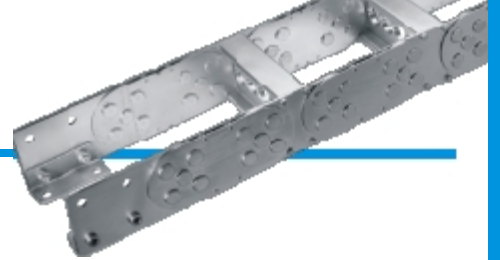


GKA Energy chains



The order text for a steel chain type GKA should contain the following data:

Type / Radius x Length / Width - Connector "Arrangement"; Separator arrangement

- ① **Type** selection is in accordance with diameter and quantity of the lines to be installed. A clearance of at least 10 % for cables and 20 % for hoses should be available.
- ② The **R(radius)** is also dependent on the lines to be installed. Comply with the statements of the manufacturer. Usually 10 times the largest cable diameter can be taken.
- ③ The **Length** of the chain depends on the travel distance. The following formula can be used:
 $L = \text{travel distance} / 2 + 4 \times \text{radius}$ (rounded up to link pitch)
- ④ The **Width** of the chain depends on the number and cross section of the cables to be installed. With slow applications cables can be installed on top of one another, creating extra space.
- ⑤ The **Connectors** depend on the application in question. Where required the connection angle can be slightly modified.
- ⑥ The **Arrangement** is only to be stated in special cases. (see page 29)
- ⑦ The **Separator arrangement** depend on the application. If possible arrange the weight evenly across the stays, heaviest cables and tubes quiet close to the link strands.

Example:

travel distance 9.350 mm; bend radius 1.000 mm; pitch 225mm (GKA 160)

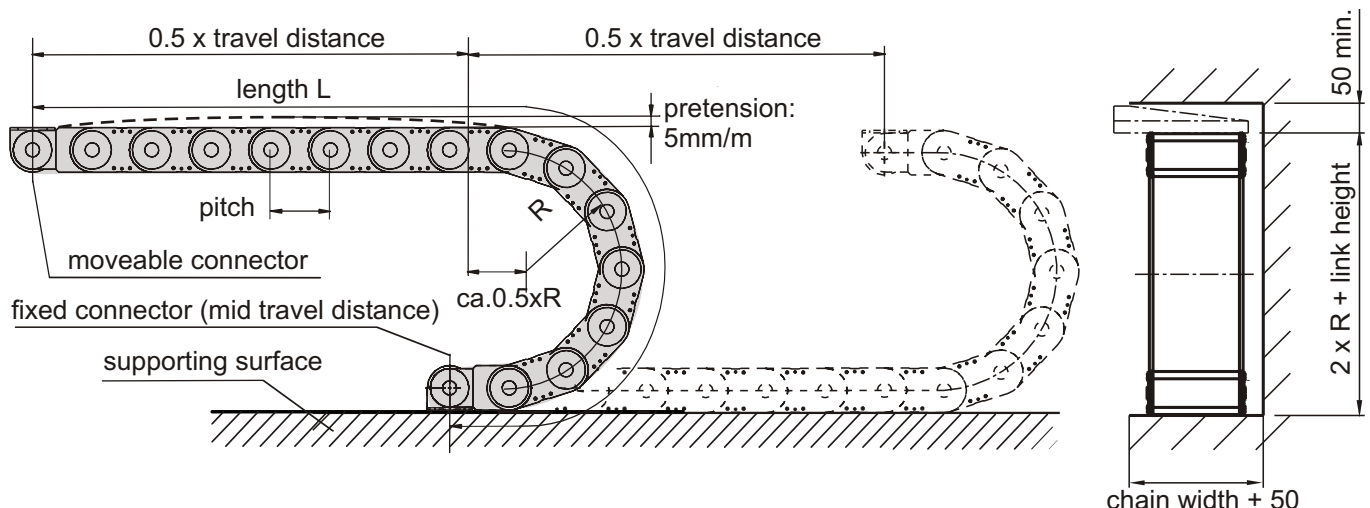
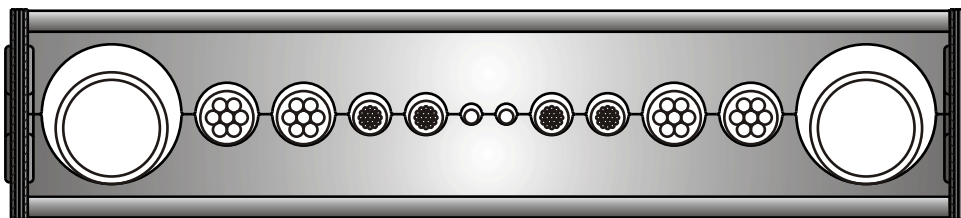
installation: 2 tubes 100; 4 cables 37,3; 4x 24; 2x 10,3

