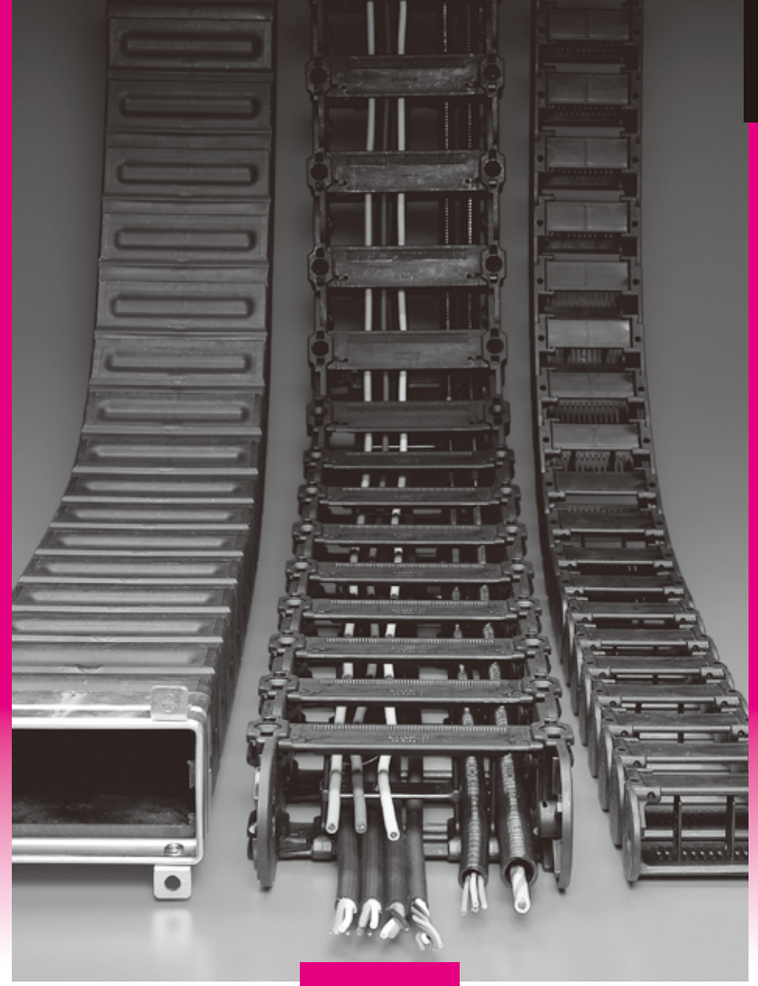


CABLE CARRIER

POWER GODZILLA®

パワーゴジラ

1. CABLE CARRIER

Designed for robots / machine tools

2. DEVELOPED LIKE GODZILLA

- Specially developed Polyamide is used for Non-metallic POWER GODZILLA
- Durable and smooth movements
- Special style which holds up to high speed-movements is available

3. REDUCE INSTALLATION TROUBLE

- Experienced technical staff support you from the design stage in order to reduce installation and operation trouble

4. TECHNICAL CO-OPERATION WITH ekd gelenkrohr (Germany)

CONSTRUCTION SUMMARY

TYPE

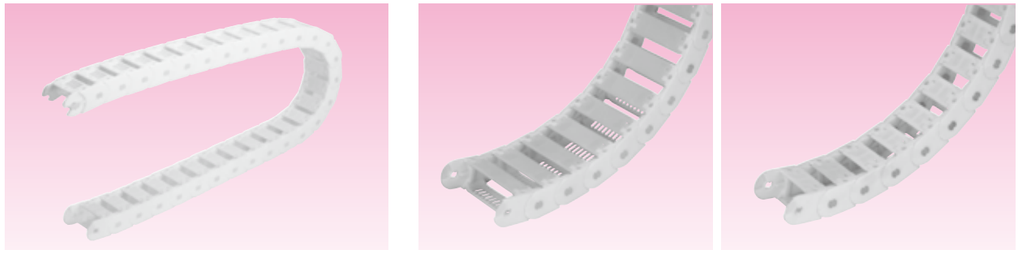
PKK

PKK SERIES (NON-METALLIC POWER GODZILLA - PARTS COMBINATION CONSTRUCTION)

Type	Features	Inside height availability (mm)	Stay length (mm)	Bend radius availability (mm)	Cable/hoses max. outside diameter to be inserted (mm)	Cable/hoses max. total weight to be inserted (kg/m)	Max. traveling length for sagging resistance (mm)	Speed resistance - max. traveling speed (m/sec)	LINK Pitch (mm)	Page
PKK 120	Standard type 0	16	30 50 80 100	40 50 60 75	14	2	2.9	2	35	193 ⟆ 196
PKK 121	Standard type 1									
PKK 123	With additional stay	16×2		50 60 75						
PKK 128	With slider	16								
PKK 125	With inner / outer cover		50 100							
PKK 220	Standard type 0	34	50 60 70 80 90 100 120 150 170 200	75 100 150 200 300	30	8	5.6		65	
PKK 221	Standard type 1									
PKK 223	With additional stay	34×2		100 150 200 300						
PKK 228	With slider	34								
PKK 225	With inner / outer cover		50 100 150 200							
PKK 320	Standard type 0	51	50 100 120 150 200 250 300	100 150 200 250 300 400	46	18	7.6		90	
PKK 321	Standard type 1									
PKK 323	With additional stay	51×2		150 200 250 300 400						
PKK 328	With slider	51								
PKK 325	With inner / outer cover		100 150 200 300							
PKK 530	Standard type 0	81	50 100 120 150 200 250 300	150 200 250 300 400 500	70	23	11.5		115	
PKK 531	Standard type 1									
PKK 535	With inner / outer cover		150 200 300	200 250 300 400 500						

TYPE

KOR



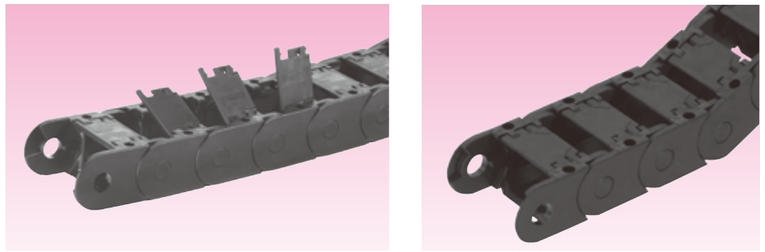
KOR SERIES (NON-METALLIC POWER GODZILLA - FOR CLEANLINESS REQUIREMENT)

Type	Features	Inside height availability (mm)	Stay length (mm)	Bend radius availability (mm)	Cable/hoses max. outside diameter to be inserted (mm)	Cable/hoses max. total weight to be inserted (kg/m)	Max. traveling length for sagging resistance (mm)	Speed resistance - max. traveling speed (m/sec)	LINK Pitch (mm)	Page
KOR 10.0	Designed for application which requires cleanliness (Prevention of abrasion/ Quiet running) Open on the inner radius side	23	34	75 100	20	1.2	2.8	2.8	35	203
KOR 11.0			44							
KOR 12.0			64							
KOR 13.0			79							
KOR 14.0			109							

CONSTRUCTION SUMMARY

TYPE

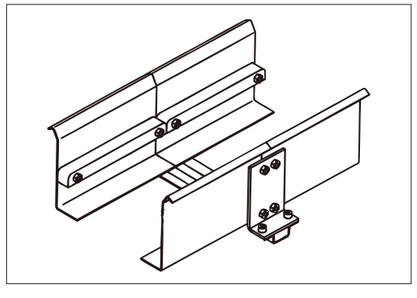
KOL



KOL SERIES (NON-METALLIC POWER GODZILLA - FOR LIGHT WEIGHT APPLICATION)

Type	Features	Inside height availability (mm)	Inside width (mm)	Bend radius availability (mm)	Cable/hoses max. outside diameter to be inserted (mm)	Cable/hoses max. total weight to be inserted (kg/m)	Max. traveling length for sagging resistance (mm)	Speed resistance - max. traveling speed (m/sec)	LINK Pitch (mm)	Page
KOL 0.3	Small Non-open-able type	ϕ10	ϕ10	20 30	8	0.4	2	1	20	198 ⟆ 202
KOL 01.3			ϕ10	30						
KOL 1.3		24	18	40 100 200	16	2	3.4	2	40	
KOL 2.3			48		21					
KOL 3.3			78							
KOL 00	Small Open on the inner radius side	ϕ7	ϕ7	15 30	6	0.25	1.5	1	15	
KOL 0		ϕ10	ϕ10	20 30	8		2		20	
KOL 02		10	24							
KOL 03			39							
KOL 05.0		17	27	35 50 70	15	0.6	2.8		26	
KOL 06.0			37							
KOL 10.0	Medium Open on the inner radius side	23	34	40 75 100 150 200	20	2	4.2		35	
KOL 11.0			44							
KOL 12.0			64							
KOL 13.0			79							
KOL 14.0			109							
KOL 16	Large Open on the inner radius side	28	59	60 125 250	25	8	4.6		50	
KOL 17			109							
KOL 19.0		38	78	75 100 150 200 250	33	12	5.6		55	
KOL 20.0			133							
KOL 21.0			48							
KOL 22.0			108							
KOL 24.0		50	77	200	45				70	
KOL 29.0			205	100 150 200 250						
KOL 10.5	Closed construction Open on the outer radius side	20	33	60 75 100 150	18	2	4.2		35	
KOL 19.5		38	78	100 150 200 250	35	8	5.6		55	
KOL 20.5			130							
KOL 21.5			48							
KOL 24.5		50	77	125 150 200 300	45	16	6.2		70	
KOL 25.5			117							
KOL 27.5			177							
KOL 06.4	T-STAY open-able type	17	18×2	35 70	14	0.6	2.5	1	30	

GUIDE CHANNEL and SLIDE RAIL for PKK SERIES

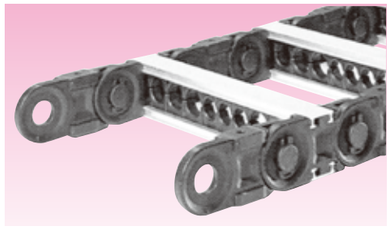
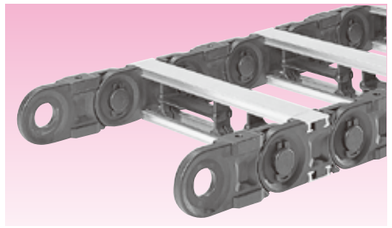


- To be used for long traveling
- Contact us for more information of what situation requires GUIDE CHANNEL and SLIDE RAIL

Refer to GUIDE CHANNEL FOR PKK SERIES andSLIDE RAIL FOR PKK SERIES

CONSTRUCTION SUMMARY

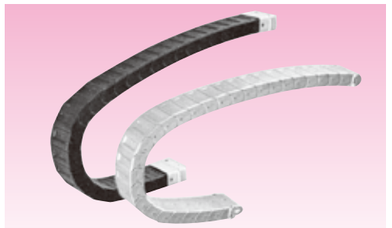
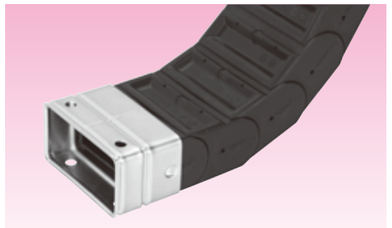
TYPE
PL

PL SERIES (NON-METALLIC POWER GODZILLA - REINFORCED CONSTRUCTION)

Type	Features (INNER STAY type:)	Inside height availability (mm)	Inside width (mm)	Bend radius availability (mm)	Cable/hoses max. outside diameter to be inserted (mm)	Cable/hoses max. total weight to be inserted (kg/m)	Max. traveling length for sagging resistance (mm)	Speed resistance - max. traveling speed (m/sec)	LINK Pitch (mm)	Page
PLE220	INSERT	31	As required 50～600mm (Available in increments of 5mm)	75 100 150 200 300	27	7	5.8	3	75	204 ⟆ 205
PLS220	FOAM STAY				25					
PLP220	DIVIDER PDV				28					
PLE320	INSERT	49		150 200 250 300 400	41	18	7.8		100	
PLS320	FOAM STAY				35					
PLP320	DIVIDER PDV				44					
PLE520	INSERT	68		200 250 300 400 500	59	25	10		125	
PLS520	FOAM STAY				55					
PLP520	DIVIDER PDV				62					

TYPE
PFR

PFR SERIES (NON-METALLIC POWER GODZILLA - CLOSED CONSTRUCTION)

Type	Features	Inside height availability (mm)	Inside width (mm)	Bend radius availability (mm)	Cable/hoses max. outside diameter to be inserted (mm)	Cable/hoses max. total weight to be inserted (kg/m)	Max. traveling length for sagging resistance (mm)	Speed resistance - max. traveling speed (m/sec)	LINK Pitch (mm)	Page
PFR121	Closed construction, Non-open-able type	23	23	75 150	20	3	3.8	2	35	209 ⟆ 210
PFR122			38							
PFR123			30× 2 sections							
PFR221		34	36	100 200	31	5	4.8		50	
PFR222			86							
PFR223			66.5× 2 sections							
PFR322		57	134	150 300	52	8	5.8		65	
PFR323			103× 2 sections							

TYPE
Marathon

Refer to the section for Marathon

CHARACTERISTICS

- POWER GODZILLA - Wheel traveling type
- Suitable for long traveling
- Solution to reduce friction and noise

TYPE
NDF

CHARACTERISTICS

- Non-metallic corrugated flexible conduit - Track type
- Possible movement: Similar to movement of POWER GODZILLA
- Suitable for short traveling
- Refer to the page for SANFLEKI ROBO for more information

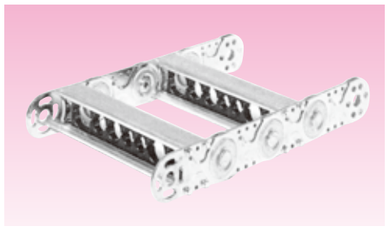
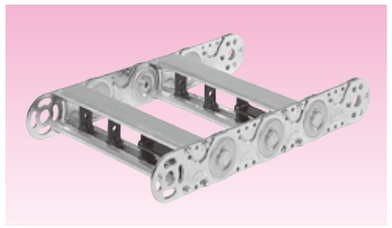
SANFLEKI ROBO 3D movement system

CHARACTERISTICS

- Non-metallic corrugated flexible conduit slit type - 3D movement system
- Refer to the page for SANFLEKI ROBO for more information

CONSTRUCTION SUMMARY

TYPE
KL

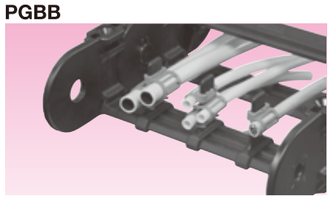
KL SERIES (METALLIC POWER GODZILLA)

Type	Features (INNER STAY type:)	Inside height availability (mm)	Aluminum stay length (mm)	Bend radius availability (mm)	Cable/hoses max. outside diameter to be inserted (mm)	Cable/hoses max. total weight to be inserted (kg/m)	Max. traveling length for sagging resistance (mm)	Speed resistance - max. traveling speed (m/sec)	LINK Pitch (mm)	Page
KLP120	DIVIDER PDV / PDH	19	As required 50～600mm (Available in increments of 5mm)	60 100 150 250	17	7	6.7	0.5	50	206 ⟆ 208
KLE220 KLE225	INSERT (225: COVERED TYPE)	31		100 150 200 250 300	27	30	8.7		75	
KLS220 KLS225	FOAM STAY (225: COVERED TYPE)				25					
KLP220 KLP225	DIVIDER PDV / PDH (225: COVERED TYPE)				28					
KLA220	T-STYLE ALUMINUM STAY (T-PROFILE)									
KLE320 KLE325	INSERT (325: COVERED TYPE)	49		150 200 250 300 400	41	40	10.5		100	
KLS320 KLS325	FOAM STAY (325: COVERED TYPE)				35					
KLP320 KLP325	DIVIDER PDV / PDH (325: COVERED TYPE)				44					
KLA320	T-STYLE ALUMINUM STAY (T-PROFILE)									
KLE520 KLE525	INSERT (525: COVERED TYPE)	68		200 250 300 400 500	59	50	16.5		125	
KLS520 KLS525	FOAM STAY (525: COVERED TYPE)				55					
KLP520 KLP525	DIVIDER PDV / PDH (525: COVERED TYPE)				61					
KLA520	T-STYLE ALUMINUM STAY (T-PROFILE)									
KLP620	DIVIDER PDV / PDH	118		250 300 400 500 600	107	55	17.5		175	
KLA620	T-STYLE ALUMINUM STAY (T-PROFILE)									
KLP625	DIVIDER PDV / PDH (COVERED TYPE)			400 500 600						

