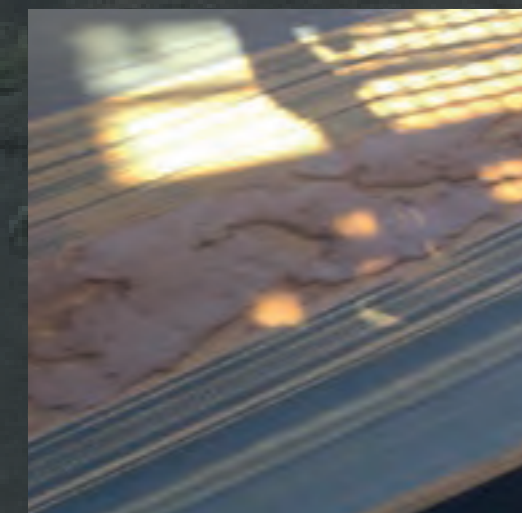
Poorly cleaned conveyor belt



Material falling from soiled idler pulleys



Soiling caused by **poorly sealed** transfer points



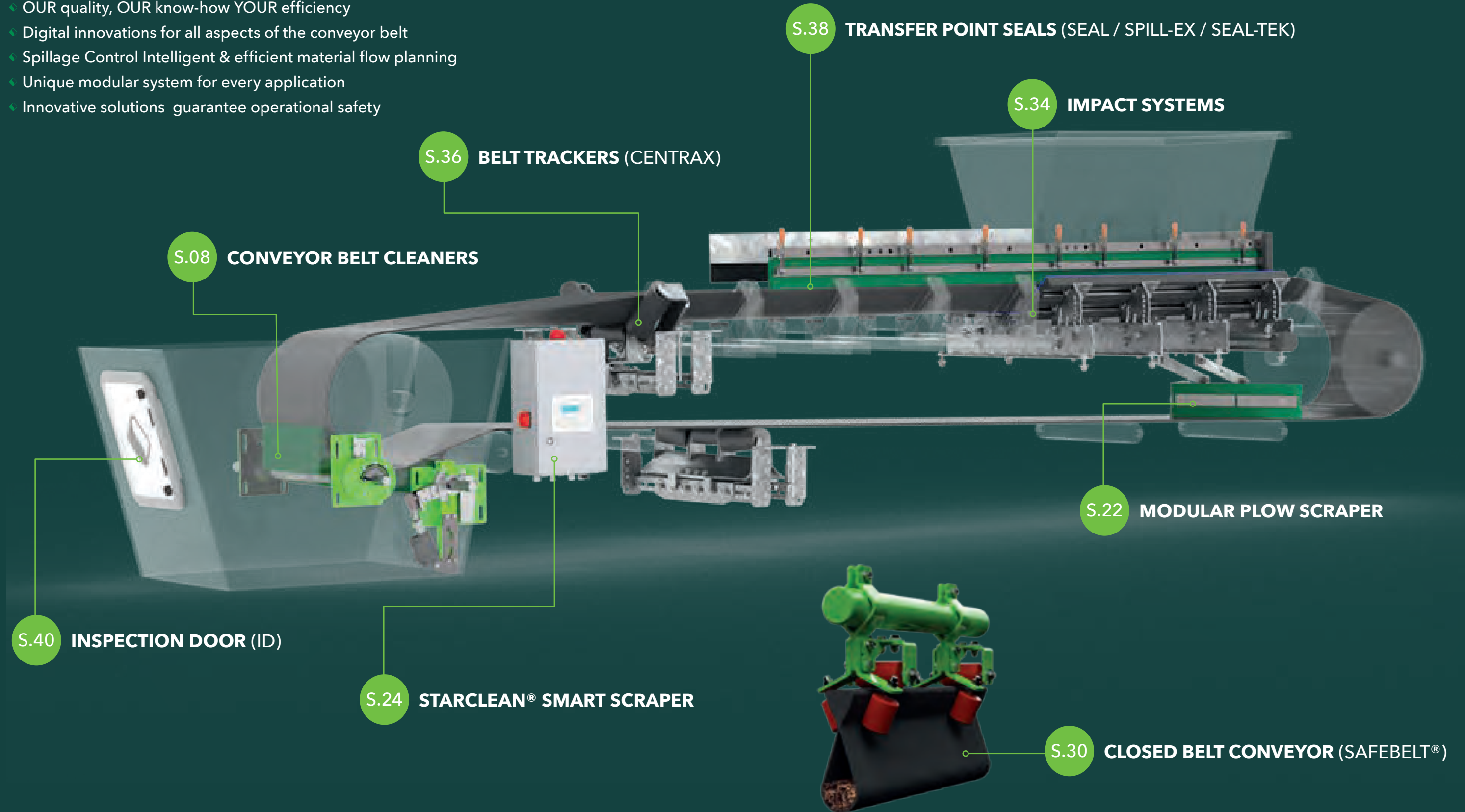
Material clinging to the conveyor belt

THERE IS
A SOLUTION
FOR THESE
PROBLEMS!
STARCLEAR®
SPILLAGE
CONTROL



STARCLEAN® SMART CONVEYING SOLUTIONS

- ◆ OUR quality, OUR know-how YOUR efficiency
- ◆ Digital innovations for all aspects of the conveyor belt
- ◆ Spillage Control Intelligent & efficient material flow planning
- ◆ Unique modular system for every application
- ◆ Innovative solutions guarantee operational safety



All products appearing on the following pages are example illustrations.

MEMBER OF SCHULTE STRATHAUS ◆ FAMILY-OWNED COMPANY SINCE 1952 ◆ MADE IN GERMANY

STARCLEAN®

CONVEYOR BELT CLEANER

ADVANTAGES AT A GLANCE

- ◆ Perfect, belt-saving cleaning
- ◆ Extremely long lifespan thanks to low wear
- ◆ Tool-less scraper blade replacement
- ◆ Quick and easy mounting and maintenance
- ◆ Optimum adjustment to the conveyor belt thanks to TWIST-SWING®
- ◆ Unique, modular system
- ◆ Top-quality materials: high-performance polyurethane or polyurethane base with special tungsten carbide blades

PRIMARY SCRAPER

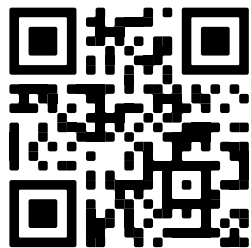


SECONDARY SCRAPER



TWIST-SWING®

- ◆ Optimum adjustment of each scraper blade to the belt surface
- ◆ Ability to evade obstacles
- ◆ Flawless cleaning results

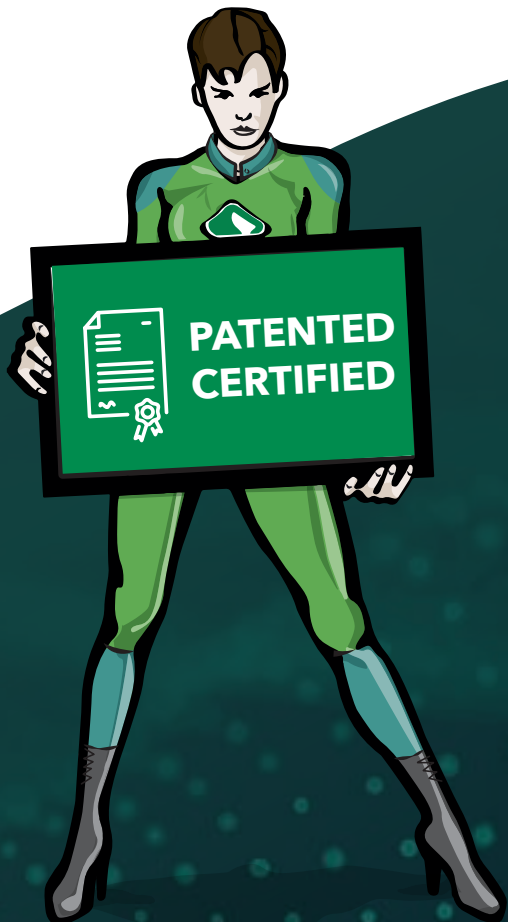
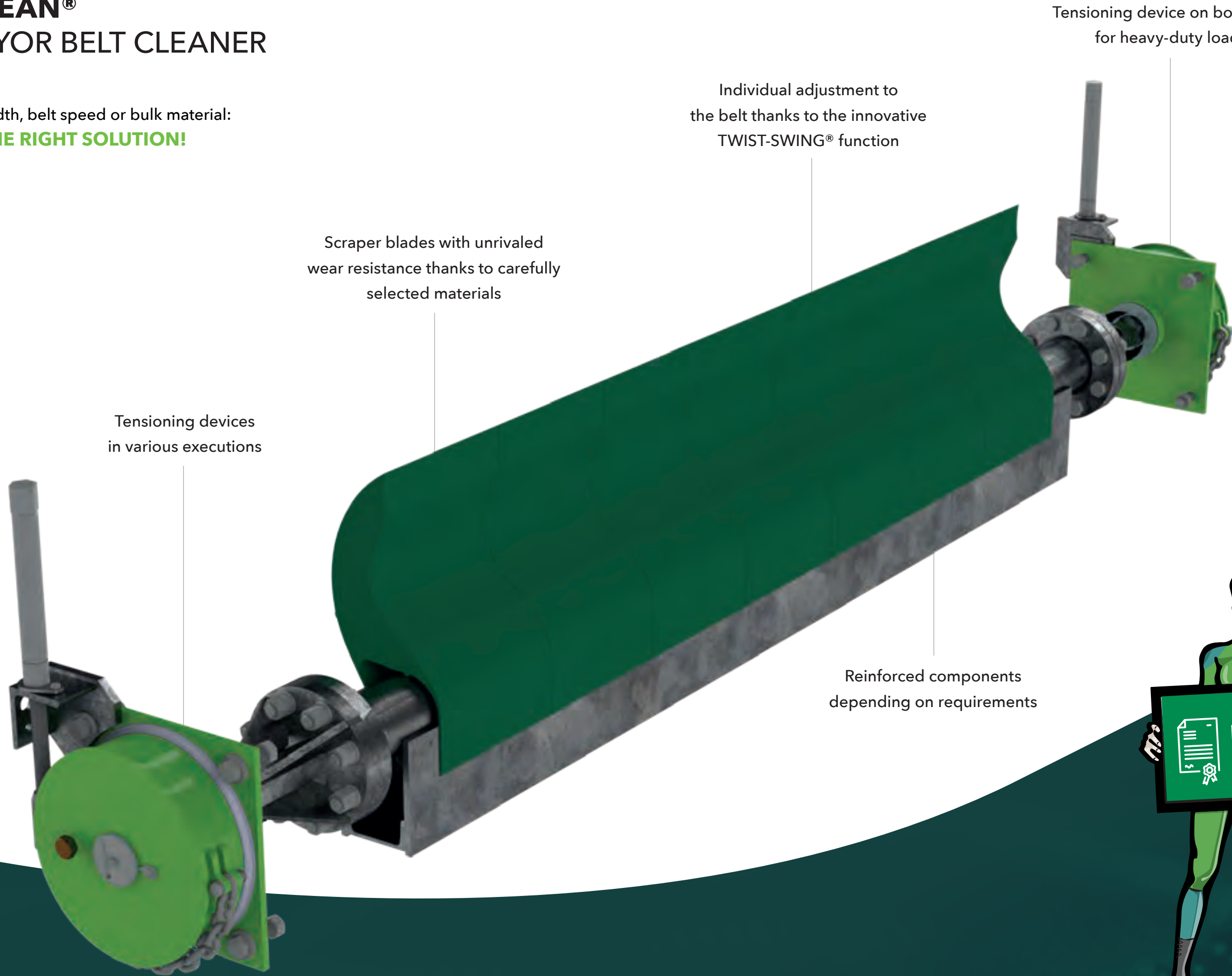


