

PKK

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closed + open

PKK CHARACTERISTICS

A development from many years of experience, which combines all the advantages of plastic energy chains to one system:

- positive locking stays
- fast stay assembly and disassembly
- easy to shorten and lengthen
- the three-dimensional chain

All ekd plastic energy chains are equipped with the integrated plastic connector. Additional components for attaching the energy chain are not required.

Dimensions

bending radii:	40	to	500 mm
inner height:	16	to	80 mm
inner width:	30	to	400 mm
energy chain weight:	0.6	to	3.4 kg / m
(see dimensions)			

Travel

The maximum range of travel is determined by the arrangement and the additional weight (line weight). At normal arrangement the maximum travel is double free carrying length. Support rollers or similar constructive steps can increase this value. Travel distances up to 100 meters are possible (see chapter on design guidelines).

Travel speed

There are no limits for the travel speed in general. But at gliding arrangements application specific influences have to be taken into account.

Acceleration

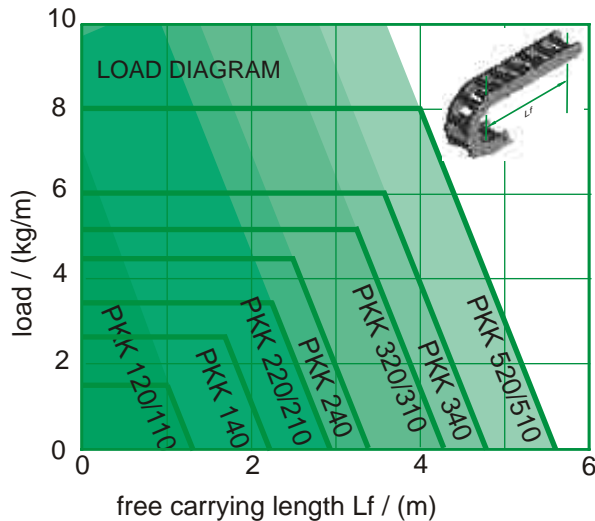
The acceleration is not subject to any restriction. Boundaries can only be achieved at high line tension forces encountered by the weights.

Temperature

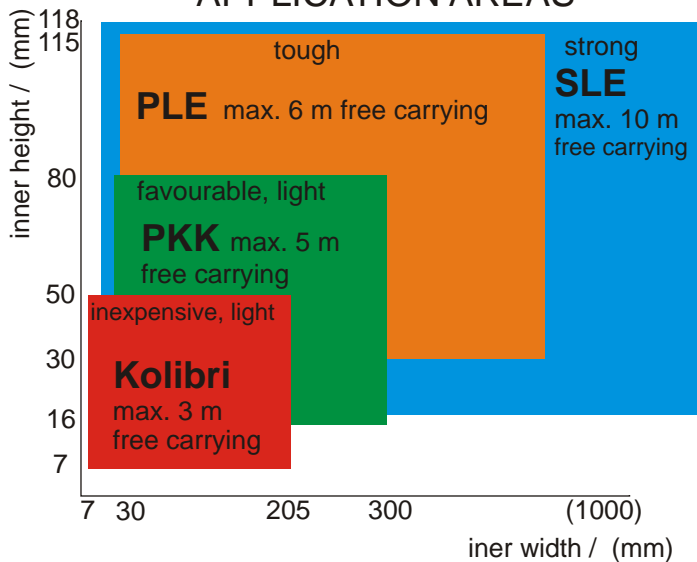
Long term temperature limits are inbetween -20°C and 100°C.

Special versions

- | | |
|----------|------------------------|
| ELTOLA | ... silent running |
| ALLROUND | ... all movements |
| ATEX | ... EX-protection |
| ESD | ... antistatic |
| V-0 | ... self extinguishing |



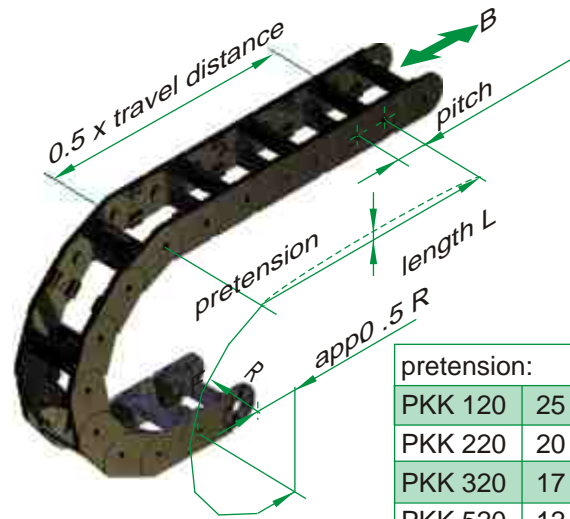
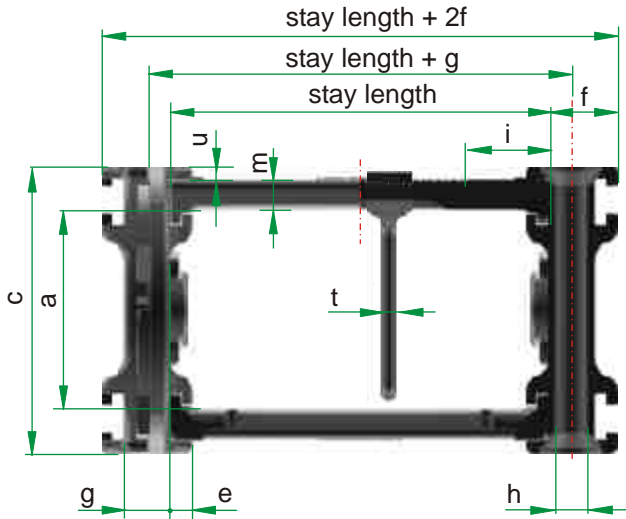
APPLICATION AREAS





robotics, handling equipment,
machine tools,
textile machinery

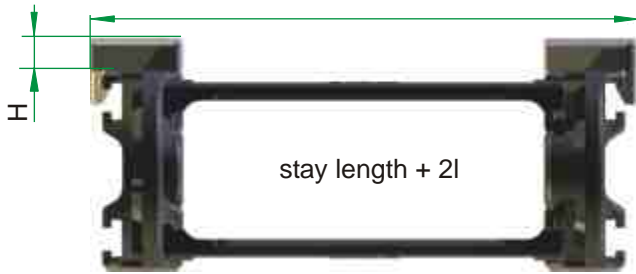




pretension:	
PKK 120	25 +/- 4 mm/m
PKK 220	20 +/- 4 mm/m
PKK 320	17 +/- 4 mm/m
PKK 520	12 +/- 4 mm/m

