

KABELSCHLEPP

TSUBAKI KABELSCHLEPP

SYSTEMS FOR PORT CRANES

Heavy duty cable carrier for
long travel applications



COSTS DOWN – SERVICE LIFE UP

CABLE CARRIER SYSTEMS FOR CRANES

TSUBAKI KABELSCHLEPP develops customized solutions for cable carrier systems in cranes. Our decades of experience from hundred thousands of realized projects in various industries with diverse demands on our cable carrier systems, lead to new custom and application-specific solutions for our customers. Our specialists will support you from the planning and design stage through to the onsite installation and start-up of the tested complete system.



Spreader



Reach stacker



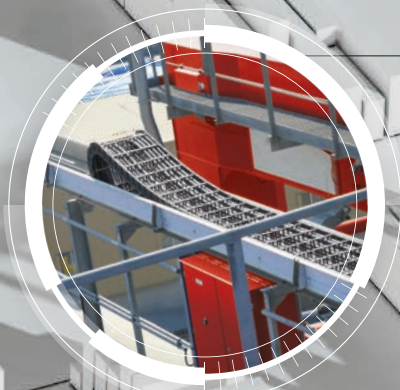
Automated Stacking
Cranes (ASC)



Ship To Shore
Container Cranes (STS)



Rail Mounted Gantry (RMG)



Rubber Tyre Gantry (RTG)

YOUR GLOBAL CRANE EXPERT



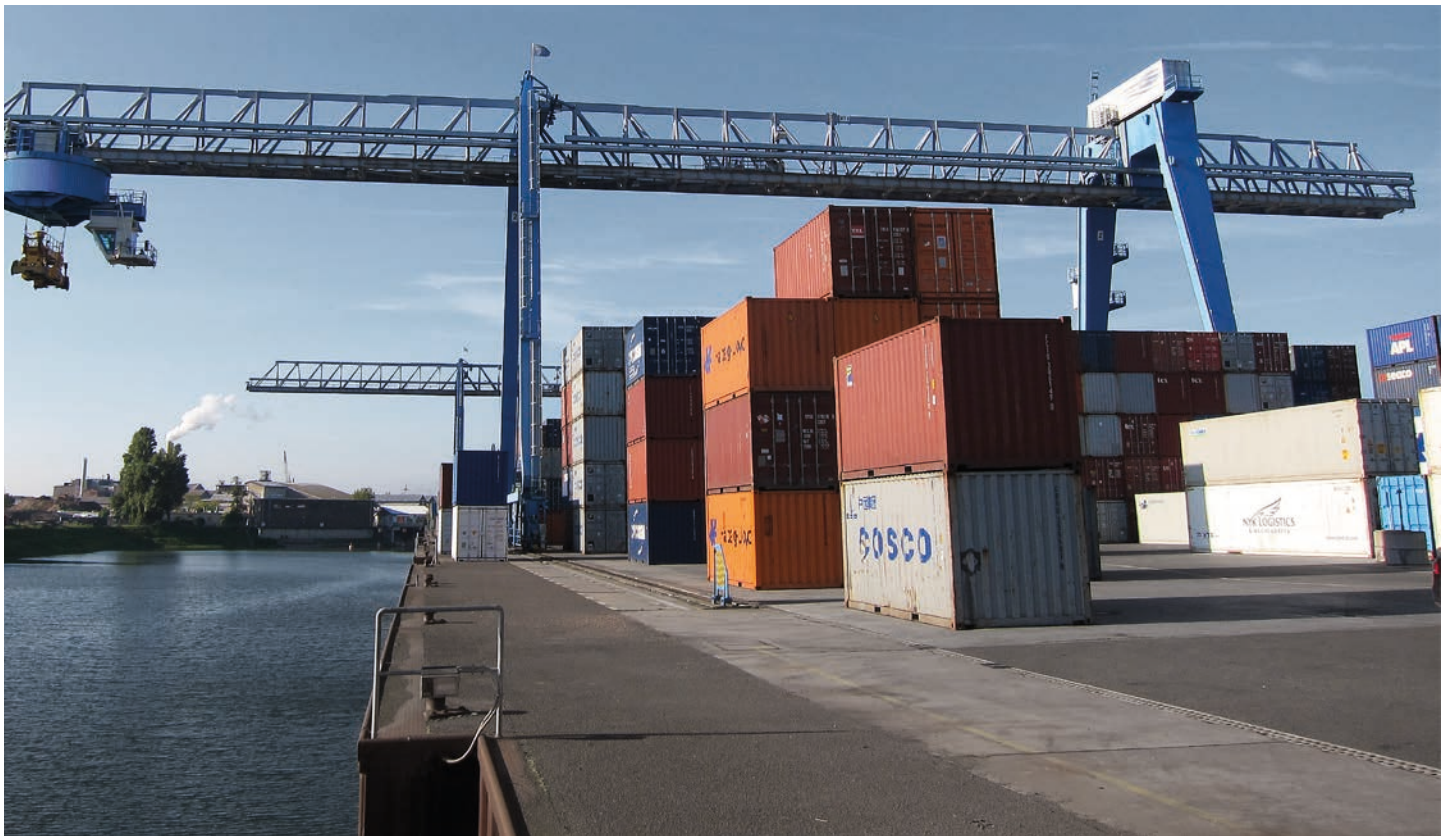
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YOUR PARTNER FOR CRANE APPLICATIONS

KABELSCHLEPP specializes in cable carriers for all types and sizes of cranes and has been a pioneer in dynamic cable and hose carrier systems ever since the invention of the original cable carrier that was patented by KABELSCHLEPP in 1954.

As modern crane systems demand increasingly higher cycle rates and travel speeds, they need cable management solutions that can hold up to the new requirements. To meet these demands, today's port cranes and lifting devices require lightweight plastic cable carriers that offer high speed, high acceleration and high durability.

Cable carrier systems made of plastic and aluminium can help you to adapt your systems to meet these current demands. TSUBAKI KABELSCHLEPP has solutions for even extremely long travel applications that require high travel speeds and accelerations.

Since 1954, KABELSCHLEPP cable carriers have been proved in the field and provide high reliability, high quality, and cost-effective cable guiding solutions that can also satisfy increasingly challenging needs of the future.

Engineering by TSUBAKI KABELSCHLEPP

TSUBAKI KABELSCHLEPP is a total solution provider. Our almost 70 years of experience and thousands of installed applications worldwide make us a competent partner that you can rely on for your applications. Our specialists will support you from planning through installation and start-up of the complete system.

