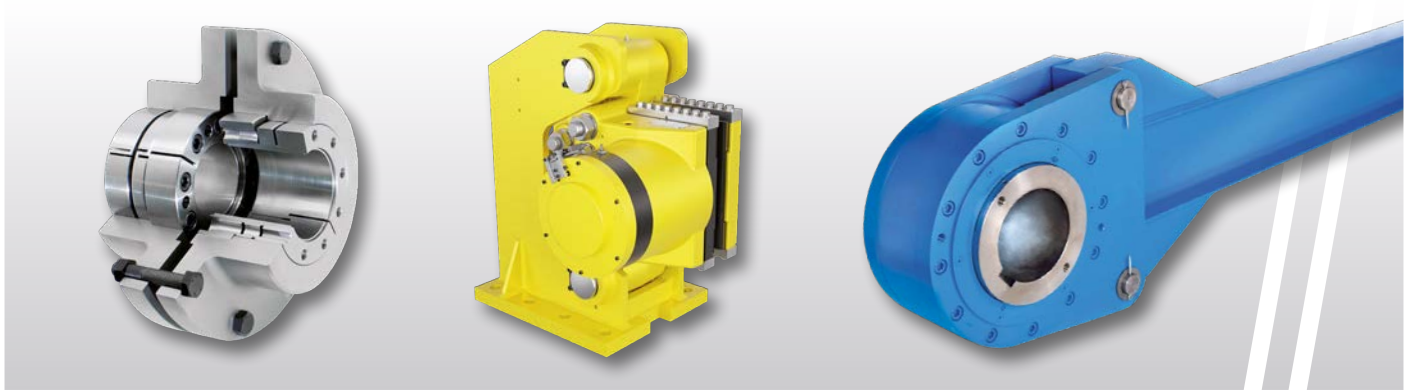
RINGSPANN®

Your benefit
in Mining Technology



Company

Company profile

Innovative achievements have made the family-owned company RINGSPANN a leading manufacturer of industrial Clutches, Couplings and Brakes. Many well-known companies from the machine building, the material handling, the energy as well as the steel industries successfully work with RINGSPANN. With more than 80 years' experience in development, design and manufacturing, we are experts in intelligent technical solutions.

From our headquarters in Bad Homburg, Germany, more than 575 employees in 23 international companies provide personal service onsite and ensure speedy and reliable delivery. Own manufacturing plants in the most important regions of the world make flexible and customer-oriented production possible.

Customer service is close to our heart; we want you to continue to choose RINGSPANN.

Headquarters

Bad Homburg, Germany

Founded

1944

International companies

23

Manufacturing plants

11

Employees

> 575

Customers

> 7,500 a year

Product lines

Freewheels
Brakes
Shaft-Hub-Connections
Heavy-Duty Couplings
Industrial Couplings
Precision Couplings
Precision Clamping Fixtures
Remote Control Systems

RINGSPANN GmbH, Germany
Headquarters and
Plant Freewheels

RINGSPANN GmbH, Germany
Plant Brakes, Couplings,
Clamping Fixtures and
Shaft-Hub-Connections

RINGSPANN Kempf GmbH,
Germany
Plant Cardan Shafts

RINGSPANN StS GmbH,
Germany
Plant Precision Couplings

RINGSPANN RCS GmbH,
Germany
Plant Remote Control Systems

RINGSPANN Benelux B.V.,
Netherlands

RINGSPANN (U.K.) LTD.,
Great Britain

RINGSPANN France S.A.,
France

RINGSPANN CORPORATION,
USA

RINGSPANN do Brasil Ltda.,
Brazil

RINGSPANN Sudamérica SpA,
Chile

RINGSPANN Austria GmbH,
Austria

RINGSPANN Bosanska Krupa
d.o.o., Bosnia and Herzegovina

RINGSPANN Nordic AB,
Sweden

RINGSPANN Turkey Tic. Ltd. Şti.,
Turkey

RINGSPANN IBERICA S.A.,
Spain

RINGSPANN Italia S.r.l.,
Italy

RINGSPANN AG,
Switzerland

RINGSPANN Power Transmission
(Tianjin) Co., Ltd., China

RINGSPANN Korea Ltd.,
South Korea

RINGSPANN Singapore Pte. Ltd.,
Singapore

RINGSPANN Australia Pty Ltd,
Australia

RINGSPANN South Africa (Pty) Ltd.,
South Africa

RINGSPANN Power Transmission
India Pvt. Ltd., India

Key

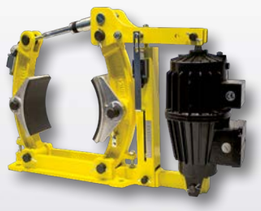
- Sales company
- Manufacturing plant
- Sales partner