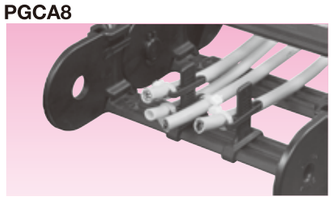
POWER GODZILLA ACCESSORIES

CABLE / HOSE BINDING ACCESSORIES

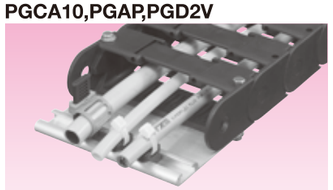
PGBB



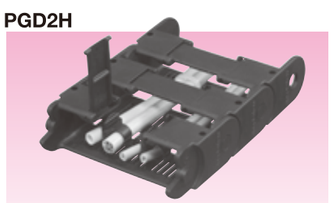
PGCA8



PGCA10,PGAP,PGD2V



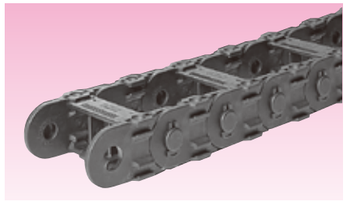
PGD2H



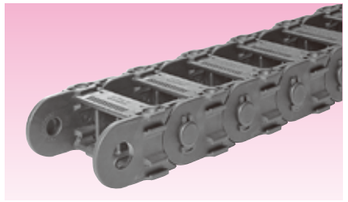
Refer to POWER GODZILLA ACCESSORIES

TYPE PKK

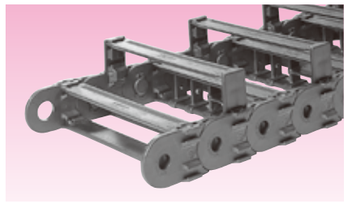
NON-METALLIC POWER GODZILLA - PARTS COMBINATION CONSTRUCTION



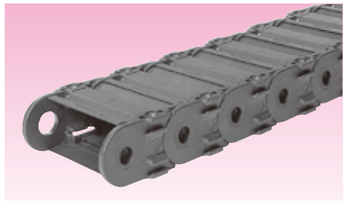
PKK ※※0



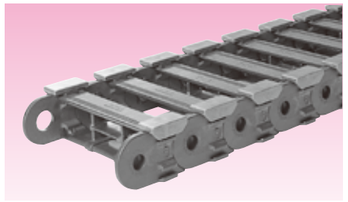
PKK ※※1



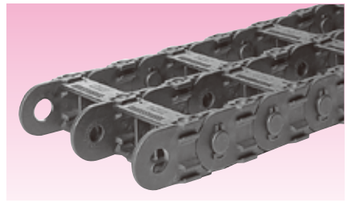
PKK ※※3



PKK ※※5



PKK ※※8



Horizontally connected POWER GODZILLA

CHARACTERISTICS

- Suitable for high speed and long traveling (except Type PKK※※3)
  Note: Only type PKK※※3 is suitable for low speed and short traveling
- With holes on each LINK to fix POWER GODZILLA to machinery / an installation place so that Extra end fittings are not required
- Construction: Main assembly parts:
  LINKs, STAYs (or INNER/OUTER COVERs), SPREADERs, DIVIDERs - type PDV and PDH
  Note: DIVIDERs - type PDV and PDH are optional

- How to read the Type Code
  PKK + Height of LINKs + Thickness of LINKs + Style code

- Available styles:
  PKK※※0 : With STAYs assembled on every 2 pairs of LINKs
  PKK※※1 : With STAYs assembled on every pair of LINKs
  PKK※※3 : With ADDITIONAL STAYs
  PKK※※5 : With INNER/OUTER COVERs in stead of regular STAYs
  PKK※※8 : With SLIDERs

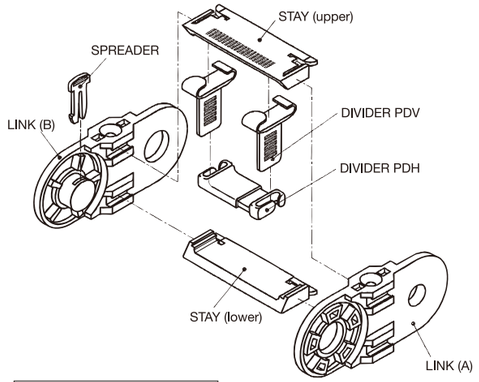
- Height of LINKs:
  1 = 25mm, 2 = 50mm, 3 = 75mm, 5 = 108mm

- Thickness of LINKs
  2 = Regular wall thickness type, 3 = Reinforced wall - Thick wall type (only available for type PKK53※)

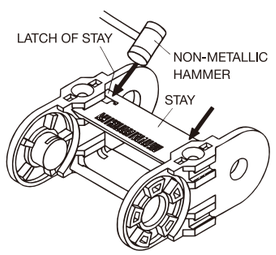
- Horizontally connectable (Combination of types are limited)
- Possible to put cables inside POWER GODZILLA from the inner and outer radius sides

- DIVIDERs - type PDV and PDH are available to sort cables inside POWER GODZILLA
- DIVIDERs - type PDV and PDH shall be connected to STAYs (or OUTER COVERs for type PKK※※5) before connect STAYs / OUTER COVERs to LINKs
- Disconnection of LINKs can be done easily. Should shortening the length of POWER GODZILLA be required, take out SPREADER from LINKs and disconnect them.
- Reassembly of LINKs can be done easily. Should more inside space for cables be required, replace STAYs with longer STAYs (or connect ADITIONAL STAY to POWER GODZILLA)
- Fix POWER GODZILLA (except type PKK5※※) to machinery / an installation place with countersunk head screws (There are holes for screws on LINKs. The hole size is depending on types of POWER GODZZILA: M4, M6, or M8)
  Note: Bolts (such as Hexagon head bolts) shall be used for type PKK5※※in stead of countersunk head screws.
- Refer to the page for SCREW / BOLT for PKK SERIES for more information

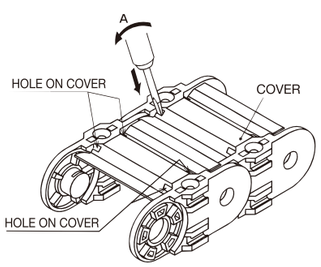
- Use GUIDE CHANNEL and SLIDE RAIL for long traveling.
  Note: Contact us for information of what situation requires GUIDE CHANNEL and SLIDE RAIL
- Should fixing cables at the end of POWER GODZILLA be required, use POWER GODZILLA accessories (PGBB, PGCA8, PGCA10, PGAP, PGD2V). Refer to the page for those accessories



DISCONNECTION OF STAY



- Diagonally Hit the latch of STAY with non-metallic hammer to release the hook of latch
- Note: Do not hit the latch hard, otherwise, STAY breaks



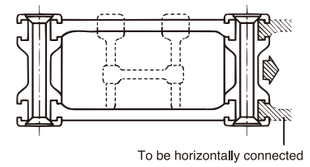
①Insert a screwdriver(flat-shaped end) into each hole on COVER
②Pull down the screwdriver (Refer to the drawing) to release the hook of latch

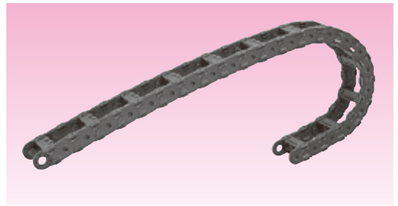
TYPE PKK

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	ENVIRONMENT	FLAMMABILITY
PA6	Black	Lowest -15℃ ~Highest 80℃	RoHS	UL94HB

PKK ※※0（120/220/320/530）

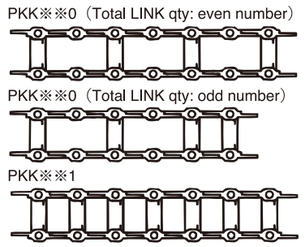
- Cable carriers with STAYs assembled on every 2 pairs of LINKs

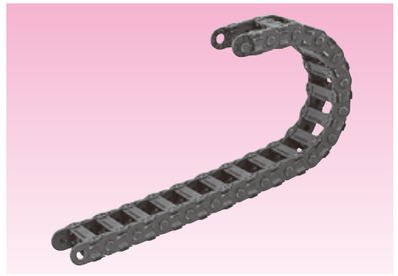




PKK ※※1（121/221/321/531）

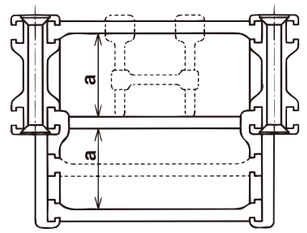
- Cable carriers with STAYs assembled on every pair of LINKs

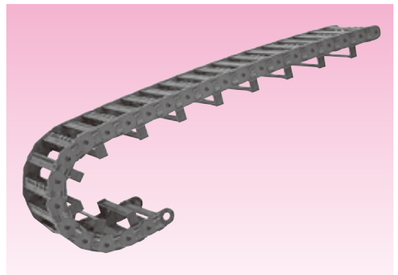




PKK ※※3（123/223/323）

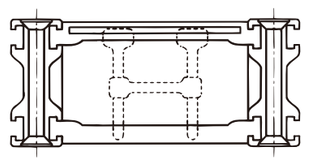
- Cable carriers with ADDITIONAL STAYs on every 2 pairs of LINKs on the inner radius side
- Suitable for low speed and short traveling
- Possible to connect ADDITIONAL STAYs on LINKs on the outer radius sides

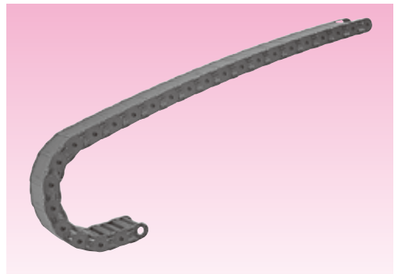




PKK ※※5（125/225/325/535）

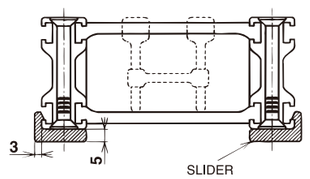
- COVERED Type
- Cable carriers with INNER/OUTER COVERs in stead of regular STAYs
- Dust particle protection

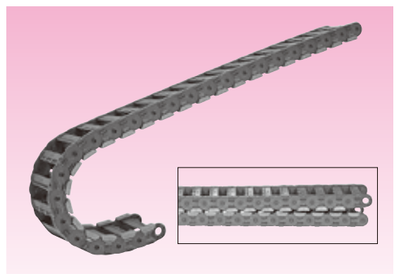




PKK ※※8（128/228/328）

- Cable carriers with SLIDERs
- Sliding movements
- Suitable for operation of long traveling / highly repeated movements, and with traveling speed 1m/second or faster,
  Note: Contact us for information of what situation requires SLIDERs
- When 2 or more POWER GODZILLA are connected horizontally, SLIDERs are only needed on the outside walls of LINKs
- SLIDERs are not connected to END LINKs
- Available on request: Reinforced SLIDERs (abrasion resistance is higher than regular SLIDERs)
  Note: only available for PKK228, PKK328
  When the reinforced SLIDERs are required, indicate the product code with an indication of Type PKK228N / PKK328N on your purchase order.





MAIN MATERIAL	COLOR	ENVIRONMENT
PA6	Black	RoHS

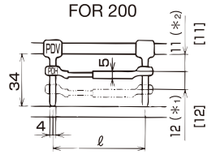
TYPE PKK

DIVIDER

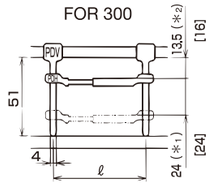
- DIVIDERs - type PDV and PDH are usually used for every other pair of LINKs
- PDV can be repositioned horizontally in increments of 2mm
- PDH can be repositioned vertically (12mm for PKK2※※ / 24mm for PKK3※※ / 60mm for PKK5※※) in increments of 3mm
- PDV availability (4 kinds in size): PDV100, PDV200, PDV300, PDV500
- PDH availability (2 types in length): PDH55, PDH75
- PDH55 extends from 55mm to 80mm / PDH75 extends from 75mm to 100mm
- Available on request: Shorter PDH (One of its sides is connected to PDV)

FOR 100

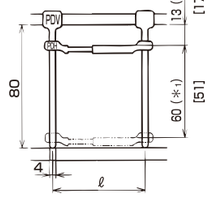
FOR 200



FOR 300



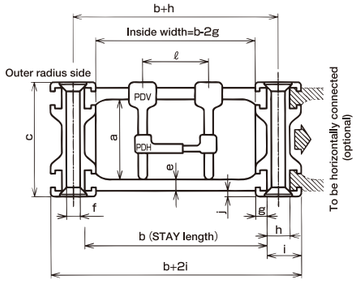
FOR 500

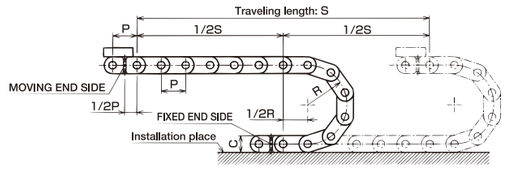


※1…PDH connectable range
※2…Min. distance

- Size in 【 】 is for DIVIDER PDV※25 (used for PKK※※5)

PKK SERIES SIZE





- The length of POWER GODZILLA (L): determined by 1 / 2 S + π R + R + 2P , or longer
- Qty of LINKs: determined by L / P (Note: The remainder shall be rounded up)

Deli-very	Type PKK	Bend radius availability	Pitch P	Inside height a	Outside height c	e	f	g	h	i	j	ℓ
○	120,121	40/50/60/75	35	16	25	3	4.3 (M4)	3	8	11	1.5	55～80 75～100
○	123,125,128	50/60/75										
○	220,221	75/100/150/200/300	65	34	50	5	6.3 (M6)	5	10	15	3	
○	223,225,228※	100/150/200/300										
○	320,321	100/150/200/250/300/400	90	51	75	8	8.3 (M8)	6	12	18	4	
○	323,325,328※	150/200/250/300/400										
○	530,531	150/200/250/300/400/500	115	81	108	8		6	17	23	5.5	
○	535	200/250/300/400/500										

※Type code of reinforced SLIDERs : PKK228N / PKK328N

Type PKK	b (STAY length)
120,121,123,128	30 50 80 100
125	50 100
220,221,223,228	50 60 70 80 90 100 120 150 170 200
225	50 100 150 200
320,321,323,328 530,531	50 100 120 150 200 250 300
325	100 150 200 300
535	150 200 300

PRODUCT CODE

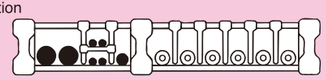
e.g. Horizontally connected POWER GODZILLA
Traveling length S: 3.8m, Bend radius R: 200mm
Cable outer dia.(φd) x qty (n): φ20 x 2 / φ4 x 4 / φ14 x 1
Hose outer dia.(φd) x qty (n): φ20 x 6

PKK221 / 200 / 100 + 150 x 42P + (PDV X 7 + PDH55 X 1) -H

PKK221 ... Type PKK 221
200 ... Bending radius
100 + 150 ... STAY length
42P ... Qtys of Links
(PDV X 7 + PDH55 X 1) ... (DIVIDER type PDV x Qtys + DIVIDER type PDH55 x Qtys)
- H ... Movement

- Refer to the page of POWER GODZILLA MOVEMENT for information of Movement
- Contact us for style selection

e.g. Horizontally connected POWER GODZILLA

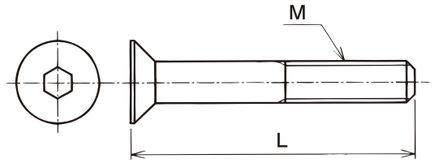


- POWER GODZILLA has PRETENSION (curving chain line) as its regular design in order to hold up against weight of cables to be loaded inside.
- Availability: Types with PRETENSION (This is Regular type) / Types without PRETENSION
- Whether or not POWER GODZILLA shall have PRETENSION depends on its movement Refer to the page for POWER GODZILLA MOVEMENT.
- Advise us on a product code with a movement type
- Movement type N, M, F, I, U : POWER GODZILLA with PRETENSION will be selected
- Unless any movement type is indicated with a product code: POWER GODZILLA with PRETENSION will be selected
- Any other movement types: POWER GODZILLA without PRETENSION will be selected
- Should POWER GODZILLA without PRETENSION be required, advise us on your special request.

