

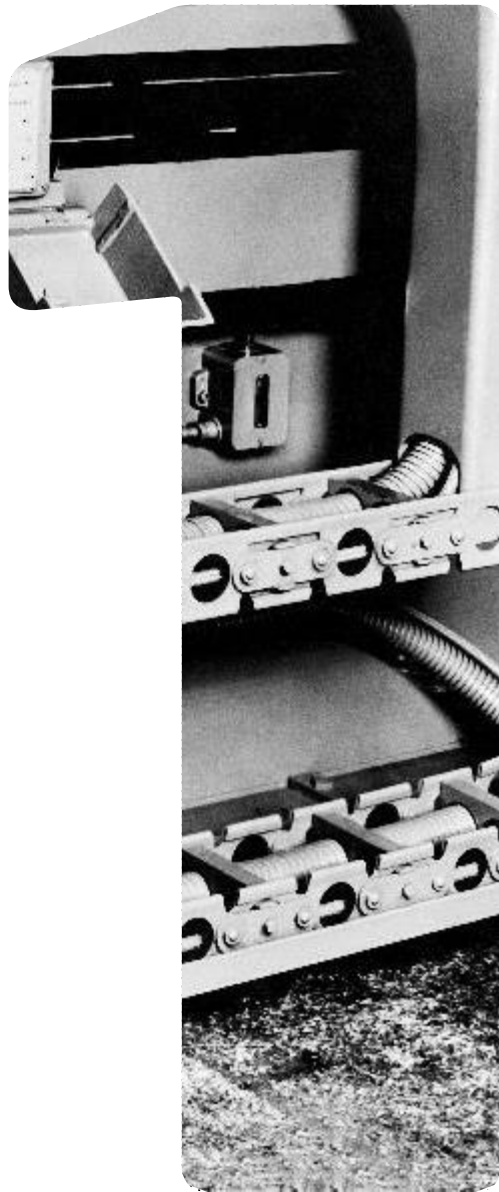
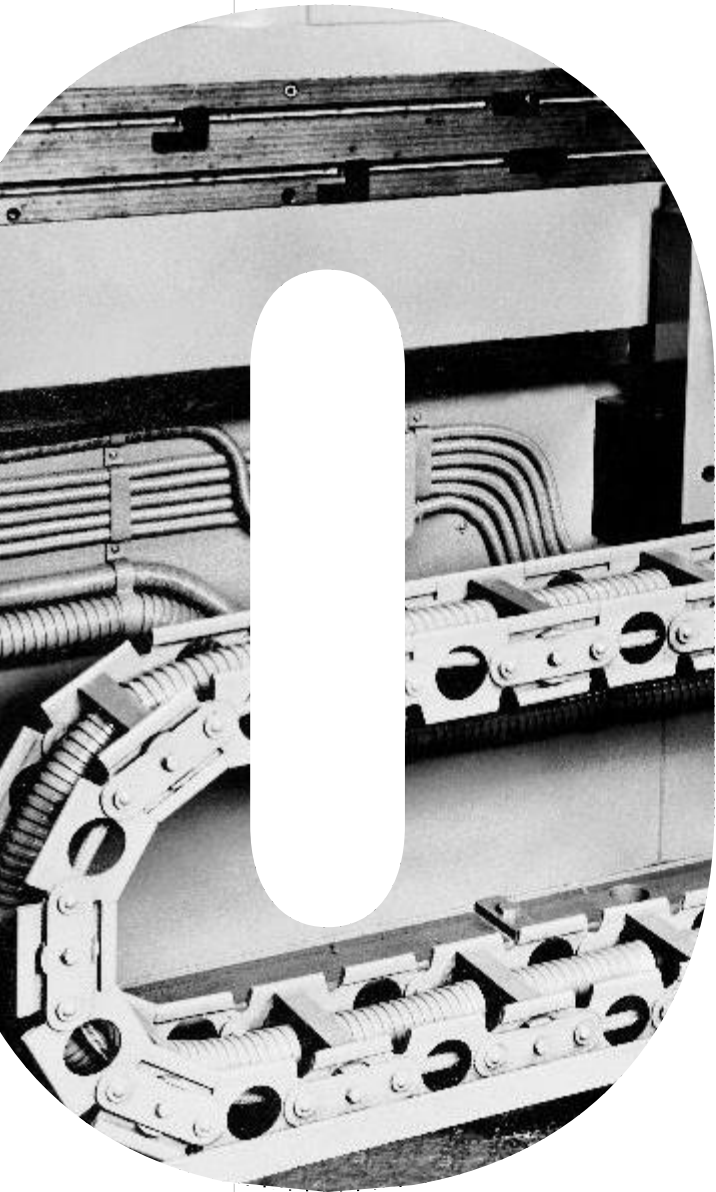
**KABELSCHLEPP**

TSUBAKI KABELSCHLEPP

# Technology Packages for Cranes

and Heavy Duty Applications





Why you should  
work with  
Kabelschlepp

# from an idea to a patented solution



**1953**  
Invention of the cable carrier  
Dr.-Ing. Gilbert Waninger



**1954**  
Foundation of  
**Kabelschlepp GmbH**  
Dr.-Ing. E.h. Oskar Waldrich



Chapter 1

- Why you should work with Kabelschlepp
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- References

# Wenden-Gerlingen Headquarters

Maximum flexibility concentrated in one place

- Conception
- design and development
- project planning
- Prototyping/3D-Print
- Validation/Testing
- Production, assembly
- Distribution
- Quality management
- maximum efforts to achieve CO<sub>2</sub> neutrality



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# Integration into the TSUBAKI Group

Closely cooperating partners for more than 40 years before becoming part of a successful family



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# Global Network of Specialists

more than 80 places around the world



Chapter 1

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# Global set up of project specialists for crane and long travel applications



