

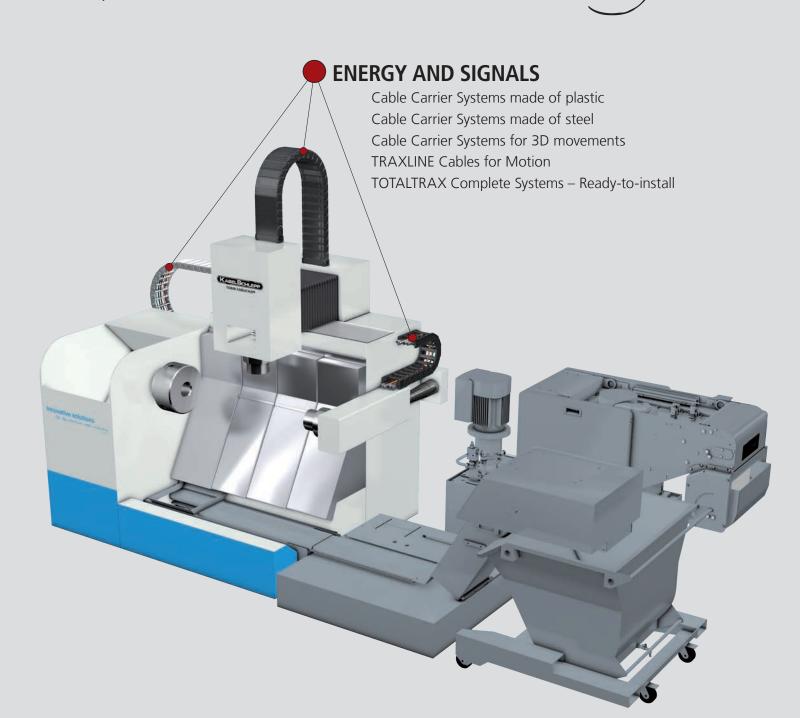


## Innovative solutions for the machine fool industry



CABLE CARRIER SYSTEMS TRAXLINE® CABLES FOR MOTION TOTALTRAX® COMPLETE TURN-KEY CARRIER SYSTEMS GUIDEWAY PROTECTION SYSTEMS CONVEYOR SYSTEMS

## Innovative solutions for the machine fool industry





## ENERGY AND SIGNALS see page 4



**STANDARD** applications



ADVANCED applications



**EXTREME** applications



**3D** applications



**TRAXLINE** Cables for Motion



TOTALTRAX Ready-to-install



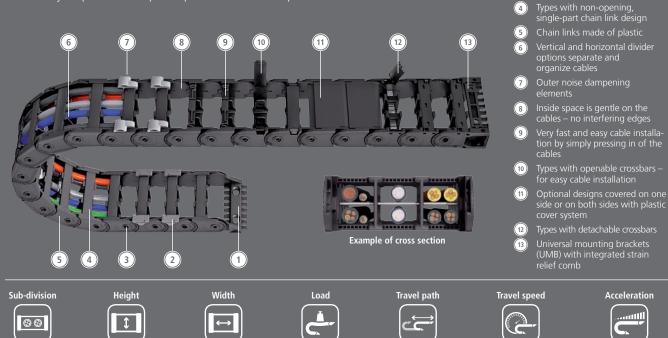
Application examples see page 16

for the machine tool industry

## **ENERGY AND SIGNALS**

## **STANDARD** applications Solid plastic cable and hose carrier systems with fixed chain widths

Reliable cable and hose carrier systems with simple designs for standard applications. Due to its vast range of various carrier types and designs, TSUBAKI KABELSCHLEPP can offer reliable and cost-efficient solutions such as extremely compact designs, types with non-opening or opening crossbars for fast and easy cable installation, as well as tube style options for superior protection from chips and other debris.





up to 10 kg/m



(1)

integrated strain relie

Replaceable glide shoes for extending system life



Acceleration

### MONO

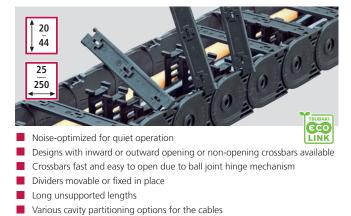
Cable carriers with simple design for standard applications



