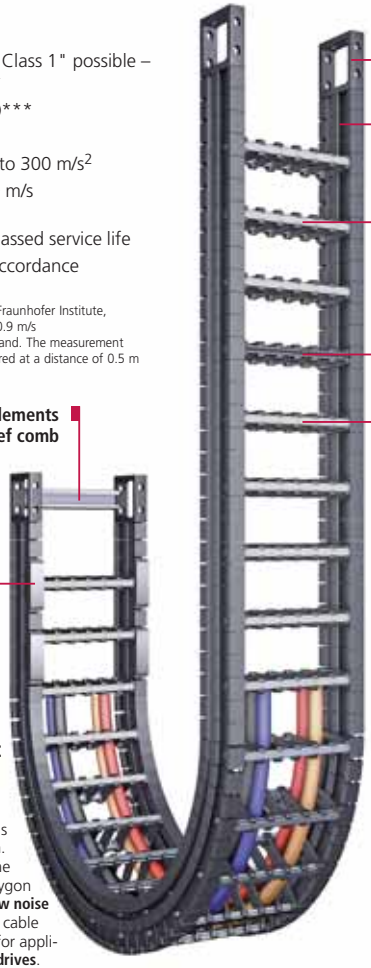
QUANTUM

Light, extremely quiet and low-vibration for high speeds and accelerations*

- **Suitable for clean rooms:** Clean room certification "Class 1" possible – no hinges, no link wear**
- Extremely quiet, 31 db (A)***
- Extremely lightweight
- For high accelerations up to 300 m/s²
- For travel speeds up to 40 m/s
- Very long service life: 25 million cycles = unsurpassed service life
- TÜV design approved in accordance with 2PfG 1036/10.97

** Tested: Q040.77.RE-70-1000 by the Fraunhofer Institute, travel speed V1 = 0.2 m/s and V2 = 0.9 m/s
*** Tested: Q060.100.100 by TÜV Rheinland. The measurement area sound pressure level was measured at a distance of 0.5 m for uniform and jerky movement.



ALMOST **NO POLYGON EFFECT**

QUANTUM Low-vibration operation | Cable carrier with polygon effect

Ideal for highly dynamic applications – extruded side bands

The operation of the QUANTUM is extremely quiet and low-vibration. Due to the link-free design and the very small pitch, the so-called polygon effect is minimized. Due to the **low noise** during operation, the QUANTUM cable carrier system is optimally suited for applications with **low-vibration linear drives**.

Suitable for clean rooms and long service life

Extruded sidebands are installed. In contrast to conventional pin-hole joints, there is almost no wear (link wear), whereby QUANTUM is excellent for use in clean rooms.

Extremely long service life due to

- No link wear on pin-hole joints
- Special plastic and steel cables in the supporting base

Ideal for highly dynamic applications

3D movements: The driver connection can move sideways and can be turned through up to ± 30 degrees

Side bands made of extruded special plastic and steel cables in the supporting base for extremely long service life

*Some features can be different for certain types for design reasons. Our specialists are happy to advise you.

Subject to change.

Inside heights 28 – 72
Inside widths 28 – 600
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Inside heights
28 – 72

Inside widths
28 – 600

Types Q 040, Q 060, Q 080 and Q 100

with plastic or aluminium stays

- Available in 1 mm width sections (aluminium stays)

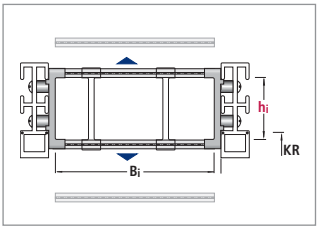
WIDTHSECTIONS
1 mm

- Available in 8 or 16 mm width sections (plastic stays)

Type	h_i	B_i	Maximum travel length in m	Dynamics of unsupported arrangement: Travel speed v_{max} in m/s	Travel acceleration a_{max} in m/s²	Page
Q 040	28	28-284	100	40	300	191
Q 060	42*	38-500	150	30	160	191
Q 080	58	50-600	180	25	100	191
Q 100	72	70-600	200	20	70	191

* with stay variant RE

Dimensions in mm



Stay variants

Frame stay RS made of aluminium

Standard design – Q 060, Q 080, Q 100

For lightweight to medium loads.

