Innovation in Motion
TSUBAKI

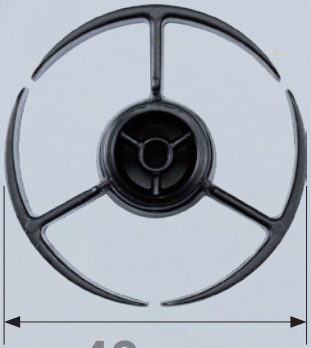
ROBOTRAX

CABLEVEYOR for 3D movements
TKRB Series mini

TSUBAKI ECO LINK

[Minimum size of conventional product]

TKRB21



40mm

20% down ▶

NEW

TKRB14

31mm

[Actual size]

ROBOTRAX

CABLEVEYOR for 3D movements TKRB Series mini

A miniature cable carrier ideal for small robots

Demand for industrial robots is increasing to accelerate automation and labor savings in all industries, including the food, medical/pharmaceutical, and chemical industries. Many of the robots in those industries are small and repeat high-speed motions over a long period of time.

The new **ROBOTRAX TKRB14H10** is suitable for cable protection of such small industrial robots. This Smallest ROBOTRAX has the same basic feature such as cable protection and customer-friendly design. It can be installed in places where conventional models are too large, preventing machine stoppages due to cable damage.

Food industry

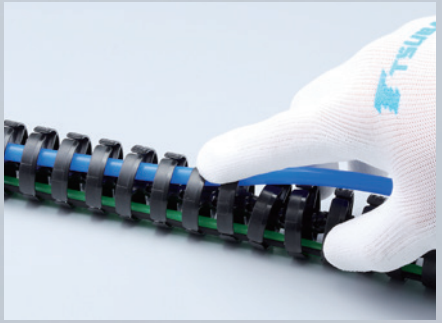
Medical/pharmaceutical industry

Chemical industry

High strength through wires

Following performance during rapid acceleration/deceleration
(Stainless steel wires for transferring extremely high tensile forces)