- Simple single piece chain links design with either non-opening or hinged opening crossbars
- Simple and quick assembly
- Compact design for operation in tight spaces
- Mounting brackets with integrated strain relief

### **UNIFLEX** Advanced

Light, guiet standard track for a wide range of applications







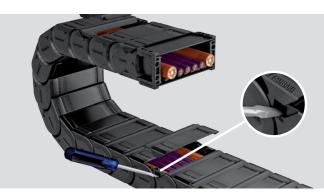
Splash- and dustproof - in more than 300 sizes

The enclosed cable and hose carrier TKA55 was specifically developed for use in environments with contamination from chips and dirt. The design effectively prevents the ingress of foreign bodies into the cable space and provides reliable protection of the cables, up to the protection class IP54 – tested and attested by the TÜV Nord (German Technical Inspection Authority, North).\*

The geometry of the chain links of the TKA series and the 3-fold, encapsulated stroke system enables extensive

unsupported length and high torsional rigidity. Integrated gliding surfaces also predestine them for long travel lengths. Easy to open cover provides secure hold, even under severe mechanical stresses, e.g. when used with hydraulic cables.

The TKA45, TKA38 and TKA30 types were developed modeled on the TKA55. There is a total of more than 300 versions available with inner widths of 15 to 175 mm and inner heights of 20.5 to 45 mm.



Versions available opening inwards or outwards



Cover system also in the connection



Fixable dividers with arresting cams

area

for the machine tool industry

## **ENERGY AND SIGNALS**

**STANDARD** applications

## TKA Series Chip-tight right to the end



Pitch Height Width Load Travel speed Acceleration unsupported gliding aattii 1 up to 150 m 20.5 – 45 mm 15 – 175 mm up to 10 kg/m up to 6 m up to 45 m/s<sup>2</sup> 30.5 - 55.5 mm up to 9 m/s

The assigned values are average values. Depending on the specific application, the maximum values may differ significantly. For detailed information please contact us.

## Splash- and dustproof – in more than 300 sizes

- Impermeability against chips, excellent cable protection also in the connection area
- TKA55: IP54 tested and attested (TÜV NORD)
- On request, also in special material with protection against hot chips up to 850 °C
- Quick routing of the cables, easy to open







6 inside widths 15 – 65 mm



TKA38



6 inside widths 25 – 130 mm

- Inner or outer opening variants available
- Extensive unsupported length due to 3-fold stroke system
- Integrated gliding surfaces for gliding arrangements
- Suppressed against vibration and noise using an internal damping system
- High torsional rigidity



TKA45



5 inside widths 50 – 150 mm







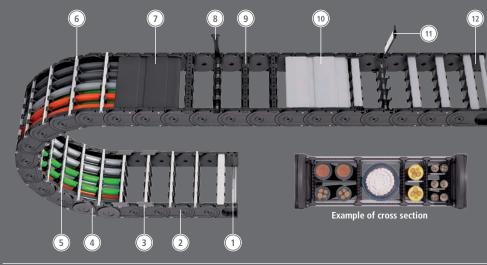
6 inside widths 50 – 175 mm



### **ADVANCED** applications

# Cable and hose carrier systems with variable chain widths

With more than 50,000 design options, ranging from easy-to-open/snap-open or bolted-on frame stay systems to cavity extender systems guiding large vacuum hoses to enclosed tube frame stay systems that provide superior protection from dirt and debris. We offer the ideal solution to fit any application. As an example, cable carriers with linkless design can operate at extreme speeds. Numerous frame stay options allow even the most complex cable configurations to be safely and effciently partitioned within the carrier cavity.