In order to achieve an optimal upgrade to the respective equipment, our experts will coordinate the components for your application on-site. As required, we use standard components or we can custom configure our systems to adapt them to the existing structures.

- » site measuring for best engineering and assembly planning
- » on-site-training custom tailored to the application
- » application specific assembly and maintenance manuals
- » CAD documentation of the installation in 2D and 3D formats for your records

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 structure
- » Short cable length
- » Easy to maintain
- » Data transfer with light velocity

TOTALTRAX Complete Systems – From planning to the final complete system

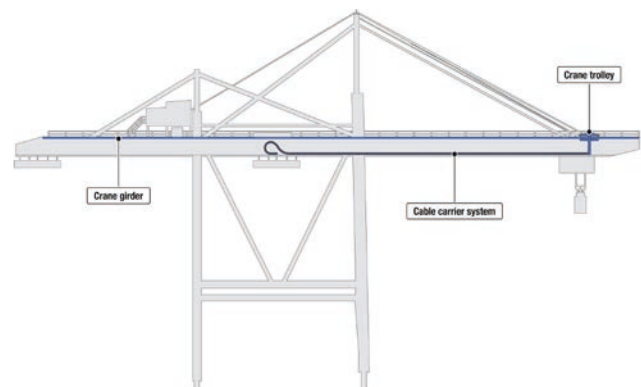
Use our know-how. Working jointly with you, our experienced specialists can provide pre-sale support, including planning and design services through after sales service and support.

One order, one contact person, components optimally matched to each other, including the cable and hose carrier, the electrical cables, the hydraulic and pneumatic hoses and the connectors.

You receive the complete system in one delivery along with a guarantee certificate, if desired – in short: TOTALTRAX.

Reduce your storage costs for cable and hose carriers, cables and connectors with TOTALTRAX.

We supply all components just-in-time to your production facility or directly to the installation site.



Expert installation by our Service Team

Let our Service Team handle the planning and execution of the installation of cable and hose carrier systems. We provide the support you need.

- » complete assembly including the guide channel and the substructure
- » uncoiling and assembling cable and hose carrier systems for long travel applications
- » installation in harsh conditions at great height
- » commissioning and acceptance

OUTDOOR TESTING FACILITY

PROVEN QUALITY –
TESTED FOR LONGER LIFE

TSUBAKI KABELSCHLEPP stands for high quality and safe solutions. To ensure the highest standards we have an outdoor testing facility with real conditions. Gliding and rolling systems with travel lengths of more than 100 meters as well as high speed applications are being tested by our experts under harsh conditions.



Outdoor Testing Facility



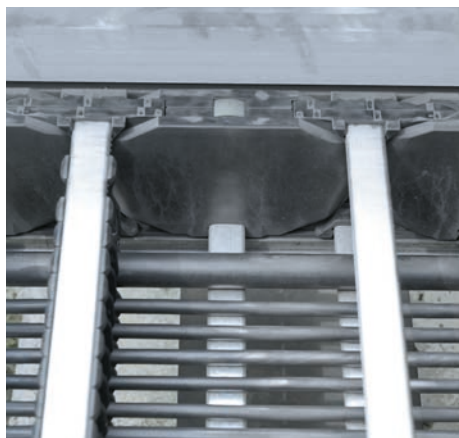
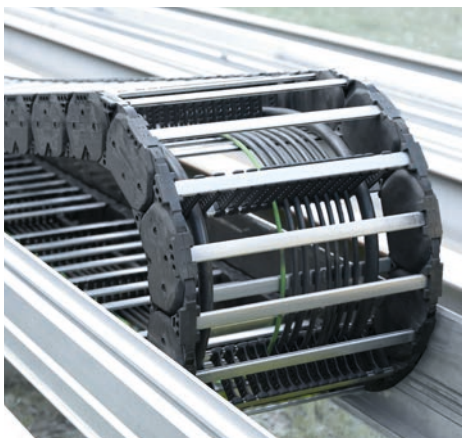
Test-Center „TEZ“

Testing facility for all cable carrier types

- » independent cable carrier systems beside each other
- » gliding and rolling systems applicable
- » travel lengths of more than 100 meters
- » overtensioning protection system
- » high speed (5 m/s) tests
- » full automatic
- » special testcycles (Vessel unloading simulation)
- » 24/7 tests possible

Outdoor conditions

- » exposed to harsh winter
- » direct solar radiation
- » heavy rainfalls
- » incident simulations



Material variety

Your application determines the material

EX



For Ex-protection applications, we offer customized solutions made from solid plastic, hybrid or steel cable carriers, which meet the requirements of the standard (with $< 10^5 \Omega$).

ESD



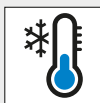
Our proven ESD cable carriers based on nano-technology with carbon tubes easily meet the requirements of the ESD standard (with $< 10^9 \Omega$) in terms of conductivity and resistance.

FLAME RETARDANT



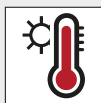
We offer special materials including V0 versions for operating areas having a risk of fire. All materials listed by UL94. Additional special solutions on request.

LOW TEMPERATURE



Suited for usage in low temperature areas such as cold stores, etc., up to around -40°C .