Power Transmission Components for Uphill Conveyors

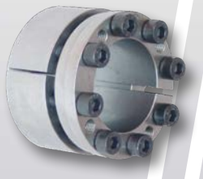
RINGSPANN®

1 Shrink Discs
to connect hollow gearbox shafts with pulley shafts

2 High Speed Backstops
to prevent reverse motion of conveyor belts

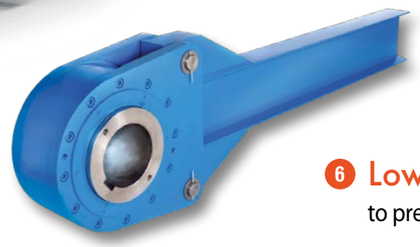


3 Drum Brakes
for braking and holding of conveyor belts

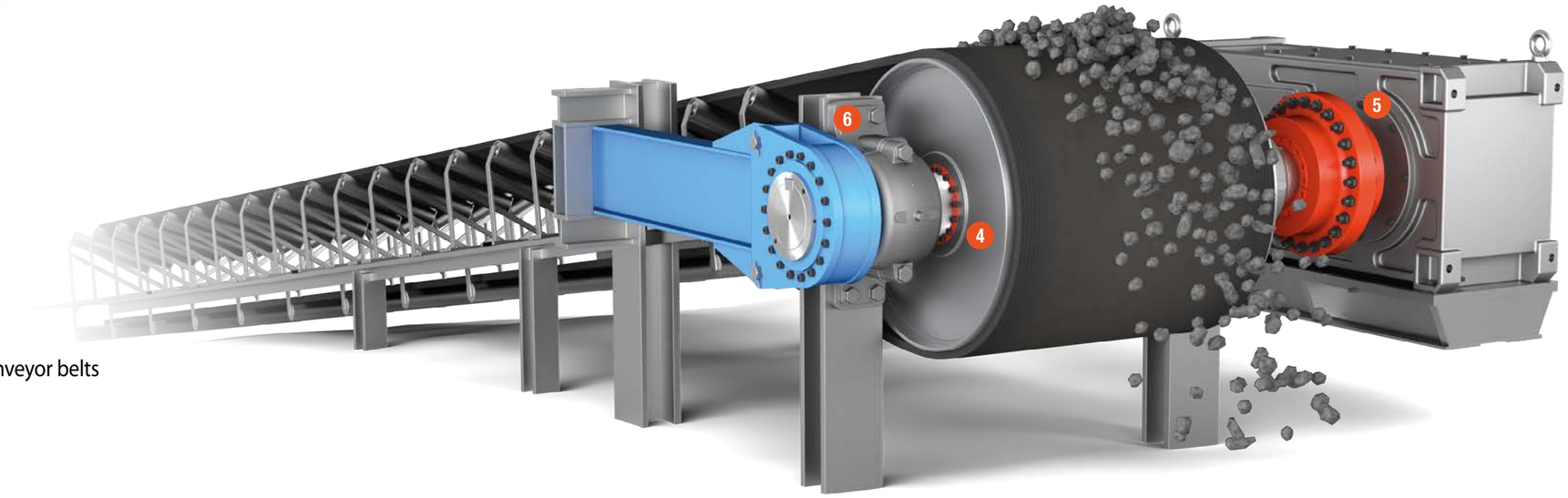


4 Cone Clamping Elements
to connect pulley shafts with pulley drums

5 Tru-Line Flange-Couplings
to connect solid gearbox shafts with pulley shafts



6 Low Speed Backstops
to prevent reverse motion of conveyor belts



Power Transmission Components for Downhill Conveyors

RINGSPANN®

1 Shrink Discs

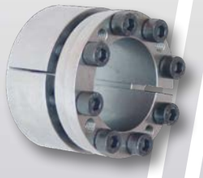
to connect hollow gearbox shafts
with pulley shafts

2 Disc Brakes

for braking and holding
of conveyor belts

3 Pin and Bush Couplings

for elastic connection of solid gearbox shafts with
solid pulley shafts on conveyor drives