Opening options:
Outside/Inside: can be opened quickly and easily simply by rotating the stays through 90°.

Frame stay RV made of aluminium

Reinforced design – Q 080, Q 100

For medium to heavy loads and for large chain widths.

Opening options:
Outside/Inside: can be opened quickly and easily simply by rotating the stays through 90°.

Frame stay RE made of plastic

Q 040, Q 060, Q 080, Q 100

Opening options:
Outside/Inside: simply by turning (through 90°).

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Subject to change.

Types Q 040, Q 060, Q 080 and Q 100

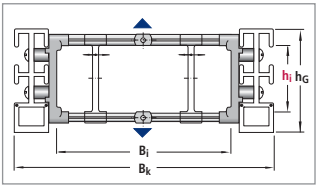
Dimensions and intrinsic weight

WIDTHSECTIONS 1 mm

"Hybrid designs" with aluminium stay systems

Type	Stay variant	h_i	h_G	B_i min	q_k min	B_i max	q_k max	B_k
Q 060	RS	38	60	38	1.25	500	2.40	B_i + 52
Q 080	RS	58	80	50	1.90	600	2.25	B_i + 72
Q 080	RV	58	80	50	2.10	600	2.90	B_i + 72
Q 100	RS	72	98	70	2.60	600	3.40	B_i + 82
Q 100	RV	72	98	70	2.80	600	4.60	B_i + 82

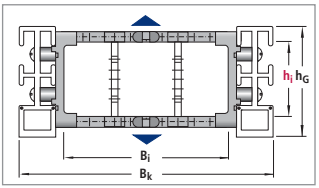
Dimensions in mm/Weights in kg/m



"Plastic designs"

Type	Stay variant	h_i	h_G	B_i min	q_k min	B_i max	q_k max	B_k	Width section
Q 040	RE	28	40	28	0.63	284	0.98	B_i + 40	8
Q 060	RE	42	60	68	1.16	276	1.54	B_i + 52	8
Q 080	RE	58	80	58	1.93	570	2.70	B_i + 72	16
Q 100	RE	72	98	74	2.74	570	3.67	B_i + 82	16

Dimensions in mm/Weights in kg/m



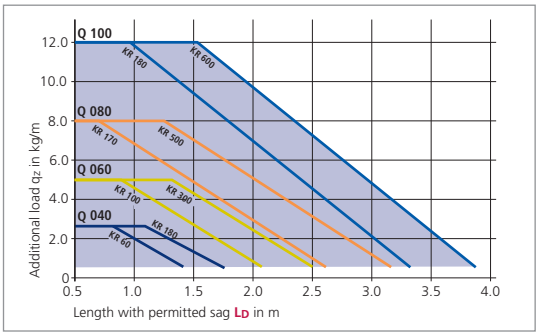
Bend radius and pitch

Type	Bend radii KR mm					
Q 040	60	75	90	110	150	180
Q 060	100	120	150	190	250	300
Q 080	170	200	250	320	420	500
Q 100	180	250	300	370	460	600

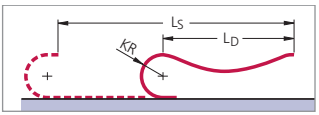
Pitch:
Q 040: t = 15 mm
Q 060: t = 20 mm
Q 080: t = 25 mm
Q 100: t = 30 mm

Load diagram

for length with permissible (desired) sag L_D
depending on the additional load



Length with permissible sag L_D and travel length L_S



In the case of long travel lengths, the cable carriers are placed in a guide channel with the upper trough gliding on the lower trough (see page 305).

