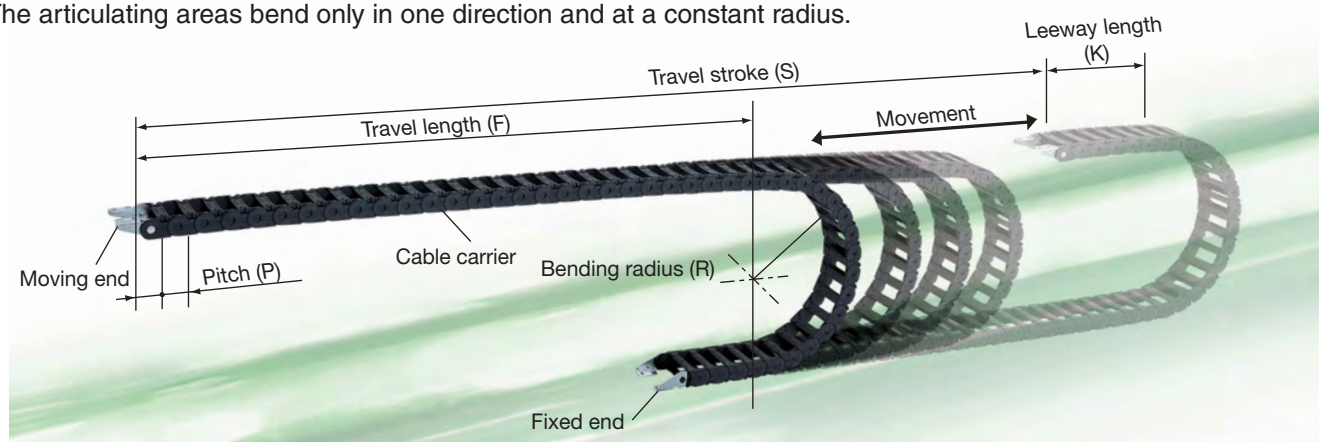
Innovation in Motion
TSUBAKI

Tsubaki
CABLEVEYOR® (Cable Carriers)

Product Lineup

Cable Carrier Movement

Cableveyors are cable carriers, which are devices where electric cables and hydraulic/pneumatic hoses are housed inside so that they can be reliably supported and guided between moving equipment and their fixed end. The articulating areas bend only in one direction and at a constant radius.



Travel length (F):	Refers to the distance between the cable carrier support points. Allowable length varies by model. (See the list of specifications and the load diagrams for more information.)
Travel stroke (S):	Refers to the distance between two points where the moving part of the device (cable carrier moving end) completes one cycle.
Leeway length (K):	Refers to the leeway the cable carrier has to absorb any differences in installation dimensions.
Pitch (P):	Refers to the distance between consecutive cable carrier links.
Bending radius (R):	The cable carrier bends in a fixed direction at a constant radius. This radius is referred to as the bending radius (R). (Rotating arrangements bend in both directions.)
Support roller:	Support rollers (or plates) must be attached to the cable carrier when used beyond the allowable travel stroke.

■Cable and hose support and guidance protection

When connecting a cable or hose to the moving part of a device, the movement will result in excessive forces such as twisting and tension to be applied to the cable/hose. The setup will also appear cluttered.
As shown above, Tsubaki Cableveyor cable carriers are devices housing cables and hoses from the fixed end installed on the fixed side of the device and to the moving end installed on the moving side. With no excess force applied to the cable or hose, the cable carrier is able to provide steady, reliable support and guidance back and forth along the travel stroke (S).

Cable Carrier Model No.

Model No. Example

	Model No.	Quantity	Unit
Unit	TKP45H25-30W58R50	20	L (link)
Fixed end bracket	TKP45H25-FOA	1	K (pc.)
Moving end bracket	TKP45H25-MOA	1	K (pc.)

Single-line ordering example

TKP45H25-30W58R50 (Unit) + 20L (Number of links) - FOA (Fixed end bracket) - MOA (Moving end bracket) 1 (Quantity) H (unit) (Unit)

Explanation of marks

*1
Arm opening

- Integrated type (arm cannot be opened from links)
- Removable outer arm
- Outer arm single-sided open/close
- Inner arm single-sided open/close
- Outer arm dual-sided open/close
- Inner arm dual-sided open/close
- Outer arm single-sided open/close, removable inner lock stay
- Outer arm dual-sided open/close, removable inner lock stay
- Removable outer arm and inner lock stay

*2
Dividers and dividing methods

- Vertical dividers only
- DSA type (fully stayed)
- DSB type (partially stayed)
- Supporter type
- Split supporter type

Note: Some restrictions apply to the specifications stated in this catalog depending on the operating conditions. Refer to the catalogs for individual cable carrier models for details.

Cable Carrier Lineup

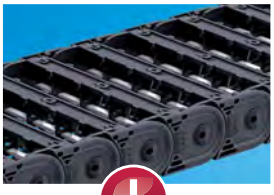
Classification	Material	Type	Product	Model
Cable carrier	Plastic	Open	TKP Series	TKP13H10
				TKP17H11
				TKP18H14
				TKP18H15
				TKP25H15
				TKP35H22
				TKP35H32
				TKP45H25
				TKP58H36
				TKP62H34
				TKP68H46
				TKP90H50
				TKP91H56
				TKP125H74
				TKP91H80
			TKUA Series	TKUA45H26
				TKUA55H38
				TKUA66H44
			TKMK Series	TKMK47H28
				TKMK65H42
				TKMK95H58
				TKMK125H72
			TKHC Series	TKHC56H33
				TKHC67H46
			TKLC Series	TKLC91H60
				TKLC111H80
			TKXC Series	TKXC165H108
			TKQT Series	TKQT32H20
			TKET Series	TKET32H18
			TKZP Series	TKZP10H13
			TKR Series	TKR15H22
				TKR20H28
				TKR26H40
				TKR28H52**L
				TKR28H52
				TKR37H28
			TKQ Series	TKQ15H28
				TKQ20H42
				TKQ25H58
				TKQ30H72
			TKP Series, MW Specification	TKP13H10**M
				TKP18H14**M
				TKP25H15**M
				TKP35H22**M
				TKP35H32**M
				TKP45H25**M

Classification	Material	Type	Product	Model
Cable carrier	Plastic	Closed	TKA Series	TKA30H20
				TKA38H26
				TKA45H36
				TKA55H45
			TKC Series	TKC28H30
				TKC34H25
				TKC47H36
				TKC64H50
				TKC91H56
				TKC85H68
				TKC91H80
			TKMT Series	TKMT47H26
				TKMT65H38
				TKMT95H54
				TKMT125H68
				TKMT95H54
			TKLT Series	TTLT91H60
			TKXT Series	TKXT165H105
			TKRB Series	TKRB21H10
				TKRB32H14
				TKRB40H22
				TKRB40H24
				TKRB40H31
			FTP Series	FTP026
			PMA	PIST-07B
				PIST-10B
				PIST-12B
				PIST-17B
				PIST-23B
				PIST-29B
				PIST-36B
				PIST-48B
	Steel	Open	TK Series	TK070
				TK095
				TK130
				TK180
			TKH Series	TKH250
			TKS Series	TKS070
				TKS095
			TKLS Series	TKLS105
		Closed	TKF Series	TKF055
				TKF085
				TKF115
				TKF175
		Heavy loads	TKV Series	TKV130
			TKI Series	TKI**

Classification	Type	Model
Cable system	FLATVEYOR	FV**
	CLEANVEYOR	CV**
Accessories	Cable	LLC**
	Rail	**H2M
		**U2M
	Base	**JB
		**SB
	Clamper	RCL06
	Clamp	CL-LF**
		CL-COMB-A**
		CL-COMB-B**
		ZL**
		CL-SZL**
		CL-BS**
		CL-CRA**
	Support roller	**SPR

TOTALTRAX®

Cables and hoses with end connectors attached are delivered installed in the cable carrier as a set. Installation on machines or equipment following delivery is quick and simple.



Cable carrier

Cable

Connector

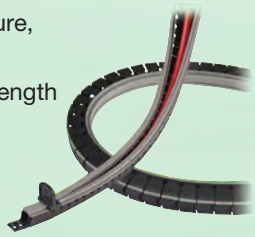
Tsubaki's TOTALTRAX system—which includes delivery service of a cable carrier + cable/hose set—ensures customers receive just what they need when and where they need it.

Wide variety of models to

Open

TKZP Series P10

Zipper structure,
cuts easily to
the required length



TKQT Series / TKET Series P10

Easy cable storage,
arms won't fall off

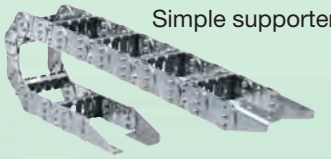
Handling

TKUA

Complementary products for the TKP lineup with comb-shaped strain relief* and increased quietness

TKS Series P17

Simple supporter capability



TKLS Series P18

Lightweight type

TK Series / TKH Series P17

Increased protection of
cables and hoses
thanks to supporters

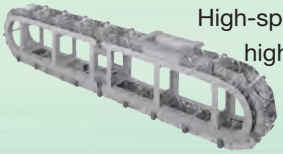
Highly durable

TKP

Standard open type

TKV Series P19

High-speed,
high-frequency



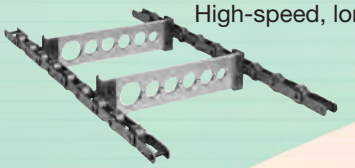
Dirt/dust resistant

TKC

Standard
closed type

TKI Series P19

High-speed, long-stroke



TKF Series P20

Steel Series
closed type

TKA

Complementary products for the TKC lineup with comb-shaped strain relief* and increased quietness

Plastic Series
Steel Series
3D Series

Others

*Cable/hose brackets and clamps

Closed

meet a wide range of needs

type

TKMK Series P8

Wide variety of models

TKHC Series, TKLC Series, TKXC Series P9

Variable width (1 mm increments), comb-shaped strain relief*

TKQ Series P12

Quiet, smooth operation

Series P8

Variable sizes

TKP Series, MW Specification P12

Improved protection of cables and hoses

FV FLATVEYOR® P21

Series P7

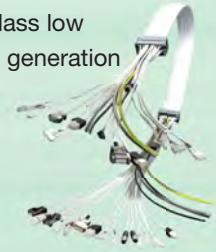
Clean

TKR Series P11

Quiet, low debris generation

CV CLEANVEYOR® P22

Top-class low debris generation



3D

Series P13

TKRB Series P15

Easy cable storage

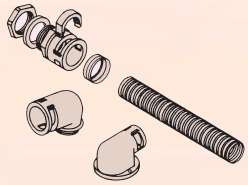
FTP Series P16

3D closed type

Series P13

PMA Series P16

3D waterproof closed type



TKMT Series P14

Wide variety of models

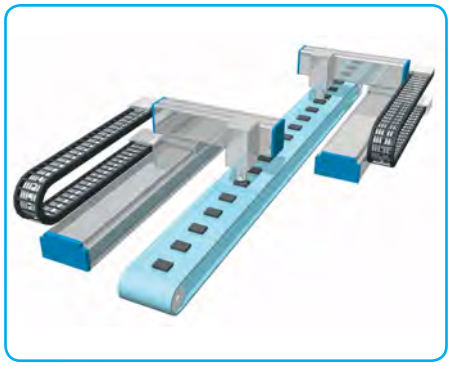
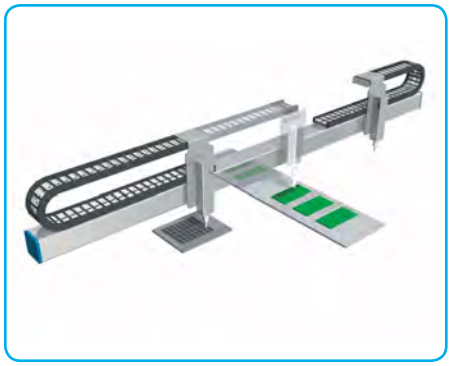
TKLT Series / TKXT Series P14