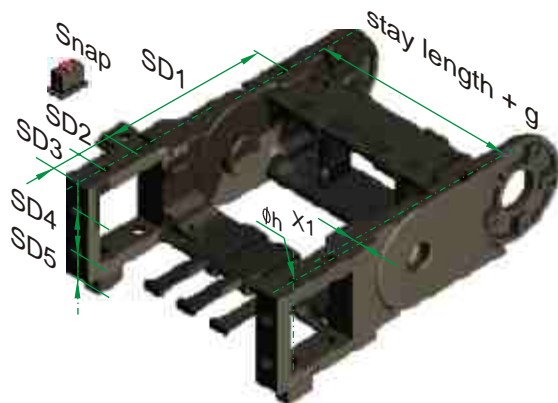


additional stay		v	r	s
PKK 113, 123, 143		19		16
PKK 213, 223, 243	short	19,5	14,5	-
		39	-	34
PKK 313, 323, 343	short	29,5	21	-
		59	-	51
PKK 513, 523	short	29,5	21	-
		59	-	51



slider	(see p.64) part no.	H	l	radius
PKK 225	1740	5	18	100 150 200 250 300
PKK 228	0402	5	18	100 150
PKK 228	1742	8	18	200 250 300
PKK 325	1741	5	21	150 200 250 300 400
PKK 328	0432	5	21	150 200 250 300 400
PKK 328	1632	8	21	250 300 400
PKK 528	1800	8	23	200 250 300 400 500
PKK 528	1801	8	23	300 400 500

friction coefficient: 0.2 to 0.25



SD flange	X1	SD1	SD2	SD3	SD4	SD5
PKK 210	2,5	85	22,5	15	22	14
PKK 220	2,5	85	22,5	15	22	14
PKK 310	3	119	35	20	30-35	22,5
PKK 320	3	119	35	20	30-35	22,5
PKK 340	3	119	35	20	40-45	20

optional with Snap for toolless quick assembly

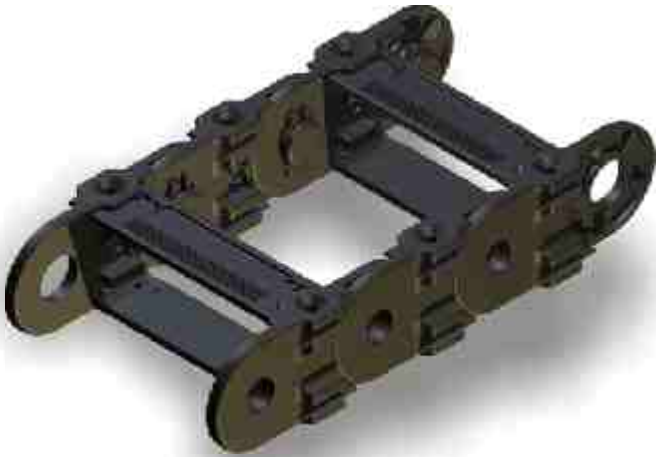
PKK	pitch	a	c	e ¹⁾	f	g	h	i ²⁾	m ³⁾	t	u	weight (stay 100) kg/m									
120, 121, 123, 125	35	16	25	3	11	8	Ø4	15	3	2	1.5	0.60									
110, 111, 113, 115	35	16	25	3	8	8	Ø4	15	3	2	1.5	0.60									
140, 141, 143	54	30	40	3	9	9	Ø4	15	3	3	2	1.03									
220, 221, 223, 225, 228	65	34	50	5	15	10	Ø6	15	5	4	3	1.50									
210, 211, 213, 215	65	34	50	5	10	10	Ø6	15	5	4	3	1.40									
240, 241, 243, 245	65	44	60	5	10	10	Ø6	15	5	4	3	1.70									
320, 321, 323, 325, 328	90	51	75	6	18	12	Ø8	20	8	4	4	2.50									
310, 311, 313, 315	90	51	75	6	12	12	Ø8	20	8	4	4	2.50									
340, 341, 343, 345	90	61	85	6	15	15	Ø8	20	8	4	3.5	2.70									
520, 521, 523, 525, 528	115	80	104	6	20	14	Ø8	20	8	4	3.5	3.40									
510, 511, 513, 515	115	80	104	6	14	14	Ø8	20	8	4	3.5	3.20									
bending radius R [mm]																					
120, 121, 123, 125 ⁴⁾	40	50	60	75																	
110, 111, 113, 115 ⁴⁾	40	50	60	75																	
140, 141, 143		50	60	80	100		150		200												
220, 221, 223, 225 ⁴⁾ , 228 ⁶⁾				75	100		150		200	250	300										
210, 211, 213, 215 ⁴⁾				65	75	100	125	150	200	250	300										
240, 241, 243, 245 ⁴⁾				75	100	120	150		200	250	300										
320, 321, 323, 325 ⁴⁾ , 328 ⁶⁾					100		150		200	250	300	400									
310, 311, 313, 315 ⁴⁾					100	130	150		200	250	300	400									
340, 341, 343, 345 ⁴⁾					100		150		200	250	300	400									
520, 521, 523, 525 ⁴⁾ , 528 ⁶⁾							150		200	250	300	400	500								
510, 511, 513, 515 ⁴⁾							150		200	250	300	400	500								
stay length [mm] ¹⁾																					
120, 110, 111, 113, 121, 123	30	50	60	70	80	90	100	110	120												
115, 125		50					100														
140, 141, 143	30	50	60	70	80	90	100	110	120												
220, 210, 211, 213, 221, 223, 228		50	60	70	80	90	100	110	120	130	150	170	200	220							
215, 225 ⁵⁾		50					100			150		200									
240, 241, 243		50	60	70	80	90	100	110	120	130	150	170	200	220							
245 ⁵⁾		50					100			150		200									
320, 310, 311, 313, 321, 323, 328		50	60	70	80	90	100		120	130	150	170	180	200	230	250	270	300	330	400	
315, 325 ⁵⁾							100			150		200						300			
340, 341, 343		50	60	70	80	90	100		120	130	150	170	180	200		230	250	270	300	330	400
345 ⁵⁾							100			150		200						300			
520, 510, 511, 513, 521, 523, 528		50	60	70	80	90	100		120	130	150	170	180	200		230	250	270	300	330	400
515, 525										150		200									

- 1) The usable interior width is stay length - 2e minus the width of the used PZ
- 2) First latching the PZ (latching all 2mm); PKK 215, 225, 245, 315, 325, 345 i=22;
- 3) Dimension does not apply to the closed type
- 4) PKK 115 and 125 from R50, 215 and 225 from R100, 245, 315 and 325 from R150, 345, 525 and 515 from R200
- 5) The inner radius covers (ASl) of length 200 mm of the PKK 215, 225, 245 and 300 mm and 200 mm of the PKK 315, 325, 345 are designed with a pivot on one side.
- 6) PKK 228 from R100, PKK 328 from R150, PKK 528 from R200

PKK TYPES

PKK 120, 220, 320, 520

The standard version has a stay in every second link. With additional link bands and stays the chains can be extended as multibandchains. The **integrated connector** makes each link in the chain to a mounting link.



order example

PKK 220	/ 100	x 3510	/ 100
type	radius	length	stay length

PKK 110, 140, 210, 240, 310, 340, 510

The smooth designed PKK corresponds to the standard version, but has no exterior T-slot. These types provide a very good visual effect and a smaller width through the flat outside surfaces (also see PKK 215, PKK 245). The PKK 240 and 340 offer larger cross sections due to the increased link height.

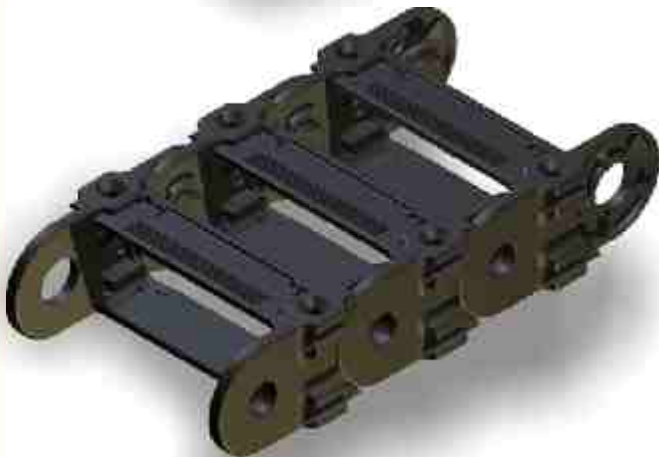


order example

PKK 240	/ 100	x 3510	/ 100
type	radius	length	stay length

PKK 121, 221, 321, 521

The types PKK -21 are manufactured with a stay in each link. The additional stays increase the lateral stability and optimize guiding of particularly smaller cable diameter.