4 Cone Clamping Elements

to connect pulley shafts with pulley drums

5 Control Systems

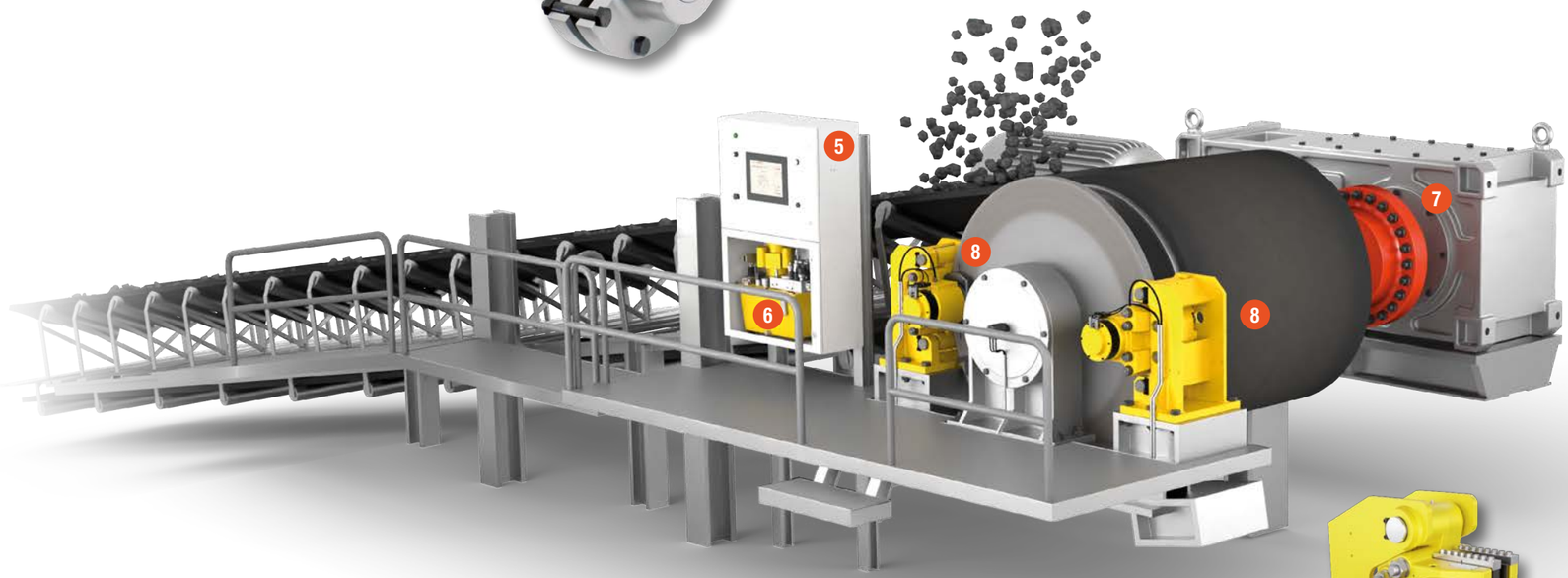
for controlled braking of conveyor belts

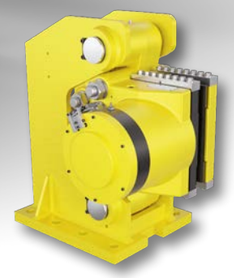
6 Hydraulic Power Units

to supply hydraulic power to brakes

7 Tru-Line Flange-Couplings

to connect solid gearbox shafts
with pulley shafts





8 Hydraulic Brakes

for braking and holding of conveyor belts

Power Transmission Components for Bucket Elevators

RINGSPANN®

1 Shrink Discs

to connect hollow gearbox shafts
with solid bucket elevator shafts

2 High Speed Backstops

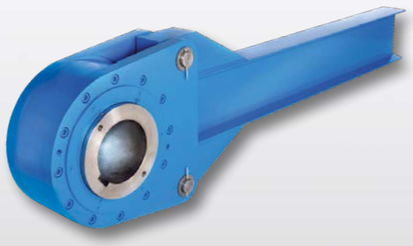
to prevent reverse motion of bucket elevators

