

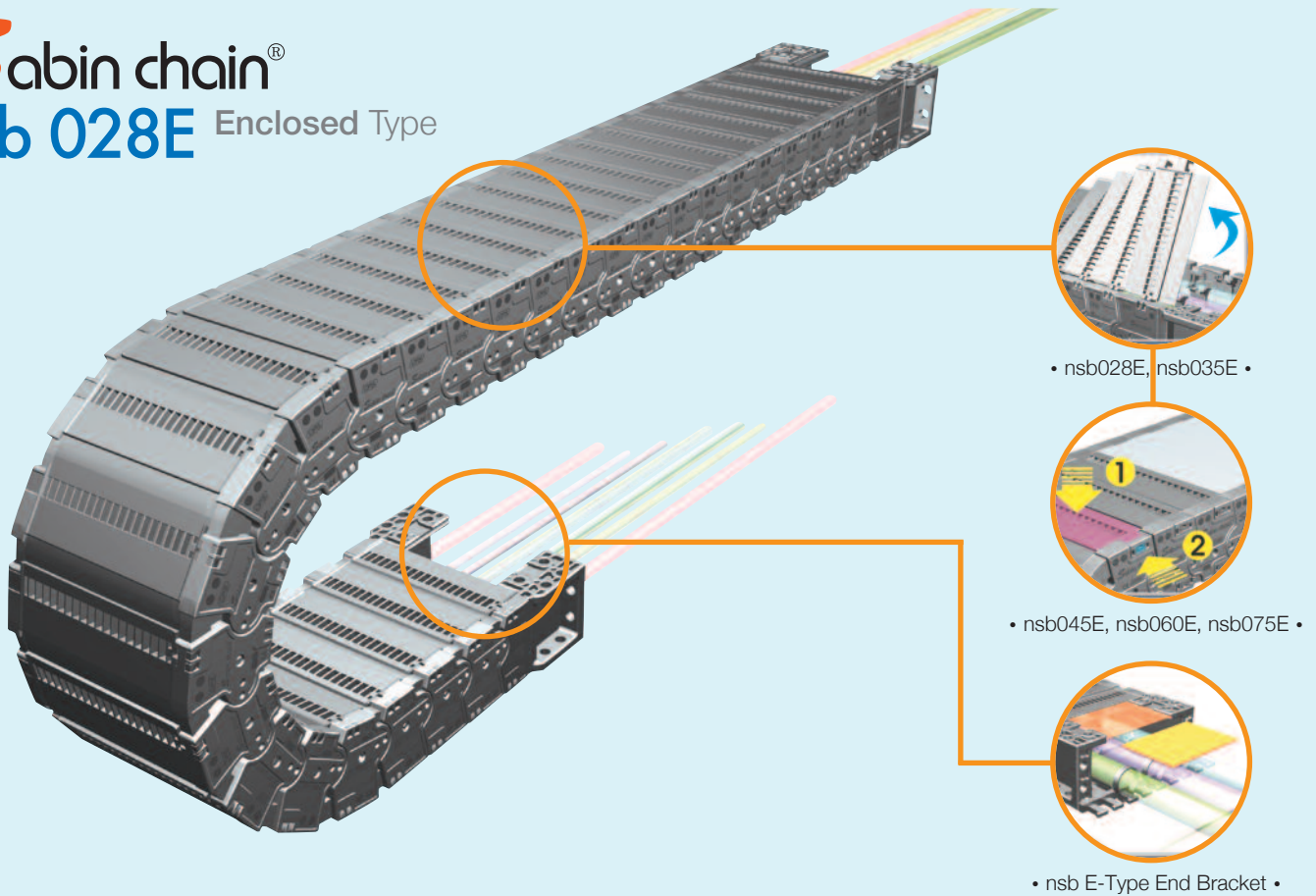
# Sabin chain<sup>®</sup> E TYPE : Enclosed

- nsb028E - 328p
- nsb035E - 333p
- nsb045E - 338p
- nsb060E - 343p
- nsb075E - 348p



Min ●●●●●●●● Max

## Sabin chain<sup>®</sup> nsb 028E Enclosed Type



### MATERIAL

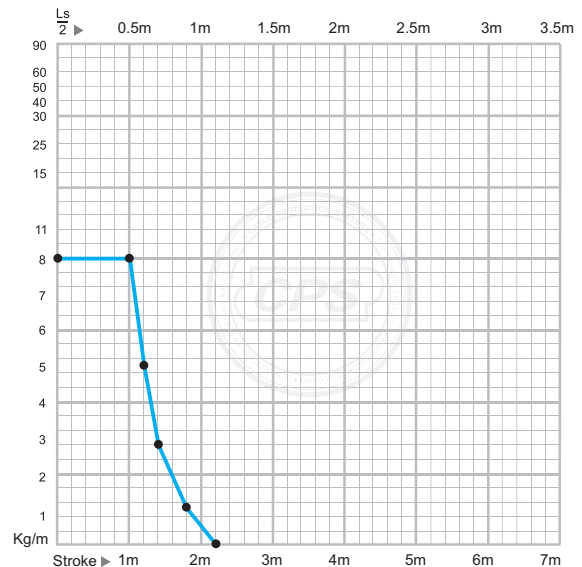
- **Chain material:**  
CPS-amide UL94-HB
- **Low Noise:**
- **Low Mote:**
- **Speed :** 15m / sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length:**  
Vertical curve above, Unsupported= max 2.0m  
Vertical curve below, Unsupported= max 40m  
Side Mounted, Unsupported= max 1.0m

- **Applications**  
Sabin Chain E 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.  
저분진, 저소음을 요구하는 산업현장, 외부위험 요소로부터 케이블의 보호가 필요한 용접라인, 도장라인 등에 적용.

### ● Calculation of the chain length

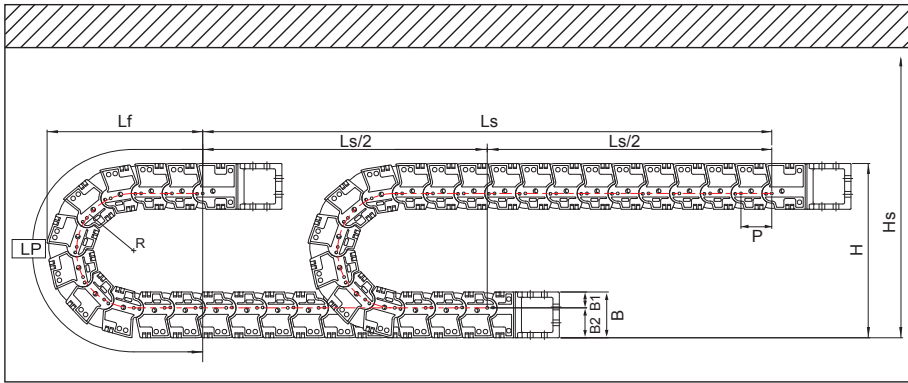
$$\left[ L = \frac{L_s}{2} + L_p \right]$$

### ● Load diagrams self-supporting length



## Enclosed Type **nsb 028E**

### LAYOUT OF THE CHAIN



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

### nsb 028E Type

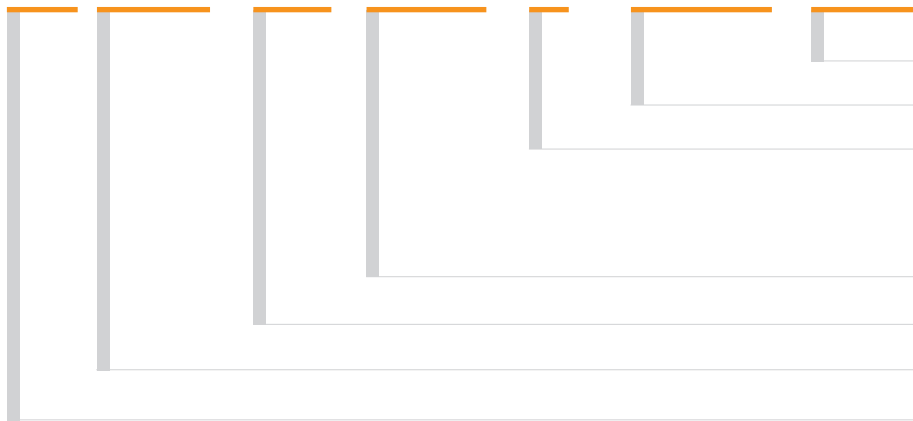
**Pitch P:** 28mm  
**Height B:** 38mm  
**Height H:** 2R+46mm  
**Hs** ≥ H+30mm  
**B1:** 15mm **B2:** 23mm