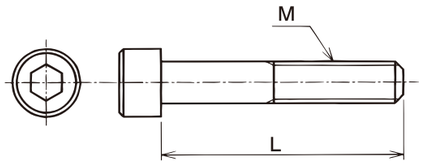
TYPE PKK

SCREW / BOLT FOR PKK SERIES

- Countersunk head screws shall be used to fix POWER GODZILLA (except type PKK5※※) to machinery / an installation place
- Note: Bolts (such as Hexagon head bolts) shall be used for type PKK53※in stead of countersunk head screws.
- Refer to the chart and drawing, select the appropriate one



(Countersunk head screws for PKK12※ 22※、32※)

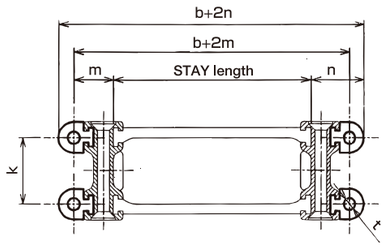


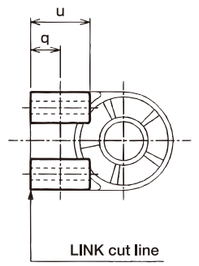
(Hexagon head bolts for PKK53※)

Deli-very	Item number	Length L	Screw / bolt size M	Designed for
◎	PGPA425	30	M4	PKK12※
◎	PGPA426	40		
◎	PGPA427	55	M6	PKK22※
◎	PGPA428	60		
◎	PGPA429	70		
◎	PGPA453	80	M8	PKK32※
◎	PGPA430	85		
◎	PGPA431	90		
◎	PGPA432	100		
◎	PGPA433	120		PKK53※

BRACKET FOR PKK SERIES

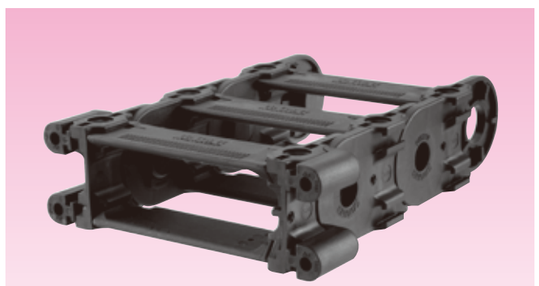
- Bracket to fix POWER GODZILLA PKK SERIES on vertical installation place
- Cut a pair of LINKs as drawing shows
- Contact us for information of how LINKs should be cut
- Available on request: Cut LINKs





MAIN MATERIAL	COLOR	ENVIRONMENT
PA6	Black	RoHS

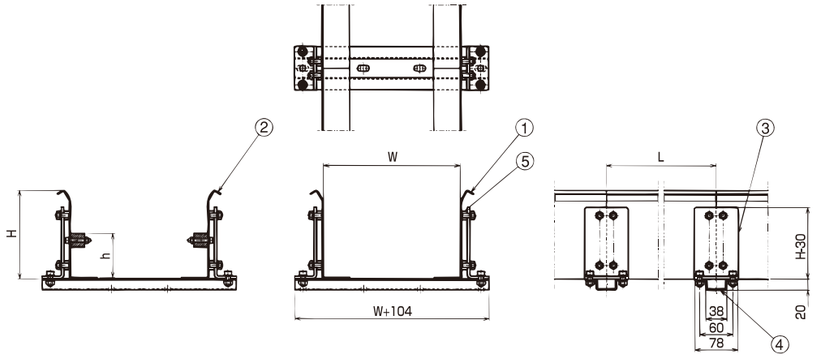
Deli-very	Item number	Connectable Type	Pitch k	m	n	LINK cut line q+0.5	u	t	bolt size
◎	PGZ 12	PKK 12※	15	14	19	8.5	16.5	φ4.1	M4
◎	PGZ 22	PKK 22※	34	20	28	15	30.5	φ6.1	M6
◎	PGZ 32／52	PKK 32※	55	23	32	20	40.5	φ8.1	M8
		PKK 53※	85	28	37	20			



GUIDE CHANNEL FOR PKK SERIES

MATERIAL	SURFACE FINISH
Steel	Hot dipped zinc coating

- GUIDE CHANNEL for PKK SERIES
- To be used for long traveling
- To be installed with SLIDE RAIL (Non-metallic)
- GUIDE CHANNEL consists of ① to ⑤ as the drawing shows
- Availability of GUIDE CHANNEL: GUIDE CHANNEL with SLIDE RAIL / without SLIDE RAIL
- Refer to the page of INSTALLATION - section 5. BRIEF INSTRUCTION OF GUIDE CHANNEL & SLIDE RAIL INSTALLATION for more information
- Inside width of GUIDE CHANNEL (W):
  Refer to the page of PKK SERIES SIZE and find " b+2i " in the drawing which denotes the outer width of POWER GODZILLA. "W" shall be the Exact 6mm wider than "b+2i".
  Note: If "W" is wider than the limit, it may cause traveling difficulty of POWER GODZILLA.
- Available on request:
  Additional sizes, GUIDE CHANNEL for KOL SERIES



Deli-very	Item number	Part name	Material	Designed for	H	h	L	SLIDE RAIL
7	PGPA 480	① Side piece A	Hot dipped zinc coated steel	PKK221,228	100	—	2000	without Slide Rail
7	PGPA 481			PKK321,328	150	—		
7	PGPA 482	② Side piece B		PKK221	100	50		with Slide Rail (Size 25 x 25mm)
7	PGPA 483			PKK228	100	55		
7	PGPA 484			PKK321	150	75		with Slide Rail (Size 25 x 25mm)
7	PGPA 485			PKK328	150	80		
7	PGPA 486	③ Plate		PKK22※	—	—	—	—
7	PGPA 487			PKK32※	—	—	—	—
7	PGPA 488	④ Rail		For all PKK SERIES	To be decided according to POWER GODZILLA product code			
◎	PGPA 489	⑤ Fastening parts		For all PKK SERIES	Bolts, washers and etc.			

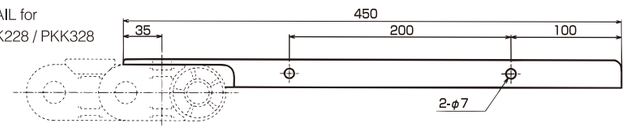
SLIDE RAIL FOR PKK SERIES

MATERIAL
PE (specially developed)

- Non-metallic SLIDE RAIL for PKK SERIES
- Designed for sliding movement
- Advantage of Non-metallic SLIDE RAIL:
  Reduce friction for sliding movement of POWER GODZILLA
  Solution for difference in level between SLIDE RAILS
- No holes on SLIDE RAIL to fix, so cut a hall for your specification
- PGPA492 shall be selected for FIXED END SIDE of Type PKK228
- PGPA493 shall be selected for FIXED END SIDE of Type PKK328

- SLIDE RAIL

- SLIDE RAIL for Type PKK228 / PKK328

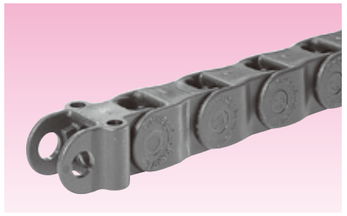


Deli-very	Item number	Part name	Material	L	A
◎	PGPA 490	SLIDE RAIL for PKK SERIES	PE	2000	25×25
7	PGPA 492	SLIDE RAIL for FIXED END SIDE of Type PKK228 (2 pieces per set)		450	25×25
7	PGPA 493	SLIDE RAIL for FIXED END SIDE of Type PKK328 (2 pieces per set)			25×25

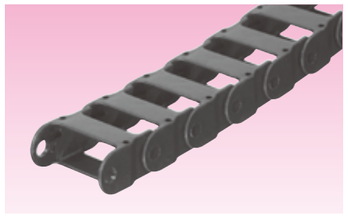
TYPE KOL

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	ENVIRONMENT	FLAMMABILITY
PA6	Black	Lowest -15℃ ~Highest 80℃	RoHS	UL94HB

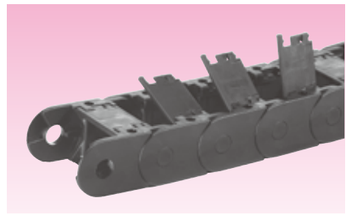
NON-METALLIC POWER GODZILLA - FOR LIGHT WEIGHT APPLICATION



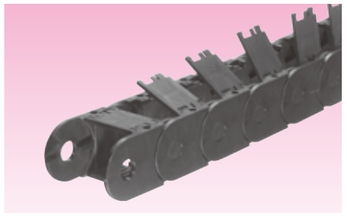
KOL 0.3/01.3



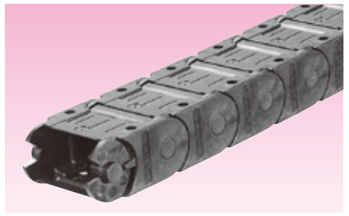
KOL 1.3/2.3/3.3



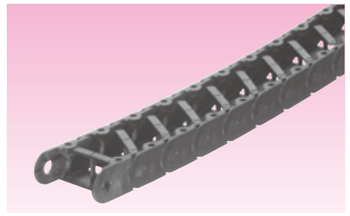
KOL 00/0/02/03/05.0/06.0/10.0/11.0/12.0/13.0/14.0



KOL 16/17/19.0/20.0/21.0/22.0/24.0/29.0



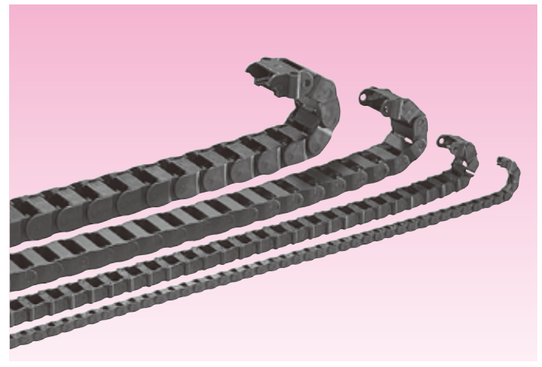
KOL 10.5/19.5/20.5/21.5/24.5/25.5/27.5

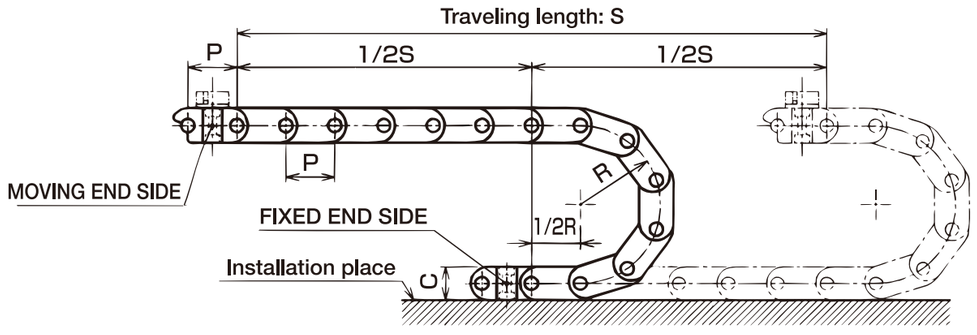


KOL 06.4

CHARACTERISTICS

- Suitable for short traveling and narrow space
- Good cost performance
- Available types:
  Type 0.3, 01.3, 1.3, 2.3, 3.3 : Non-open-able type
  Type 00, 0, 02, 03, 05.0, 06.0, 10.0, 11.0, 12.0, 13.0, 14.0 : Open on the inner radius side
  Type 16, 17, 19.0, 20.0, 21.0, 22.0, 24.0, 29.0 : Open on the inner radius side
  Type 10.5, 19.5, 20.5, 21.5, 24.5, 25.5, 27.5 : Open on the outer radius side
  Type 06.4 : T-STAY open-able type
- Use GUIDE CHANNEL and SLIDE RAIL for long traveling
  Note: Contact us for information of what situation requires GUIDE CHANNEL and SLIDE RAIL
- Disconnection of LINKs / Shortening the length of POWER GODZILLA
  1) Open SPACE BARs (or FLAP STAYs) on LINKs to be disconnected and also on some LINKs around the LINKs to be disconnected (except for Non-open-able type)
  2) Insert a screwdriver(flat-shaped end) into LINKs
  3) Pull it down toward you, and disconnect LINKs.





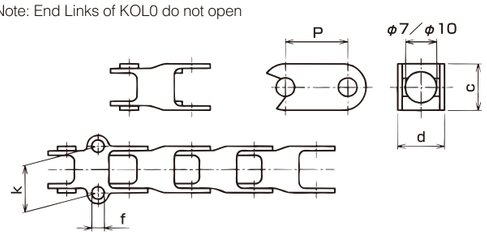
- The length of POWER GODZILLA (L): determined by 1 / 2 S + π R + R + 2P , or longer
- Qty of LINKs: determined by L / P (Note: The remainder shall be rounded up)

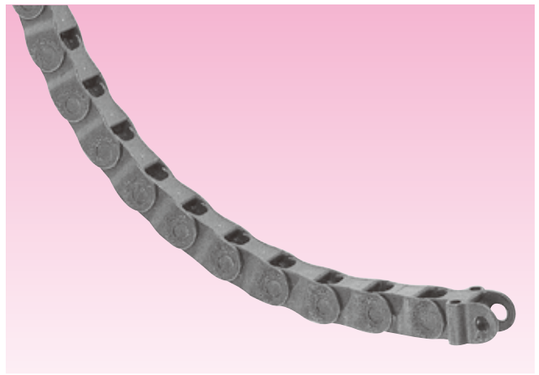
TYPE KOL 00, 0, 0.3, 01.3, 1.3, 2.3, 3.3

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	ENVIRONMENT	FLAMMABILITY
PA6	Black	Lowest -15℃ ~Highest 80℃	RoHS	UL94HB

CHARACTERISTICS

- Thinner / light body
- Lower abrasion
- Extra end fittings are not required to fix POWER GODZILLA (Except KOL0 and KOL0.3) to machinery / an installation place
- LINKs of KOL01.3 (with holes each LINK to fix) is used as END LINKs of KOL0 and KOL0.3)
- Only KOL0 and KOL00 are Open-able type
  Note: End Links of KOL0 do not open





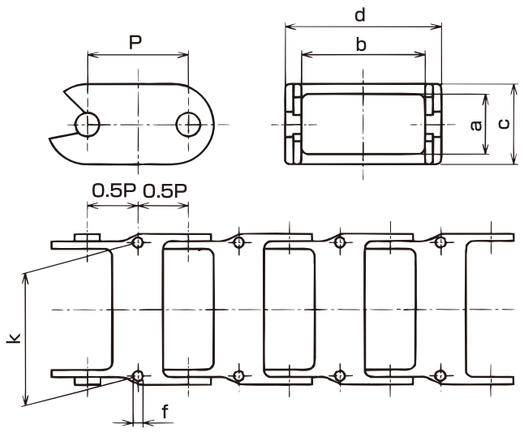
- LINKs of KOL01.3 is used as END LINKs of KOL0 and KOL0.3)

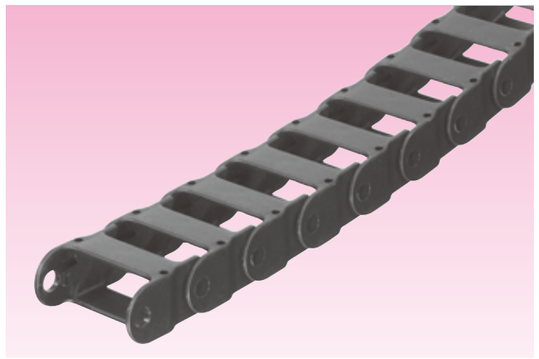
Deli-very	Type	Bend radius availability	Pitch P	Inside Height a	Inside Width b	Outside Height c	Outside Width d	To fix Hole size to fix f	To fix Pitch k	Weight (kg/m)
◎	KOL 00	15/30	15	φ7		10	12	3.1(M3)	12	0.1
◎	KOL 0.3	20/30	20	φ10		15	15	4.2(M4)	15	0.13
◎	KOL 0	20/30	20	φ10		15	15	4.2(M4)	15	0.13

PRODUCT CODE KOL0.3 / 30 x 45P - C

KOL0.3 ... Type KOL0.3 45P ... Qtys of Links
30 ... Bending radius - C ... END LINKs

・Note: For KOL01.3, 45P is inclusive of END LINKs





- DIVIDER - type PDV24 is available to sort cables inside POWER GODZILLA (only available for KOL2.3 and KOL3.3)
- DIVIDER - type PDV24 is usually connected on every 2 LINKs

Deli-very	Type	Bend radius availability	Pitch P	Inside Height a	Inside Width b	Outside Height c	Outside Width d	To fix Hole size to fix f	To fix Pitch k	Weight (kg/m)
◎	KOL 01.3	30	20	φ10		15	22	4.2(M4)	15	0.15
◎	KOL 1.3	40/100/200	40	24	18	30	30	4.2(M4)	23	0.5
◎	KOL 2.3	40/100/200	40	24	48	30	60	4.2(M4)	53	0.6
◎	KOL 3.3	40/100/200	40	24	78	30	90	4.2(M4)	83	0.7

PRODUCT CODE KOL2.3 / 100 x 35P + (PDV24 x 1) - N

KOL2.3 ... Type KOL2.3 (PDV24 x 1) ... (DIVIDER type PDV24 x 1)
100 ... Bending radius - N ... Movement
35P ... Qtys of Links

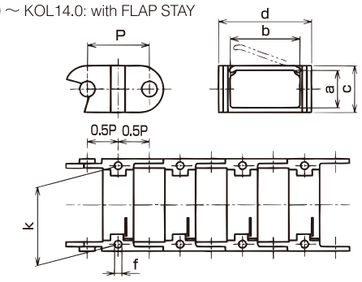
・DIVIDER type PDV24 is usually used for every 2nd LINK

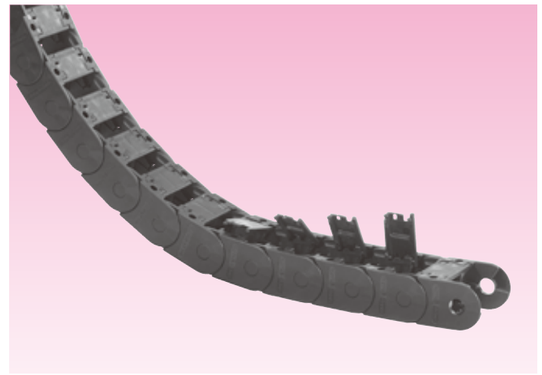
TYPE KOL 02～14.0

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	ENVIRONMENT	FLAMMABILITY
PA6	Black	Lowest -15℃ ~Highest 80℃	RoHS	UL94HB

CHARACTERISTICS

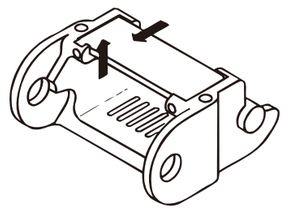
- Open-able type (Open on the inner radius side)
- Easily to put cables inside POWER GODZILLA
- With holes on each LINK to fix POWER GODZILLA to machinery / an installation place so that Extra end fittings are not required
- Lower abrasion
- PINCH STAY is available to sort cables inside POWER GODZILLA (only available for KOL10.0 ～ KOL14.0)
- KOL10.0 ～ KOL14.0: with FLAP STAY