HIGH TEMPERATURE

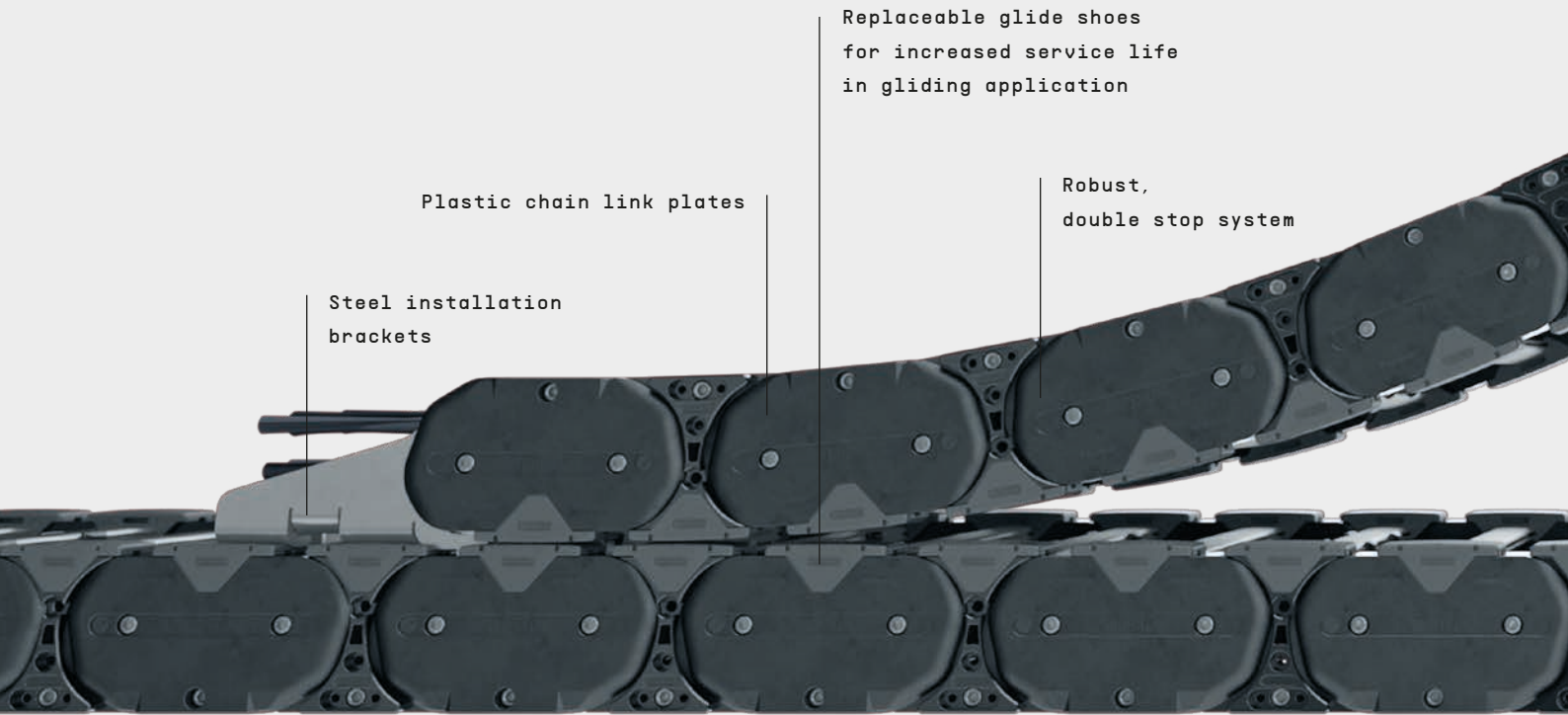


High temperature material 1: Suited for a (dimensionally stable) long-term temperature range for 2,500 hrs. up to 190°C and for 10,000 hrs. up to 160°C .










High temperature material 2: Suited for transient surface contact temperatures of up to 800°C .