(Dimensions in mm)

Bending radius R	66	86	116	146
Lp	376	439	533	627
Lf	173	193	223	253
H	178	218	278	338

### ORDERING (주문방법)

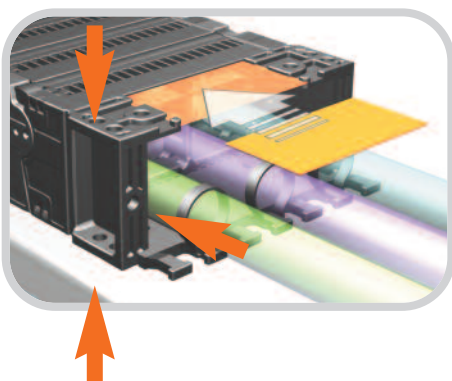
## nsb 028E . 050. R66 / F- 1000L : 10ST



주문수량 Q'ty(set)  
 체인길이 Length(mm)  
 브라켓 F : Free End Bracket  
 G : Guide Channel Type  
 V : Vertical Guide Type  
 곡률반경 Bending Radius  
 내폭 Inside Width  
 밀폐형태입 Enclosed Type

### New Sabin Chain

### BRACKET TYPE (브라켓타입)



### FEB (Free End Bracket)

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, inserting plastic sheets creates enclosed structure in the bracket.

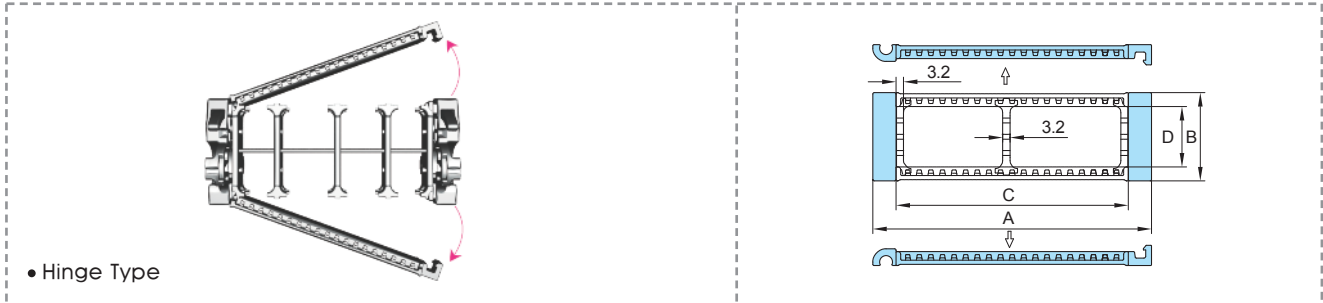
체인을 고정하는 끝부분으로 기존 Easy End Bracket 과 Normal End Bracket 을 하나로 통합한 방식으로 취부의 효율성을 높임. 또한 부자재를 삽입하여 브라켓부분이 완전밀폐가 될수 있는 구조.

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



Enclosed Type **nsb 028E**

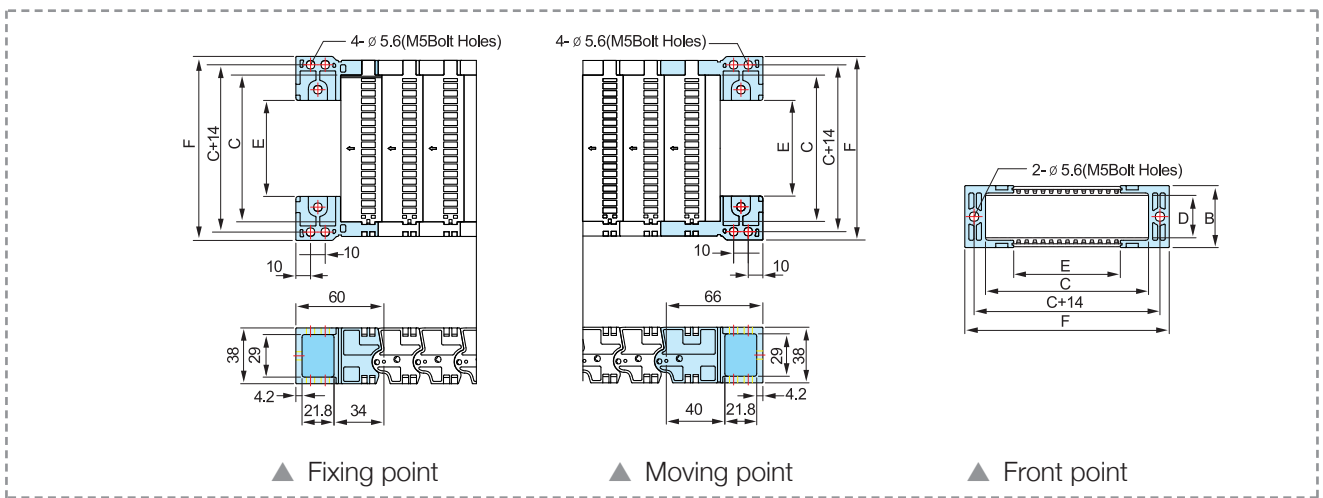
**CHAIN CROSS SECTION**



• Hinge Type

Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
nsb 028E.035	55		35			1.00
nsb 028E.055	75	38	55	26	66, 86, 116, 146	1.13
nsb 028E.075	95		75			1.30
nsb 028E.100	120		100			1.50

**FREE END BRACKET**



▲ Fixing point

▲ Moving point

▲ Front point

Chain Type	F	B	C	D	E	Hole Type
nsb 028E.035	60.4		35		0.4	M5 Bolt Holes
nsb 028E.055	80.4	38	55	26	20.4	
nsb 028E.075	100.4		75		40.4	
nsb 028E.100	125.4		100		65.4	

2014 NEW PRODUCT  
**Unity Systems®**

Enclosed Type **nsb 028E**

This type of bracket is to protect deflection of chain which will support the weight of certain section start from bracket, also will protect the damage of chain.

케이블 보호 장치에 전해지는 하중을 지지하여 케이블 체인의 처짐이 없이 일정구간을 끈게 유지 하므로, 케이블 체인의 파손을 방지하는 Guide Channel 일체형 브라켓입니다.

