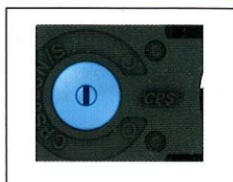


Using Material of High Quality

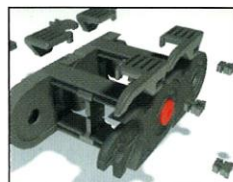
• Instructions for the installation of cable

1 생산일자 표시(Marking production Date).



The CPS cable chain shows the production date on the outside of each link on the side band.

2 조립 및 분해가 매우 쉽게 제작(Designed to assemble and disassemble each link simply).



The CPS cable chains are designed with a single pivot pin, which reduces the time for both installation & repair.

3 저분진(Low-mote design).



The CPS cable chain is especially designed to be link less with no frictional parts to minimise.

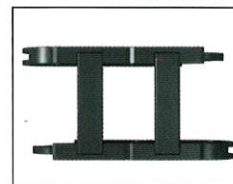
4 저소음(Low-noise design).



The CPS cable chain is especially designed as link-less type with no friction parts to decrease the noise.

5

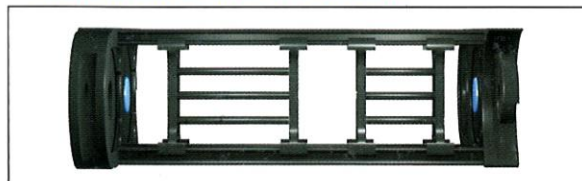
(Nylon frames for all type of cable chains).



Using Nylon frames is more convenient than aluminum rod frames. Using nylon frames eliminates the chance of rods becoming detached from the side frame, also reduces setting up time and protects against abrasion & disintegrated appearance of a bolt.

6

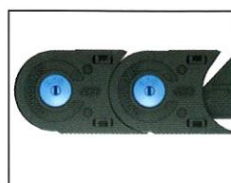
(Expansion of interior space).



The CPS cable chains are designed to expand inner height in order to use longer self supporting length.

7

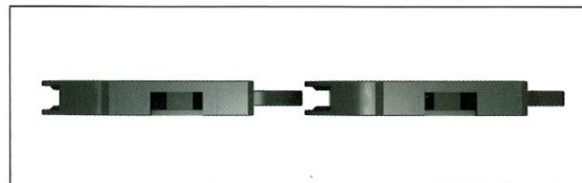
(One pivot pin connection).



Link connecting style has been changed three pin type to one pin type. In case of three pin type, the cable chains were hung down and got a damage both the cable chains and cables inside when the chains overloaded. Since one pin type takes each link's course to same direction, that makes chains are raising the cohesion and it can bear a strong shock from the outside as well as overcome hanging down. Also this type of pin is easily assembled and disassembled with a simple tool.

8

(Poke Pin style for Link connecting).



Link connecting style(half in out) is widely used. However, CPS cable chain selects Poke Pin connecting style, since there is no come off each link when get twisted. By this reason, CPS cable chain keep up its life time longer than other brand chains and have a reputation for the quality from many engineers in Hyundai Motors, Kia Motors and Daewoo Motors.



Using Material of High Quality

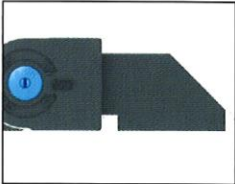
• Instructions for the installation of cable

9 슬라이드타입 체인-스키드 분해,조립간단 (Slide type- skid).



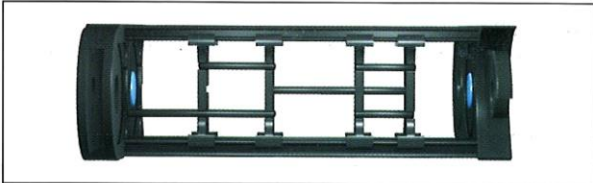
CPS developed new type of skid for slide type cable chains. This skid can be assembled with a screwdriver very simply, so that can reduce time for repair as well as reduce the coefficient of friction, giving a unevenness method to the bottom of skid.

10 일체형 브라켓 (End Bracket- One united body style).



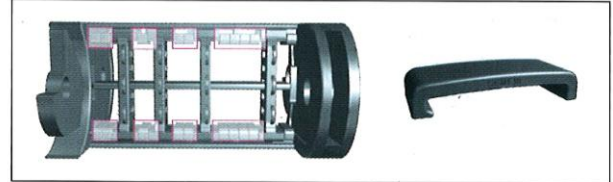
CPS end brackets designed one united body style, so it's more stable and stronger than connecting with bolt. Sometimes, customers use the end bracket which is inserted, not fixed with the cable chain. In this case, it can be found the bracket come off from the side band. Only CPS end bracket solve these all problems.

11 Separator의 다양화 실현 (Various kind of Separators).



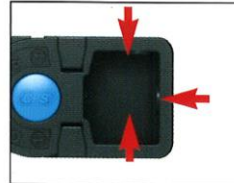
In order to install multipule cables, hoses with different diameter inside of the chain, seperators can be used to create variatble sized compartments to accomadate your particular cable, hose requirements.

12 스토퍼 적용 (Stoper).