- Expertise on site
- Supervising
- Installation Support
- Sales specialist
- Multiplication
- Training



# Technology Packages

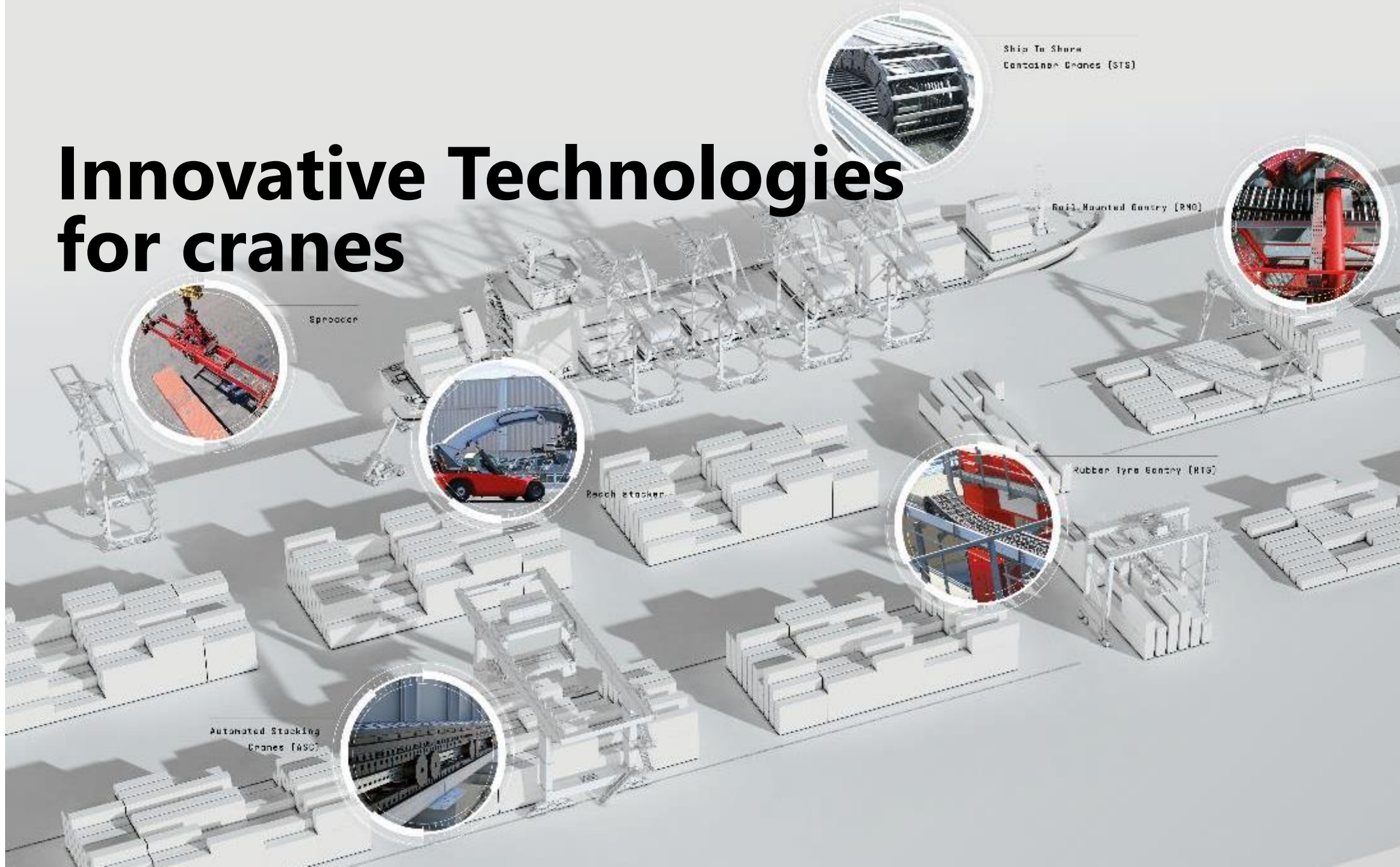
Cranes & Heavy Duty Applications



Chapter 2

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# Innovative Technologies for cranes



Ship To Shore  
Container Cranes (STS)

Rail-Mounted Gantry (RMG)

Spreader

Reach stacker

Rubber Tyre Gantry (RTG)

Automated Stacking  
Cranes (ASC)

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# Technology packages for cranes

- TSUBAKI PowerCylinders, Electronical Actuators
- TSUBAKI Super Chains, Heavy Duty Chains
- TSUBAKI Cam Clutches, One Way Clutch
- KABELSCHLEPP Cable Carrier Systems incl. TRAXLINE cables and equipment