Deli-very	Type	Bend radius availability	Pitch P	Inside Height a	Inside Width b	Outside Height c	Outside Width d	To fix Hole size to fix f	To fix Pitch k	Weight (kg/m)
◎	KOL 02	20/30	20	10	24	15	37	4.2(M4)	30	0.2
◎	KOL 03	20/30	20	10	39	15	51	4.2(M4)	44	0.28
◎	KOL 05.0	35/50/70	26	17	27	22	38	4.2(M4)	32.4	0.34
◎	KOL 06.0	35/50/70	26	17	37	22	48	4.2(M4)	42.4	0.37
◎	KOL 10.0	40/75/100/150/200	35	23	34	30	50	5.2(M5)	40	0.54
◎	KOL 11.0	40/75/100/150/200	35	23	44	30	60	5.2(M5)	50	0.61
◎	KOL 12.0	40/75/100/150/200	35	23	64	30	80	5.2(M5)	70	0.65
◎	KOL 13.0	40/75/100/150/200	35	23	79	30	95	5.2(M5)	85	0.75
◎	KOL 14.0	40/75/100/150/200	35	23	109	30	125	5.2(M5)	115	0.87

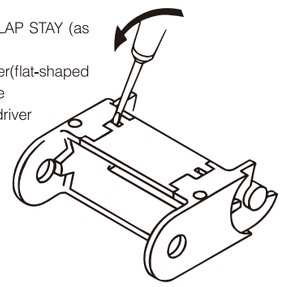
SPACE BAR (KOL02～03)



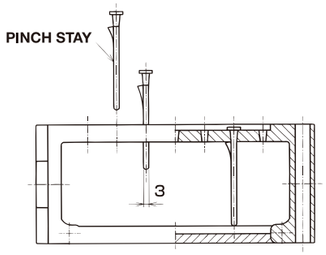
・Instruction to open SPACE BAR (as per the drawing)
①Find a groove around a mark "Heben"
②Insert a screwdriver(flat-shaped end) into the groove
③Push SPACE BAR forward while pushing up the screwdriver
・Instruction to close SPACE BAR
①Until SPACE BAR is completely fastened by means of a latch, push it down while moving it forward

FLAP STAY (KOL05.0～14.0)

・Instruction to open FLAP STAY (as per the drawing)
①Insert a screwdriver(flat-shaped end) into the groove
②Push up the screwdriver to open FLAP STAY



・PINCH STAY to divide the space inside POWER GODZILLA (for KOL10.0 ～ KOL14.0)



PRODUCT CODE KOL12.0 / 100 x 35P + (PPS x 2) - S

KOL12.0 ... Type KOL12.0 (PPS x 2) ... (PINCH STAY x Qtys)
100 ... Bending radius - S ... Movement
35P ... Qtys of Links

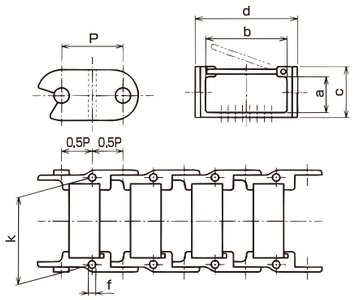
・PINCH STAY is usually used for every 2nd LINK

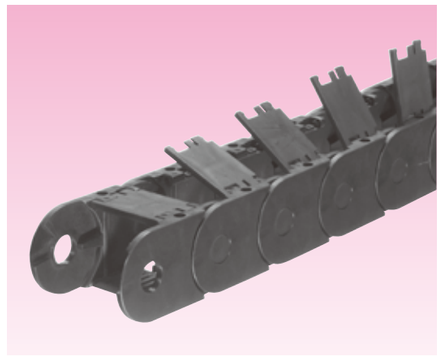
TYPE KOL 16,17,19.0～22.0,24.0,29.0

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	ENVIRONMENT	FLAMMABILITY
PA6	Black	Lowest -15℃ ~Highest 80℃	RoHS	UL94HB

CHARACTERISTICS

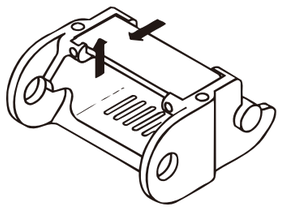
- Open-able type (Open on the inner radius side)
- KOL19.0 ～ KOL29.0 with FLAP STAY: a screwdriver(flat-shaped end) is required to open FLAP STAY
- KOL16, KOL17 : SPACE BAR can be opened by hand
- Available on request:
  Non-open-able type KOL16.3
  Non-open-able type KOL17.3
- Typical application for KOL16.3, KOL17.3: Typically used in situations where pressurized oil hoses can force the SPACE BAR to open
- With holes on each LINK to fix POWER GODZILLA to machinery / an installation place so that Extra end fittings are not required
- Lower abrasion
- PINCH STAY is available to sort cables inside POWER GODZILLA





Deli-very	Type	Bend radius availability	Pitch P	Inside		Outside		To fix		Weight (kg/m)
				Height a	Width b	Height c	Width d	Hole size to fix f	Pitch k	
◎	KOL 16	60/125/250	50	28	59	40	75	5.2(M5)	65	1.05
◎	KOL 17	60/125/250	50	28	109	40	125	5.2(M5)	115	1.3
◎	KOL 19.0	75/100/150/200/250	55	38	78	50	95	6.3(M6)	85	1.35
◎	KOL 20.0	75/100/150/200/250	55	38	133	50	150	6.3(M6)	140	1.57
◎	KOL 21.0	75/100/150/200/250	55	38	48	50	65	6.3(M6)	55	1.3
◎	KOL 22.0	75/100/150/200/250	55	38	108	50	125	6.3(M6)	115	1.52
◎	KOL 24.0	200	70	50	77	65	95	6.3(M6)	85	1.68
◎	KOL 29.0	100/125/150/200/300	70	50	205	65	225	6.3(M6)	215	2.71

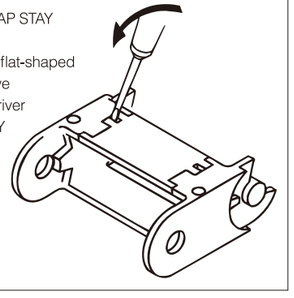
SPACE BAR (KOL16,KOL17)



・Instruction to open SPACE BAR (as per the drawing)
①Slide SPACE BAR by hand
・Instruction to close SPACE BAR
①Until SPACE BAR is completely fastened by means of a latch, push it down while moving it forward

FLAP STAY (KOL19.0～29.0 and KOL※5)

・Instruction to open FLAP STAY (as per the drawing)
①Insert a screwdriver(flat-shaped end) into the groove
②Push up the screwdriver to open FLAP STAY



PRODUCT CODE

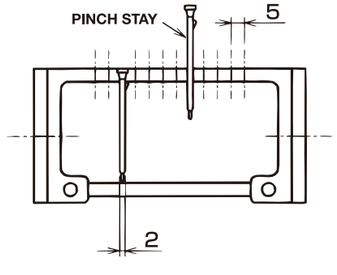
KOL17 / 125 x 48P + (PPS x 2) - S

KOL17 ... Type KOL17
125 ... Bending radius
48P ... Qtys of Links
(PPS x 2) ... (PINCH STAY x Qtys)
- S ... Movement

・PINCH STAY is usually used for every 2nd LINK

PINCH STAY PPS ASSEMBLY INSTRUCTION

①Put PINCH STAY into holes on the outer radius side of LINKs
Note: For KOL※5, Put PINCH STAY into holes on the inner radius side of LINKs
②Push it down until PINCH STAY is completely fastened by means of a latch
・Note: PINCH STAY is usually used for every 2nd LINK
・Note: PINCH STAY can be assembled even after cable insertion

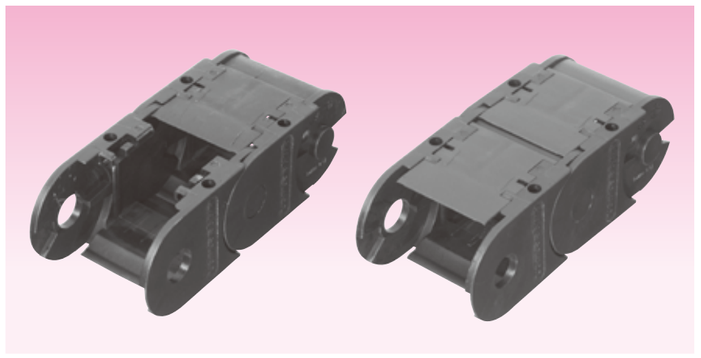


TYPE KOL 10.5, 19.5, 20.5, 21.5, 24.5, 25.5, 27.5

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	ENVIRONMENT	FLAMMABILITY
PA6	Black	Lowest -15℃ ~Highest 80℃	RoHS	UL94HB

CHARACTERISTICS

・Open-able type (Open on the outer radius side)
・with FLAP COVERs
・Closed construction
・With holes on each LINK to fix POWER GODZILLA to machinery / an installation place so that Extra end fittings are not required
・Lower abrasion



Deli-very	Type	Bend radius availability	Pitch P	Inside		Outside		To fix		Weight (kg/m)
				Height a	Width b	Height c	Width d	Hole size to fix f	Pitch k	
◎	KOL 10.5	60/75/100/150	35	20	33	30	50	5.2(M5)	40	0.7
◎	KOL 19.5	100/150/200/250	55	38	78	50	95	6.3(M6)	85	1.8
◎	KOL 20.5	100/150/200/250	55	38	130	50	150	6.3(M6)	140	2.2
◎	KOL 21.5	100/150/200/250	55	38	48	50	65	6.3(M6)	55	1.3
◎	KOL 24.5	125/150/200/300	70	50	77	65	95	6.3(M6)	85	2.2
◎	KOL 25.5	125/150/200/300	70	50	117	65	135	6.3(M6)	125	2.6
◎	KOL 27.5	125/150/200/300	70	50	177	65	195	6.3(M6)	185	3.0

PINCH STAY is available to sort cables inside POWER GODZILLA

PRODUCT CODE

KOL21.5 / 100 x 48P + (PPS x 2) - N

KOL21.5 ... Type KOL21.5
100 ... Bending radius
48P ... Qtys of Links
(PPS x 2) ... (PINCH STAY x Qtys)
- N ... Movement

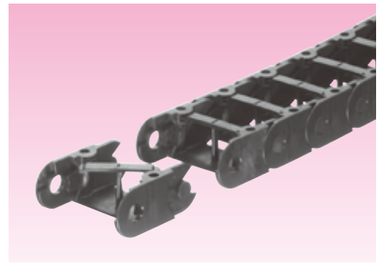
・PINCH STAY is usually used for every 2nd LINK

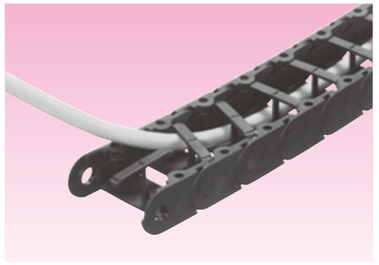
TYPE KOL 06.4

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	ENVIRONMENT	FLAMMABILITY
PA6	Black	Lowest -15℃ ~Highest 80℃	RoHS	UL94HB

CHARACTERISTICS

・T-STAY open-able type
・T-STAY can be opened by hand
・With holes on each LINK to fix POWER GODZILLA to machinery / an installation place so that Extra end fittings are not required





PRODUCT CODE

KOL06.4 / 35 x 35P - N

KOL06.4 ... Type KOL06.4
35 ... Bending radius
35P ... Qtys of Links
- N ... Movement

Deli-very	Type	Bend radius availability	Pitch P	Inside		Outside		To fix		Weight (kg/m)
				Height a	Width b	Height c	Width d	Hole size to fix f	Pitch k	
◎	KOL 06.4	35/70	30	17	2 sections ×18	22	48	4.2(M4)	41	0.34

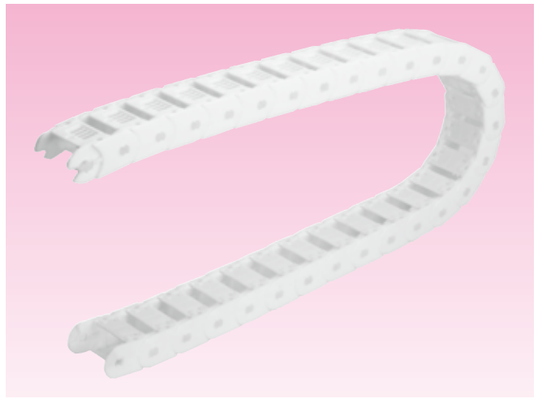
TYPE KOR

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	FLAMMABILITY	APPLICATION
PA66	Ivory white	Lowest -15℃ ~Highest 80℃	UL94HB	Clean place

NON-METALLIC POWER GODZILLA - FOR CLEANLINESS REQUIREMENT

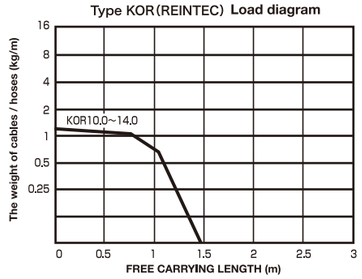
CHARACTERISTICS

- KOR (KOLIBRI REINTEC)
- Friction free connection with TPU torsion bearing ELTOLA
- Quiet running
- Prevention of abrasion
- Low vibration
- Designed for application which requires cleanliness
- Suitable for application for the Semiconductor industry / Food industry / Textile (fiber)industry
- IPA Qualification Certificate
  US Fed.std.209E(1988):class1
  VDI 2083-1(1004):class1
- Suitable for short traveling



Deli-very	Type	Bend radius availability	Pitch P	Inside		Outside		To fix		Weight (kg/m)
				Height a	Width b	Height c	Width d	Hole size to fix f	Pitch k	
◎	KOR 10.0	75/100	35	23	34	30	50	5.1(M5)	40	0.49
◎	KOR 11.0	75/100	35	23	44	30	60	5.1(M5)	50	0.52
◎	KOR 12.0	75/100	35	23	64	30	80	5.1(M5)	70	0.59
◎	KOR 13.0	75/100	35	23	79	30	95	5.1(M5)	85	0.64
◎	KOR 14.0	75/100	35	23	109	30	125	5.1(M5)	115	0.74

Type KOR(REINTEC) Load diagram

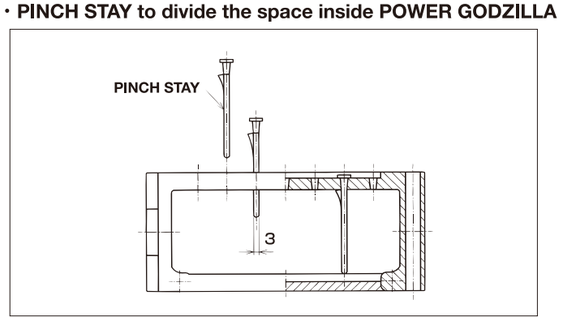


- This LOAD DIAGRAM apply only to movement type N
- KOR SERIES can not be used for movement type W

FLAP STAY

Please refer to the page for KOL10.0 ～ KOL14.0 for more information

・PINCH STAY to divide the space inside POWER GODZILLA



・Material for PINCH STAY: PA6 (color: Black)

PRODUCT CODE

KOR11.0 / 100 x 20P + (PPS x 2) - N

KOR11.0 ... Type KOR11.0
100 ... Bending radius
20P ... Qtys of Links
(PPS x 2) ... (PINCH STAY x Qtys)
- N ... Movement

・PINCH STAY is usually used for every 2nd LINK

IPA Qualification Certificate


Fraunhofer
TESTED® DEVICE
ekd gelenkrohr „Reintec"
Report No. EG 0111-250

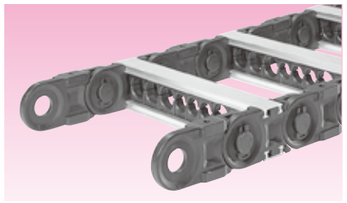
IPA Qualification Certificate

DUPLIKAT

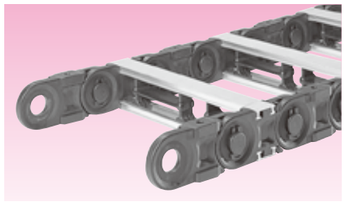
TYPE PL

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	ENVIRONMENT	FLAMMABILITY
PA6	Black	Lowest -15℃ ~Highest 80℃	RoHS	UL94HB

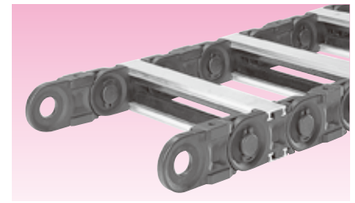
NON-METALLIC POWER GODZILLA - REINFORCED CONSTRUCTION



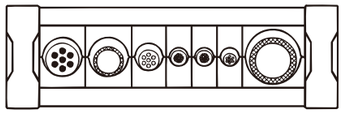
PLE 220/320/520



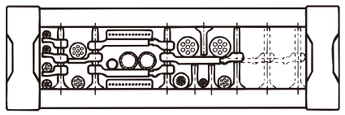
PLP 220/320/520



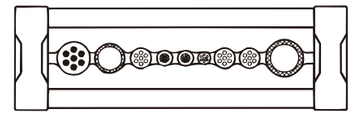
PLS 220/320/520



INSERT



DIVIDER



FOAM STAY

CHARACTERISTICS

・Suitable for long traveling
・The most recommended SERIES among non-metallic POWER GODZILLA in terms of weight of load to be put inside POWER GODZILLA
・With ALUMINUM STAYs assembled on every 2 pairs of LINKs
・FILLERs are assembled on LINKs where ALUMINUM STAYs are not assembled
・With holes (for M6/M8 bolt) on each LINK to fix POWER GODZILLA to machinery / an installation place so that Extra end fittings are not required
・Use GUIDE CHANNEL and SLIDE RAIL for longer traveling
Note: Contact us for information of what situation requires GUIDE CHANNEL and SLIDE RAIL
・Construction: Main assembly parts:
Non-metallic LINKs, ALU-C-PROFILE (ALUMINUM STAYs), SPREADERs, INNER STAYs