Easy handling

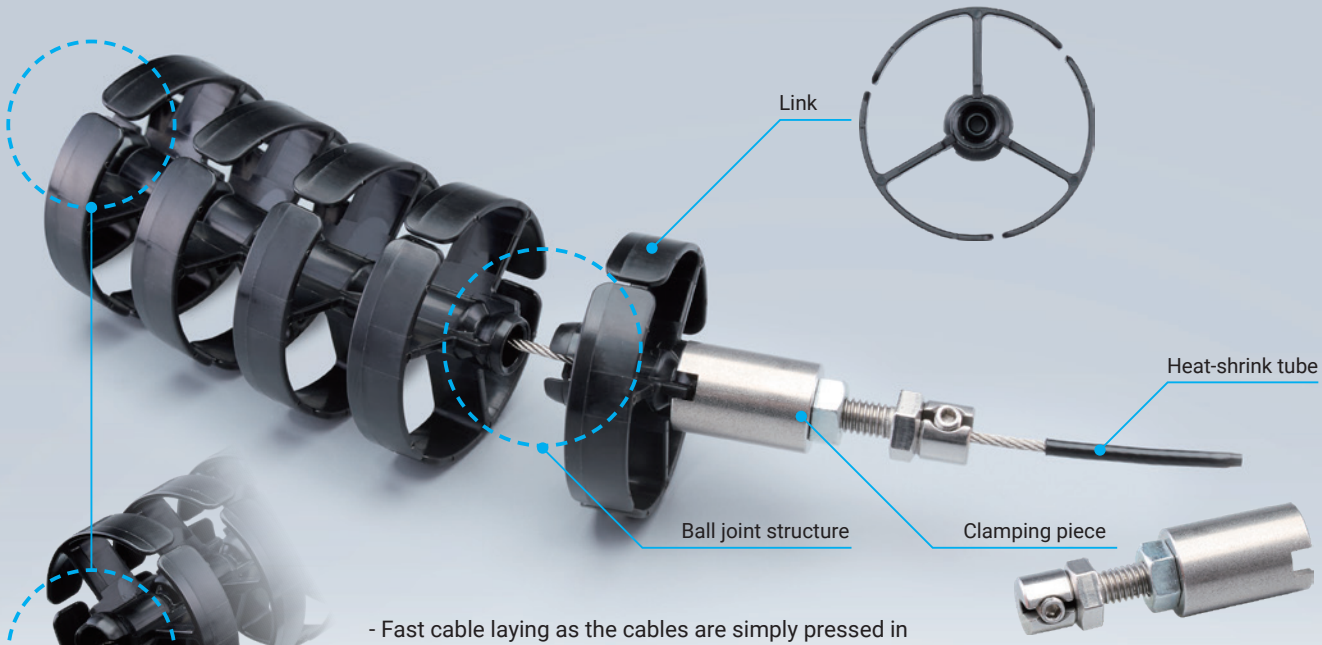


Open structure enables easy insertion and visual confirmation of cable status

Excellent cable protection performance

The structure controls link bending, protecting cables from excess force

Basic component parts Links + Ball-end stainless steel wire + heat-shrink tube + Clamping piece



Ball-end stainless steel wire
The opposite end from the Clamping piece is a stainless steel ball-end structure

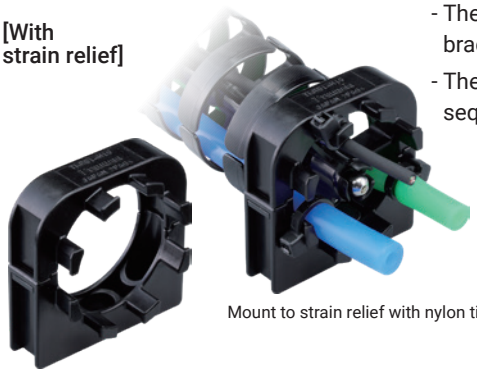
- Fast cable laying as the cables are simply pressed in
- Easy checking of all cables
- The cables can be separated in three chambers to prevent cables from sliding and tangling with each other
- Ball-end stainless steel wire and spherical snap-on connections ensure the strength and flexibility needed for high speed and high acceleration
- The clamping piece can be used to easily set the chain links to the desired tension and adjust them at any time

Accessories

Quick-release bracket

[Without strain relief]

[With strain relief]



Mount to strain relief with nylon ties.

- The ROBOTRAX is fixed and continued with quickrelease brackets which are attached with screws.
- The fixing points can be individually adjusted to the motion sequence

Guide holder

- Supports the sagging middle section of TKRB14H10
- Guides and slide TKRB14H10(Links)

Protector

- Protect the cable carrier against hard impacts, excessive abrasion and premature wear
- Mountable on any link
- Snap-fit structure for easy mounting and removal

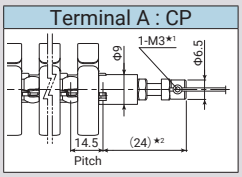
TKRB14H10

Model number

TKRB14H10-10R40+ ① L - ②

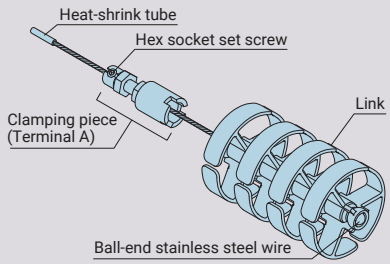
①No. of links

②Terminal A
CP

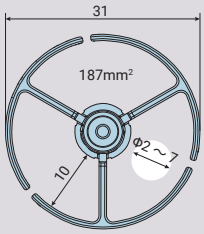


Notes: ★ 1. Hex socket set screw for stainless steel wire fixing.
★ 2. Reference dimensions.

Structure



Cross-section dimensions



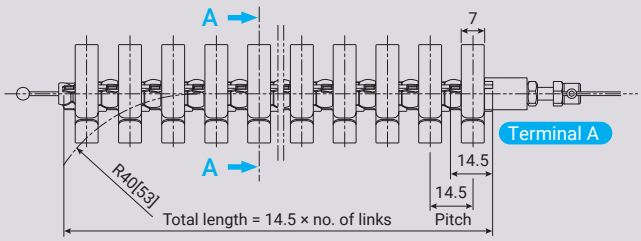
section A–A

Notes: Check below when selecting a size.

Clearance of 2mm or more must be maintained between fellow cables/hoses and between cables/hoses and links.

