

Shift chain[®] E - TYPE : Encloed

ST044E _ 189p

ST055E _ 193p

ST072E _ 197p

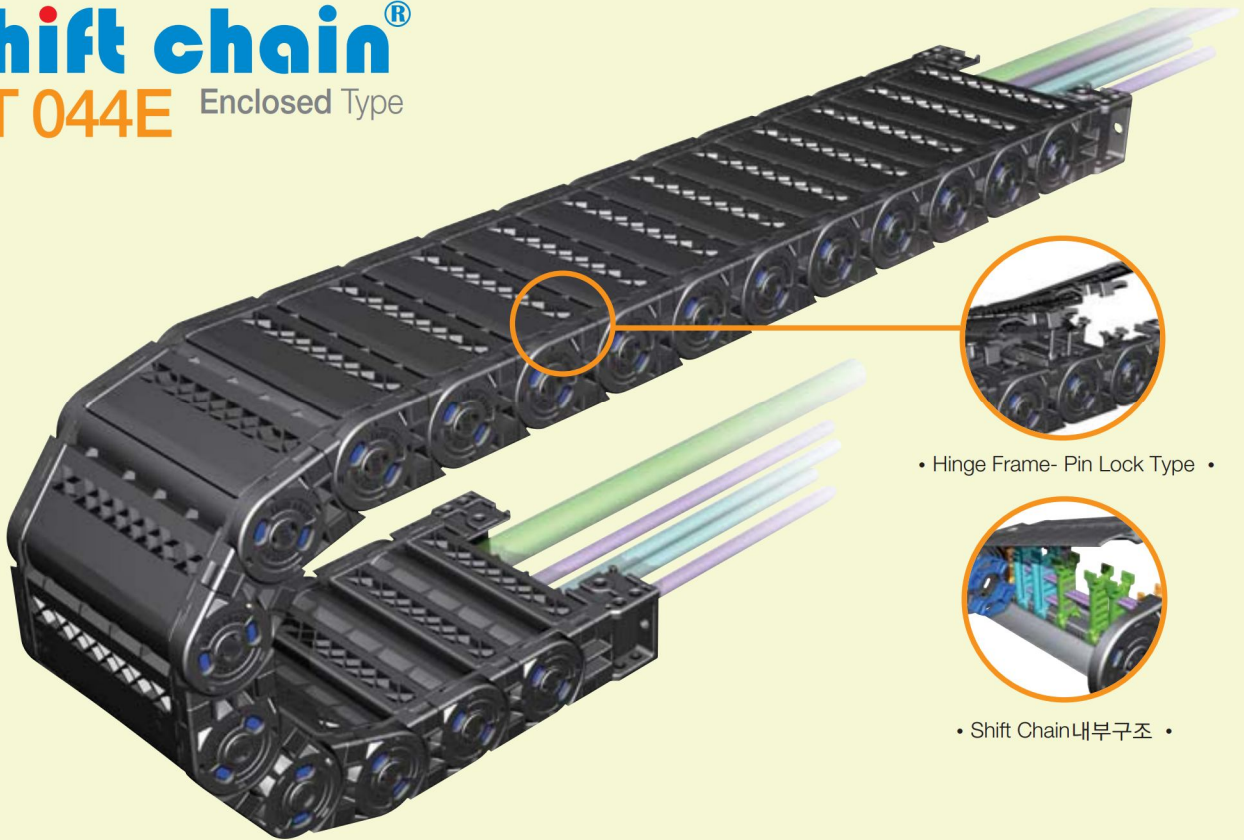
ST095E _ 201p

ST120E _ 205p

ST150E _ 209p

Min ●●●●● Max

Shift chain® ST 044E Enclosed Type



• Hinge Frame- Pin Lock Type •



• Shift Chain내부구조 •

SHIFT-CHAIN

SAEN-CHAIN

REVOLVING-CHAIN

HELIX-CHAIN

ROBOT-KIT

OPSTILEX

OPSTIFX

MATERIAL

- **Chain material:**
CPS-polyamide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Speed :** 10m / sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length**
Vertical curve above= max 2.0m
Vertical curve below= max 40m
Side Mounted, Unsupported= max 1.0m

Applications

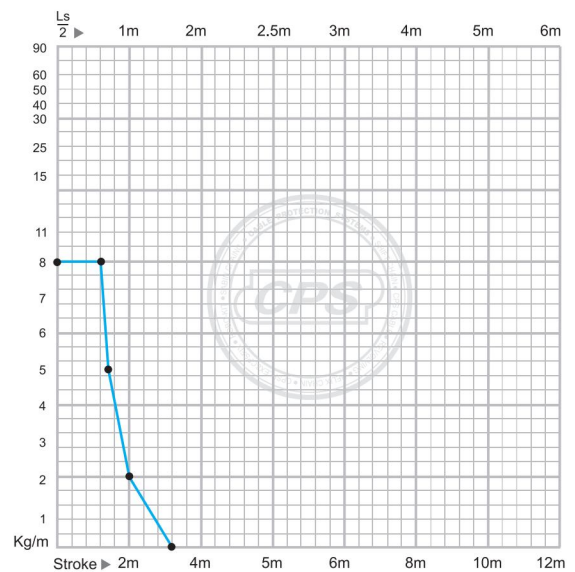
Shift Chain E-Type can be found on car manufacturer's welding line, robot carriages and press lines and on any machine where excess material can damage your inserted cables.

산업현장, 외부위험 요소로부터 케이블의 보호가 필요한 용접라인, 도장라인 등에 적용. 겐츨리로봇, 공작기계, 용접기계, 로봇케리지 등의 외부위험 요소로부터 케이블의 보호가 요구되는 케이블 체인의 적용 사업장에 사용가능.

Calculation of the chain length

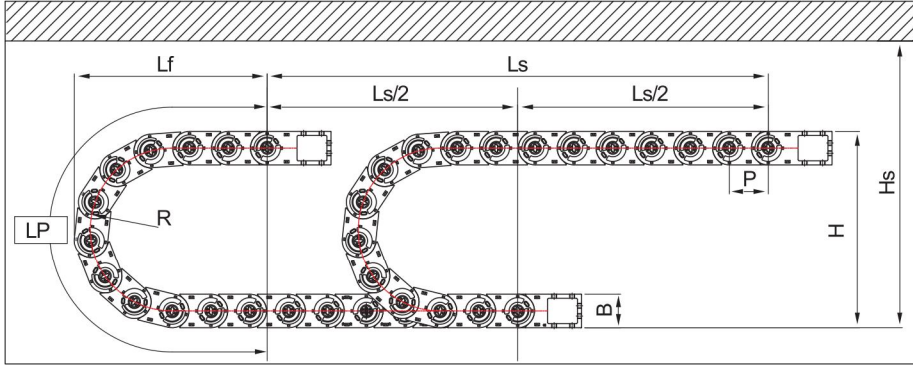
$$[L = \frac{L_s}{2} + L_p]$$

Load diagrams self-supporting length



ST 044E Enclosed Type

LAYOUT OF THE CHAIN



- Ls:** Stroke
- Lp:** Loop Length
- Lf:** Loop Projection
- Hs:** Safe Space

(Dimensions in mm)

Bending radius R	70	90	120	150
Lp	396	459	553	648
Lf	177	197	227	257
H	178	218	278	338

ST 044E Type

- Pitch P:** 44mm
- Height B:** 38mm
- Height H:** 2R+38mm
- Hs** ≥ H+30mm

ORDERING (주문방법)

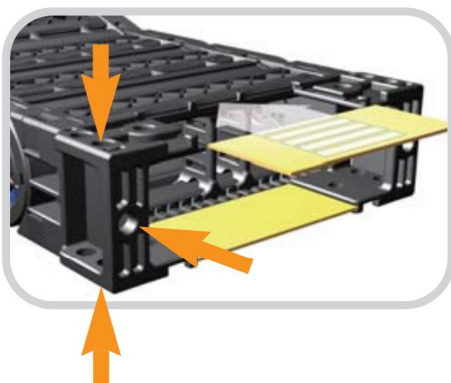
ST 044E. 100. R120 / F - 1500L : 10ST



- 주문수량 Q' ty(set)
- 체인길이 Length(mm)
- 브라켓 Free End Bracket
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclosed Type

Shift Chain

BRACKET TYPE (브라켓타입)



FEB (Free End Bracket)

FEB Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket.

체인을 고정하는 끝부분으로 기존 Easy End Bracket 과 Normal End Bracket 을 하나로 통합한 방식으로 취부의 효율성을 높임.

▶ Above products are patent registered item which can be protected by industrial property right. (상기제품은 특허등록 제품으로 산업재산권의 보호를 받는 제품입니다.)

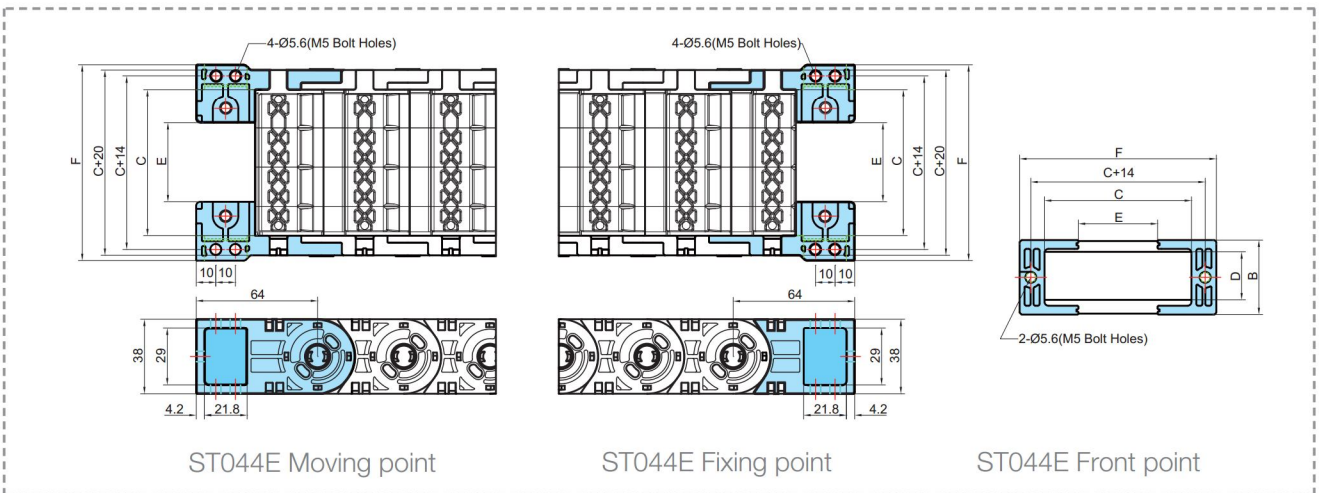
ST 044E Enclosed Type

CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 044E.035	56		35			1.03
ST 044E.055	76	38	55	24.5	70, 90, 120, 150	1.21
ST 044E.075	96		75			1.37
ST 044E.100	121		100			1.58

FREE END BRACKET



Chain Type	F	B	C	D	E	Hole Type
ST 044E.035	60.4		35		0.4	M5 Bolt Holes
ST 044E.055	80.4	38	55	24.5	20.4	
ST 044E.075	100.4		75		40.4	
ST 044E.100	125.4		100		65.4	

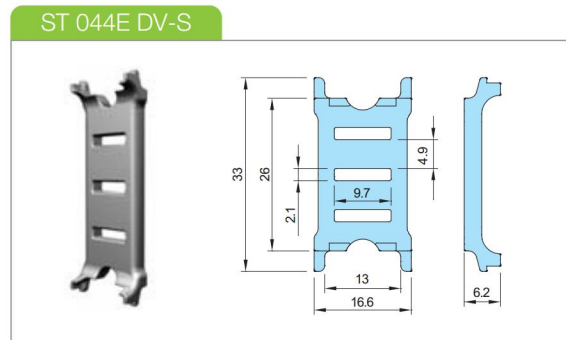
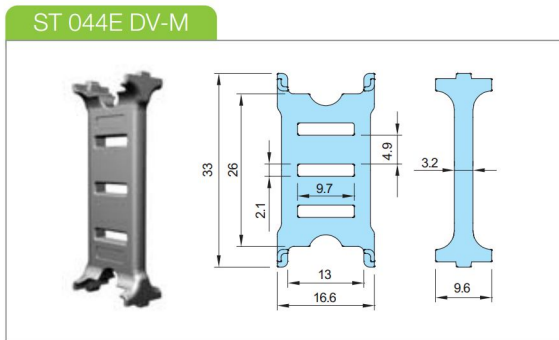
ST 044E Enclosed Type

DIVIDERS & SEPARATORS

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

디바이더(세로분리대)와 세퍼레이터(가로분리대)는 체인내에 많은 케이블들이 입선될 시 케이블들을 서로 분리하여 케이블상호간의 마찰로 인한 **피복손상 및 단선**을 방지하는 역할을 하며 케이블과 10%이상의 여유공간을 확보해야 합니다.