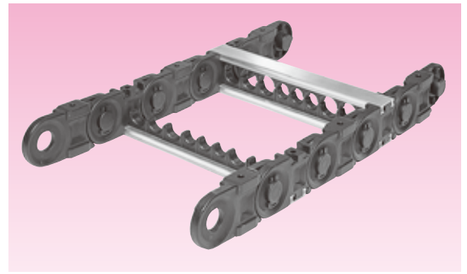
・How to read the Type Code:
PLE/PLP/PLS + Size code

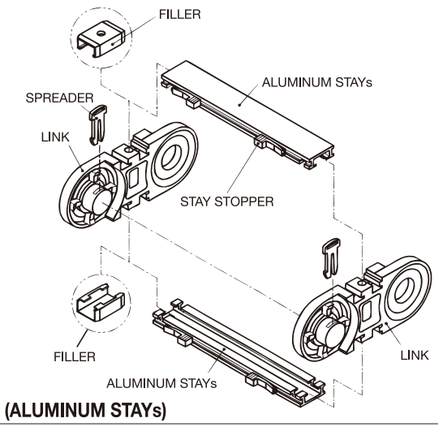
・Available types decided by INNER STAYs:
PLE : With INSERT STAYs
PLP : With DIVIDERs
PLS : With FORM STAYs
・Available on request: PL with both INSERT STAYs and DIVIDERs

・Size : 3 sizes are available for each of the types according to inside height between UPPER and LOWER ALUMINUM STAYs (refer to the drawing on the page for INNER STAYs. "a" denotes inside height between UPPER and LOWER Aluminum STAYs)
220 = Inside height 31mm, 320 = Inside height 49mm, 520 = Inside height 68mm

・ALUMINUM STAY length between inner walls of LINKs: Available from 50mm to 600mm in increments of 5mm (refer to the drawing on the page for INNER STAYs. "b" denotes the inside width of POWER GODZILLA. ALUMINUM STAY length between inner walls of LINKs is the equivalent of "b")

・Horizontally connectable.
・Possible to put cables inside POWER GODZILLA from the inner and outer radius sides after take off ALUMINUM STAY
・Assembly / disconnection of ALUMINUM STAYs can be done easily
・Disconnection of LINKs: Should shortening the length of POWER GODZILLA be required, take out SPREADER from LINKs and disconnect them
・Fix POWER GODZILLA to machinery / an installation place with bolts (There are holes for bolts on LINKs. The hole size is depending on types of POWER GODZILLA: M6, or M8)

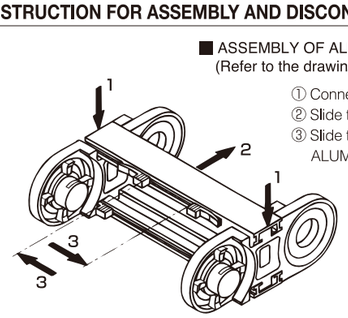




・INSTRUCTION FOR ASSEMBLY AND DISCONNECTION OF ALU-C-PROFILE (ALUMINUM STAYs)

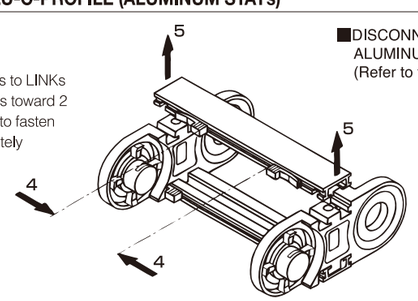
■ ASSEMBLY OF ALUMINUM STAYs
(Refer to the drawing 1 to 3)

① Connect ALUMINUM STAYs to LINKs
② Slide the ALUMINUM STAYs toward 2
③ Slide the STAY STOPPERS to fasten ALUMINUM STAYs completely



■DISCONNECTION OF ALUMINUM STAYs
(Refer to the drawing 4 to 5)

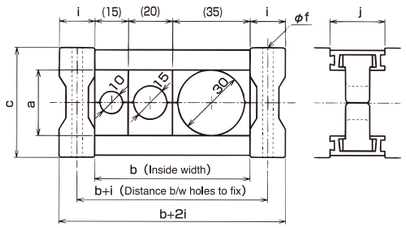
Reverse the order of INSTRUCTION FOR ASSEMBLY OF ALUMINUM STAYs



INNER STAYS FOR PL

PLE 220/320/520 INSERT

- INSERT PI
- Designed to sort cables inside POWER GODZILLA
- Non-metallic cubes with openings
- Consist of upper and lower part
- Size of opening available:
  For PLE 220 : From ϕ10mm to 30mm in increments of 5mm
  For PLE 320 : From ϕ10mm to 45mm in increments of 5mm
  For PLE 520 : From ϕ10mm to 65mm in increments of 5mm
- Width of cube: 5mm bigger than opening size (e.g. Width of cube with an opening ϕ30mm is 35mm)
- The minimum opening size shall be 1.1 times as big as the outside diameter of a cable to be inserted
- The minimum opening size shall be 1.2 times as big as the outside diameter of a hose to be inserted
- Refer to the drawing. "b" denotes the inside width of POWER GODZILLA:



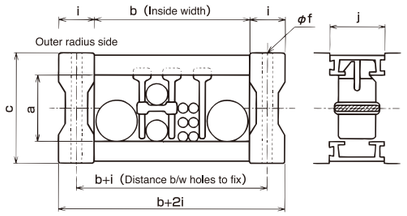
- How to read the product code:
  PLE220 / 150 x 39P + PI (10x1 + 15x1 + 30x1) - S
  PLE220 ... Type PLE 220
  150 ... Bending radius
  39P ... Qtys of Links
  PI (10x1 + 15x1 + 30x1) ... INSERT STAY PI (Opening size ϕ x Qtys of cube)
  - S ... Movement
- Refer to the page of POWER GODZILLA MOVEMENT for information of Movement
- Available on request: Should only INSERT STAY PI be required, item no. will be: PI + Size code + Opening size ϕ
  e.g. PI 320 / 15 denotes Size code 320 + Opening size ϕ15
- Contact us for style selection

PLP 220/320/520 DIVIDER PDV / PDH

- DIVIDER PDV / PDH
- Designed to sort cables inside POWER GODZILLA
- Refer to DIVIDER section for more information

- How to read the product code:
  PLP220 / 100 / 255 x 34P + (PDV X 3 + PDH55 X 1) - N
  PLP220 ... Type PLP 220
  100 ... Bending radius
  255 ... Inside width of POWER GODZILLA.
  ALUMINUM STAY length between
  inner walls of LINKs (refer to "b" in the drawing)
  34P ... Qtys of Links
  (PDV X 3 + PDH55 X 1) ... (DIVIDER type PDV x Qtys + DIVIDER type PDH55 x Qtys)
  - N ... Movement

- Refer to the page of POWER GODZILLA MOVEMENT for information of Movement
- Contact us for style selection



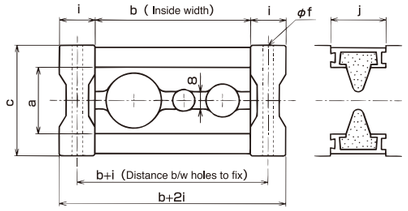
PLS 220/320/520 FOAM STAY

- FOAM STAY
- Consists of upper and lower FORM
- Designed to pinch and hold cables / hoses between upper and lower FOAM
- Suitable for highly frequent traveling of POWER GODZILLA
- The gap between upper and lower FOAM (in cable & hose free condition): 8mm
- Cable & hose max. outside diameter to be inserted: Refer to the page of CONSTRUCTION SUMMARY
- Cable & hose min. outside diameter to be inserted: Avoid inserting any cables / hoses with such a small outside diameter that they are not pinched or held stably enough by upper and lower FOAM

- Installation of cables / hoses with different outer diameters from each other: In this case, cut a moderate-size semicircular opening in upper and lower FORM for each of the cables / hoses' positions (except the smallest diameter-cable) in order to make FORM to pinch and hold the cables / hoses stably enough.
- Contact us for information of the FORM cutting instruction

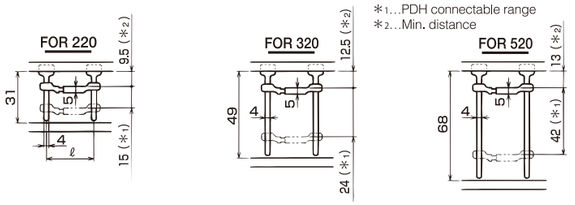
- How to read the product code:
  PLS320 / 200 / 245 x 25P - N
  PLS320 ... Type PLS 320
  200 ... Bending radius
  245 ... Inside width of POWER GODZILLA. ALUMINUM STAY length between inner walls of LINKs (refer to "b" in the drawing)
  25P ... Qtys of Links
  - N ... Movement

- Refer to the page of POWER GODZILLA MOVEMENT for information of Movement
- Contact us for style selection

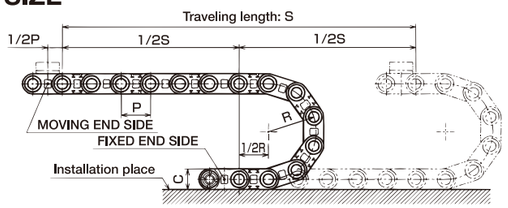


DIVIDER

- DIVIDER
- PDH55 extends from 55mm to 80mm / PDH75 extends from 75mm to 100mm
- PDH can be repositioned vertically in increments of 3mm
- PDV availability (3 kinds in size): PDV220 for PLP220, PDV320 for PLP320, PDV520 for PLP520
- PDH availability (2 types in length): PDH55, PDH75



SIZE



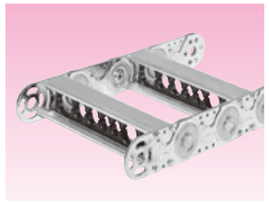
Deli-very	Type	Bend radius availability	Pitch P	Inside height a	Outside height C	f	i	j	ℓ
確	PLE/PLS/PLP 220	75/100/150/200/300	75	31	50	6.3(M6)	16	25	55 ~ 80
確	PLE/PLS/PLP 320	150/200/250/300/400	100	49	75	8.3(M8)	20	28	75 ~ 100
確	PLE/PLS/PLP 520	200/250/300/400/500	125	68	100	8.3(M8)	24	31	

- The length of POWER GODZILLA (L): determined by 1 / 2 S + π R + R + 2P , or longer
- Qty of LINKs: determined by L / P (Note: The remainder shall be rounded up)

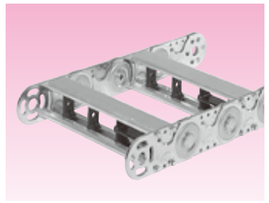
TYPE KL

MATERIAL	SURFACE FINISH	TEMPERATURE RANGE
Steel	Electroplated zinc	Lowest -15℃ ~Highest 150℃

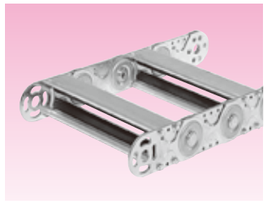
METALLIC POWER GODZILLA



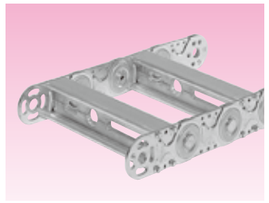
KLE 220/320/520



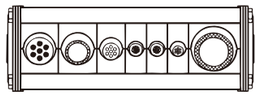
KLP 120/220/320/520/620



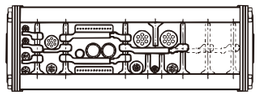
KLS 220/320/520



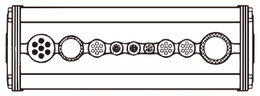
KLA 220/320/520/620



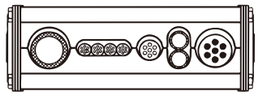
INSERT



DIVIDER



FOAM STAY



T-STYLE ALUMINUM STAY (T-PROFILE)

CHARACTERISTICS

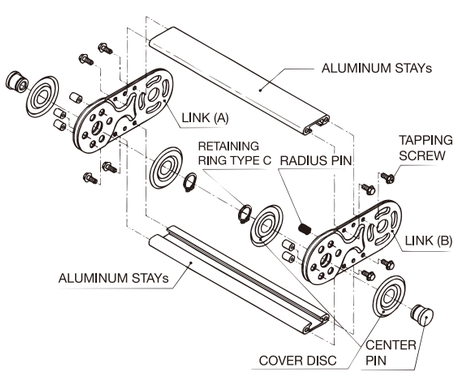
- Suitable for long traveling
- The most recommended SERIES among POWER GODZILLA for installation where heavier cables/hoses are required to be loaded inside POWER GODZILLA
- With ALUMINUM STAYs assembled on every 2 pairs of LINKs
- END FITTINGs are required to fix POWER GODZILLA
- Use GUIDE CHANNEL and SLIDE RAIL for longer traveling
  Note: Contact us for information of what situation requires GUIDE CHANNEL and SLIDE RAIL
- Construction: Main assembly parts:
  Metallic LINKs, ALU-C-PROFILE (ALUMINUM STAYs), INNER STAYs

- How to read the Type Code:
  PLE/PLP/PLS + Size code

- Available types decided by INNER STAYs:
  KLE : With INSERT STAYs
  KLP : With DIVIDERs
  KLS : With FORM STAYs
  KLA : With T-STYLE ALUMINUM STAYs
- Available on request:
  KL with both INSERT STAYs and DIVIDERs
  KL with Stainless steel LINKs

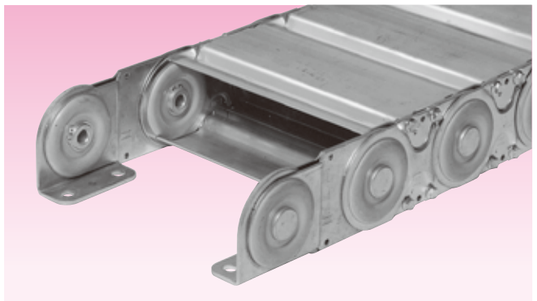
- Size : 5 sizes are available according to the height of LINKs (refer to the drawing on the page for INNER STAYs. "c" denotes the height of LINKs)
  120 = height 35mm, 220 = height 50mm, 320 = height 75mm, 520 = height 100mm, 620 = height 150mm

- The radius can be re-arranged by changing the positions of each RADIUS PIN. Refer to the chart in the section of "SIZE OF KL / END FITTING TO FIX" for information of radius
- Disconnection of LINK
  1) Take off RETAINING RING TYPE C
  2) Take COVER DISC out
  3) Note the position of each RADIUS PIN before disconnection.
  4) LINK will be disconnection by removing CENTER PIN
- Length of ALUMINUM STAYs : Available from 50mm to 600mm in increments of 5mm
- Horizontally connectable.
- Possible to put cables inside POWER GODZILLA from the inner and outer radius sides after take off ALUMINUM STAY by taking out 4 TAPPING SCREWS
- Assembly / disconnection of ALUMINUM STAYs can be done easily
- Disconnection of LINKs: Should shortening the length of POWER GODZILLA be required, take out SPREADER from LINKs and disconnect them
- Fix POWER GODZILLA to machinery / an installation place with bolts



COVERED TYPE

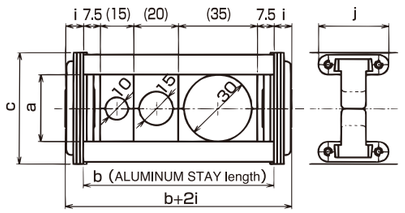
- Cable carriers with INNER/OUTER COVERs in stead of ALU-C-PROFILE (ALUMINUM STAYs)
- Metallic LINKs, ALUMINUM INNER/OUTER COVERs
- Dust particle protection
- Available types decided by INNER STAYs:
  KLE※※5 : With INSERT STAYs
  KLP※※5 : With DIVIDERs
  KLS※※5 : With FORM STAYs



INNER STAYS FOR KL

KLE 220/320/520 INSERT（COVERED TYPE : KLE225/325/525）

・INSERT PI
・Designed to sort cables inside POWER GODZILLA
・Non-metallic cubes with openings
・Consist of upper and lower part
・Size of opening available:
For KLE 220 : From ϕ 10mm to 30mm in increments of 5mm
For KLE 320 : From ϕ 10mm to 45mm in increments of 5mm
For KLE 520 : From ϕ 10mm to 65mm in increments of 5mm
・Width of cube: 5mm bigger than opening size (e.g. Width of cube with an opening ϕ 15mm is 20mm)
・The minimum opening size shall be 1.1 times as big as the outside diameter of a cable to be inserted
・The minimum opening size shall be 1.2 times as big as the outside diameter of a hose to be inserted
・Refer to the drawing. "b" denotes the length of ALUMINUM STAY (= the total width of cubes + 15mm)