Variable width (1 mm increments), comb-shaped strain relief*

type

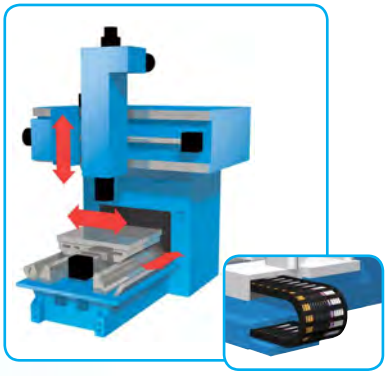
Applications

LCD / semiconductors / inspection machines

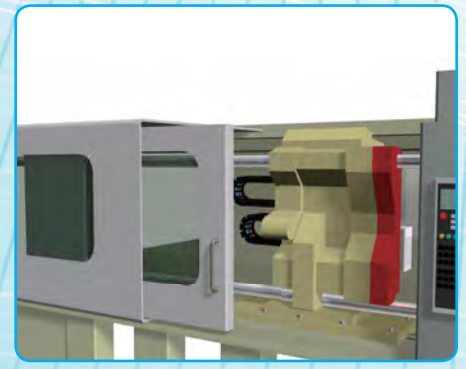
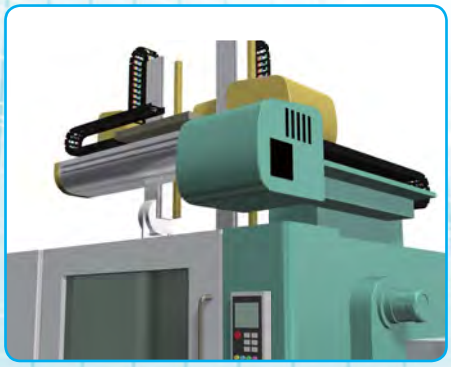




Machine tools



Molding machines

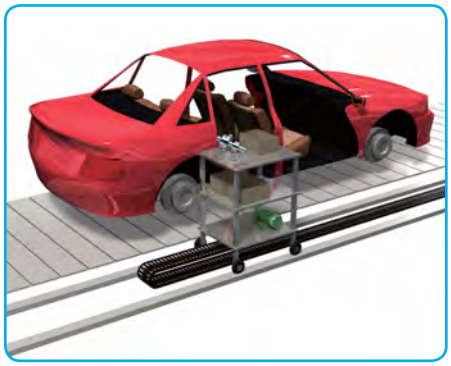
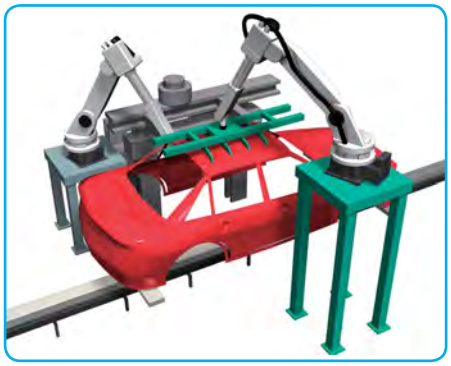



ATMs

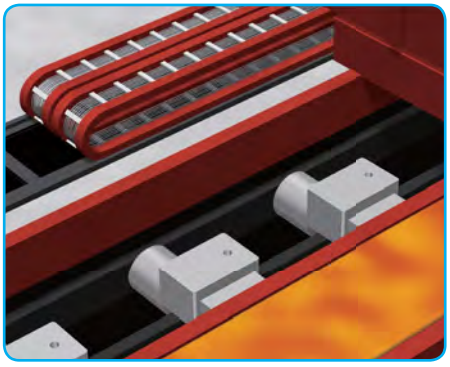
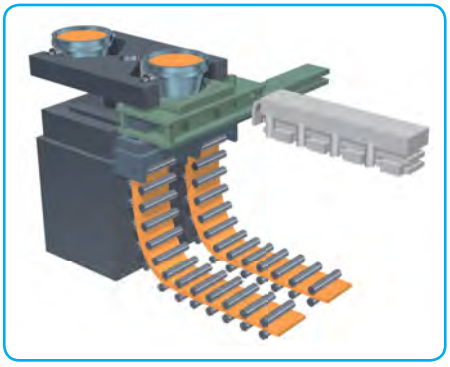
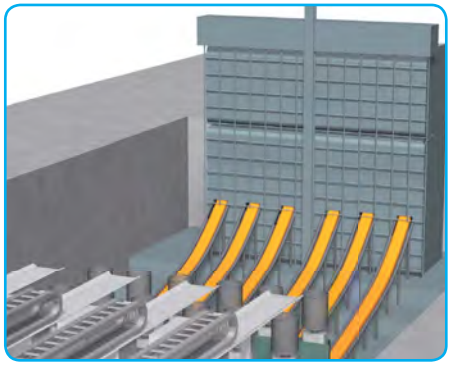
Medical equipment

Amusement machines

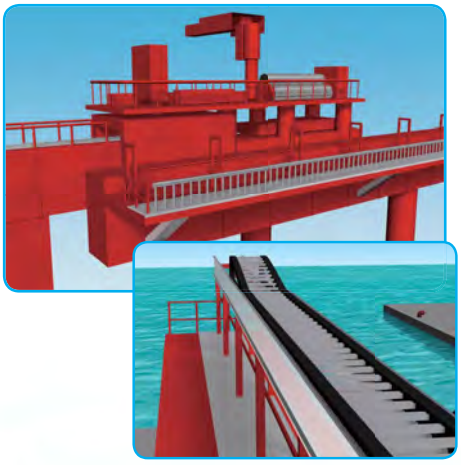
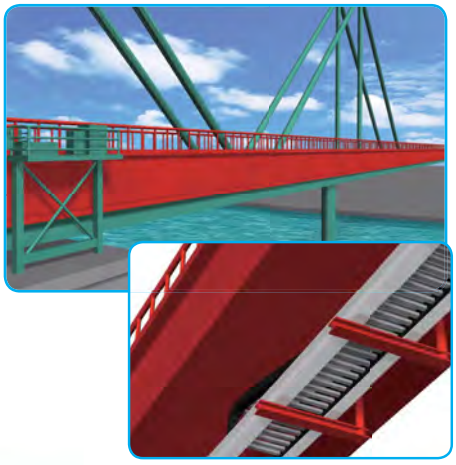
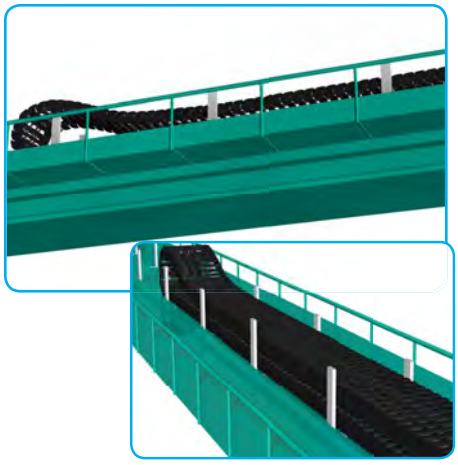
Automotive

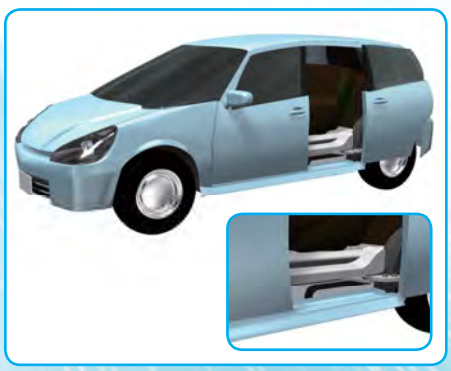

Steel mills

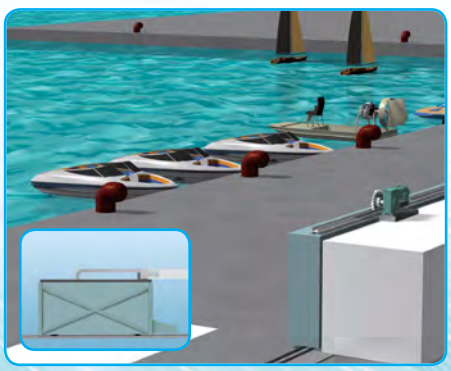
Cranes

Automotive / special vehicles



Infrastructure



Boarding bridges

TKP

- Standard-type Plastic Series open model
- Wide selection of easy-to-handle products—from compact to large sizes

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	Dividers*2 DSA	Dividers*2 DSB	Model No. Example (Unit)
TKP13H10 (Open/ closed type)	10	6 15	20 28 37	13	R20: 1.0 R28 or more: 1.3	0.4	W6: 4 W15: 8	●				Inner width: 6 Bending radius: R20 TKP13H10-30W6R20
TKP13H10 (Open/ closed type)	10	10 20	18 28 37	13	R18: 1.0 R28 or more: 1.3	0.4	8	●				Inner width: 10 Bending radius: R18 TKP13H10-30W10R18TC
TKP13H10 (Integrated type)	10	6 10 15 20	20 28 37	13	R20: 1.0 R28 or more: 1.3	0.4	W6: 4 W10 or more: 8	●				Inner width: 6 Bending radius: R20 TKP13H10-20W6R20
TKP17H11	11	10	17	17	1.2	0.4	7	●				TKP17H11-30W10R17
TKP18H14 (Open/ closed type)	14	15 40	28 37 50	18	R28: 1.5 R37 or more: 1.75	1	12	●				Inner width: 15 Bending radius: R28 TKP18H14-30W15R28TC
TKP18H15 (Open/ closed type)	15	20 30	28 37 50	18	R28: 1.5 R37 or more: 1.75	1	12	●				Inner width: 20 Bending radius: R28 TKP18H15-30W20R28
TKP18H15 (Integrated type)	15	15 20 30 40	28 37 50	18	R28: 1.5 R37 or more: 1.75	1	12	●				Inner width: 15 Bending radius: R28 TKP18H15-20W15R28
TKP25H15	15	15 20 30	28 37 50	25	R28: 1.5 R37 or more: 1.75	1	12	● W30 only				Inner width: 15 Bending radius: R28 TKP25H15-30W15R28
TKP35H22	22	13 25 38 50 63	37 50 75 100	35	R50 or less: 2.3 R75 or more: 2.7	2	W13: 11 W25 or more: 19	● ●	●	● Excl. W13, W25		Inner width: 13 Bending radius: R37 TKP35H22-30W13R37
TKP35H32	32	16 25 38 50	48 60 75 100 125	35	R60 or less: 2.0 R75 or more: 2.3	2	W16: 13 W25: 22 W38 or more: 28	● ● Excl. W16	● Excl. W16	● Excl. W16		Inner width: 16 Bending radius: R48 Outer arm open/closed type TKP35H32-30W16R48
TKP45H25	25	38 58 78 103	50 75 95 125 150 200	45	R50: 2.8 R75, R95: 3.2 R125 or more: 3.3	4.5	22	● ●	●	●	●	Inner width: 38 Bending radius: R50 Outer arm open/closed type TKP45H25-30W38R50
TKP58H39	39	50 75 100 125	60 75 90 125 150 200	58	R60: 3.9 R75 or more: 4.5	8	35	● ●	●	●	●	Inner width: 50 Bending radius: R60 Outer arm open/closed type TKP58H39-30W50R60
TKP62H34	34	150 200	75 90 125 150 200	62.5	4.4	12	31	●	●	●	●	Inner width: 150 Bending radius: R75 TKP62H34W150R75
TKP68H46	46	75 100 125 150 175	75 100 125 150 200 250	68	4.8	12	41	● ●	●	●	●	Inner width: 75 Bending radius: R75 Outer arm open/closed type TKP68H46-30W75R75
TKP90H50	50	100 150 200	130 200 250 300	90	5.2	18	44	●	●	●	●	Inner width: 100 Bending radius: R130 TKP90H50W100R130
TKP91H56	56	150 300 175 325 200 350 225 400 250 450 275 500	150 200 250 300 350 400	91	6.8	50	50	●	●	●	●	Inner width: 150 Bending radius: R150 TKP91H56W150R150
TKP125H74	74	150 250 350	185 250 350 450	125	7.2	45	67	●	●	●	●	Inner width: 150 Bending radius: R185 TKP125H74W150R185
TKP91H80	80	150 300 175 325 200 350 225 400 250 450 275 500	150 200 250 300 350 400 450 500	91	8.8	60	72	●	●	●	●	Inner width: 150 Bending radius: R150 TKP91H80W150R150