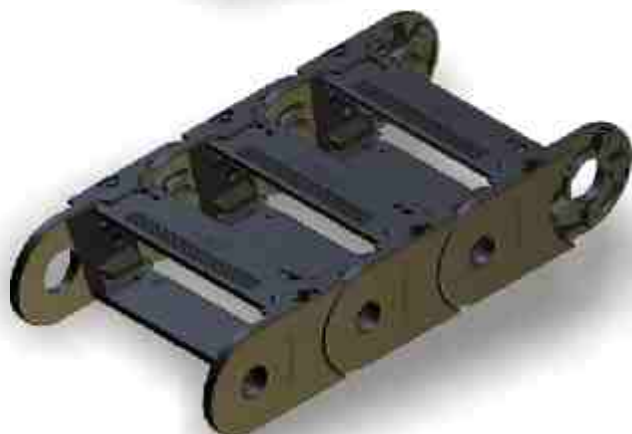


order example

PKK 221	/ 100	x 3510	/ 100
type	radius	length	stay length

PKK 111, 141, 211, 241, 311, 341, 511

These are the smooth designs with a stay in each link to increase lateral stability and optimize guiding of particularly small cables. PKK 241 and PKK 341 have a higher capacity due to their increased link height.



order example

PKK 241	/ 100	x 3510	/ 100
type	radius	length	stay length

PKK 113, 123, 143, 213, 223, 243, 313, 323, 343, 513, 523

The PKK with extension stays in the inner radius. Suitable for low speeds these stays create additional space. The extension stays can be arranged in the outer radius or in other combinations as per optional drawing. The extension stays are available in two lengths.

order example

PKK 223	/ 100	x 3510	/ 100
type	radius	length	stay length

PKK 125, 225, 325, 525

The closed designs offer optimum protection of the lines against chips or against UV radiation. The covers can be opened in the inner or outer radius. The closed types may also be subsequently created from the standard version.

PKK 115, 215, 245, 315, 345, 515

Without T-slot on the outside, the closed types achieve a good visual effect with their flat sides and a smaller width.

order example

PKK 215	/ 100	x 3510	/ 100
type	radius	length	stay length

PKK 228, 328, 528

The PKK 128, 228 and 328 with sliders are designed for gliding arrangements (long travel distances) and are fitted with stays in each link. The sliders are mounted in the inner radius of the energy chain and have a very low coefficient of friction ($\mu = 0.2$ to 0.25).

The sliders can also be installed afterwards. At low stroke rates and low speeds ($<1\text{m/s}$) sliders are not necessary. The smallest radius of each dimension of the PKK is not suitable for sliders.

order example

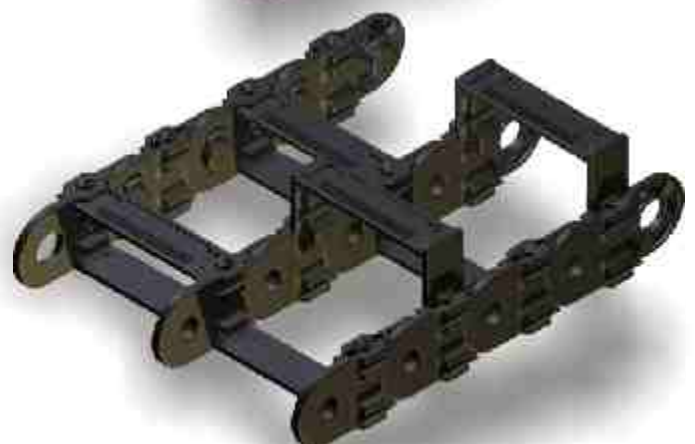
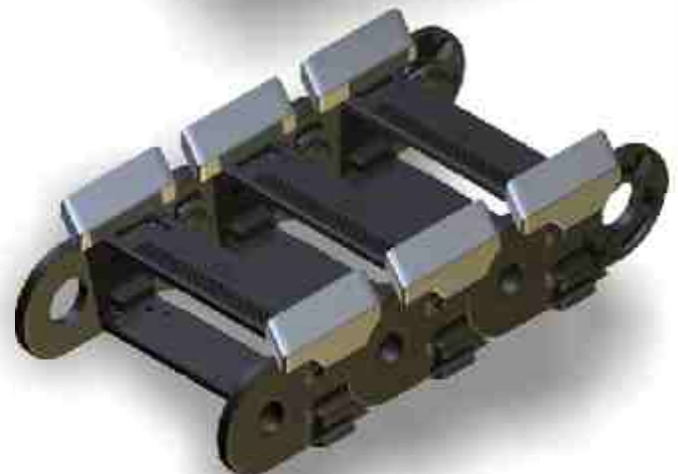
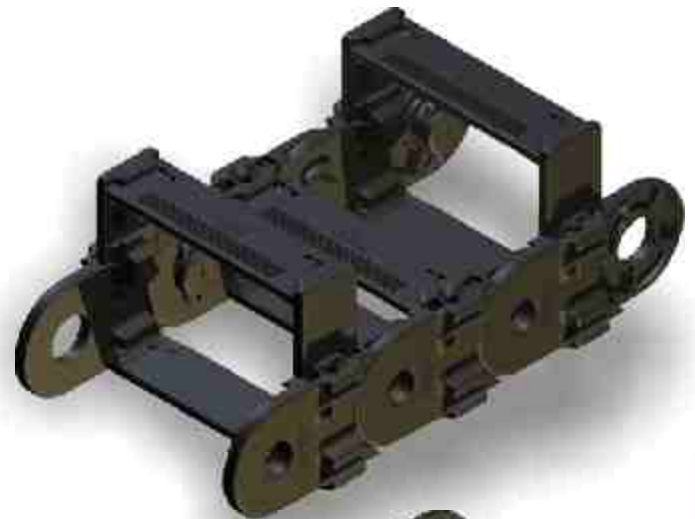
PKK 228	/ 100	x 3510	/ 100
type	radius	length	stay length

Multiband energy chains

Multiband energy chains can be created by attaching additional link bands. These are assembled through stays at standard energy chains (see assembly, except PKK with smooth exteriors).