▼ Horizon Type 수평형

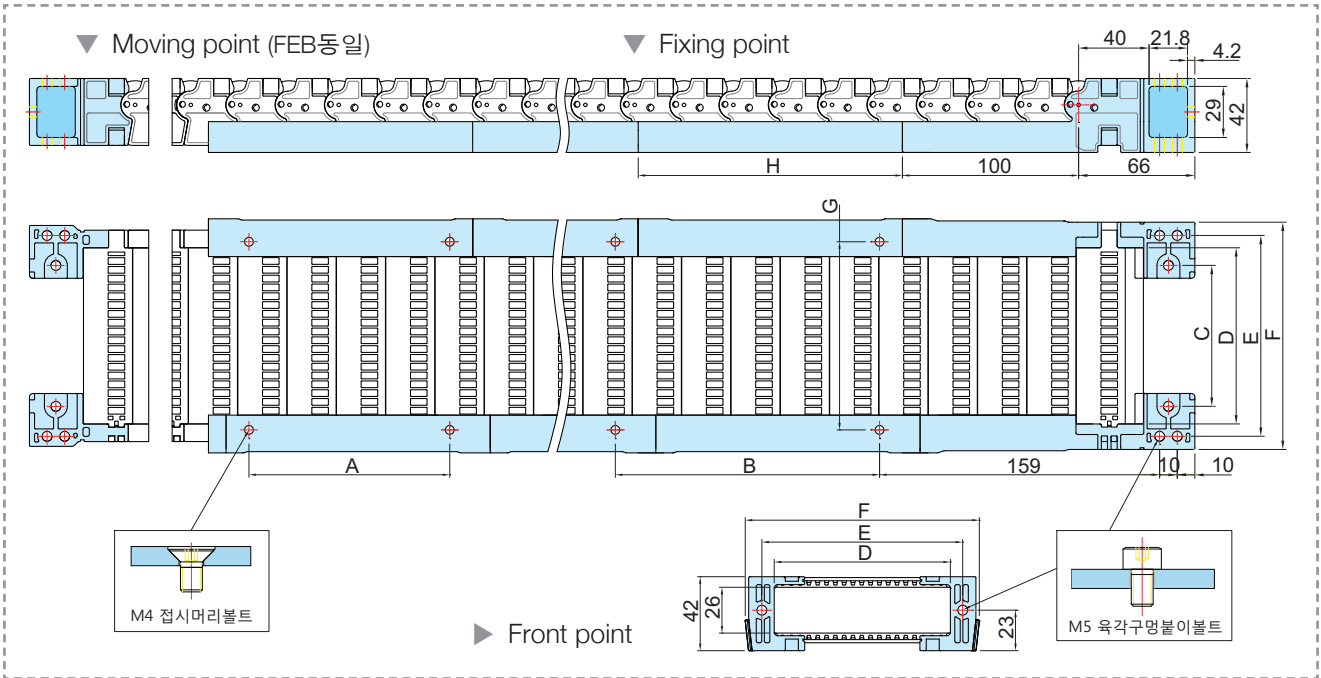


▼ Vertical Type 수직형



**GUIDE CHANNEL TYPE END BRACKET**

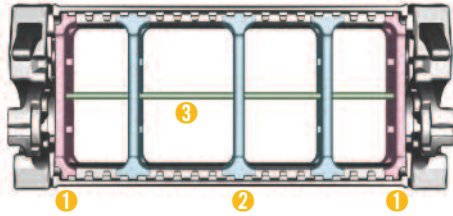
(Dimensions in mm)



Chain Type	C FEB fix hole(inner)	D Frame length dimension	E FEB width	F FEB width	G GC hole width	GC TYPE	H GC length	B GC fixing hole	A GC hole dimension
nsb 028E.035	15	35	49	68	41.8	GC150	150	151	114
nsb 028E.055	35	55	69	88	61.8				
nsb 028E.075	55	75	89	108	81.8	GC250	250	251	214
nsb 028E.100	80	100	114	133	106.8				

## Enclosed Type **nsb 028E**

### DIVIDERS & SEPARATORS

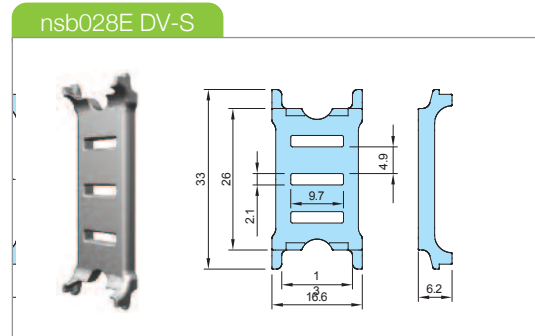
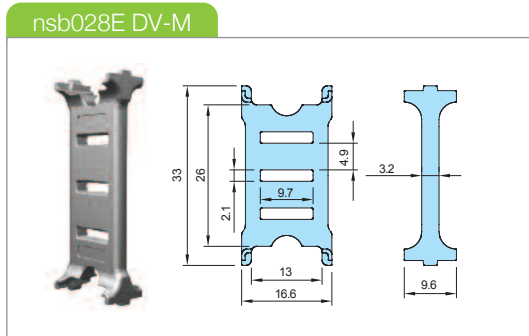


- ① DV-S (측면전용다바이더)
- ② DV-M
- ③ Separator(SP)

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own 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.

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

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

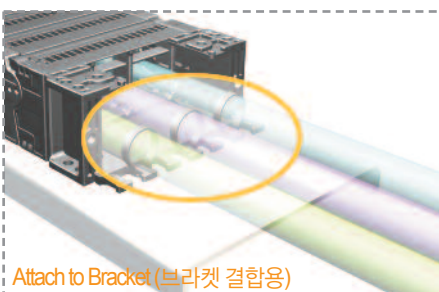


▶ Assemble divider every four links.(4링크마다 결합.)

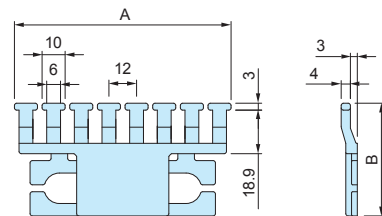
### nsb028E Separators (SP) (No. : S-SP/M)

Chain Type \ Separators	SP035	SP050	SP055	SP075	SP100	SP125	SP150	SP175	SP200
nsb028E	○	○	○	○	○	○	○	○	○
nsb035E	○	○	○	○	○	○	○	○	○

### TIE WRAP



Attach to Bracket (브라켓 결합용)



(Dimensions in mm)

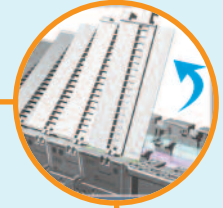
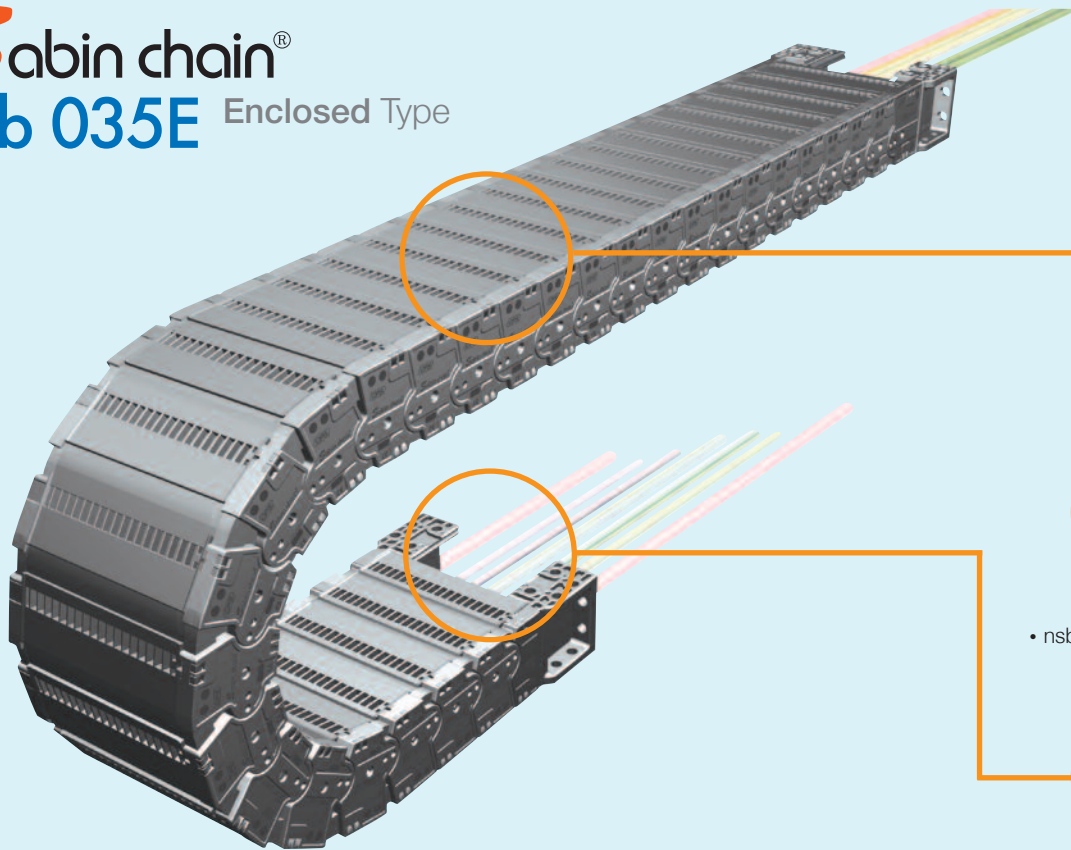
Tie Wrap	035	055	075	100
A	46	70	94	118
B	35.4	48.9	48.9	48.9

The tie wrap separated from the Sabin 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.