3 Freewheels as Overrunning Clutches

to automatically engage and disengage main drives
and auxiliary drives

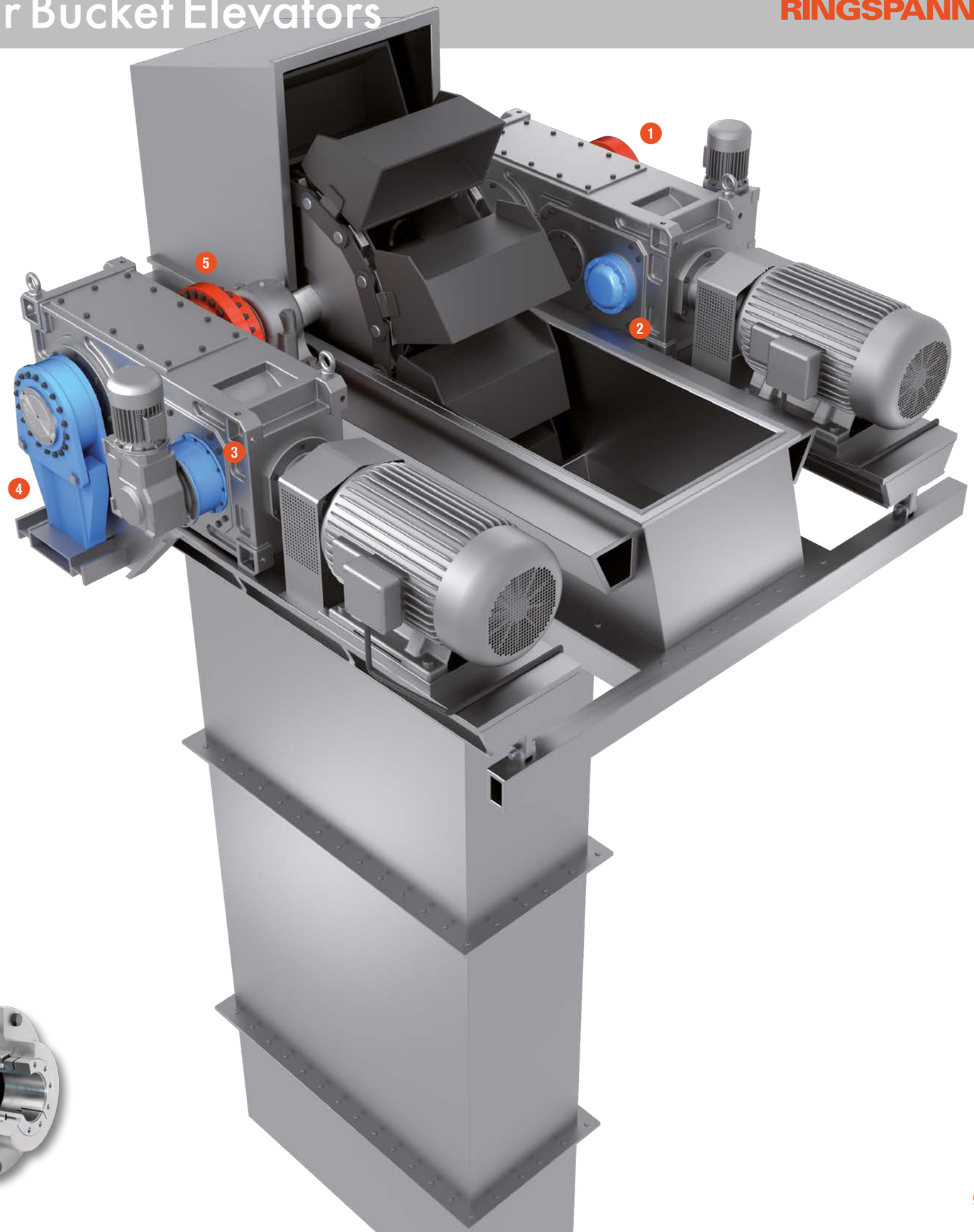
4 Low Speed Backstops

to prevent reverse motion of bucket elevators



5 Tru-Line Flange-Couplings

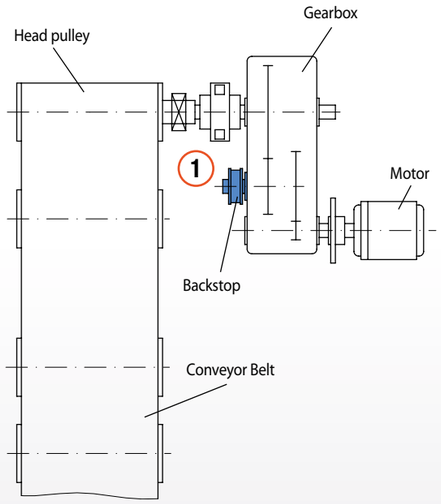
to connect solid gearbox shafts
with bucket elevator shafts