order example

PKK 220	/ 100	x 3510	/ 100 / 100
type	radius	length	stay length / stay length



PKK SIZES

PKK120

height: 25
inner height: 16

PKK140

height: 40
inner height: 30

PKK 220

height: 50
inner height: 34

PKK 240

height: 60
inner height: 44

PKK 320

height: 75
inner height: 51

PKK 340

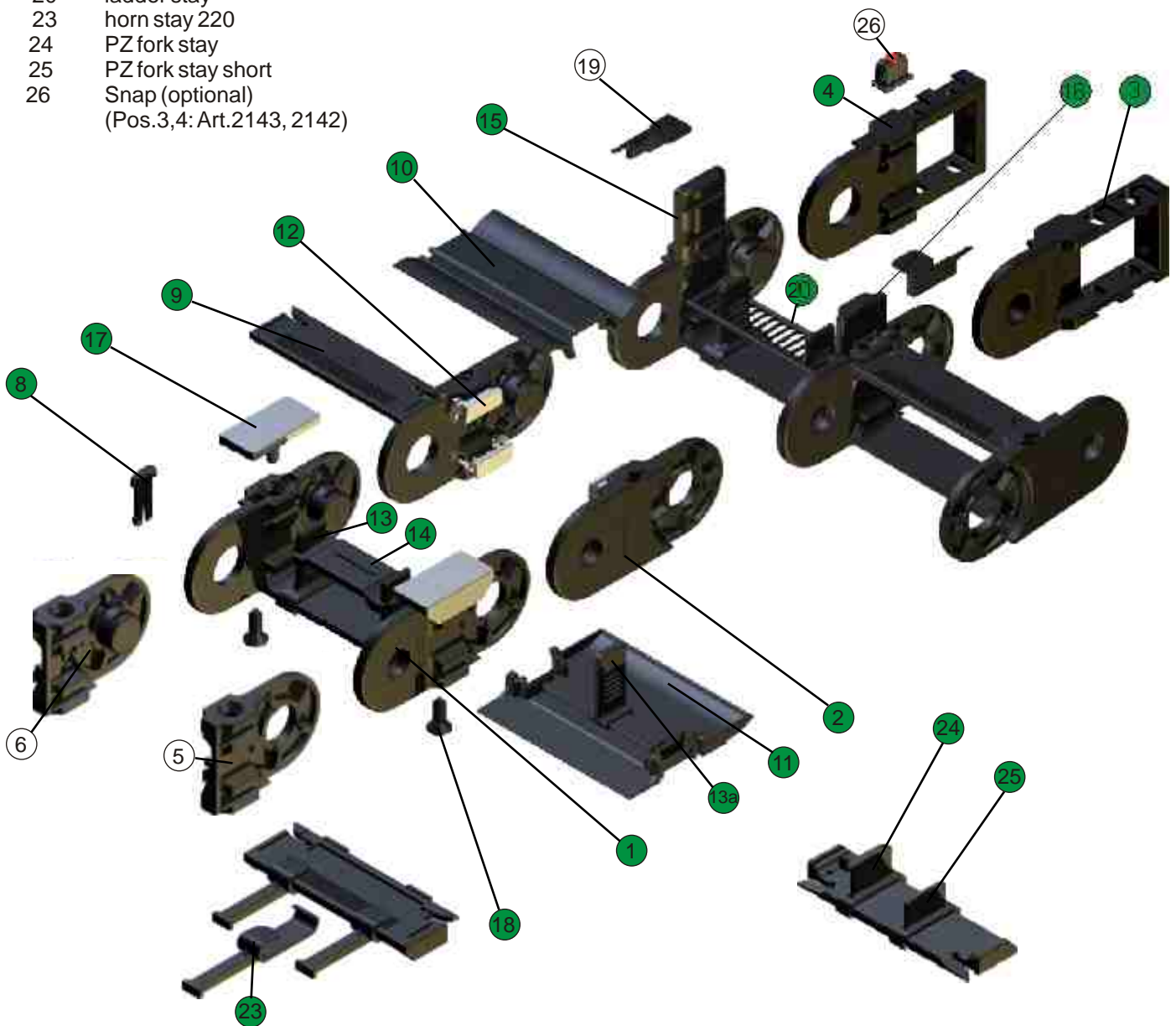
height: 85
inner height: 61

PKK 520

height: 104
inner height: 80



- | pos. | name |
|--------|---|
| 1 | PKK 220 link |
| 2 | PKK 210 link |
| 3 | SD / Z (universal flange connector pivot) |
| 4 | SD / B (universal flange connector drilling) |
| 5 | PKK 220 connector link short (drilling) |
| 6 | PKK 220 connector link short (pivot) |
| 8 | spreader |
| 9 | 22 stay 100 |
| 10 | 22ASI 100 (inner cover) |
| 11 | 22ASA 100 (outer cover) |
| 12 | cover holder |
| 13,13a | PZ (plastic divider) |
| 14 | PT 55 / PT 75 (telescopic horizontal divider) |
| 15 | extension stay long |
| 16 | extension stay short |
| 17 | slider R100 |
| 18 | damping element |
| 19 | band holder |
| 20 | ladder stay |
| 23 | horn stay 220 |
| 24 | PZ fork stay |
| 25 | PZ fork stay short |
| 26 | Snap (optional)
(Pos.3,4: Art.2143, 2142) |



Packaging

ekd energy chains are supplied in transport friendly packaging. When removing the packaging and during removal of the energy chain or parts of it, ensure that the energy chains are free of torsion and tension, to avoid mechanical damage.

Lengthening or shortening, linkbands

Lengthening of the energy chain is done by fitting of energy chain pieces or links (1) and lock with spreader (2). To shorten the spreader is disengaged and removed, then the piece of chain removed.

Alternatively first link strands may be mounted and then stays assembled.

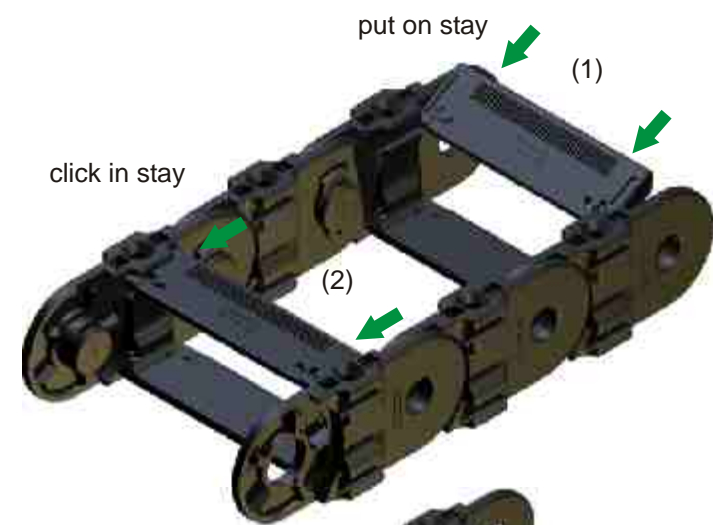
For the PKK the opposite link strands are rotated by 180 ° and arranged with the pivot on the inner chain.



Stay assembly

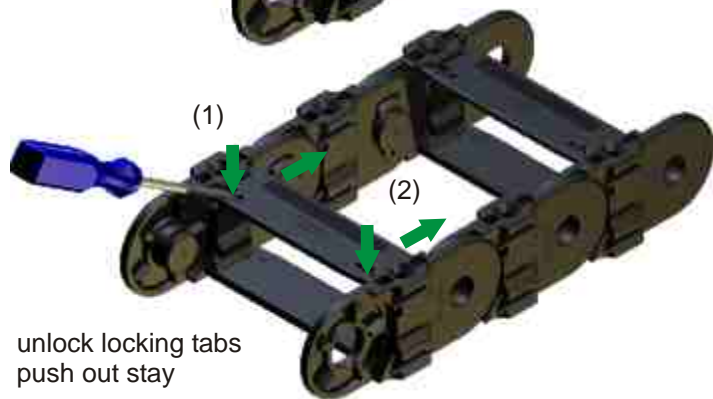
The stays with the locking tabs are put in the T-guide of the link (1) and push until it clicks into the guides (2).

The stays can be positioned initially in the T-guide and will be engaged in one swoop (plastic hammer or similar) in the final position.