We are at your service to advise on these applications.

Example of ordering

Cable Carrier									Divider system		Connection
Q 060	.	200	-	RS	-	150	-	1540	TS 0	/ 2	FU/MU
Type		Inside width B_i in mm		Stay variant		Bend radius KR in mm		Chain length L_k in mm (without connection)	Divider system	Number of dividers n_T	Connection Fixed point/ Driver

Ordering divider systems:
Please state the designation of the divider system (TS 0, TS 1 ...) and the number of dividers. Possibly attach a sketch with the dimensions.

Subject to change.

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Inside widths 28 – 600
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Inside heights
28 – 72

Inside widths
28 – 600

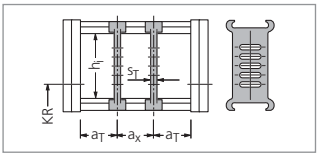
Types Q 040, Q 060, Q 080 and Q 100

Divider system TS 0

Type	Stay variant	h_i mm	S_T mm	$a_{T\,min}$ mm	$a_{x\,min}$ mm
Q 040	RE	28	2.8	8	8
Q 060	RS	38	3	13.5	13
Q 060	RE	42	4.2	14	13
Q 080	RS	58	4	11	14
Q 080	RV	58	4	11	14
Q 080	RE	58	6	12	14.5
Q 100	RS	72	5	11	14
Q 100	RV	72	6	13	16
Q 100	RE	72	8	12	14.5

In the standard version, the dividers are movable.

In the case of plastic stays (stay variant RE), the dividers can also be mounted fixed (note the mounting distances).



Standard mounting distances of the divider systems:

Q 040, Q 060: on every **6th** pitch division

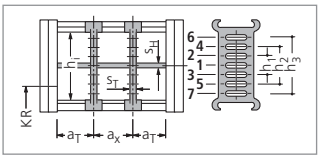
Q 080, Q 100: on every **8th** pitch division

Divider system TS 1 with continuous height subdivision made of aluminium

Type	Stay variant	h_i mm	S_T mm	$a_{T\,min}$ mm	$a_{x\,min}$ mm	S_H mm	h_1 mm	h_2 mm	h_3 mm
Q 040	RE	28	2.8	8	8	2.4	15	–	–
Q 060	RS	38	3	13.5	13	4	15	–	–
Q 060	RE	42	4.2	14	13	2	10	–	–
Q 080	RS	58	4	11	14	4	30	–	–
Q 080	RV	58	4	11	14	4	15	30	–
Q 080	RE	58	6	12	14.5	4	22	–	–
Q 100	RV	72	6	13	16	4	15	30	45
Q 100	RE	72	8	12	14.5	4	32	–	–

In the standard version, the dividers are movable.

In the case of plastic stays (stay variant RE), the dividers can also be mounted fixed (note the mounting distances).



Standard mounting distances of the divider systems:

Q 040, Q 060: on every **6th** pitch division

Q 080, Q 100: on every **8th** pitch division

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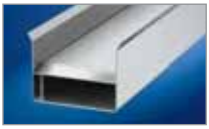
Guide channels
➤ from page 305



Strain relief devices
➤ from page 311

Cables for cable carrier systems
➤ from page 354

Subject to change.

Types Q 040, Q 060, Q 080 and Q 100

Divider systems TS 2 and TS 3

Q 040 with divider system TS 2 with grid subdivision made of aluminium
available in 8 mm section widths.

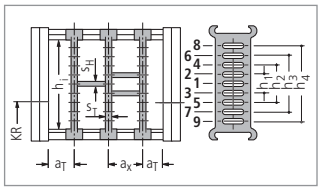
Q 060, Q 080 and Q 100 with divider system TS 3 with with section subdivision, partitions made of plastic
For these types, divider system TS 2 with grid subdivision made of aluminium (1 mm grid) is also available.