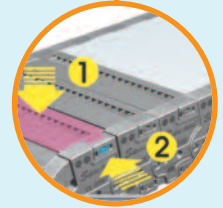
Tiewrap은 Sabin Chain 의 브라켓을 기준으로 설치함으로써 체인의 움직임으로 인해 체인내의 케이블이나 호스가 당겨져 단선되는 경우를 방지할 수 있다. Sabin Chain의 Tiewrap은 브라켓부분과 근접해서 사용할 수 있는 사양 과 브라켓에 결합해서 사용할 수 있는 사양으로 구분되어 사용할 수 있다.

Min ●●●●●●●● Max

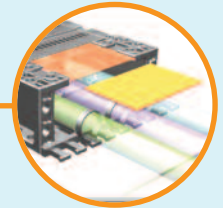
# Sabin chain® nsb 035E Enclosed Type



• nsb028E, nsb035E •



• nsb045E, nsb060E, nsb075E •



• nsb E-Type End Bracket •

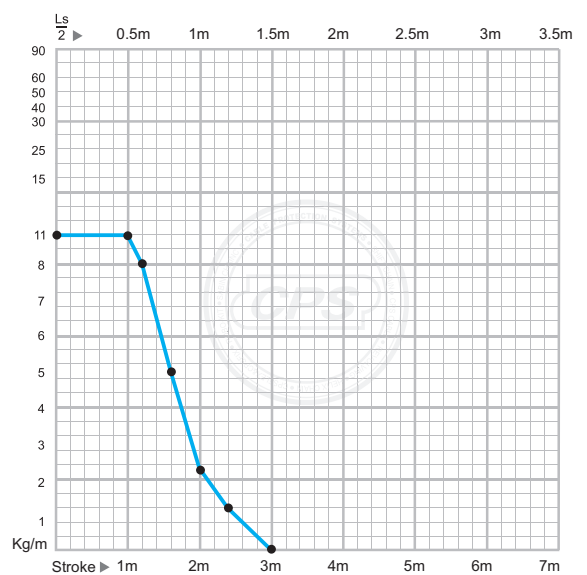
## MATERIAL

- **Chain material:**  
CPS-amide UL94-HB
- **Low Noise:**
- **Low Mote:**
- **Speed :** 15m/sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length:**  
Vertical curve above, Unsupported= max 3.0m  
Vertical curve below, Unsupported= max 50m  
Side Mounted, Unsupported= max 1.0m
- **Applications**  
Sabin Chain E 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.  
저분진, 저소음을 요구하는 산업현장, 외부위험 요소로부터 케이블의 보호가 필요한 용접라인, 도장라인 등에 적용.

### ● Calculation of the chain length

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

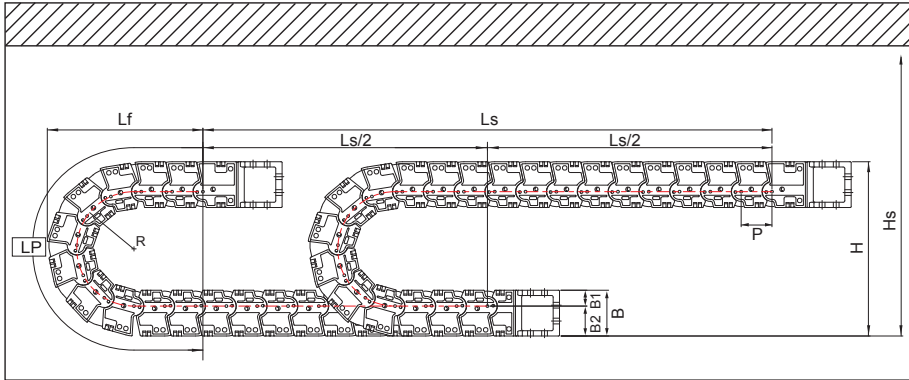
### ● Load diagrams self-supporting length





## Enclosed Type **nsb 035E**

### LAYOUT OF THE CHAIN



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

### nsb 035E Type

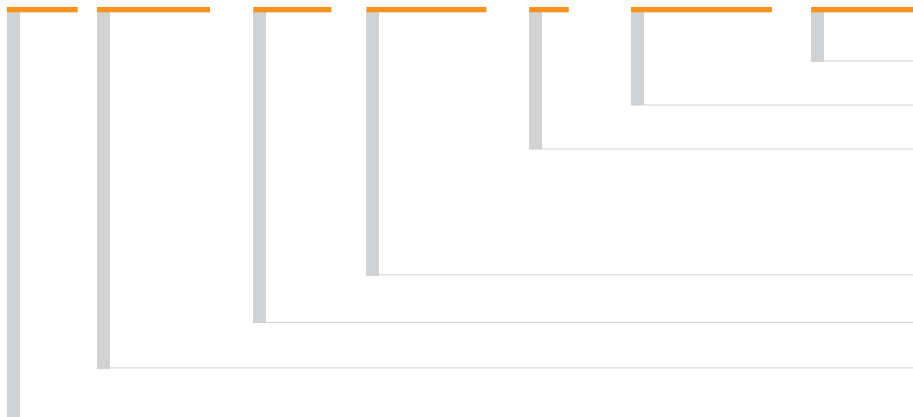
- Pitch P:** 35mm
- Height B:** 52mm
- Height H:** 2R+68mm
- Hs** ≥ H+30mm
- B1:** 18mm **B2:** 34mm

(Dimensions in mm)

Bending radius R	90	115	140	190
Lp	493	572	650	807
Lf	229	254	279	329
H	248	298	348	448

### ORDERING (주문방법)

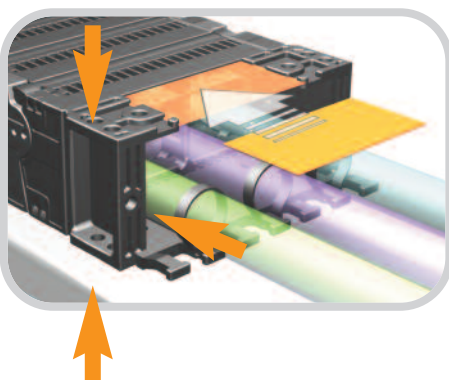
## nsb 035E. 100. R90 / F- 1500L : 10ST



- 주문수량 Q'ty(set)
- 체인길이 Length(mm)
- 브라켓 F : Free End Bracket  
G : Guide Channel Type  
V : Vertical Guide Type
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclosed Type

### New Sabin Chain

### BRACKET TYPE (브라켓타입)



#### FEB (Free End Bracket)

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, inserting plastic sheets creates enclosed structure in the bracket.

체인을 고정하는 끝부분으로 기존 Easy End Bracket 과 Normal End Bracket 을 하나로 통합한 방식으로 취부의 효율성을 높임. 또한 부자재를 삽입하여 브라켓부분이 완전밀폐가 될수 있는 구조.

