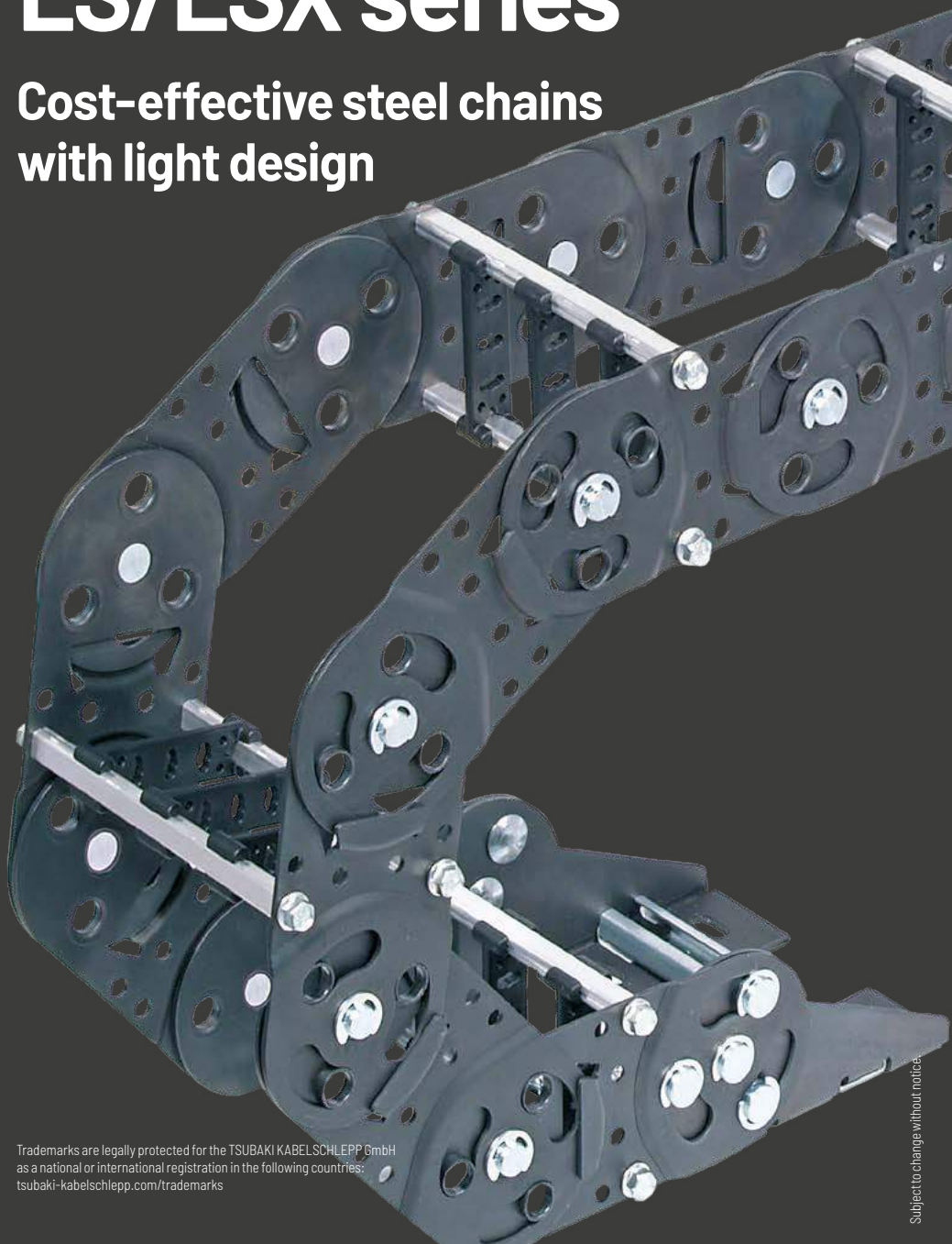
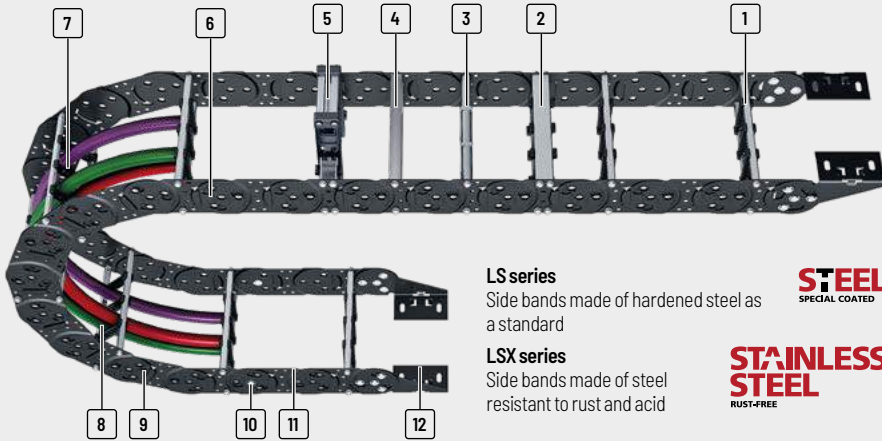


LS/LSX series

**Cost-effective steel chains
with light design**



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as a national or international registration in the following countries:
tsubaki-kabelschlepp.com/trademarks



- 1 All stays available in **1 mm width sections**
- 2 4-fold bolted aluminum stays for extreme loads
- 3 Rolling stays
- 4 Aluminum hole stays

- 5 Mounting frame stays
- 6 Stops integrated into link plate – no additional bolts required
- 7 Different separation options for the cables
- 8 Plastic or steel dividers

- 9 Weight-optimized side bands made of hardened steel or stainless steel
- 10 Optional center bolt for applications with high loads

- 11 Good ratio of inner to outer width – no end divider required
- 12 End connectors for different connection variants

Features

- » Weight-optimized one-part link plate design
- » Better value than comparable steel cable carriers
- » Significantly higher unsupported lengths compared to plastic cable carriers of a similar size
- » Integrated radius and pre-tension stops – in a good value design
- » Bolted stay systems, solid end connectors
- » Cover with steel band available on request
- » Also possible as a double band solution
- » Good corrosion resistance

The design

The weight-optimized link plate design makes the cable carriers very light yet highly sturdy. For the LS series, the unsupported length is significantly higher compared to plastic cable carriers of a similar size.