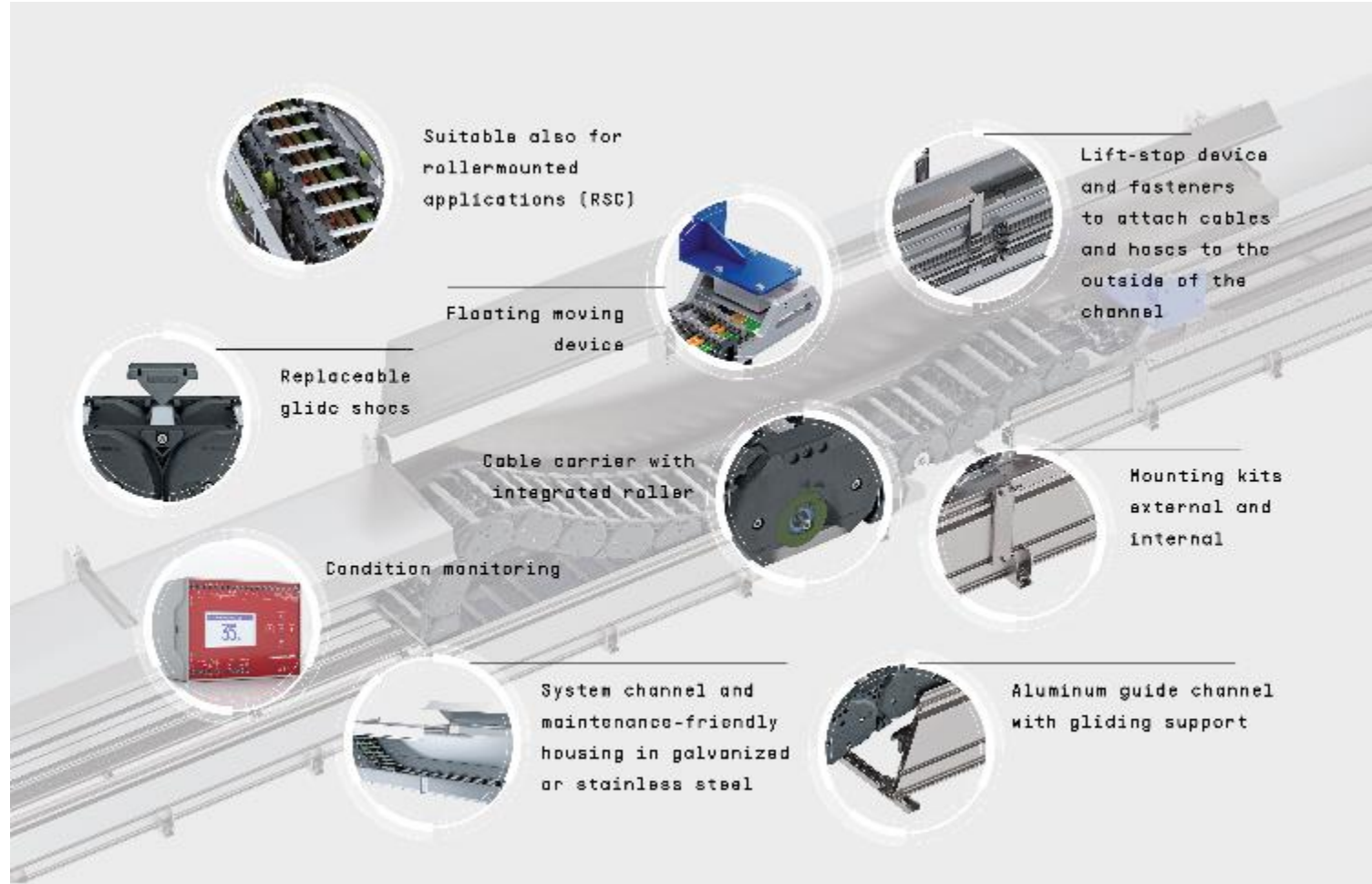


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# Turnkey Cable Management Systems

Suitable and durable systems to manage cables, hoses, etc. for all kind of crane and long travel applications.



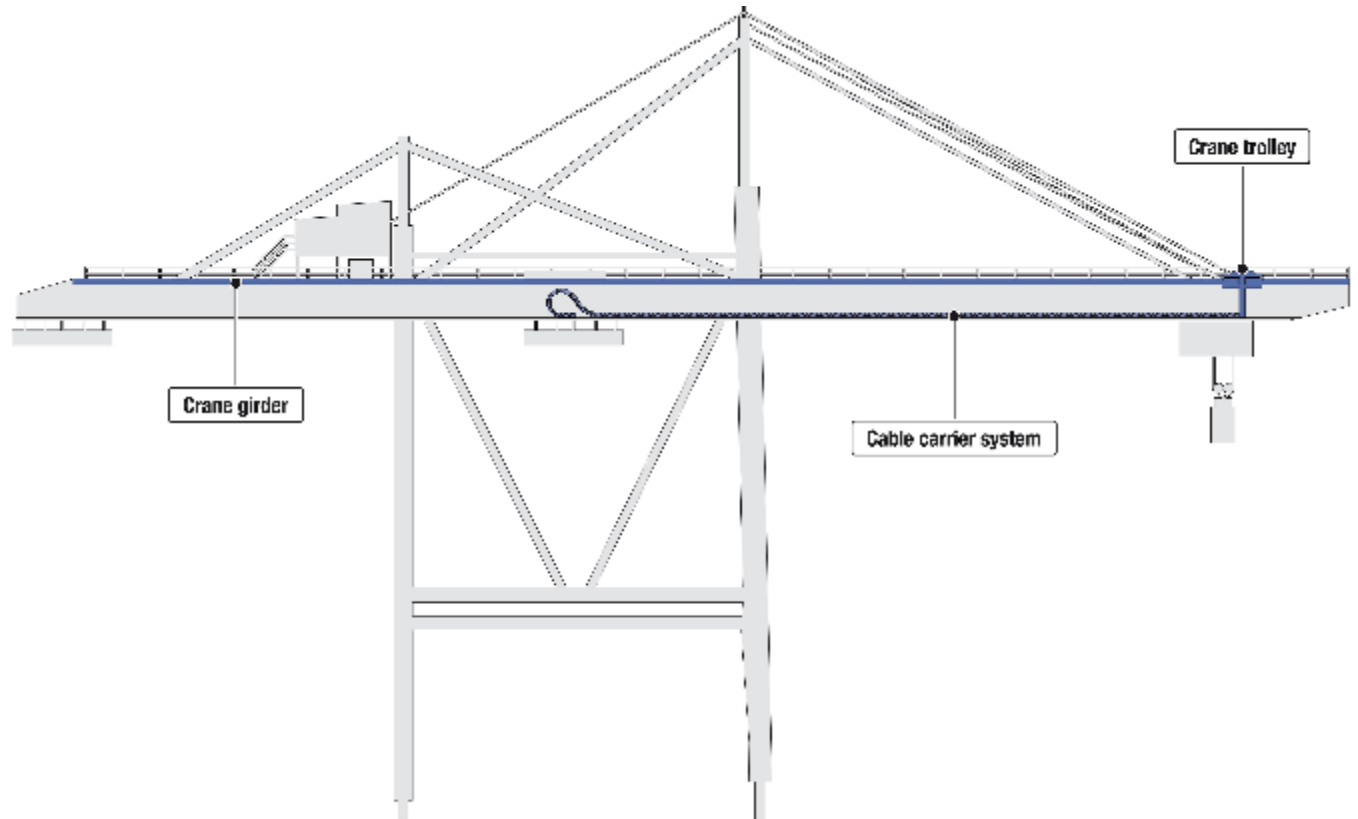
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# Turnkey Cable Management Systems