We recommend that the storage ration should be 50% or more of the cross-section area per storage space

Dimensions

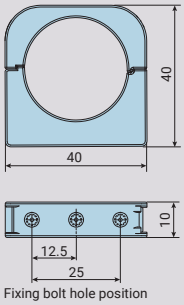


R (bending radius) [ ] ★1 mm		40 [53]
Allowable torsion angle (per 1m) °		±670
Allowable acceleration★2 G		4
Cable/hose stored allowable mass kg/m		0.6
Body mass kg/m		0.15
Pitch mm		14.5
Stainless steel wire diameter mm		1.2
Operating temperature range★3 ℃		-20 to 80
Material	Link	Engineering plastic (black)
	Stainless steel wire/Terminal parts	Stainless steel
	Heat-shrink tube	Polyolefin (black)

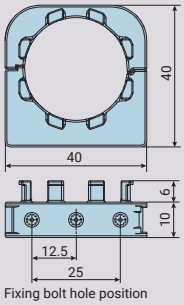
Notes: ★ 1. Dimensions in [ ] show the bending radius with a protector mounted.
★ 2. Allowable acceleration varies depending on operating conditions. Consult us as needed.
★ 3. The recommended operating temperature range is 0 to 50°C. Use outside the 0-50°C range may cause the product functions to deteriorate: be sure to confirm the product action thoroughly before mounting.
4. This product's structure operates in three dimensions and is not intended to maintain a linear status.

Quick-release bracket

[Without strain relief]



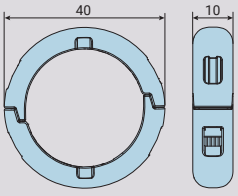
[With strain relief]



Type	Without tabs	With tabs
Model number	TKRB14H10-QMB	TKRB14H10-QMBCL
Material	Engineering plastic (black)	
Mass g/pc	6.0	6.7
Fixing bolt ★1	M4 (2 pcs)	
Fixing bolt hole modification Y/N	Not required	

Notes: ★ 1. Bolts are NOT included.
2. Keep the bracket pitch for mounting to links within 800mm.

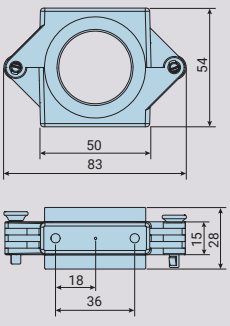
Protector



Model number	TKRB14H10-PT
Material	Engineering plastic (black)
Mass g/pc	4.5

Note: Sales unit; 5pcs

Guide holder



Model number		TKRB14H10-GH
Material	Guide holder body	Engineering plastic (black)
	Open/close pins★1	
Mass g/pc		50
Fixing bolt ★2		M4 (2 pcs)
Fixing bolt hole modification Y/N		Required

Notes: ★ 1. Two open/close pins are embedded in each guide holder.
★ 2. Bolts are NOT included.
3. The fixing bolt holes for fixing to equipment are not bored through as of delivery, so the customer is requested to bore them through with a hole puncher, etc.

Instruction manual (link extension/contraction)

Extension or contraction of TKRB14H10 can be performed by the customer.
*We recommend wearing work gloves for the process.

Link extension (up to 4 links)

1.

Cut around where the heat-shrink tube and stainless steel wire meet, and remove the heat-shrink tube.

2.

Loosen the hex socket set screw and remove the clamping piece.

3.

Pass the additional links through the wire.

4.

Mount the clamping piece.
*Tightening torque 0.45-0.5Nm

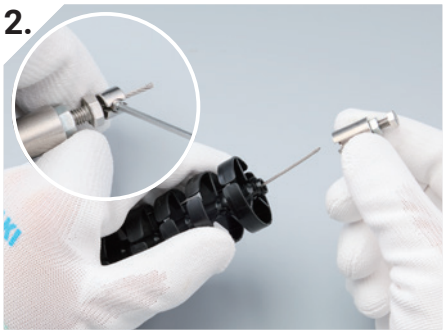
Notes: 1. When extending by five links or more, purchase a new ball-end stainless steel wire.
2. As a safety measure, protect the tip with a heat-shrink tube (separately purchased), cover, etc.

Link contraction

1.

Cut around where the heat-shrink tube and stainless steel wire meet, and remove the heat-shrink tube.

2.



Loosen the hex socket set screw and remove the clamping piece.

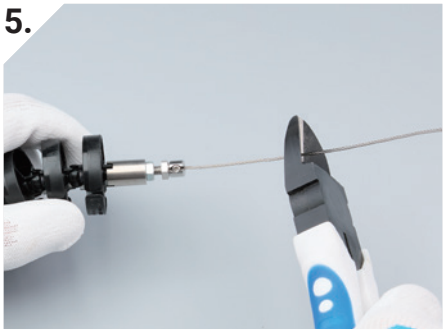
3.

Remove the number of links required for contraction.