a) theoretical chain length: $9.350 / 2 + 4 \times 1.000 = 8.675$

b) calculation of the number of links: $8.675 / 225 = 38,55$ (chose 39 links)

c) order length $39 \times 225 = 8.775$

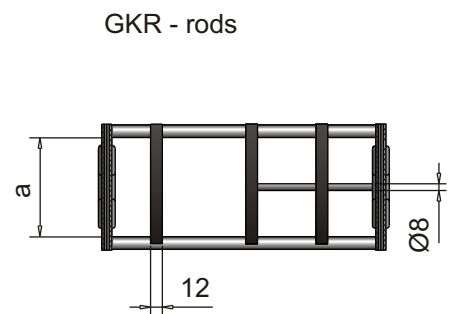
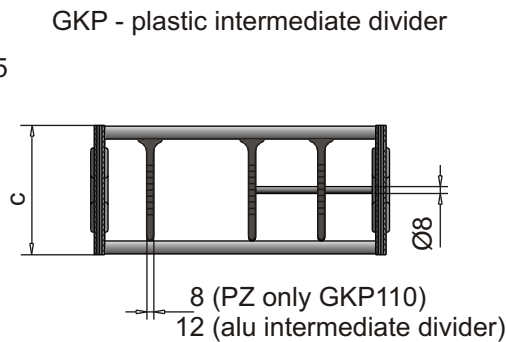
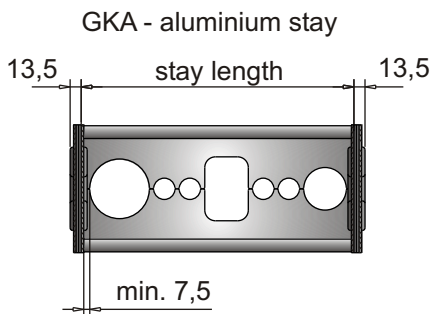
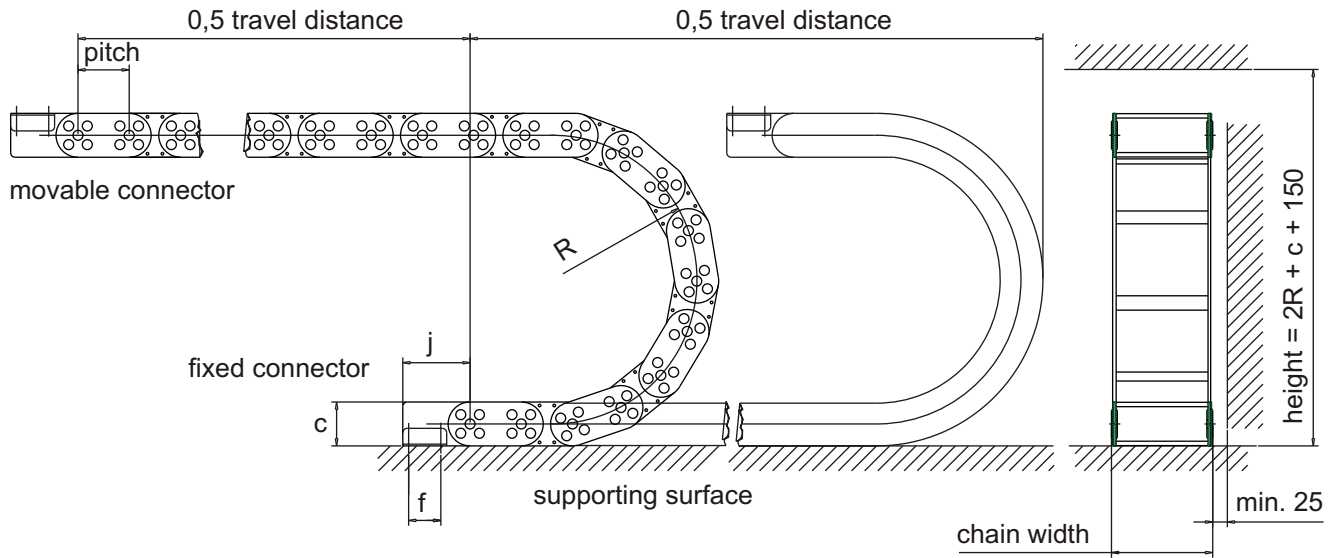
GKA 160 / 1.000 x 8.775 / 660 - D/E



Material:

Energy chain GKA is supplied as standard in galvanized steel. For aggressive environments the chain can be executed in stainless steel (eg. off-shore). The use of hardened chains with large bend radii is recommended for high travel speeds and accelerations.