Backstops for Belt Conveyors and Bucket Elevators

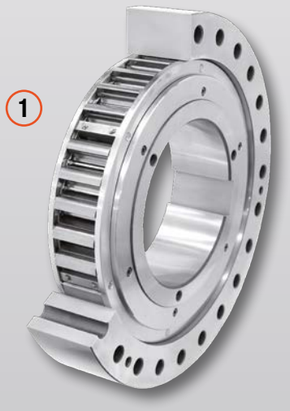
RINGSPANN®

High Speed Backstops

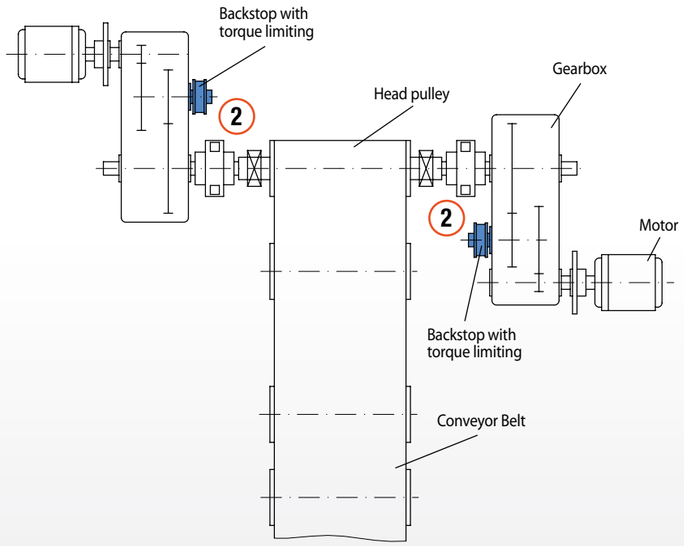


- High Speed Backstops are located on the 2nd or 1st gearbox reduction shaft and **prevent reverse motion** of conveyor belts or bucket elevators.
- They are equipped with sprag lift-off X which ensures a wear free freewheeling operation when the backstop is rotating at high speeds with the gearbox shaft. In this state of operation, the backstop works wear-free, i.e. with **unlimited service life**.
- **Maintenance free**
- **Cost effective**

1



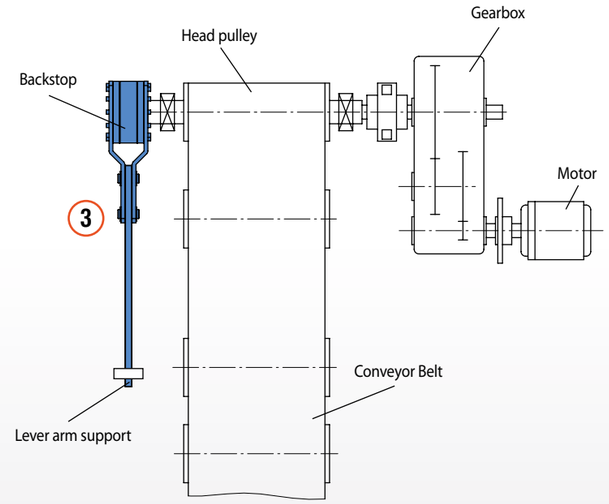
High Speed Backstops with Torque Limiting



- High Speed Backstops with Torque Limiting are used in belt conveyors with **multiple drives** and **prevent reverse motion of conveyor belts**.
- They **solve the problem of uneven load distribution** in multiple drives.
- They are equipped with sprag lift-off X which ensures a wear free freewheeling operation when the backstop is rotating at high speeds with the gearbox shaft. In this state of operation, the backstop works wear-free, i.e. with **unlimited service life**.
- **Maintenance free**
- The integrated torque limiters **protect the gearboxes and backstops from overload** by dynamic peak torques.
- **Smaller gearboxes can be used** without negatively effecting the safety.
- Available with or without **controllable release function**.
- **Cost effective**