benefits for crane builder and enduser

- Space saving design
- No loop station, no additional steel structure
- No additional drives
- No control system
- All kind of media
- Less mechanical stress
- Short cable length
- Easy to maintain
- Data transfer with light velocity





# Products & Services

For crane and Heavy Duty Applications

Chapter 3

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# TKHD Series...

the “big black brick”, TKHD90-R & TKHD85-R

Heavy Duty cable carrier developed for Ship to Shore cranes, Bulk handling and long travel applications

First cable carrier in the market with the combination of:

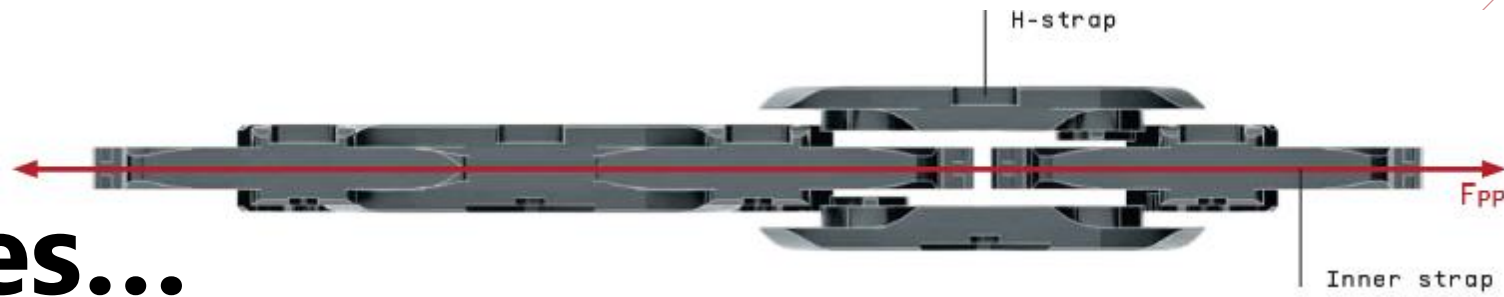
- Inner Height: 58/87mm
- Link Pitch: 85/90mm
- Integrated Rollers



# TKHD Series...

the "big black brick"  
TKHD90-R & TKHD85-R

- Integrated Brake
- Integrated Rollers
- Reinforced stop dog-system
- 85mm/90mm pitch
- Shape optimized
- Reinforced bolt hole connection
- Linear Force curve
- Massive Design
- RSC-Version available
- With glide shoes available
- Polygon optimized outer shape



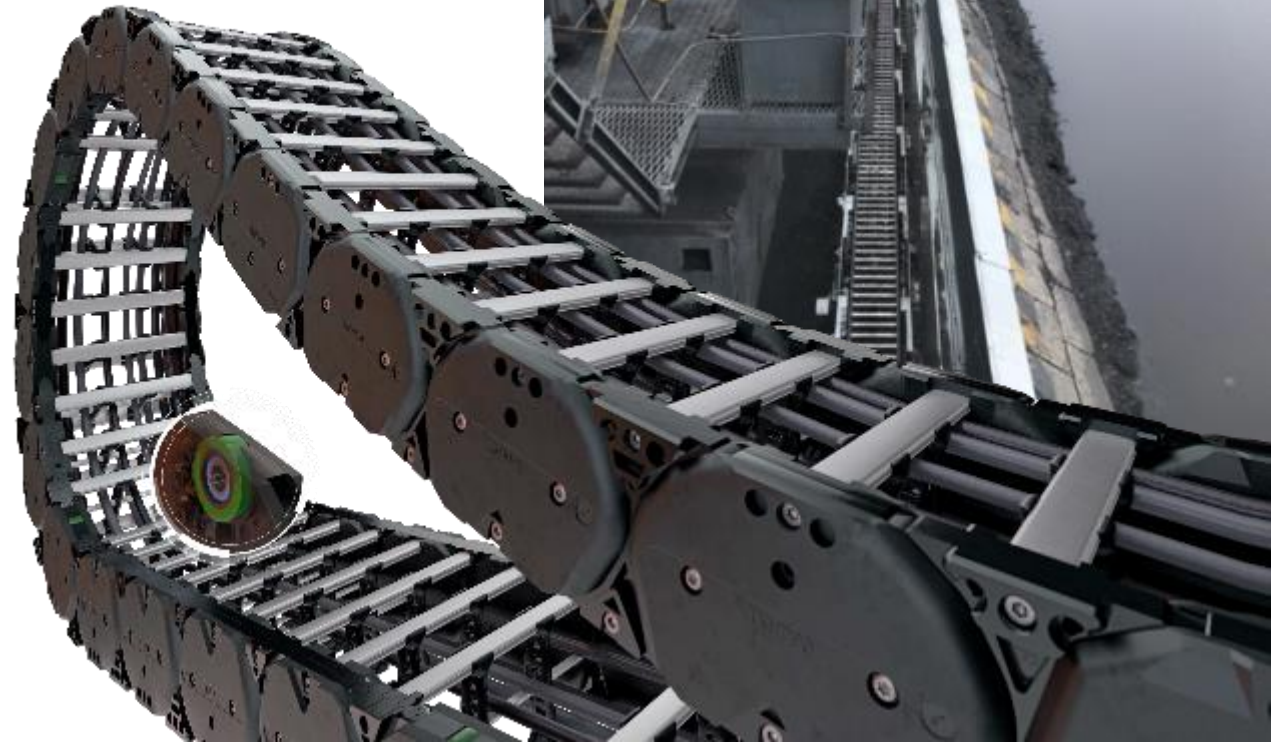
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# Rolling Cable Carriers