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



## Enclosed Type **nsb 035E**

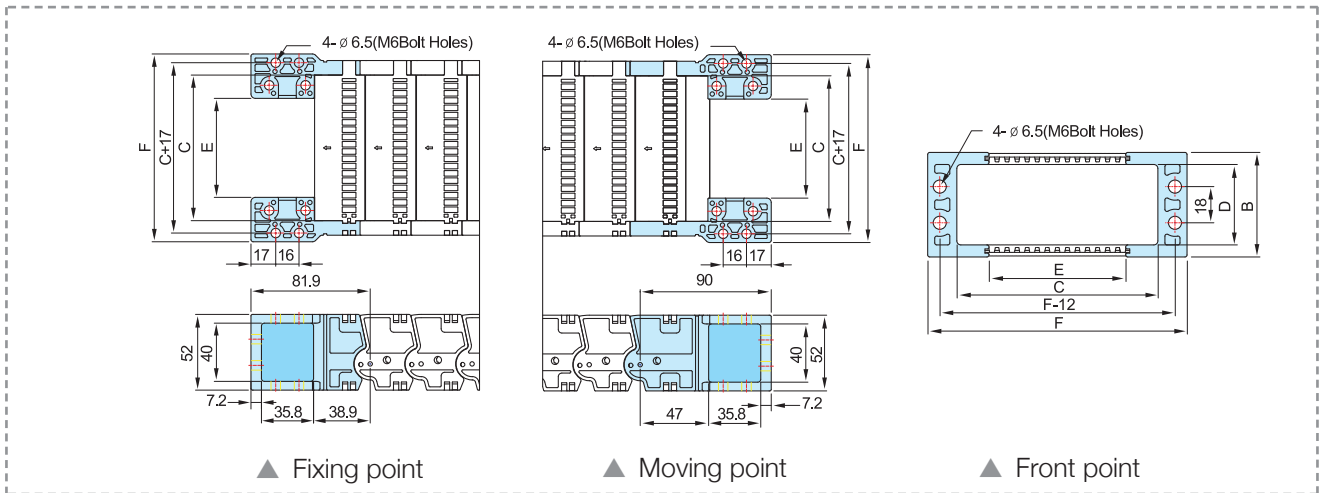
### CHAIN CROSS SECTION



• Hinge Type

Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
nsb 035E.050	70		50			1.45
nsb 035E.075	95		75			1.64
nsb 035E.100	120	52	100	40	90, 115, 140, 190	1.83
nsb 035E.125	145		125			2.06
nsb 035E.150	170		150			2.28

### FREE END BRACKET



▲ Fixing point

▲ Moving point

▲ Front point

Chain Type	F	B	C	D	E	Hole Type
nsb 035E.050	79		50		18	M6 Bolt Holes
nsb 035E.075	104		75		43	
nsb 035E.100	129	52	100	40	68	
nsb 035E.125	154		125		93	
nsb 035E.150	179		150		118	

## 2014 NEW PRODUCT

# Unity Systems<sup>®</sup>

## Enclosed Type nsb 035E

This type of bracket is to protect deflection of chain which will support the weight of certain section start from bracket, also will protect the damage of chain.

케이블 보호 장치에 전해지는 하중을 지지하여 케이블 체인의 처짐이 없이 일정구간을 곧게 유지 하므로, 케이블 체인의 파손을 방지하는 Guide Channel 일체형 브라켓입니다.

▼ Horizon Type 수평형

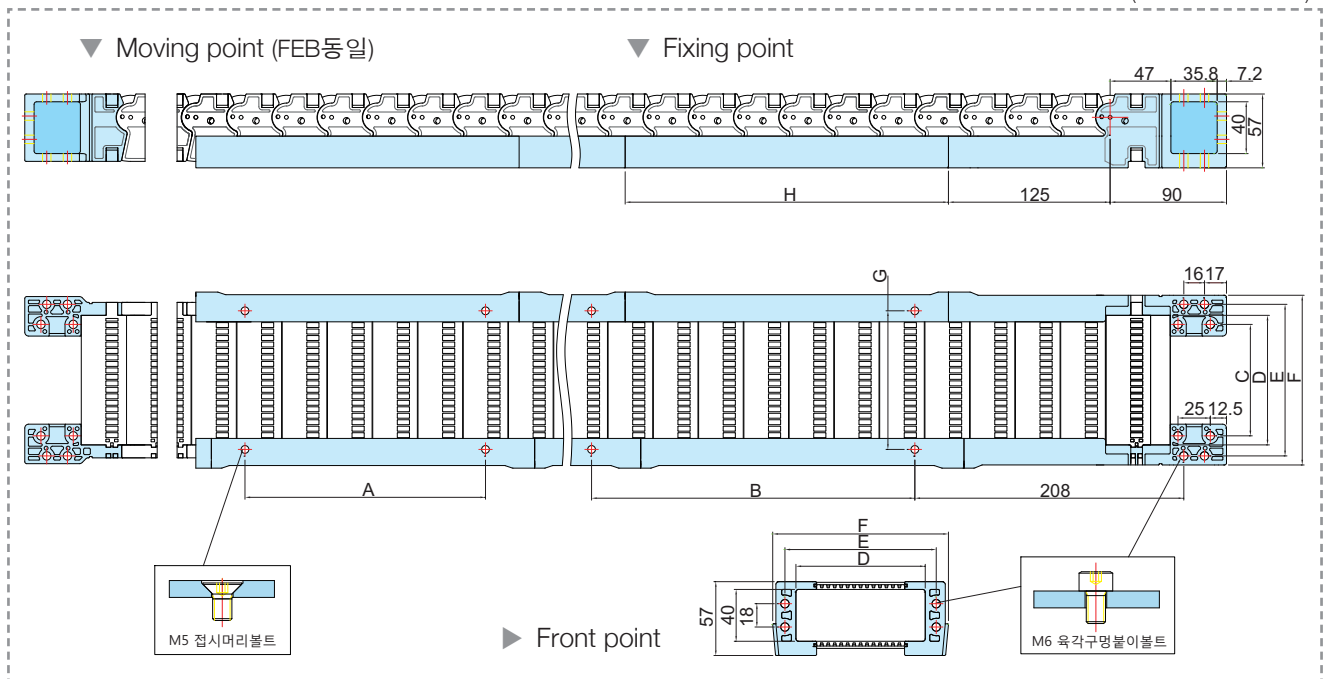


▼ Vertical Type 수직형



### GUIDE CHANNEL TYPE END BRACKET

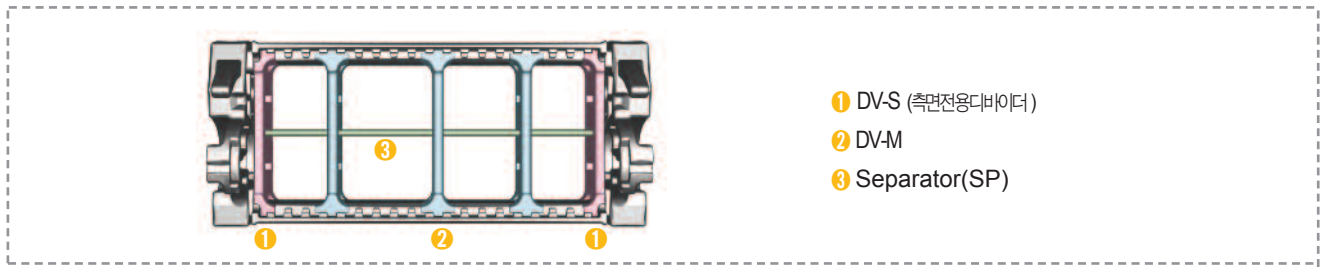
(Dimensions in mm)



Chain Type	C FEB fix hole(inner)	D Frame length dimension	E FEB width	F FEB width	G GC hole width	GC TYPE	H GC length	B GC fixing hole	A GC hole dimension
nsb 035E.050	36	50	67	86	57	GC250	250	251	186
nsb 035E.075	61	75	92	111	82				
nsb 035E.100	86	100	117	136	107				
nsb 035E.125	111	125	142	161	132	GC400	400	400	336
nsb 035E.150	136	150	167	186	157				

## Enclosed Type nsb 035E

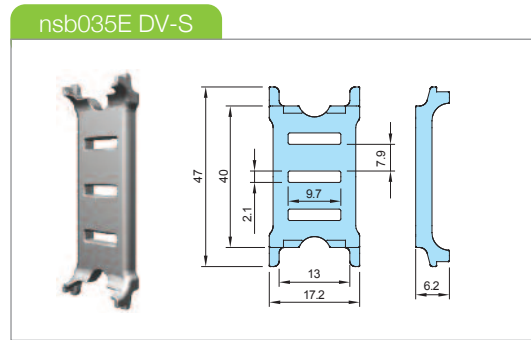
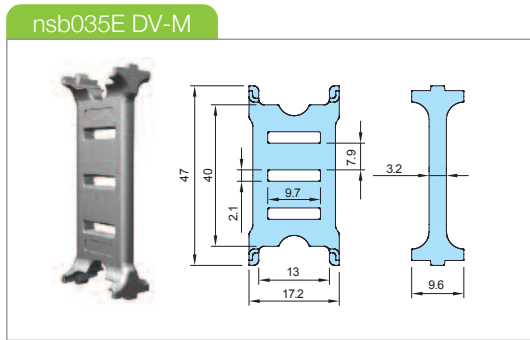
### DIVIDERS & SEPARATORS



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 a 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.