PRODUCT
VIDEO



STARCLEAN® CONVEYOR BELT CLEANER

For any belt width, belt speed or bulk material:
WE HAVE THE RIGHT SOLUTION!

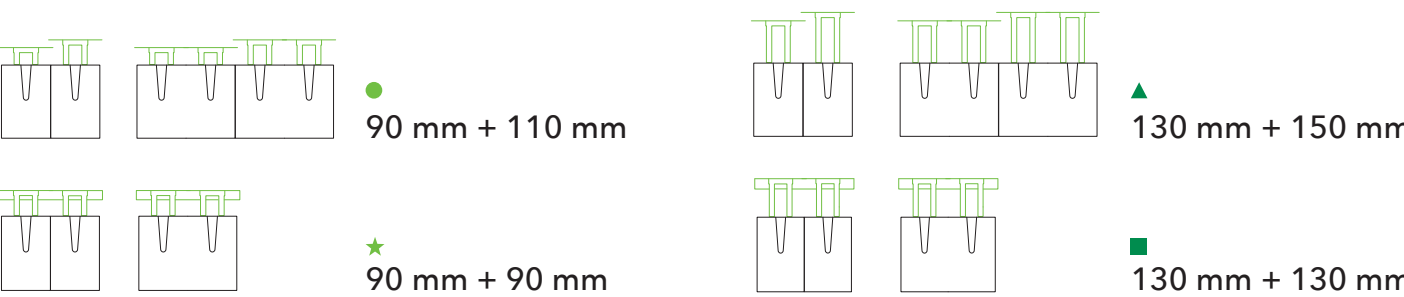


STARCLEAN® THE MODULAR SYSTEM

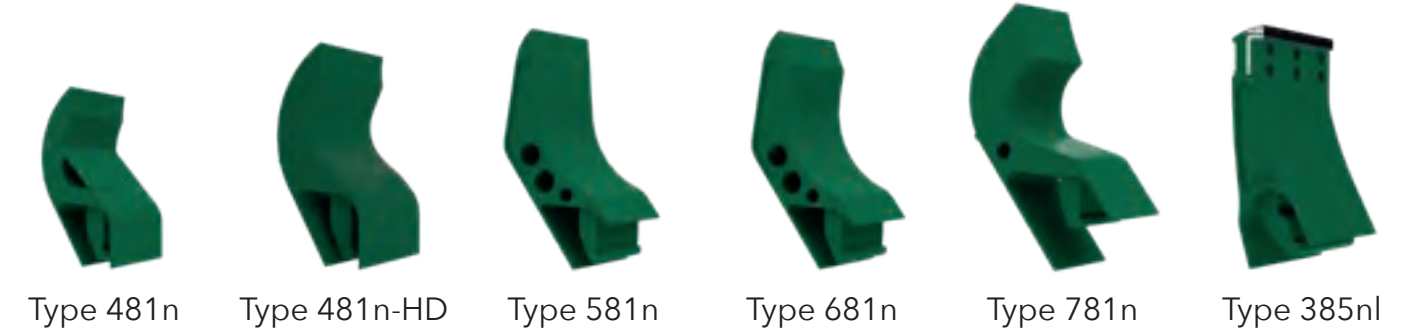
PRIMARY SCRAPER BLADES FOR USE AT THE PULLEY



Carbide segments available in different lengths

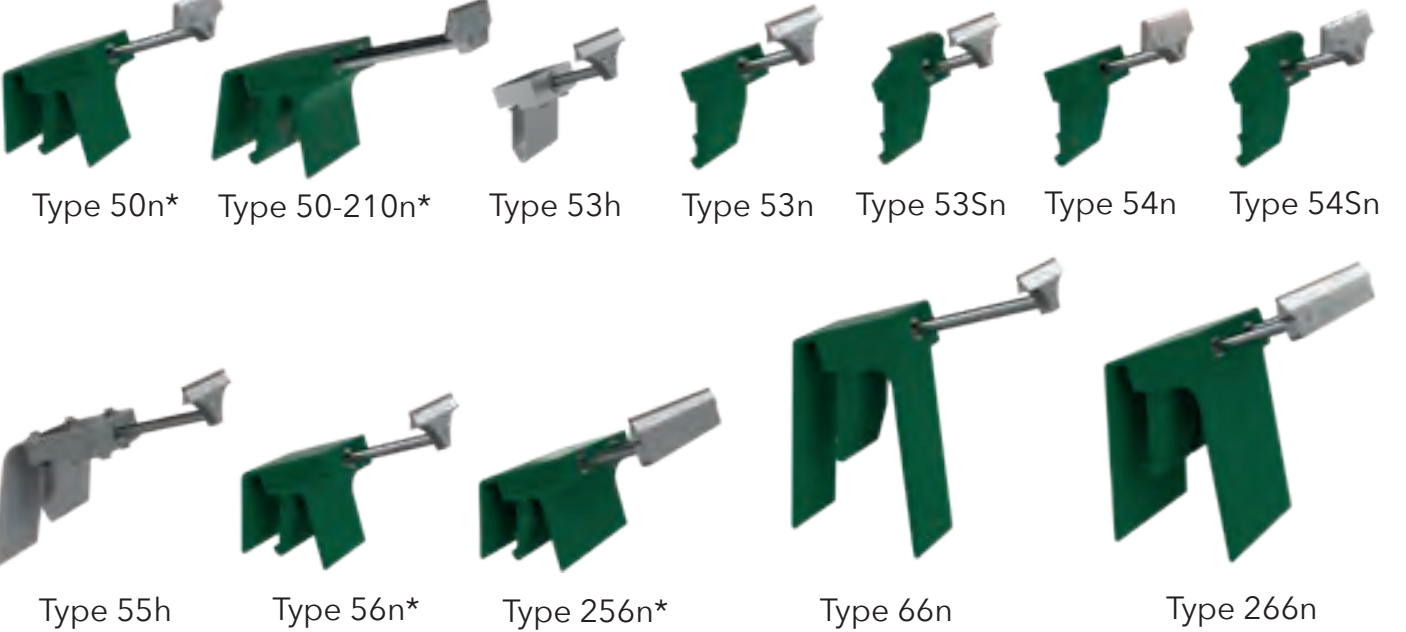


PRIMARY SCRAPER BLADES FOR HEAVY-DUTY BELT CONVEYORS

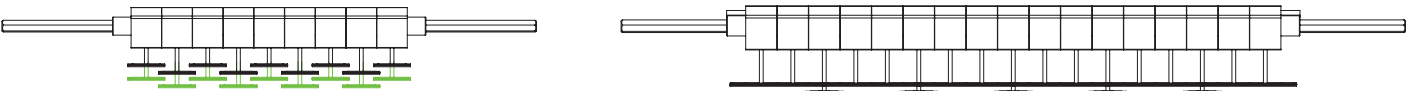


AVAILABLE IN: STANDARD QUALITY - ATEX QUALITY - SUITABLE FOR FOOD
 - HEAT-RESISTANT - HYDROLYSIS STABILIZED

SECONDARY SCRAPER BLADES FOR USE BELOW THE BELT

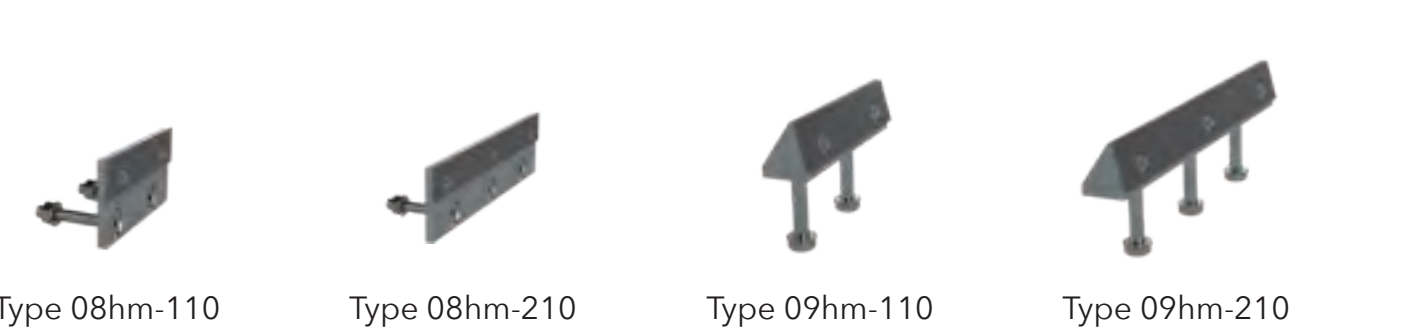


* available in different lengths



- ◆ Scraper available in different length pairs.
- ◆ Secondary scrapers are always mounted overlapping

SECONDARY CLEANING BLADES



STARCLEAN® TENSIONING DEVICES