TKHD85 / TKHD90

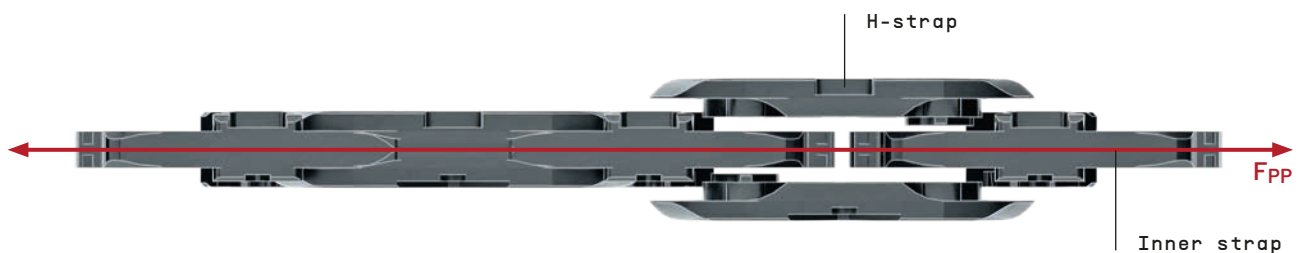
HEAVY DUTY CABLE CARRIERS FOR ROLLING, GLIDING AND UNSUPPORTED APPLICATIONS

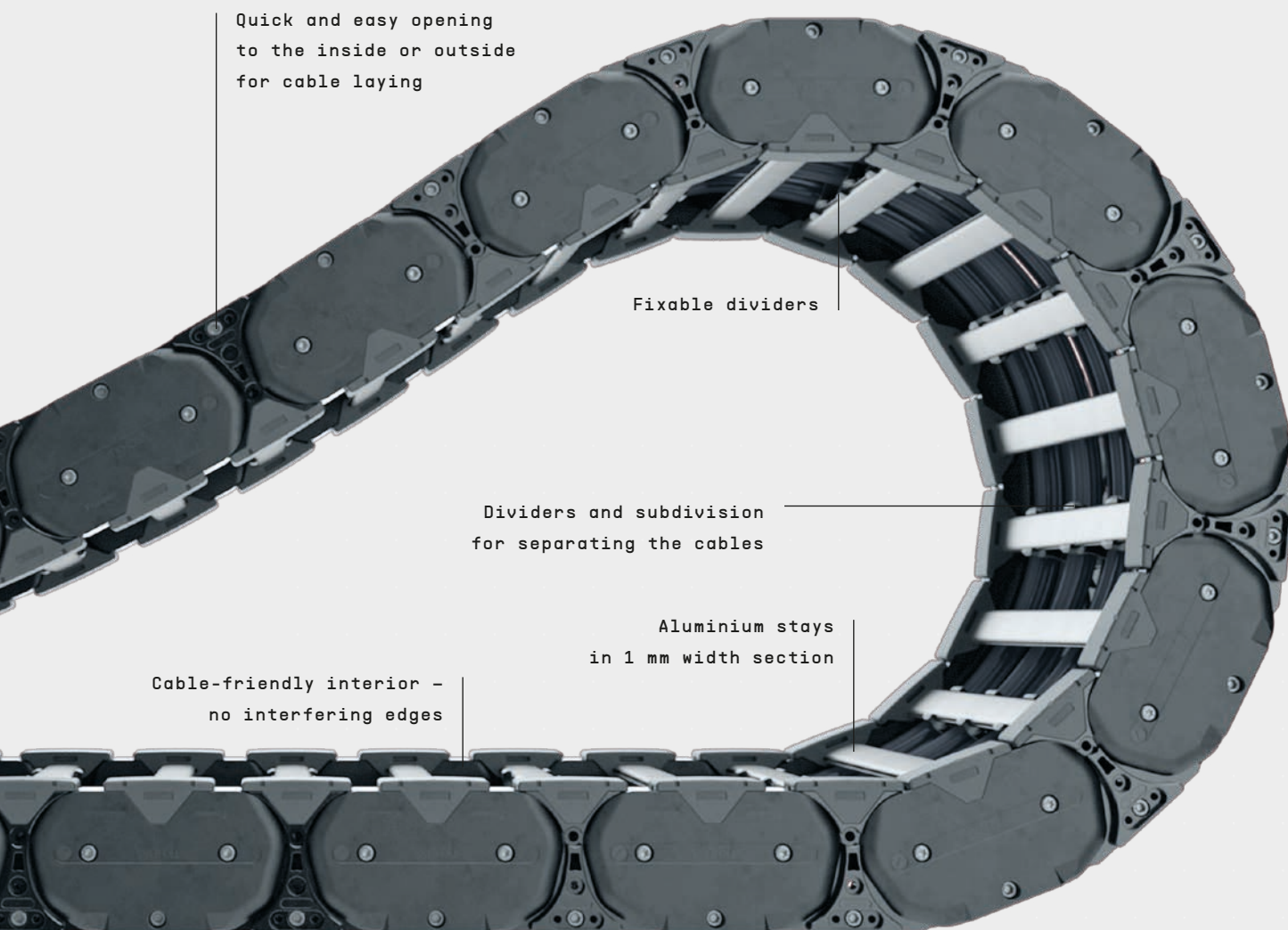


Parameter

| | | | | | |
|--|--------------|---|--------------|---|--------------------------|
|  Sub-division | simple |  Inner heights | 58/87 mm |  B _i increments | 1 mm |
|  Pitch | 85/90 mm |  Inner widths | up to 500 mm |  Travel acceleration | up to 5 m/s ² |
|  Travel speed | up to 10 m/s |  Bending radii | 240 - 500 mm |  Travel length | 1000 m and more |

High push/pull-force transmission because of H-Strapdesign linear force flow through the entire system





Features

- » massive, enclosed, stain-repellent stop system
- » massive sidebands through robust double fork-bracket-construction
- » sidebands easy to assemble
- » reinforced pin bore connection
- » integrated damping system
- » quick and easy opening to the inside or outside for cable laying
- » soil-resistant outer contour
- » bolted construction for heavy duty applications
- » low maintenance effort
- » variable vertical inner distribution optional with fixable dividers
- » replaceable glide shoes for longer service life in gliding long travel applications
- » aluminium stays with 1 mm width section
- » linear force curve
- » polygon-optimized contour (less vibration)
- » 85/90 mm chain pitch



TKHD85-R / TKHD90-R

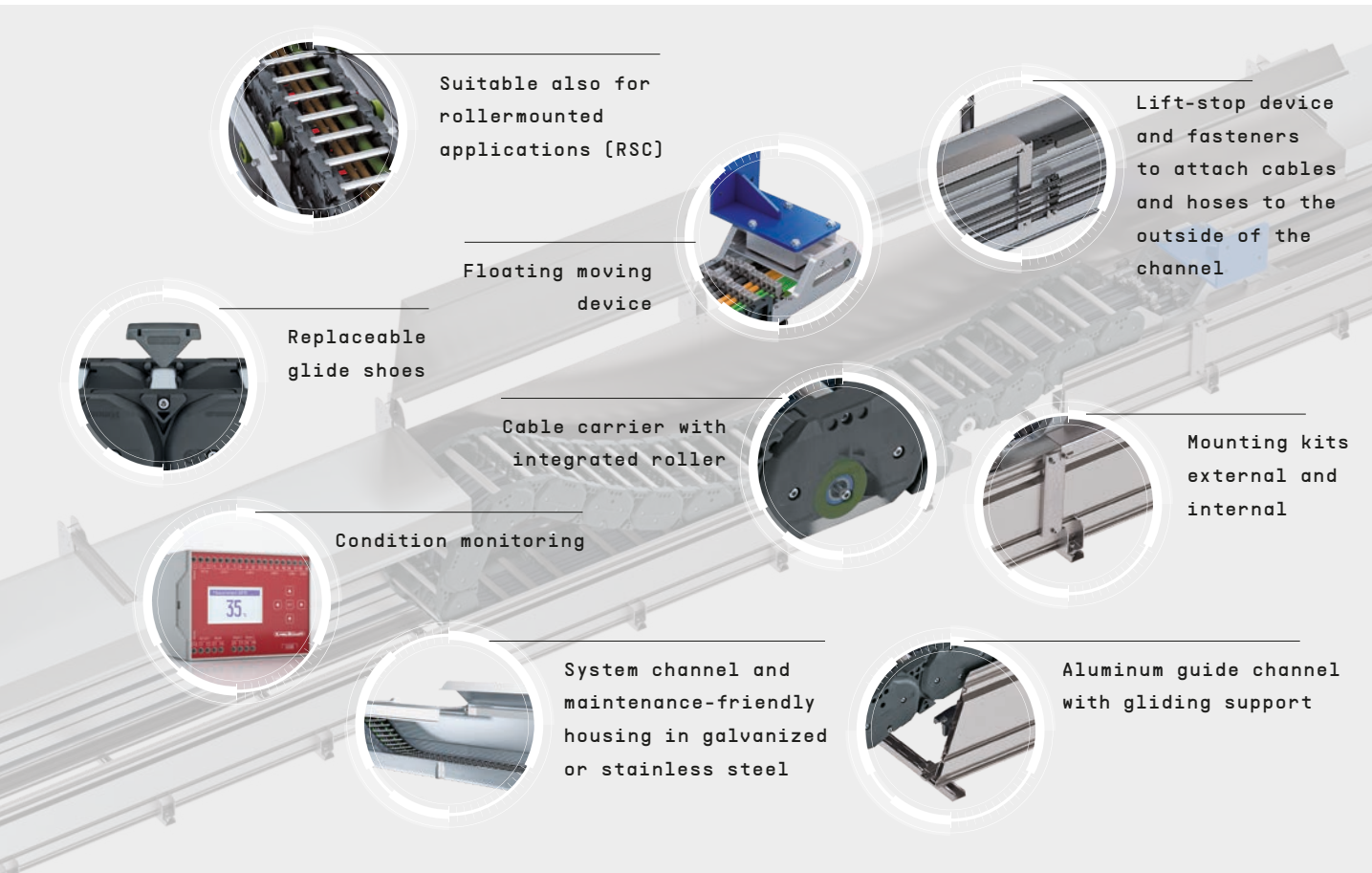
HEAVY DUTY CABLE CARRIERS FOR LONG TRAVEL LENGTHS AND HIGH ADDITIONAL LOADS WITH INTEGRATED ROLLERS IN TWO SIZES

Features

- » rolling instead of gliding
- » up to 75 % less force compared to a gliding system
- » quiet of less-vibration
- » high travel speed and acceleration
- » minimum stress for cable carrier and cables
- » suitable for very long travel applications
- » easy to maintain
- » only visual inspection
- » no fix distances of the support structur necessary
- » 1000 m and more travel length

Technical highlights

- » integrated rollers
- » integrated brake
- » reinforced stop dog-system
- » inner height 58/87 mm
- » 85/90 mm pitch
- » shape optimized
- » reinforced bolt hole connection
- » linear force curve
- » massive design
- » RSC (Roller supported chain) version available



TKHD-R SERIES

COMPLETE SYSTEMS – THAT’S WHAT WE DO

As a specialist for cable carriers, we have been a reliable partner for decades when it comes to complete ready-to-connect systems.