Type	Stay variant	h_i mm	S_T mm	$a_{T\,min}$ mm	$a_{x\,min}$ mm	S_H mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm
Q 040 A)	RE	28	2,8	14	8	2,4	15	–	–	–
Q 060 B)	RS	38	8	11	16*	4	14	–	–	–
Q 060 B)	RE	42	8	11	16*	4	14	28	–	–
Q 080 B)	RV	58	8	8	16*	4	14	28	42	–
Q 080 B)	RE	58	8	8	16*	4	14	28	42	–
Q 100 B)	RV	72	8	8	16*	4	14	28	42	56

* When using plastic partitions

A) Only fixed mounting of the divider is possible, and at 8 mm intervals (also see mounting version B in Chapter ME/MK).

B) The dividers are fixed by the partitions, the complete divider system is movable.

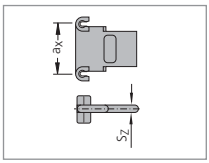


Standard mounting distances of the divider systems:

Q 040, Q 060: on every **6th** pitch division

Q 080, Q 100: on every **8th** pitch division

Dimensions of the plastic partitions for TS 3



Aluminium partitions in 1 mm width sections are also available.

S_Z	a_x (center-to-center distance, dividers)									
4	16	18	23	28	32	33	38	43	48	58
	64	68	78	80	88	96	112	**128**	**144**	**160**
	176	**192**	**208**	–	–	–	–	–	–	–

Dimensions in mm

When using **partitions with a_x > 112 mm** there should be an additional central support with a **twin divider**.

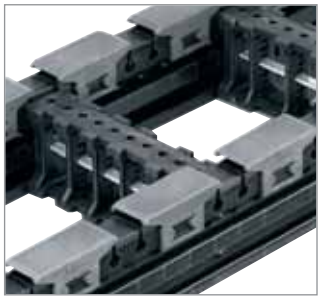
Twin dividers are designed for subsequent fitting in the partition system.

Gliding elements – the economical solution for gliding applications

Replaceable glide shoes made of plastic*

To extend the life of cable carriers in gliding operations KABELSCHLEPP supplies detachable, exchangeable glide shoes. Replaceable glide shoes are a very economical solution. When wear occurs only the glide shoes are replaced, and not the complete cable carrier.

* not for Q 040



Dimensions with glide shoe

Type	Height h_G'	Width B_{EF}'
Q 060	$h_G' = h_G + 6 = 66$	$B_i + 56.0$
Q 080	$h_G' = h_G + 8 = 88$	$B_i + 79.5$
Q 100	$h_G' = h_G + 10 = 108$	$B_i + 89.5$

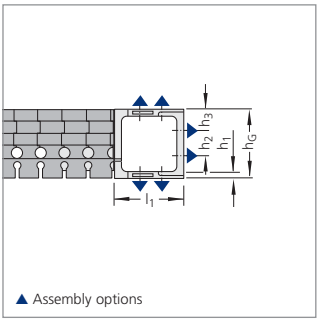
Dimensions in mm

! By means of a positive snap connection, the glide shoes sit firmly on the chain link.

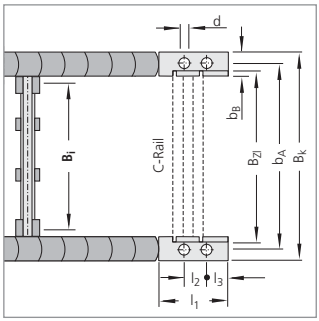
Subject to change.

Types Q 040, Q 060, Q 080 and Q 100

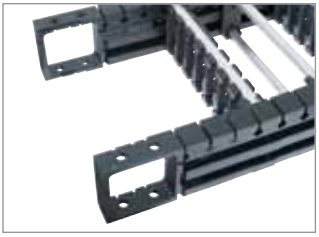
UMB (Universal Mounting Brackets) made of plastic (Q 040/060) or aluminium (Q 080/100)



▲ Assembly options



The dimensions of the fixed point and driver connections are identical.
The connecting elements make the the last 3 pitch divisions at both ends of each sideband immobile.
When ordering please specify the connection type FU/MU (see ordering key on page 347).