Stay disassembly

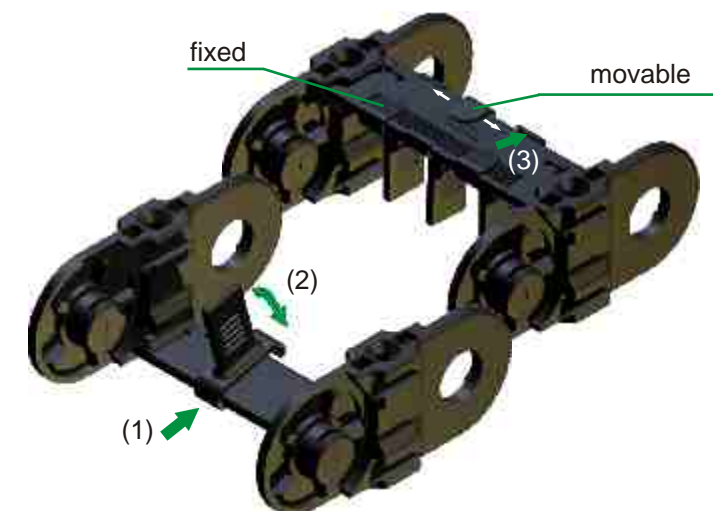
The lock tongue of the stays are unlock with a screwdriver (1) and the stays pushed out with light pressure to the front of the T-slot (2). For medium and larger series (from PKK220) the stays can be unlocked with a light hit on the lock tongue (plastic hammer or similar) and then ejected.



Plastic divider PZ (vertical)

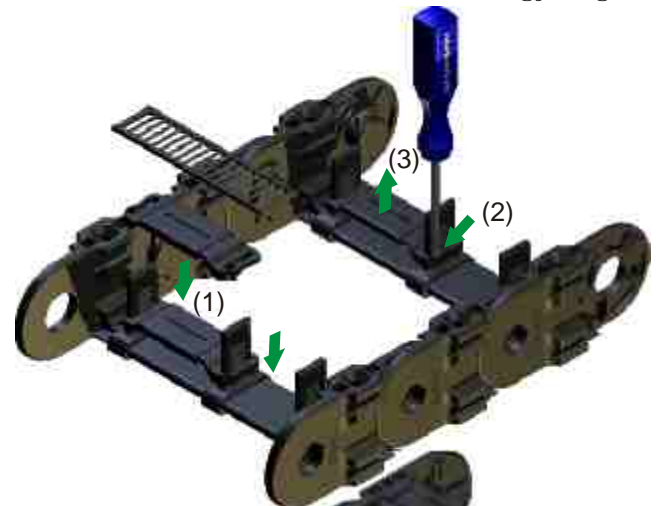
The PZ will be placed in the designated position on the stay (1) and engaged (2). The PZ can be mounted fixed or movable.

The dismantling is done by unlocking (3) and removal of the PZ.



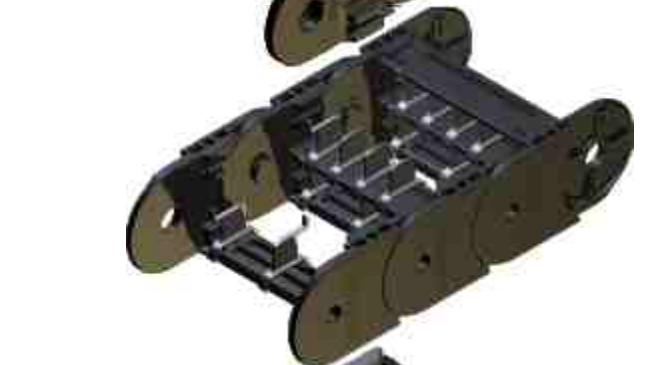
Telescopic divider and ladder divider

The telescopic horizontal divider and ladder stay horizontally pushed onto the plastic divider (PZ) and engaged in the designated height (1). The disassembly is done with a screwdriver through pull (2) and removal (3).



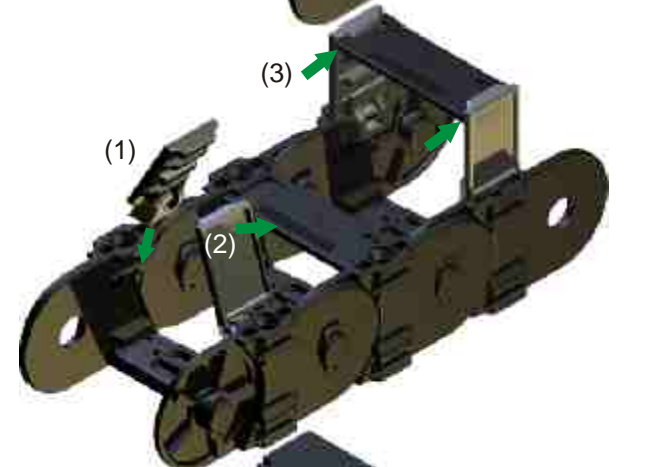
PZ fork stays

The fork stays allow in combination with an additional stay a horizontal separation and several vertical separations. Fork stays are clipped upon the stays like plastic divider PZ (p.56).



Extension stays

The extension stays are pushed onto the link guides (1) and pivoted until it clicks (1). Then the stays are pushed into the guides until it clicks (3).



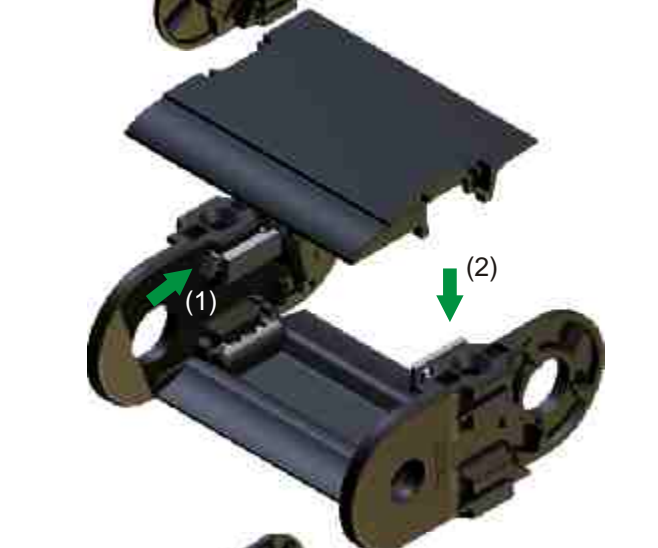
Covers

Before installing covers (ASA/ASI) first segment holder have to be pushed in the T-slot of the links (1). Then the covers can be plugged in (2). Covers and segment holder snap in the end position.

The covers are marked with arrows, to avoid wrong assembly direction.

Covers for the outer radius are equipped with holders for divider (PZ).

During assembly, ensure the correct overlap of the covers and that the covers are engaged on all four locking points.



The inner radius covers (ASI) of length 200 mm of the PKK 215, 225, 245 and 300 mm of the PKK 315, 325, 345 are designed with a pivot on one side. The cover has to be pushed into the T-slot of the link on its pivot side (1) and can swing to close or open (2). For that the cover holder has to be unlocked (see disassembly).



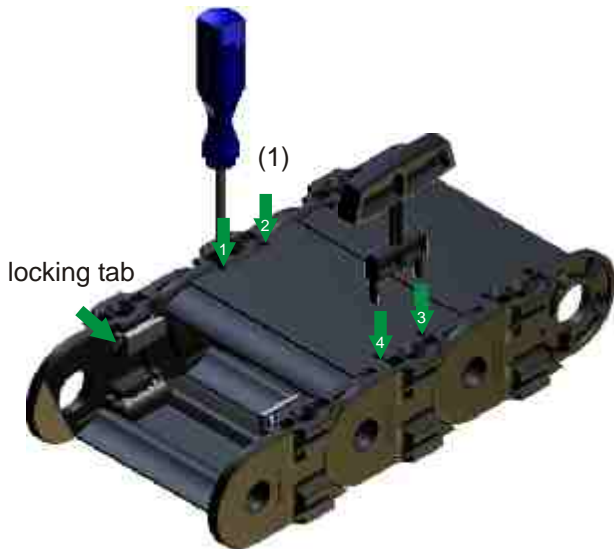
PKK ASSEMBLY

The dismantling of the covers is done by unlocking and lifting out. These are done one by one at a time with the 4 locking tongues on the segment holders using a screwdriver (1), then the cover is easy to raise.