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKUA

- Lightweight, easy-to-handle design with unique link structure and superior quietness during operation
- Supports installation of comb-shaped strain reliefs

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKUA45H26	26	25 38 58 78 103	52 65 95 125 150 180 200	45.5	4.3	4	W25: 22 W38 or more: 23	● ●	●	●	●	Inner width: 25 Bending radius: R52 Outer arm open/closed type TKUA45H26-30W25R52
TKUA55H38	38	50 75 100 125 150	63 80 100 125 160 200	55.5	5.8	7	34	● ●	●	●	●	Inner width: 50 Bending radius: R63 Outer arm open/closed type TKUA55H38-30W50R63
TKUA66H44	44	50 75 100 125 150 175 200 225 250	75 100 120 140 200 250 300	66.5	6.4	10	39	● ●	●	●	●	Inner width: 50 Bending radius: R75 Outer arm open/closed type TKUA66H44-30W50R75

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKMK

- Supports various widths and stay patterns
- High-performance open type

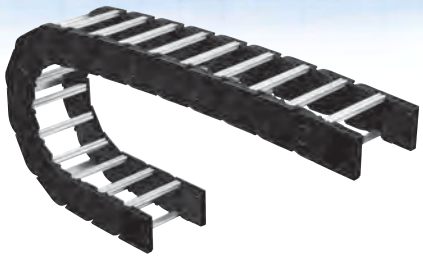
Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit))
TKMK47H28	28	*3 24 56 104 152 192	55 75 100 160 200 250	47.5	2.4	3	W24: 21 W56 or more: 25	●	●	●	●	Inner width: 24 Bending radius: R55 Vertical divider attachment specifications: Standard TKMK47H28DE24R55TC
TKMK65H42	42	*3 66 106 154 194 258	75 95 115 145 220 300	65	4.4	20	38	●	●	●	●	Inner width: 66 Bending radius: R75 Vertical divider attachment specifications: Standard TKMK65H42D66R75TC
TKMK95H58	58	114 *4 162 210 258 306 402 514	140 170 200 290 380	95	7.3	30	52	●	●	●	●	Inner width: 114 Bending radius: R140 Vertical divider attachment specifications: Standard TKMK95H58D114R140TC
TKMK125H72	72	151 *4 247 359 407 455 503	180 220 260 340 380 500	125	9.3	50	65	●	●	●	●	Inner width: 151 Bending radius: R180 Vertical divider attachment specifications: Standard TKMK125H72D151R180TC

*1, *2: See p. 1 for information on marks for arm opening and dividers.

*3: Width can also be specified in 8 mm increments.

*4: Width can also be specified in 16 mm increments.

TKHC / TKLC



- Widths configurable to 1 mm increments
- Installable in narrow, confined spaces
- Supports installation of comb-shaped strain reliefs

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKHC56H33	33	50 to 400 (adjustable in 1 mm increments)	60 75 100 125 150 175 200 220 250 300	56	3.6	11	29	●	●	●	●	Inner width: 50 Bending radius: R60 TKHC56H33SH50R60
TKHC67H46	46	50 to 400 (adjustable in 1 mm increments)	75 100 115 125 150 170 200 215 250 300 350	67	5.6	20	41	●	●	●	●	Inner width: 50 Bending radius: R75 TKHC67H46SH50R75
TKLC91H60	60	75 to 600 (adjustable in 1 mm increments)	135 150 200 250 300 350 400 500	91	6.6	20	54	●	●	●	●	Inner width: 75 Bending radius: R135 TKLC91H60SH75R135
TKLC111H80	80	100 to 800 (adjustable in 1 mm increments)	150 200 250 300 350 400 500	111	7.5	25	72	●	●	●	●	Inner width: 100 Bending radius: R150 TKLC111H80SH100R150

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKXC

- Plastic Series open type with largest cross-sectional height inside links
- Widths configurable to 1 mm increments
- Supports installation of comb-shaped strain reliefs

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKXC165H108	108	200 to 1000 (adjustable in 1 mm increments)	250 300 350 400 450 500 550	165	10.8	65	98	●	●	●	●	Inner width: 200 Bending radius: R250 TKXC165H108M200R250

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKQT

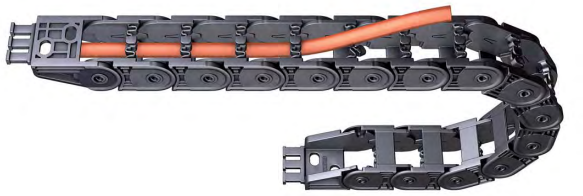
●Simple structure with integrated openable arms and links

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	Dividers*2 DSA	Dividers*2 DSB	Model No. Example (Unit)
TKQT32H20	20	15 25 38 50 65	28 38 48 75 100 125	32	2.3	2	W15: 13 W25 or more: 18	● ●	●	●		Inner width: 15 Bending radius: R28 Outer arm open/closed type TKQT32H20-30W15R28

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKET

●Unique arm structure allows for quick and easy cable/hose laying



Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	Dividers*2 DSA	Dividers*2 DSB	Model No. Example (Unit)
TKET32H18	18	15 25 38 50 65	28 38 48 75 100 125	32	2.3	2	W15: 13 W25 or more: 16	● ●	●			Inner width: 15 Bending radius: R28 Outer arm open/closed type TKET32H18-30W15R28

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKZP

●Easy-to-handle and inexpensive structure—just zip close

●Easily cuttable to the required length

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	Dividers*2 DSA	Dividers*2 DSB	Model No. Example (Unit)
TKZP10H13	13	10 15 20 25	–	10	1.0	W15 or more: 0.1 W20 or more: 0.2	6	●				Inner width: 10 TKZP10H13-40W10

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKR

- Clean-type Plastic Series open model
- Top-of-its-class quietness and low debris generation thanks to the unique bending structure
- Can be cut to any desired length

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKR15H22	22	20 40 60	40 50 75	15	1.77	2	W20: 18 W40 or more: 19	●	●	●		Inner width: 20 Bending radius: R40 TKR15H22-30W20R40
TKR20H28	28	30 40 50 60 80 100 120	55 75 95 150	20	R55: 2.46 R75 or more: 2.76	2.4	25	●	●	●		Inner width: 30 Bending radius: R55 TKR20H28W30R55
TKR26H40	40	50 62 75 87 100 125 150 200	75 100 125 150	26	3.95	8	36	●	●	●	●	Inner width: 50 Bending radius: R75 TKR26H40W50R75
TKR28H52 Long stroke specification	52	50 62 75 87 100 125 150 200	75 100 150 200	28	5.94	10	46	●	●	●	●	Inner width: 50 Bending radius: R75 TKR28H52W50R75L
TKR28H52	52	50 62 75 87 100 125 150 200	75 100 150 200	28	4.94	10	46	●	●	●	●	Inner width: 50 Bending radius: R75 TKR28H52W50R75

*1, *2: See p. 1 for information on marks for arm opening and dividers.

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKR37H28	28	40 50 60 70 80	55 75 100	37	2.76	2.4	25	●	●	●		Inner width: 40 Bending radius: R55 TKR37H28W40R55

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKQ

- Smooth operation in addition to low noise and debris generation thanks to the unique connected link structure

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKQ15H28	28	*3 36 60 76 108	60 75 90 110 150	15	2.3	3	23	●	●	●		Inner width: 36 Bending radius: R60 TKQ15H28E36R60
TKQ20H42	42	*3 84 124 172	100 150 190 250	20	3.3	5	35	●	●	●		Inner width: 84 Bending radius: R100 Vertical divider attachment specifications: Standard TKQ20H42E84R100C
TKQ25H58	58	*4 122 170 218 266	170 200 250 320	25	4.2	8	48	●	●	●	●	Inner width: 122 Bending radius: R170 Vertical divider attachment specifications: Standard TKQ25H58E122R170C
TKQ30H72	72	*4 170 266 378	180 250 300 370	30	4.6	12	60	●	●	●	●	Inner width: 170 Bending radius: R180 Vertical divider attachment specifications: Standard TKQ30H72E170R180C

*1, *2: See p. 1 for information on marks for arm opening and dividers.

*3: Width can also be specified in 8 mm increments.

*4: Width can also be specified in 16 mm increments.

TKP-MW

- Made with engineering plastic for excellent slidability
- Improved protection of cables and hoses

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKP13H10	10	10 20	18 28 37	13	R18: 0.8 R28 or more: 1.0	0.4	8	●				Inner width: 10 Bending radius: R18 TKP13H10-30W10R18M
TKP18H14	14	15 40	28 37 50	18	R28: 1.2 R28 or more: 1.4	1	12	●				Inner width: 15 Bending radius: R28 TKP18H14-30W15R28M
TKP25H15	15	15 20 30	28 37 50	25	R28: 1.2 R37 or more: 1.4	1	12	● W30 only				Inner width: 15 Bending radius: R28 TKP25H15-30W15R28M
TKP35H22	22	13 25 38 50 63	37 50 75 100	35	R50 or less: 1.8 R75 or more: 2.2	2	W13: 11 W25 or more: 19	● ●	●	● Excl. W13, W25		Inner width: 13 Bending radius: R37 Outer arm open/closed type TKP35H22-30W13R37M
TKP35H32	32	16	60 75 100 125	35	R60: 1.6 R75 or more: 1.8	2	13	●				Inner width: 16 Bending radius: R60 Outer arm open/closed type TKP35H32-30W16R60M
TKP45H25	25	38 58 78 103	50 75 95 125 150 200	45	R50: 2.2 R75, R95: 2.5 R125 or more: 2.6	4.5	22	● ●	●	●		Inner width: 38 Bending radius: R50 Outer arm open/closed type TKP45H25-30W38R50M

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKC

- Plastic Series standard closed type
- Protects cables and hoses from dust, spatter, and other environmental factors