또한 케이블을 체인내 2단이상 입선시 반드시 세퍼레이터를 디바이더에 결합하여 사용해야 케이블의 꼬임방지와 피복손상을 방지할 수 있습니다.

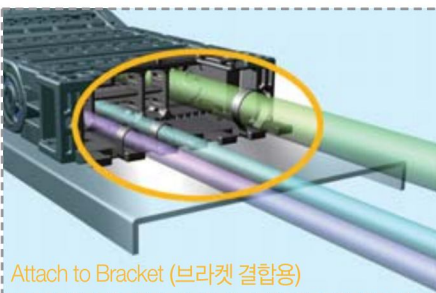


▶ Assemble divider every Two links. / 2링크마다 결합.

ST 044E Separators (SP) (No. : S-SP/M)

Chain Type	Separators	SP035	SP050	SP055	SP075	SP100	SP125	SP150	SP175	SP200
ST 044E		○	○	○	○	○	○	○	○	○
ST 055E		○	○	○	○	○	○	○	○	○

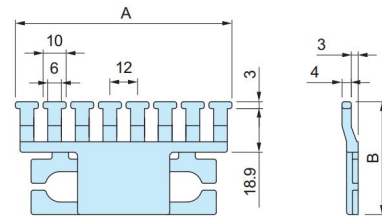
TIE WRAP



Attach to Bracket (브라켓 결합용)



(Dimensions in mm)



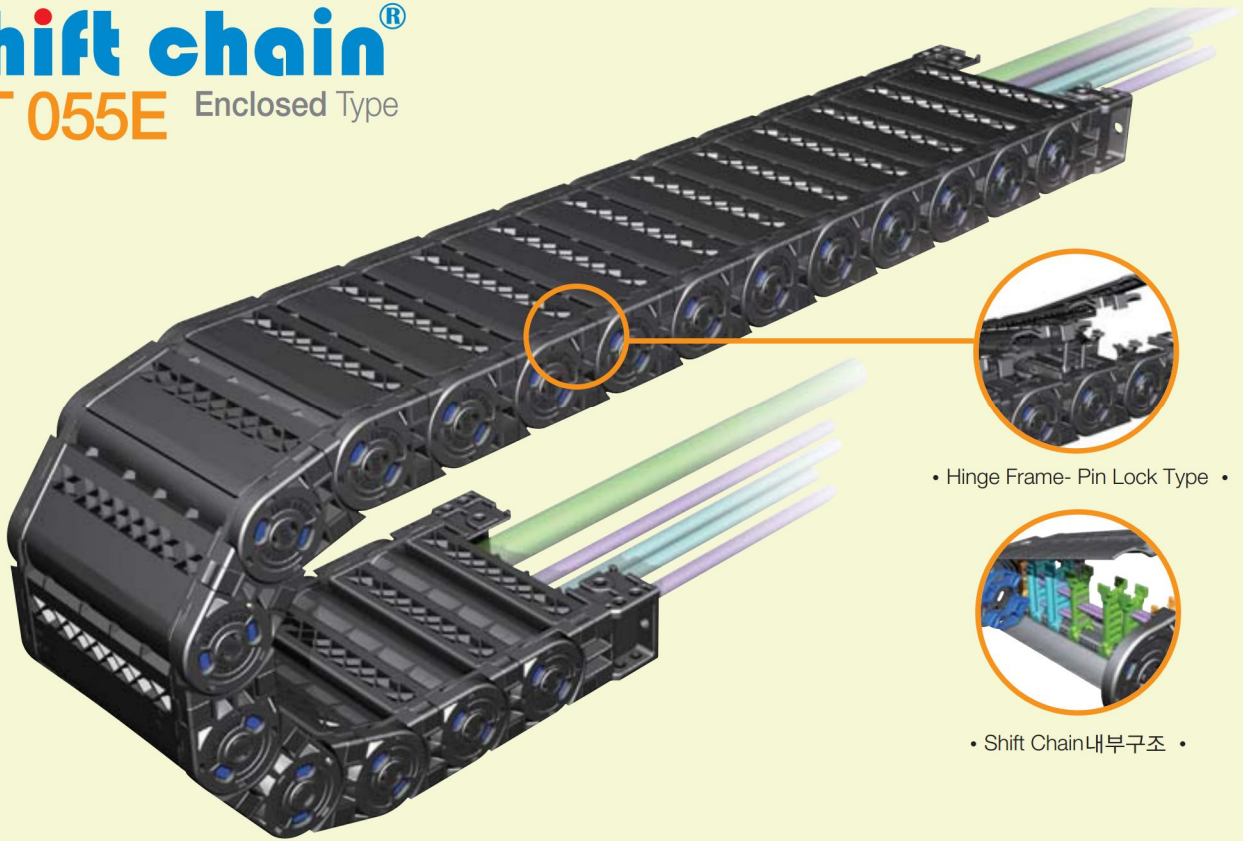
Tie Wrap	035	055	075	100	125
A	46	70	94	118	142
B	35.4	48.9	48.9	48.9	48.9

The Tie Wrap separated from the Shift Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation. There are two types in the tie wrap; Attached & Unattached to the bracket.

Tie Wrap은 Shift Chain의 브라켓을 기준으로 설치함으로써 체인의 움직임으로 인해 체인내의 케이블이나 호스가 당겨져 단선되는 경우를 방지할 수 있다. Shift Chain의 Tie wrap은 브라켓부분과 근접해서 사용할 수 있는 사양과 브라켓에 결합해서 사용할 수 있는 사양으로 구분되어 사용할 수 있다.

Min ●●●●● Max

Shift chain® ST 055E Enclosed Type



• Hinge Frame- Pin Lock Type •



• Shift Chain 내부구조 •

SHIFT-CHAIN

SAEN-CHAIN

REVOLVING-CHAIN

HELIX-CHAIN

MATERIAL

- **Chain material:**
CPS-polyamide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Speed :** 10m / sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length**
Vertical curve above= max 2.0m
Vertical curve below= max 40m
Side Mounted, Unsupported= max 1.0m

Applications

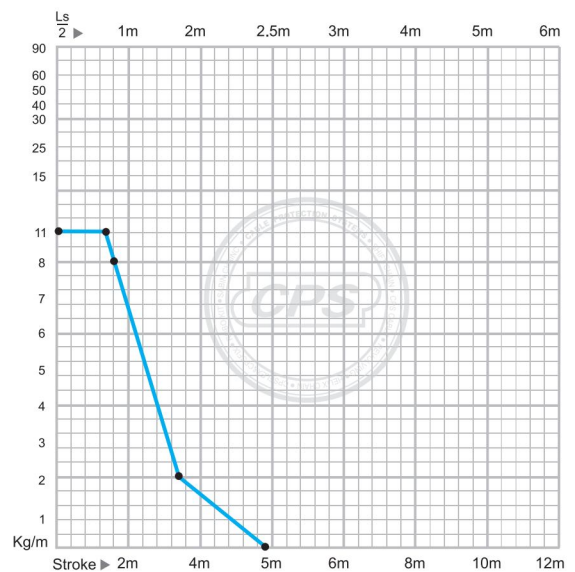
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Calculation of the chain length

$$\left[L = \frac{Ls}{2} + Lp \right]$$

Load diagrams self-supporting length



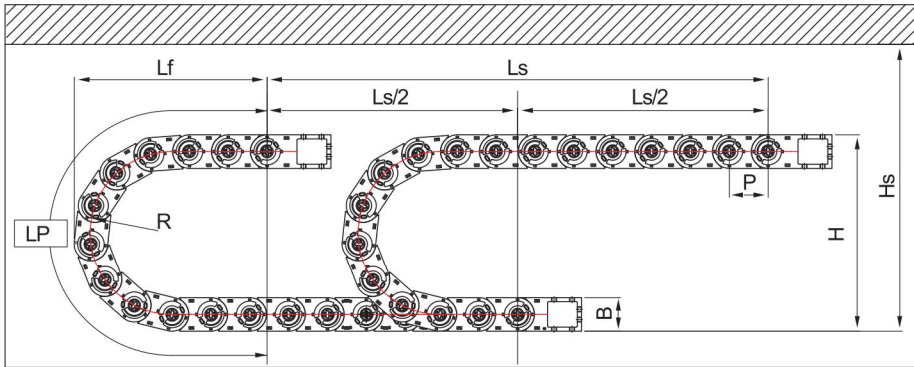
ROBOT-KIT

OPF-TELEX

OPF-SFX

ST 055E Enclosed Type

LAYOUT OF THE CHAIN



- Ls:** Stroke
- Lp:** Loop Length
- Lf:** Loop Projection
- Hs:** Safe Space

(Dimensions in mm)

Bending radius R	-	-	100	125	150	200
Lp	-	-	535	613	692	849
Lf	-	-	236	261	286	336
H	-	-	252	302	352	452

ST 055E Type

- Pitch P:** 55mm
- Height B:** 52mm
- Height H:** 2R+52mm
- Hs** ≥ H+35mm

ORDERING (주문방법)

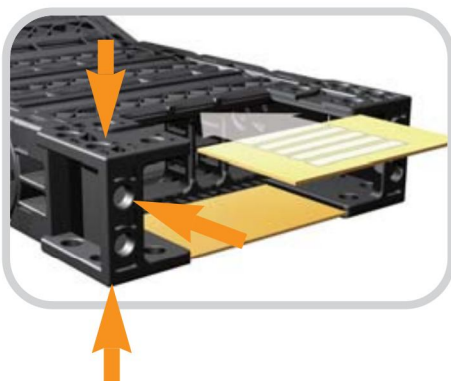
ST 055E. 150. R150 / F - 1800L : 10ST



- 주문수량 Q' ty(set)
- 체인길이 Length(mm)
- 브라켓 Free End Bracket
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclose Type

Shift Chain

BRACKET TYPE (브라켓타입)



FEB (Free End Bracket)

FEB Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket.

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ST 055E Enclosed Type

SHIFT CHAIN

SAEN CHAIN

REVOLVING CHAIN

HELIX CHAIN

ROBO-KIT

OP-STEEX

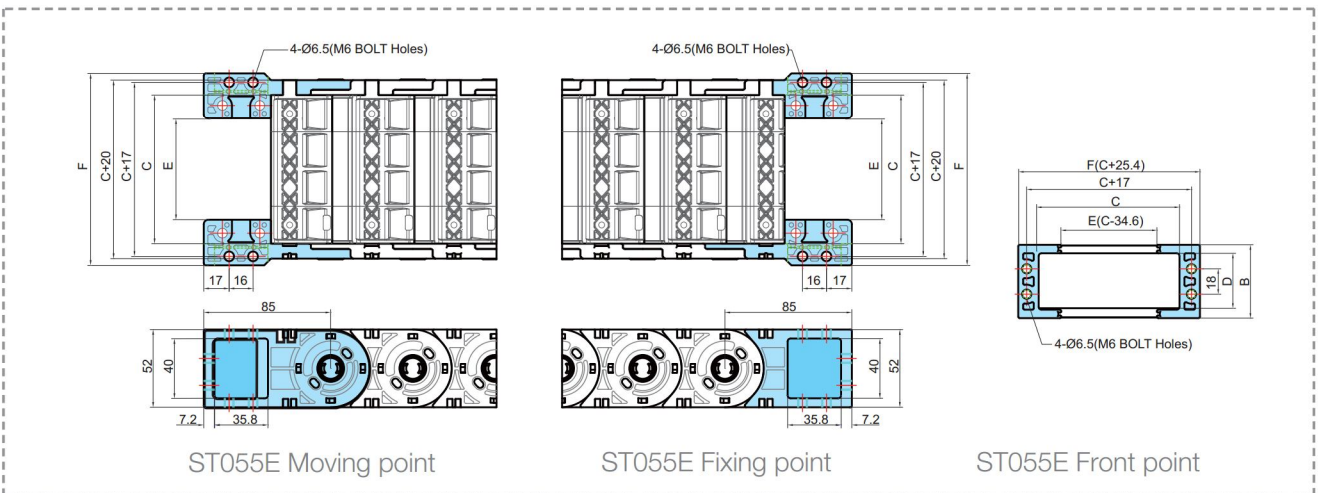
OP-SFX

CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 055E.050	71		50			1.36
ST 055E.075	96		75			1.56
ST 055E.100	121	52	100	38.5	100, 125, 150, 200	1.76
ST 055E.125	146		125			1.97
ST 055E.150	171		150			2.21