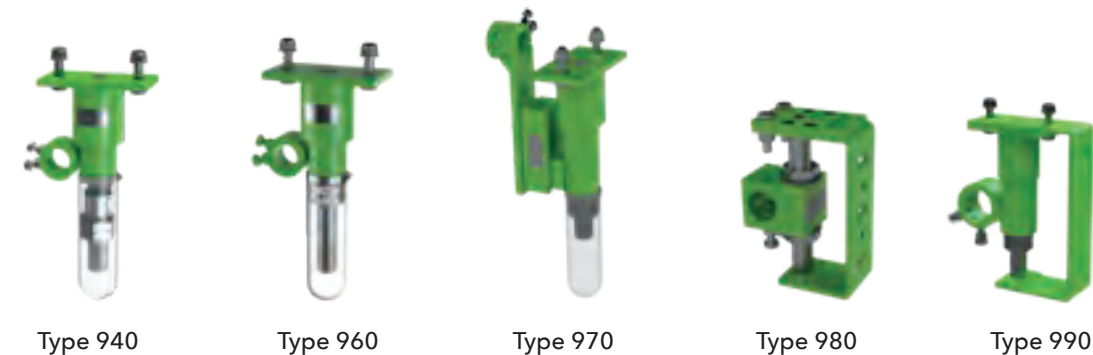
RASTER-TENSIONING DEVICES



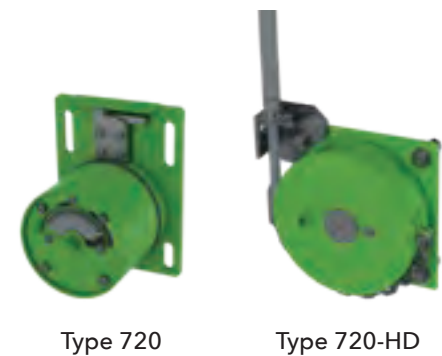
LEVER-TYPE TENSIONING DEVICES



SPINDLE-TYPE TENSIONING DEVICES



TORSION-TENSIONING DEVICES

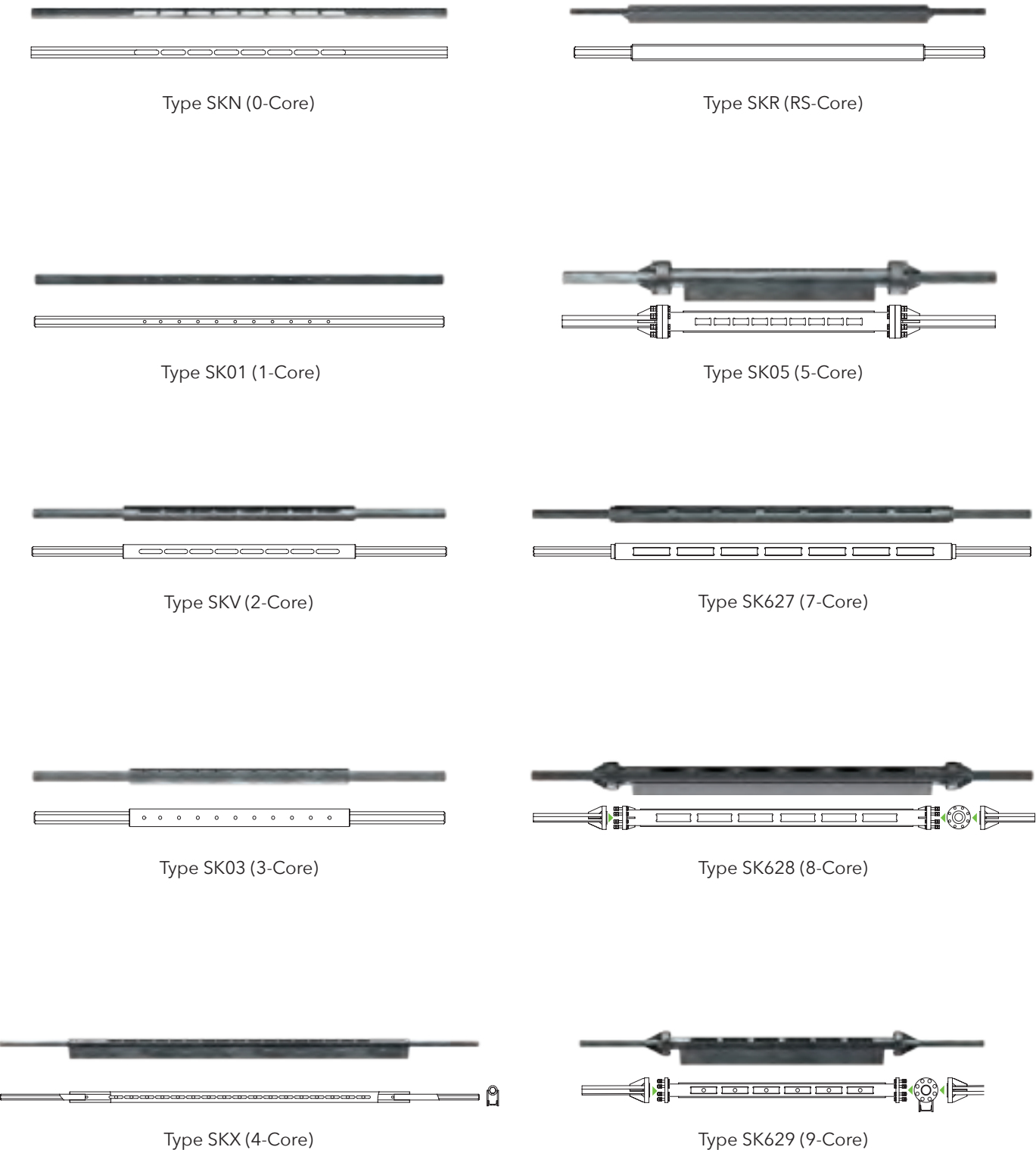


ELECTRIC TENSIONING DEVICES



STARCLEAN® BLADE BASES

AVAILABLE IN DIFFERENT LENGTHS



PRIMARY SCRAPERS

SERIES 700 WITH TORSION-TENSIONING DEVICE

WITH TUNGSTEN CARBIDE SCRAPER BLADES

Available types:
85, 285, 86 and 286
◆ Suitable for reversible operation

WITH POLYURETHANE SCRAPER BLADES

Available types:
18, 81, 82, 281, 282 and 283
◆ Suitable for reversible operation
and mechanical belt joints



SERIES 800 WITH RASTER-TENSIONING DEVICE

WITH TUNGSTEN CARBIDE SCRAPER BLADES

Available types: 85, 285, 86 and 286
◆ Suitable for reversible operation
◆ Overlapping cleaning with types 85 and 285