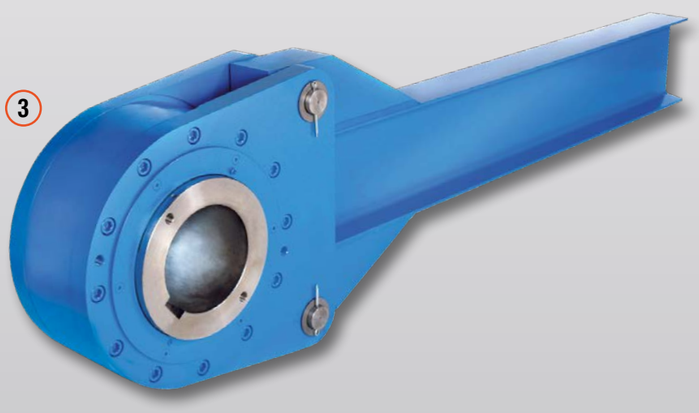
2

Low Speed Backstops



- Low Speed Backstops are located to conveyor belt drum shafts or gearbox output shafts and **prevent reverse motion** of conveyor belts or bucket elevators.
- **Taconite seals** protect the backstop from contamination with dust or dirt.
- Low Speed Backstops **allow the removal of the drive unit** when the conveyor belt is loaded.

3



Power Transmission Components for Bucket Wheel Excavators, Stackers & Reclaimers

RINGSPANN®

Tru-Line Flange-Couplings

to connect solid gearbox shafts with solid pulley shafts on conveyor drives

Pin and Bush Couplings

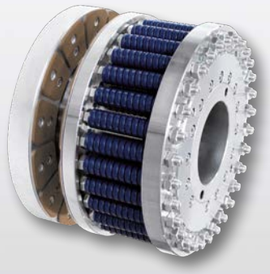
for elastic connection of solid gearbox shafts with solid pulley shafts on conveyor drives

Shrink Discs

- to connect drive units with hollow shafts to bucket wheels
- to connect hollow gearbox shafts with solid pulley shafts on conveyor drives

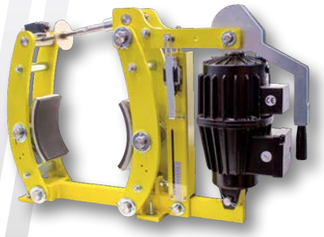
Cone Clamping Elements

- to connect pulley drums with pulley shafts
- to connect machine elements with shafts



Friction & Positive Torque Limiters

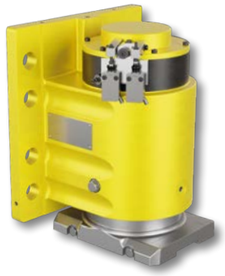
- to protect drive units from overload
- heavy-duty series also available



Brakes

for normal operation and emergency stops in

- conveyor drives
- boom hoist drives
- slewing drives
- bucket wheel drives

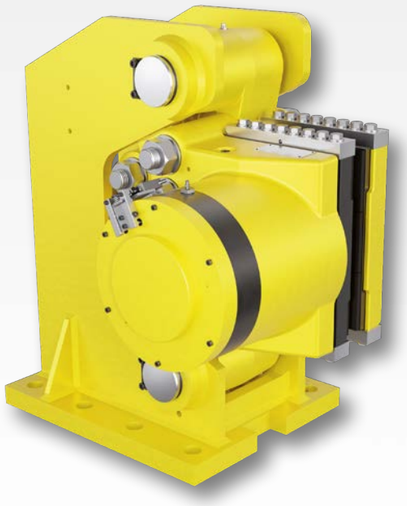


Storm Brakes

for holding in bogie drives

Power Transmission Components for Semi-Automatic Grinding Mills

RINGSPANN®



Emergency Brakes

for braking and securing of ball and grinding mills with up to three brakes per bracket