Connection dimensions:

Type	B_{ZL}	b_a	B_k	d	l_2	l_3	l_1	h_1	h_2	h_3	h_G	b_B
Q 040	B_i + 16	B_i + 26	B_i + 40	6.6	14	13.0	40	5	14	13.0	40	14
Q 060	B_i + 18	B_i + 32	B_i + 52	6.6	25	17.5	60	5	25	17.5	60	20
Q 080	B_i + 30	B_i + 47	B_i + 72	9	35	22.5	80	8	35	22.5	80	25
Q 100	B_i + 30	B_i + 52	B_i + 82	11	35	32.5	100	10	35	31.5	98	30

Dimensions in mm

Strain relief devices

Strain relief comb made of aluminum on one side (QUANTUM 040, 060)

The cables can be fixed securely and simply using the **optional strain relief combs**.
The strain relief combs are installed between the UMBs, and do not need to be bolted on separately or mounted on a C-Rail.
Please state on the order whether strain relief combs are needed.

■ Strain relief comb made of Aluminium

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Subject to change.

Types Q 040, Q 060, Q 080 and Q 100

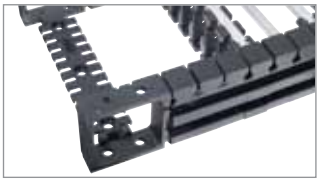
Strain relief devices

Strain relief combs made of plastic on both sides (QUANTUM 060)

The cables can be fixed securely and simply using the **optional strain relief combs**.

The strain relief combs are installed between the UMBs, and do not need to be bolted on separately or mounted on a C-Rail.

Please state on the order whether strain relief combs are needed.



■ Universal mounting bracket with strain relief comb

■ Both-sided strain relief comb

Type	B_i mm	n_Z
Q 060	44	5
Q 060	49	5
Q 060	69	7
Q 060	74	7
Q 060	89	8
Q 060	94	9
Q 060	99	9
Q 060	119	11

Type	B_i mm	n_Z
Q 060	124	11
Q 060	144	13
Q 060	149	13
Q 060	169	15
Q 060	174	15
Q 060	199*	17
Q 060	224*	19

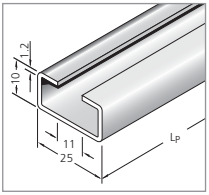
n_Z = Number of teeth on one side of the comb

* on request

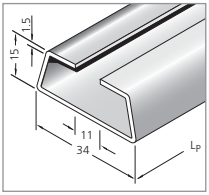
C-rails for LineFix bracket clamps, SZL strain reliefs and clamps

The optional C-rails are fixed by means of the universal mounting brackets and do not have to be screwed separately. **Please state in your order whether C-rails are needed.**

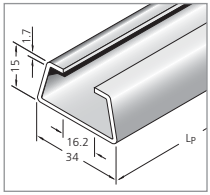
■ Universal mounting bracket with C-rail



■ **QUANTUM 060:**
Integratable C-rail
25 x 10 mm,
slit width 11 mm,
material steel,
Item-No. 3931



■ **QUANTUM 080, 100:**
Integratable C-rail
34 x 15 mm,
slit width 11 mm,
material steel,
Item-No. 3935



■ **QUANTUM 080, 100:**
Integratable C-rail
34 x 15 mm,
slit width 16 – 17 mm,
material aluminium,
Item-No. 3926,
material steel,
Item-No. 3932

Our LineFix strain reliefs are optimally suited for the C-rails. (LineFix bracket clamps and other strain relief devices – see Accessories chapter, from page 311 onwards).

■ C-rail with LineFix strain relief

Subject to change.

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