GKA Dimensions

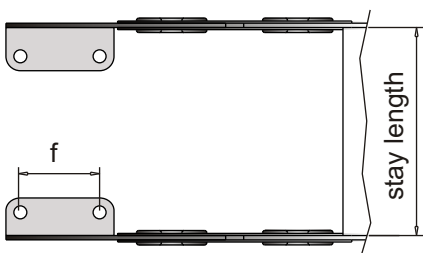


GKA	bend radius R (min)	pitch					free carrying length		weight [kg/m] 500mm stay
			a	c	f	j	m	kg /m	
110	200	175	118	150	110	230	8,5	25	25
160	250	225	168	200	160	300			30
210	300	275	218	250	210	370	9,5	30	40
260	400	325	268	300	260	430			45
310	450	375	318	350	310	500	11	40	55
360	550	425	368	400	360	560			65
410	600	475	418	450	410	620	12	45	75
460	700	525	468	500	460	680			85

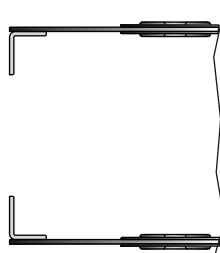
The **bending radius** is acc. to consultation **freely eligible** (notice polygon effect)

Stay variants and connectors can differ from these representations. Energy chains GKA will be produced individually in arrangement with the customer.

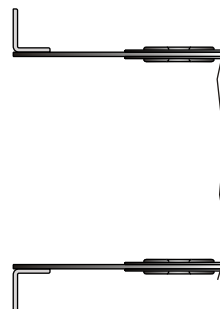
Normal connector
in outer radius



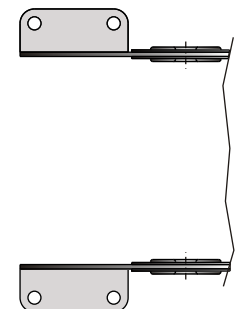
connector A



connector B



connector C
in outer radius



connector E
in inner radius

connector D
in inner radius

GKA Applications

GKA with aluminum profile

A very individual and strong solution which is used primarily in the case of bigger steel chains. The stays are made according to customers order:



smelting plant: GKA 161

GKR with rods

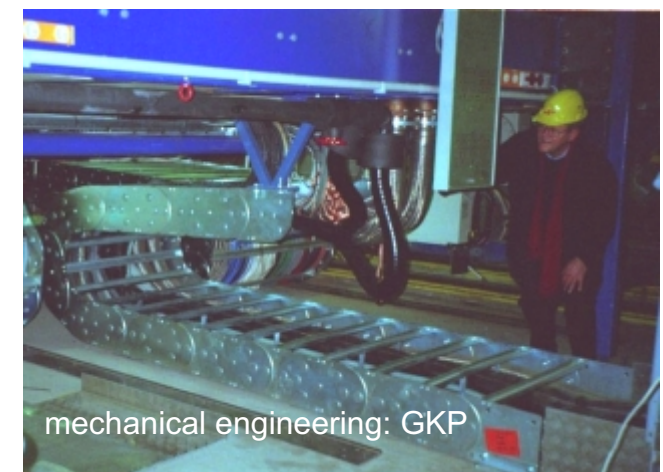
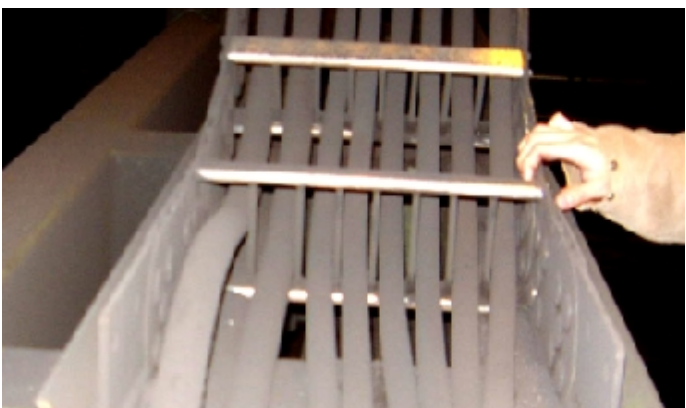
Manufactured of stainless steel this energy chain is offered for off-shore applications generally, since aluminum isn't suitable for these applications. The chains also can be subdivided into different sections by stainless steel horizontal dividers and other separators:



hydroelectric power plant: GKR 260

GKP with plastic dividers (PZ)

This stays and separators are particularly used in heavy-duty industries. Advantages are the low weight and the space saving besides the price.