Hydraulic Power Units

for controlling emergency brakes

Control Systems

for controlling hydraulic power units and emergency brakes

Power Transmission Components for Crushers

RINGSPANN®

Friction Torque Limiters

- to protect drive units from overload
- heavy-duty series also available

Positive Torque Limiters

to protect drive units from overload

Gear Couplings

for torsionally rigid connection of machine shafts

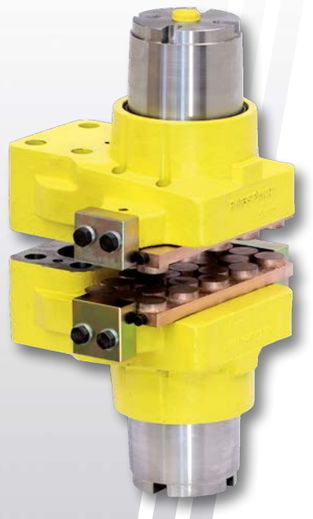
Cone Clamping Elements

to connect machine elements with shafts

Control Systems

for controlled braking
of mine hoists and winches

Source: Josef Wiegand GmbH & Co. KG



Brakes

for braking and holding
of mine hoists and winches

Brakes and Control Systems in Mining Technology

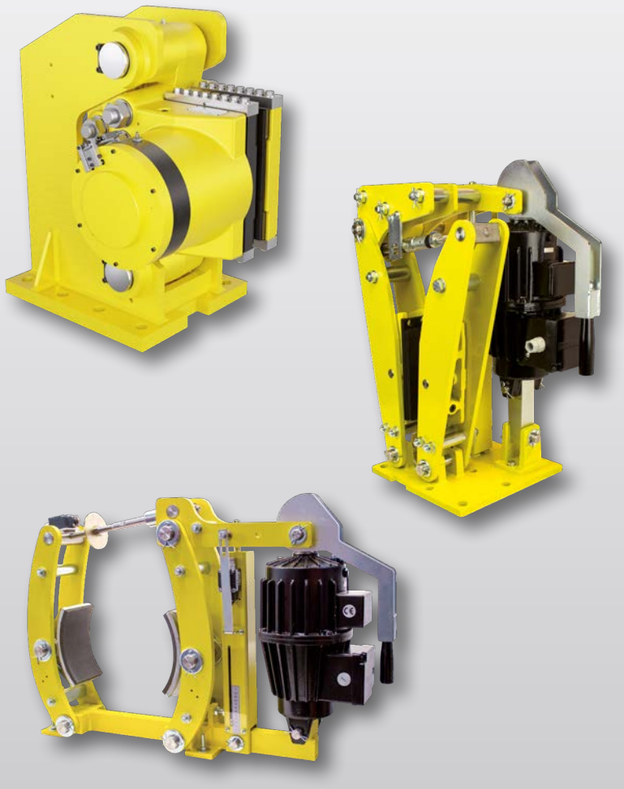
RINGSPANN®

Brakes

RINGSPANN brakes ensure the safe operation of conveyor systems and machinery in the mining industry - whether used as stopping, control, or holding brakes. Thanks to their fast closing time, they ensure reliable protection in an emergency. They also enable controlled deceleration sequences and the safe holding of heavy loads, for example in uphill or downhill conveyors, bucket wheel excavators, stackers & reclaimers, grinding mills, or mine hoists.

Performance features:

- Braking torque range from 10 Nm to over 1.000.000 Nm
- Wide selection of friction lining materials for a variety of operating conditions
- Available as a fail-safe, spring activated brake or as a hydraulically, pneumatically, electromagnetically, or electrohydraulically activated brake
- Hydraulic brakes for heavy-duty applications, including a ready-to-install bracket, hydraulic power unit, piping, and terminal box



Hydraulic Power Units

Hydraulic power units are at the heart of controlled braking processes. In heavy-duty mobile or stationary drives used in mining technology, they reliably supply the hydraulic brake calipers with the necessary pressure and ensure safe braking. Hydraulic power units are custom-designed to meet specific customer requirements. Their operation in combination with RINGSPANN hydraulic brakes is coordinated in close collaboration with the customer.

Performance features:

- High system functionality can be achieved through modular function blocks
- For one or more hydraulic brakes (even in different brake circuits)
- Individual selection of system components based on customer requirements

Brake Control Systems

RINGSPANN Brake Control Systems (BCS) were developed specifically for large overland conveyors, winches, and grinding mills and offer maximum control. This allows for the reliable execution of demanding braking operations with defined braking times, deceleration rates, or braking distances. At the same time, the BCS performs important safety and monitoring functions. It consists of a control and regulation unit as well as a hydraulic power unit. The system is complemented by brakes from the RINGSPANN product line.

Performance features:

- Continuous monitoring of speed, oil pressure, oil temperature, and direction of rotation
- Custom BCS solutions for specific requirements
- Three selectable braking profiles: constant braking time, constant deceleration, or constant belt speed
- Convenient configuration via PC, touchscreen, or potentiometer
- Optionally expandable with a hydraulic accumulator, cold-climate version, or friction pad wear monitoring

RINGSPANN®

Your benefit is our motivation

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