With two release tools all four locking tongues can be done at once and the cover removed.

Attention:

The release tools can only be resolved if covers are dismantled (by lateral withdrawal)



Covers with lengths 200 mm and 300 mm of the PKK 225 and 325 are equipped with a pivot on one side. These covers opening mechanism is deactivated on one side. The covers can be swiveled.

Sliders

The sliders are mounted in the inner radius of the energy chain. The minimum bend radius in each PKK size can not be fitted with sliders.

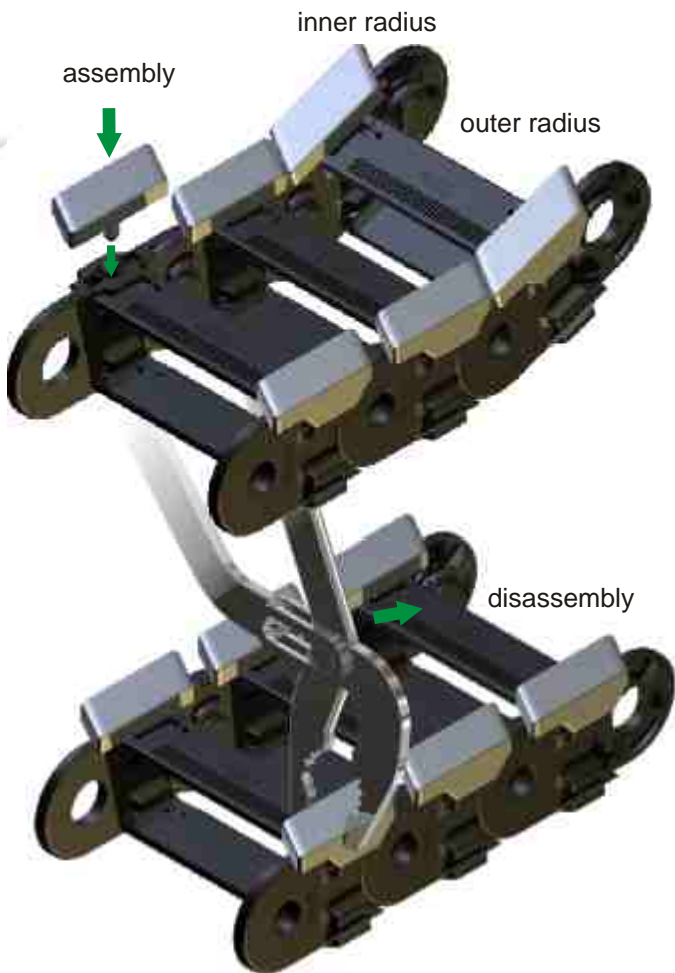
During assembly of the sliders be aware of the following:

The sliders must be conditioned (water content min. 1%, overnight storage in water at room temperature or 2 h at 80 ° C).

Heat the slider just before mounting in a water bath.

Avoid impact load.

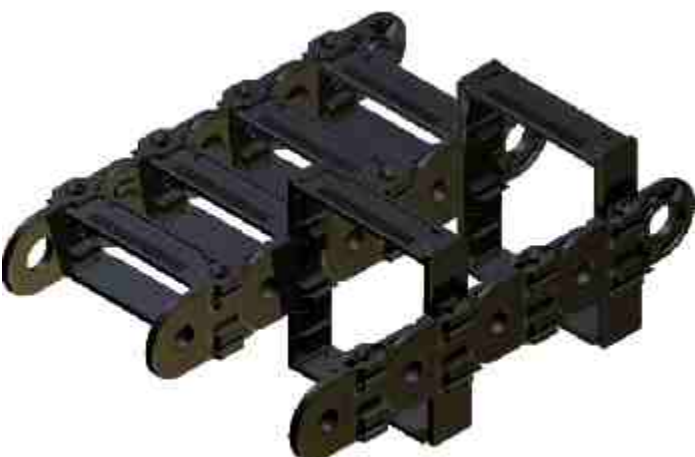
The dismantling is carried out channel lock pliers as shown and unlock slider by turning it to the outer side.



Multiband energy chains

Multiband energy chains can be created by attaching additional link strands. These are attached to existing energy chains by additional stays (see stay assembly).

By combining with extension stays large hoses or other additional components may be carried.



Mounting the energy chain

All ekd plastic energy chains are equipped with the **integrated connector** (1). When using integrated strain relief, no additional components are needed. Provision for the combined strain relief, the anchor profile has to be screwed with the first link in the chain. Separate strain relief can be subsequently mounted.

Headside mounting

Optionally, the attachment can be made with flange connectors or universal connectors. The flange connectors are mounted in the T-slots of short connectors links until locking (1). The energy chains can be attached through four flange connectors (2).

The SD connectors are mounted like the links with the spreader (3) and provide universal connection options, as an example with Snap for fast and toolless assembly.

Strain Reliefs

With long travel distances and high speeds the lines at one end of the cable carrier, preferably on the moved driver, are attached to strain reliefs. The distance of strain relief to the bending area depends on the particulars of the line manufacturer.

Integrated strain relief

In this space-saving type strain reliefs are directly mounted on the vertical divider (PZ) of the first link of the energy chain.

The mounting direction of the PZ must be chosen so that tension directed on the chain can not unlock the divider.

In order to avoid premature line wear caused by dynamic loads a small extra chain length is recommended.

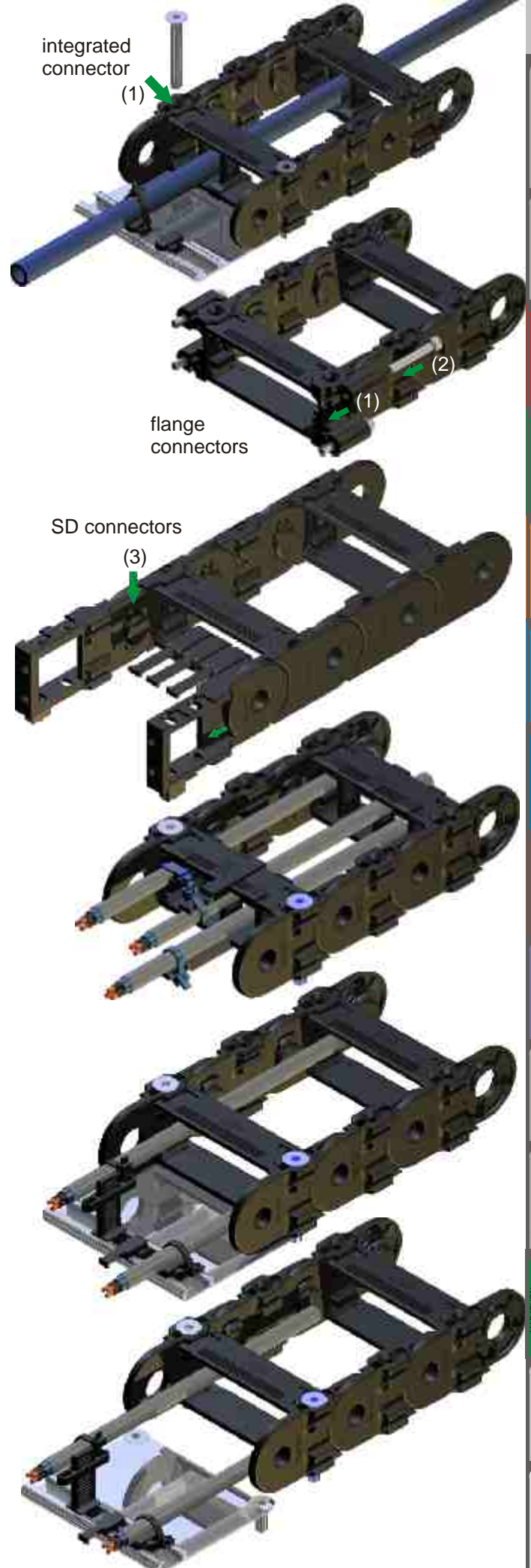
Combined strain relief

The combined strain relief combines the advantage of sufficient distance from the strain relief to the bending line areas provided by a simple and space-saving installation of the integrated strain relief.