Worldwide there are thousands of our realized systems in use. Every single one has been adapted to the individual customer application. No matter whether it is a simple, assembled chain or a highly complex system – we offer ready-to-install subassemblies for almost every field of application.

As a member of the TSUBAKI Group we are part of a globally operating group. Thus, we offer our customers and partners the international footprint of a global player combined with the flexibility of a medium-sized company.

Applicable for all systems:

- » made from high-quality components
- » perfectly attuned to one another
- » optimized lead times
- » just-in-time delivery
- » complete systems from simple to complex
- » for single components and
- » for complete subassemblies – certification and comprehensive documentation available upon request

We deliver the ready-to-install cable carrier system just-in-time directly into your production or to your desired location. Securely transported in disposable or reusable packaging.

STANDARDIZED MONITORING SYSTEM TKCMS FLOATING MOVING DEVICE TKFMD

SAFETY DEVICES FOR CRANES AND LONG TRAVEL APPLICATIONS

Better safe than sorry – this is also true for cable carrier systems. With the two solutions “Standardized Monitoring System” and “Floating Moving Device” we have two very useful helpers in our portfolio.



Standardized Monitoring System TKCMS

- » programmable for different tasks
- » different tasks available
- » less program effort
- » different interfaces
- » standardized top-hat-rail-module
- » operating system independent
- » independently programmable

Wear monitoring for cranes

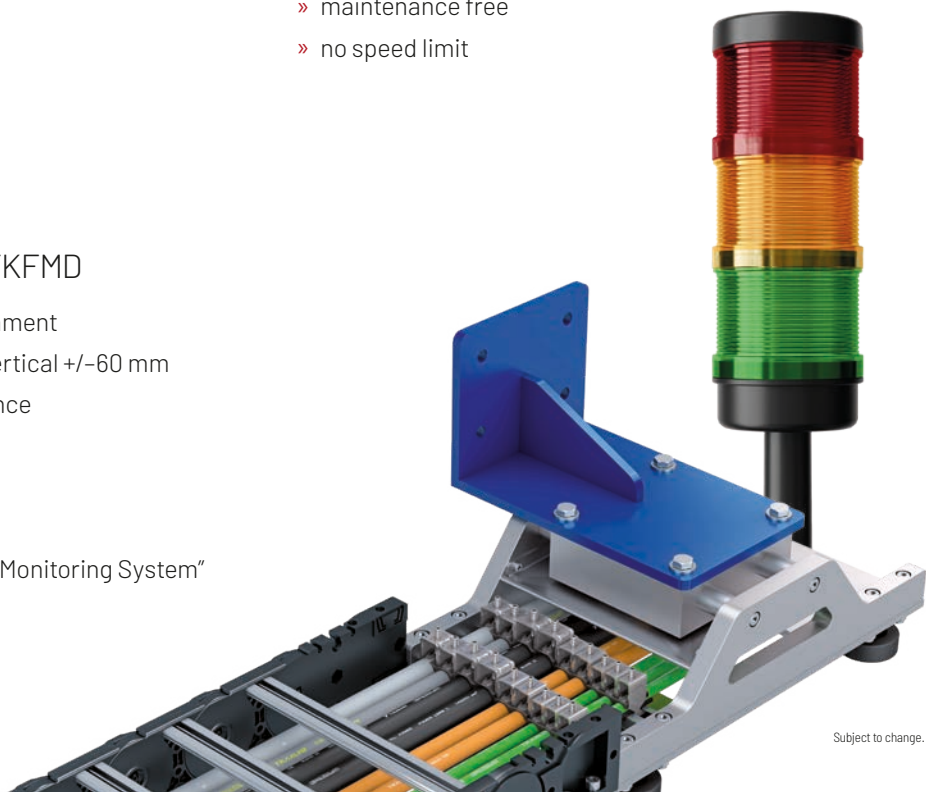
- » determine and evaluate real-time wear values
- » operating system independent
- » easy to retrofit and to install
- » no sensor-cables inside the cable carrier
- » no radio transmission
- » using standard components
- » easy access to all sensors
- » maintenance free
- » outgoing signal PLC usable
- » internal data storage