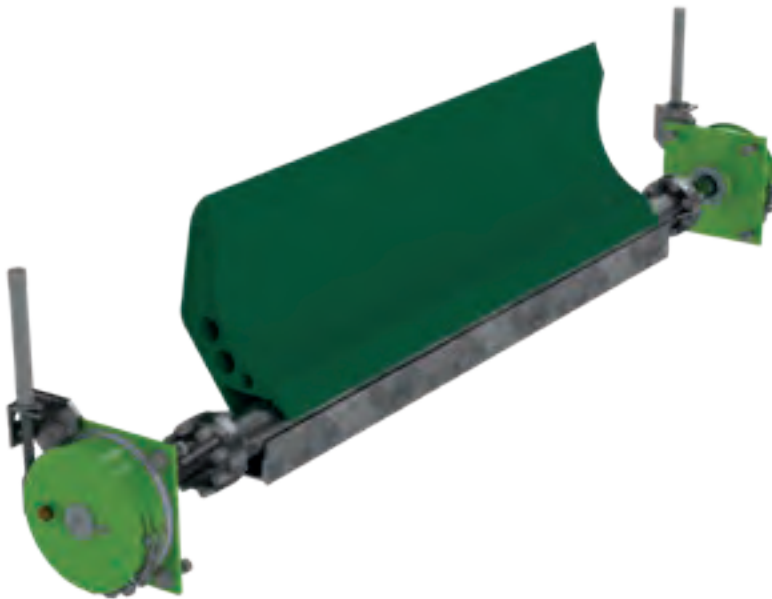
SERIES 700 FOR HEAVY-DUTY BELT CONVEYORS WITH TORSION-TENSIONING DEVICE

WITH TUNGSTEN CARBIDE SCRAPER BLADES

Available types: 385
◆ Suitable for reversible operation

WITH POLYURETHANE SCRAPER BLADES

Available types:
481, 481-HD, 581, 681 and 781
◆ Suitable for reversible operation
and mechanical belt joints



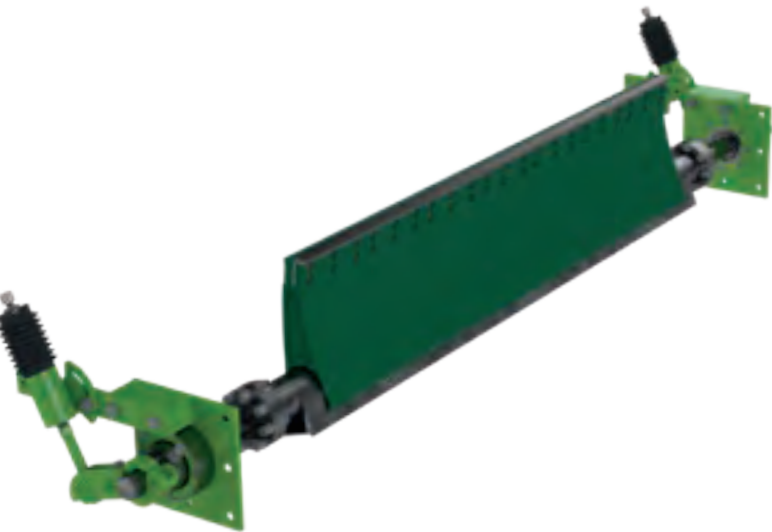
SERIES 600 FOR HEAVY-DUTY BELT CONVEYORS WITH LEVER-TYPE TENSIONING DEVICE

WITH TUNGSTEN CARBIDE SCRAPER BLADES

Available types: 385
◆ Fable for reversible operation

WITH POLYURETHANE SCRAPER BLADES

Available types:
481, 481-HD, 581, 681 and 781
◆ Suitable for reversible operation
and mechanical belt joints



SECONDARY SCRAPERS

SERIES 800 WITH RASTER-TENSIONING DEVICE

WITH TUNGSTEN CARBIDE SCRAPER BLADES

Available types: 08, 09, 50, 53, 54, 56 and 256

- ◆ Overlapping cleaning with types 50, 53, 56 and 256
- ◆ Suitable for reversible operations type 09
- ◆ Suitable for mechanical belt joints type 50 and 54

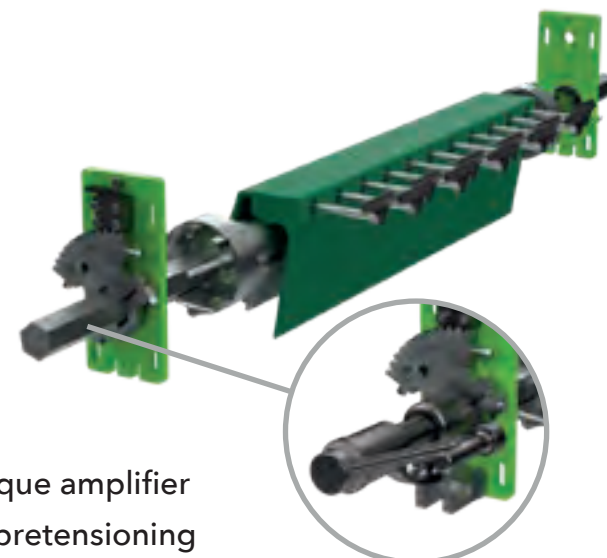


SERIES 800 FOR HEAVY-DUTY BELT CONVEYORS WITH RASTER-TENSIONING DEVICE

WITH TUNGSTEN CARBIDE SCRAPER BLADES

Available types: 66 and 266

- ◆ Overlapping cleaning



With torque amplifier
for easy pretensioning



SERIES 500 WITH SEGMENTED PRESSURE ROLLER SYSTEM

WITH TUNGSTEN CARBIDE BLADE

Available types: 08 and 09

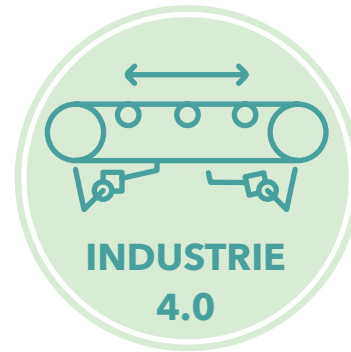
- ◆ Suitable for reversible operations
- ◆ For particularly abrasive, sticky materials
- ◆ With single-piece or two-piece tensioning device
- ◆ Belt-saving operation due to deflecting segmented rollers
- ◆ Optimum pressure of the belt against the carbide blade
- ◆ Version for heavy-duty belt conveyors also available



SCRAPER

NEXT-GENERATION SCRAPERS

SERIES 830-E WITH AUTOMATIC TENSIONING DEVICE



- ◆ Suitable for reversible operation
- ◆ Interval-based or load-based cleaning possible
- ◆ Electric linear drive unit (retrofitting possible)

WITH POLYURETHANE SCRAPER BLADES

Available types: 18, 81, 82, 281, 282 and 283

- ◆ For primary scrapers



WITH TUNGSTEN CARBIDE SCRAPER BLADES

Available types:

50, 53, 54, 56, 256, 08 and 09

- ◆ For secondary scrapers



SERIES 860-RS WITH RASTER-TENSIONING DEVICE

- ◆ Easy and quick maintenance outside of the transfer chute
- ◆ Convenient removal of each scraper blade from the side
- ◆ Reliable and safe scraper blade replacement without reaching into the system

WITH TUNGSTEN CARBIDE SCRAPER BLADES

Available types: 85, 285, 86 and 286

- ◆ For primary scrapers

WITH POLYURETHANE SCRAPER BLADES

Available types: 18, 81, 82, 281, 282 and 283

- ◆ For primary scrapers

WITH TUNGSTEN CARBIDE SCRAPER BLADES

Available types: 50, 53, 54, 56 and 256

- ◆ For secondary scrapers

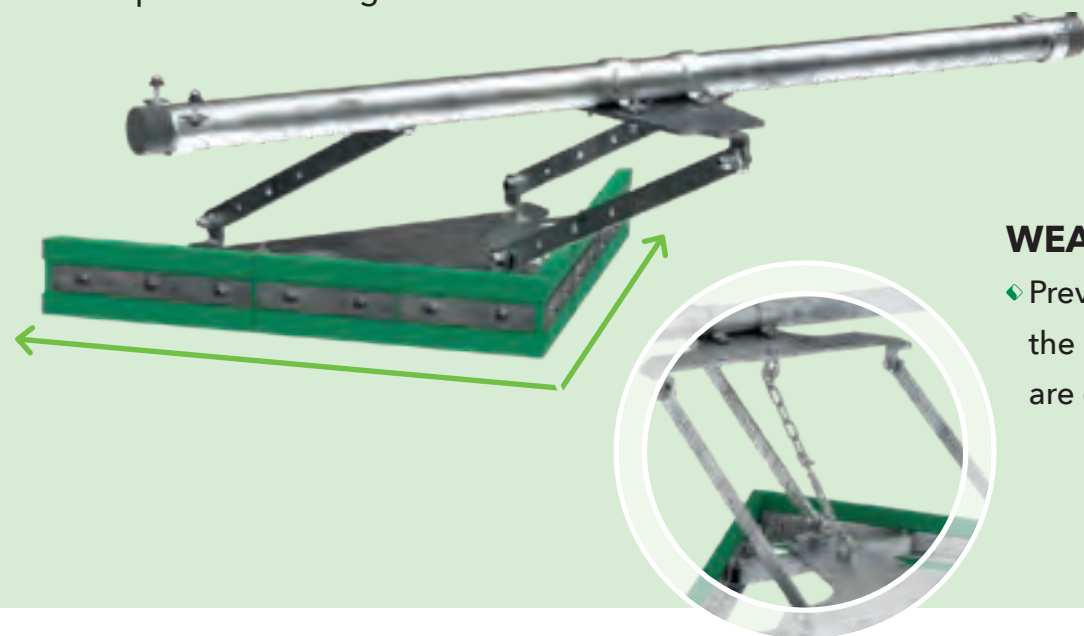


INNER BELT SCRAPERS

SERIES 200 FOR INNER BELT CLEANING

MODULAR PLOW SCRAPER

- ◆ Individual polyurethane blades
- ◆ Adjustable to every belt width thanks to the modular system
- ◆ Long lifespans
- ◆ Simplified mounting of the elements