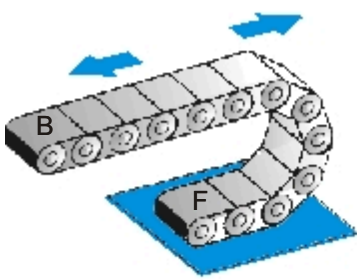


mechanical engineering: GKP

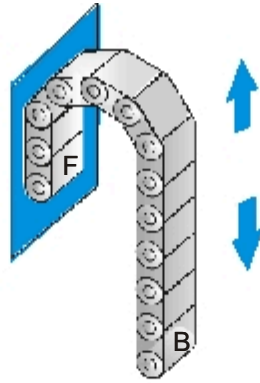
Arrangements

B = moved connector

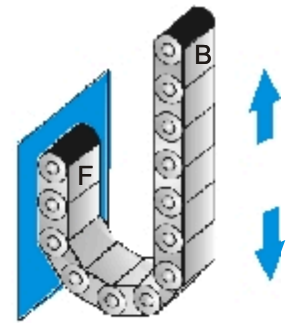
F = fixed connector (mid of travel)



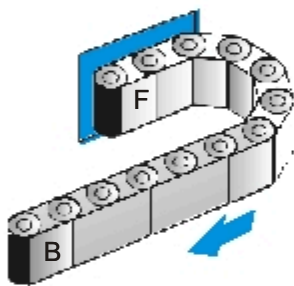
normal (no order comment)



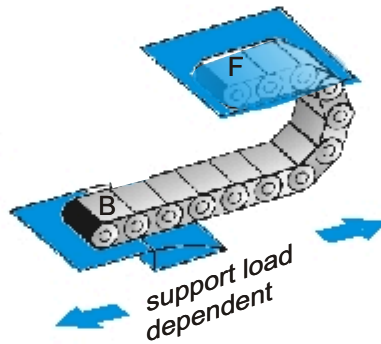
"s" standing (without pretension)



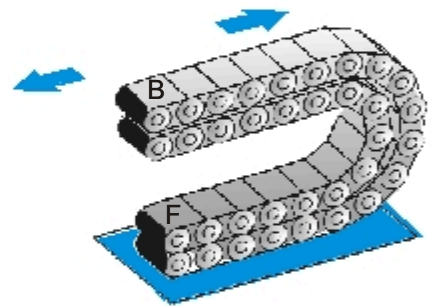
"h" hanging (without pretension)



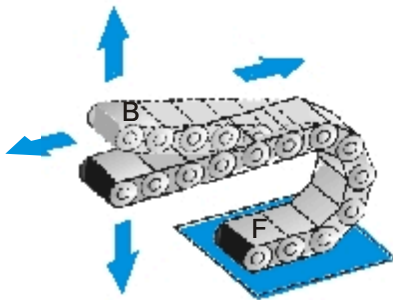
"w" horizontal, laying on side (without pretension)



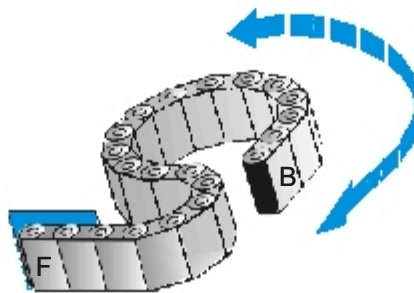
"u" moved end downside



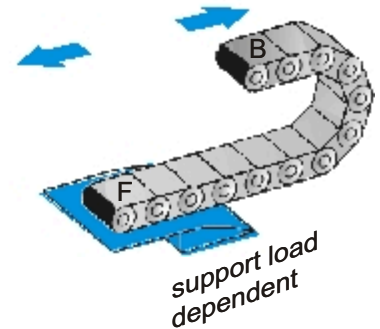
"i" into each other



"m" multiaxial



"k" circular, laying on side



"f" free overhung

There are basic drawings for CAD users in different file formats, which can be imported in existing drawings.

Please request or download.

3D-CAD files will be offered on request:

ekd-gelenkrohr@t-online.de
www.ekd-gelenkrohr.de