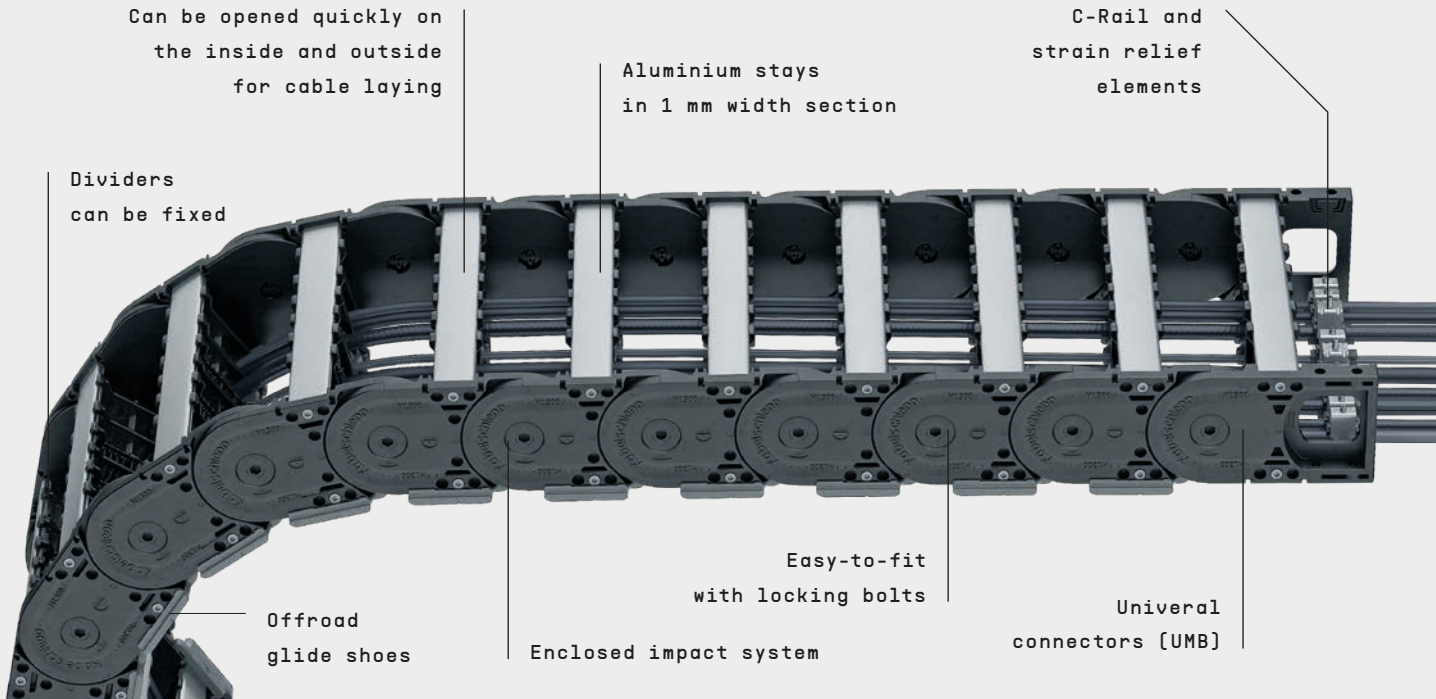
Force monitoring for cranes

- » 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

Floating Moving Device TKFMD

- » compensate horizontal misalignment
- » misalignment compensation: vertical +/-60 mm
- » easy installation, less maintenance
- » roller supported
- » integrated strain relief system
- » safe cable guidance
- » combinable with “Standardized Monitoring System”
- » for M series and TKHD series





M SERIES

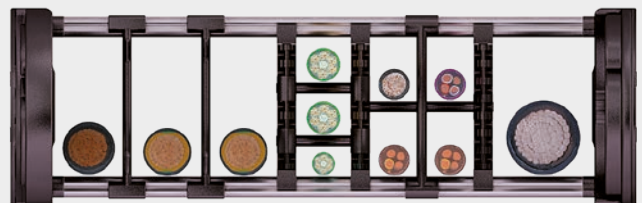
PROVEN CABLE CARRIERS FOR LONG TRAVEL LENGTHS, HIGH SPEEDS AND HIGH ACCELERATIONS

Multivariable system – fits to any application

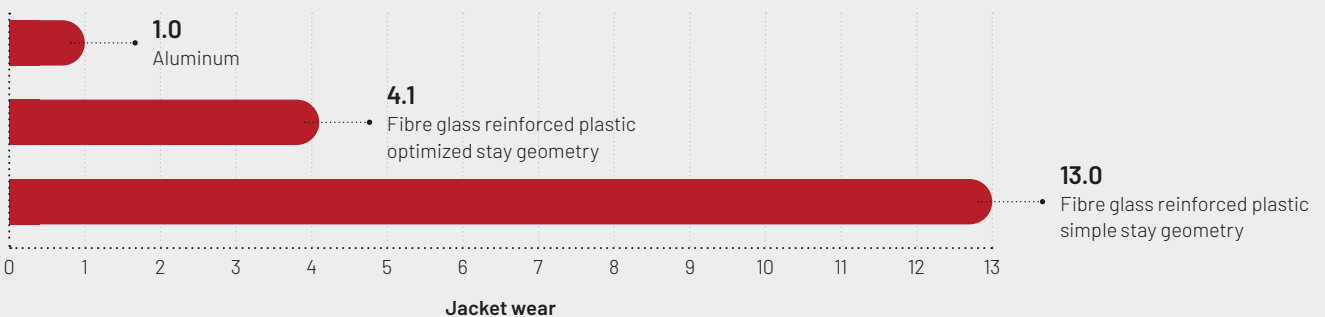
Multivariable cable carriers with extensive accessories and stay variants for extreme long travel lengths.

- » seawater resistant aluminum stays; bolted 4 times for high stability and extreme loads
- » aluminum stays with custom widths available in 1 mm width increments
- » extremely long service life in long travel applications due to replaceable glide shoes
- » can be opened easily and quickly on both sides for cable laying

- » enclosed stroke system protects against dirt/contamination
- » large selection of divider systems for separating the cables and hoses



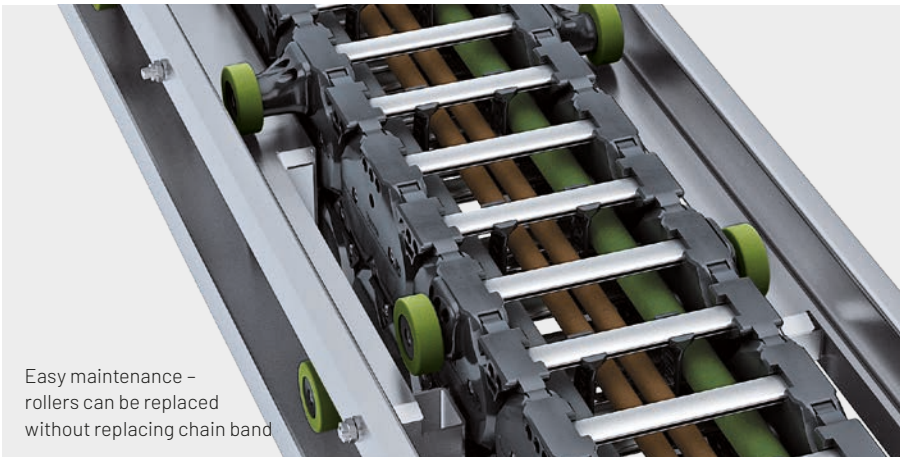
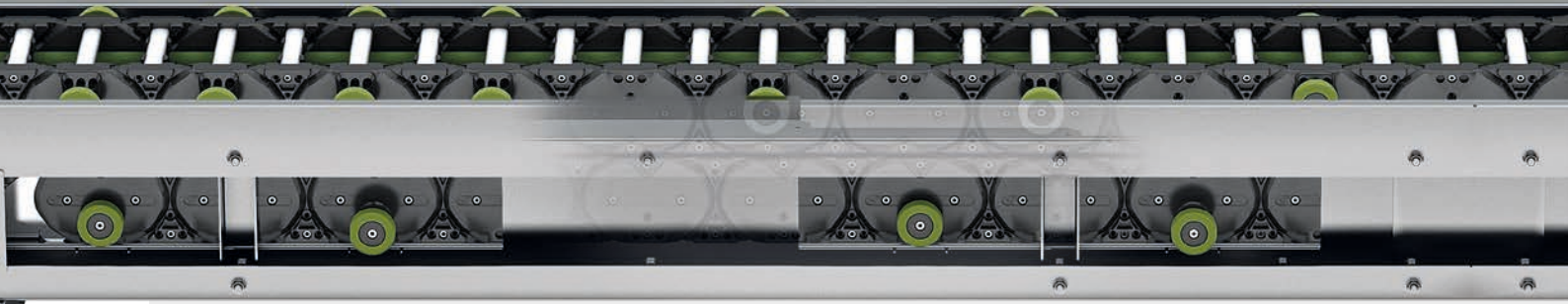
Save costs due to low jacket wear for cables



Subject to change.