FREE END BRACKET



Chain Type	F	B	C	D	E	Hole Type
ST 055E.050	79		50		18	M6 Bolt Holes
ST 055E.075	104		75		43	
ST 055E.100	129	52	100	38.5	68	
ST 055E.125	154		125		93	
ST 055E.150	179		150		118	

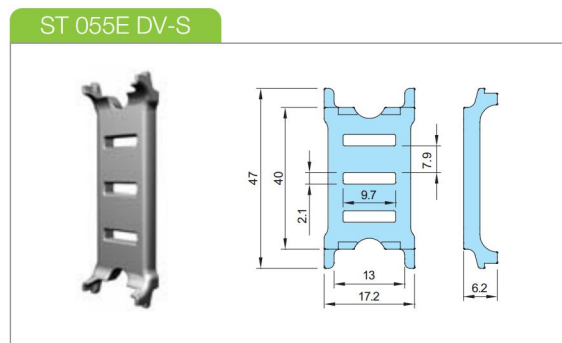
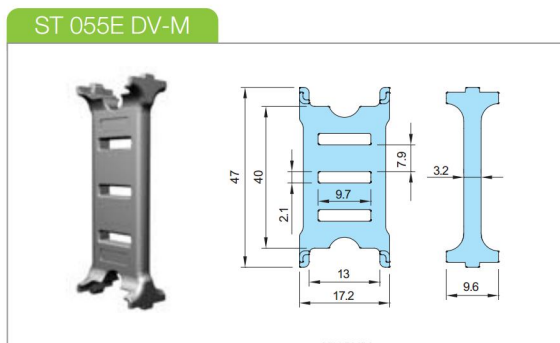
ST 055E Enclosed Type

DIVIDERS & SEPARATORS

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

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또한 케이블을 체인내 2단이상 입선시 반드시 세퍼레이터를 디바이더에 결합하여 사용해야 케이블의 꼬임방지와 피복손상을 방지할 수 있습니다.

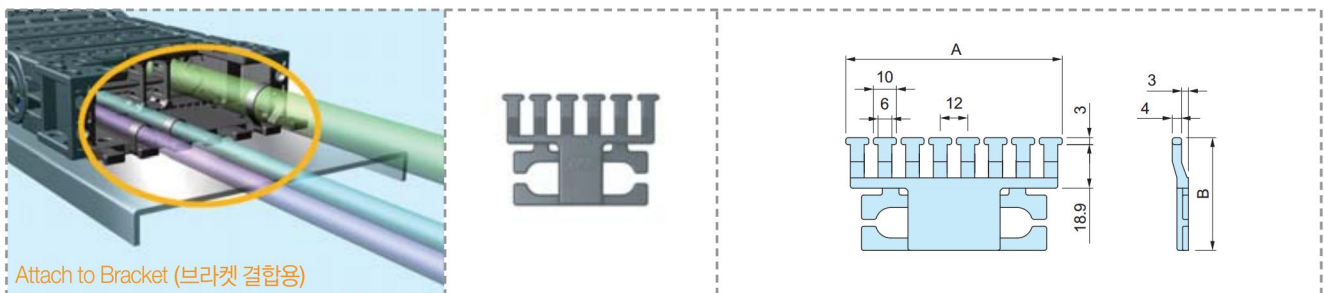


▶ Assemble divider every Two links. / 2링크마다 결합.

ST 055E Separators (SP) (No. : S-SP/M)

Chain Type	Separators	SP035	SP050	SP055	SP075	SP100	SP125	SP150	SP175	SP200
ST 044E		○	○	○	○	○	○	○	○	○
ST 055E		○	○	○	○	○	○	○	○	○

TIE WRAP



Attach to Bracket (브라켓 결합용)

The Tie Wrap separated from the Shift Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation.

There are two types in the tie wrap; Attached & Unattached to the bracket.

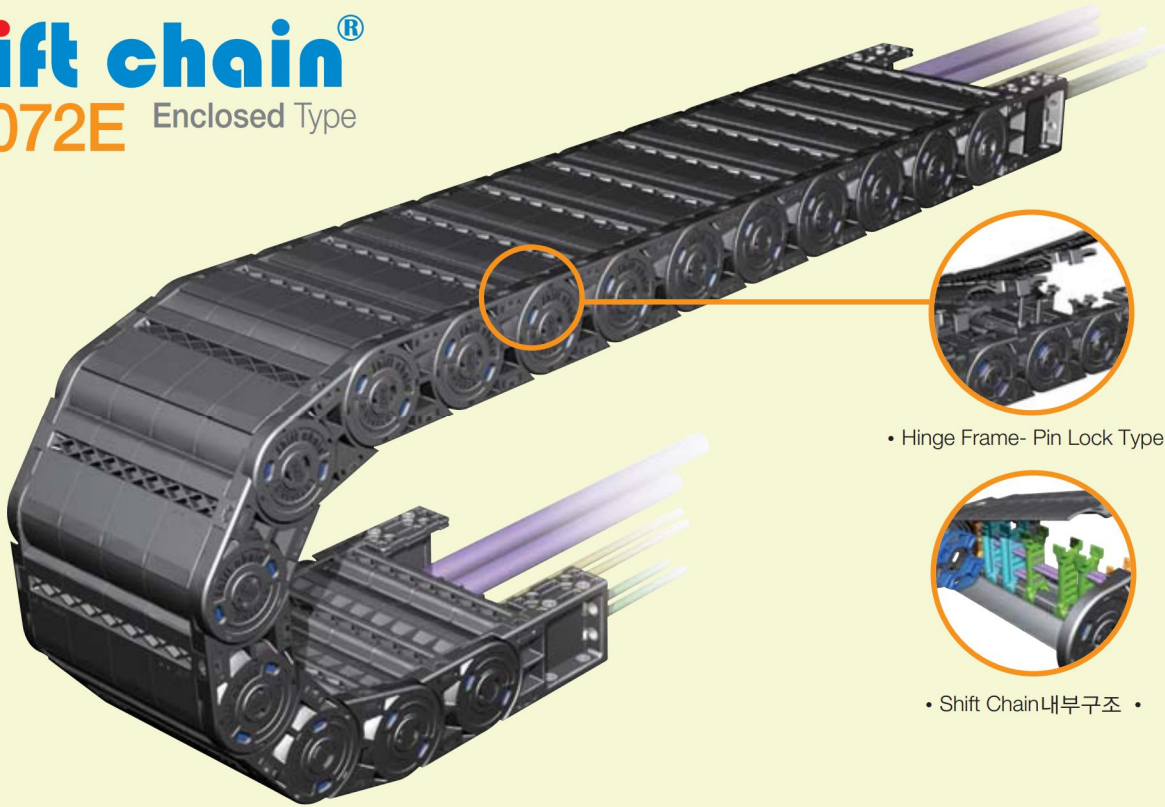
Tie Wrap은 Shift Chain의 브라켓을 기준으로 설치함으로써 체인의 움직임으로 인해 체인내의 케이블이나 호스가 당겨져 **단선되는 경우를 방지**할 수 있다. Shift Chain의 Tiewrap은 브라켓부분과 근접해서 사용할 수 있는 사양과 브라켓에 결합해서 사용할 수 있는 사양으로 구분되어 사용할 수 있다.

When using the tie wrap option for the Shift Chain ST 055 series, the corresponding frame sizes will be 50, 75, 100, 125, 150, 175 and 200mm respectively.

ST 055 제품은, 삽입형 Tiewrap을 사용하며 적용되는 Frame은 50, 75, 100, 125, 150, 175, 200 입니다.

Min ●●●●●● Max

Shift chain® ST 072E Enclosed Type



• Hinge Frame- Pin Lock Type •



• Shift Chain 내부구조 •

SHIFT-CHAIN

SAEN-CHAIN

REVOLVING-CHAIN

HELIX-CHAIN

ROBO-KIT

OP-SHLEX

OP-SHFX

MATERIAL

- **Chain material:**
CPS-polyamide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Speed :** 10m / sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length**
Vertical curve above = max 6.0m
Vertical curve below = max 100m
Side Mounted, Unsupported = max 2.5m
- **Applications**

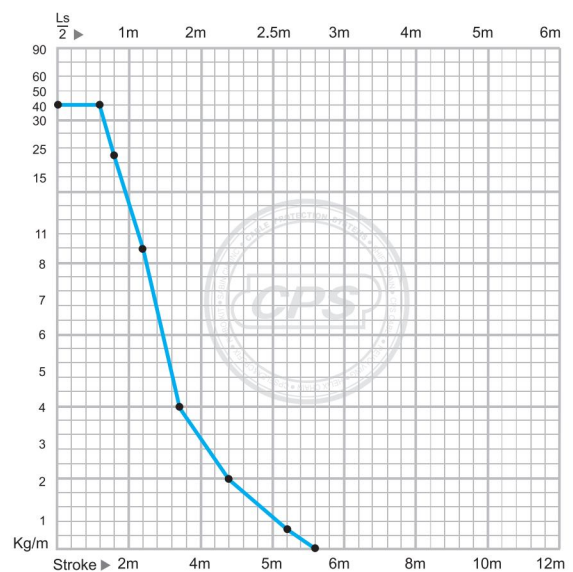
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- **Calculation of the chain length**

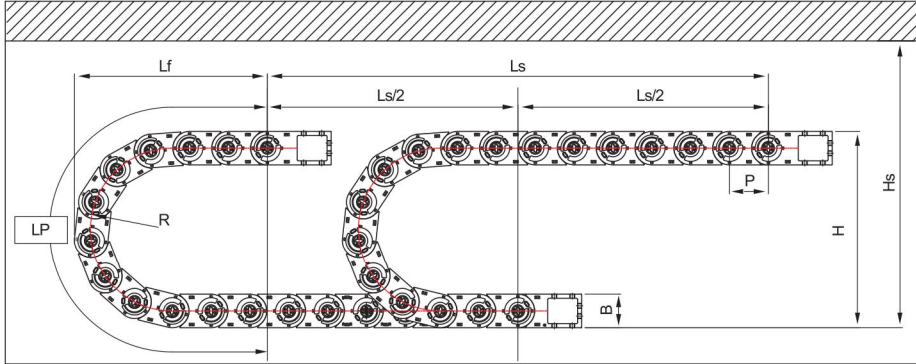
$$[L = \frac{Ls}{2} + Lp]$$

Load diagrams self-supporting length



ST 072E Enclosed Type

LAYOUT OF THE CHAIN



- Ls:** Stroke
- Lp:** Loop Length
- Lf:** Loop Projection
- Hs:** Safe Space

(Dimensions in mm)

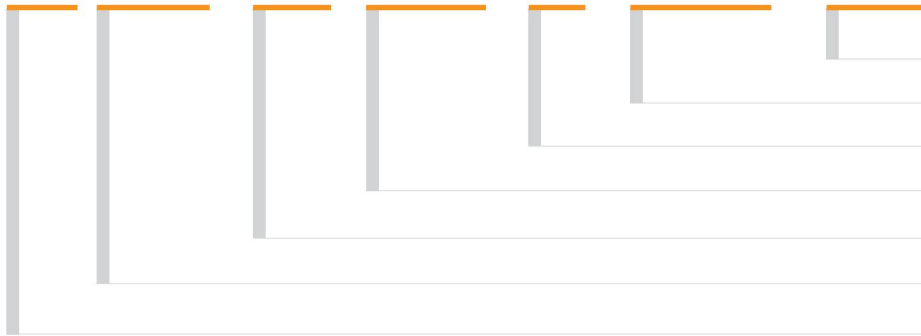
Bending radius R	120	145	200	250	300
Lp	665	743	916	1,074	1,230
L f	297	322	377	427	477
H	306	356	466	566	666

ST 072E Type

- Pitch P:** 72 mm
- Height B:** 66mm
- Height H:** 2R+66mm
- Hs** ≥ H+40mm

ORDERING (주문방법)

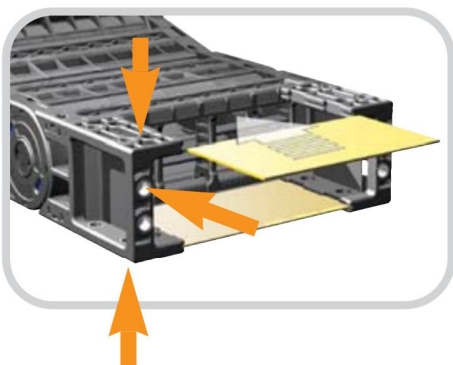
ST 072E. 150. R200 / F - 3000L : 10ST



- 주문수량 Q' ty(set)
- 체인길이 Length(mm)
- 브라켓 Free End Bracket
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclose Type

Shift Chain

BRACKET TYPE (브라켓타입)



FEB (Free End Bracket)

FEB Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket. Also, inseting plastic sheets creates enclosed structure in the bracket.