WEAR LIMITER

- ◆ Prevents further lowering of the plow when the segments are completely worn out



WITH POLYURETHANE BLADE

Available types: 240 and 273

- ◆ Available as diagonal and plow scraper
- ◆ Prevents dirt and damage between pulley and belt

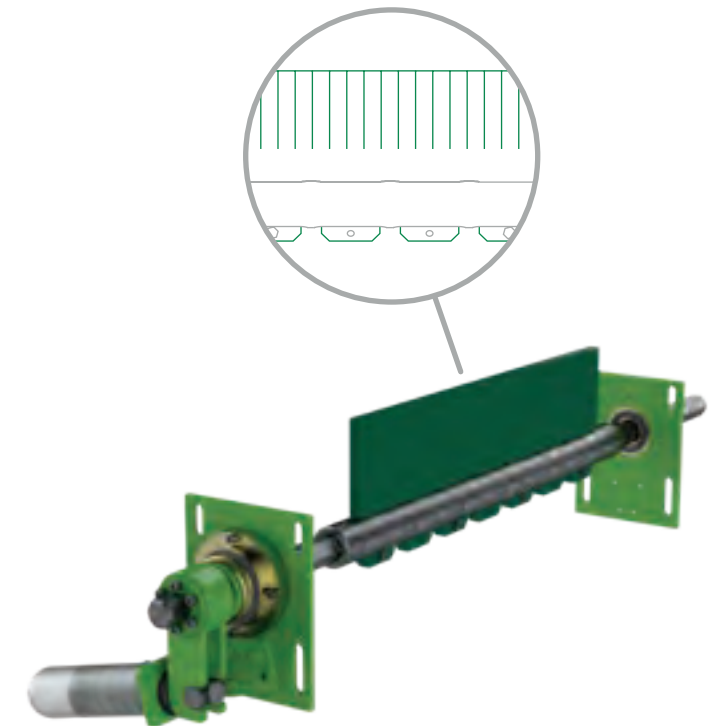
SPECIAL SOLUTIONS

SERIES 400 FOR CHEVRON CONVEYORS

WITH POLYURETHANE BLADE

Available types: 04 and 07

- ◆ Slotted or continuous
- ◆ For use on the return side of the belt



BRUSH CLEANER WITH BEATING DRUM

WITH FIXED BRUSH

- ◆ Poly bristles
- ◆ For use on the return side of the belt
- ◆ Alternatively with polyurethane blade

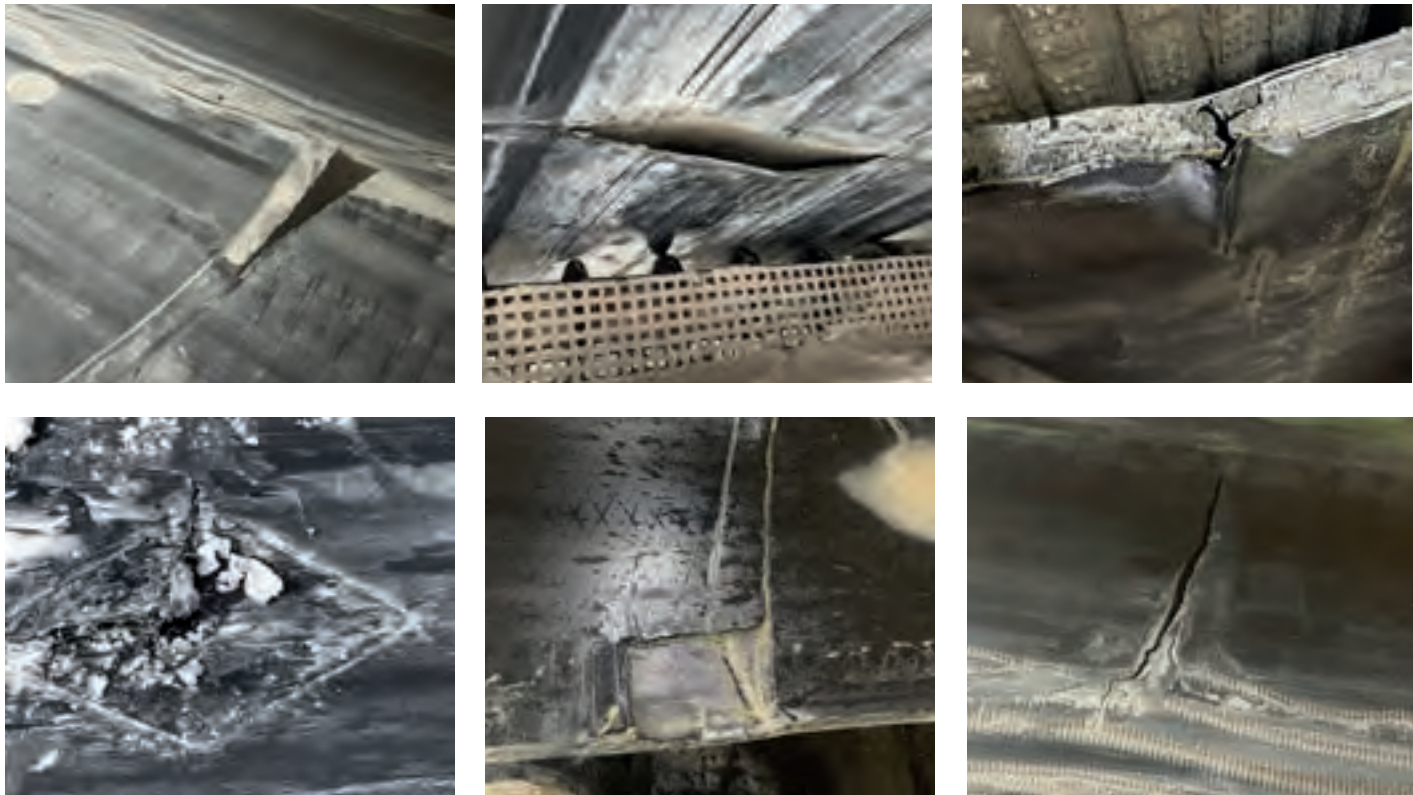


BELT DAMAGE

THE UNFORSEEABLE DANGER

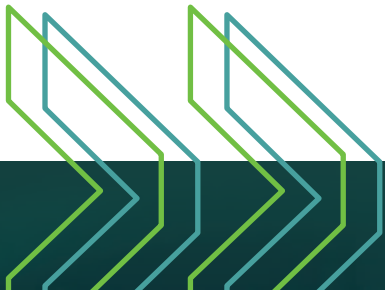
Unplanned production downtime due to damaged conveyor belts is one of the biggest challenges in the bulk materials industry. Even the smallest damage can cause major problems and ultimately bring the conveyor system to a standstill if not detected in time.

Top Cover Damages, Splice Damages, Repair Damages, Belt Rips, Edges Damages - a nightmare of all conveyor belts.



WE HAVE THE SOLUTION!

With the innovative **STARCLEAN®S³ belt damage detection system**, our customers get what they need: early **damage identification**, **resource conservation**, and **operational safety**.