ROLLER SUPPORTED CHAIN RSC

HIGH PERFORMANCE - LOW MAINTENANCE COSTS
FOR TRAVEL LENGTHS UP TO 100 M



Easy maintenance -
rollers can be replaced
without replacing chain band



Rolling instead of gliding - the proven principle for less friction

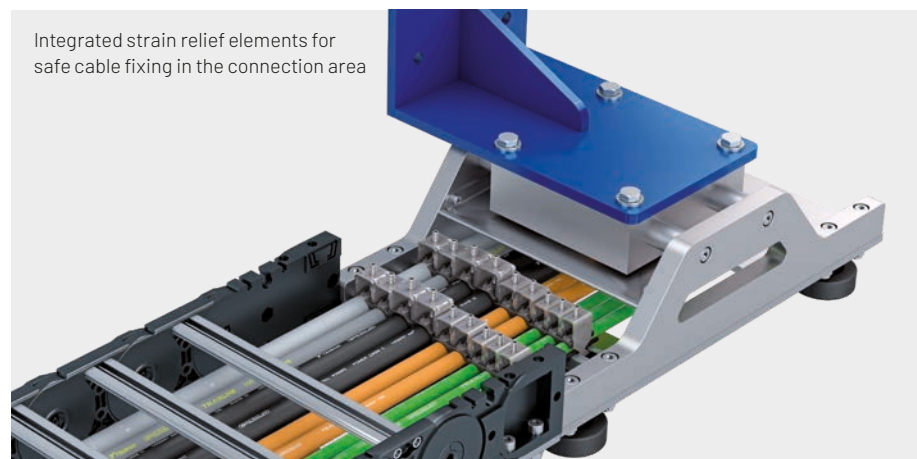
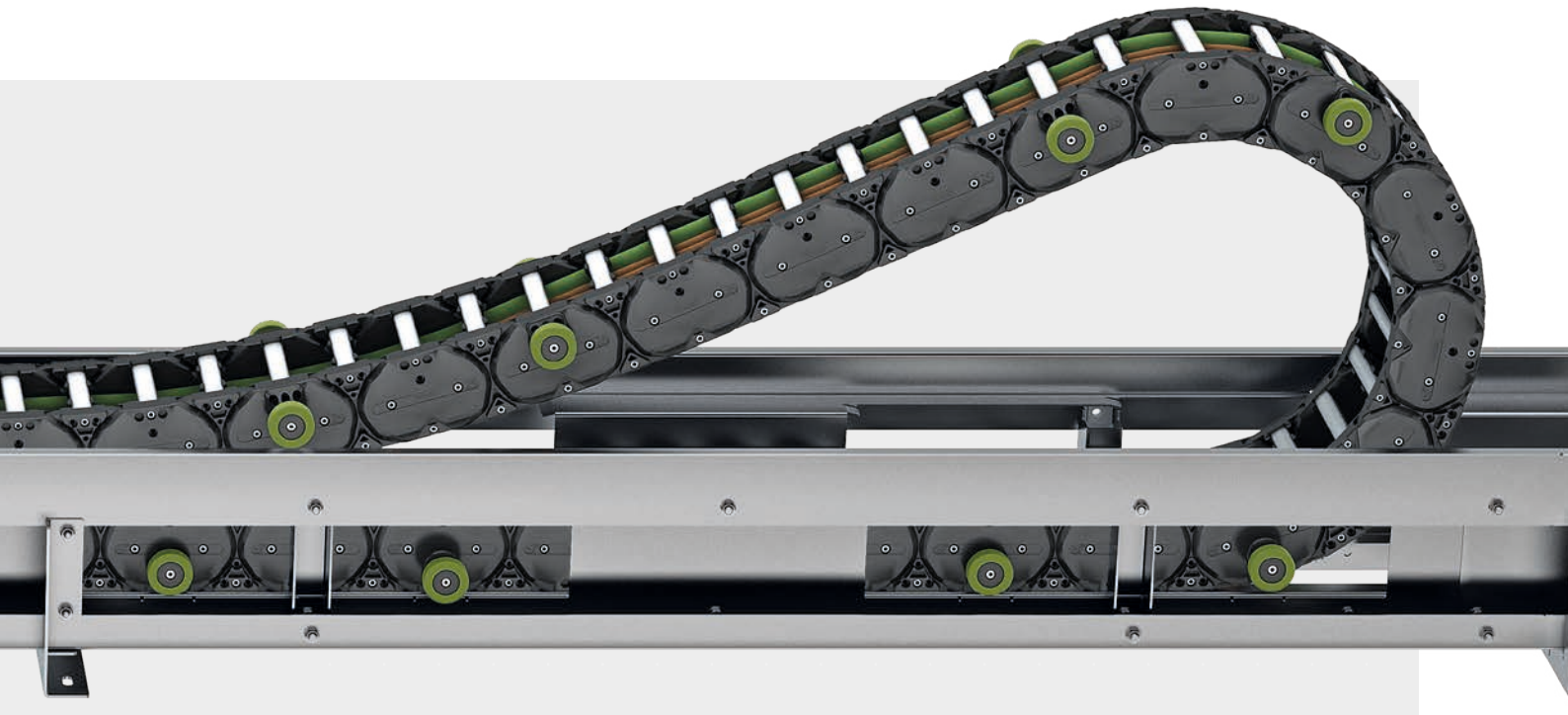
With the RSC, the upper trough does not glide on the bottom trough, as it runs on rollers. The rollers are mounted on ball bearings at the side of the carrier and allow up to 100 m travel lengths requiring substantially less driving power. The tension and thrust is **90 %** less in comparison to gliding arrangements.

Minimized costs and maintenance time

In case of maintenance only the wear part roller can be replaced individually. A time-consuming and cost-intensive replacement of the entire cable carrier is no longer necessary. The rollers are easily accessible through cutouts in the channel and modular side panels. This saves time during maintenance and service.