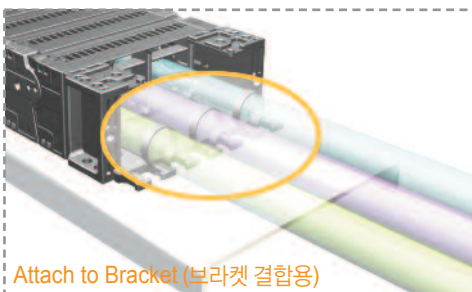


▶ Assemble divider every four links.(4링크마다 결합.)

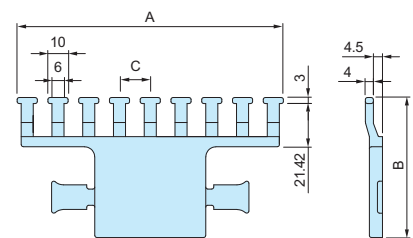
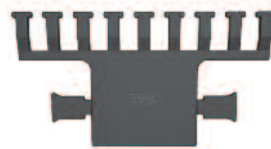
### nsb035E Separators (SP) (No. : S-SP/M)

Chain Type	Separators	SP035	SP050	SP055	SP075	SP100	SP125	SP150	SP175	SP200
nsb028E		○	○	○	○	○	○	○	○	○
nsb035E		○	○	○	○	○	○	○	○	○

### TIE WRAP



Attach to Bracket (브라켓 결합용)



(Dimensions in mm)

Tie Wrap	050	075	100	125	150	175	200
A	82	107	132	157	182	203	232
B	69.42	69.42	69.42	69.42	69.42	69.42	69.42
C	12	12.13	15.25	14.7	14.35	12.31	13.88

When using the tie wrap option for the Sabin Chain nsb035 series, the corresponding frame sizes will be 50, 75, 100, 125, 150, 175 and 200mm respectively.

nsb035 제품은 삽입형 Tie Wrap을 사용하며 적용되는 Frame은 50, 75, 100, 125, 150, 175, 200 입니다.

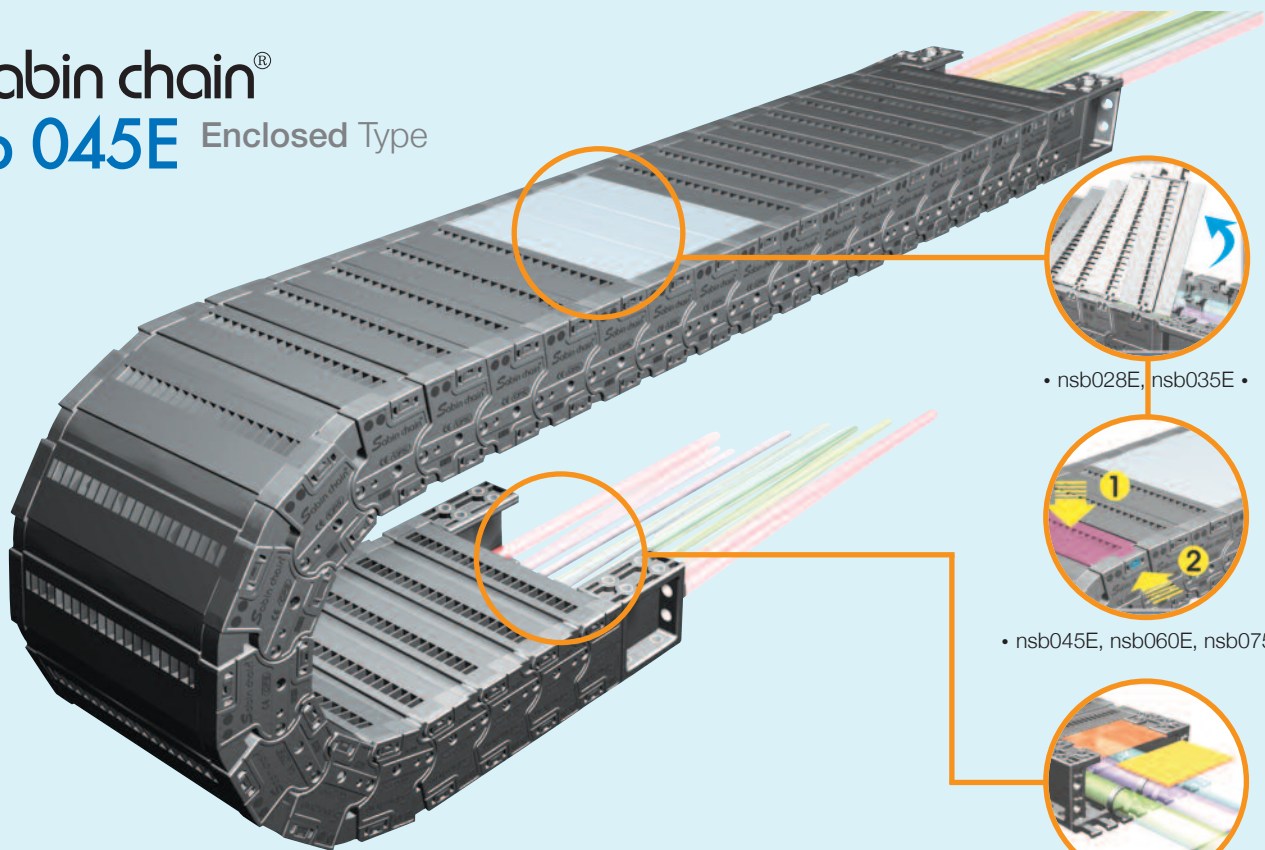
The tie wrap separated from the Sabin Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation. There are two types in the tie wrap; Attached & Unattached to the bracket.

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



Min ●●●●●●●●●● Max

## Sabin chain® nsb 045E Enclosed Type



• nsb028E, nsb035E •

• nsb045E, nsb060E, nsb075E •

• nsb E-Type End Bracket •

- Aluminum material for nsb E-Type frame is available on customer request.
- nsb-E Type 프레임 재질은 고객의 요청시 알루미늄 재질로 제작가능.

### MATERIAL

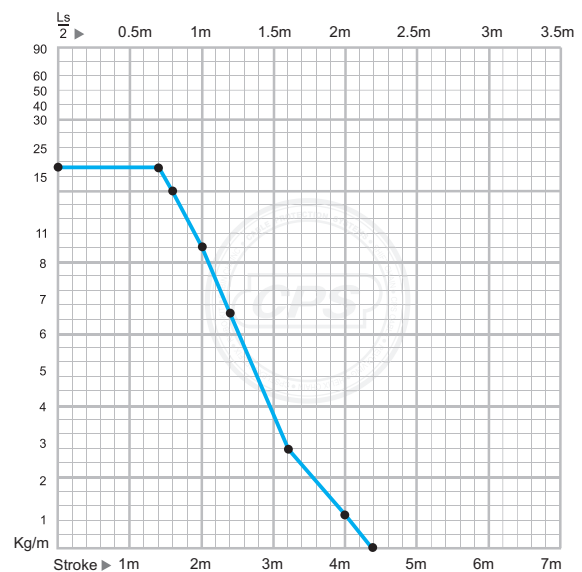
- **Chain material:**  
CPS-amide UL94-HB
- **Low Noise:**
- **Low Mote:**
- **Speed :** 15m/sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length:**  
Vertical curve above= max 6.0m  
Vertical curve below= max 100m  
Side Mounted, Unsupported= max 2.5m

- **Applications**  
Sabin Chain E 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.  
저분진, 저소음을 요구하는 산업현장, 외부위험 요소로부터 케이블의 보호가 필요한 용접라인, 도장라인 등에 적용.