Weight-optimized link plates consist of only one plate – the stop system is integrated



Lightweight side bands without additional bolts – hardened steel or stainless steel



Optional: Center bolts and circlip for applications with high loads



Optional: C-rail for strain relief elements attached in the connection

MT series

XLT series

ROBOTRAX® System

FLATVEYOR®

CLEANVEYOR®

LS/LSX series

S/SX series

S/SX-Tubes series

Accessories

TRAXLINE®

Type	Opening variant	Stay variant	h_i [mm]	h_G [mm]	B_i [mm]	B_k [mm]	B_i - grid [mm]	t [mm]	KR [mm]	Additional load ≤ [kg/m]	Cable- d _{max} [mm]
LS/LSX1050											
		RS2	58	80	84 – 384	100 – 400	1	105	105 – 430	35	46
		RV	58	80	84 – 584	100 – 600	1	105	105 – 430	35	46
		RR	54	80	84 – 484	100 – 500	1	105	105 – 430	35	43
		LG	48	80	82 – 582	100 – 600	1	105	105 – 430	35	38
		RMA	58 (200)	80 (226)	184 – 384	200 – 400	1	105	105 – 430	35	–

Sturdy and durable, even under extreme conditions

Double-band steel cable carrier LS1050

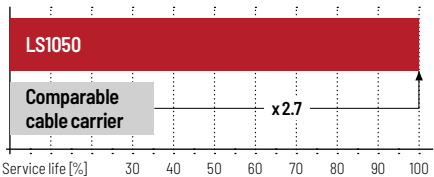
- » Up to 40% longer unsupported lengths compared to LS1050 with standard side band with the same additional load, as part of the load diagram
- » Very high additional loads: up to 40 kg/m possible
- » Long service life even with high dynamic loads
- » High travel speeds



Longer service life through hardened side bands

The hardened surface significantly increases the service life of the LS1050. Tests were carried out on cable carriers with identical designs.

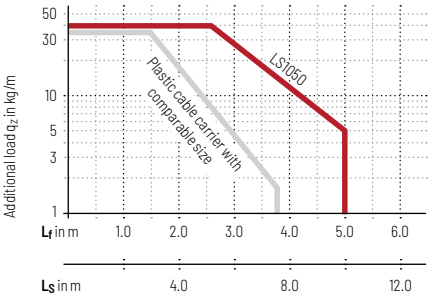
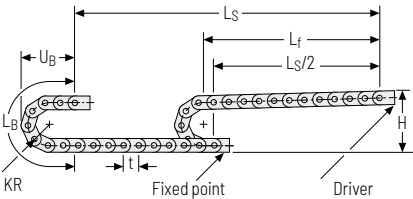
The LS1050 is therefore ideal for applications with many travel cycles, for example in 3-shift operation.



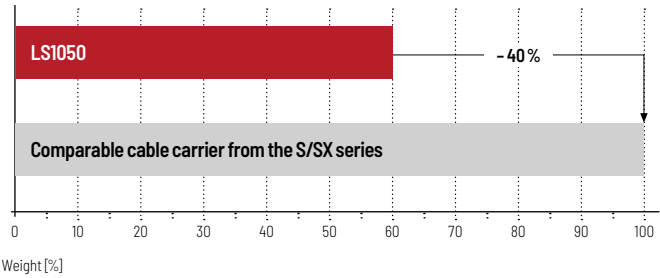
Unsupported arrangement			Gliding arrangement			Inner Distribution				Movement			Page
Travel length ≤ [m]	v_{max} ≤ [m/s]	a_{max} ≤ [m/s ²]	Travel length ≤ [m]	v_{max} ≤ [m/s]	a_{max} ≤ [m/s ²]	TS0	TS1	TS2	TS3	vertical hanging or standing	lying on the side	rotating arrangement	
9.5	5	10	-	-	-	•	•	•	•	•	-	-	700
9.5	5	10	-	-	-	•	•	•	•	•	-	-	704
9.5	5	10	-	-	-	•	•	-	-	•	-	-	708
9.5	5	10	-	-	-	-	-	-	-	•	-	-	710
9.5	5	10	-	-	-	•	-	-	-	•	-	-	712

Significantly higher unsupported lengths compared to plastic cable carriers of a similar size

Load diagram for unsupported length depending on the additional load



Weight-optimized through adapted link plate design



LS/LSX1050



Pitch
105 mm



Inner height
48 – 58 mm



Chain widths
100 – 600 mm



Bending radii
105 – 430 mm

Stay variants



Aluminum stay RS 2 page 700

Frame stay narrow, bolted

- » Quick to open and close.
- » Aluminum profile bars for light to medium loads. Easy threaded connection.
- » **Inside/outside:** Threaded joint easy to release.



Aluminum stay RV page 704

Frame stay, reinforced

- » Aluminum profile bars for medium to heavy loads and large cable carrier widths. Double threaded joint on both sides.
- » **Inside/outside:** Threaded joint easy to release.



Tube stay RR page 708

Frame stay, tube version

- » Steel rolling stays with gentle cable support and steel dividers. Ideal for using media hoses with soft sheathing.
- » **Inside/outside:** Screw connection detachable.