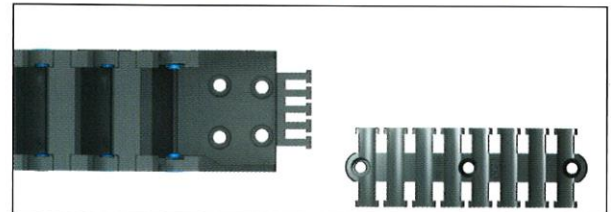
This item control the position of divider and fixing the location, it can be applied to the frame accordingly by the width.

13 Easy 브라켓 (Easy End Bracket).



The Easy Bracket of CPS can be fixed on all directions such as up, down & side.

14 Tiewrap 브라켓 (Tiewrap end bracket).



Tiewrap type end bracket developed in order to fix the cables, hoses on the bracket of each moving point and fixing point. Tiewrap is combined with end bracket for small size cable chain. In case of big size cable chain, the tiewrap is separated from its end bracket, since the cables or hoses have to be fixed into a distance of about 20~30x outer diameter of cable backward. This method well as prevents cables inside of chain get tangled.



Using Material of High Quality

Chain Request for selecting sorts

➡ Selecting criterion for cable chain

1. STROKE(total traveling distance of the equipment):
Judge whether chain for selecting droops or not.
2. Bending Radius(곡률반경) R
Rotation diameter of chain must be bigger than the biggest one of cables or hoses to be in the cable chain.

 $R_{min} > 8 \sim 10 \times \text{Cable outer diameter}$
 $R_{min} > 15 \sim 20 \times \text{Hose outer diameter}$
3. Internal size of chain
Select sorts of chain by checking inserted cable q' ty and diameter.
Slect the internal size of chain after selecting 1,2
4. The length of chain
Must select the length of chain by checking the starting point of chain when traveling.

➡ Calculation of the length for chain

$$L = LS/2 + LP \quad (LP = \pi \times R + 4P)$$

L : The length of chain LS/2: The half of total stroke
 LS: Total stroke, total traveling distance of the equipment
 LP: Loop length P: Length of each pitch
 π : 3.14 R: Bending radius of chain

➡ Calculation of the height of installation for chain

$$H = 2R + B$$

H: Length of the upper end & lower end for chain when forming round (Round 형성시 체인 상부끝과 하부끝의 총 길이)
 R: Bending radius of chain B: The height for outer width for chain
 체인설치시 적정 높이: $H + @$ @: 체인사양에 따라 변동 (ex. CPS068N, CPS077N은 +40mm)
 Proper height of installing chain: $H + @$ @: It depends on the sort of chain(ex. CPS068N,077N =+40mm)

➡ Calculation of the bending radius for cable chain

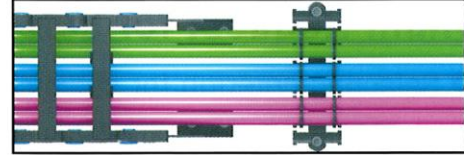
$$R = (H - B)/2$$

Firstly checking the total height of chain, and then subtract the height of outer height from it, Finally divide it by 2.



Using Material of High Quality

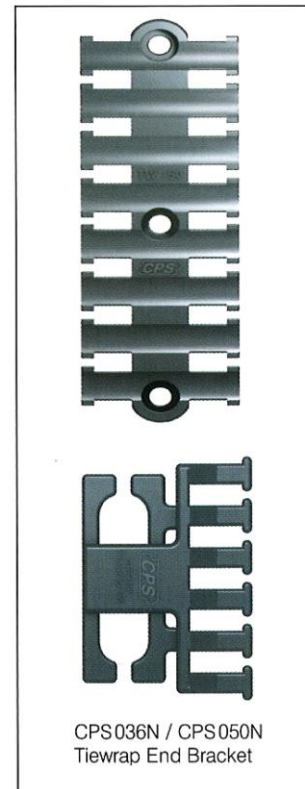
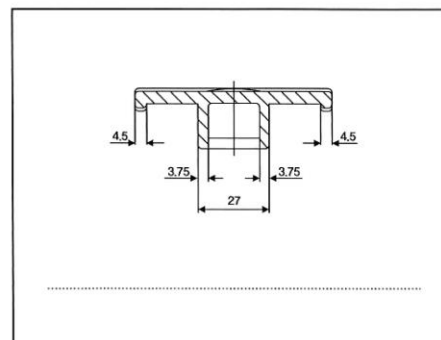
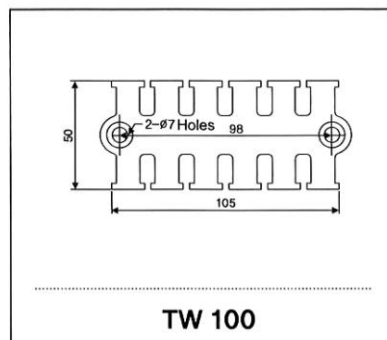
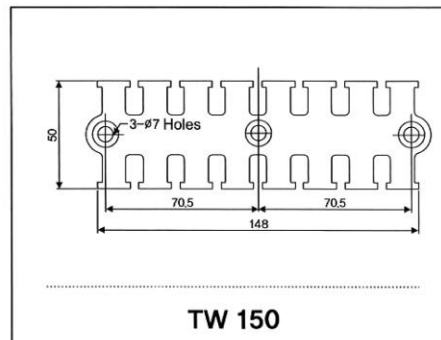
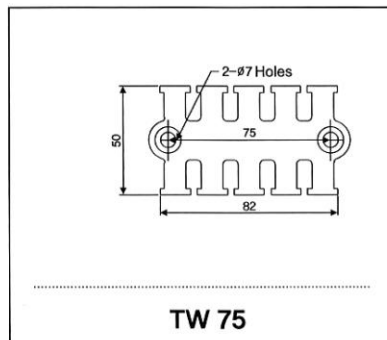
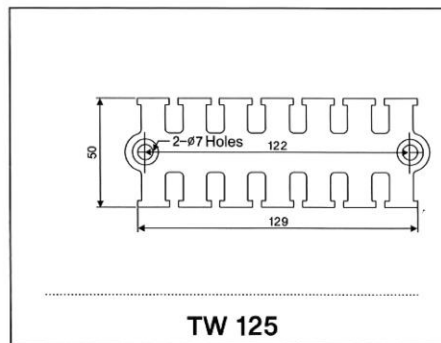
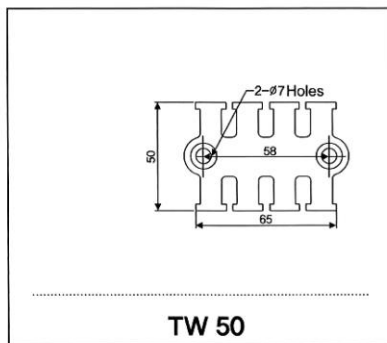
Tiewrap System