(The order for subsidiary materials is extra.)

체인을 고정하는 끝부분으로 기존 Easy End Bracket과 Normal End Bracket을 하나로 통합한 방식으로 취부의 효율성을 높임.

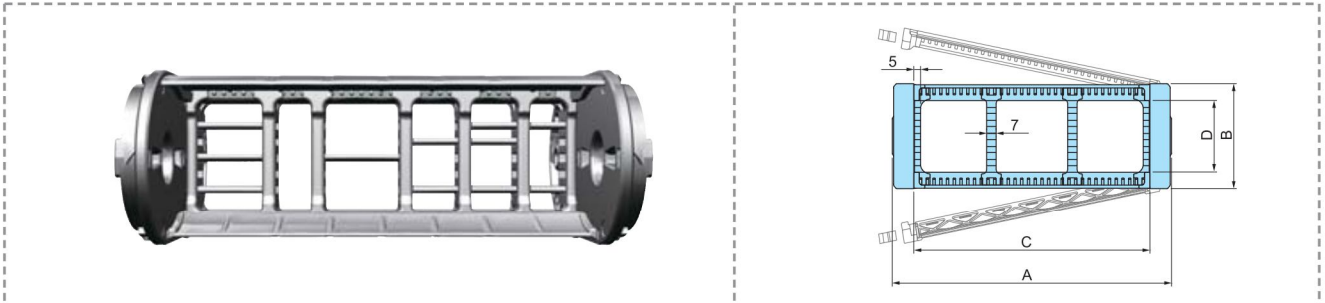
또한 부자재를 삽입하여 브라켓부분이 완전밀폐가 될 수 있는 구조.

(부자재는 별도 주문)

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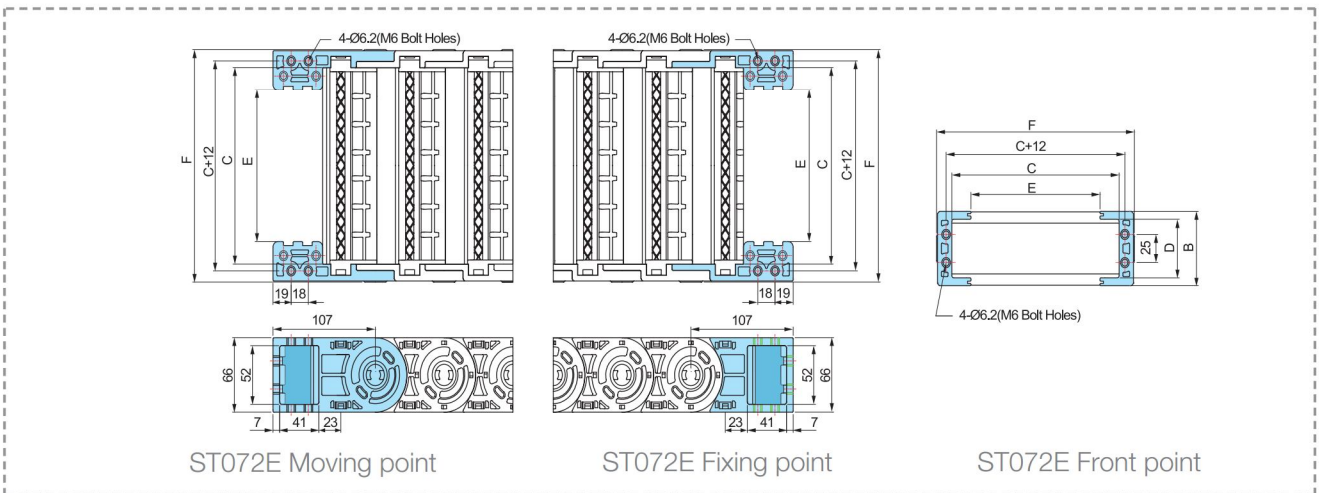
ST 072E Enclosed Type

CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 072E.050	82		50			2.37
ST 072E.075	107		75			2.61
ST 072E.100	132	66	100	44	120, 145, 200, 250, 300	2.85
ST 072E.125	157		125			3.09
ST 072E.150	182		150			3.33

FREE END BRACKET



Chain Type	F	B	C	D	E	Hole Type
ST 072E.050	82		50		10	M6 Bolt Holes
ST 072E.075	107		75		35	
ST 072E.100	132	66	100	44	60	
ST 072E.125	157		125		85	
ST 072E.150	182		150		110	

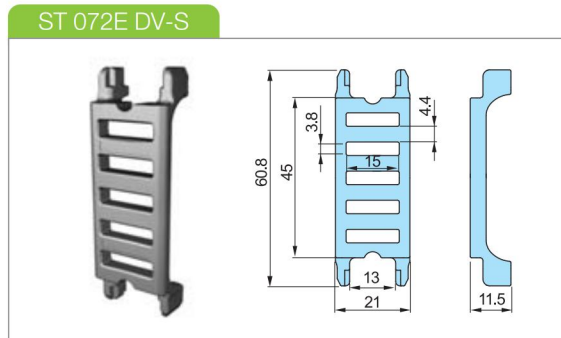
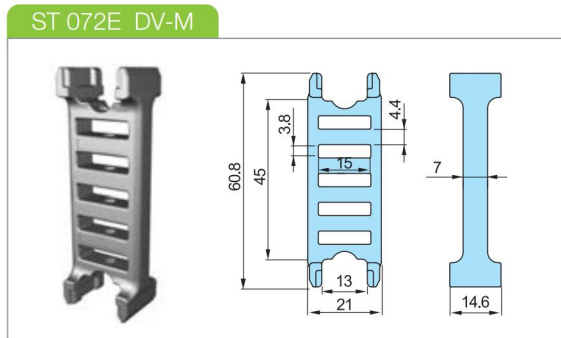
ST 072E Enclosed Type

DIVIDERS

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

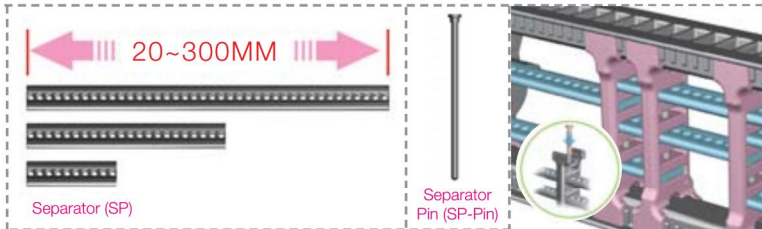
디바이더(세로분리대)와 세퍼레이터(가로분리대)는 체인내에 많은 케이블들이 입선될 시 케이블들을 서로 분리하여 케이블상호간의 마찰로 인한 **피복손상 및 단선**을 방지하는 역할을 하며 케이블과 10%이상의 여유공간을 확보해야 합니다.

또한 케이블을 체인내 2단이상 입선시 반드시 세퍼레이터를 디바이더에 결합하여 사용해야 케이블의 꼬임방지와 피복손상을 방지할 수 있습니다.



▶ Assemble divider every Two links. / 2링크마다 결합.

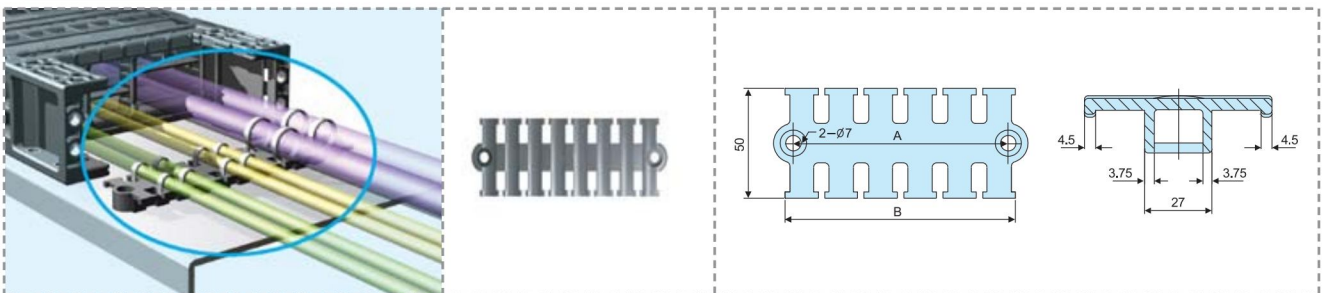
SEPARATORS (SP)



Separator is available in length from 20mm to 300mm and can be cut every 5mm for use. The combined use of divider and separator with the pin creates the most effective cable pattern and keep insertion space for cables safely, so it protects the inserted cables.

세퍼레이터의 사용길이는 최소20mm부터 최대300mm까지 사용가능하며 **5mm간격으로 절단**하여 원하는 길이로 사용가능합니다. 크기가 각각 다른 케이블을 크기에 맞게끔 공간분할이 용이하고 **세퍼레이터 핀으로 결합**하여 어떠한 경우에도 안전하게 케이블의 입선공간을 유지하여 안전하게 케이블을 보호할 수 있습니다.

TIE WRAP



(Dimensions in mm)

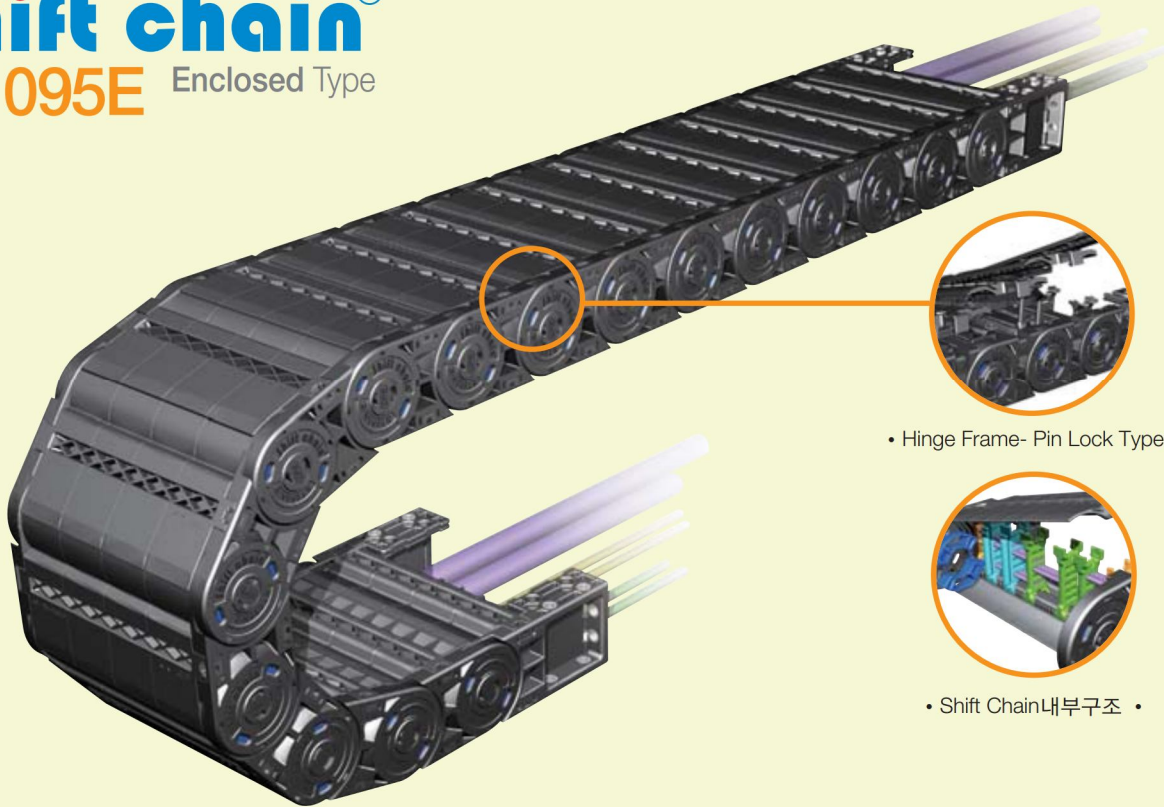
Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	149

The Tie Wrap separated from the Shift Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation

Tie Wrap은 Shift Chain의 브라켓을 기준으로 바깥으로 설치함으로써 체인의 움직임으로 인해 **케이블의 유동을 방지하고자 고정하는 시스템**으로 케이블의 피복손상 및 단선을 방지하는 역할을 합니다.