Aluminum stay LG page 710

Frame stay, split

- » Optimum cable routing in the neutral bending line. Split version for easy cable routing. Stays also available unsplit.
- » **Inside/outside:** Threaded joint easy to release.



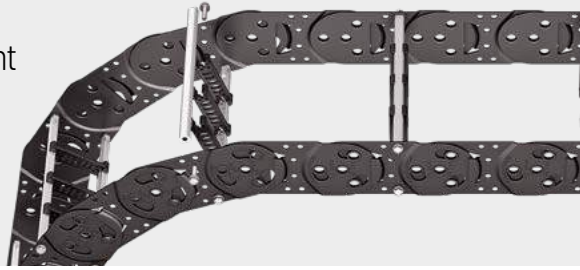
Aluminum stay RMA page 712

Mounting frame stay

- » Aluminum profile bars with plastic mounting frame stays for guiding very large cable diameters.
- » **Outside/inside:** Screw-fixing easy to release.

Aluminum stay RS 2 – frame stay narrow, threaded joint

- » Quick to open and close
- » Aluminum profile bars for light to medium loads.
Simple threaded joint.
- » Available customized in **1 mm grid**.
- » **Inside/outside:** Threaded joint easy to release.



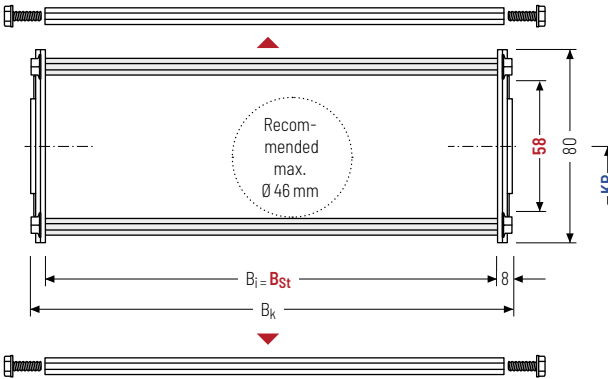
Stay arrangement on every
2nd chain link, **standard**
(HS: half-stayed)



Stay arrangement on each
chain link (**VS: fully-stayed**)



1 mm B_k 100 – 400 mm
in **1 mm** width sections



The maximum cable diameter strongly depends on the bending radius and the desired cable type. Please contact us.

Calculating the cable carrier length

Cable carrier length L_k

$$L_k \approx \frac{L_S}{2} + L_B$$

Cable carrier length L_k
rounded to pitch t

h _i [mm]	h _G [mm]	B _i [mm]	B _{St} [mm]*	B _k [mm]	KR [mm]					q _k [kg/m]
58	80	84 384	84 384	B _{St} + 16	105 295	125 325	155 365	195 430	260	3.63 4.11

* in 1 mm width sections

Order example

	LS1050 Type	180 B _{St} [mm]	RS 2 Stay variant	125 KR [mm]	Sb Material	2415 L _k [mm]	HS Stay arrangement
--	----------------	-----------------------------	----------------------	----------------	----------------	-----------------------------	------------------------

Divider systems

As a standard, the divider system is mounted on each crossbar – for stay mounting on every 2nd chain link (HS).

As a standard, dividers and the complete divider system (dividers with height separations) can be moved in the cross section (**version A**).

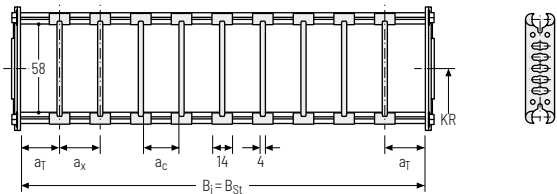
For applications with lateral acceleration and rotated by 90°, the dividers can be attached by simply clipping on a socket (available as an accessory).

The socket additionally serves as a spacer between the dividers and is available in 1 mm sections between 3 – 50 mm as well as 16.5 and 21.5 mm (**version B**).

Divider system TS0 without height separation

Vers.	a _T min [mm]	a _x min [mm]	a _c min [mm]	η _T min
A	7	14	10	-

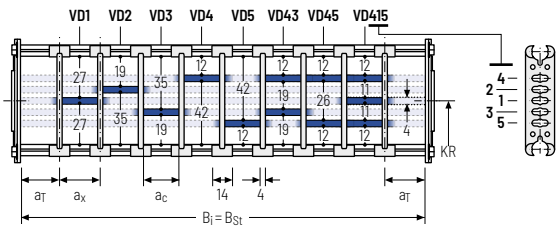
The dividers can be moved in the cross section.



Divider system TS1 with continuous height separation

Vers.	a _T min [mm]	a _T max [mm]	a _x min [mm]	a _c min [mm]	η _T min
A	7	25	14	10	2

The dividers can be moved in the cross section.

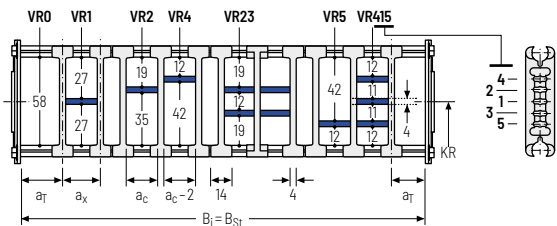


Divider system TS2 with partial height separation

Vers.	a _T min [mm]	a _x min [mm]	a _c min [mm]	η _T min
A	7	23	19	2

With grid distribution (1 mm grid).
The dividers are attached by the height separation, the grid can be moved in the cross section.

Sliding dividers are optionally available (thickness of divider = 4 mm).



Please note that the real dimensions may deviate slightly from the values indicated here.