Quiet and low-vibration operation

The rollers run on the guide rail and do not contact other rollers. Ball bearings and a polyurethane roller surface additionally contribute to quiet and smooth operation.



Roller Supported Chain (RSC)

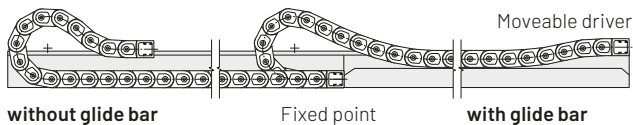
- » suitable for up to 100 m travel lengths
- » up to 90 % less tension and thrust compared to a gliding arrangement, thus requiring substantially less driving power
- » low-noise and low-vibration operation
- » less space required and cost-optimized with a shorter loop overhang – minimum turnaround length
- » no impacting of the rollers against one another
- » long service life – low maintenance
- » minimum stress on the cable carrier and cables
- » Roller supported chain (RSC)
- » less push/pull forces
- » high travel speed and acceleration
- » substantial additional capacity possible
- » use of proven standard cable carriers
- » the cable carrier cannot rise
- » variable profile lengths, adjusted to your connection points

GLIDING ARRANGEMENT

A COST-EFFECTIVE SOLUTION FOR YOUR APPLICATION



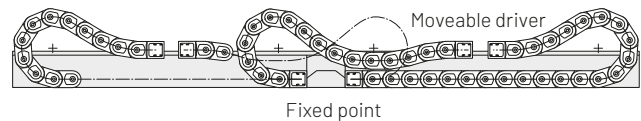
Single-Sided Gliding Arrangement



Here, the upper run of the cable and hose carrier glides on the lower run and/or on the glide bar of the guide channel. The single-sided arrangement is the most common and cost-effective solution.

TSUBAKI KABELSCHLEPP supplies cable carrier, guide channel, cables and hoses, and strain relief devices – the complete system solution. Cable carriers in this configuration operate trouble-free in installations all over the world.

Opposed Two-Sided Gliding Arrangement



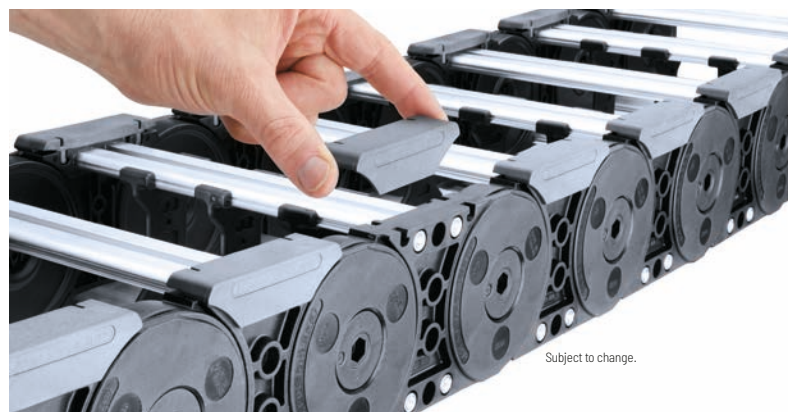
With high additional loads, the cables in an opposed arrangement can be distributed between two opposing cable carriers. This allows the installation width to be reduced and the separation of power, control and signal cables is also possible.

Replaceable glide shoes – the cost-effective solution

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

- » increased lifespan of cable carrier
- » reduced costs and downtimes
- » only the glide shoes instead of the complete carrier needs to be replaced
- » 80 % more wearing volume
- » made of a special, highly abrasion-resistant material with low friction coefficients

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



STEEL GUIDE SYSTEM TKSG

EASY TO ASSEMBLE AND LOW MAINTENANCE TIMES

- » easy and time-saving assembly/disassembly
- » single channel elements can be disassembled
- » with integrated steel glide bars
- » open construction,
dust is not able to pile up
- » no welded parts
- » pre-assembled delivery
- » available in galvanized and stainless steel



ALU GUIDE SYSTEM TKAL

MODULAR GUIDE CHANNEL SYSTEM MADE OF ALUMINUM

- » 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



Protection against external influences: Maintenance-friendly housing

- » 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



TRAXLINE® 700/1000 SERIES

FLEXDESIGN CABLES FOR PROJECTS AND CRANES

700/700C – Bundle stranded cables with wear resistant PUR outer jacket and inner jacket for heavy demands.

1000/1000C – Bundle stranded cables with wear resistant TPE outer jacket and inner jacket for really heavy loads.



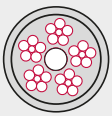
HIGH FLEXDESIGN PUR CABLES – 700 SERIES

Developed for

- » long travel length crane applications
- » - 35 to + 90 °C
- » outdoor/indoor
- » offshore/onshore
- » very high electrical voltages
- » small bend radii
- » high speed (up to 50 m/s)
- » high acceleration (up to 50 m/s²)

Properties

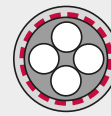
- » high flex design
- » side pressure strength
- » seawater-resistant
- » ozone-resistant
- » UV-stable
- » crude oil resistant
- » flame-retardant
- » **CE**
- » **UL** **US**
- » cut resistant
- » halogen-free
- » silicone-free
- » CFC-free
- » REACH/RoHS II conform
- » metermarked
- » MUD resistant



Core insulation KS-PP
bundled stranding
(> 8 cores)



Inner jacket KS-TPE
valley-sealed, pressure
extruded, hi-flex design



Overall shield
continuous bending
hi-flex, tin-plated
copper braiding for
smallest bend radii



Outer jacket KS-PUR
pressure extruded,
hi-flex design, extremely
abrasion-resistant



Jacket colour black
ozone-resistant
UV-resistant

TOP FLEXDESIGN TPE CABLES – 1000 SERIES

Developed for

- » heavy load and long travel length
- » - 40 to + 90 °C
- » crane and conveyor equipment
- » systems, mechanical and crane engineering
- » clean room duties
- » limited space solutions
- » permafrost using
- » outdoor applications

Technical details

- » shielded continuous bending top FLEXdesign TPE power cables
- » TPE inner jacket
- » special shielding with 85 % coverage
- » top FLEXdesign copper wires
- » KS-Special compound core insulation
- » outer jacket color: black

Premium properties

- » low-capacitive
- » top flexdesign
- » oil-resistant
- » UV-resistant
- » REACH/RoHS II-conform
- » halogen-free
- » microbe resistant
- » metermarked
- » CFC-free
- » silicone-free
- » spark tested 10 kV
- » ozone-resistant
- » hydrolysis durable
- » test voltage 4 kV
- » **CE**





CONTACT

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