for Long Travel and Cranes

- Rolling instead of gliding
- 75% less force compared to a gliding System
- Quiet and less-vibration
- High travel speed and acceleration
- Minimum stress for cable carrier and cables
- Very long travels possible
- Easy to maintain
- Only visual inspection
- No fix distances of the support Structur necessary
- For M-Series and TKHD-Series
- 1000m and more travel way





## Chapter 3

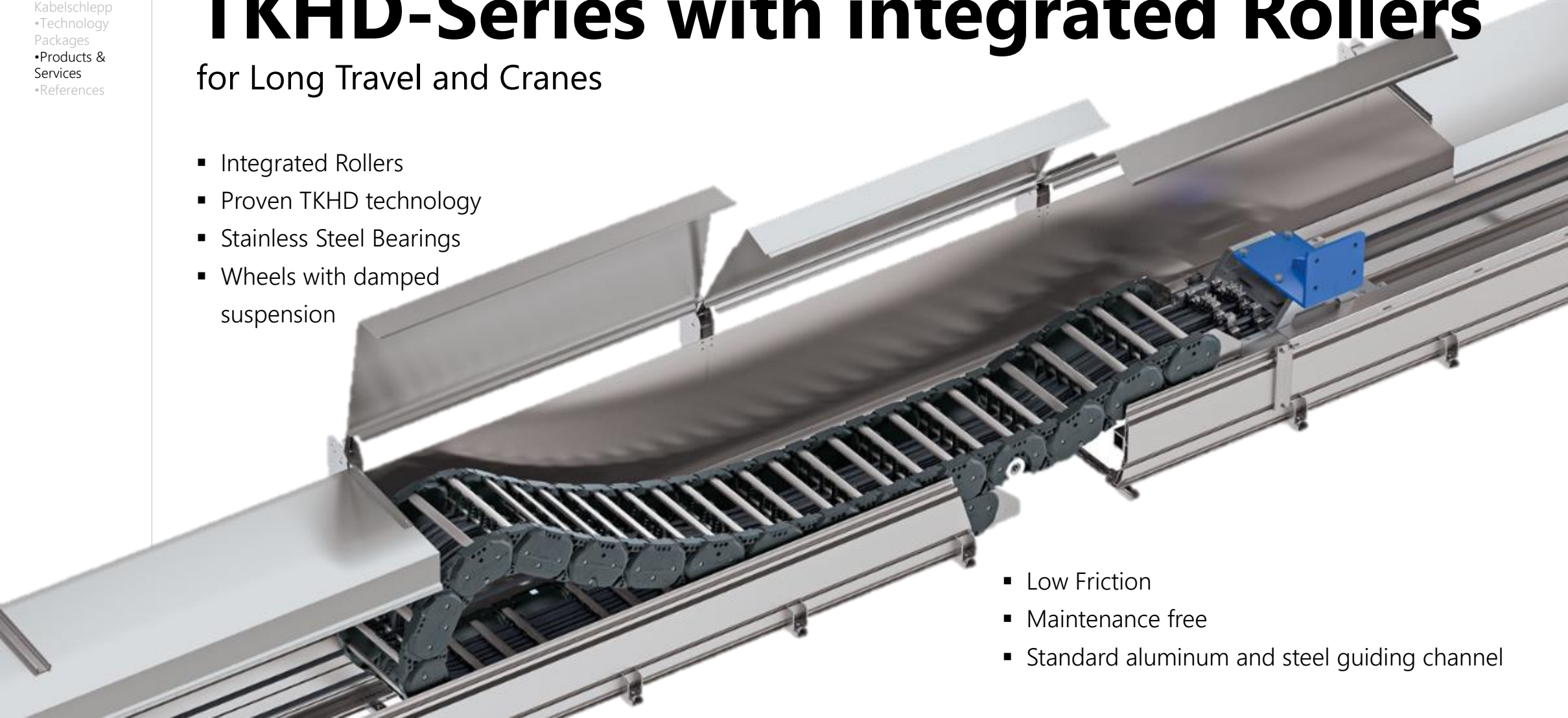
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•References

# TKHD-Series with integrated Rollers

for Long Travel and Cranes

- Integrated Rollers
- Proven TKHD technology
- Stainless Steel Bearings
- Wheels with damped suspension

- Low Friction
- Maintenance free
- Standard aluminum and steel guiding channel



## Chapter 3

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# Standardized Housing Systems

for Long Travel and Cranes

- galvanized steel and stainless steel,
- Heavy Duty design with reinforced brackets,
- Preassembled delivery,
- Suitable for System- and RSC-Channel,
- Suitable for M-Series and TKHD-Series,
- Easy access to cable carrier,
- Standardized.