### Calculation of the chain length

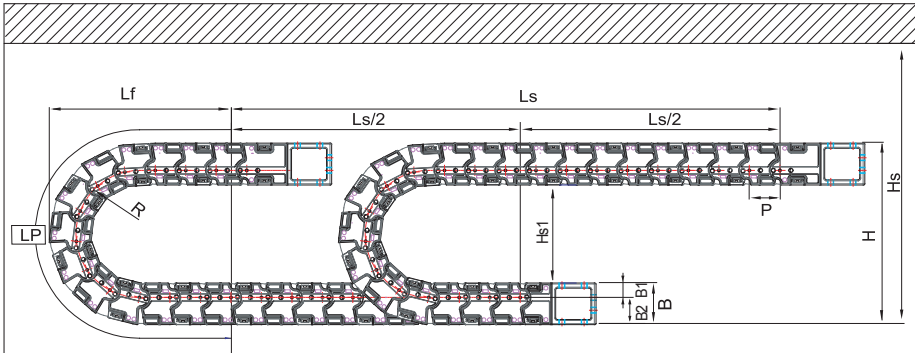
$$\left[ L = \frac{Ls}{2} + Lp \right]$$

### Load diagrams self-supporting length



## Enclosed Type **nsb 045E**

### LAYOUT OF THE CHAIN



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

### nsb 045E Type

- Pitch P:** 45mm
- Height B:** 66mm
- Height H:** 2R+86mm
- Hs** ≥ H+40mm
- B1:** 23mm **B2:** 43mm

(Dimensions in mm)

Bending radius R	90	110	135	165	185	235	285
Lp	633	695	774	868	931	1,088	1,245
Lf	291	311	336	366	386	436	486
H	266	306	356	416	456	556	656

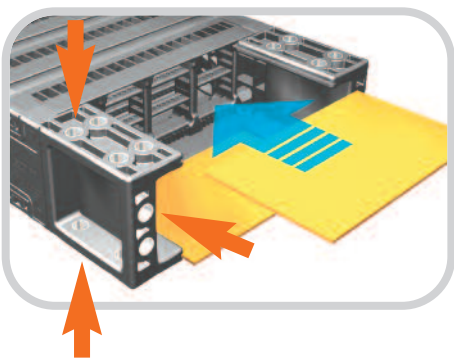
### ORDERING (주문방법)

## nsb 045E. 100. R135 /F- 2000L : 10ST



- 주문수량 Q'ty(set)
- 체인길이 Length(mm)
- 브라켓 F : Free End Bracket  
G : Guide Channel Type  
V : Vertical Guide Type
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclosed Type

### BRACKET TYPE (브라켓타입)



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

### FEB (Free End Bracket)

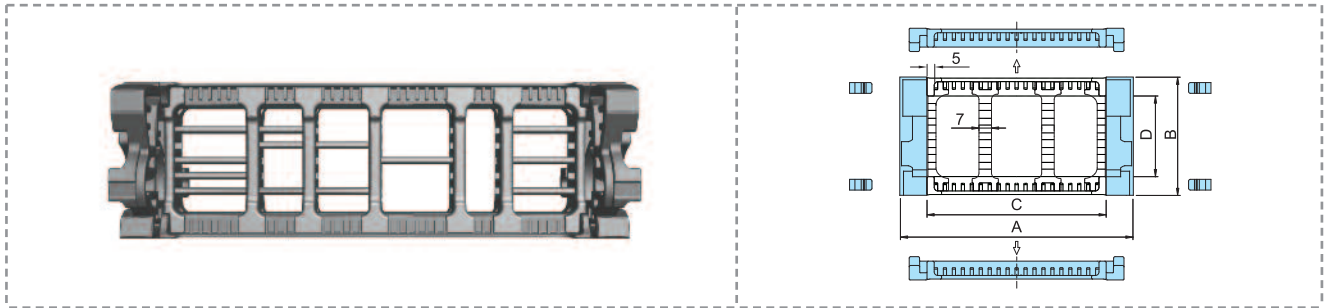
Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket. For added strength, steel spacers are inserted into the fixing holes of each Free End Bracket. Any contaminants can't get into through the gap of bracket by inserted subsidiary parts in the FEB.

체인을 고정하는 끝부분으로 기존 Easy End bracket 과 Normal End bracket 을 하나로 통합한 방식으로 취부의 효율성을 높임. 또한 스틸와셔를 결합하여 더욱 견고한 취부가 가능.

New Sain chain의 밀폐형 Type의 FEB(브라켓)부분에 부자재를 삽입하여 브라켓부분을 통해 외부 이물질이 체인안으로 침투하는 현상을 방지하고 완벽한 밀폐로 입선된 케이블을 보호할 수 있습니다.

## Enclosed Type **nsb 045E**

### CHAIN CROSS SECTION

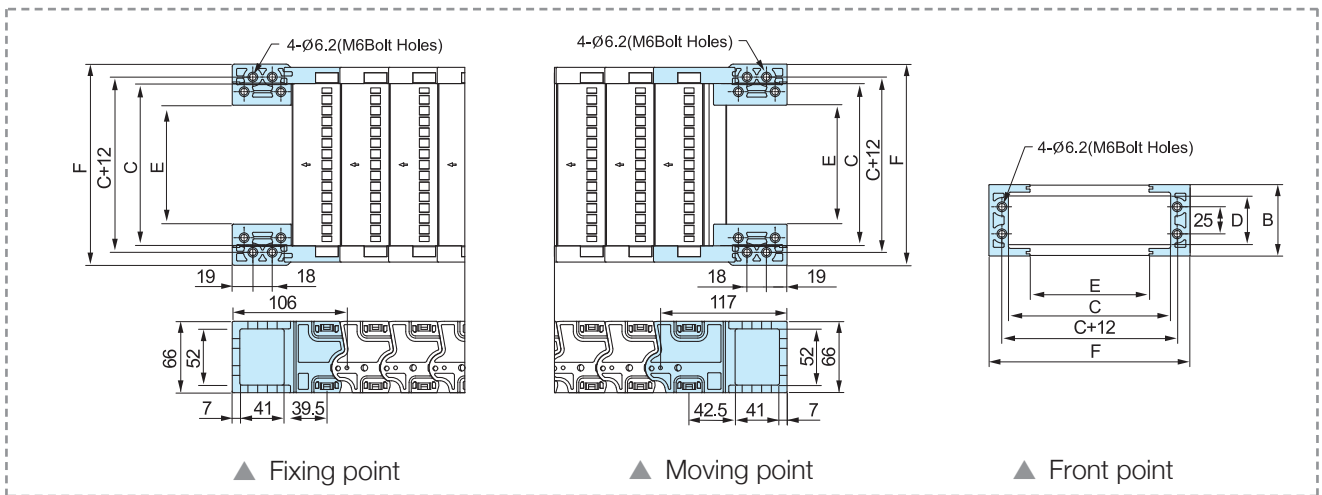


Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
nsb 045E.075	105		75		90, 110, 135, 165, 185 235, 285	2.78
nsb 045E.100	130	66	100	45		3.07
nsb 045E.125	155		125			3.35
nsb 045E.150	180		150			3.58

▲ 특수 프레임 적용 가능. (C:140,165,190,240)

▲ Application of special frame. (C:140,165,190,240)

### FREE END BRACKET



▲ Fixing point

▲ Moving point

▲ Front point

Chain Type	F	B	C	D	E	Hole Type
nsb 045E.075	111		75		35	M6 Bolt Holes
nsb 045E.100	136	66	100	45	60	
nsb 045E.125	161		125		85	
nsb 045E.150	186		150		110	

▲ 특수 프레임 적용 가능. (C:140,165,190,240)

▲ Application of special frame. (C:140,165,190,240)

2014 NEW PRODUCT  
**Unity Systems®**

Enclosed Type **nsb 045E**

This type of bracket is to protect deflection of chain which will support the weight of certain section start from bracket, also will protect the damage of chain.  
 케이블 보호 장치에 전해지는 하중을 지지하여 케이블 체인의 처짐이 없이 일정구간을 끈게 유지 하므로, 케이블 체인의 파손을 방지하는 Guide Channel 일체형 브라켓입니다.