- C-Profile strain relief elements
- Minimized hinge wear due to the "life extending 2 disc principle"
- 3 Replaceable glide shoes
- Extremely robust due to heavyduty link plate/sideband design
- 5 Vast selection of cavity partitioning options
- 6 Aluminum frame stays available in 1 mm width increments
- Plastic covers available in 8 or 16 mm width increments
- 8 Crossbars can be quickly opened on the inside or outside radius for easy cable installation
- Plastic crossbars available in
  4, 8 or 16 mm width increments
- Aluminum covers available in 1 mm width increments
- (1) Aluminum frame stays with ball joint hinge mechanism
- Universal mounting brackets (UMB)



### **MASTER Series**

Quiet and weight-optimized carriers



- Light design with weight-optimized sideband construction
- Excellent ratio of inside to outside height
- Customized bend radii are available
- Plastic covers available

### **M Series / MT Series**

### Robust and versatile design



- Various separation options
- Large selection of frame stay systems
- Ideal for fast, gliding applications; replaceable glide shoes made of highly wear-resistant special plastic material
- Plastic or aluminum covers available

### QUANTUM

Light, quiet, low-vibration



- Suitable for clean room environments
- Allows for high acceleration and high travel speeds
- Long service life no link pins to wear out
- Linkless design: sidebands made of extruded material

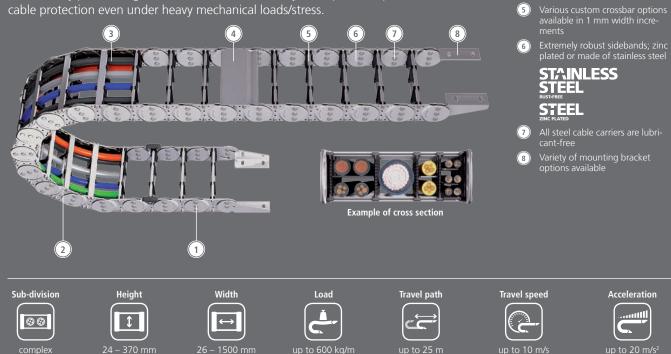
#### More Information: call: **800-443-4216** or visit: **ustsubaki.com**

for the machine tool industry

## **ENERGY AND SIGNALS**

## EXTREME applications Steel/stainless steel cable carrier systems – solutions for extreme applications

Lubricant-free cable and hose carrier systems made of steel or stainless steel for applications in extreme environments. Steel and stainless steel carrier systems are the carrier of choice for operation in extreme heat or the harshest environments. We offer various carrier types and designs ranging from compact style to super-sized carriers. Customized cavity partitioning as well as aluminum cover systems provide optimum cable protection even under heavy mechanical loads/stress.



The assigned values are average values. Depending on the specific application, the maximum values may differ significantly. For detailed information please contact us.

LS/LSX Series

Cost-effective, light-weight steel chains



- Improved dynamic characteristics due to weight-optimized design
- Long unsupported lengths for small to medium additional loads
- Cover with steel band for optimum cable protection available on request

### S/SX Series

Extremely robust and heavy-duty steel chains



3

(4)

Aluminum cover available in custom 1 mm width increments

- Extremely robust and heavy-duty steel chains for large mechanical loads and harsh environmental conditions
- Very long unsupported lengths even for heavy additional loads
- Various types in a variety of dimensions available
- Aluminum cover available for maximum protection of the cables



## **3D** applications **ROBOTRAX System – Cable and hose carrier systems for 3D movements**

ROBOTRAX – cable and hose carrier system for robotic applications – is safe and gentle on the cables. Downtimes are reduced to a minimum. The open-style design allows for fast and easy installation and inspection of cables and hoses once installed. The ROBOTRAX series offers a vast assortment of accessories to perfectly fit the carrier system to the individual application. Solutions include accessories for impact protection, shock and vibration dampening, and heat sleeves for optimum cable protection.

- 1) Steel wire for transmission of extremely large tensile forces
- Protective covers or heat shields made of various materials are available for a diverse range of environmental conditions
- Quick-opening mounting brackets easily attach any link of the ROBOTRAX system to any mounting point on the robot
- Fast cable installation by simply pressing the cables into the carrier system's cavity partitions: no threading through is required
- Special plastic material for long service life









The assigned values are average values. Depending on the specific application, the maximum values may differ significantly. For detailed information please contact us.

### **ROBOTRAX System**

LineFix saddly-type clamps for strain relief



For secure and gentle cable installation. Multilayer strain relief with double and triple clamps available. Multiple systems can also be mounted one behind the other.