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	Dividers*2 DSA	Dividers*2 DSB	Model No. Example (Unit)
TKC28H30	30	28 48	67 100 125	28	2.7	2	25	●	● W48 only	● W48 only		Inner width: 28 Bending radius: R67 TKC28H30-30W28R67
TKC34H25	25	50 90 130	70 100 150	34	3.3	12	22	●	●			Inner width: 50 Bending radius: R70 TKC34H25W50R70
TKC47H36	36	80 160	100 150 200 250	47	4.3	17	32	●	●			Inner width: 80 Bending radius: R100 TKC47H36W80R100
TKC64H50	50	110 220	135 200 250 300	64	5.8	25	44	●	●	●	●	Inner width: 110 Bending radius: R135 TKC64H50W110R135
TKC91H56	56	150 200 250 300 350 400	200 250 300 350 400	91	6.8	50	50	●	●	●	●	Inner width: 150 Bending radius: R200 TKC91H56W150R200
TKC85H68	68	150 200 300 350	180 250 350	85	7.8	60	60	●	●	●	●	Inner width: 150 Bending radius: R180 TKC85H68W150R180
TKC91H80	80	150 200 250 300 350 400	200 250 300 350 400 450 500	91	8.8	60	72	●	●	●	●	Inner width: 150 Bending radius: R200 TKC91H80W150R200

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKA

- Unique link structure for superior quietness during operation
- Wide selection of easy-to-handle products—from compact to large sizes
- Supports installation of comb-shaped strain reliefs

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	Dividers*2 DSA	Dividers*2 DSB	Model No. Example (Unit)
TKA30H20	20.5	15 20 25 38 50 65	55 75 95 125 145 180	30.5	3.3	2	W15: 13 W20 or more: 18	●	●	●		Inner width: 15 Bending radius: R55 Outer arm open/closed type TKA30H20-80W15R55
TKA38H26	26	25 38 58 78 103 130	70 90 120 145 170 195 230	38.5	3.7	4	23	●	●	●		Inner width: 25 Bending radius: R70 Outer arm open/closed type TKA38H26-80W25R70
TKA45H36	36	50 75 100 125 150	82 95 125 145 170 200 230	45.5	5.9	7	32	●	●	●		Inner width: 50 Bending radius: R82 Outer arm open/closed type TKA45H36-80W50R82
TKA55H45	45	50 75 100 125 150 175	100 120 140 170 195 225 250 300	55.5	6.3	10	40	●	●	●		Inner width: 50 Bending radius: R100 Outer arm open/closed type TKA55H45-80W50R100

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKMT

- Supports various dividers and widths

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKMT47H26	26	56 80 104 152 192	75 100 160 200 250	47.5	2.4	3	23	●	●	●		Inner width: 56 Bending radius: R75 TKMT47H26DDE56R75
TKMT65H38	38.5	66 106 130 194 258	95 115 145 220 300	65	4.4	20	34	●	●	●		Inner width: 66 Bending radius: R95 TKMT65H38DD66R95
TKMT95H54	54.5	114 130 162 258 306	140 170 200 290 380	95	7.3	30	49	●	●	●	●	Inner width: 114 Bending radius: R140 TKMT95H54DD114R140
TKMT125H68	68.5	135 183 247	220 260 340 380 500	125	9.3	50	61	●	●	●	●	Inner width: 135 Bending radius: R220 TKMT125H68DD135R220
TKMT95H54 (Aluminum cover type)	54.5	100 to 400 (adjustable in 1 mm increments)	140 170 200 290 380	95	6.2	30	49	●	●	●	●	Inner width: 100 Bending radius: R140 TKMT95H54MD100R140

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKLT

- Widths configurable to 1 mm increments
- Supports installation of comb-shaped strain reliefs

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKLT91H60	60	53 75 100 125 150 175 200 225 250 275 300	150 200 250 300 350 400 500	91	6.4	19	W53: 47 Other than W53: 54	●	●	●	●	Inner width: 53 Bending radius: R150 TKLT91H60DL53R150

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKXT

- Plastic Series closed type with largest cross-sectional height inside links
- Widths configurable to 1 mm increments
- Supports installation of comb-shaped strain reliefs

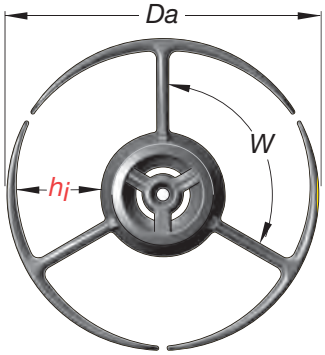
Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Arm opening*1	Dividers*2 Vertical dividers	DSA	DSB	Model No. Example (Unit)
TKXT165H105	105	200 to 1000 (adjustable in 1 mm increments)	250 300 350 400 450 500 550	165	9.6	52	95	●	●	●	●	Inner width: 200 Bending radius: R250 TKXT165H105MD200R250

*1, *2: See p. 1 for information on marks for arm opening and dividers.

TKRB

- 3D Series open type
- Supports heavy loads thanks to its steel wire design
- Easy cable storage
- Wide variety of available peripheral components (accessories)

Model No.	Inner height hi (mm)	Inner width W (mm)	Outer diameter Da (mm)	Bending radius (mm)	Pitch (mm)	Acceptable angle of torsion	Compatible cable/ hose outer diameters (mm)
TKRB21H10-10R80	10	27	40	80	21.5	±450°	2 to 8.5
TKRB32H14-10R115	14	39	56	115	32	±300°	2 to 11
TKRB40H22-10R145	22	52	75	145	40	±215°	3 to 18
TKRB40H24-10R175	24	54	85	175	40	±215°	3 to 20
TKRB40H31-10R195	31	64	100	195	40	±215°	3 to 27



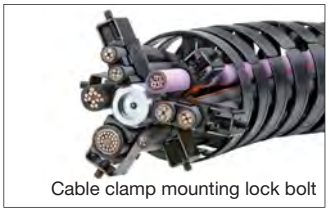
Accessories


Bracket


Heat shield / protective sleeve


Chucking component


Clamp


Cable clamp mounting lock bolt

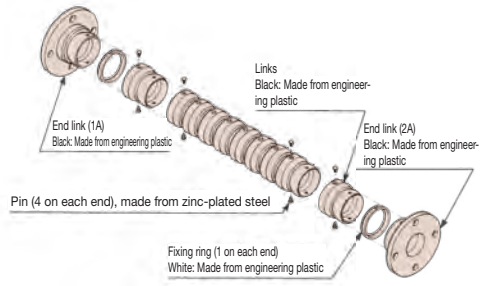

Helical bracket spring

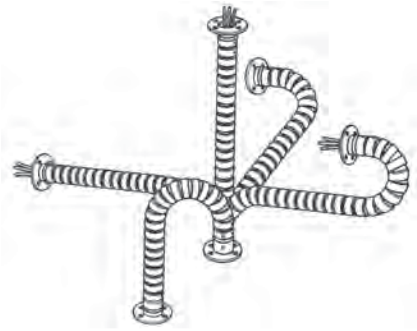

Bracket pivot plate

FTP

- 3D Series closed type
- Can be cut to any length
- Restrictable 2D movement and installation

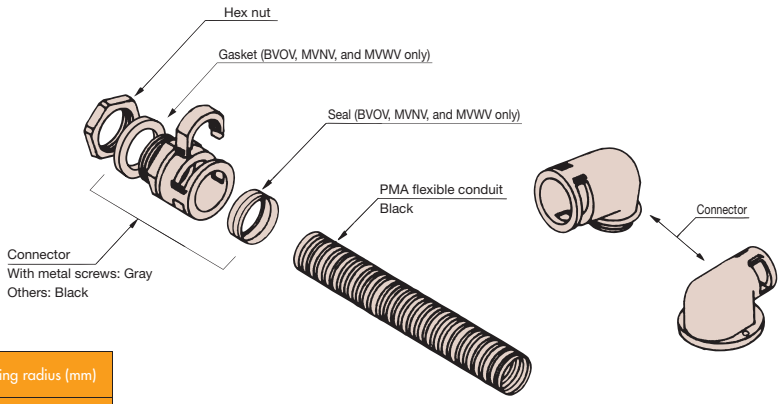
Model No.	Outer diameter (mm)	Inner diameter (mm)	Bending radius (mm)	Pitch (mm)	Max. cable/hose outer diameter (mm)
FTP026R100	38	26	100	20	24





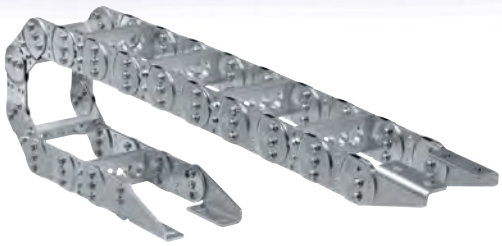
PMA

- 3D Series closed type
- Wide variety of inner diameters
- One-touch connector and cable carrier connection
- Waterproof connection areas



Model No.	Outer diameter (mm)	Inner diameter (mm)	Allowable bending radius (mm)	
			Static	Active
PIST-07B	10	6.2	15	40
PIST-10B	13	9.6	20	50
PIST-12B	15.8	11.9	25	65
PIST-17B	21.1	16.4	30	65
PISG-23B	28.4	21.7	40	100
PISG-29B	34.3	27.4	50	120
PISG-36B	42.3	35.8	60	180
PISG-48B	54.2	46.7	70	200

TK / TKH



- Standard Steel Series type
- Highly durable and highly rigid with excellent heat resistance
- Increased protection of cables and hoses thanks to supporters

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Material			Dividers*2			Model No. Example (Unit)
								Body	Supporter	Mounting bracket	Supporter	Split supporter	Vertical dividers	
TK070	Dimensions made to order	Dimensions made to order	75 90 125 145	70	6.7	50	27	Steel (Glossy zinc plating)	Aluminum	Steel (Glossy zinc plating)	●	●		Bending radius: R75 TK070R75
TK095	Dimensions made to order	Dimensions made to order	125 145 200 250 300	95	8.7	60	46	Steel (Glossy zinc plating)	Aluminum	Steel (Glossy zinc plating)	●	●		Bending radius: R125 TK095R125
TK130	Dimensions made to order	Dimensions made to order	200 250 300 400	130	11.6	70	60	Steel (Glossy zinc plating)	Aluminum	Steel (Glossy zinc plating)	●	●		Bending radius: R200 TK130R200
TK180	Dimensions made to order	Dimensions made to order	250 300 400 500 600 700	180	15.7	80	80	Steel (Glossy zinc plating)	Aluminum	Steel (Glossy zinc plating)	●	●		Bending radius: R250 TK180R250
TKH250	Dimensions made to order	Dimensions made to order	350 450 600 750	250	22	100	110	Steel (Glossy zinc plating)	Aluminum	Steel (Glossy zinc plating)	●	●		Bending radius: R350 TKH250R350

*2: See p. 1 for information on marks for dividers.

TKS

- TK Series with simple supporters

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Material			Dividers*2			Model No. Example (Unit)
								Body	Supporter	Mounting bracket	Supporter	Split supporter	Vertical dividers	
TKS070	31	100 150 200	75 90 125 145	70	6.7	10	27	Steel (Glossy zinc plating)	Aluminum Steel Engineering plastic	Steel (Glossy zinc plating)			●	Bending radius: R75 TKS070R75
TKS095	46	100 150 200	125 145 200 250 300	95	8.7	10	42	Steel (Glossy zinc plating)	Aluminum Steel Engineering plastic	Steel (Glossy zinc plating)			●	Bending radius: R125 TKS095R125

*2: See p. 1 for information on marks for dividers.