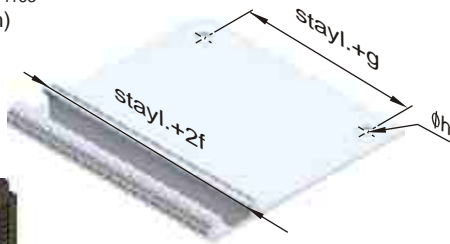
The anchor profile is fitted to the drilling dimensions of the energy chain (integrated connectors) and attached to this. The lateral insertion and extraction of strain relief elements is possible at any time.

Separate strain relief

The separate strain relief is recommended for high dynamic loads and large line diameters. A sufficient distance from the strain relief to the chain is easy to implement.



ZLP XX part no. 1163
(xx = chain width)



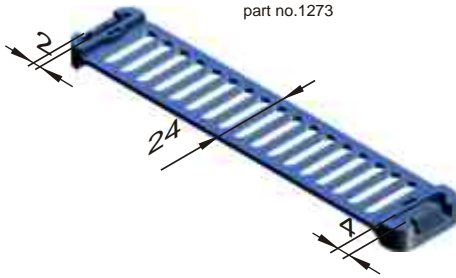
ZL 100
part no. 1612

ZL 80
part no. 1675

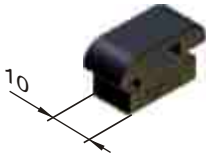
ZL 50
part no. 1273

$\text{Ø}7 < D < \text{Ø}35$

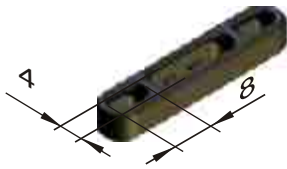
ZLB24
part no. 1142



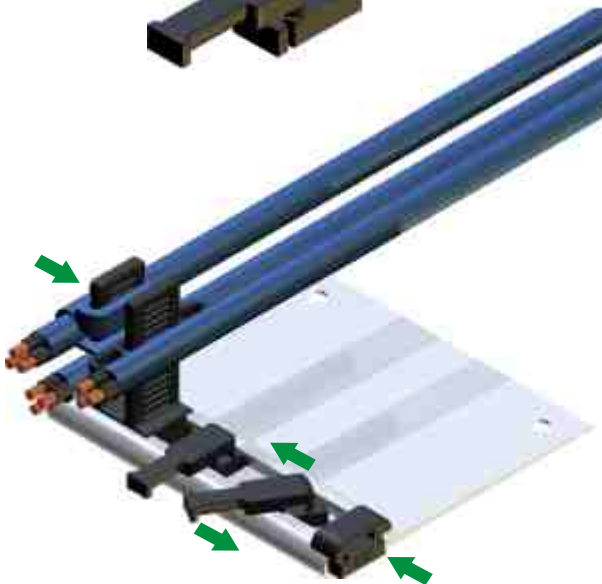
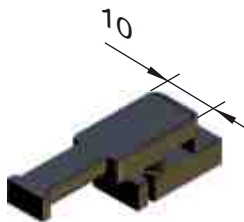
ZLS10
part no. 1160



ZLA8
part no. 1159



ZHS10
part no. 1407



PKK ASSEMBLY

ANCHOR PROFILE ZLP

The aluminum anchor profile is used to mount various of strain relief elements. Both the distance to the energy chain as well as the positioning of the strain relief elements can be designed.

STRAIN RELIEF STAY PZL

The design of this strain relief stay is closely based on the plastic vertical divider (PZ). It is laterally inserted into the anchor profile or a c-profile and can accommodate multiple strain relief elements.

BLUE RIBBON ZLB 24

The Blue Ribbon is a special ekd developed cable tie with a 24 mm wide fixing area for cable diameters of 7 mm to 35 mm. The Blue Ribbon can be locked on the strain relief stay. The lines may be fixed single or multiple (s-shaped) with the Blue Ribbon.

PUSH ANCHOR ZLS 10

The push anchor is laterally inserted into the anchor profile or a c-profile. The lines are fixed with standard cable ties on the push anchor.

CABLE ANCHOR ZLA 8

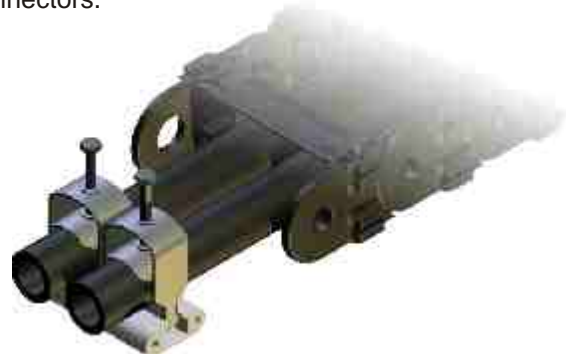
The cable anchor is pushed onto the strain relief stay and can be fixed by the latching at different altitudes. The line is connected with commercially available cable ties on the cable anchor (single or double).

HORN STAY ZHS 10

The horn stay ZHS10 is transversely inserted into the anchor profile and locked by a 90 ° rotation. The line is fixed with cable ties at the horn.

YOKE CLAMPS

Commercially yoke clamps can be used as a separate strain relief (see below) and can be mounted with the aluminum c-profile of the SLE 520, SLE 320 in front of the energy chain connectors.



Maintenance of the energy chain

PKK energy chains are maintenance free. Like every mechanical system there will - depending on the ambient conditions - wear must be observed.

In case of this the energy chain has to be replaced.

For long travels or even in a circular motion, the energy chains are often equipped with sliding elements. These allow sliding of the upper part of the chain on a suitable surface (eg, slider-slider, slider-steel, glide bar).

The sliders show wear according to the application due to abrasion. The slider surfaces should be checked at regular intervals on their condition. With a thickness of 1-2 mm sliders have to be replaced.