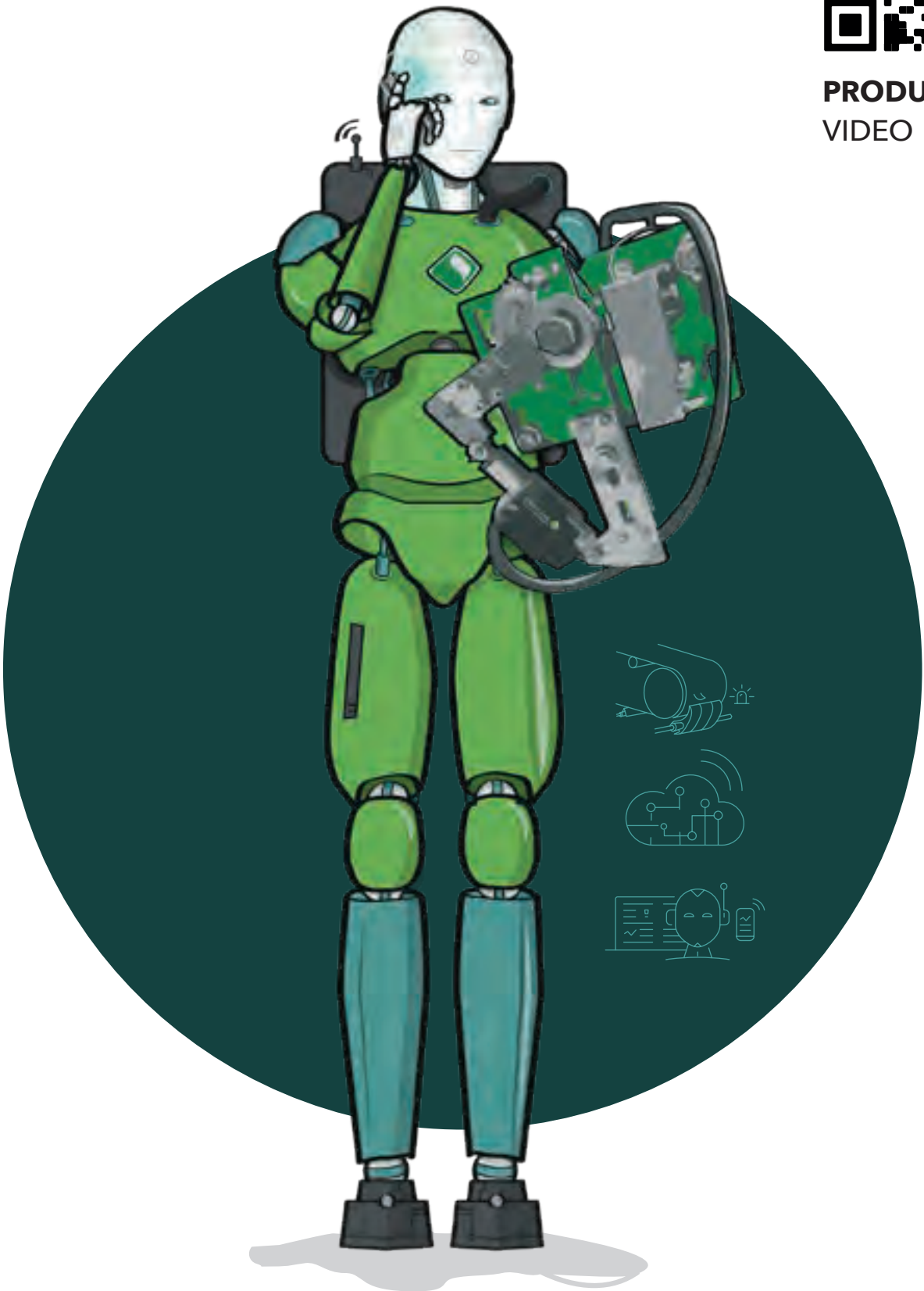


BELT DAMAGE

DETECTION



PRODUCT
VIDEO





STARCLEAN® SMART SCRAPER

THE NEW DIGITAL STARCLEAN®S³

Our unique smart scraper with an electric drive, combined with our smart cloud dashboard, enables predictive maintenance of wear elements through preventive damage detection on the conveyor belt. This digital innovation gives the scraper the ability to self-regulate wear and tear while also ensuring a constant pretensioning force - completely automatically.

Designed according to the principle of **“detect - react - protect”**, our innovation enables continuous contact-based inspection of the conveyor belt, thus enabling predictive maintenance.

ADVANTAGES AT A GLANCE

- ◆ Continuous inspection
- ◆ Damage limitation
- ◆ Efficient use of resources
- ◆ Improved operating reliability
- ◆ Prevention of costly, unscheduled conveyor belt downtimes
- ◆ Transparency

THE MODULES

- ◆ Scraper
- ◆ Motorization set
- ◆ Scraper Intelligence Module (SIM)
- ◆ Measuring roller with sensor system
- ◆ Belt damage detection
- ◆ LTE Edge Controller/Cloud

THE MODULES



Scraper Intelligence Module (SIM)

Motorization set with S³ sensor system

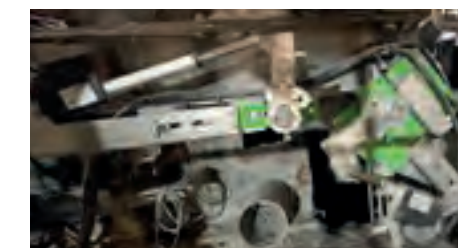
Drive on one side and on both sides

Scraper
Primary or secondary

Measuring roller with sensor system

TECHNICAL APPLICATIONS

- ◆ Automatic or manual engagement and disengagement of conveyor belt cleaner
- ◆ Automatic readjustment of the pretension
- ◆ Wear indicator and warning for polyurethane scrapers
- ◆ Constant belt damage detection by the secondary scraper
- ◆ Operating hours display for belt conveyor, scraper, and wear parts
- ◆ Switch-on, engagement and disengagement counter
- ◆ Indicator of conveying speed and running direction
- ◆ Control for up to four scrapers
- ◆ RFID access with rights allocation to protect against unauthorized access
- ◆ Information about the belt conveyor, the scrapers, and the control system
- ◆ Error messages and faults



STARCLEAN® S³ DASHBOARD/CLOUD



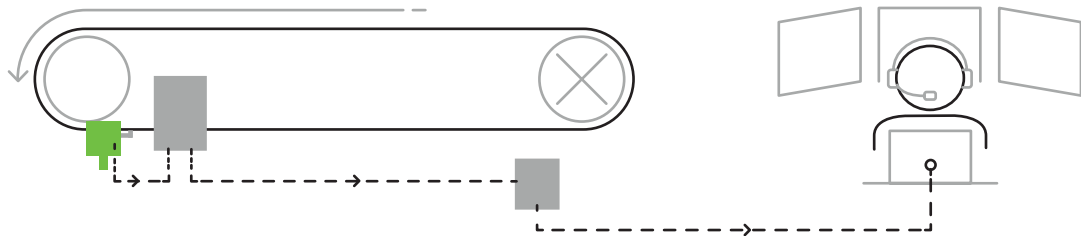
WHAT THE CLOUD CAN DO

- ◆ Monitor the conveyor belt
- ◆ Classify the damage
- ◆ Define the internal damage level
- ◆ Initiate action if belt is damaged (disengagement, send information, alarm, you determine the function)
- ◆ Detect the position of belt damage
- ◆ Record belt characteristics
- ◆ Smart, cloud-based dashboard

STARCLEAN® S³ SIGNAL LINK

As an alternative to our cloud, the signal and status reports from the STARCLEAN® Smart Scraper can be sent directly to the control room, e.g., via a PLC.

The Signal Link can serve as an add-on to the cloud or as the only data source.



BENEFITS AT A GLANCE:

- ◆ **Real-time monitoring:** Detailed information about the status of the scrapers and belt damage detection, centrally organized in the control room
- ◆ **Less downtime:** prevention of faults and interruptions early in the production process
- ◆ **Optimized process control:** real-time status signals of the Smart Scraper including predictive maintenance
- ◆ **Cost savings:** less unplanned downtime, more efficient processes

The integration of our data in the control room ensures process **reliability, efficiency, and transparency** in your production.

OUTPUT SIGNALS:

- ◆ Belt damage reports, levels 1-3
- ◆ Fault message (speed monitoring, position monitoring, measurement monitoring, control and linear drive fault message)
- ◆ Cleaning position (cleaning yes/no)
- ◆ Wear volume of the scrapers less than 20%
- ◆ Communication status
- ◆ **More signals are possible**

TECHNICAL SPECIFICATIONS:

- ◆ Power supply 100-240 VAC
- ◆ 50/60 Hz
- ◆ Outputs potential-free contacts
- ◆ Installation up to 150 m from the SIM