TKLS

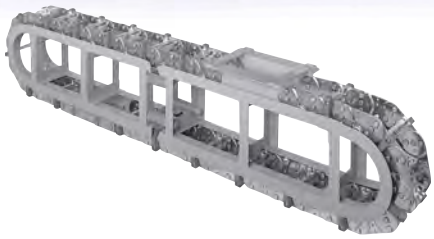
●Superior dynamic functionality thanks to an optimized lightweight design

Model	Stay specification	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Material			Dividers*2			Model No. Example (Unit)
									Body	Supporter	Mounting bracket	Supporter	Split supporter	Vertical dividers	
TKLS105	SB	58	84 to 384 (adjustable in 1 mm increments)	105 125 155 195 260 295 325 365 430	105	9.7	30	52	Steel	Aluminum	Steel			●	Inner width: 84 Bending radius: R105 TKLS105H58SB84R105
	V	58	84 to 584 (adjustable in 1 mm increments)					52	Steel	Aluminum	Steel			●	Inner width: 84 Bending radius: R105 TKLS105H58V84R105
	RR	54	84 to 484 (adjustable in 1 mm increments)					49	Steel	Steel	Steel			●	Inner width: 84 Bending radius: R105 TKLS105H54RR84R105
	LG	–	–					–	Steel	Aluminum	Steel	●	●		–

*2: See p. 1 for information on marks for dividers.

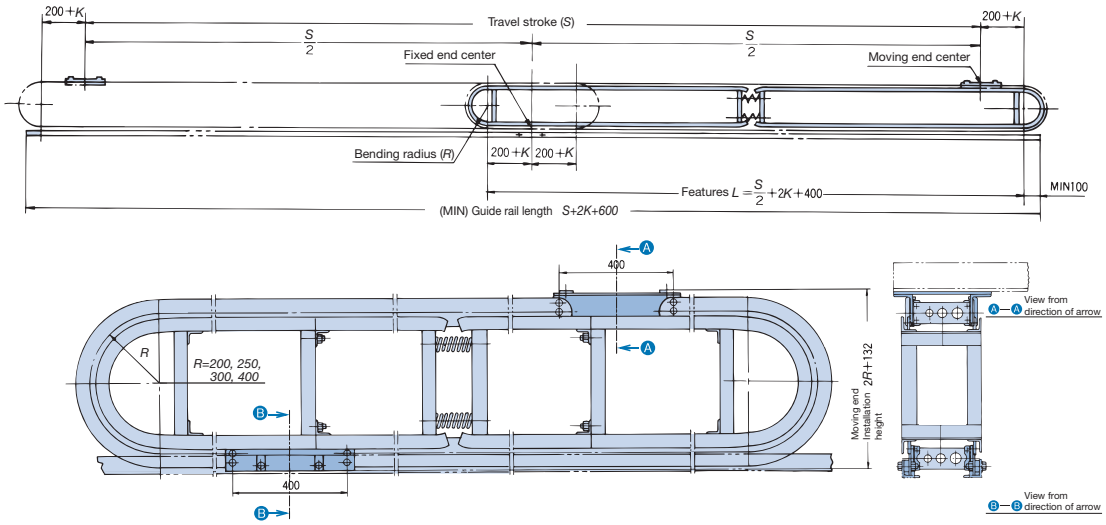
TKV

●Can be used in high-speed, high-frequency applications



Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Material			Dividers*2		
								Body	Supporter	Mounting bracket	Supporter	Split supporter	Vertical dividers
TKV130	Dimensions made to order	Dimensions made to order	200 250 300 400	130	30	50	60	Steel	Aluminum	—	●	●	

*2: See p. 1 for information on marks for dividers.

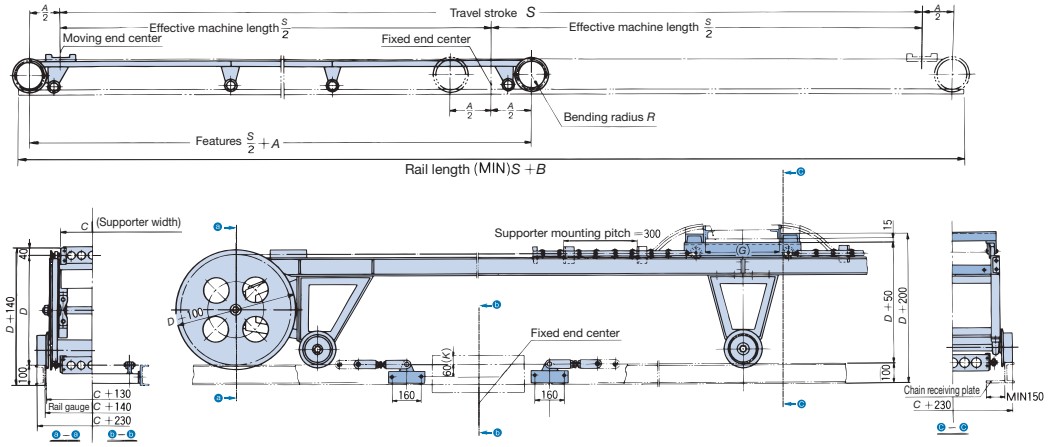


TKI

●Usable in high-speed, long-stroke applications

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Material			Dividers*2		
								Body	Supporter	Mounting bracket	Supporter	Split supporter	Vertical dividers
TKI	Dimensions made to order	Dimensions made to order	175 200 250 300 350 400 500	—	100	100	80	Steel	Aluminum	—	●	●	

*2: See p. 1 for information on marks for dividers.



TKF

- Steel Series closed type
- Protects cables and hoses from dust, spatter, and other environmental factors

Model	Inner height (mm)	Inner width (mm)	Bending radius (mm)	Pitch (mm)	Maximum travel stroke (m)	Max. cable/hose weight (kg/m)	Max. cable/hose outer diameter (mm)	Material			Dividers*2			Model No. Example (Unit)
								Body	Supporter	Mounting bracket	Supporter	Split supporter	Vertical dividers	
TKF055	25	45	60 100 150	20	2.7	12	22	Zinc-plated steel plate + Engineering plastic	–	Aluminum				Bending radius: R60 TKF055R60
TKF085	38	74	100 200 250	20	3.7	21.5	35	Zinc-plated steel plate + Engineering plastic	–	Aluminum				Bending radius: R100 TKF0855R100
TKF115	52	102	140 225 300	25	4.7	30	48	Zinc-plated steel plate + Engineering plastic	–	Aluminum				Bending radius: R140 TKF115R140
TKF175	72	162	185 250 350	30	5.2	40	60	Zinc-plated steel plate + Engineering plastic	–	Aluminum				Bending radius: R185 TKF175R185

*2: See p. 1 for information on marks for dividers.

FLATVEYOR®

Features

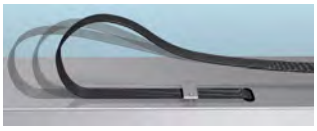
The FLATVEYOR is a free-standing flat cable system that makes full use of cable carrier technology.

Usable in long stroke applications
The built-in support member allows for a maximum travel stroke of up to 3 m.*1

Flat cable (competitor)

FLATVEYOR (Tsubaki)

Bounce suppression
The cable's minimum bending radius does not change, ensuring smooth operation and preventing the cable from bouncing upward.



Flat cable (competitor)

FLATVEYOR (Tsubaki)

Low debris generation
Generation of wear debris is kept to a minimum, providing ISO Class 2 cleanliness.*2

Quiet
The unique short-pitch structure reduces noise during operation.

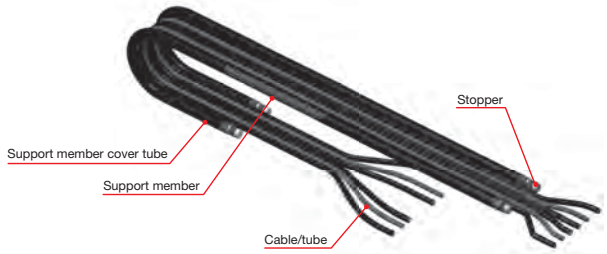
Usable with various cables and tubes
In addition to the recommended Tsubaki cables for motion, the FLATVEYOR supports installation of a wide variety of cables and tubes.*3

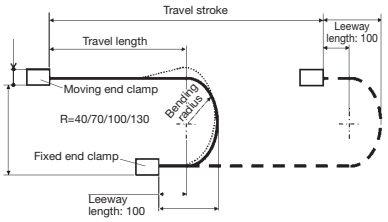
Lightweight
The simple structure is lighter.

Space-saving design
Adopting the same shape as a flat cable, the FLATVEYOR can be installed even when space is limited. Cables can also be retracted within the device without the need for relays.

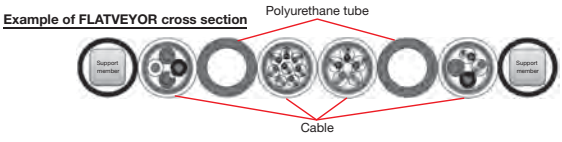
*1: Varies by operating conditions.
*2: Based on in-house test results.
*3: Varies according to cable/tube specifications and various conditions.

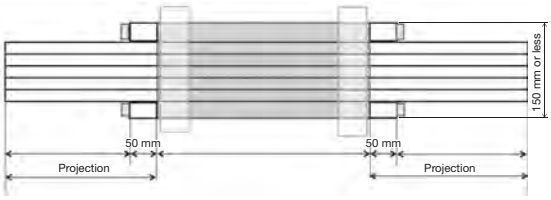
Structure





Example of FLATVEYOR cross section





Basic specifications/capacities

Maximum travel stroke	Support member bending radius: R40 = 1200 mm	
	Support member bending radius: R70 = 2400 mm	
	Support member bending radius: R100 = 3000 mm	
	Support member bending radius: R130 = 3000 mm	
Maximum travel speed	2 m/sec	
Maximum acceleration speed	4 G	
Operating temperature range	–10 to 80°C	
Max. cable/tube outer diameter	16 mm or less	
Min. bending radius of Tsubaki recommended cable	Un-shielded: Outer Diameter × 6; Shielded: Outer Diameter × 8	
Estimated max. width	150 mm or less (see diagram above)	
Material	Support member	Engineering plastic
	Support member cover tube	PVC
	Stopper	P E

CLEANVEYOR®

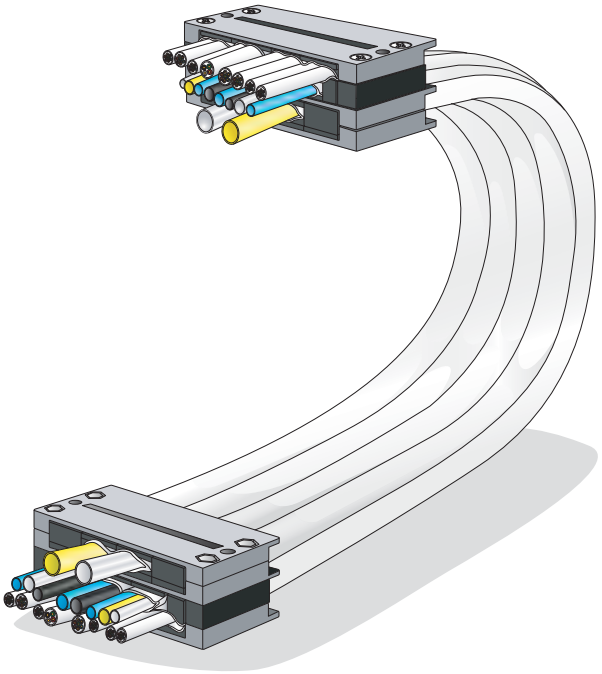
Features

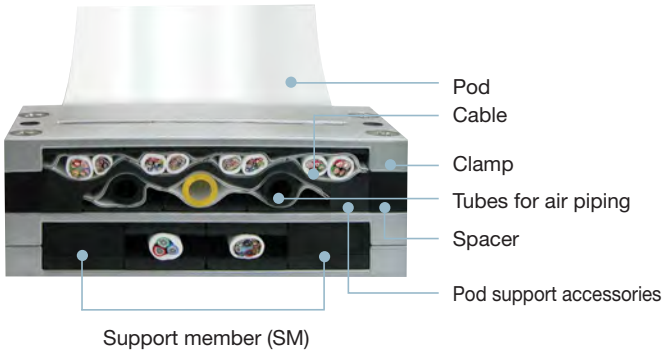
Zero debris*1 cable solution! Tsubaki provides dedicated cables and tubes to suit any operating conditions.