Order example



TS2	A	3	K1	34	VR1
			⋮	⋮	⋮
			K4	38	VR3
Divider system	Version	η _T	Chamber	a _x	Height separation

MT series

XLT series

ROBOTRAX® System

FLATVEOR®

CLEANVEOR®

LS/LSX series

S/SX series

S/SX-Tubes series

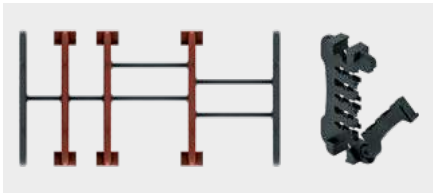
Accessories

TRAXLINE®

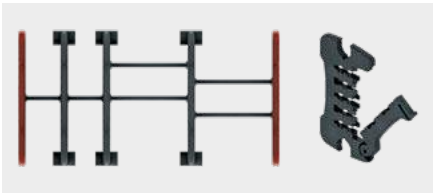
Divider system TS3 with height separation consisting of plastic partitions

As a standard, the divider **version A** is used for vertical partitioning within the cable carrier. The complete divider system can be moved within the cross section.

Divider version A



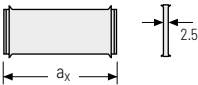
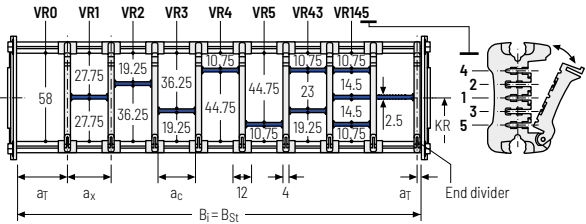
End divider



Vers.	a _T min [mm]	a _x min [mm]	a _c min [mm]	nr min
A	6 / 2*	14	10	2

* For End divider

The dividers are fixed by the partitions, the complete divider system is movable in the cross section.



a _x (center distance of dividers) [mm]																	
a _c (nominal width of inner chamber) [mm]																	
14	16	19	23	24	28	29	32	33	34	38	39	43	44	48	49	54	
10	12	15	19	20	24	25	28	29	30	34	35	39	40	44	45	50	
58	59	64	68	69	74	78	79	80	84	88	89	94	96	99	112		
54	55	60	64	65	70	74	75	76	80	84	85	90	92	95	108		

When using partitions with **a_x > 49 mm** we recommended an additional preferential central support.

Order example



TS3

A

3

K1

34

VR1

⋮

K4

38

VR3

Divider system

Version

nr

Chamber

ax

Height separation

Please state the designation of the divider system (TS0, TS1,...), version and number of dividers per cross section [nr]. In addition, please also enter the chambers [K] from left to right, as well as the assembly distances [a_T/a_x] (as seen from the driver).

If using divider systems with height separation (TS1, TS3) please also state the positions [e.g. VD23] viewed from the left driver belt. You are welcome to add a sketch to your order.



Subject to change without notice

Aluminum stay RV – frame stay reinforced

- » Aluminum profile bars for medium to heavy loads and large cable carrier widths. Double threaded joint on both sides.
- » Available customized in **1 mm grid**.
- » **Inside/outside:** Threaded joint easy to release.



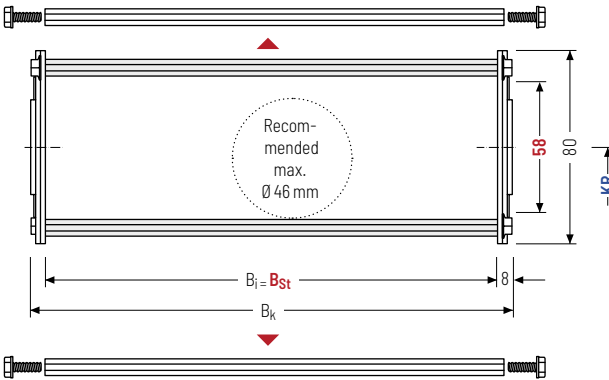
Stay arrangement on every 2nd chain link, **standard** (HS: half-stayed)



Stay arrangement on each chain link (**VS: fully-stayed**)



1 mm B_k 100 – 600 mm in 1 mm width sections



Divider systems

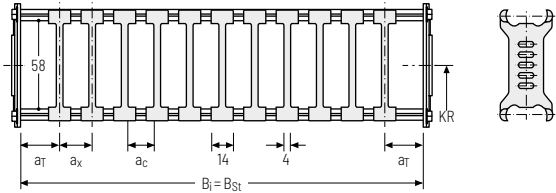
As a standard, the divider system is mounted on each crossbar – for stay mounting on every 2nd chain link (HS).

As a standard, dividers and the complete divider system (dividers with height separations) can be moved in the cross section (**version A**).

Divider system TS0 without height separation

Vers.	a _T min [mm]	a _x min [mm]	a _c min [mm]	n _T min
A	7	14	10	-

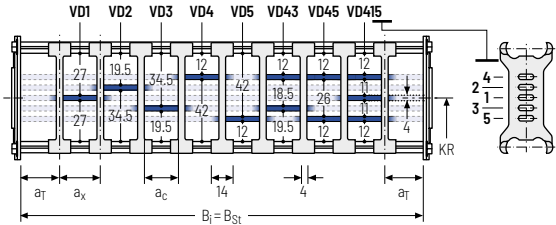
The dividers can be moved in the cross section.



Divider system TS1 with continuous height separation

Vers.	a _T min [mm]	a _T max [mm]	a _x min [mm]	a _c min [mm]	n _T min
A	7	25	14	10	2

The dividers can be moved in the cross section.