4.

Mount the clamping piece.
*Tightening torque 0.45-0.5Nm

5.

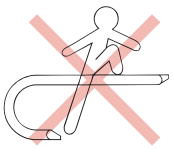


Cut the extra length of stainless steel wire as needed.

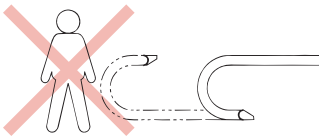
Note: As a safety measure, protect the tip with a heat-shrink tube (separately purchased), cover, etc.

Safety Precautions

⚠ WARNING To prevent hazards, be sure to observe the following safety precautions.



- Do not use the cable carrier (including Cleanveyor and Flatveyor) or its parts for anything other than their original purpose.
- Do not stand or ride on the cable carrier. There is a risk of damage and falls.
- Never attempt to make additions or modifications to the cable carrier or its parts. (except for Cleanveyor and Flatveyor cable and tube end terminations)
  - Do not clean cable carriers or their parts with acid or alkali. Doing so will cause cracks to form.
  - Never electroplate the cable carrier or its parts. Doing so could cause hydrogen embrittlement cracking.
  - Do not weld onto the cable carrier or its parts. Doing so will cause loss of strength and cracking due to thermal effects.
- Observe the general standards stipulated in Part 2, Chapter 1, Section 1 of the Ordinance on Industrial Safety and Health. (The Ordinance on Industrial Safety and Health also includes items that do not apply to cable carrier products.)
- When replacing worn (damaged) parts, do not replace only the worn (damaged) parts, but replace all parts with new ones.
- If any substance (acid, strong alkali, battery acid, etc.) that may cause embrittlement cracking adheres to the cable carrier or its parts, immediately stop using the cable carrier or its parts, and replace them with new ones.
- Be sure to observe the following points when connecting, mounting, disconnecting, and servicing cable carriers and its parts.
  - Perform the procedures as specified in the instruction manual, catalog, or documentation specially provided to the customer.
  - Secure the cable carrier and parts so they do not move freely. Otherwise, the cable carrier may move on its own or collapse under its own weight.
  - Be careful that your hands do not get pinched, crushed, or entangled in the bending section of the cable carrier.
  - Wear suitable clothing and protective equipment for the work (such as safety goggles, gloves and safety shoes).
  - Always turn off the main power supply of the equipment before starting any work, and be careful not to inadvertently operate any switches.
  - Only experienced personnel should handle the cable carrier.



⚠ CAUTION Observe the following points to prevent accidents.

- Be sure that you fully understand the construction and specifications of the cable carrier and its parts before operation.
- Before installing, inspect the cable carrier and its parts for any damage that may have occurred during transport.
- The cable carrier and its parts should be periodically serviced and inspected.
- The performance of the hose and cable carrier system varies depending on the manufacturer. Please be sure to use a Tsubaki product when selecting based on the Tsubaki catalog.
- Be sure to give the instruction manual to the end user.
  - If no instruction manual is available, use the product name, series name, and model number to request an instruction manual from the distributor where the product was purchased or from Tsubaki.
- The product details described in this catalog are intended primarily for model selection. Before using the product, read the instruction manual thoroughly, and ensure the product is used correctly.

Warranty

1. Warranty period without charge

Tsubakimoto Chain Co. (hereinafter referred to as "Company") provides a warranty without charge valid for either 18 months after the shipment of the purchased product (hereinafter referred to as "Goods") from the factory, or 12 months after the first use of Goods, whichever comes first. First use of Goods is considered to be the complete incorporation of Goods into the equipment of the purchasing party (hereinafter referred to as "Customer"). This warranty may be provided with charge in certain circumstances.

2. Warranty coverage

Should any malfunction in Goods arise during the warranty period, given that Goods were properly installed, operated, and maintained as instructed in the catalog, instruction manual, or similar, Company shall promptly deliver or repair Goods at no charge once Company has confirmed such failure. This warranty covers delivered Goods only and therefore does not include the following: ("Instruction manual or similar" includes documentation specially provided to Customer.)

(1) Any costs required for the removal or installing of Goods from or into Customer's equipment for repair or replacement.
(2) Costs required for transporting Customer's equipment to repair shop, etc.
(3) Profits lost due to a malfunction or repair, or any other consequential loss.