- **Low debris generation** ISO Class 1 cleanliness*2
- **Quiet** Noise levels maintained at or below 38 dB (A)*3
- **Long service life** More than 10 million cycles possible*4

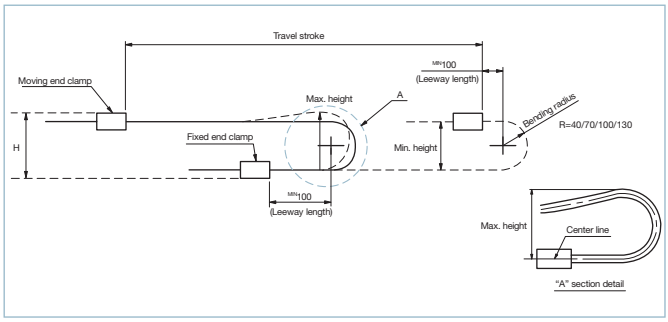
*1: Based on test results from Germany's Fraunhofer Institute for Manufacturing Engineering and Automation (IPA).
*2: Based on test results in accordance with ISO 14644-1 "Classification of air cleanliness by particle concentration" from Germany's Fraunhofer Institute for Manufacturing Engineering and Automation (IPA).
*3: Based on in-house test results at a travel speed of 100 m/min and a noise measurement distance of 500 mm.
*4: Based on in-house test results.

Structure





Support member (SM)



Basic specifications/capacities

Maximum travel stroke	Support member bending radius: R40 = 1200 mm
	Support member bending radius: R70 = 2400 mm
	Support member bending radius: R100 = 3000 mm
	Support member bending radius: R130 = 3000 mm
Max. cable length	8000 mm
Min. bending radius	R40 mm
Maximum travel speed	2 m/sec
Maximum acceleration speed	4G
Operating temperature range	–10 to +80°C
Cable outer diameter	3 to 10 mm
Cable type	I/O, Encoder, IEEE1394, Ethernet, Power, Video, tubes for air piping
Cable certification standards	CE & UL*

*Contact a Tsubaki representative for information on UL-certified products.

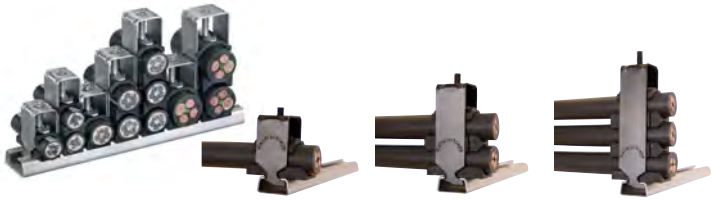
Cables for Motion

	Cable type	Sheath	Shield[*1]	Rated voltage		Conductor nominal cross-sectional area (mm²)	No. of cores	Min. bending radius (D: Cable outer diameter)	Operating temperature range (°C)	Max. travel speed (standard installation) (m/s)	Max. travel speed (long-span) (m/s)	Max. acceleration speed (m/s²)
				VDE	UL							
Control	**200 Series**	PVC	×	300/500	300	0.5² to 2.5²	2 to 25	10 × D	–5 to 80	3.5	2	10
	200 Series (shielded) 	PVC	○			0.5² to 1.5²	2 to 25	10 × D	–5 to 80			
	400 Series	PVC	×	300/500	600	0.34² to 2.5²	2 to 48	7.5 × D	–5 to 80	5	3	20
	400 Series (shielded) 	PVC	○			0.5² to 1.5²	3 to 36	7.5 × D	–5 to 80			
	700 Series	PUR	×			0.5² to 1²	2 to 36	7.5 × D	–35 to 90	20	5	50
	700 Series (shielded)	PUR	○			0.5² to 1²	3 to 25	7.5 × D	–35 to 90			
Power	**400 Series**	PVC	×	600/1000	1000	1.5² to 70²	2 to 25	7.5 × D	–5 to 80	5	3	20
	400 Series (shielded) 	PVC	○			1.5² to 35²	4 to 7	7.5 × D	–5 to 80			
	700 Series 	PUR	×			1.5² to 95²	2 to 36	7.5 × D	–35 to 90	20	5	50
	700 Series (single-core) 	PUR	×			0.25² to 700²	1	7.5 × D	–35 to 90			
	700PE Series (single-core)	PUR	×			1.5² to 95²	1	7.5 × D	–35 to 90			
	700 Series (shielded) 	PUR	○			1.5² to 150²	2 to 49	7.5 × D	–35 to 90			
	700 Series (single-core, shielded) 	PUR	○			1.5² to 300²	1	7.5 × D	–35 to 90			
Data	**400 Series (shielded)**	PVC	○	300/500	300	0.25² to 0.34²	4 to 25	7.5 × D	–5 to 80	5	3	20
	700 Series	PUR	×			0.25² to 0.34²	3 to 15	7.5 × D	–35 to 90	20	5	50
	700 Series (shielded)	PUR	○			0.25² to 1²	2 to 32	7.5 × D	–35 to 90			
	700 Series (dual-core, shielded)	PUR	○	300/300 to 600/1000	300 to 1000	0.25² to 1.5²	6 to 20	7.5 × D	–35 to 90			
Coaxial	**700 Series (for Profibus)**	PUR	○	300/300	–	0.64 mm	2	15 × D	–20 to 70	3.5	2	10
	700 Series (for CAN-BUS)	PUR	○	300/300	300	0.5²	2 to 4	7.5 × D	–20 to 80	3	3	10
	700 Series (for USB)	PUR	○	300	300	AWG28/24/20	4	10 × D	–10 to 70	3.5	2	10
	700 Series (for Interbus)	PUR	○	–	300	0.25²	6	10 × D	–30 to 70	3.5	2	10
	700 Series (for CAT.5E/CAT.6)	PUR	○	30	30	0.15²	8	10 × D	–40 to 80	3	3	5
	700 Series (coaxial)	PUR	○	*		HF50/75 Ω	1 to 5	15 × D	–30 to 70	3.5	3.5	10
	700 Series (optical fiber)	PUR	×	–		50 µ / 62.5 µ	6 to 12	7.5 × D	–30 to 90	3.5	3.5	10
Special applications	**S700C**	PUR	○	*		0.14² to 1²	3 to 16	7.5 × D	–35 to 90	5	5	50
	M700C	PUR	○			1² to 50²	4	7.5/ 10 × D	–35 to 90			
High-voltage power	**Single-core for power — 10 kV / 11 kV / 12 kV**	PUR	○	* 10000 to 12000		10² to 400²	1	7.5 × D	–40 to 80	50	10/6	50
	Single-core for power — 15 kV / 24 kV / 30 kV	PUR	○	* 15000 to 30000		10² to 400²	1	7.5 × D	–40 to 80			

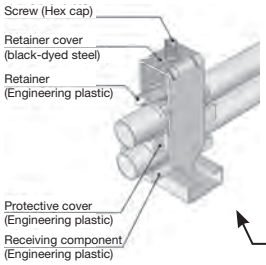
Note 1: ○: Supported, ×: Not supported

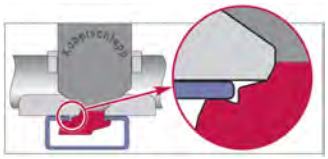
* Varies depending on the model number.

●LineFix Cable Clamps



Single clamp　Double clamp　Triple clamp



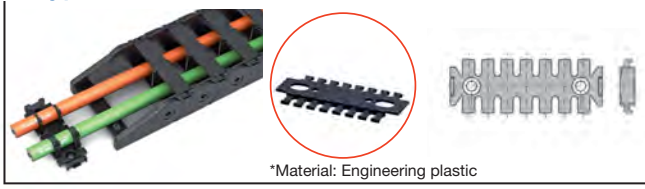


Simple, reliable fixing to clamp rails

*Slit width of applicable clamp rail: 11 mm

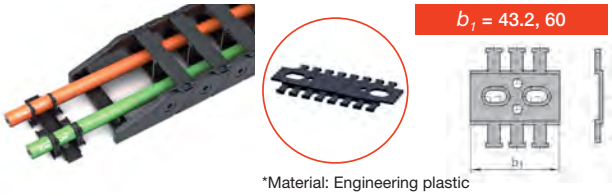
●Comb-Shaped Strain Reliefs

●A type



*Material: Engineering plastic

●B type



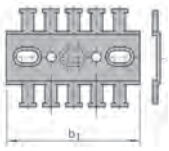
b_1 = 43.2, 60

*Material: Engineering plastic

Clamp Rails

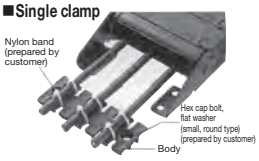
$b_1 \geq 63.2$

Mounting on clamp rails is possible.
Applicable Clamp Rails
• CL-CRA25-10-ST-●●●
• CL-CRA25-12-ST-●●●
⇒ See “Clamp Rails” below.

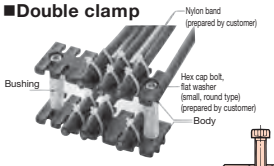


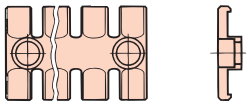
●ZL type

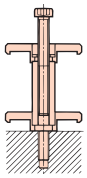
■Single clamp



■Double clamp

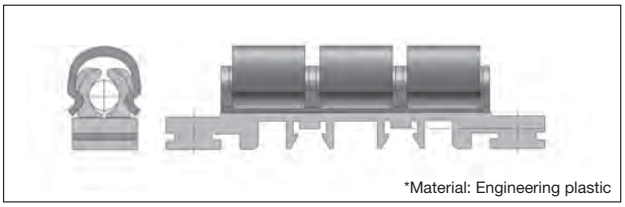






*Bushing material: Steel
(Zinc plating)

●SZL Cable Clamps



*Material: Engineering plastic

Features

- Easy installation with no tools required
- Mounts with no screws or bands for binding
- Large cable contact surface for reduced stress and secured mounting

Installation examples

▼ Mounted on clamp rails (no mounting screws necessary)

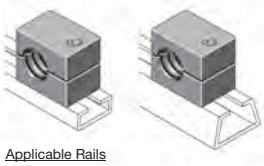
○ Use on rail with slit width of 16.2 mm

○ Use on rail with slit width of 11 mm

●Hose Clamps

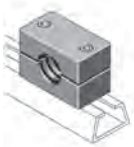
Dedicated bolts and nuts included.
(Clamp rails must be ordered separately)

CL-BS-0



Applicable Rails
CL-CRA25-10-ST●●● (steel)
CL-CRA25-12-ST●●● (steel)

CL-BS-1 to CL-BS-5



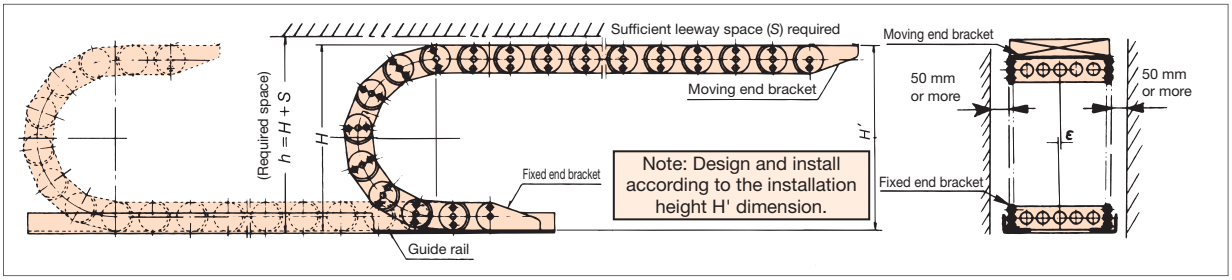
Applicable Rails
CL-CRA34-15-ST●●● (steel)
CL-CRA34-15-AL●●● (aluminum)