PULL-BACK-UNIT – PBU



Rapid, repetitive movements of relatively long cable carrier systems in large operating envelopes, constantly hitting the robot arm, are to blame for reducing the service life of the carrier and installed cables. This can lead to a failure of the overall robotic system with expensive downtime and production outages. By using the PULL-BACK UNIT, the service life of the cable carrier and cables is significantly extended and downtimes are kept to a minimum.

### More Information: call: **800-443-4216** or visit: **ustsubaki.com**

#### PROTECTOR



The service life of the cable carriers and cables is significantly reduced through impact when moving quickly and in large operating areas. The PROTECTOR protects the cable carrier from agressive impact, excessive abrasion and premature wear and, simultaneously, provides limiting of the smallest bend radius. Down times are minimized. The complete cable carrier does not need to be replaced, just the PROTECTOR.

for the machine tool industry

## **ENERGY AND SIGNALS**

RAXIIN

Our cable ranges meet the highest quality standards. With the TRAXLINE range, we offer cables which are cost-effective and extremely durable. A key factor is their tested and proven operational reliability, which meets all applicable standards. Competent, objective-driven systems consultation and global on-site service are both part of what we consider an on-going commitment to the technical and commercial optimization. We deliver stock cables with no minimum quantities, each cut-to-length without extra cutting costs.

Vmax unsupp.:

Vmax gliding:

amax: 50 m/s2

Insulation resis-

 $\geq 10 \text{ M}\Omega \text{ x km}$ 

cURus,

Varying

, possible

. nlease

parameters

contact us

based on VDE

5 m/s

5 m/s

tance:

range moved:

Minimum bend

radius moved:

≤ 16 mm<sup>2</sup>: KR<sub>min</sub>

≥ 25 mm<sup>2</sup>: KR<sub>min</sub>

- 35 up to

+ 90 °C

≥ 7.5 x Ø

 $\geq 7.5 \times \emptyset$ 

### TRAXLINE CAT.5E / CAT.6 700 CD

Conductor:

extremely fine

stranded con-

copper wires

hi-flex design

Conductor:

extra-fine wire

from bare or

wires, design-

optimized for

ral strength

Conductor:

extremely fine

stranded con-

copper wires

hi-flex design

ductors of bare

in an optimized

maximum flexu-

conductor made

tin-plated copper

ductors of bare

in an ontimized

Double-shielded continuous bending hi-flex CAT.5E / CAT.6 PUR cable

### **Properties:\***

- n oil-resistant n hi-flex design
- UV-resistant/UV-stable n
- n RoHS-conform
- n metermarked

#### \* some properties are type-dependent; please

n flame-retardant n ozone-resistant

n halogen-free

silicone-free

n CFC-free

n

contact us.

-**F** c**FN** us 🧲 TRAXLINE CAT 6 700 CD Overall double-shielding Shieldina: Approvals: Temperature Vmax unsupp.: 3 m/s coverage 85 % range moved: cŪRus, continuous bending hi-flex, Core insulation KS-PP/TPE based on VDE Outer jacket: – 30 up to tin-plated copper braiding concentrically stranded Vmax gliding: + 80 °C Coverage: approx. 90 % KS-PUR Varying and foil shield Minimum bend a<sub>max</sub>: 5 m/s<sup>2</sup> parameters possible – radius moved: Insulation resis KR<sub>min</sub> ≥ 10 x Ø Outer jacket KS-PUR please tance. contact us pressure extruded ≥ 10 MΩ x km hi-flex design, UV-resistant extremely abrasion-resistant **TRAXLINE System S 700 C** Shielded continuous bending hi-flex PUR signal cables -**[]** c**Al**us ((= SYSTEM S 700 C Manna. Shielding: Approvals: **Overall shield** Temperature Vmax unsupp.: coverage 80/85 % (typerange moved: - 35 up to cURus. continuous bending hi-flex. 5 m/s Core insulation KS-PP/TPE based on VDE tin-plated copper braiding Vmax gliding: hvbrid stranded dependent) + 90 °C Varying parameters 5 m/s Outer jacket: Minimum bend amax: 50 m/s<sup>2</sup> radius moved: , possible KS-PUR Insulation resis- $KR_{min} \ge 7.5 \times Ø$ . please Element shield tance: . contact us ≥ 10 MΩ x km continuous bending hi-flex, in-plated braided copper shield with the option of foil shield extremely abrasion-resistant **TRAXLINE Profibus 700 C** Shielded continuous bending hi-flex Profibus PUR cables (KABELSCHLEPP) TRAXLINE PROFIBUS 700 C HHHHHA Shielding: Temperature Approvals: Vmax unsupp.: coverage 85 % cURus, based on VDE Core insulation KS-PP/TPE range moved: 3,5 m/s – 20 up to concentrically Outer jacket: Vmax gliding: + 70 °C stranded KS-PUF 2 m/s Varying Minimum bend parameters amax: 10 m/s2 possible radius moved: Insulation resis- $KR_{min} \ge 15 \times \emptyset$ . nlease Inner jacket KS-PP/TPE tance: contact us valley-sealed, ≥ 10 MΩ x km pressure extruded hi-flex desigr **TRAXLINE System M 700 C** Shielded continuous bending hi-flex PUR motor/servo drive cables Temperature Approvals:





10

### Outer jacket KS-PUR pressure extruded







**Overall shield** continuous bending hi-flex, tin-plated copper braiding for smallest bend radius Coverage: approx. 80 %



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

for smallest bend radius Coverage: approx. 80 % Outer jacket KS-PUR pressure extruded . hi-flex design, UV-resistant





Overall shield continuous bending hi-flex, tin-plated copper braiding Coverage: approx. 90 % and foil shield

> hi-flex design, extremely abrasion-resistant



Core insulation KS-PP/TPE

hybrid stranded

Element shield



### **TRAXLINE Power ONE 700 PE**

Unshielded, continuous bending highly-flexible PUR single-core cables with PE core identification



for the machine tool industry

## **ENERGY AND SIGNALS**

# Cut costs with TOTALTRAX complete cable carrier systems

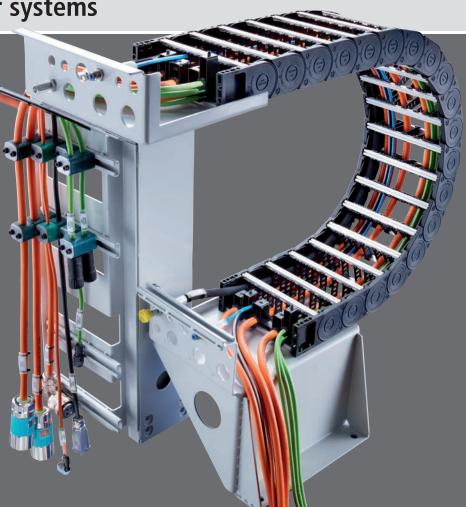
Use our know-how. Working closely with you, our experienced system specialists can provide pre-sale support, including planning and design services, through post sales service and support. Only one contact person for the complete system.

All components match each other perfectly, including your cable carriers, electrical cables, hydraulic and pneumatic hoses as well as connectors. You'll receive the complete system in one delivery, with a guarantee certificate if desired – in short: TOTALTRAX.

Reduce your storage costs for cable and hose carriers, cables, and connectors with TOTAL-TRAX. We supply all components Just-In-Time to your production facility or directly to the installation site.

### Everything from a single source:

- Consulting
- Planning
- Design
- Cable carriers
- Power & control cables
- Complete guarantee
- Hydraulic hosesPneumatic hosesPlug-and-socket
- connectors
- Assemply plates
- Complete assembly of all components











More Information: call: **800-443-4216** or visit: **ustsubaki.com** 



#### Cut costs with TOTALTRAX complete cable carrier systems

We help you . . .