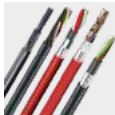
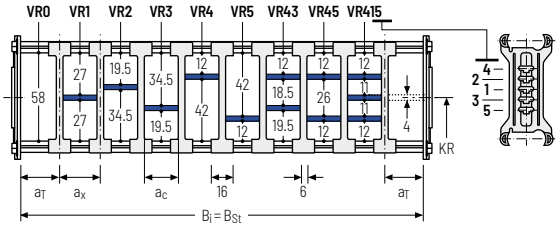


Divider system TS2 with partial height separation

Vers.	a _T min [mm]	a _x min [mm]	a _c min [mm]	n _T min
A	8	21	15	2

With grid distribution (**1 mm grid**).
The dividers are attached by the height separation, the grid can be moved in the cross section.

Sliding dividers are optionally available (thickness of divider = 4 mm).



TRAXLINE® cables for cable carriers

Hi-flex electric cables which were especially developed, optimized and tested for use in cable carriers can be found at tsubaki-kabelschlepp.com/traxline

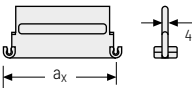
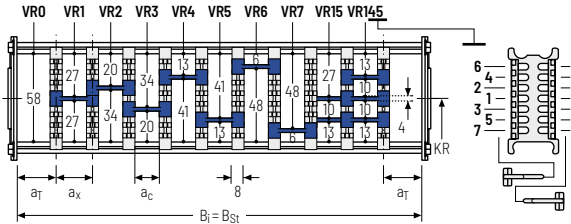
MT series
XLT series
ROBOTRAX® System
FLATVEVOR®
CLEANVEVOR®
LS/LSX series
S/SX series
S/SX-Tubes series
Accessories
TRAXLINE®

Divider system TS3 with height separation made of plastic partitions

Vers.	a _T min [mm]	a _x min [mm]	a _c min [mm]	n _T min
A	4	16 / 42*	8	2

* For aluminum partitions

The dividers are fixed by the partitions, the complete divider system is movable in the cross section.



Aluminum partitions in 1 mm increments with **a_x > 42 mm** are also available.

a _x (center distance of dividers) [mm]											
a _c (nominal width of inner chamber) [mm]											
16	18	23	28	32	33	38	43	48	58	64	68
8	10	15	20	24	25	30	35	40	50	56	60
78	80	88	96	112	128	144	160	176	192	208	
70	72	80	88	104	120	136	152	168	184	200	

When using **plastic partitions with a_x > 112 mm**, we recommend an additional center support with a **twin divider** (S_T = 4 mm). Twin dividers are also suitable for retrofitting in the partition system.

Order example

TS3

A

3

K1

34

VR1

⋮

K4

38

VR3

Divider system

Version

n_T

Chamber

a_x

Height separation

Please state the designation of the divider system (**TS0, TS1...**), version and number of dividers per cross section [n_T]. In addition, please also enter the chambers [K] from left to right, as well as the assembly distances [a_T/a_x] (as seen from the driver).

If using divider systems with height separation (**TS1, TS3**) please also state the positions [e.g. VD23] viewed from the left carrier belt. You are welcome to add a sketch to your order.

More product information online



Assembly instructions etc.:
Additional info via your smartphone or
check online at
[tsubaki-kabelschlepp.com/
downloads](https://tsubaki-kabelschlepp.com/downloads)



Configure your cable carrier here:
online-engineer.de



Subject to change without notice.

MT
series

XLT
series

ROBOTRAX®
System

FLATVEYOR®

CLEANVEYOR®

LS/LSX
series

S/SX
series

S/SX-Tubes
series

Accessories

TRAXLINE®

Tube stay RR –
frame stay, tube version

- » Steel rolling stays with gentle cable support and steel dividers. Ideal for using media hoses with soft sheathing. Easy screw connection.
- » Available customized in **1 mm width sections**.
- » **Inside/outside: Screw connection detachable**
- » **Option:** Divider systems made from steel and stainless steel ER 1, ER 1S.



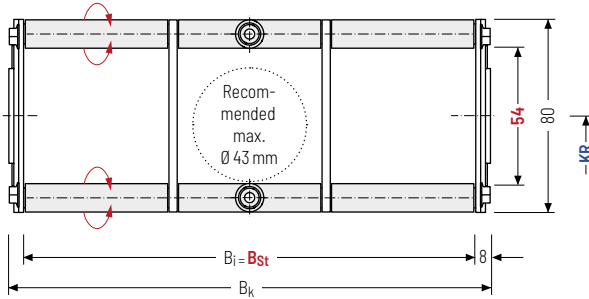
Stay arrangement on every
2nd chain link, **standard**
(HS: half-stayed)



Stay arrangement on each
chain link (**VS: fully-stayed**)



1 mm B_k 100 – 500 mm
in **1 mm width sections**



The maximum cable diameter strongly depends on the bending radius and the desired cable type. Please contact us.

Calculating the
cable carrier length

Cable carrier length L_k

$$L_k \approx \frac{L_S}{2} + L_B$$

Cable carrier length L_k
rounded to pitch t

h _i [mm]	h _G [mm]	B _i [mm]	B _{St} [mm]*	B _k [mm]	KR [mm]					q _k [kg/m]
54	80	84 484	84 484	B _{St} + 16	105 295	125 325	155 365	195 430	260	4.25 7.80

* In 1 mm width sections



LS1050
Type

180
B_{St} [mm]

RR
Stay variant

125
KR [mm]

Sb
Material

2415
L_k [mm]

HS
Stay arrangement

Divider systems

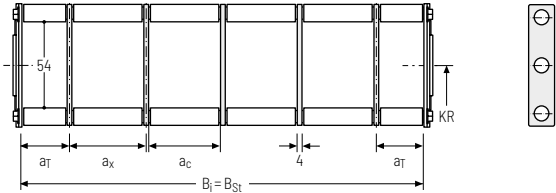
As a standard, the divider system is mounted on each crossbar – for stay mounting on every 2nd chain link (HS).