PKK parts 55

special material parts like UI94 V-0, EX or other have to be named in the order



Link
m.V. with pretension
o.V. without pretension



PKK						PKK												
R	40	50	60	75		R	40	50	60	75								
110,111 113 115	m.V.	1598	1599	1600	1601		120, 121 123 125	m.V.	0380	0379	0378	0377						
	o.V.	1605	1604	1603	1602			o.V.	1717	1716	1715	1714						
	R	50	60	80	100	150	200											
140, 141 143	m.V.	2174	2175	2176	2177	2179	2180											
	o.V.	2181	2182	2183	2184	2185	2186											
	R	65	75	100	125	150	200	250	300									
210, 211 213 215	m.V.	1454	1299	1300	1635	1301	1302	1571	1303	220, 221 223 225 228	m.V.	0394	1295	2225	1296	1297	1596	1298
	o.V.	2221	2215	2216	2217	2218	2219	2224	2220		o.V.	2192	2193	2194	2195	2196	2197	2198
	R	75	100	120	150	200	250	300			R	75	100	125	150	200	250	300
240, 241 243 245	m.V.	1455	1456	2405	1457	1458	1459	1460										
	o.V.	2209	2210	2406	2211	2212	2213	2214										
	R	100	120	130	150	200	250	300	400		R	100	150	200	250	300	400	
310, 311 313 315	m.V.	1309	2115	1310	1311	1312	1926	1313	1314	320, 321 323 325 328	m.V.	0421	1305	1306	1570	1307	1308	
	o.V.	2200	2116	2201	2204	2205	2206	2207	2208		o.V.	2199	0420	0419	1569	0418	0417	
	R	100	150	200	250	300	400											
340, 341 343 345	m.V.	1544	1545	1546	1763	1547	1548											
	o.V.	2226	1543	1542	2227	1541	1540											
	R	150	200	250	300	400	500				R	150	200	250	300	400	500	
510, 511 513 515	m.V.	1766	1767	1768	1769	1770	1771			520, 521 523 525 528	m.V.	1094	1095	1437	1096	1097	1098	
	o.V.	2235	2236	2237	2240	2238	2239				o.V.	2230	2231	2232	2081	2233	2234	

PKK ELTOLA									
R	75	100	125	150	200	250	300	400	
210				2089			2090		
220			2091	2092	2093	2094	2095	2096	2097
240			2098	2099		2100	2101	2102	2103
310									2086
320									2087
340						2088			

PKK 210 / 0 5 Anschl. 2045
PKK 210 / 0 2 Anschl. 2046



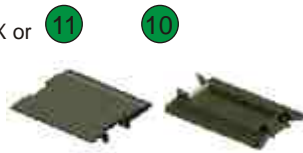
PKK 30 50 60 70 80 90 100 110 120 130 150 170 180 200 220 230 250 270 300 330 400

110	0373	0374	0375	0372	0371	0370	0369	1815	1864	-	-	-	-	-	-	-	-	-	-	-	
111	0373	0374	0375	0372	0371	0370	0369	1815	1864	-	-	-	-	-	-	-	-	-	-	-	
113	0373	0374	0375	0372	0371	0370	0369	1815	1864	-	-	-	-	-	-	-	-	-	-	-	
115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
120	0373	0374	0375	0372	0371	0370	0369	1815	1864	-	-	-	-	-	-	-	-	-	-	-	
121	0373	0374	0375	0372	0371	0370	0369	1815	1864	-	-	-	-	-	-	-	-	-	-	-	
123	0373	0374	0375	0372	0371	0370	0369	1815	1864	-	-	-	-	-	-	-	-	-	-	-	
125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
140	0373	0374	0375	0372	0371	0370	0369	1815	1864	-	-	-	-	-	-	-	-	-	-	-	
141	0373	0374	0375	0372	0371	0370	0369	1815	1864	-	-	-	-	-	-	-	-	-	-	-	
143	0373	0374	0375	0372	0371	0370	0369	1815	1864	-	-	-	-	-	-	-	-	-	-	-	
210	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
211	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
213	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
220	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
221	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
223	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
228	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
240	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
241	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
243	-	0390	0389	0388	0387	0386	0385	1517	0384	1436	0383	0382	-	0381	1887	-	-	-	-	-	
245	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
310	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
311	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
313	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
321	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
323	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
328	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
340	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
341	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
343	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
510	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
511	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
513	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
520	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
521	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
523	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001
525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
528	-	0416	1564	1565	1164	1566	0411	-	1009	1567	0410	1392	1888	0409	-	1889	0408	1929	0407	1931	2001

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PKK parts 55

special material parts like UI94 V-0, EX or other have to be named in the order



PKK	ASA	ASI	ASA	ASI	ASA	ASI	ASA	ASI	ASA	ASI	SH	SR	ASK	ASL	GL
	50	50	100	100	150	150	200	200	300	300					
110	-	-	-	-	-	-	-	-	-	-	-	0367	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	0367	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	0367	1984	-	-
115	0364	0362	0363	0361	-	-	-	-	-	-	0360	0367	-	-	-
120	-	-	-	-	-	-	-	-	-	-	-	0367	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	0367	-	-	-
123	-	-	-	-	-	-	-	-	-	-	-	0367	1984	-	-
125	0364	0362	0363	0361	-	-	-	-	-	-	0360	0367	-	-	-
140	-	-	-	-	-	-	-	-	-	-	-	0367	-	-	-
141	-	-	-	-	-	-	-	-	-	-	-	0367	-	-	-
143	-	-	-	-	-	-	-	-	-	-	-	0367	-	-	-
210	-	-	-	-	-	-	-	-	-	-	-	0404	-	-	-
211	-	-	-	-	-	-	-	-	-	-	-	0404	-	-	-
213	-	-	-	-	-	-	-	-	-	-	-	0404	1893	1892	-
215	0401	0399	0400	0398	0487	0485	0888	0887	-	-	0397	0404	-	-	-
220	-	-	-	-	-	-	-	-	-	-	-	0404	-	-	-
221	-	-	-	-	-	-	-	-	-	-	-	0404	-	-	-
223	-	-	-	-	-	-	-	-	-	-	-	0404	1893	1892	-
225	0401	0399	0400	0398	0487	0485	0888	0887	-	-	0397	0404	-	-	1740
228	-	-	-	-	-	-	-	-	-	-	-	0404	-	-	402,1742
240	-	-	-	-	-	-	-	-	-	-	-	0404	-	-	-
241	-	-	-	-	-	-	-	-	-	-	-	0404	-	-	-
243	-	-	-	-	-	-	-	-	-	-	-	0404	1893	1892	-
245	0401	0399	0400	0398	0487	0485	0888	0887	-	-	0397	0404	-	-	-
310	-	-	-	-	-	-	-	-	-	-	-	0434	-	-	-
311	-	-	-	-	-	-	-	-	-	-	-	0434	-	-	-
313	-	-	-	-	-	-	-	-	-	-	-	0434	1885	1886	-
315	-	-	0428	0426	0427	0425	0491	0489	0492	0490	0424	0434	-	-	-
320	-	-	-	-	-	-	-	-	-	-	-	0434	-	-	-
321	-	-	-	-	-	-	-	-	-	-	-	0434	-	-	-
323	-	-	-	-	-	-	-	-	-	-	-	0434	1885	1886	-
325	-	-	0428	0426	0427	0425	0491	0489	0492	0490	0424	0434	-	-	1741
328	-	-	-	-	-	-	-	-	-	-	-	0434	-	-	0432,1632
340	-	-	-	-	-	-	-	-	-	-	-	0434	-	-	-
341	-	-	-	-	-	-	-	-	-	-	-	0434	-	-	-
343	-	-	-	-	-	-	-	-	-	-	-	0434	1885	1886	-
345	-	-	0428	0426	0427	0425	0491	0489	0492	0490	0424	0434	-	-	-
510	-	-	-	-	-	-	-	-	-	-	-	1474	-	-	-
511	-	-	-	-	-	-	-	-	-	-	-	1474	-	-	-
513	-	-	-	-	-	-	-	-	-	-	-	1474	-	-	-
515	-	-	-	-	1399	1400	1401	1402	-	-	1478	1474	-	-	-
520	-	-	-	-	-	-	-	-	-	-	-	1474	-	-	-
521	-	-	-	-	-	-	-	-	-	-	-	1474	-	-	-
523	-	-	-	-	-	-	-	-	-	-	-	1474	1885	1886	-
525	-	-	-	-	1399	1400	1401	1402	-	-	1478	1474	-	-	-
528	-	-	-	-	1399	1400	1401	1402	-	-	1478	1474	-	-	1800, 1801