## Chapter 3

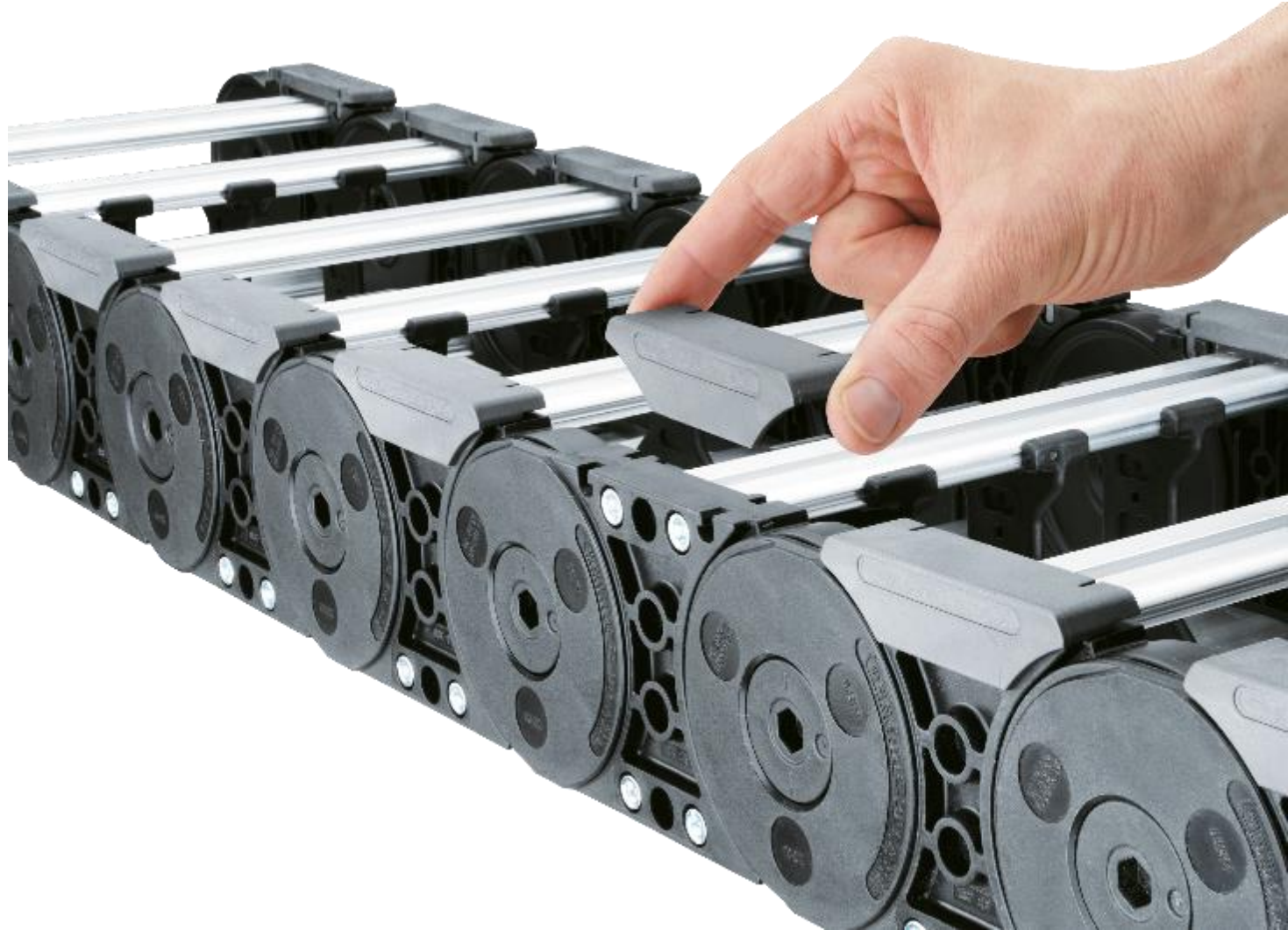
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# Glide Shoes

## for Long Travel and Cranes

All gliding and rolling applications are more or less affected by wear. To extend the lifetime of a cable carrier, Kabelschlepp developed exchangeable glide shoes.

**Biggest advantage:**  
Instead of changing the whole cable carrier by disassembling it on-site, only the attached glide shoes need to be replaced.



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# System Channel

for Long Travel and Cranes

- Standardized for many cable carrier types
- Injection molded polymer glidebars
- Glidebars with expansion joints
- Seawater resistant
- Different versions (regular & heavy duty)
- Preassembled delivery
- Standardized accessories



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# TRAXLINE Cables

High-flex TPE cables for projects and cranes

- Highest quality
- heavy load and long travel
- crane and bulk handling equipment
- systems, mechanical and crane engineering
- clean room duties
- limited space solutions
- permafrost using
- outdoor applications

The full TRAXLINE TPE program:

**[www.traxline1000.de](http://www.traxline1000.de)**



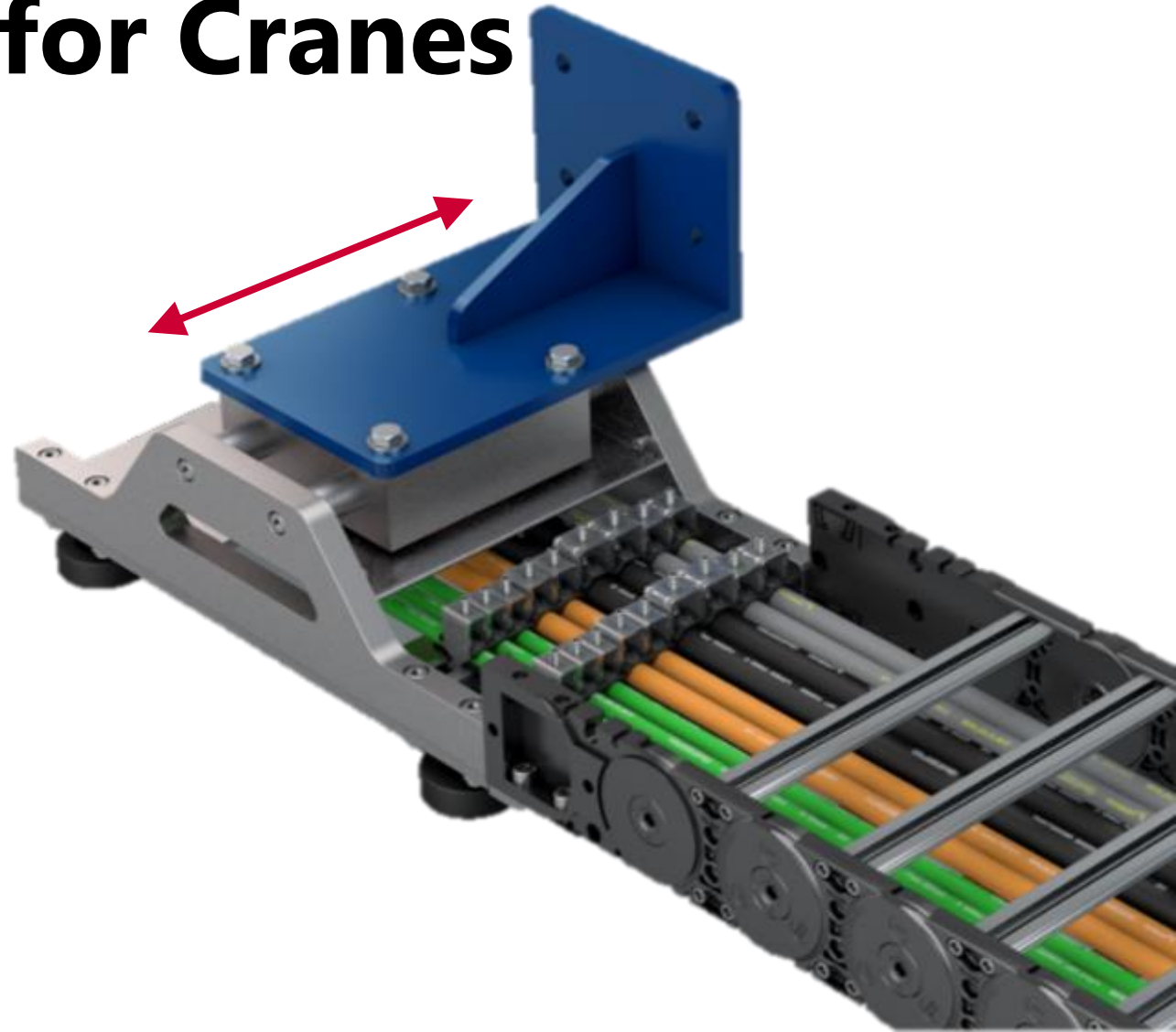
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•References

# Safety Devices for Cranes

## Floating Moving Device

- Compensate horizontal misalignment
- Misalignment compensation:
  - Vertikal: +/-60mm
- Easy installation, less maintenance
- Roller supported
- Integrated strain relief system
- Safe cable guidance
- Combinable with TSUBAKI Kabelschlepp Force Monitoring System
- For M-Series and TKHD-Series



## Chapter 3

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# Safety Devices for Cranes

## Standardized Monitoring Systems TKCMS

- Programmable for different tasks
- Different tasks available
- Less program effort
- Different interfaces
- Standardized Top-Hat-Rail-Module
- Operating system independent
- Independently programmable



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# Safety Devices

## Force Monitoring for cranes

- usable for automatic emergency stop-system
- direct measurement of the push-/pull-forces at the moving point
- force limits free programmable (lower/upper)
- error indication if the limits are exceeded
- outgoing signal PLC usable internal
- data storage
- maintenance free
- no speed limit





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# Safety Devices

## Wear Monitoring for cranes

- Determine and evaluate real-time wear values
- Operating system independent
- Easy to retrofit
- Easy installation
- No sensor-cables inside the cable carrier
- No radio transmission
- Using standard components
- Easy access to all sensors
- Redundant sensos
- Maintenance free
- Outcoming signal PLC usable
- Internal data storage



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# Total Trax Turnkey Systems

## full service for your crane Application

- Harnessed Systems with System warranty.
- From the first sketch to the final check
- Everything from one supplier.
- Full System documentation.
- Full installation service on site.
- Full Project-Support and Realization



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# Designed and tested for longer life

## Tsubaki Kabelschlepp Test-Center “TEZ”

short and long term tests for all cable carrier and cables

- Free span Tests
- Long Span Tests
- Bending Moment Tests
- Long travel Tests
- Pull Force Tests
- Customer Tests
- Cable Tests (wear and durability)
- Product Development Tests



Chapter 3

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- Technology Packages
- Products & Services
- References

# Designed and tested for longer life

## Crane Test Facility

Proven under real conditions on outside test facility

- Test facility for 2 distinct systems
- Travel lengths more than 100 m
- Test speeds up to 5 m/s
- realistic weather conditions
- Automatic Test in 24/7
- Crane unloading test cycles
- Incident simulations





# References

Cranes & Heavy Duty  
Applications

Chapter 4

- Why you should work with Kabelschlepp
- Technology Packages
- Products & Services
- References

# References

## Ship to Shore crane

- Country: China
- Applicationtyp: STS-Cranes
- Travelway: 100 m
- Speed: 4,0 m/s
- acceleration: 0,5 m/s<sup>2</sup>
- Additional load: 5 kg/m
- Cable carrier: RSC MC0950.184.RM.200



Chapter 4

- Why you should work with Kabelschlepp
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- References