The dividers are fixed through the tubes.
The tube additionally serves as a spacer between the dividers (**version B**).

Divider system TSO without height separation

Vers.	a _T min [mm]	a _x min [mm]	a _c min [mm]	n _T min
B	20	20	16	–

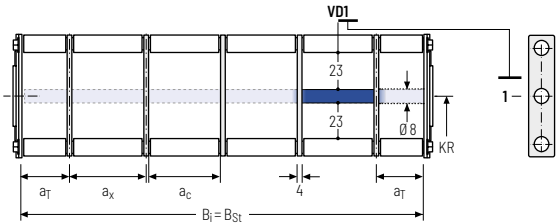
The dividers can be moved in the cross section.



Divider system TS1 with continuous height separation

Vers.	a _T min [mm]	a _T max [mm]	a _x min [mm]	a _c min [mm]	n _T min
B	20	25	20	16	2

The dividers can be moved in the cross section.



Order example

TS1	.	B	.	3	.	K1	.	34	-	VDO
						⋮		⋮		⋮
						K4	.	38	-	VDO
Divider system		Version		n _T		Chamber		a _x		Height separation

Please state the designation of the divider system (**TS0, TS1...**), version and number of dividers per cross section [n_T]. In addition, please also enter the chambers [K] from left to right, as well as the assembly distances [a_T/a_x] (as seen from the driver).



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MT series

XLT series

ROBOTRAX® System

FLATVEYOR®

CLEANVEYOR®

LS/LSX series

S/SX series

S/SX-Tubes series

Accessories

TRAXLINE®

Aluminum stay LG – hole stay, split version

- » Optimum cable routing in the neutral bending line.
Split version for easy cable routing. Stays also available unsplit.
- » Available customized in **1 mm grid**.
- » **Inside/outside:** Threaded joint easy to release.

HEAVY DUTY
TSUBAKI KABELSCHLEPP



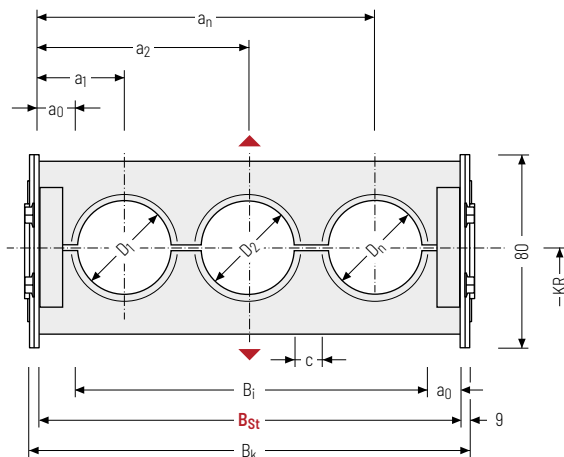
Stay arrangement on every
2nd chain link, **standard**
(HS: half-stayed)



Stay arrangement on each
chain link (**VS: fully-stayed**)



1 mm B_k 100 – 600 mm
in 1 mm width sections



The maximum cable diameter strongly depends on the bending radius and the desired cable type. Please contact us.

Calculating the cable carrier length

Cable carrier length L_k

$$L_k \approx \frac{L_S}{2} + L_B$$

Cable carrier length L_k
rounded to pitch t

Calculating the stay width

Stay width B_{St}

$$B_{St} = \sum D + \sum c + 2 a_0$$

D _{max} [mm]	D _{min} [mm]	h _G [mm]	B _i [mm]	B _{St} [mm]*	B _k [mm]	c _{min} [mm]	a _{0 min} [mm]	KR [mm]					q _k 50 %** [kg/m]
48	12	80	54 554	82 582	B _{St} +18	4	14	105 295	125 325	155 365	195 430	260	4.00 7.99

* in 1 mm width sections ** Hole ratio of the hole stay approx. 50 %



LS1050

Type

180

B_{St} [mm]

LG

Stay variant

125

KR [mm]

Sb

Material

2415

L_k [mm]

HS

Stay arrangement



Subject to change without notice.

Aluminum stay RMA –
mounting frame stay

- » Aluminum profile bars with plastic mounting frame stays for guiding very large cable diameters.
- » The mounting frame stay can be mounted either inside or outside in the bending radius. Available customized in **1 mm width sections**.
- » **Outside/inside:** Screw-fixing easy to release.



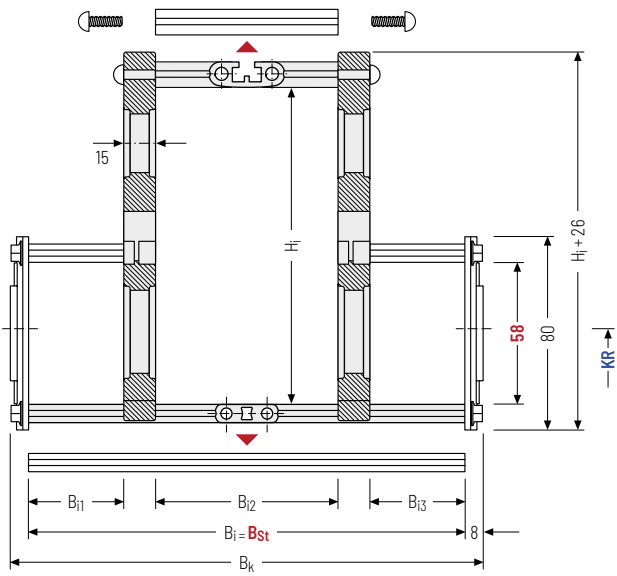
Stay arrangement on every 2nd chain link, **standard** (HS: half-stayed)



Stay arrangement on each chain link (**VS: fully-stayed**)



1mm B_k 200 – 400 mm in 1 mm width sections



The maximum cable diameter strongly depends on the bending radius and the desired cable type. Please contact us.