SAFEBELT®

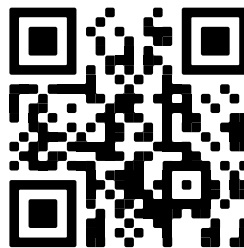
CLOSED BELT CONVEYOR

ADVANTAGES AT A GLANCE

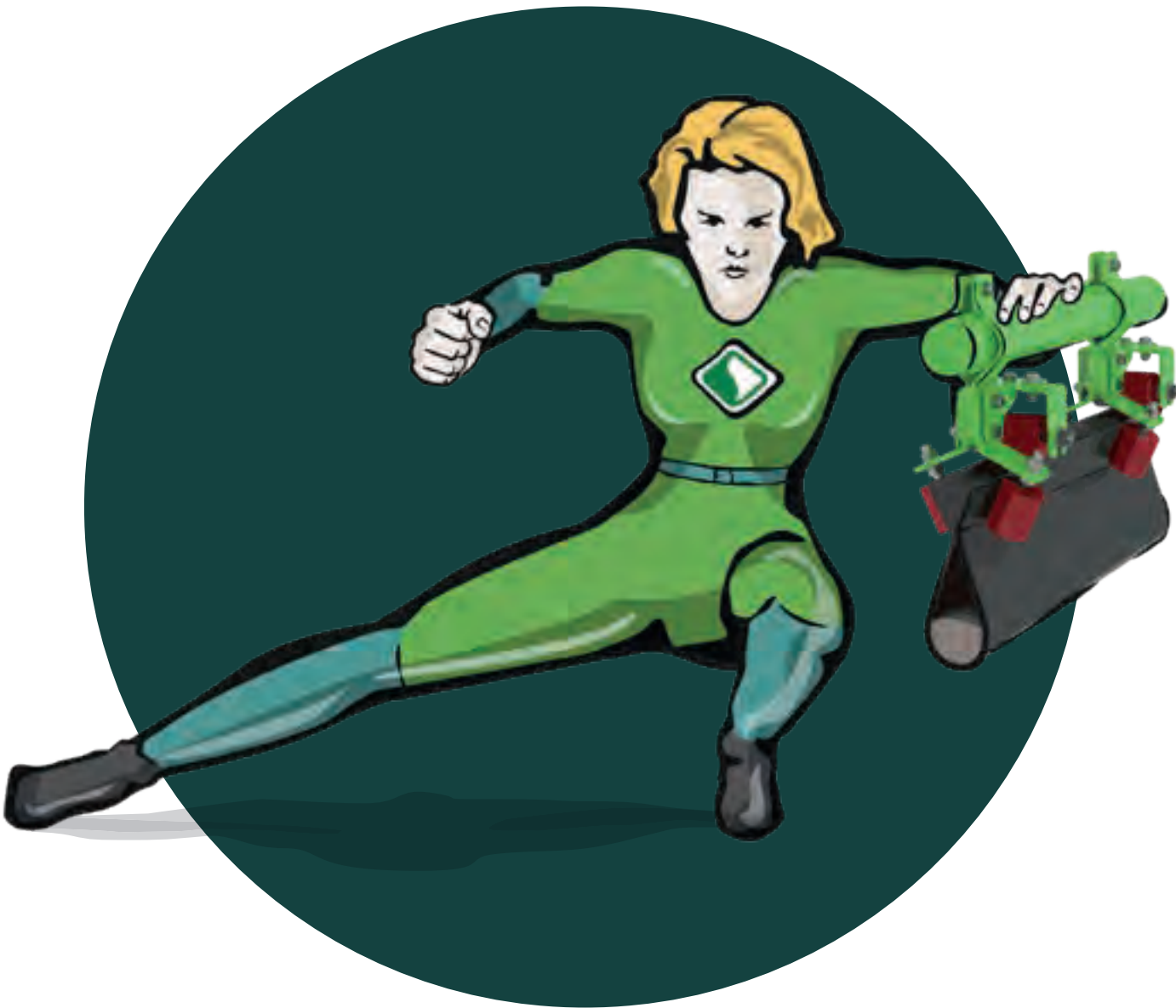
- ◆ Weatherproof and dust-free transport of bulk material
- ◆ Easy circumvention of obstacles
- ◆ Avoidance of several transfer points
- ◆ Small footprint thanks to tight curve radii
- ◆ Simplified installation planning
- ◆ Simple (subsequent) relocation of the complete system)

AVAILABLE IN

- ◆ 800 mm belt width
- ◆ 1400 mm belt width



PRODUCT
VIDEO



SAFEBELT®

CLOSED BELT CONVEYOR

DATA AND FACTS

- ◆ Maximum filling level: 60%
- ◆ Maximum material weight: 40 kg/m
- ◆ Maximum belt speed: 3 m/s
- ◆ Horizontal radii: > 8m
- ◆ Gradients: < 30°
- ◆ Heat-resistant up to 80°C
- ◆ Durability: friction, ozone, UV (optional: oil and grease)

SUITABLE FOR A WIDE VARIETY OF BULK MATERIALS ACROSS MANY DIFFERENT INDUSTRIES:

Construction industry: gypsum, lime, clay, sand, stone, cement

Energy industry: ash, turf, wood shavings, coal, recycling

Cellulose industry: wood shavings, waste paper, kaolin

Metal industry: foundry sand, ore, coal, slag

Mining/quarrying: ore, grinding balls, minerals, sand

Food industry: raw materials, fishmeal/food, cereals

Processing industry: chemicals, finished products, minerals, granulates, fertilizers

... AND LOTS MORE!

SEE WHAT MAKES SAFEBELT® SO SPECIAL:

IT CUTS COSTS

Eliminates expensive enclosures and cleaning work

ECO-FRIENDLY

Little or no ingress or emissions of dust or liquids

LOW-ODOR

Odors are largely contained in the conveyor belt

SPACE-SAVING

Can overcome steep uphill and downhill gradients as well as tight horizontal and vertical curve radii

LOW-MAINTENANCE

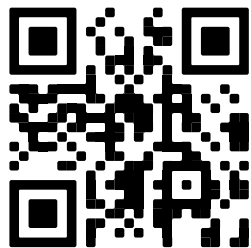
No deposits of material residues thanks to enclosed return flow

FLEXIBLE BELT GUIDANCE

Can also be used for additional conveyed material thanks to enclosed return flow



STARCLEAN® IMPACT BARS



PRODUCT
VIDEO

ADVANTAGES AT A GLANCE

- ◆ Optimum protection of the conveyor belt
- ◆ Easy and quick to install
- ◆ Eco-friendly sealing
- ◆ Minimum friction forces
- ◆ Supports the belt instead of idler rollers
- ◆ Heat-resistant up to 75°C
- ◆ Also available in ATEX quality
- ◆ Absorbs the impact force of the bulk material

Also available with removable blades

REPLACEMENT OF SIDE ROLLERS

STARCLEAN® Mounting Adapter and Impact Bars
for sealing support



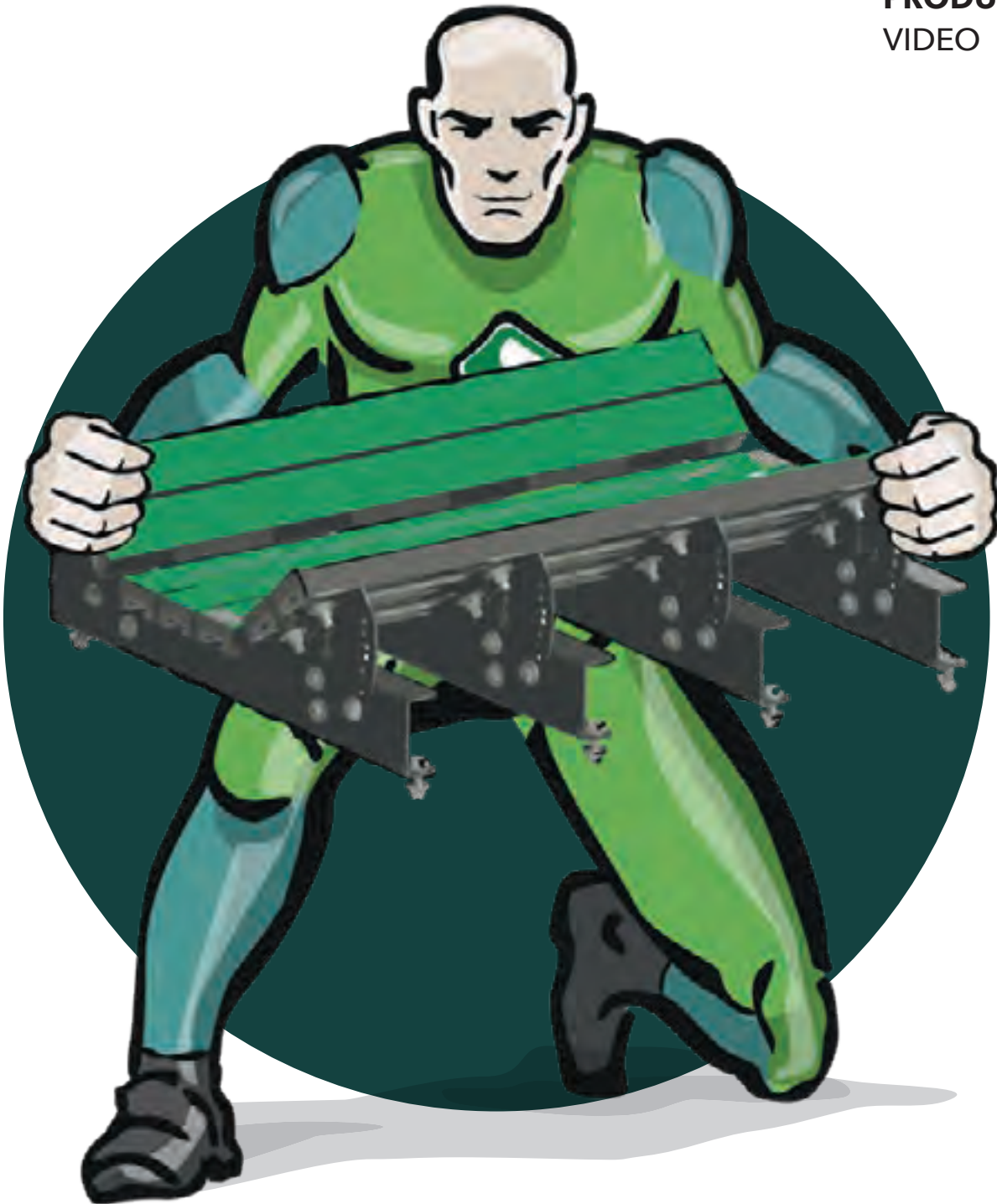
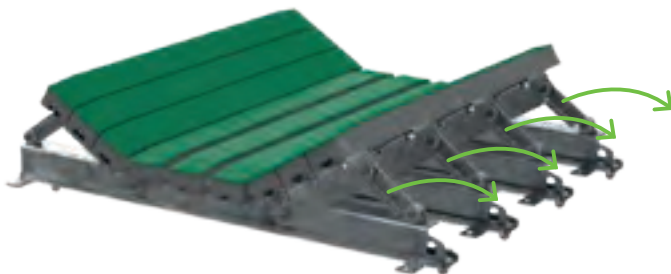
INDIVIDUAL IMPACT BARS