Tiewrap System (케이블 고정 시스템)

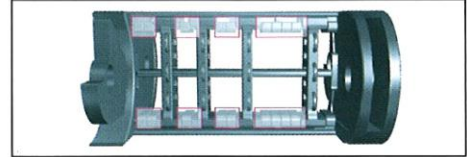
The cables and hoses should be fixed a backward from 30mm X maximum diameter of cable or hose in moving point so as to block up cutting the cables or hoses when move cable chain.

Tiewrap system is a valuable tool for fixing the cables or hoses which installed in the cable chain.



Using Material of High Quality

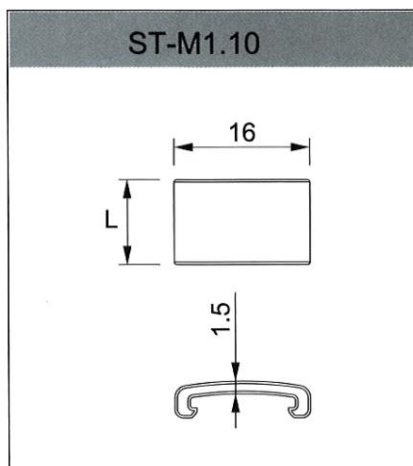
Stoper System



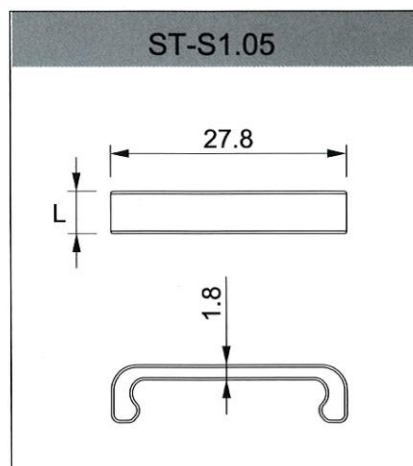
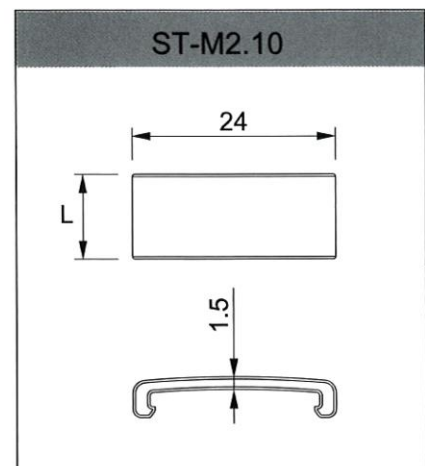
Stoper System (디바이더 고정 시스템)

Stoper fixing the location of divider which is settled in side of cable chain and control the position of divider by the inserted cable's size and quantity.

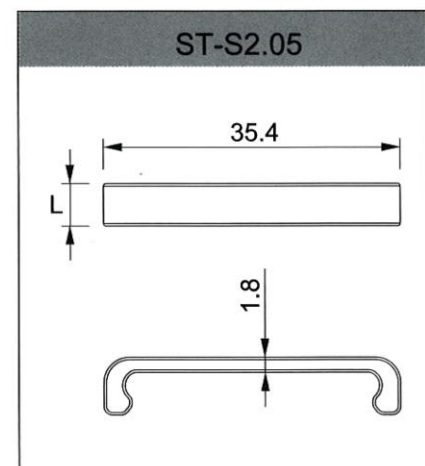
The items are classified as ST-M1, ST-M2, ST-S1, ST-S2 and please refer following drawings.