# References

## Ship to Shore crane

- Country: Panama
- Applicationtyp: STS-Cranes
- Travelway: 115 m
- Speed: 4,0 m/s
- acceleration: 0,5 m/s<sup>2</sup>
- Additional load: 7 kg/m
- Cable carrier: TKHD90



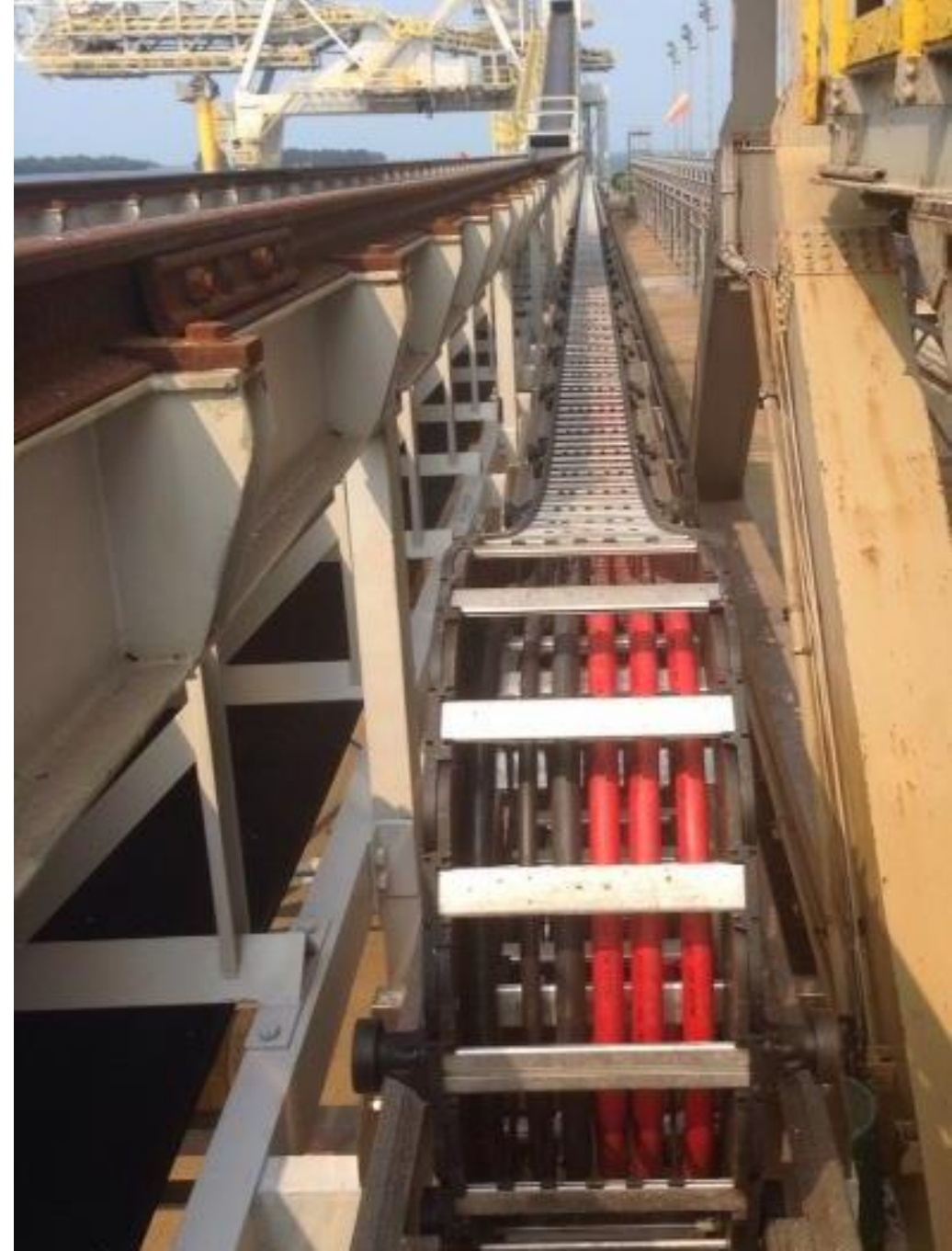
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# References

## Shiploader/Shipunloader

- Country: Indonesia
- Applicationtyp: Ship-Unloader
- Travelway: 300 m
- Speed: 1,5 m/s
- acceleration: 0,5 m/s<sup>2</sup>
- Additional load: 15 kg/m (incl. Medium Voltage Cables)
- Cable carrier: MC1300.330.RMF-320-155000





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# References

## RTG's/ASC's

- Country: China (ZPMC)
- Type of crane: RTG
- Travel length: up to 30 m
- Speed: 1,2 m/s
- Acceleration: 0,5 m/s<sup>2</sup>
- Additional load up to 12 kg/m



Chapter 4

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# References

## RMG's

- Country: Germany
- Type of crane: RMG
- Travel length: 108 m
- Speed: 2 m/s
- Acceleration: 1 m/s<sup>2</sup>
- Additional load 17 kg/m
- Cable carrier: MC1300.335-RMF-360-57200



Chapter 4

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- References

# References

## Stacker/Reclaimer

- Country: Russia
- Type of application: Stacker/Reclaimer
- Travel length: 705 m
- Speed: 2 m/s
- Acceleration:  $<1 \text{ m/s}^2$
- Additional load 20 kg/m
- Cable carrier: TKHD90



Chapter 4

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- References

# References

## Shipyard cranes

- STX Shipbuilding, Dalian (China)
- for Upper und Lower Trolley
- Travel distance: approx. 250 m
- Additional load: max. 50 kg/m
- MC1300 with double-sidebands



Chapter 4

- Why you should work with Kabelschlepp
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- References

# References

## Elevators

- Cable carrier system for elevator applications
- Close project management between Kabelschlepp India and Germany.
- Travelway 100m
- Arrangement: vertical





Thanks for your  
attention