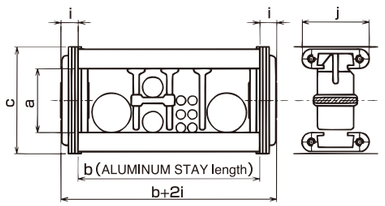
・How to read the product code:
KLE220 / 250 x 75P + PI (10x1 + 15x1 + 30x1) - N/N - S

KLE220 ... Type KLE 220
250 ... Bending radius
75P ... Qtys of Links
PI (10x1 + 15x1 + 30x1) ... INSERT STAY PI (Opening size ϕ x Qtys of cube)
N,N ... END FITTINGS
- S ... Movement

・Refer to the page of POWER GODZILLA MOVEMENT for information of Movement
・Available on request: Should only INSERT STAY PI be required, item no. will be: PI + Size code + Opening size ϕ
e.g. PI 520 / 20 denotes Size code 520 + Opening size ϕ 20
・Contact us for style selection

KLP 120/220/320/520/620 DIVIDER PDV / PDH（COVERED TYPE : KLP225/325/525/625）

・DIVIDER PDV / PDH
・Designed to sort cables inside POWER GODZILLA



・How to read the product code:
KLP520 / 400 / 200 x 55P + (PDV X 3 + PDH55 X 1) - N/A - N

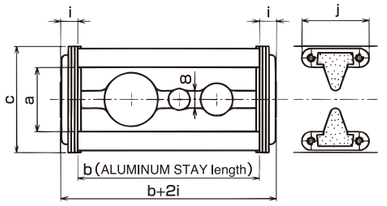
KLP520 ... Type KLP 520
400 ... Bending radius
200 ... Length of ALUMINUM STAYs
55P ... Qtys of Links
(PDV X 3 + PDH55 X 1) ... (DIVIDER type PDV x Qtys + DIVIDER type PDH55 x Qtys)
N/A ... END FITTINGS
- N ... Movement

・Refer to the page of POWER GODZILLA MOVEMENT for information of Movement
・Contact us for style selection

KLS 220/320/520 FOAM STAY（COVERED TYPE : KLS225/325/525）

・FOAM STAY
・Consists of upper and lower FORM
・Designed to pinch and hold cables / hoses between upper and lower FOAM
・Suitable for highly frequent traveling of POWER GODZILLA
・The gap between upper and lower FOAM (in cable & hose free condition): 8mm
・Cable & hose max. outside diameter to be inserted: Refer to the page of CONSTRUCTION SUMMARY
・Cable & hose min. outside diameter to be inserted: Avoid inserting any cables / hoses with such a small outside diameter that they are not pinched or held stably enough by upper and lower FOAM

・Installation of cables / hoses with different outer diameters from each other: In this case, cut a moderate-size semicircular opening in upper and lower FORM for each of the cables / hoses' positions (except the smallest diameter-cable) in order to make FORM to pinch and hold the cables / hoses stably enough.
・Contact us for information of the FORM cutting instruction



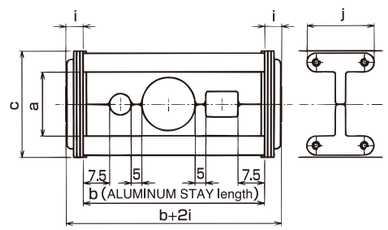
・How to read the product code:
KLS520 / 250 / 250 x 55P - D/E - H

KLS520 ... Type KLS 520
250 ... Bending radius
250 ... Length of ALUMINUM STAYs
55P ... Qtys of Links
D/E .. END FITTINGS
- H ... Movement

・Refer to the page of POWER GODZILLA MOVEMENT for information of Movement
・Contact us for style selection

KLA 220/320/520/620 T-STYLE ALUMINUM STAY (T-PROFILE)

・T-STYLE ALUMINUM STAY (T-PROFILE)
・Designed to sort cables inside POWER GODZILLA
・Openings can be cut on T-STYLE ALUMINUM STAY to become custom-made according to cable outer dia. in your specification
・Note: Min. distance b/w each opening shall be 5mm (Refer to the drawing)
・Note: Min. distance b/w openings and LINKs shall be 7.5mm (Refer to the drawing)
・The minimum opening size shall be 1.1 times as big as the outside diameter of a cable to be inserted
・The minimum opening size shall be 1.2 times as big as the outside diameter of a hose to be inserted
・Available on request: Length of ALUMINUM STAYs for type KLA with Max. length 900mm



・How to read the product code:
KLA220 / 250 / 200 x 33P - A/C - S

KLA220 ... Type KLA 220
250 ... Bending radius
200 ... Length of ALUMINUM STAYs
33P ... Qtys of Links
A/C ... END FITTINGS
- S ... Movement

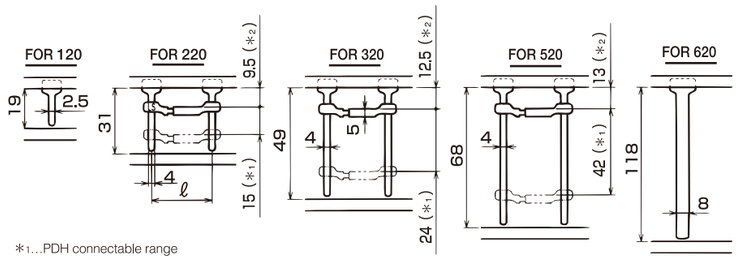
・Refer to the page of POWER GODZILLA MOVEMENT for information of Movement
・Contact us for style selection and design which matches up with your specification

TYPE KL

DIVIDER

MAIN MATERIAL: PA6
COLOR: Black

・Refer to the page for DIVIDER section for PL
・PDH can not be used for KLP 120, KLP 620

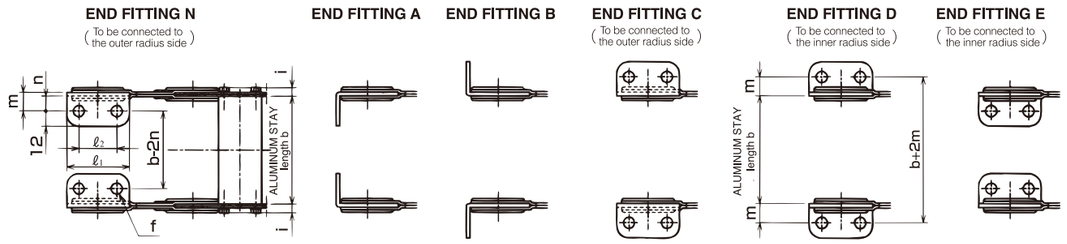


*1...PDH connectable range
*2...Min. distance

END FITTINGS

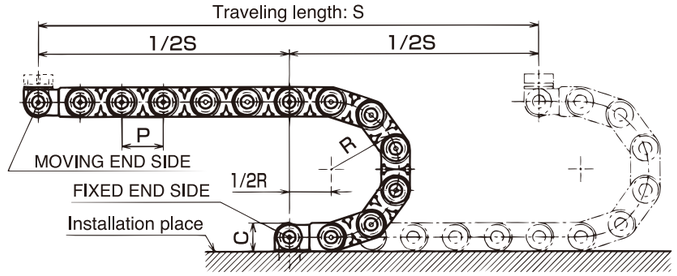
MATERIAL: Steel
SURFACE FINISH: Electroplated zinc
TEMPERATURE RANGE: Lowest -15℃ ~Highest 150℃

・Type of END FITTINGs: as indicated below
・How to read the product code:
N/A ... END FITTING Type N for Fix side / END FITTING Type A for moving side



SIZE OF KL / END FITTING TO FIX

・The length of POWER GODZILLA (L): determined by 1 / 2 S + π R + R , or longer
・Qty of LINKs: determined by L / P (Note: The remainder shall be rounded up)
e.g. 10m (L) / Pitch 75mm (P) = 133.3333 = 134 Therefore, Qty of LINKs is 134 pieces
The length of POWER GODZILLA (L) shall be 10,050mm (134 x 75mm)

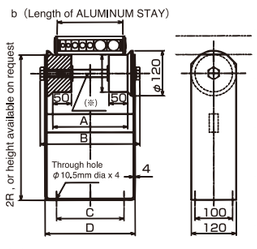


Delivery	Type		Bend radius availability	Pitch P	Inside height a	Outside height c	i	j	END FITTING f	ℓ_1	ℓ_2	m	n
確	KLP	120	60/100/150/250	50	19	35	5.5	18.5	7 (M6)	35	20	9.5	7.5
確	KLE/KLS	220	100/150/200	75	31	50	8	34	9 (M8)	50	30	15	12
確	KLP/KLA	225	250/300										
確	KLE/KLS	320	150/200/250	100	49	75	10	39	11 (M10)	75	50	21	17
確	KLP/KLA	325	300/400										
確	KLE/KLS	520	200/250/300	125	68	100	14	44	13 (M12)	100	70	28	22
確	KLP/KLA	525	400/500										
確	KLP/KLA	620	250/300/400/500/600	175	118	150	14	44	13 (M12)	150	115	32	26
確		625	400/500/600										

※Note: Type KLA※※5 is unavailable.

SUPPORT ROLLER

・SUPPORT ROLLER for KL SERIES



(※)…Pipe φ20 x thickness 3mm

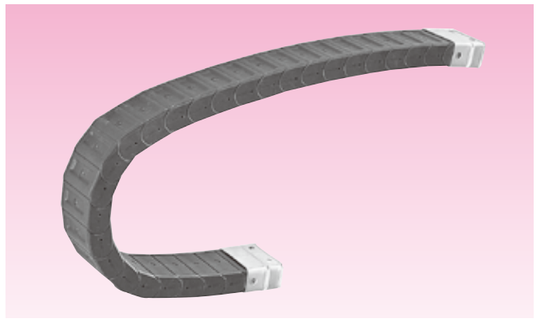
Delivery	Item number	Designed for the Length of ALUMINUM STAY as below	A	B	C	D
特	KR10	75	100	166	80	140
特	KR15	125	150	216	130	190
特	KR20	175	200	266	180	240
特	KR25	225	250	316	230	290
特	KR30	275	300	366	280	340
特	KR35	325	350	416	330	390
特	KR40	375	400	466	380	440
特	KR45	425	450	516	430	490
特	KR50	475	500	566	480	540
特	KR55	525	550	616	530	590
特	KR60	575	600	666	580	640
特	KR65	600	650	716	630	690
特	KR70	660	700	766	680	740
特	KR75	715	750	816	730	790

Contact us for information of product availability and delivery

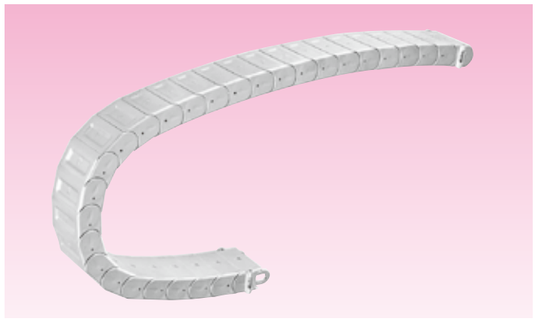
TYPE PFR

MAIN MATERIAL	COLOR	TEMPERATURE RANGE	ENVIRONMENT	FLAMMABILITY
PA6	Black	Lowest -15℃ ~Highest 80℃	RoHS	UL94HB

NON-METALLIC POWER GODZILLA - CLOSED CONSTRUCTION



PFR-STANDARD type



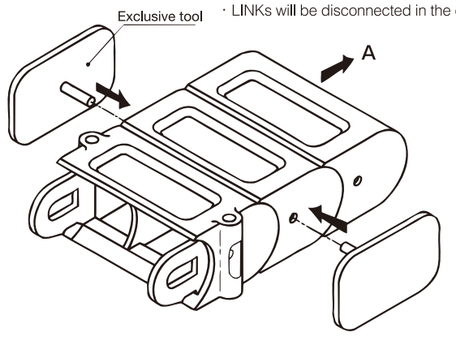
PFR※※※NI-Ni coated type

CHARACTERISTICS

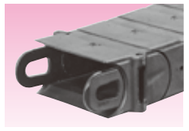
- Closed construction
- Dust particle protection
- Available on request : Ni coated type (Type code: with NI)
  e.g PFR221 NI / 100 x ...
- INSTRUCTION to fix POWER GODZILLA to machinery / an installation place :
  1) Connect END FITTINGs to MOVING END SIDE and FIXED END SIDE of POWER GODZILLA
  2) Fix the END FITTINGs to machinery / an installation place with bolts (There are holes for bolts on END FITTINGs. The hole size is depending on types of POWER GODZILLA: M5, M6, or M8)
- Disconnection of LINKs: Exclusive tools are required。

INSTRUCTION FOR DISCONNECTION OF LINKs

- Insert the exclusive tool into LINKs until it clicks
- LINKs will be disconnected in the direction of A



END FITTING

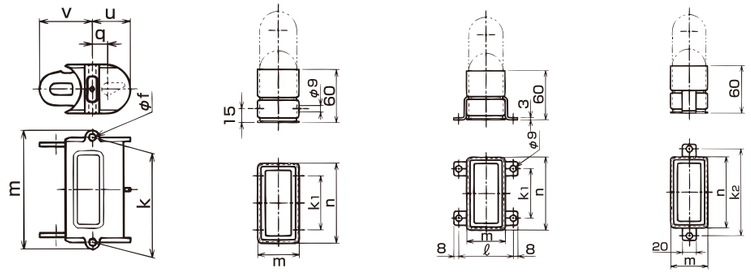


END FITTING C

END FITTING N

END FITTING A

END FITTING B



END FITTING N, A, B	m	n	k_1	k_2	ℓ
For PFR 121	40	40	0	61	61
For PFR 122	40	55	20	76	61
For PFR 123	40	80	45	101	61
For PFR 221	55	55	20	76	76
For PFR 222	55	105	70	126	76
For PFR 223	55	155	120	176	76
For PFR 322	80	155	120	176	101
For PFR 323	80	230	195	251	101

※Refer to the column of END FITTING C in the chart on the page of TYPE PFR SIZE for information of END FITTING C

PRODUCT CODE

PFR222/200 X 46P - A/C - M

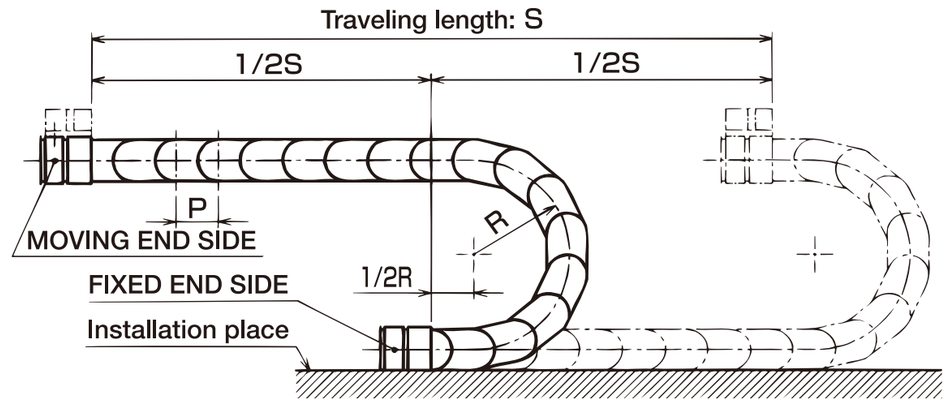
PFR222 ... Type PFR222
200 ... Bending radius
46P ... Qtys of Links
A ... END FITTING on the fixed end side
C ... END FITTING on the moving end side
- M ... Movement

・Note: 46P is inclusive of two (2) END FITTINGs

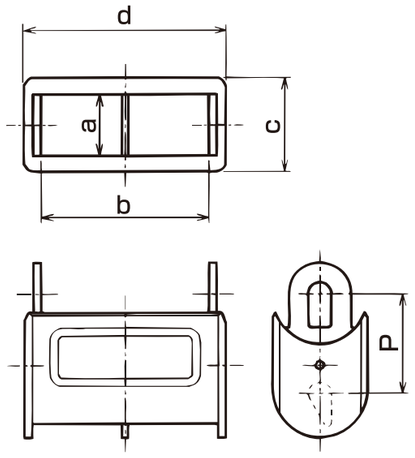
- Refer to the page of POWER GODZILLA MOVEMENT for information of Movement
- Contact us for style selection
- Available on request : Ni coated (Type code: with NI)
  e.g PFR222 NI / 200 ...