Calculating the cable carrier length

Cable carrier length **L_k**

$$L_k \approx \frac{L_S}{2} + L_B$$

Cable carrier length **L_k** rounded to pitch **t**



Intrinsic cable carrier weight

Determining the intrinsic cable carrier weight strongly depends on the selected stay arrangement. Please contact us.

h_i [mm]	H_i [mm]	h_G [mm]	B_i [mm]	B_{i1} min [mm]	B_{i2} min [mm]	B_{i3} min [mm]	B_{St} [mm]*	B_k [mm]	KR [mm]		
58	130	80	184 384	35	84	35	184 384	B _{St} + 16	105	125	155
	160								195	260	295
	200								325	365	430

* in 1 mm width sections

Order example

LS1050
Type

280
B_{St} [mm]

RMA2
Stay variant

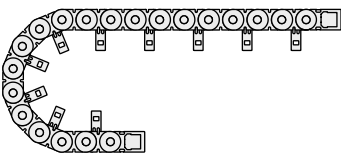
195
KR [mm]

Sb
Material

2415
L_k [mm]

HS
Stay arrangement

Assembly variants



RMA 1 – assembly to the inside:

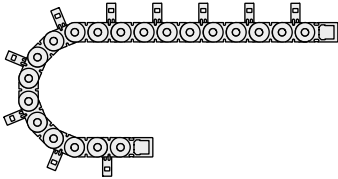
Gliding application is not possible when using assembly version RMA 1.

Observe minimum KR:

$H_f = 130\text{ mm}; KR_{\min} = 195\text{ mm}$

$H_f = 160\text{ mm}; KR_{\min} = 260\text{ mm}$

$H_f = 200\text{ mm}; KR_{\min} = 260\text{ mm}$

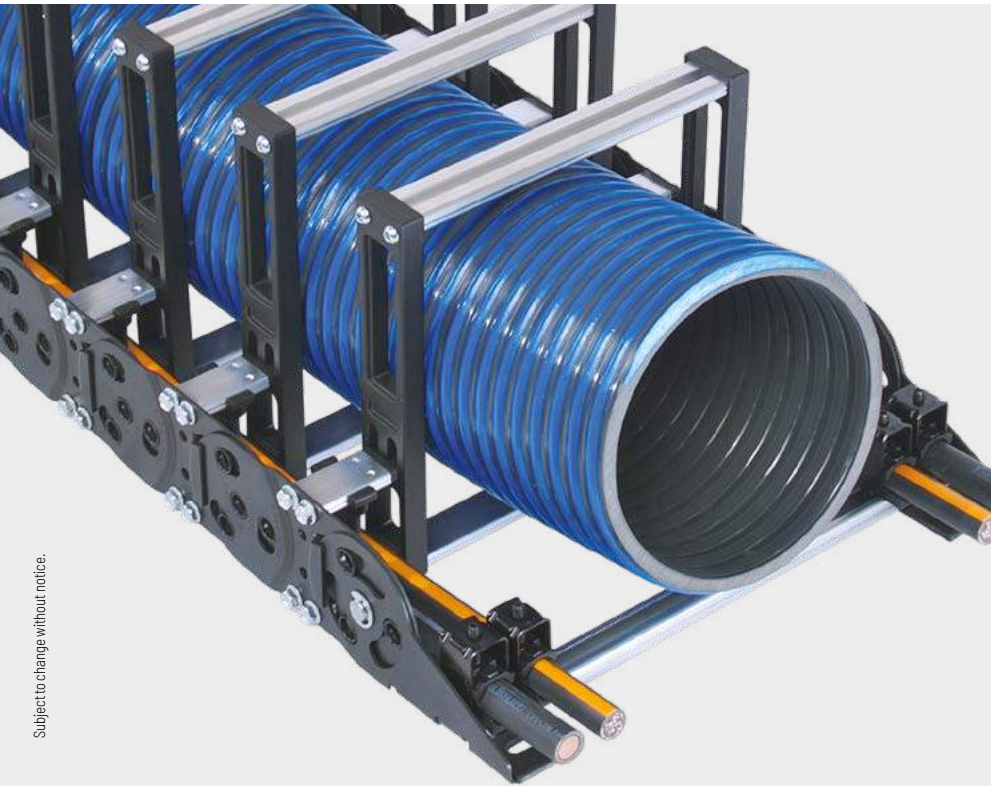


RMA 2 – assembly to the outside:

The cable carrier has to rest on the side bands and not on the stays.