- Advice on planning
- Support in the design phase
- Only one contact person for the complete system including all of the individual components
- Complete delivery from a single source
- Only one supplier – one purchase order and one item number
- All components match each other perfectly
- Guarantee certificate available upon request

#### ... to cut your costs!

- Goods receiving inspections for all individual components are no longer required
- Expensive technical personnel and special tools are no longer required
- Shorter assembly times
- No hidden costs, e.g. cables being cut to excessive lengths etc.
- Less captive capital with almost no inventory
- On-time delivery directly to your production site



### **OnlineEngineer.de** TSUBAKI KABELSCHLEPP Cable Carrier Configurator

## Online configuration tool for cable carrier systems

Using TSUBAKI KABELSCHLEPP **OnlineEngineer**, in just a few clicks of the mouse you can **quickly select and configure** the optimal TSUBAKI KABELSCHLEPP cable carrier system for your application. Just input the parameters of your application and the OnlineEngineer will automatically calculate the TSUBAKI KABELSCHLEPP cable carrier system with the **optimal price/performance ratio**! Alternatively, you can follow easy step-by-step menus and individually design your desired cable carrier system.

Finally, if you already know which TSUBAKI KABELSCHLEPP cable carrier systems you would like to use, just enter the order specifications and you will receive all applicable information by mouse click. Since any and all functions can be combined, the specification data needs to be entered only once. A corresponding 2D drawing or 3D model of your carrier can be immediately downloaded.

### Save time with our 2D & 3D drawing library available online

Our 2D and 3D CAD drawings simplify the job for your design engineers. You can find the data for our cable carriers in the **CADENAS** component libraries. TSUBAKI KABELSCHLEPP provides free drawing libraries. Once selected, CAD data can be saved or exported in a wide range of formats for import into your CAD system. Can't find what you are looking for, please contact us.



## Innovative solutions for the machine fool industry

**ENERGY AND SIGNALS** 

## **Application examples**

Decades of application experience in hundreds of market segments, with thousands of product combinations has resulted in new many tailor-made and user oriented solutions for our customers.





Plastic cable carriers on a roll neck milling machine.

TKA Series cable carrier system on a machining center.



Plastic cable carrier on a CNC-machining center.





MASTER LT Series cable carriers on a tube end processing machine.



REICHENBACHER





ROBOTRAX, K Series and M Series cable carriers on a laser cutting machine.

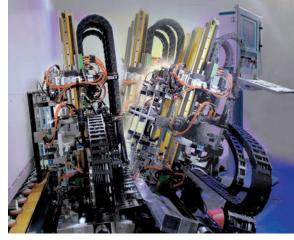


M Series cable carrier on a high-performance machining center.

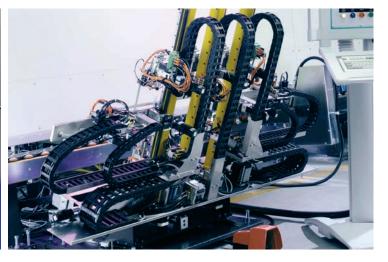


QUANTUM cable carrier system on a handling system.





Plastic cable carriers on an automatic window frame setting station.







for the machine tool industry

#### CABLE CARRIER SYSTEMS

Cable carriers made of steel and plastic QUANTUM cable and hose carrier system PROTUM cable and hose carrier system ROBOTRAX cable and hose carrier system

#### TRAXLINE Cables for Motion

Continuous bending hi-flex cables for cable carriers TOTALTRAX complete turn-key carrier systems Pre-assembled cables

#### **Guideway Protection Systems**

Telescopic covers Link apron covers Way wipers Conical spring covers Bellows Protective devices

Conveyor Systems Hinged belt conveyors Scraper conveyors Belt conveyors



Corporate Headquarters U.S. Tsubaki Power Transmission, LLC 301 E. Marquardt Drive Wheeling, IL 60090 Tel: (800) 323-7790 Fax: (947) 459-9515 www.ustsubaki.com



Roller Chain Division 821 Main Street Holyoke, MA 01040 Tel: (800) 323-7790



Conveyor & Construction Chain Division 1010 Edgewater Drive Sandusky, OH 44870 Tel: (800) 537-6140 Fax: (419) 626-5194



Sprocket Manufacturing Mississauga, Ontario Tel: (800) 323-7790



Cable & Hose Carrier Division 7100 W. Marcia Road Milwaukee, WI 53223 Tel: (800) 443-4216 Fax: (414) 354-1900