TYPE PFR

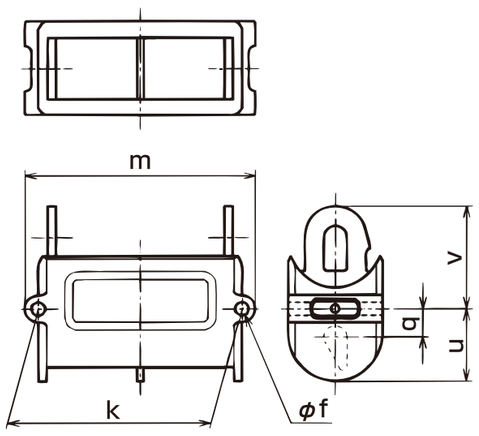
SIZE



- The length of POWER GODZILLA (L): determined by 1 / 2 S + π R + R , or longer
- Qty of LINKs: determined by L / P (Note: The remainder shall be rounded up)



LINKs



END FITTING

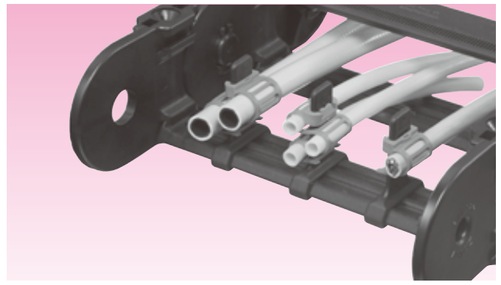
Deli-very	Type	Bend radius availability	Pitch P	LINKs				END FITTING C					
				Inside		Outside							
				a	b	c	d	f	k	m	q	u	v
◎	PFR 121	75/150	35	23	23	35	35	5.3(M5)	35	45	9	26.5	38
◎	PFR 122	75/150	35	23	38	35	50	5.3(M5)	50	60	9	26.5	38
◎	PFR 123	75/150	35	23	2 × 30	35	75	5.3(M5)	75	85	9	26.5	38
◎	PFR 221	100/200	50	34	36	50	50	6.3(M6)	52	64	11.5	36.5	55
◎	PFR 222	100/200	50	34	86	50	100	6.3(M6)	102	114	11.5	36.5	55
◎	PFR 223	100/200	50	34	2 × 66.5	50	150	6.3(M6)	152	164	11.5	36.5	55
◎	PFR 322	150/300	65	57	134	75	150	8.3(M8)	154	170	15	52.5	70
◎	PFR 323	150/300	65	57	2 × 103	75	225	8.3(M8)	229	245	15	52.5	70

POWER GODZILLA ACCESSORIES

POWER GODZILLA ACCESSORIES PGBB

NON-METALLIC BINDING BAND

・Non-metallic binding band
・Designed to fix cables on DIVIDER PDV and PINCH STAY PPS at the end of POWER GODZILLA (Refer to the photo)
・with 24mm in width
・Able to hold cables gently
・Suitable for cables with outside dia. from Φ7mm to 35mm



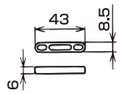
Deli-very	Item number	Designed for
◎	PGBB	PDV200,300,500,220,320,520　PPS any size ※1

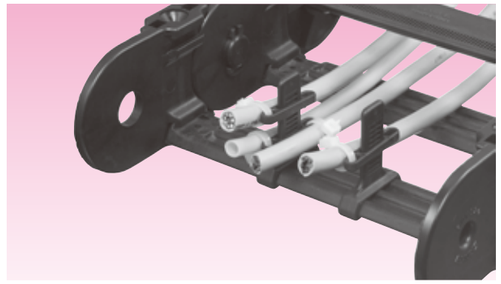
※1　PGBB can not be connected to PINCH STAY PPS for KOL10.0 ～ KOL14.0, KOL19.0 ～ KOL29.0

POWER GODZILLA ACCESSORIES PGCA8

SUPPORT PART FOR BINDING BAND

・Support part for a binding band
・To be Attached to DIVIDER PDV



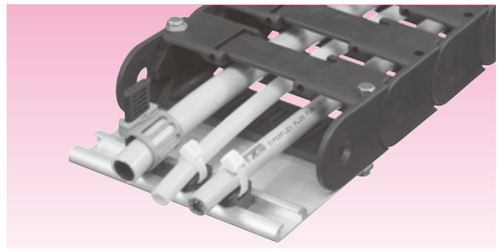


Deli-very	Item number	Designed for
◎	PGCA8	PDV200,300,500,220,320,520

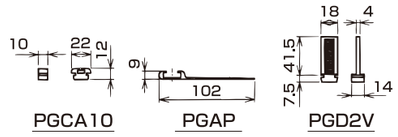
POWER GODZILLA ACCESSORIES PGCA10 / PGAP / PGD2V

BINDING ACCESSORIES

・PGAP: Aluminum support bar designed to hold PGCA10, PGD2V
Note: No holes on PGAP to fix, so cut a hall for your specification
Available on request: PGAP with holes to fix. Advise us on your specification
・PGCA10: Support part for a binding band
・PGD2V: DIVIDER to which PGBB / PGCA8 can be attached



Deli-very	Item number	Designed for
◎	PGCA10	PGAP
◎	PGD2V	
9	PGAP	PKK,KOL,PL※2



PGCA10　PGAP

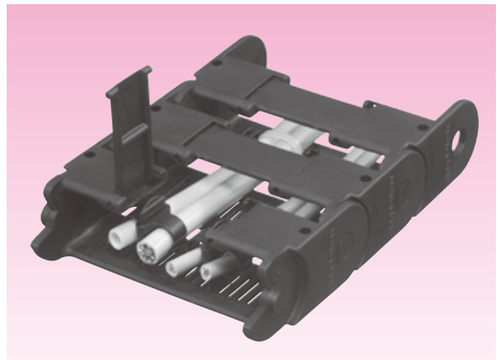
PGD2V

・Advise us on the length of PGAP required

POWER GODZILLA ACCESSORIES PGD2H

DIVIDER FOR CABLE WITH SMALLER OUTER DIA（φ2～φ10mm）

・DIVIDER for cables with smaller outside diameter
・Solution for cable sorting trouble
・Can be attached to DIVIDER PDV and PINCH STAY PPS
・Holds cables between UPPER and LOWER part
・With a slit which helps cable insertion
・PGD2H4 (with wall thickness 4mm) is for DIVIDER PDV
・PGD2H2 (with wall thickness 2mm) is for PINCH STAY PPS



Deli-very	Item number	Connectable cable outer dia.	Designed for
◎	PGD2H2	φ2～φ10	PINCH STAY PPS (2mm) ※3
◎	PGD2H4	φ2～φ10	DIVIDER PDV (4mm)

※3　PGD2H2 can not be connected to PINCH STAY PPS for KOL10.0 ～ KOL14.0

TYPE Marathon　PATENTED

MARATHON SERIES

CHARACTERISTICS

・POWER GODZILLA - Wheel traveling type
・Suitable for long traveling
・Durable
・Solution to reduce friction and noise

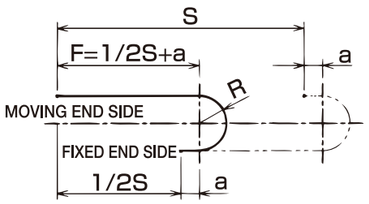
INSTALLATION

1. SELECTION OF PRODUCT CODE

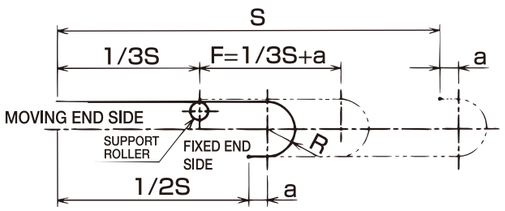
(1) KEYS
- Traveling length: S(m)
- Traveling speed: V(m/sec)
- Traveling acceleration: A(m/sec2)
- Cable / hose outer dia. and qty: Φd(mm) x n(qty)
- Cable / hose total weight: Z (kg/m)
- Cable / hose min. bend radius: R(mm)

(2) SELECTION
<TRAVELING LENGTH and FREE CARRYING LENGTH (F)>
- Refer to the drawings herewith. Indication F denotes FREE CARRYING LENGTH in which POWER GODZILLA can stay horizontal by itself without sagging after the loading of cable / hoses into POWER GODZILLA. NOTE: FREE CARRYING LENGTH is not the total length of POWER GODZILLA
- Refer to the line chart indicated in the section of " no. 10. LOAD DIAGRAM " which shows interrelationship between cable / hose load and FREE CARRYING LENGTH. When loads of cable / hose are more than the limit, GUIDE CHANNEL and SLIDE RAIL are required for non-metallic POWER GODZILLA, while SUPPORT ROLLERs are required for KL SERIES. Contact us for more information
- Refer to the drawing as below for information of interrelationship between TRAVELING LENGTH and FREE CARRYING LENGTH

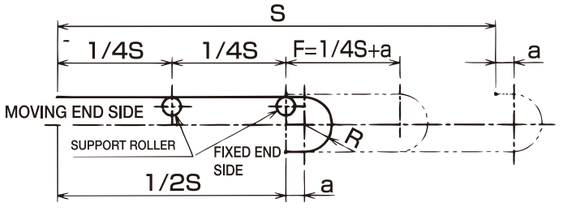
1) NON- SUPPORT ROLLER APPLICATION



2) ONE (1) SUPPORT ROLLER APPLICATION



3) ONE (2) SUPPORT ROLLER APPLICATION



- The drawings 1), 2), 3) shows TRAVELING LENGTH AND FREE CARRYING LENGTH for KL SERIES with / without SUPPORT ROLLER.
- Refer to the section of " no. 5. BRIEF INSTRUCTION OF GUIDE CHANNEL & SLIDE RAIL INSTALLATION " for information of non-metallic POWER GODZILLA.

<MIN. BEND RADIUS>
- Min. bend radius of POWER GODZILLA shall be larger than min. bend radius of a cable / a hose
- Min. bend radius of POWER GODZILLA shall be at least about 8 times as large as outer dia. of a cable (with the biggest outer dia among that of cables to be loaded). Note: Min. bend radius of POWER GODZILLA shall be much larger when the cables are not flexible enough or when highly frequent traveling of POWER GODZILLA is required
- Min. bend radius of POWER GODZILLA shall be at least about 10 times as large as outer dia. of a hose (with the biggest outer dia among that of hoses to be loaded). Note: Min. bend radius of POWER GODZILLA shall be much larger when the hoses are not flexible enough or when highly frequent traveling of POWER GODZILLA is required
- Note: LINKs of PKK, PL, KL SERIES shall be wide enough: The outer width of LINKs shall be larger than the size equivalent to 30% of the total height (2R + height of LINK) of POWER GODZILLA
- Contact us for more information

<LOADING OF CABLE / HOSE>
- Refer to the INSTRUCTION OF LOADING OF CABLE
- Contact us for the information

<SELECTION OF PRODUCT CODE>
- Select a product code with the chart on the page of " CONSTRUCTION SUMMARY " and the line chart indicated in the section of " no. 10. LOAD DIAGRAM "
- Should movement type "CIRCULAR MOTION" / longer traveling, or any other special specification be required, contact us for information.。

2. POWER GODZILLA LENGTH / QTY OF LINKs

- The length of POWER GODZILLA (L): determined by 1 / 2 S + π R + R + 2P , or longer
- Qty of LINKs: determined by L / Pitch (Note: The remainder shall be rounded up)
  e.g.: Traveling length (S): 3.8m, POWER GODZILLA bend radius (R): 200mm, PITCH (P): 35mm
  Step1: In this case, L = 1/2 x 3,800 + 200π + 200 + 70 = 2,798mm
  Step2: 2,798 / 35 = 79.94... = 80 Therefore, Qty of LINKs is 80 pieces
  Step3: Qty of LINKs to be ordered shall be 80 pieces (80 x 35mm = 2,800mm)
- Note: This calculation formula applies only to REGULAR installation (The position of FIXED END SIDE = 1/2S). Contact us for more information.

3. CABLES / HOSES

- Cables / hoses to be loaded into POWER GODZILLA shall be abrasion & nick-resistant, and highly flexible ones which hold up against repeated flexing

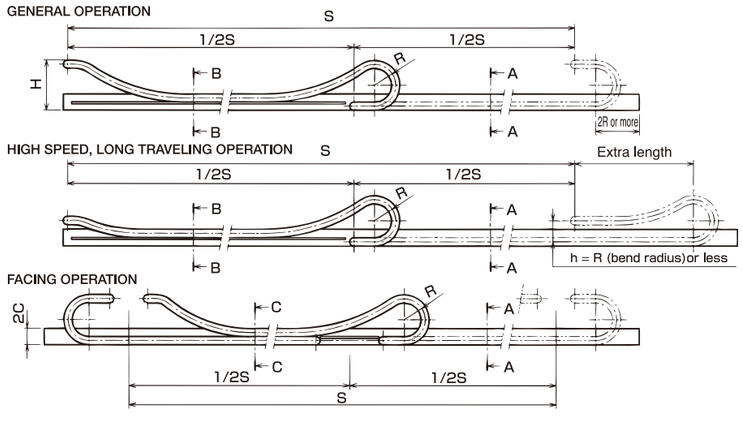
4. MATERIALS

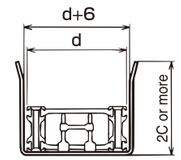
<Non-metallic POWER GODZILLA>
- Glass fiber-containing Polyamide which makes POWER GODZILLA durable and resistant to abrasion. This material also makes it possible for POWER GODZILLA to move smoothly.

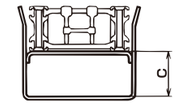
<Metallic POWER GODZILLA>
- Rolled steel (Electroplated zinc)

5. BRIEF INSTRUCTION OF GUIDE CHANNEL & SLIDE RAIL INSTALLATION

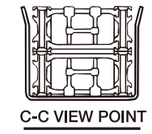
- The line chart indicated in the section of " no. 10. LOAD DIAGRAM shows interrelationship between cable / hose load and FREE CARRYING LENGTH. When loads of cable / hose are more than the limit which the line chart shows, GUIDE CHANNEL and SLIDE RAIL are required for non-metallic POWER GODZILLA (PKK, KOL, PL SERIES). Typical installation of GUIDE CHANNEL and SLIDE RAIL is as the drawing shows.
- Suitable traveling speed: 1m/second or slower
- Sliding movement with the traveling speed at 1m/second or faster is possible with PKK※28
- Extra length of POWER GODZILLA and GUIDE CHANNEL is required in high speed / long traveling operation. The movement trail of MOVING END SIDE shall be as low as possible.
- Contact us for more information
- Available on request: GUIDE CHANNEL & SLIDE RAIL







※PA SLIDE RAIL is recommended to improve sliding smoothness



S: Traveling length
C: Outer height of POWER GODZILLA
d: Outer width of POWER GODZILLA

6. INSTALLATION OF CABLE / HOSE

- Put cables / hoses inside POWER GODZILLA from the inner radius side (This applies to most types of POWER GODZILLA)
- There shall be a moderate balance between the weight of cables / hoses on the right side and on the left side inside POWER GODZILLA.
- Cables / hoses shall not basically be piled up on top of each other
- The max. volume of cables / hoses to be loaded shall not be determined by fixed data. It should be determined according to real conditions. There must be enough space for cables / hoses to move freely inside POWER GODZILLA while flexing operation. Refer to the INSTRUCTION OF LOADING OF CABLE
- There must basically be only one (1) cable / hose between DIVIDERs
- There must NOT be any torsion on cables / hoses for installation
- In order to avoid tension in cables / hoses during operation, the moderate length of cables / hoses shall be selected appropriately.

Note: Pressurized oil / air hoses are likely to shrink when liquid / air goes through the hoses.
Note: Pressurized oil / air hoses put highly pressure on the outer radius side of POWER GODZILLA during flexing. In this condition, the hoses are likely to have abrasion / nick. Therefore, the bend radius and moderate length shall be selected appropriately.

- Cables / hoses must remain straight in enough length around the connection with terminals / fittings
- Cables / hoses shall be bound at the end of POWER GODZILLA

7. CHARACTERISTICS

(1) ACIDITY, ALKALINITY
- KL SERIES shall NOT be used under acidic conditions
- Non-metallic POWER GODZILLA shall NOT be used under highly acidic conditions
- Available on request : Stainless steel POWER GODZILLA, which is good to use under alkaline / acidic condition

(2) HEAT RESISTANCE
- Temperature range:
  Between — 15 °C ～ 80°C for Non-metallic POWER GODZILLA and PFR SERIES (inclusive of Ni coated type - PFR ※※※NI)
  Between — 15 °C ～ 150°C for Metallic POWER GODZILLA KL SERIES

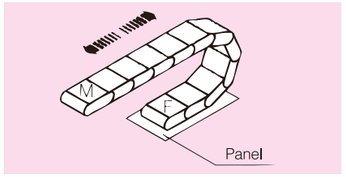
(3) OIL RESISTANCE
- Non-metallic POWER GODZILLA and Metallic POWER GODZILLA are oil-resistant.

(4) OTHER AFFECT
- Any particles such as dust particles, metal particles have possibility to gives abrasion / nick to POWER GODZILLA under sliding movement operation. Contact us should POWER GODZILLA is used under these conditions.