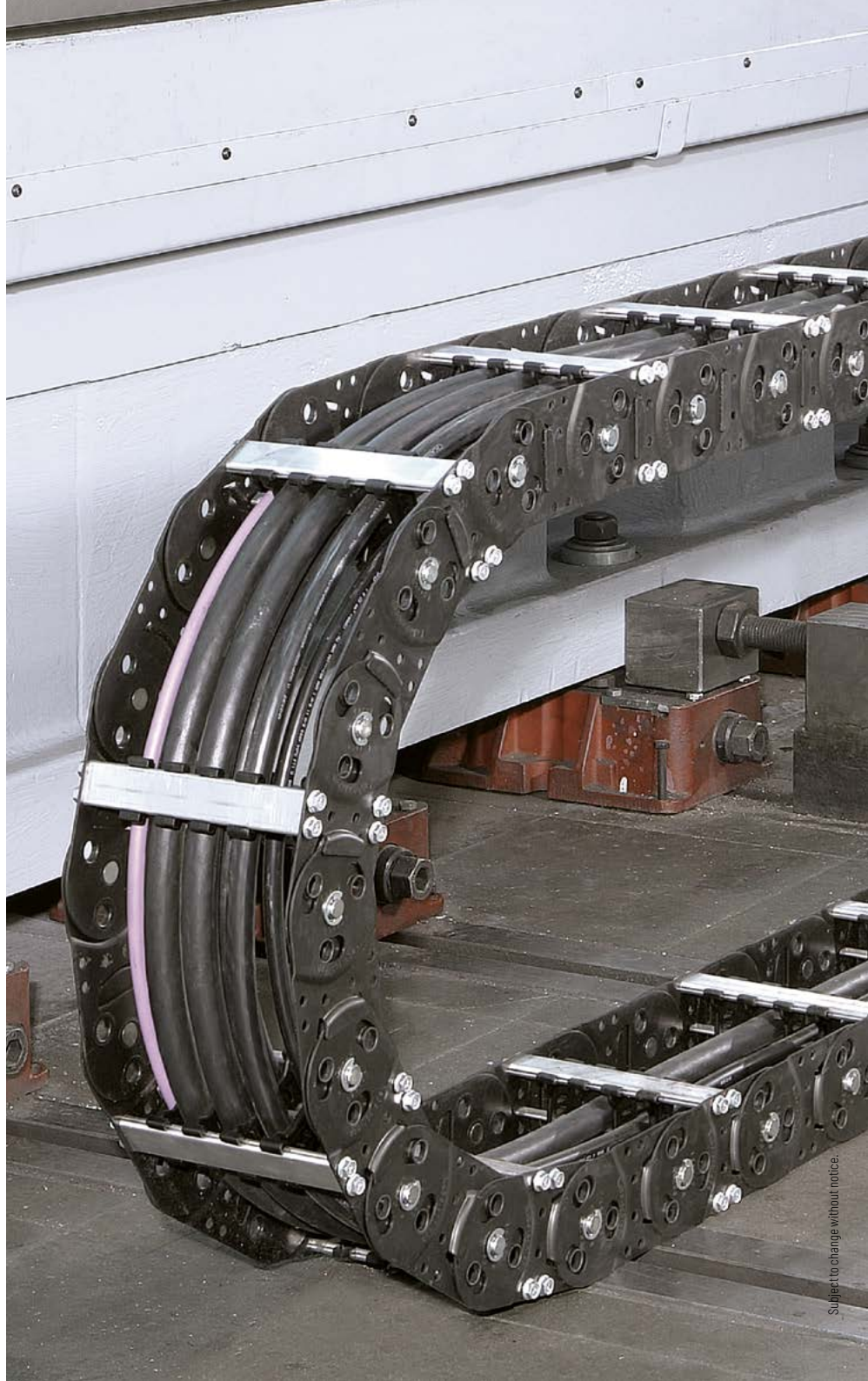
Guiding in a **channel** is **required** for support.
Please contact our technical support at technik@kabelschlepp.de to find the corresponding guide channel.

Please note the operating and installation height.



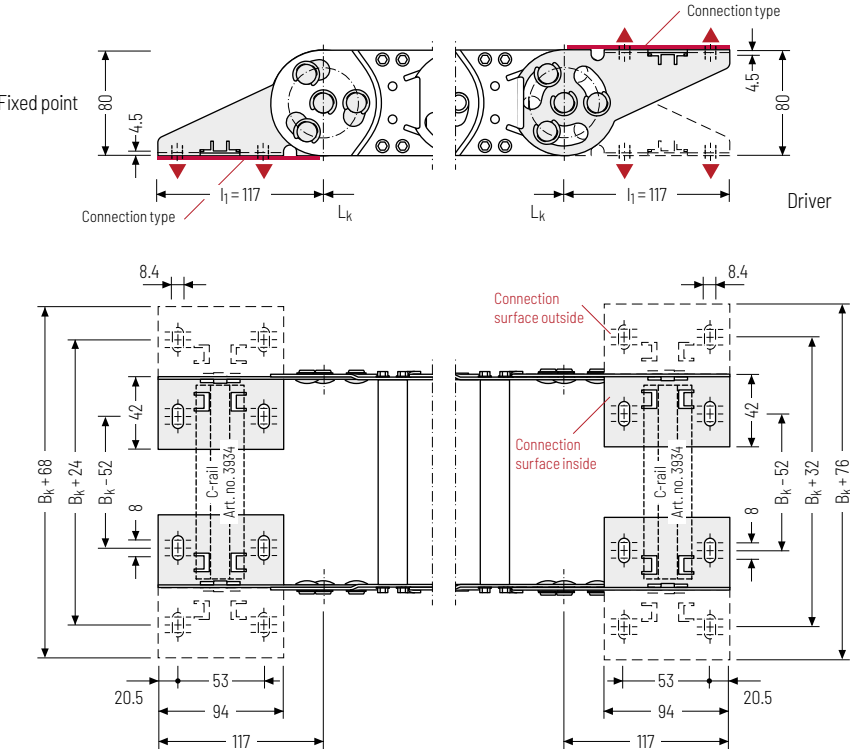
Subject to change without notice.

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XLT series
ROBOTRAX® System
FLATVEYOR®
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LS/LSX series
S/SX series
S/SX-Tubes series
Accessories
TRAXLINE®

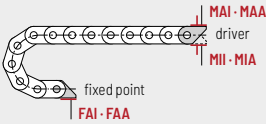


End connectors – steel

End connectors made of steel. The connection variants on the fixed point and on the driver can be combined and, if required, changed afterwards.



▲ Assembly options



Connection point

- F – fixed point
- M – driver

Connecting surface

- A – connecting surface outside
- I – connecting surface inside

Connection type

- A – threaded joint outside (standard)
- I – threaded joint inside

Order example



Steel	F	A	I
Steel	M	A	I
End connector	Connection point	Connection type	Connection surface



We recommend the use of strain reliefs before driver and fixed point. See from p. 902.

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