Min ●●●●● Max

Shift chain® ST 095E Enclosed Type



• Hinge Frame- Pin Lock Type •



• Shift Chain내부구조 •

SHIFT CHAIN

SAEN CHAIN

REVOLVING CHAIN

HELIX CHAIN

ROBOT-KIT

OPSTILEX

OPSTFX

MATERIAL

- **Chain material:**
CPS-polyamide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Speed :** 10m / sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length**
Vertical curve above = max 6.0m
Vertical curve below = max 100m
Side Mounted, Unsupported = max 3.0m

Applications

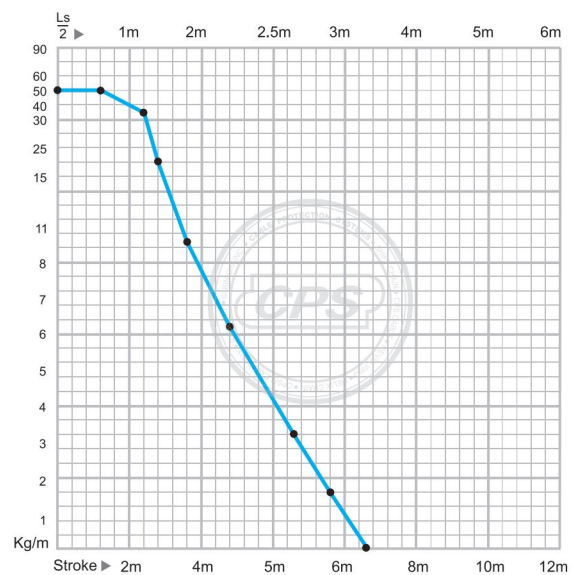
Shift Chain E-Type can be found on car manufacturer's welding line, robot carriages and press lines and on any machine where excess material can damage your inserted cables

산업현장, 외부위험 요소로부터 케이블의 보호가 필요한 용접라인, 도장라인 등에 적용. 겐츨리로봇, 공작기계, 용접기계, 로봇캐리지 등의 외부위험 요소로부터 케이블의 보호가 요구되는 케이블 체인의 적용 사업장에 사용가능.

Calculation of the chain length

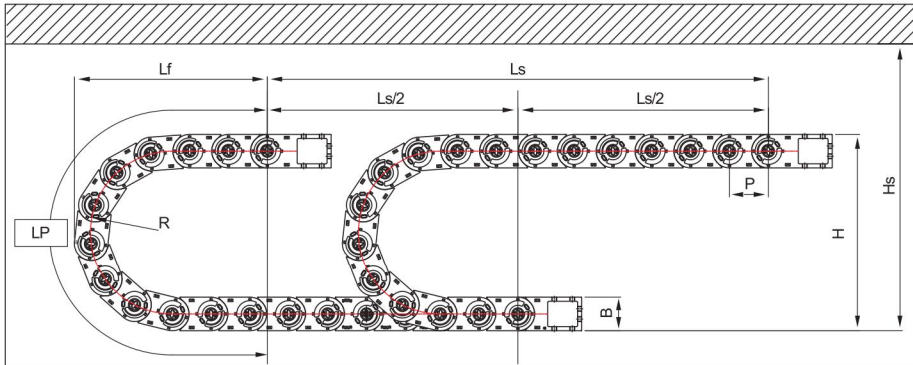
$$\left[L = \frac{Ls}{2} + Lp \right]$$

Load diagrams self-supporting length



ST 095E Enclosed Type

LAYOUT OF THE CHAIN



- Ls:** Stroke
- Lp:** Loop Length
- Lf:** Loop Projection
- Hs:** Safe Space

(Dimensions in mm)

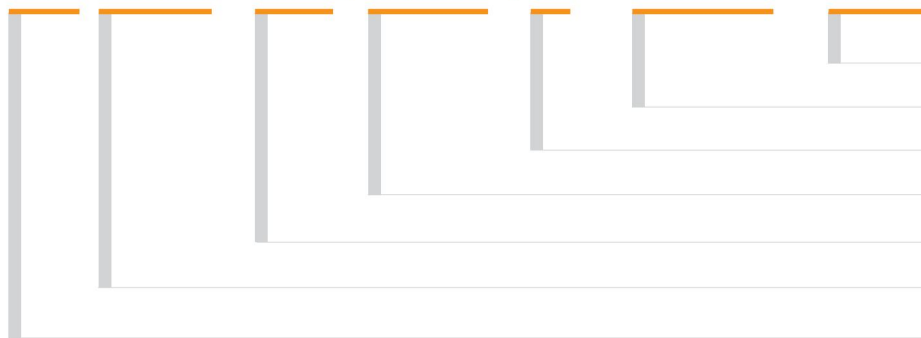
Bending radius R	150	200	230	280	400
Lp	855	1,010	1,110	1,260	1,640
L f	374	428	459	505	629
H	382	482	542	642	882

ST 095E Type

- Pitch P:** 95 mm
- Height B:** 82mm
- Height H:** 2R+82mm
- Hs** ≥ H+50mm

ORDERING (주문방법)

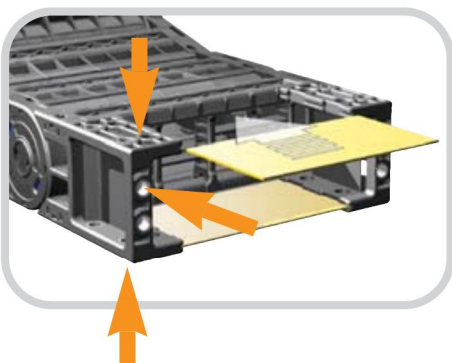
ST 095E. 200. R200 / F - 3000L : 10ST



- 주문수량 Q' ty(set)
- 체인길이 Length(mm)
- 브라켓 Free End Bracket
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclose Type

Shift Chain

BRACKET TYPE (브라켓타입)



FEB (Free End Bracket)

FEB Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket. Also, inseting plastic sheets creates enclosed structure in the bracket.

(The order for subsidiary materials is extra.)

체인을 고정하는 끝부분으로 기존 Easy End Bracket과 Normal End Bracket을 하나로 통합한 방식으로 취부의 효율성을 높임.

또한 부자재를 삽입하여 브라켓부분이 완전밀폐가 될 수 있는 구조.

(부자재는 별도 주문)

▶ Above products are patent registered item which can be protected by industrial property right. (상기제품은 특허등록 제품으로 산업재산권의 보호를 받는 제품입니다.)

ST 095E Enclosed Type

SHIFT CHAIN

SAEN CHAIN

REVOLVING CHAIN

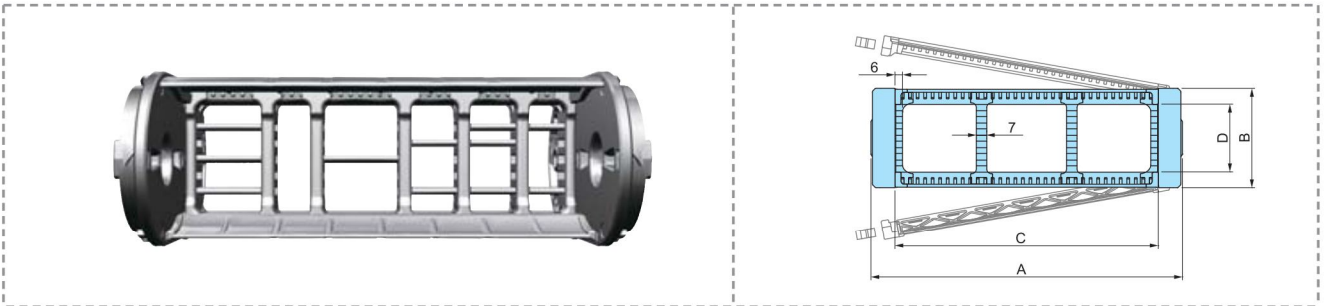
HELIX CHAIN

ROBO-KIT

OP-SILEX

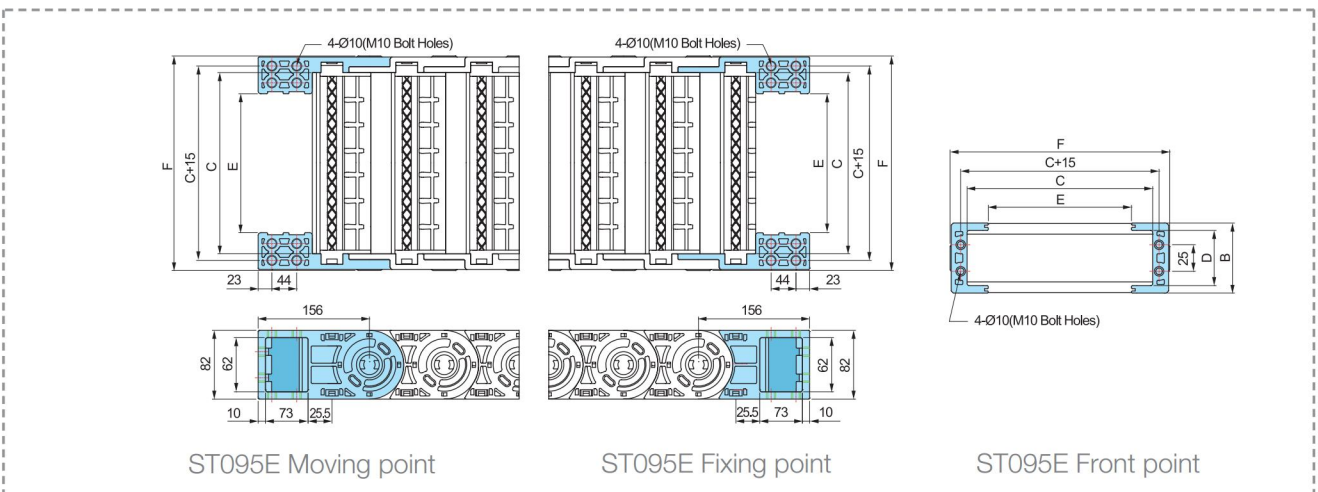
OP-SFX

CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 095E.100	138		100			3.55
ST 095E.125	163		125			3.79
ST 095E.150	188	82	150	55	150, 200	4.04
ST 095E.175	213		175		230, 280, 400	4.29
ST 095E.200	238		200			4.53

FREE END BRACKET



Chain Type	F	B	C	D	E	Hole Type
ST 095E.100	138		100		49	M10 Bolt Holes
ST 095E.125	163		125		74	
ST 095E.150	188	82	150	55	99	
ST 095E.175	213		175		124	
ST 095E.200	238		200		149	

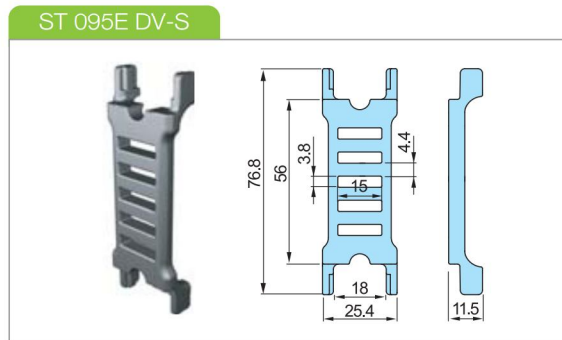
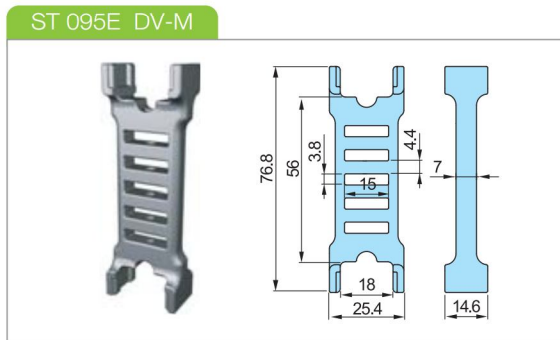
ST 095E Enclosed Type

DIVIDERS

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

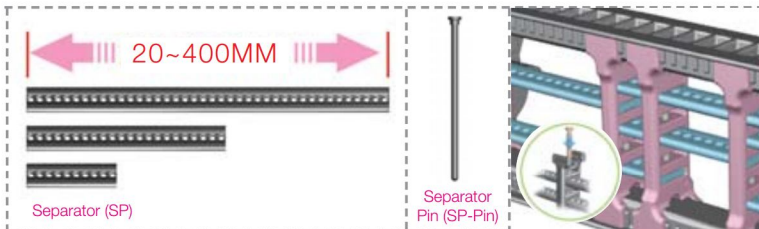
디바이더(세로분리대)와 세퍼레이터(가로분리대)는 체인내에 많은 케이블들이 입선될 시 케이블들을 서로 분리하여 케이블상호간의 마찰로 인한 **피복손상 및 단선**을 방지하는 역할을 하며 케이블과 10%이상의 여유공간을 확보해야 합니다.