3. Warranty with charge

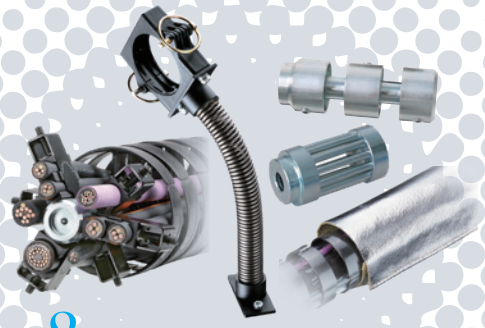
Company will charge for any investigation, repair, and/or manufacturing of a malfunction in Goods (even during the warranty period) if caused by:

(1) Improper location, installation (including cutting and connecting), lubrication, or maintenance by the Customer failing to follow the catalog, instruction manual, or similar. ("Instruction manual or similar" includes documentation specially provided to Customer.)
(2) Operation methods (including operating conditions, operating environment, and allowable values) resulting from Customer's failure to follow operation described in the catalog, instruction manual, or similar. ("Instruction manual or similar" includes documentation specially provided to Customer.)
(3) Inappropriate disassembly, modification, alteration, or processing by Customer.
(4) Use of Goods by Customer in conjunction with damaged or worn parts not made by Company. (Ex: Use of Goods with sprocket, drum, rail, etc., that has a worn chain.)
(5) When the service life of Goods determined by Company under Customer's operating conditions does not satisfy the warranty service life.
(6) Use by Customer under conditions other than those discussed.
(7) Consumption, wear, or deterioration of bearings, oil seals, oil, and other consumable parts incorporated into Goods.
(8) Secondary failure or malfunction in Goods resulting from malfunctioning of Customer's equipment.
(9) Malfunction of Goods resulting from a Force Majeure such as an act of God.
(10) Malfunction of Goods resulting from a wrongful act committed by a third party.
(11) Any other reason that is not attributable to Company.

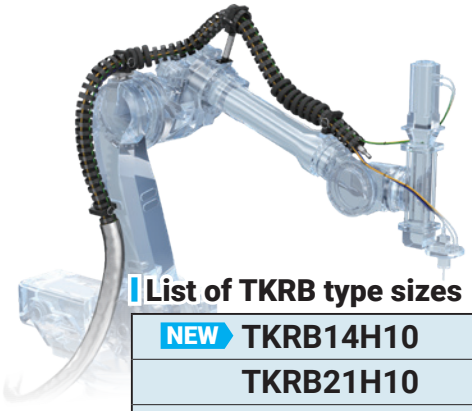
* The specifications in this catalog are subject to change without notice for incorporating improvements or other reasons. Please contact us or check our website to ensure that you have the latest information before designing.

ROBOTRAX
Full Line-Up

ROBOTRAX (CABLEVEYOR for 3D movements, TKRB Series) is a multi-axis robot partner which extends cable life and reduces the risk of equipment stops due to disconnection.



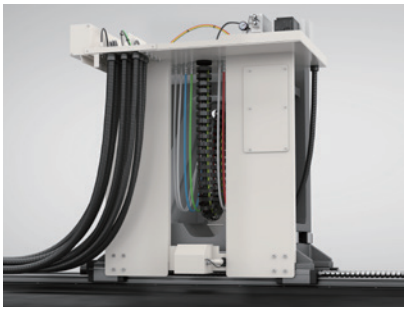
& Plentiful accessories also available



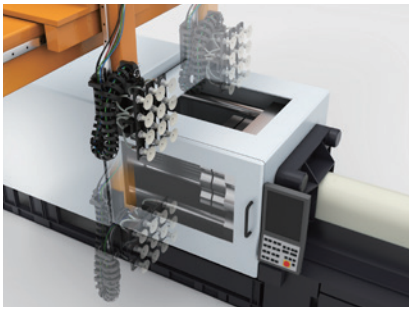
List of TKRB type sizes

	Link outer diameter (mm)	Bending radius (mm)
NEW TKRB14H10	31	40
TKRB21H10	40	70
TKRB32H14	56	90
TKRB40H22	75	125
TKRB40H24	85	130
TKRB40H31	100	130
TKRB50H48	140	125

For carwash robots



For machine tools



For injection molding take-out robots

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The Tsubaki Eco Link logo is used only on products that satisfy the standards for environmental friendliness set by the Tsubaki Group.

Website https://www.tsubakimoto.com

Note: In accordance with the policy of TSUBAKIMOTO CHAIN CO. to constantly improve its products, the specifications in this pamphlet are subject to change without notice.
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