●Clamp Rails

Type				
Model No.	CL-CRA25-10-ST-●●●	CL-CRA25-12-ST-●●●	CL-CRA34-15-ST-●●●	CL-CRA34-15-AL-●●●
Slit width	11 mm	11 mm	16.2 mm	16.2 mm
Material	Steel	Steel	Steel	Aluminum alloy

●●● = Overall clamp rail length (L); Standard product length (stock item) ●●● (L) = 500, 1000 mm
*Custom lengths available. (Made-to-order products)

●Installation and maintenance

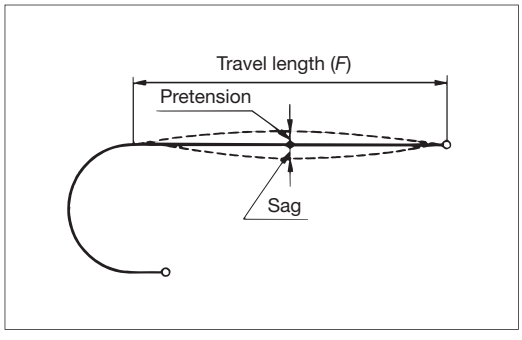


●Required space

To compensate for sag caused by cable carrier and cable mass, cable carrier products will have pretension. However, the product should be installed at the installation height H' and not the total cable carrier height H. Pretension and sagging will occur in the travel length portion depending on operating and environmental conditions. Be sure to ensure the required space referring to the figure above. Problems will not generally arise in the absence of interfering objects. Vibration may occur with increased operation speeds. If operation speeds exceed 70% of the max. allowable speed, double the S dimension.
Moreover, be sure to provide space on the inside of the cable carrier to account for sag that occurs in the travel length portion during use.

Model	ε or less	S	H'
TKP13H10, TKP17H11, TKP18H14/15, TKP25H15	3	50	H + (10 to 30)
TKP35H22, TKP45H25, TKUA45H26	4	100	
TKP Series other than the above, TKUA55H38, TKUA66H44	6	100	
TKA Series, TKC Series	6	100	
TKMK Series, TKMT Series	6	100	
TKR15H22	6	100	
TKR20H28, TKR26H40, TKR28H52/L, TKR37H28	6	100	H + (30 to 50)
TKQ Series	6	100	H + (10 to 30)
TKHC Series, TKLC Series, TKLT Series	6	100	
TK070, TKS070	4	100	H + 10
TK095, TKS095	6		
TK130	8		
TK180	10		
TKH250	15	100	H + 30
TKF055, TKF085	8	100	H + (20 to 30)
TKF115	10		
TKF175	10		

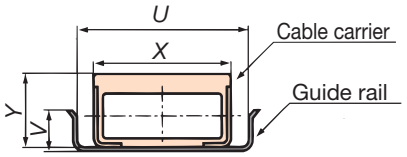
ε = Moving end bracket and fixed end bracket mounting position differences
H = Total cable carrier height
h = Height of required space
H'= Installation height



* Straight specifications (special order) that have no pretension are also available.

●Cable carrier guide

A guide rail is required for use with cable carrier products. Referring to the table below, construct a guide using steel plates or steel angles.
To ensure smooth operation, chamfer and grade the sections where the cable carrier moves in and out of.



X = Cable carrier outer width
Y = Cable carrier outer height

Model	U	V
TKP13H10, TKP17H11, TKP18H14/15, TKP25H15	X + 10	
TKP35H22, TKP45H25, TKUA45H26	X + 15	
TKP Series other than the above, TKUA55H38, TKUA66H44	X + 20	$\frac{Y}{2}$ or more
TKA Series, TKC Series		
TKMK Series, TKMT Series		
TKR Series		
TKQ Series		
TKHC Series, TKLC Series, TKLT Series		
TK Series / TKS Series / TKH Series		
TKF Series	X + 20	$\frac{Y}{3}$

●Lubrication

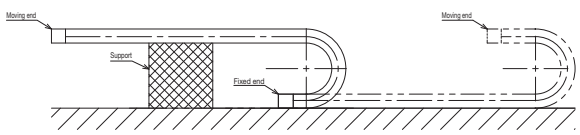
In principle, the cable carrier does not need to be lubricated. However, when using TK Series, TKS Series, TKH Series, or TKV Series products in environments prone to rusting, protect against rust by applying grease to link portions or through some other means.
Please note that lubrication is required for TKI Series products.

●Caution on special applications

1. Install support rollers or side guides to prevent collapse when lateral loads are applied such as during ceiling crane running.
2. Take care to prevent vibrations from the machine being transmitted to the cable carrier if external vibrations from manipulators, rock drills, or other equipment are a concern. (For example, use shock absorbers.)

●Storage following device installation

If the equipment will be stored following installation, fix the moving end of the cable carrier so that it is at the end of its reverse stroke to prevent sag in the travel length portion due to creeping. Moreover, use supports or some other means to hold the center travel length portion if not possible given the system structure.



●Cable/Hose wiring

1. Use highly flexible cables/hoses for movement offering excellent flexibility and durability over repeated operation.

   Use of cables with wire-braided coating is prohibited. The sliding of the cable will cause damage to both the cable carrier and the wire braiding. Do not use such cables under any circumstances.

2. Lay out the cables/hoses in a way that does not allow twisting to occur. Do not pull cables/hoses from a drum or spiral coil as doing so will cause the cable/hose to become twisted. (See Figure 1.)
   Make sure the cables/hoses are straight when inserted into the cable carrier. (See Figure 2.)
3. Required cable/hose length
   In general, the required cable length is as follows.

   (Pitch × No. of links) + Mounting area length = Required cable length

   Because hose length varies with pressure during use, the required hose length is as follows.

   {(Pitch × No. of links) + Mounting area length } × 1.015
   = Required hose length

   Please note that **a coefficient of 1.015 allows for hose shrinkage, but because this will depend on the type of hose, be sure to check with the hose manufacturer.**
4. To prevent tension where cables/hoses bend from being pressed against the outer surface of the cable carrier, arrange the cables/hoses loosely (with enough space to "float" above the inner surface of the cable carrier) to allow freedom of movement. (See Figure 3 and Figure 4.)
5. To prevent unnecessary tension from being applied to the cable/hose, and to maintain the length within the cable carrier, use clamps for fixing at the moving end and the fixed end. (See Figure 5.)
   Note that **cables and hoses should not be fixed within the cable carrier.**
6. Lay out the cables/hoses in a row horizontally so that they do not overlap. For models that allow dividers to be attached, use dividers when arranging the cables/hoses.
7. When using stayed systems for cables/hoses, note that the inner and outer circumferences are not the same. Ensure the required length along the center line for each of the cables/hoses is provided.
   However, when using dividers to separate cables/hoses into stayed systems, the sliding of the cables/hoses will cause wear to occur more quickly. As such, it is recommended that the cables/hoses be arranged in a row horizontally.

●Maintenance

1. The link or supporter bolts may come loose due to vibrations during transportation or operation. Check these bolts regularly following operation. (TK Series / TKS Series / TKH Series)
2. Take care to prevent foreign matter from falling onto or from adhering to the guide rail.
3. Check regularly for smooth back-and-forth operation of the cable carrier. Also check whether the cable/hose is being forcibly pulled or if repeated bending of the cable has caused the length to change within the cable carrier.

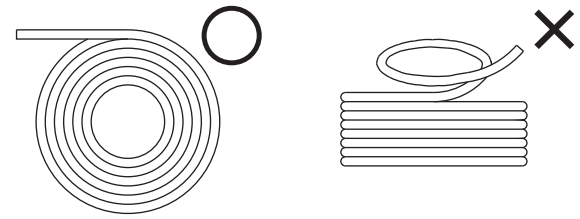


Figure 1

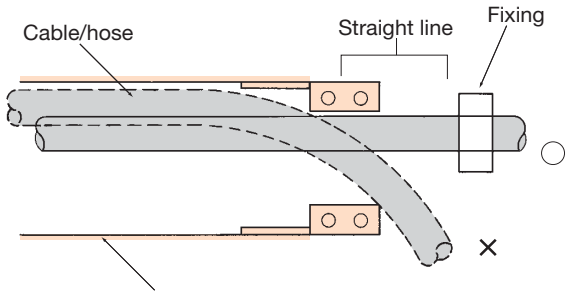


Figure 2

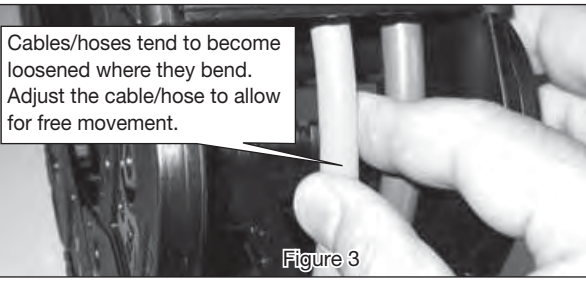


Figure 3

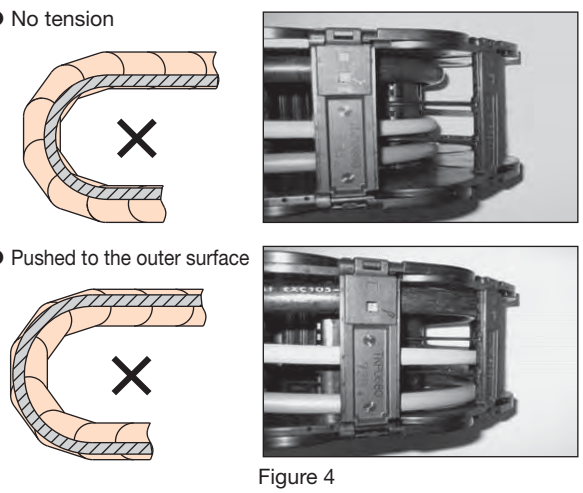


Figure 4

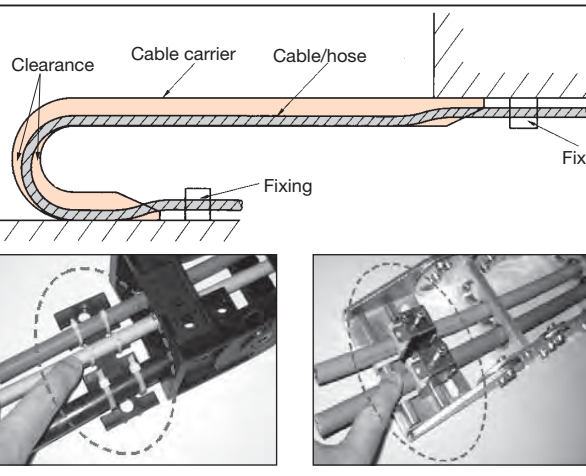


Figure 5. Examples of cable/hose fixing methods

●Points to consider before selecting a cable carrier

●Cables/hoses

1. **Cable/hose types**
   Use highly flexible cables/hoses for movement offering excellent flexibility and wear resistance with repeated operation.
   When using wire-braiding coated cables/hoses, the sliding of the cable will cause damage to both the cable carrier and the wire braiding. Do not use such cables under any circumstances.
2. **Allowable cable/hose bending radius**
   The allowable bending radius of the cable/hose should be a value that applies when the cable/hose is in motion (repeated bending). Contact the cable/hose manufacturer for details.