Height: 55 mm



Height: 75 mm



STARCLEAN® CENTRAX BELT TRACKING SYSTEM

ADVANTAGES AT A GLANCE

- ◆ Low space requirement
- ◆ Universal installation options
- ◆ Reliable alignment of the conveyor belt
- ◆ Rollers coated with diamond-pattern special rubber or with optional extremely wear-resistant polyurethane
- ◆ Optional: tracking rollers also available in ATEX quality
- ◆ Robust and flexible design



TYPE SO AND SKO

- ◆ Used on the returning belt (return part of belt)
- ◆ Suitable for reversible operations
- ◆ Beam fixed to the framework of the conveyor
- ◆ Heavy-duty turning bearings
- ◆ One cylindrical central roller and two conical side rollers



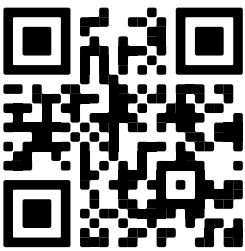
TYPE S AND SK

- ◆ Use on a troughed belt (carrying part of belt)
- ◆ Suitable for reversible operations
- ◆ Beam fixed to the framework of the conveyor
- ◆ Continuously variable angle adjustment of the side rollers for optimum adaption to the conveyor belt
- ◆ Heavy-duty turning bearings
- ◆ Simple fine adjustment ensures perfect alignment of the conveyor belt
- ◆ One cylindrical central roller and two conical side rollers



TYPE SR AND SRG

- ◆ Used on the returning belt (return part of belt)
- ◆ Heavy-duty turning bearings



PRODUCT
VIDEO



STARCLEAN® SEAL / SPILL-EX / SEALTEK

TRANSFER POINT SEALS

ADVANTAGES AT A GLANCE

- ◆ Optimum reduction of dust emissions and contamination
- ◆ Efficient material guidance
- ◆ Wear-resistant dust seal
- ◆ Simple installation
- ◆ Optimum belt protection
- ◆ Optimized lifespans
- ◆ 3 Steel qualities
(HB400 wear-resistant steel, S235 standard steel and stainless steel)



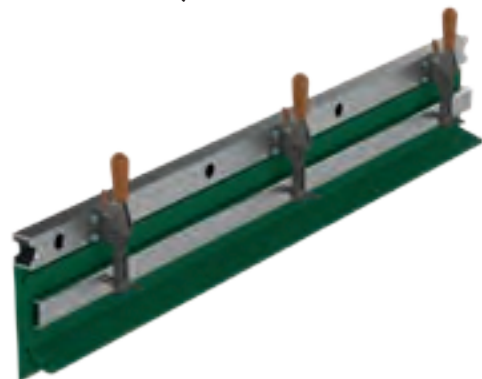
SPILL-EX

- ◆ For the reverse side of the transfer point
- ◆ Four different versions available
- ◆ Also available as a side seal



SEAL-TEK R

- ◆ Modular design suitable for any rear wall
- ◆ Individual segments for individual Adjustment to the trough
- ◆ Mounting plate made of highly wear-resistant steel



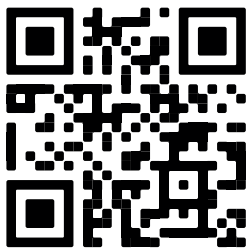
SEAL

- ◆ Dust seal adjusts to the belt troughing
- ◆ Combination of special material available in different hardness degrees
- ◆ Optional: 2 attachment variants: bolted or with quick-release lever



SEAL-TEK S

- ◆ 1-meter-long mounting plate
- ◆ 5 overlapping sealing blocks
- ◆ Chamfered and non-chamfered



PRODUCT
VIDEO



STARCLEAN® ID INSPECTION DOOR

ADVANTAGES AT A GLANCE

- ◆ Dust-proof
- ◆ Simplified maintenance and inspection of the conveyor belt cleaner
- ◆ Robust, impact-resistant material
- ◆ Secured against unauthorized access
- ◆ Suitable for every transfer point
- ◆ Easy and quick to install
- ◆ Protection against reaching into the chute
- ◆ Permits inspection even during operation
- ◆ Captive screws and cable to secure the grid



Size S:
380 x 280 mm



Size M:
405 x 375 mm



Size L:
520 x 465 mm



PRODUCT
VIDEO



STARCLEAN®

SERVICE AND ADVICE

Customer service - your satisfaction is our core business

Providing services goes without saying for us. From advisory all the way to installation or maintenance services, our expert service professionals are always at your side to help find the perfect solution for your belt conveyor.

WE ARE ONLY SATISFIED WHEN YOU ARE TOO.



STARCLEAN®

„SPILLAGE CONTROL“

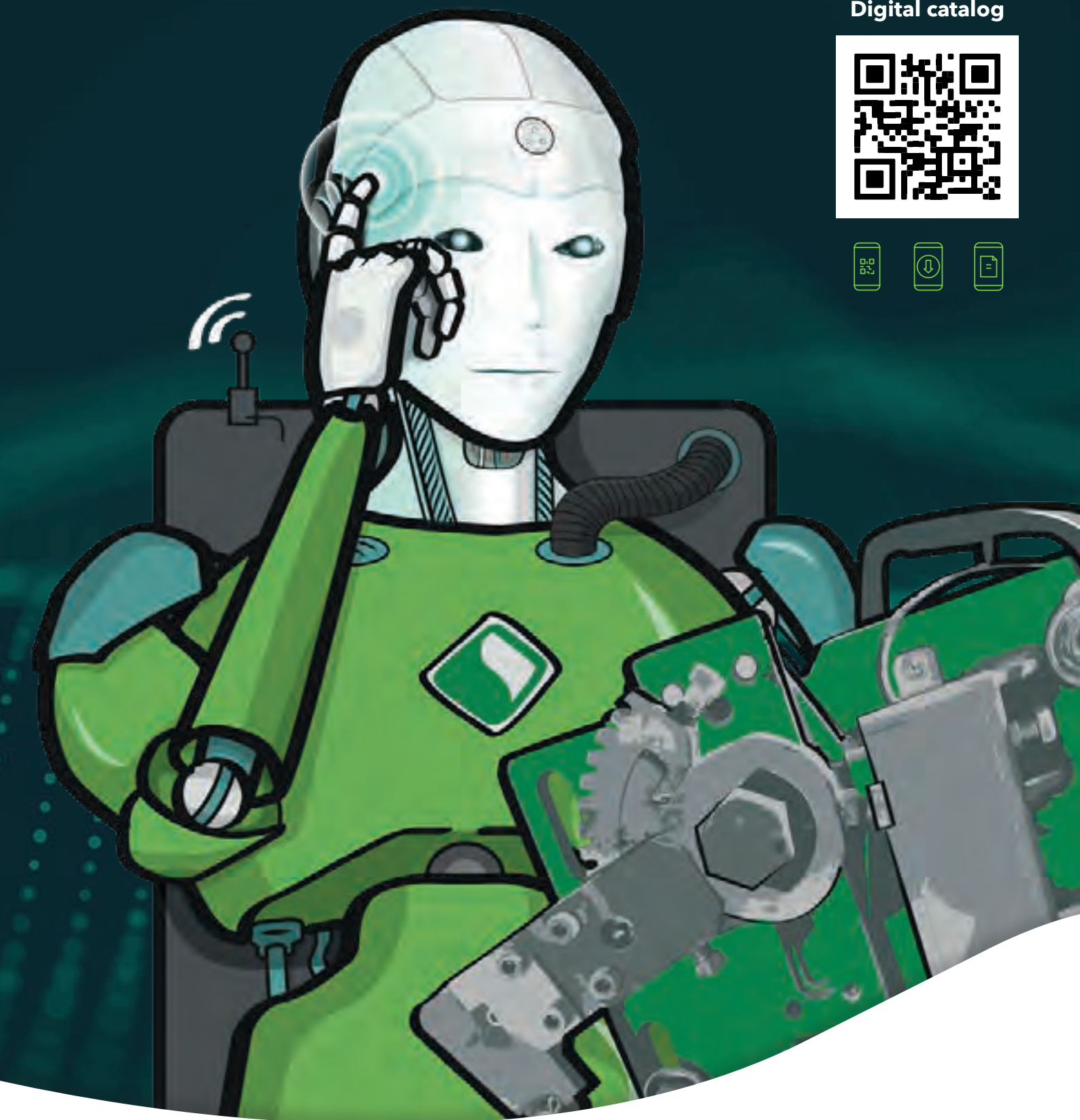
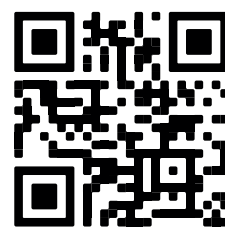


ADVANTAGES AT A GLANCE

- ◆ Optimization of the entire plant system
- ◆ Increase of plant profitability
- ◆ Prevention of dust emissions that are harmful to the environment and to health
- ◆ Loss-free material transport
- ◆ Dramatically extends the lifespan of the conveyor belt

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