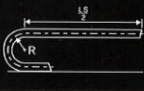
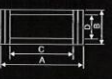


















ST-M1.10: CPS 036N
ST-M2.10: CPS 050N
(L: 5, 10, 15, 20)



ST-S1.05: CPS 068,077
ST-S2.05: CPS 095,120
(L: 5, 10, 15, 20)

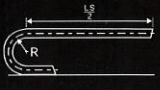
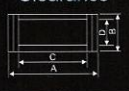












Using Material of High Quality

CPS Cable Chain MINI – Type	Pitch	Bending Radius R 	Weight kg/m	Speed m/sec	Temperature °C	Clearance 				Frame style 	Divider possible with frame 
						A	B	C	D		
CPS015.06	15	18,28,38	0.100	10	-30 ~ +130	12.6	13	6	10		
CPS015.10	15		0.106			16.6	13	10	10		
CPS015.15	15		0.111			21.6	13	15	10		
CPS015.20	15		0.115			26.6	13	20	10		
CPS020.15	20	28,38,48	0.24	10	-30 ~ +130	24	20	15	14.5		
CPS020.20	20		0.26			29	20	20	14.5		
CPS020.30	20		0.28			39	20	30	14.5		
CPS020.40	20		0.31			49	20	40	14.5		
CPS030.15	30	38,48, 75, 100	0.38	10	-30 ~ +130	29	26	15	19		
CPS030.25	30		0.40			39	26	25	19		
CPS030.35	30		0.42			49	26	35	19		
CPS030.50	30		0.44			64	26	50	19		
CPS033.27	33	35,45,75, 100,120	0.55	10	-30 ~ +130	45	31	27	23		
CPS033.37	33		0.59			55	31	37	23		
CPS033.47	33		0.61			65	31	47	23		
CPS033.67	33		0.68			85	31	67	23		
CPS033.77	33		0.70			95	31	77	23		
Medium – Type	Pitch	Bending Radius R	Weight	Speed	Temperature	Clearance				Frame style	Divider possible with frame
CPS036.035	36	70,90,120,150	1.21	10	-30 ~ +130	59	38	35	27		
CPS036.055	36		1.29			79	38	55	27		
CPS036.075	36		1.39			99	38	75	27		
CPS036.100	36		1.50			124	38	100	27		
CPS050.050	50	100,125,150,200	1.98	10	-30 ~ +130	78	52	50	38		
CPS050.075	50		2.22			103	52	75	38		
CPS050.100	50		2.44			128	52	100	38		
CPS050.125	50		2.59			153	52	125	38		
CPS050.150	50		2.93			178	52	150	38		
CPS036N.035	36	50,70,90, 120,150	1.18	10	-30 ~ +130	59	38	35	28		
CPS036N.055	36		1.21			79	38	55	28		
CPS036N.075	36		1.29			99	38	75	28		
CPS036N.100	36		1.40			124	38	100	28		
CPS036N.125	36		1.47			149	38	125	28		
CPS050N.050	50	75,100,125, 150,200	1.86	10	-30 ~ +130	78	52	50	40		
CPS050N.075	50		1.98			103	52	75	40		
CPS050N.100	50		2.10			128	52	100	40		
CPS050N.110	50		2.16			138	52	110	40		
CPS050N.125	50		2.28			153	52	125	40		
CPS050N.150	50		2.36			178	52	150	40		
CPS050N.175	50		2.50			203	52	175	40		
CPS050N.200	50		2.58			228	52	200	40		