[Reference] Use the following as a guideline.
For cables
Allowable cable bending radius r ≥ Outer diameter of cable × 7.5* (*Varies depending on cable type)
For hoses
Allowable hose bending radius r ≥ Outer diameter of hose × 9* (*Varies depending on hose type)
This will need to be increased even further with more frequent use, high-rigidity cables/hoses, or hydraulic hoses.

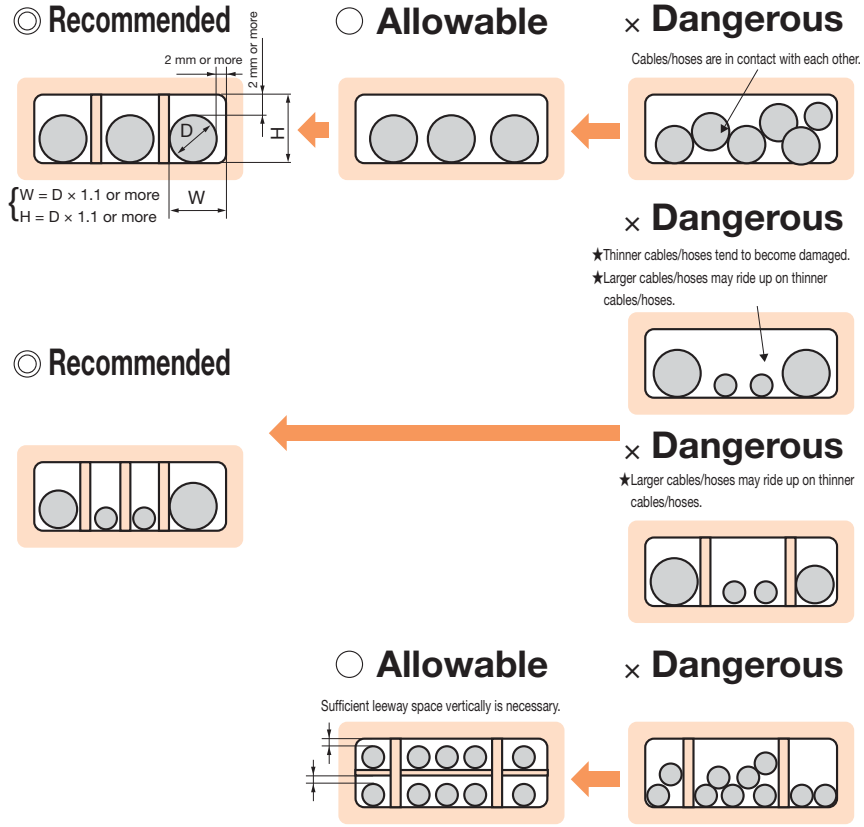
●Cable carrier bending radius

The bending radius of the cable carrier should be greater than the allowable bending radius of the cable or hose.
Ensuring a cable carrier bending radius greater than the allowable bending radius of the cable or hose contributes to reduced wear of the cable or hose, allowing for a longer service life for the cable carrier. As such, be sure to select as large a bending radius as possible.

●Various environmental resistances of cable carriers

1. **Temperature**
   Refer to the individual product pages for the operating temperature ranges. However, note that the service life may be shortened depending on the operating conditions. In addition, the cable carrier may not bend smoothly in freezing in environments with low temperatures and high moisture. Forced operation under such conditions may damage the cable carrier. Be sure to remove any moisture from frozen sections before operating.
2. **Moisture and humidity**
   Cable carriers can be used under normal atmospheric conditions (including outdoor environments). However, if the system will be exposed to environments with high humidity or high moisture content, or exposed to the elements, it is recommended that steel components be made of stainless steel.
3. **Outdoor installation (effects of UV rays)**
   Cable carriers can be used in outdoor environments. However, cable carrier Plastic Series products will undergo increased deterioration, resulting in a shortened service life under some operating conditions.

●Correct arrangement of cables and hoses (reference information)



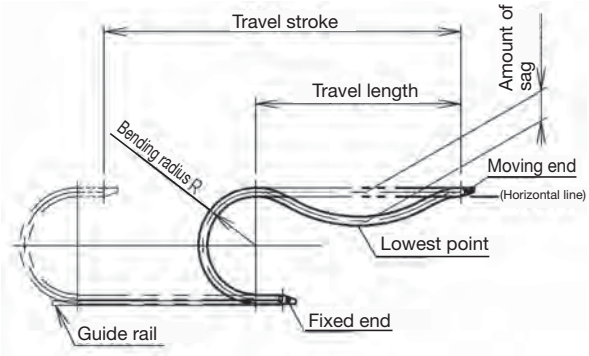
Notes on arrangement

1. Provide clearance between the outer diameter and the inner width of the cable/hose.
2. Lay out the cables/hoses in a row horizontally.
3. Do not arrange the cables/hoses in a way that causes them to interfere with each other.
4. Do not use so many cables/hoses that excessive force is applied to the cable/hose.
5. Use dividers for specifications that allow for the use of dividers. Use a divider that allows only one cable/hose to be used in any one compartment.

Cable Carrier Usage Limitations

●Cable carrier service life

1. As the cable carrier moves (cycles), the pins and holes in the link connections will wear or the no-back-bend limiting portion will wear, causing sag in the travel length portion (see the figure to the right). This will result in the product being determined as having reached the end of its service life when it is no longer possible to guarantee protection of the cables/hoses and stable operation of the cable carrier. This determination is made when the smaller of (1) or (2) below is reached.



Travel length sag limits (guideline)

(1) 10% of travel length
(2) Cable carrier bending radius (R) amount

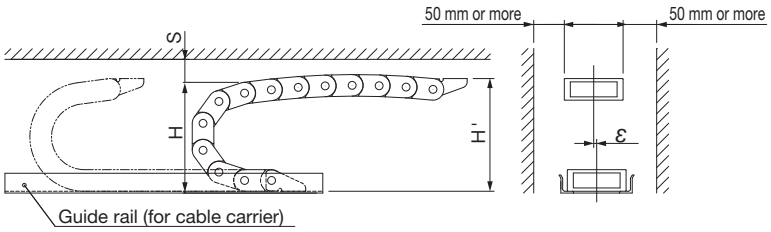
(Ex.) Travel length: 500 mm (⇒ 500 mm × 10% = 50 mm)
Cable carrier bending radius: R55
} Sag amount limit (guideline): 50 mm

2. Should the cable carrier become broken, cracked, or otherwise damaged due to deterioration caused by age, the cable carrier is determined to have reached the end of its service life.

●Factors that affect service life

A cable carrier may reach the end of its service life relatively quickly in the following cases:

1. High acceleration/deceleration or operating frequency
2. Presence of wear caused by abrasives such as dust
3. External vibrations
4. Poor installation



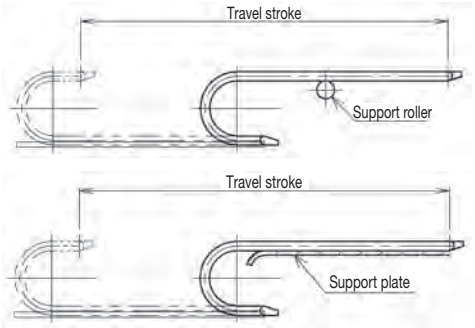
■ Cable carrier installation accuracy guidelines (recommended)

- Misalignment (ε) of moving end and fixed end positions is smaller than the allowable value
- Installation height (H') is within the recommended value range (Note: Do not install at the total height (H).)
- Leeway space (S) is greater than the recommended value
- Provide a guide rail (for cable carrier)

●Prolonging cable carrier service life

To prolong the service life of cable carrier components, installation of support rollers or support plates from the start of operation is recommended to limit sag.

Note: When adding support rollers or support plates if the sag amount in the travel length portion is increasing, the installation position (height) or—for support plates—the shape (where the travel length portion transfers to the rail) must be set with consideration for the amount of sag in the travel length portion at that time.



Cable Carrier Standards

- **Beginning with the cable carrier series, all Tsubaki Group products are compliant with the RoHS directive.**
- **The cable carrier Plastic Series uses HB-class plastics to ensure UL 94 compliance based on the UL standard for fire-resistant safety inspection of plastic products.**

1 Standard arrangement

2 With support rollers

3 With support plates

4 Long-span arrangement

5 Combined arrangement

6 Vertical arrangement

7 Top-fixed arrangement

8 Horizontal arrangement

9 Horizontal rotating arrangement

10 Vertical rotating arrangement

11 Nested arrangement

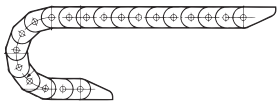
12 Side roller specification

13 Running roller specification

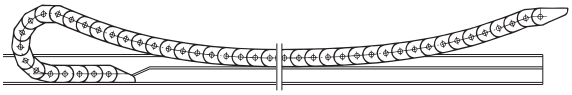
14 Hanging with load bearing bolts

Cable Carrier Inquiries Sheet

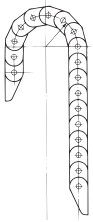
● Installation arrangement



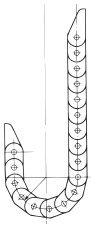
☐ Standard arrangement



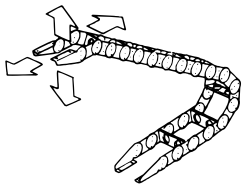
☐ Long-span arrangement



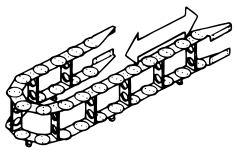
☐ Vertical arrangement (Standing)



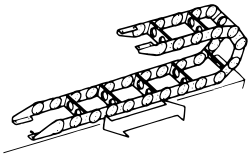
☐ Vertical arrangement (Hanging)



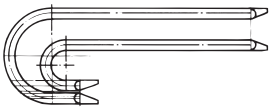
☐ Combined arrangement



☐ Horizontal arrangement

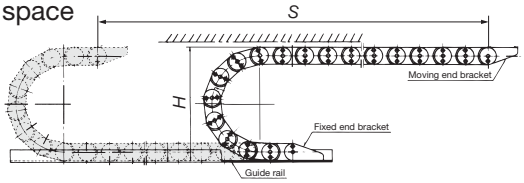


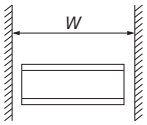
☐ Top-fixed arrangement (lower side movement)



☐ Nested arrangement

● Mounting space





1. Max. travel stroke (*S*) _____ mm (For combination specifications →
2. Allowable installation height (*H*) _____ mm Max. vertical travel stroke _____mm)
3. Allowable installation width (*W*) _____ mm
4. Machine _____
5. Operating environment
   - ● Temperature _____°C
   - ● Humidity _____%
   - ● Select all that apply
     Dirt / Dust / Cutting powder / Soil or Sand / Outdoor environment / Corrosives (acids / alkalis) / Paint
6. Max. acceleration speed _____ m/s^2
7. Travel speed _____ m/min
8. Frequency of use _____ times/day
9. Special remarks _____

● Cable/hose specifications

	Specifications	Outer diameter	Mass kg/m	Number	Allowable bending radius
1	Cable/hose				
2	Cable/hose				
3	Cable/hose				
4	Cable/hose				
5	Cable/hose				
6	Cable/hose				
7	Cable/hose				

*Write the specifications for the top and bottom cables/hoses for stayed systems.

● Desired specifications

1. Material	Plastic	/	Steel
2. Structure	Open	/	Closed
3. Dividers	Required	/	Not required

● Special remarks

Company Name	Department
Name	Tel.
Date of submission	Fax
	E-mail