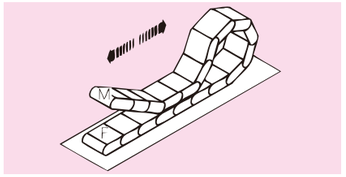
8. INSTALLATION OF POWER GODZILLA IN DEVICES / EQUIPMENT

- The distance between POWER GODZILLA and devises / equipment:
  25mm or more on each side
  50mm or more on top of POWER GODZILLA
- Bolts to fix POWER GODZILLA shall be tighten up enough. Take preventive measures to prevent the bolts to loosen.
- Put oil on SLIDER for PKK※28 every 2 to 3 months in order to reduce abrasion
- Cables / hoses shall be bound at the end of POWER GODZILLA particularly for movement type "VERTICALLY HANGING". Take preventive measures to avoid highly pressure from loads of cables / hoses at the bottom of POWER GODZILLA
- Available on request: Special type designed for movement type "CIRCULAR MOTION"
- POWER GODZILLA has PRETENSION (curving chain line) as its regular design in order to hold up against weight of cables / hoses to be loaded inside. Depending on the weight of loads inside, PRETENSION still remains

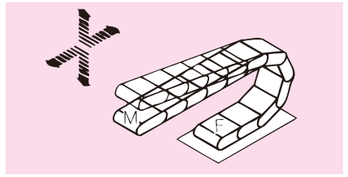
9. POWER GODZILLA MOVEMENT



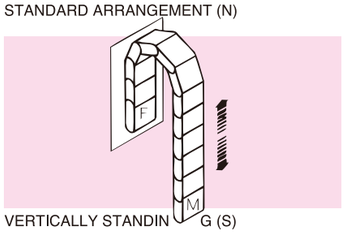
STANDARD ARRANGEMENT (N)



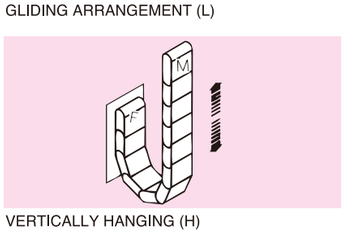
GLIDING ARRANGEMENT (L)



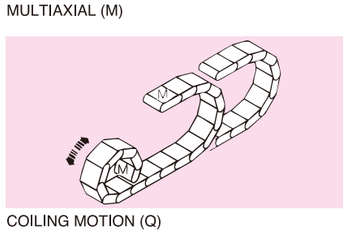
MULTIAXIAL (M)



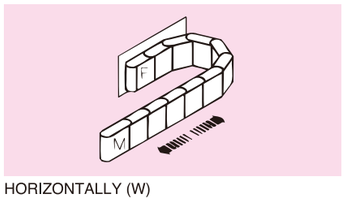
VERTICALLY STANDIN G (S)



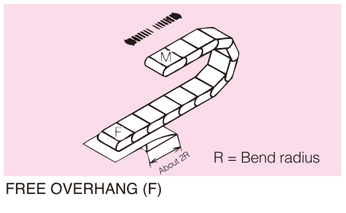
VERTICALLY HANGING (H)



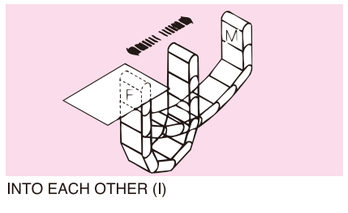
COILING MOTION (Q)



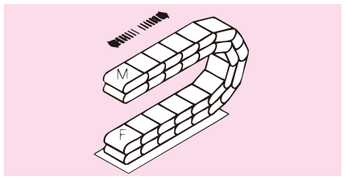
HORIZONTALLY (W)



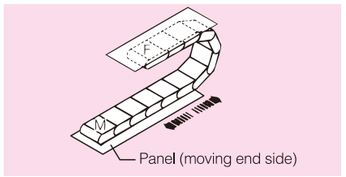
FREE OVERHANG (F)



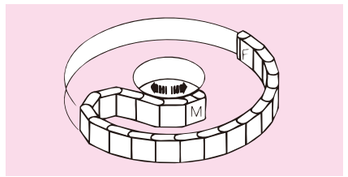
INTO EACH OTHER (I)



INTO EACH OTHER (I)



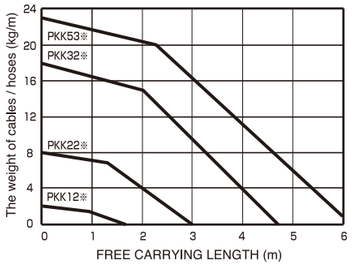
MOVED END DOWNSIDE (U)



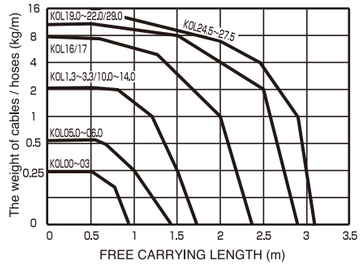
CIRCULAR MOTION (P)

10. LOAD DIAGRAM

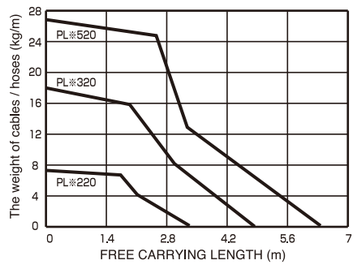
1.Type PKK



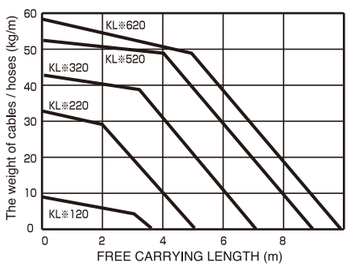
2.Type KOL



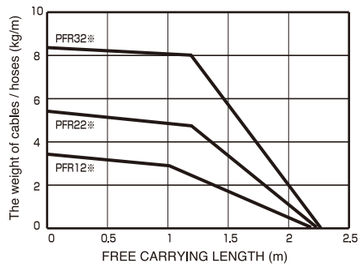
3.Type PL



4.Type KL



5.Type PFR



Note: The weight of cables / hoses shall be 10% less than the cable/hose weight (kg/m) which the diagram shows, or lighter. Otherwise, sagging of cables / hoses may be seen earlier than expected

Note: This diagram apply only to the movement type N (STANDARD ARRANGEMENT), M (MULTIAXIAL) , I (INTO EACH OTHER)

Note: This diagram doesn't apply to the movement type F (FREE OVERHANG), U (MOVED END DOWN-SIDE). Therefore, contact us for the information of the diagram for these movements.

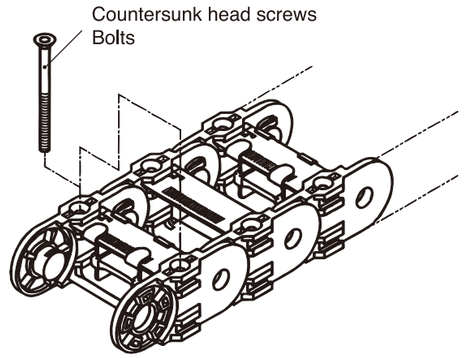
11. INSTRUCTION TO FIX MOVING END SIDE AND FIXED END SIDE TO MACHINERY / INSTALLATION PLACE

・PKK SERIES, KOL SERIES, KOR SERIES, PL SERIES: with holes to fix
・Fix these series as the drawings shows

Torque with which bolts shall be tighten up is as indicated in the chart below.

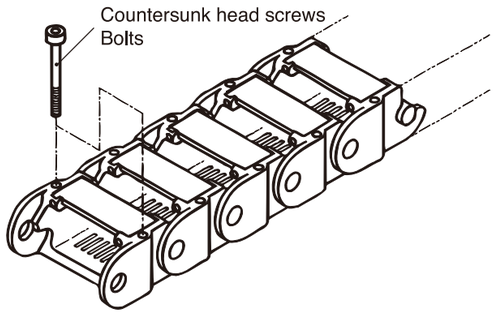
Screw / bolt size	Torque (Ncm)
M4	115
M5	140
M6	700
M8	1200

PKK SERIES (Refer to page for PKK SERIES)

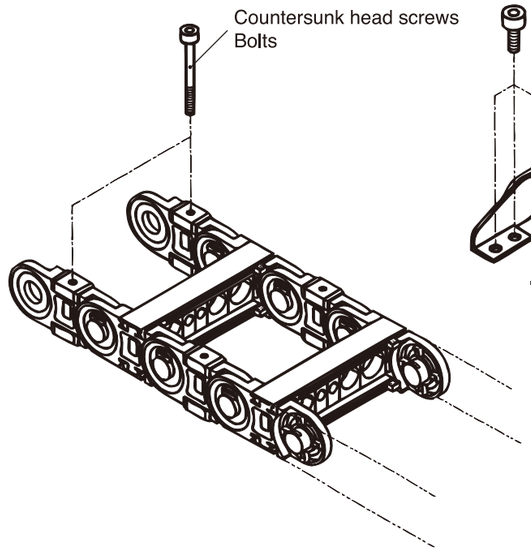


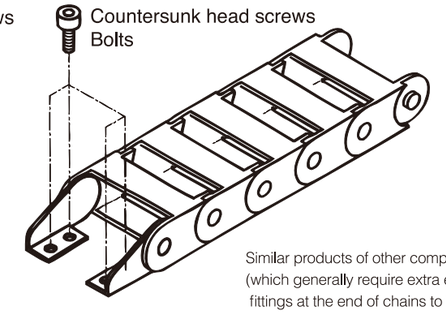
KOL SERIES (Refer to page for KOL SERIES)

(KOL00 has the half bolt-shaped wall)
(LINKs of KOL01.3 is used as END LINKs of KOL0 and KOL0.3)



PL SERIES (Refer to page for PL SERIES)





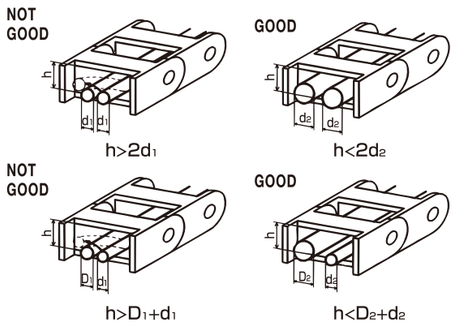
Similar products of other companies (which generally require extra end fittings at the end of chains to fix)

INSTRUCTION OF LOADING OF CABLE

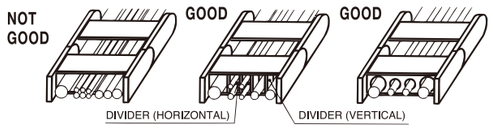
Instruction to select right products and to install the selected products correctly

●REGULAR CABLE INSTALLATION

(1) Cables shall not be piled up on top of each other

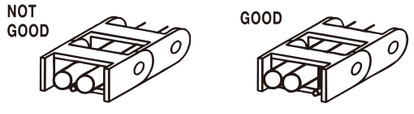


(2) There must not be any torsion on cables for installation. The DIVIDERs shall be used between cables. There must basically be only one (1) cable between DIVIDERs

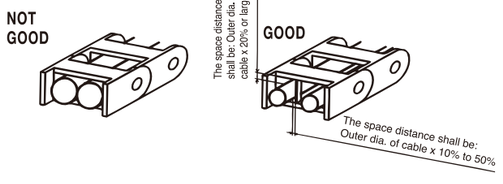


DIVIDERs (VERTICAL) and DIVIDERs (HORIZONTAL) should basically be used for every other LINK

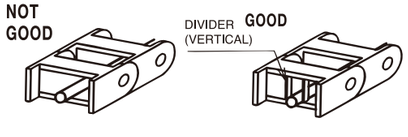
(3) There shall not be large difference in the diameter of each cable in order to avoid situations where cables can not move smoothly or there emerges too much tension in each cable.



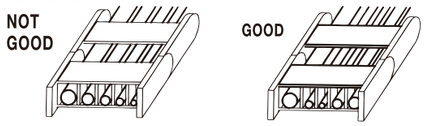
(4) There shall be moderate space for each cable.
Note: The max. volume of cables to be loaded shall not be determined by fixed data. It should be determined according to real conditions. There must be enough space for cables to move freely



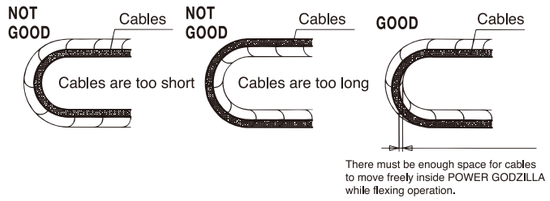
(5) DIVIDERs shall be used to give cables moderate space. If there is too large space for cables, the cables move more than they should do. The space shall not be too large or too small for cables.



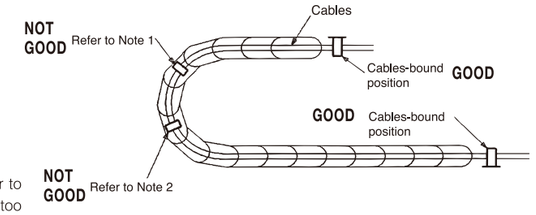
(6) There shall be a moderate balance between the weight of cables on the right side and on the left side inside POWER GODZILLA.
- The heavier cables shall be placed on both sides inside POWER GODZILLA
- The lighter cables shall be placed in the center inside POWER GODZILLA
- The same kind (characteristics such as bend radius and flexibility) of cables shall be separately placed on both sides.
- The instruction of (6) applies only to POWER GODZILLA with 200mm or wider in outer width



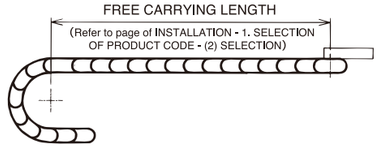
(7) The moderate length of cables shall be selected appropriately.



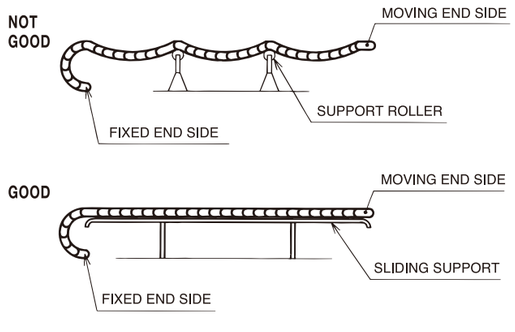
(8) Cables shall be bound at the end of POWER GODZILLA.
Note 1: Cables shall not be bound inside POWER GODZILLA.
Note 2: Cables shall not be bound with each other inside POWER GODZILLA.
Note 3: Make sure to avoid tension in cables



●LONG TRAVELING



In order to prevent non-metallic POWER GODZILLA to sag, install a sliding support, or some SLIDE RAILs.
Note: SUPPORT ROLLER shall not be used for non-metallic POWER GODZILLA.



DATA SHEET TO SELLECT PRODUCT CODE

Fill out this form and send this sheet to us.

COMPANY NAME: _____

ADDRESS: _____

CONTACT: _____

PHONE: _____ **FAX:** _____

YOUR REQUIREMENT: ☐ADVICE FOR SELECTION ☐DRAWING ☐CONATCT OUR SELES REP.

YOUR REQUIREMENT FOR SERIES: ☐PKK ☐KOL ☐PLE ☐PLS ☐PLP ☐KLE ☐KLP ☐KLS ☐KLA ☐PFR ☐KOR

●YOUR SEPECIFICATION & REQUIREMENTS

1. TRAVELING LENGTH _____ m
2. TRAVELING SPEED _____ m/sec
3. TRAVELING ACCELERATION _____ m/sec²
4. TRAVELING FREQUENCY _____ time(s)/hour
5. DURATION OF OPERATION TIME _____ hour(s)/day
6. OUTER DIA. AND QTY OF CABLES/HOSES TO BE LOADED

a.ϕ ____ mm× ____ piece(s) CABLE・HOSE (Mark one)
b.ϕ ____ mm× ____ piece(s) CABLE・HOSE (Mark one)
c.ϕ ____ mm× ____ piece(s) CABLE・HOSE (Mark one)
d.ϕ ____ mm× ____ piece(s) CABLE・HOSE (Mark one)
e.ϕ ____ mm× ____ piece(s) CABLE・HOSE (Mark one)

Writing space for any:

7. TOTAL WEIGHT OF CABLES/HOSES TO BE LOADED _____ kg/m
(Kg shall be per m and inclusive of liquid)

8. YOUR REQUIREMENT FOR BEND RADIOUS OF POWER GODZILLA
(Skip to fill out if there is no requirement for this data)

☐BEND RADIOUS OF POWER GODZILLA: R _____ mm
☐MIN. BEND RADIUS OF CABLE: R _____ mm
☐YOUR INSTALLATION DIAGONAL SPACE: _____ mm,
YOUR REQUIREMENT FOR OUTER WIDTH OF POWER GODZILLA: _____ mm OR LESS

9. YOUR REQUIREMENT FOR POWER GODZILLA MOVEMENT: _____
(Refer to the page of POWER GODZILLA MOVEMENT)

10. OPERATION PLACE CONDITIONS:
ROOM TEMPARATURE: _____ °C
ROOM HUMIDITY: _____ %
OTHER OPERATION CONDITIONS:
(Emergence or existence of dust particles / metal particles / liquid / oil /chemical substances, indoors / outdoors / any other conditions)

11. YOUR OTHER REQUIREMENTS

SAFEKEEPING

Follow the statements as below

- Do not place anything particularly heavier things on POWER GODZILLA. Otherwise, it may breaks off.
- Fix POWER GODZILLA tightly to devices / equipment for safety
- Take preventive measures to prevent POWER GODZILLA from falling onworkers during storage / when handling POWR GODZILLA.
- Take care of your hands when handling POWR GODZILLA. Prevent yourhands from getting caught between LINKs of POWER GODZILLA
- Do not use POWER GODZILLA for any inappropriate purposes and uses rather than its right purposes and uses.
- Install POWER GODZILLA in devices / equipment after understanding and knowing the construction, specification and installation way of POWER GODZILLA

WARRANTY

The warranty for POWER GODZILLA is stated as below.

1.【WARRANTY PERIOD】

The warranty period shall be the shorter period of time between a) and b)

a) 18 months after our products are dispatched from our factory

b) 12 months after the first operation of our products gets underway

2.【WARRANTY COVERAGE】

If you find a defect in our products during the warranty period stated above (1. 【WARRANTY PERIOD】), we will repair it, or replace it free of charge.

NOTE: We shall be held liable only for defects in our products which are caused by our responsibility.

However, our products with any defects which are caused by the following conditions shall not be under warranty.

① Any defects caused by any inappropriate purposes and uses / inappropriate installation and operation conditions rather than purposes and uses / installation and operation conditions indicated in our technical documents

② Any defects caused by any remodeling, design conversion, inappropriate dismantling

③ Any defects caused by devises / equipment in which our products are installed, or any other devices / equipment

④ Any defects caused by unpredictable factors

⑤ Any defects caused by acts of God

NOTE: We shall not be held liable for any consequential damages resulting from defects in our products