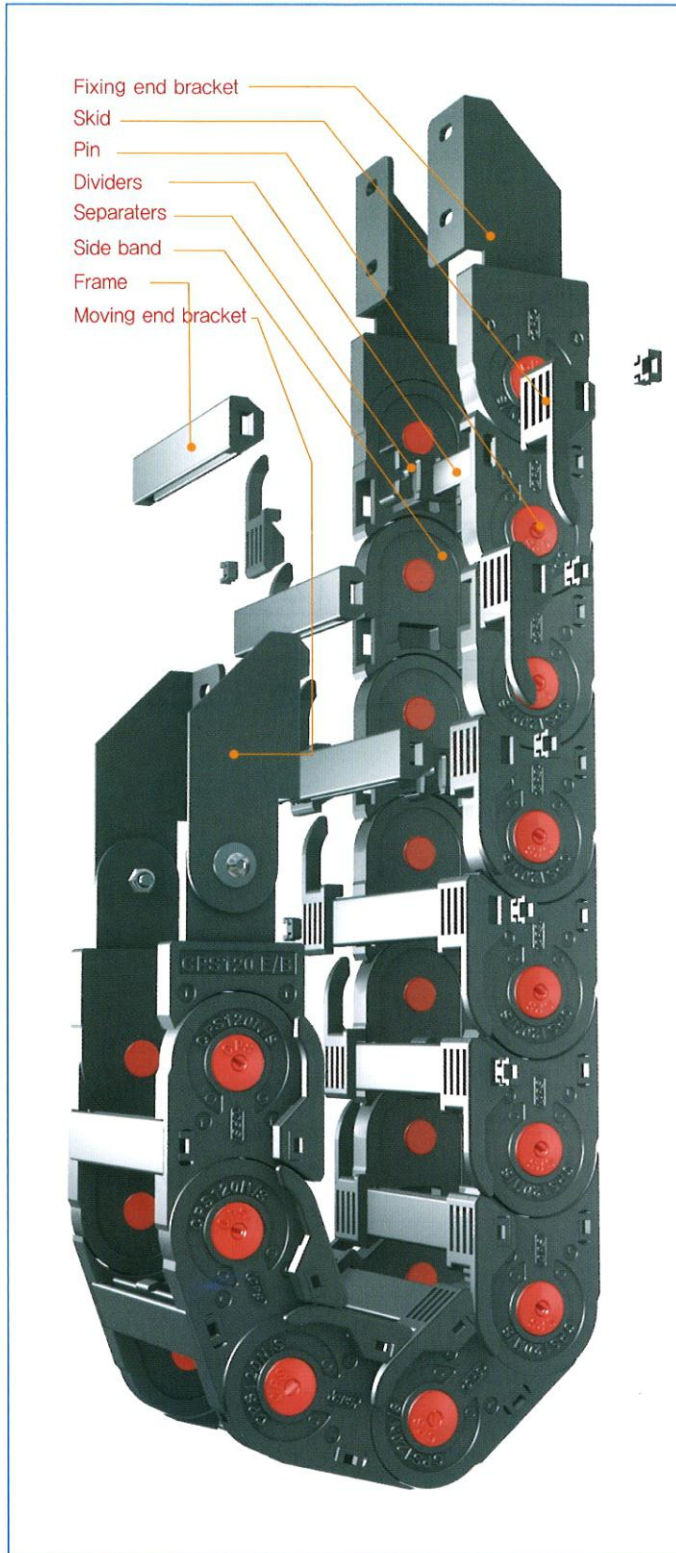
Using Material of High Quality

CPS Cable Chain System – Type	Pitch	Bending Radius R 	Weight kg/m	Speed m/sec	Temperature °C	Clearance 				Frame style	Divider possible with frame
						A	B	C	D		
CPS068N	68	75,100,150,200,250,300	3.57	10	-30 ~ +130	80~430	60	50~400	40		
CPS077N	77	100,120,140,200,250,300	3.72			80~430	70	50~400	50		
CPS095N	95	135,150,200,230,280,400	5.29			115~440	82	75~400	54		
CPS120N	120	180,200,250,300,350,400,500	5.68			115~440	108	75~400	80		
Medium – Type	Pitch	Bending Radius R	Weight	Speed	Temperature	Clearance				Frame style	Divider possible with frame
CPS036S.035	36	70,90,120,150	1.25	10	-30 ~ +130	67	41	35	28		
CPS036S.055	36		1.31			87	41	55	28		
CPS036S.075	36		1.36			107	41	75	28		
CPS036S.100	36		1.46			132	41	100	28		
CPS068S	68	100,150,200,250,300	3.89	10	-30 ~ +130	96~446	65	50~400	40		
CPS077S	77	120,140,200,250,300	4.11			96~446	75	50~400	50		
CPS095S	95	135,150,200,230,280,400	5.81			129~454	89	75~400	54		
CPS120S	120	180,200,250,300,350,400,500	6.26			129~454	115	75~400	80		
Enclose – Type	Pitch	Bending Radius R	Weight	Speed	Temperature	Clearance				Frame style	Divider possible with frame
CPS036E.035	36	70,90,120,150	1.23	10	-30 ~ +130	59	38	35	27		
CPS036E.055	36		1.35			79	38	55	27		
CPS036E.075	36		1.46			99	38	75	27		
CPS036E.100	36		1.63			124	38	100	27		
CPS050E.050	50	100,125,150,200	2.07	10	-30 ~ +130	78	52	50	30.5		
CPS050E.075	50		2.35			103	52	75	30.5		
CPS050E.100	50		2.61			128	52	100	30.5		
CPS050E.150	50		3.23			178	52	150	30.5		



Using Material of High Quality

SLIDING SYSTEM Type



CPS120S Type

- 1 Chain material**
CPS-polyamide with glass fiber reinforced, UL94-HB
- 2 Low Noise** : 55 dB
(DIN EN 61672-1)
- 3 Applications** :
Gantry robot, Robot carriage
Textile machine, Welding machine,
Auto welding system, Automatic
Soldering machine.
- 4 Speed** : 3m/sec
- 5 Temperature** : -30°C ~ +130°C
- 6 Calculation of the chain length**