또한 케이블을 체인내 2단이상 입선시 반드시 세퍼레이터를 디바이더에 결합하여 사용해야 케이블의 꼬임방지와 피복손상을 방지할 수 있습니다.



▶ Assemble divider every Two links. / 2링크마다 결합.

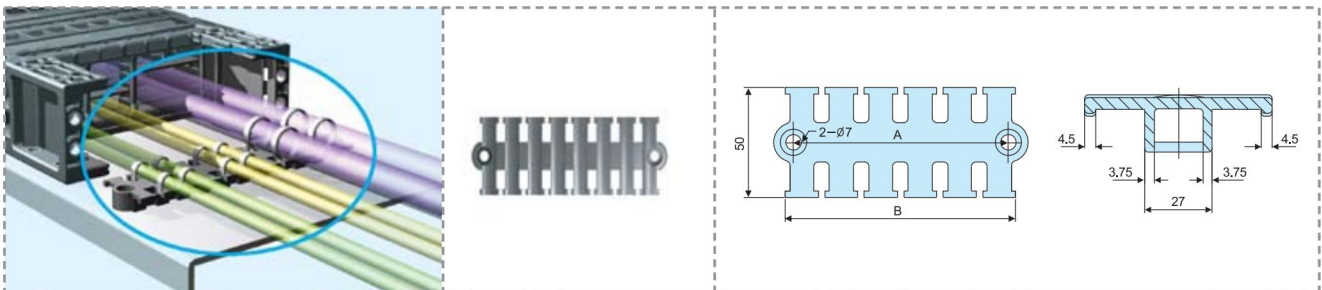
SEPARATORS (SP)



Separator is available in length from 20mm to 400mm and can be cut every 5mm for use. The combined use of divider and separator with the pin creates the most effective cable pattern and keep insertion space for cables safely, so it protects the inserted cables.

세퍼레이터의 사용길이는 최소20mm부터 최대400mm까지 사용가능하며 5mm간격으로 절단하여 원하는 길이로 사용가능합니다. 크기가 각각 다른 케이블을 크기에 맞게끔 공간분할이 용이하고 세퍼레이터 핀으로 결합하여 어떠한 경우에도 안전하게 케이블의 입선공간을 유지하여 안전하게 케이블을 보호할 수 있습니다.

TIE WRAP



(Dimensions in mm)

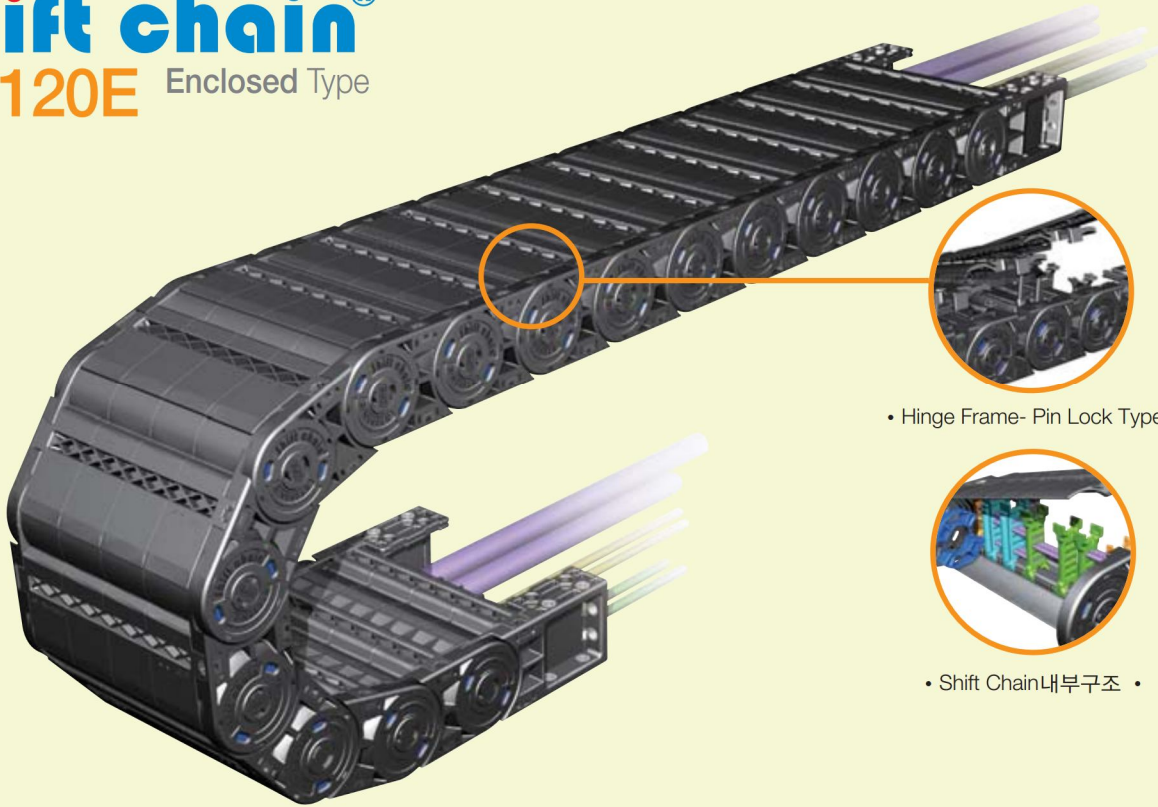
Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	149

The Tie Wrap separated from the Shift Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation

Tie Wrap은 Shift Chain의 브라켓을 기준으로 바깥으로 설치함으로써 체인의 움직임으로 인해 **케이블의 유동을 방지하고자 고정하는 시스템**으로 케이블의 피복손상 및 단선을 방지하는 역할을 합니다.

Min ●●●●● Max

Shift chain® ST 120E Enclosed Type



• Hinge Frame- Pin Lock Type •



• Shift Chain 내부구조 •

SHIFT-CHAIN

SAEN-CHAIN

REVOLVING-CHAIN

HELIX-CHAIN

MATERIAL

- **Chain material:**
CPS-polyamide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Speed :** 10m / sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length**
Vertical curve above = max 6.0m
Vertical curve below = max 100m
Side Mounted, Unsupported = max 3.0m

Applications

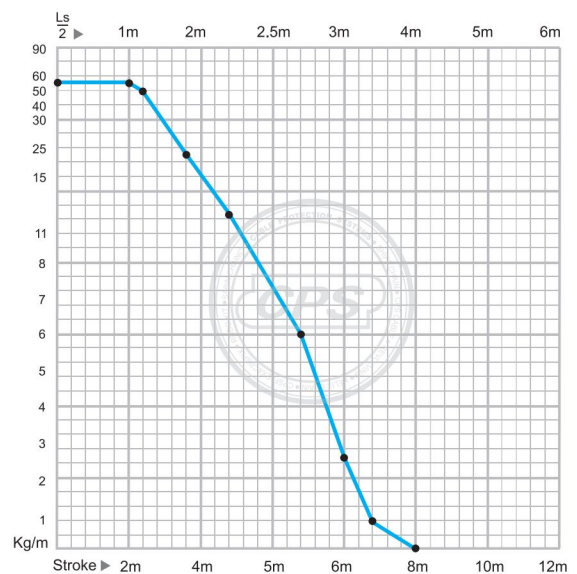
Shift Chain E-Type can be found on car manufacturer's welding line, robot carriages and press lines and on any machine where excess material can damage your inserted cables.

산업현장, 외부위험 요소로부터 케이블의 보호가 필요한 용접라인, 도장라인 등에 적용. 겐츨리로봇, 공작기계, 용접기계, 로봇케리지 등의 외부위험 요소로부터 케이블의 보호가 요구되는 케이블 체인의 적용 사업장에 사용가능.

Calculation of the chain length

$$\left[L = \frac{Ls}{2} + Lp \right]$$

Load diagrams self-supporting length



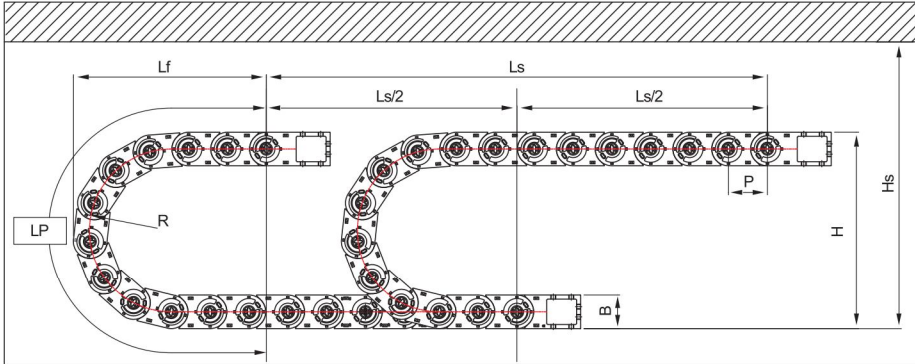
ROBOT-KIT

OPSTILEX

OPSTEX

ST 120E Enclosed Type

LAYOUT OF THE CHAIN



- Ls:** Stroke
- Lp:** Loop Length
- Lf:** Loop Projection
- Hs:** Safe Space

(Dimensions in mm)

Bending radius R	200	250	300	350	400	500
Lp	1,109	1,266	1,423	1,580	1,737	2,051
Lf	494	544	594	644	694	794
H	508	608	708	808	908	1,108

ST 120E Type

- Pitch P:** 120 mm
- Height B:** 108mm
- Height H:** 2R+108mm
- Hs** ≥ H+60mm

ORDERING (주문방법)

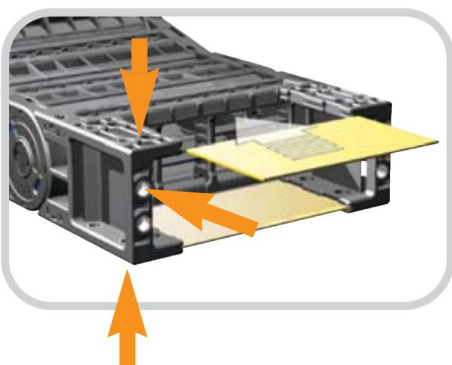
ST 120E. 200. R200 / F - 3000L : 10ST



- 주문수량 Q' ty(set)
- 체인길이 Length(mm)
- 브라켓 Free End Bracket
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclose Type

Shift Chain

BRACKET TYPE (브라켓타입)



FEB (Free End Bracket)

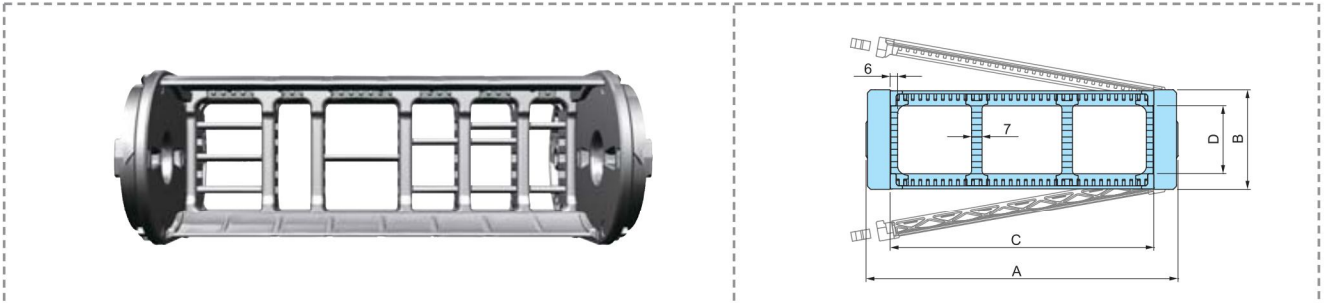
FEB Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket. Also, inseting plastic sheets creates enclosed structure in the bracket.
(The order for subsidiary materials is extra.)

체인을 고정하는 끝부분으로 기존 Easy End Bracket과 Normal End Bracket을 하나로 통합한 방식으로 취부의 효율성을 높임.
또한 부자재를 삽입하여 브라켓부분이 완전밀폐가 될 수 있는 구조.
(부자재는 별도 주문)

▶ Above products are patent registered item which can be protected by industrial property right. (상기제품은 특허등록 제품으로 산업재산권의 보호를 받는 제품입니다.)