$$L = \frac{L_s}{2} + L_p$$



⬆ Shipyard Welding Line



⬆ Press Factory Gantry Crane

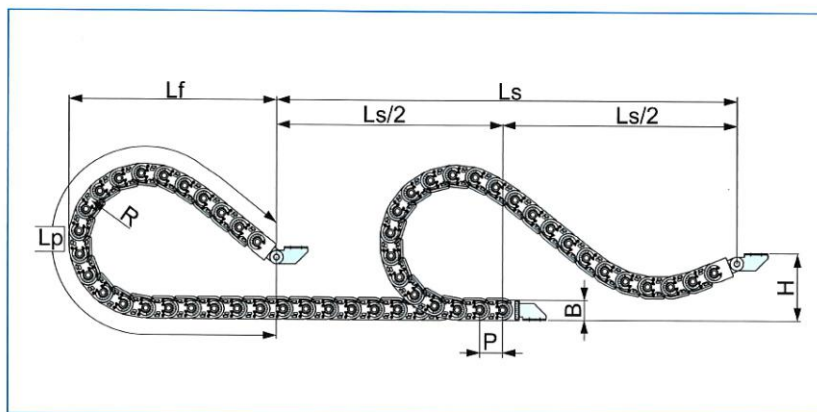


Using Material of High Quality

CPS 120S

► Lay out of the CPS cable chain

- Ls : stroke
- Lp : loop length
- Lf : loop projection



Type CPS120S

Pitch P: 120mm
Height B : 115mm

(dimensions in mm)

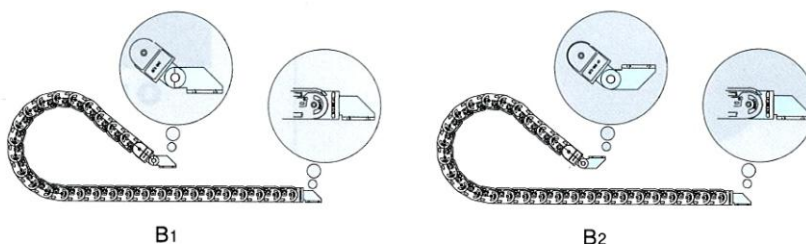
Bending radius R	180	200	250	300	350	400	500
Lp	1,531	1,693	1,969	2,218	2,463	3,004	3,789
Lf	692	761	847	916	972	1,202	1,497
H	300	300	300	300	300	300	300

► Ordering

CPS120S.075. R180 / B₂ – 30,000L : 10ST

- Q'ty(SET)
- Length(mm)
- Bracket Type(B₁, B₂)
- Bending radius(R)
- Inside Width
- S: Sliding type
- Chain Type

► Bracket Type

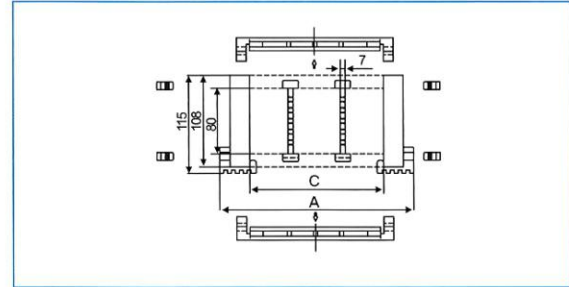


CPS 120S

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Chain cross section

• Type CPS120S



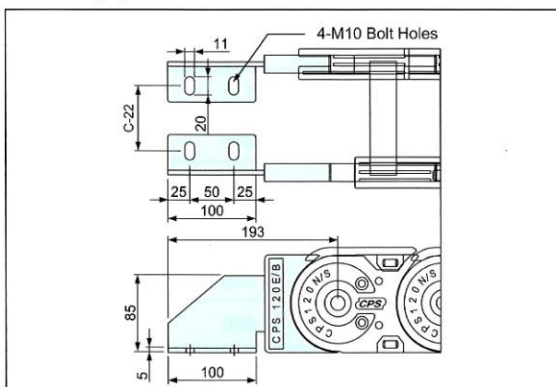
Up, Downside open frame with skid

Chain Radius, Weight

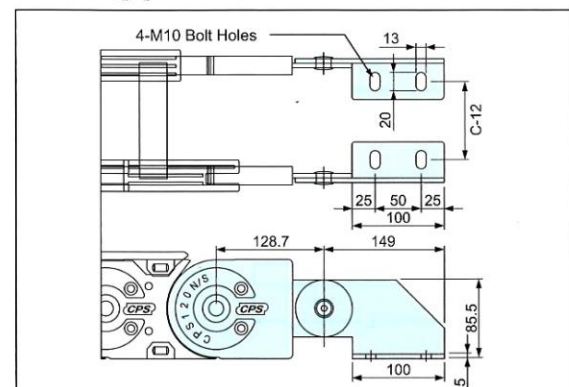
TYPE CPS120S				
Chain Type	A	C	Weight kg/m	R
CPS120S.075	129	75	4.77	180 200 250 300 350 400 500
CPS120S.100	154	100	4.89	
CPS120S.125	179	125	5.00	
CPS120S.150	204	150	5.04	
CPS120S.175	229	175	5.21	
CPS120S.200	254	200	5.37	
CPS120S.250	304	250	5.60	
CPS120S.300	354	300	5.85	
CPS120S.350	404	350	6.02	
CPS120S.400	454	400	6.26	

End Bracket (Tiewrap Type)