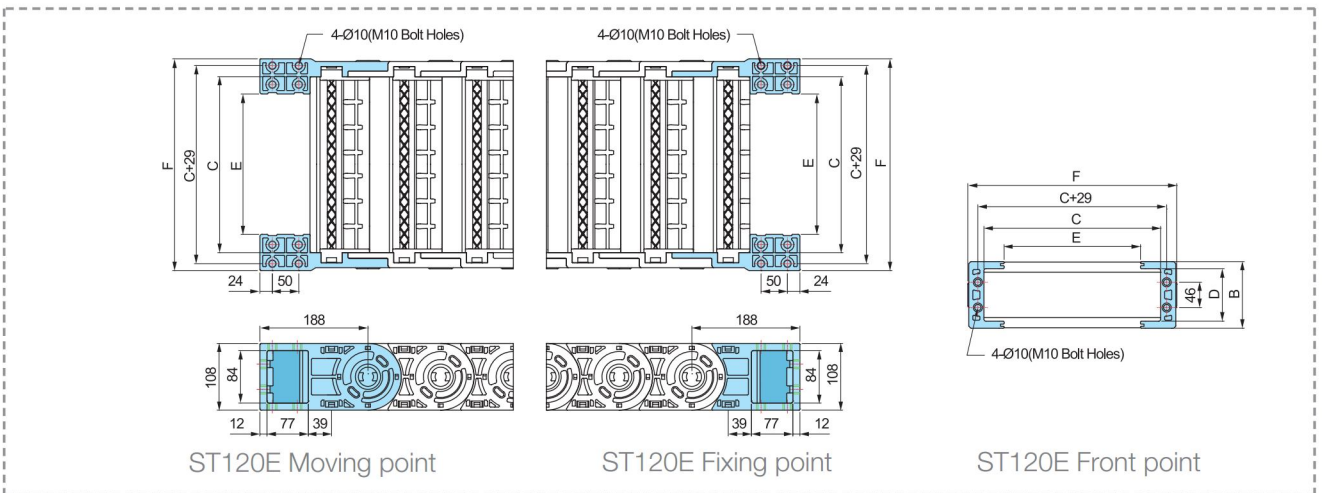
ST 120E Enclosed Type

CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 120E.150	192	108	150	76	200, 250, 300 350, 400, 500	5.79
ST 120E.200	242		200			6.43
ST 120E.250	292		250			7.07
ST 120E.300	342		300			7.71

FREE END BRACKET



Chain Type	F	B	C	D	E	Hole Type
ST 120E.150	200	108	150	76	90	M10 Bolt Holes
ST 120E.200	250		200		140	
ST 120E.250	300		250		190	
ST 120E.300	350		300		240	

ST 120E Enclosed Type

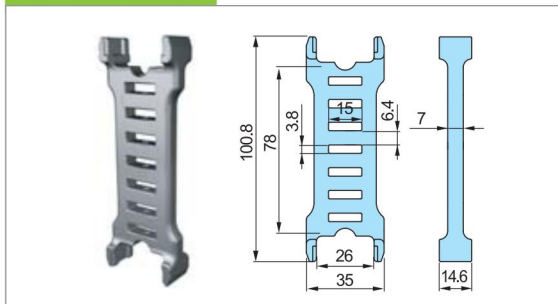
DIVIDERS

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

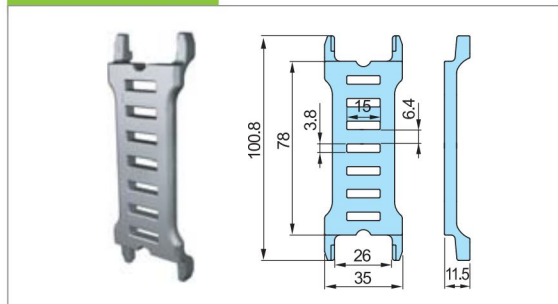
디바이더(세로분리대)와 세퍼레이터(가로분리대)는 체인내에 많은 케이블들이 입선될 시 케이블들을 서로 분리하여 케이블상호간의 마찰로 인한 **피복손상 및 단선**을 방지하는 역할을 하며 케이블과 10%이상의 여유공간을 확보해야합니다.

또한 케이블을 체인내 2단이상 입선시 반드시 세퍼레이터를 디바이더에 결합하여 사용해야 케이블의 꼬임방지와 피복손상을 방지할 수 있습니다.

ST 120E DV-M

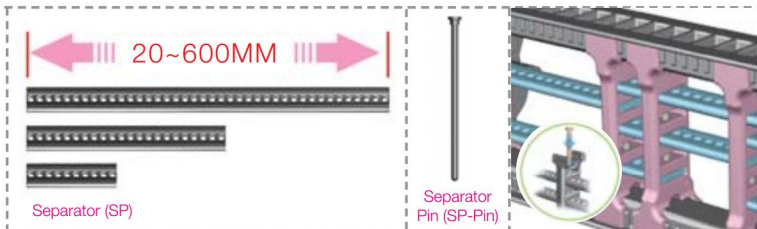


ST 120E DV-S



▶ Assemble divider every Two links. / 2링크마다 결합.

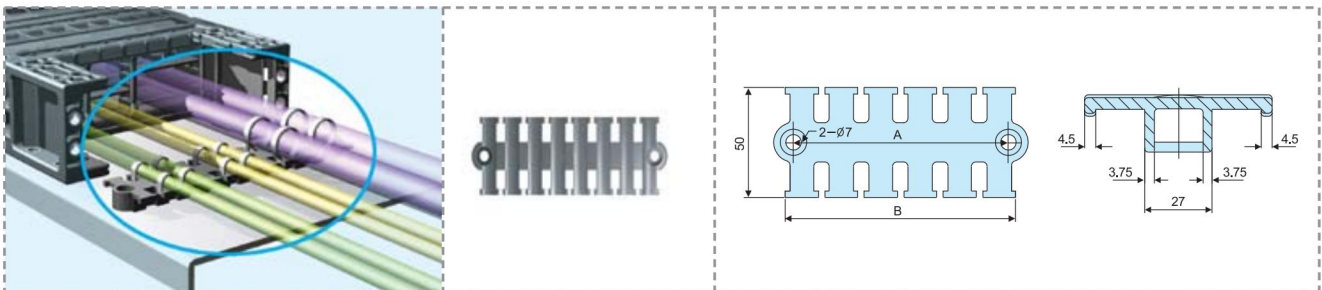
SEPARATORS (SP)



Separator is available in length from 20mm to 600mm and can be cut every 5mm for use. The combined use of divider and separator with the pin creates the most effective cable pattern and keep insertion space for cables safely, so it protects the inserted cables.

세퍼레이터의 사용길이는 최소20mm부터 최대600mm까지 사용가능하며 5mm간격으로 절단하여 원하는 길이로 사용가능합니다. 크기가 각각 다른 케이블을 크기에 맞게끔 공간분할이 용이하고 세퍼레이터 핀으로 결합하여 어떠한 경우에도 안전하게 케이블의 입선공간을 유지하여 안전하게 케이블을 보호할 수 있습니다.

TIE WRAP



(Dimensions in mm)

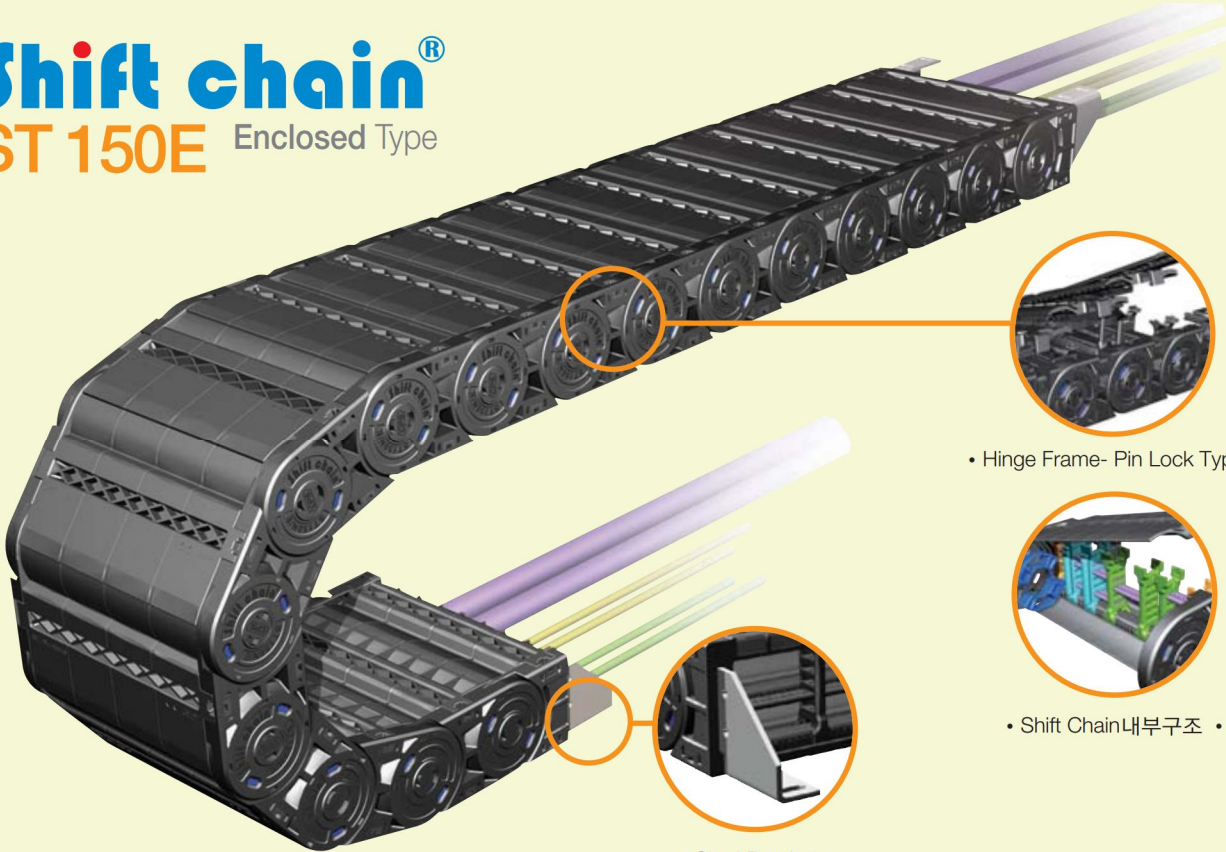
Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	149

The Tie Wrap separated from the Shift Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation

Tie Wrap은 Shift Chain의 브라켓을 기준으로 바깥으로 설치함으로써 체인의 움직임으로 인해 **케이블의 유동을 방지하고자 고정하는 시스템**으로 케이블의 피복손상 및 단선을 방지하는 역할을 합니다.

Min ●●●●● Max

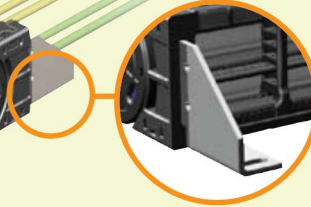
Shift chain® ST 150E Enclosed Type



• Hinge Frame- Pin Lock Type •



• Shift Chain 내부구조 •



• Steel Bracket •

SHIFT-CHAIN

SAEN-CHAIN

REVOLVING-CHAIN

HELIX-CHAIN

MATERIAL

- **Chain material:**
CPS-polyamide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Speed :** 10m / sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length**
Vertical curve above = max 7.0m
Vertical curve below = max 150m
Side Mounted, Unsupported = max 4m
- **Applications**

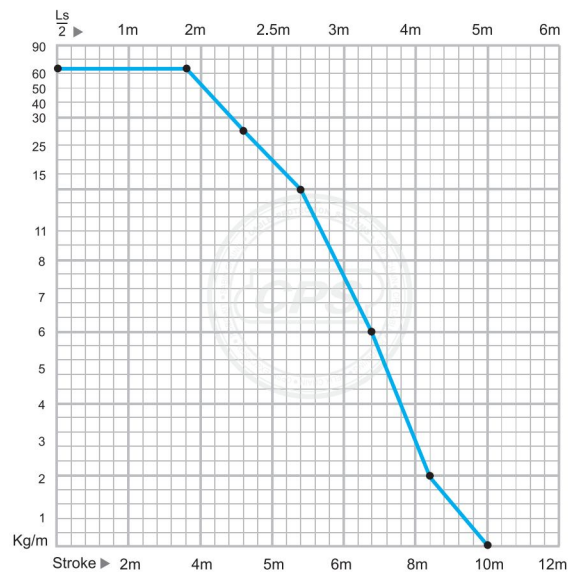
Shift Chain E-Type can be found on car manufacturer's welding line, robot carriages and press lines and on any machine where excess material can damage your inserted cables

산업현장, 외부위험 요소로부터 케이블의 보호가 필요한 용접라인, 도장라인 등에 적용. 컨츄리로봇, 공작기계, 용접기계, 로봇케리지 등의 외부위험 요소로부터 케이블의 보호가 요구되는 케이블 체인의 적용 사업장에 사용가능.