Fixing point



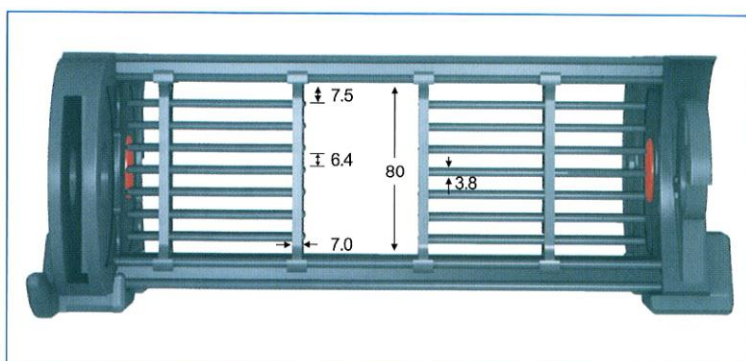
Moving point



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CPS 120S

Interior Section



TIP!

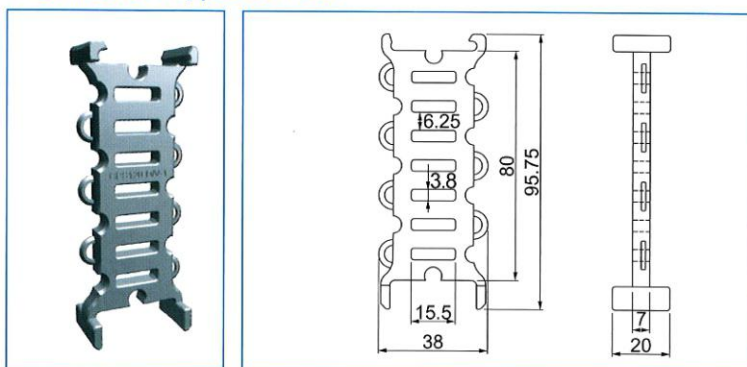
Dividers & Separator are differently installed into the inside of cable chain depending on number & size of cable and inside space of cable chain can be divided into max.8 story by separator.

Dividers

Installing dividers enables cables to divide from each other and also prevent them tangling together.

It is possible to insert separator easily by removing the loop of divider after assembled.

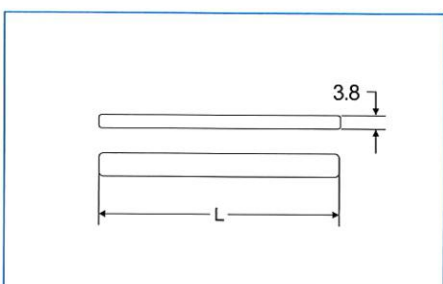
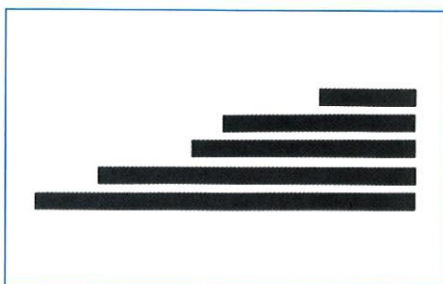
• Dividers : Type DV120



Separators

The inserted separators into dividers have the function that separate cables and lessen the interference of cables so as to prevent them tangling and disconnection.

• Separators



Type	Length (L) / mm
S-SP/S.075	75
S-SP/S.100	100
S-SP/S.125	125
S-SP/S.150	150
S-SP/S.175	175
S-SP/S.200	200
S-SP/S.250	250
S-SP/S.300	300
S-SP/S.350	350
S-SP/S.400	400



CPS 120S

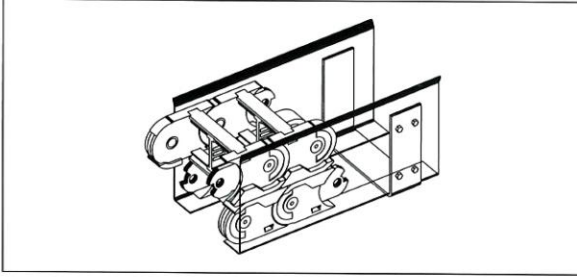
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Guide channel

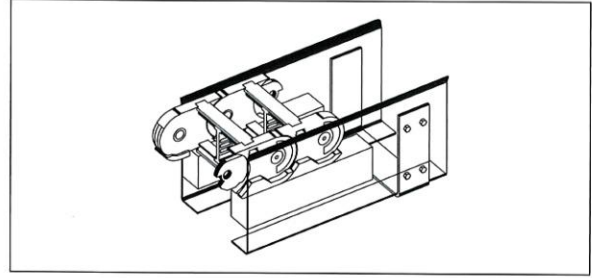


- Guide Channel prevents the cable chain deviated when the cable chain moves. CPS Sliding System Type of cable chain is installed with this guide channel as a support.
- Basic material of Guide channel is Galvanized steel while Stainless steel Guide channel is also available upon request.