- **Calculation of the chain length**

$$\left[L = \frac{L_s}{2} + L_p \right]$$

- **Load diagrams self-supporting length**



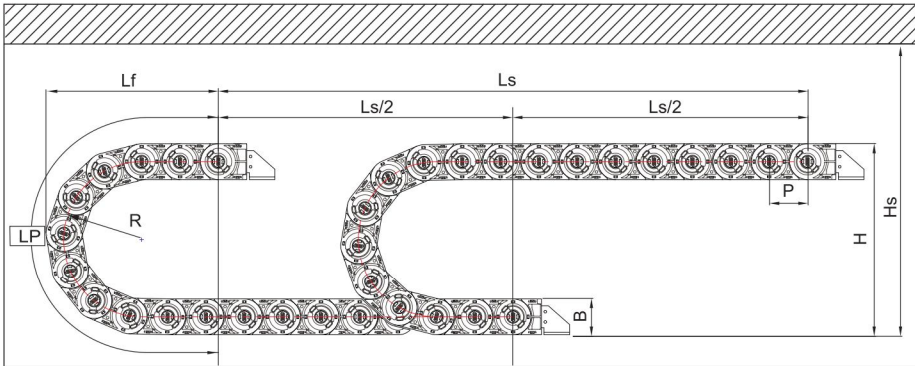
ROBOT-KIT

OP-STEELX

OP-SERX

ST 150E Enclosed Type

LAYOUT OF THE CHAIN



- Ls:** Stroke
- Lp:** Loop Length
- Lf:** Loop Projection
- Hs:** Safe Space

(Dimensions in mm)

Bending radius R	305	405	505	605
Lp	1,510	1,807	2,106	2,405
Lf	651	743	835	928
H	752	952	1,152	1,352

ST 150E Type

- Pitch P:** 150 mm
- Height B:** 141mm
- Height H:** 2R+142mm
- Hs** ≥ H+80mm

ORDERING (주문방법)

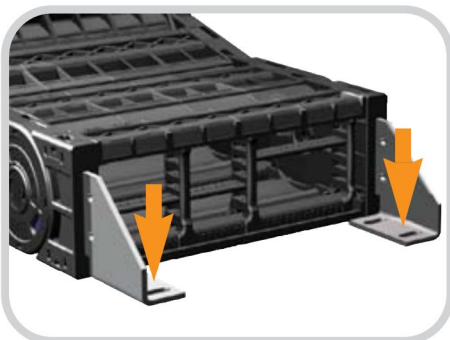
ST 150E. 400. R305 / B₁- 4500L : 10ST



- 주문수량 Q' ty(set)
- 체인길이 Length(mm)
- 브라켓타입 Bracket Type B1, B2, B3
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclose Type

Shift Chain

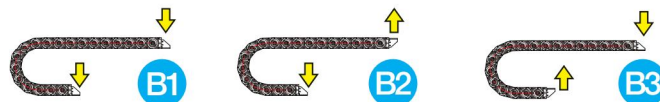
BRACKET TYPE (브라켓타입)



SEB (Steel End Bracket)

For ST150E, its end parts of cable chain being fixed are used with steel bracket, and it is possible to be installed B1, B2, B3 types of brackets.

체인을 고정하는 끝부분으로 ST150E사양은 ST체인의 다른사양과는 달리 스틸브라켓을 사용하며 브라켓의 설치형태에 따라 B1, B2, B3 등으로 구분설치가 가능하다.



▶ Above products are patent registered item which can be protected by industrial property right. (상기제품은 특허등록 제품으로 산업재산권의 보호를 받는 제품입니다.)

ST 150E Enclosed Type

SHIFT CHAIN

SAEN CHAIN

REVOLVING CHAIN

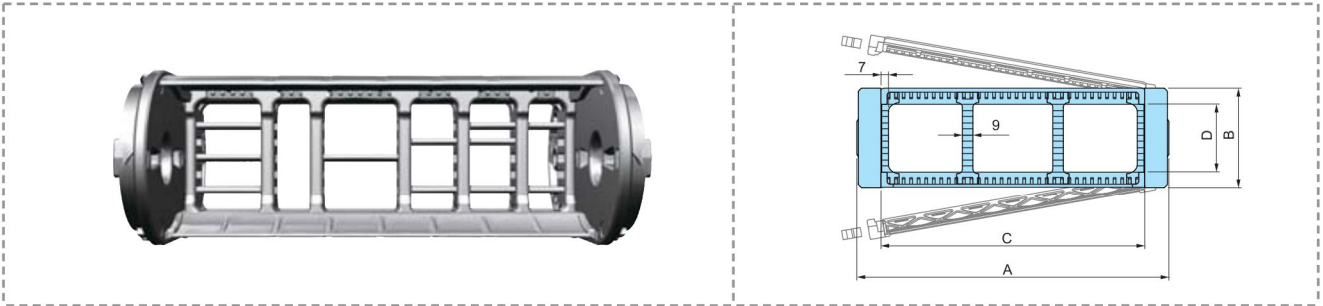
HELIX CHAIN

ROBO-KIT

OP-STEELX

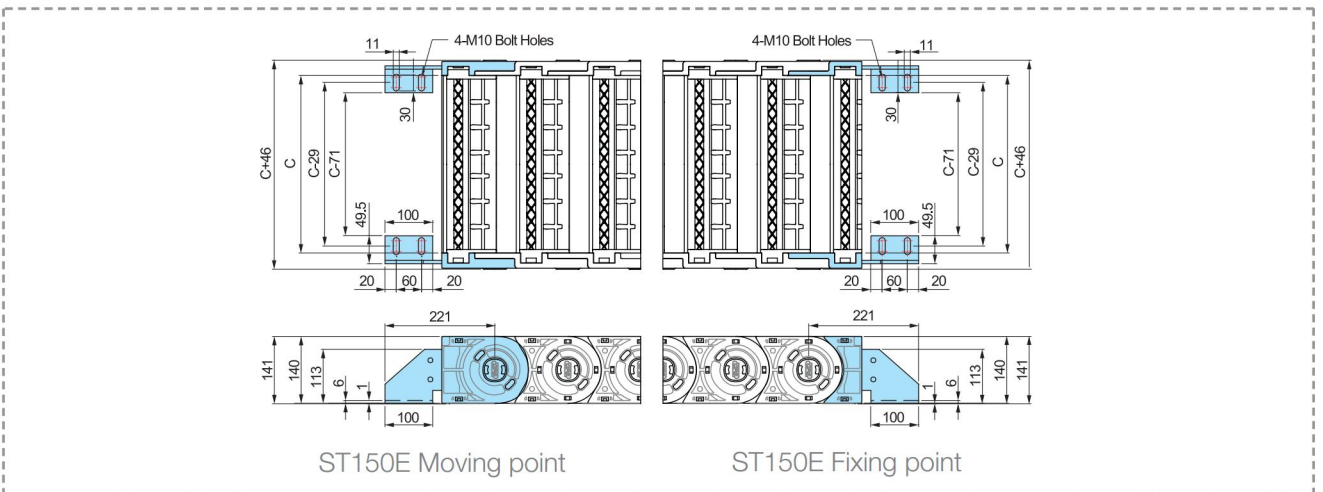
OP-SFX

CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 150E.200	246		200			8.15
ST 150E.250	296		250			8.76
ST 150E.300	346	141	300	110	305, 405, 505, 605	9.37
ST 150E.350	396		350			9.98
ST 150E.400	446		400			10.59

FREE END BRACKET



Chain Type	F	C	D	Hole Type
ST 150E.200		200		M10 Bolt Holes
ST 150E.250		250		
ST 150E.300	141	300	110	
ST 150E.350		350		
ST 150E.400		400		

ST 150E Enclosed Type

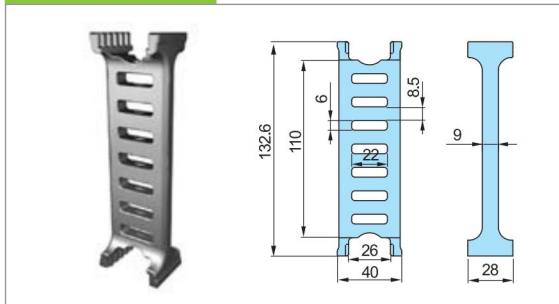
DIVIDERS

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

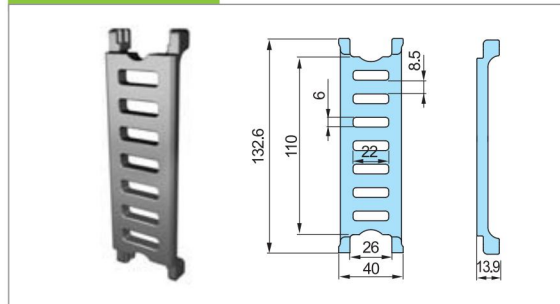
디바이더(세로분리대)와 세퍼레이터(가로분리대)는 체인내에 많은 케이블들이 입선될 시 케이블들을 서로 분리하여 케이블상호간의 마찰로 인한 **피복손상 및 단선**을 방지하는 역할을 하며 케이블과 10%이상의 여유공간을 확보해야 합니다.

또한 케이블을 체인내 2단이상 입선시 반드시 세퍼레이터를 디바이더에 결합하여 사용하여 케이블의 꼬임방지와 피복손상을 방지할 수 있습니다.

ST 150E DV-M

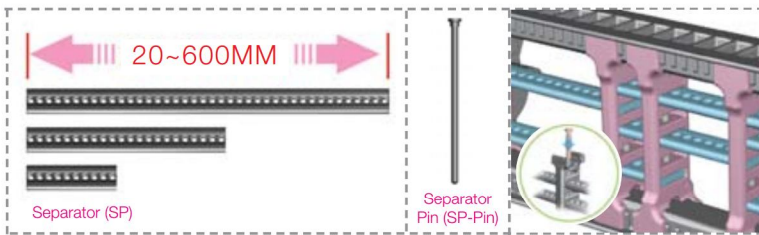


ST 150E DV-S



▶ Assemble divider every Two links. / 2링크마다 결합.

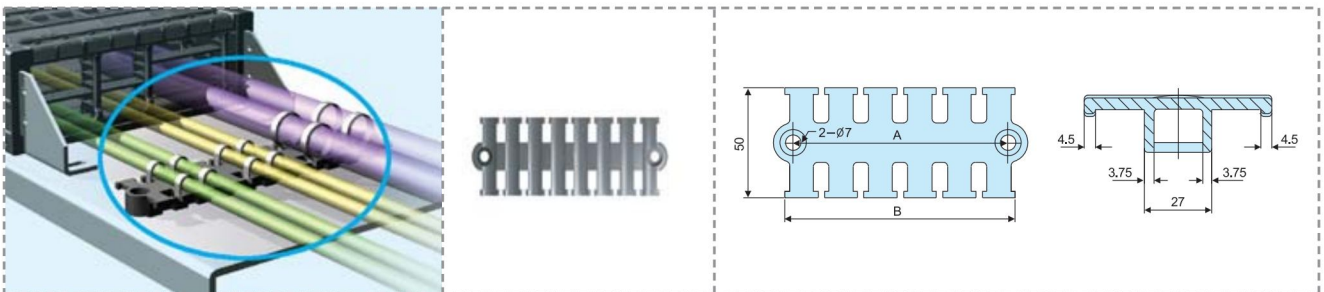
SEPARATORS (SP)



Separator is available in length from 20mm to 600mm and can be cut every 5mm for use. The combined use of divider and separator with the pin creates the most effective cable pattern and keep insertion space for cables safely, so it protects the inserted cables.

세퍼레이터의 사용길이는 최소20mm부터 최대600mm까지 사용가능하며 5mm간격으로 절단하여 원하는 길이로 사용가능합니다. 크기가 각각 다른 케이블을 크기에 맞게끔 공간분할이 용이하고 세퍼레이터 핀으로 결합하여 어떠한 경우에도 안전하게 케이블의 입선공간을 유지하여 안전하게 케이블을 보호할 수 있습니다.

TIE WRAP



(Dimensions in mm)

Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	149

The Tie Wrap separated from the Shift Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation

Tie Wrap은 Shift Chain의 브라켓을 기준으로 바깥으로 설치함으로써 체인의 움직임으로 인해 **케이블의 유동을 방지하고자 고정하는 시스템**으로 케이블의 피복손상 및 단선을 방지하는 역할을 합니다.