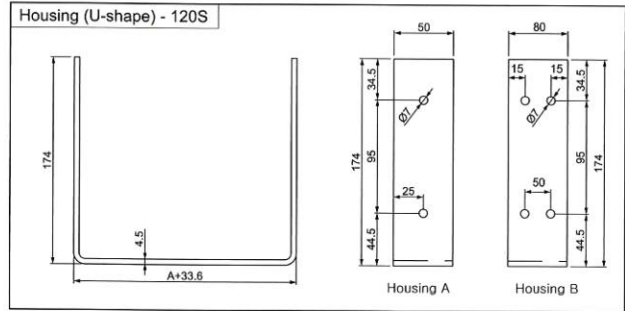
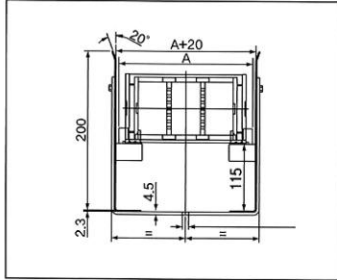
Section AA



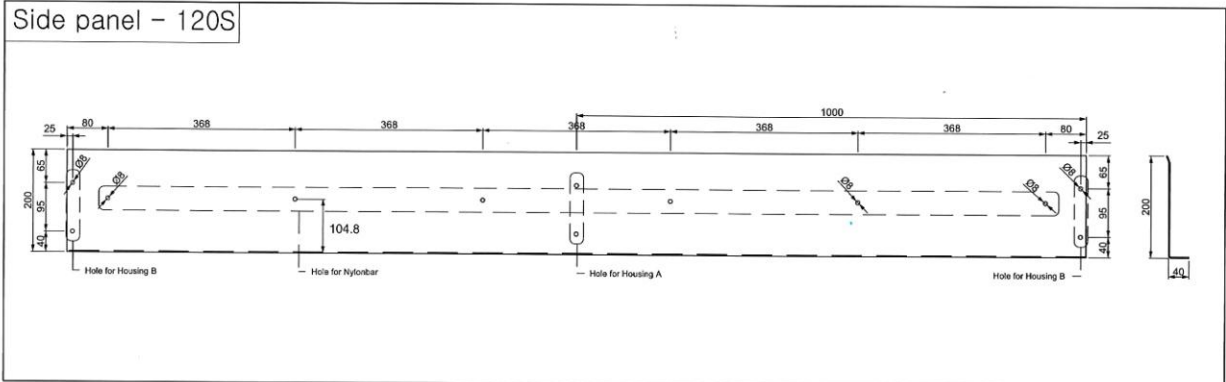
Section BB



120S Type



Side panel - 120S

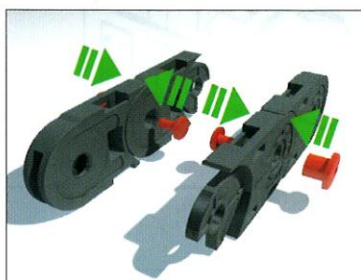


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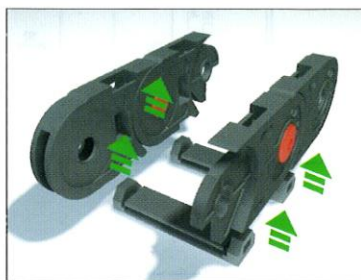
Assembly Guide of CPS Cablechain



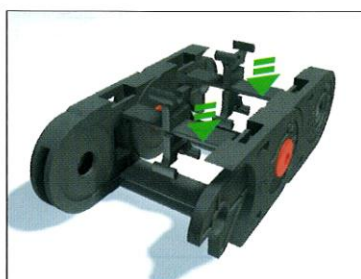
➡ Connect each body.



➡ Assemble the link pin on the side



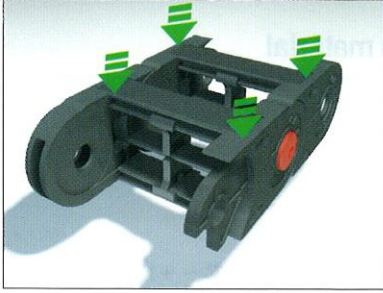
➡ Assemble the frames on the one side of cable chain.



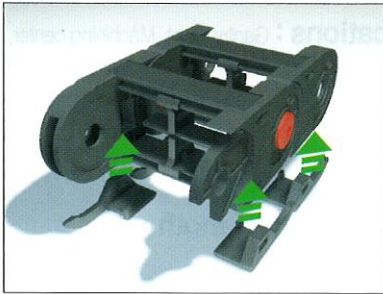
➡ Put the dividers on every other link.



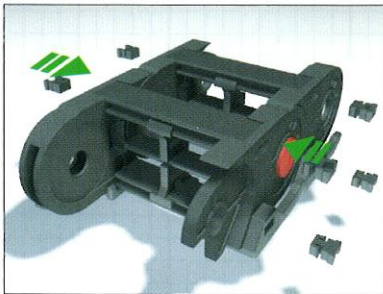
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- ➡ Assemble the frames on another side of cable chain.



- ➡ Assemble the frames on another side of cable chain.



- ➡ Insert frame-locking pins on the sideward of every link to lock the frames firmly.

TIP!

Above mentioned assembling way applies to only Sliding System type (068S, 077S, 095S, 120S) and be sure to check brackets have 2 different types like B1, B2, according to connecting way before assembly. Are made of steel except B1, B2. Also it is necessary to use rubber-headed hammer and easily take off pin with screw driver.