▼ Horizon Type 수평형

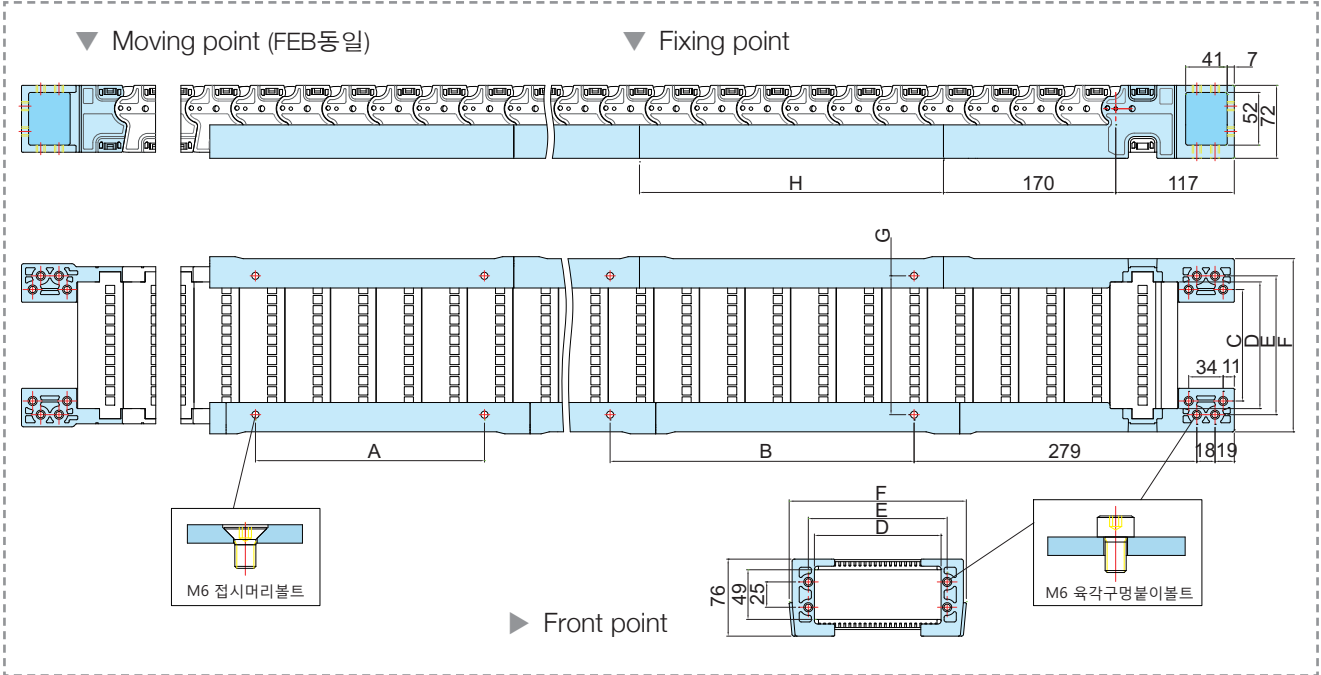


▼ Vertical Type 수직형



**GUIDE CHANNEL TYPE END BRACKET**

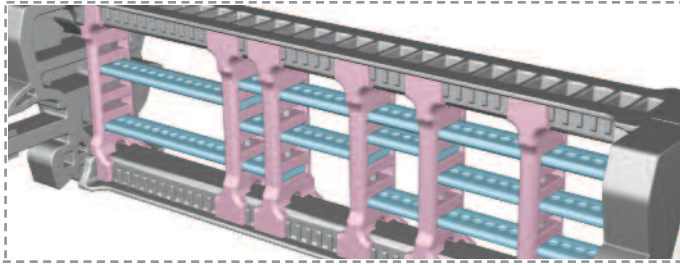
(Dimensions in mm)



Chain Type	C FEB fix hole(inner)	D Frame length dimension	E FEB width	F FEB width	G GC hole width	GC TYPE	H GC length	B GC fixing hole	A GC hole dimension
nsb 045E.075	60	75	87	125	87	GC300	300	301	226
nsb 045E.100	85	100	112	150	112				
nsb 045E.125	110	125	137	175	137				
nsb 045E.150	135	150	162	200	162	GC500	500	501	426

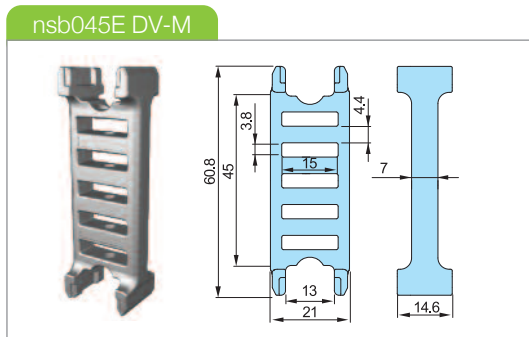
## Enclosed Type **nsb 045E**

### DIVIDERS

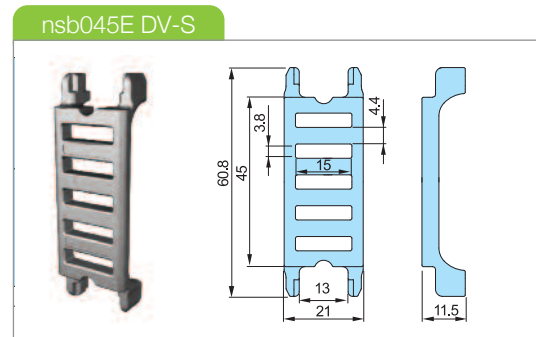


Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of a separator in some cases, can also reduce the width requirements as two or more levels can be made within the 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.

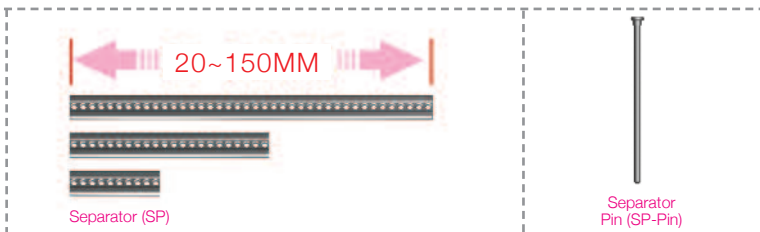
디바이더(세로분리대)와 세퍼레이터(가로분리대)는 체인내에 많은 케이블들이 입선될 시 케이블들을 서로 분리하여 케이블상호간의 마찰로 인한 **피복손상 및 단선**을 방지하는 역할을 하며 케이블과 10%이상의 여유공간을 확보해야 합니다. 또한 케이블을 체인내 2단이상 입선시 반드시 세퍼레이터를 디바이더에 결합하여 사용해야 케이블의 꼬임방지과 피복손상을 방지할 수 있습니다.



▶ Assemble divider every four links.(4링크마다 결합.)



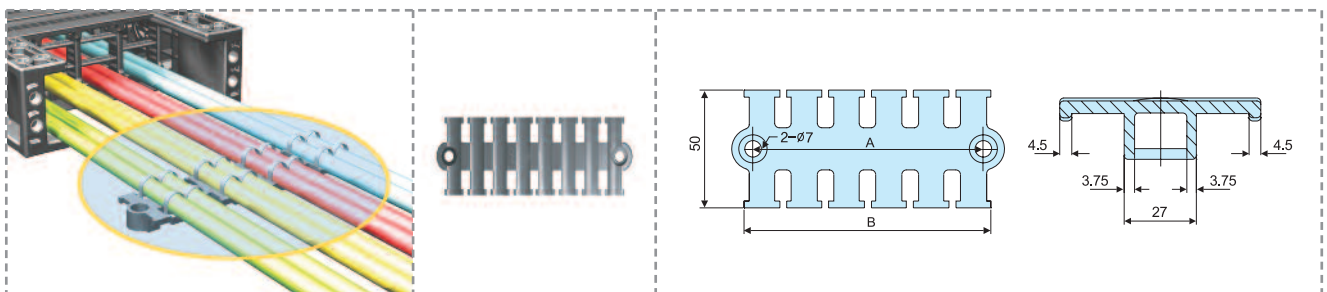
### SEPARATORS (SP)



Separator is available in length from 20mm to 150mm 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 최대150mm까지 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)

The tie wrap separated from the Sabin Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation.

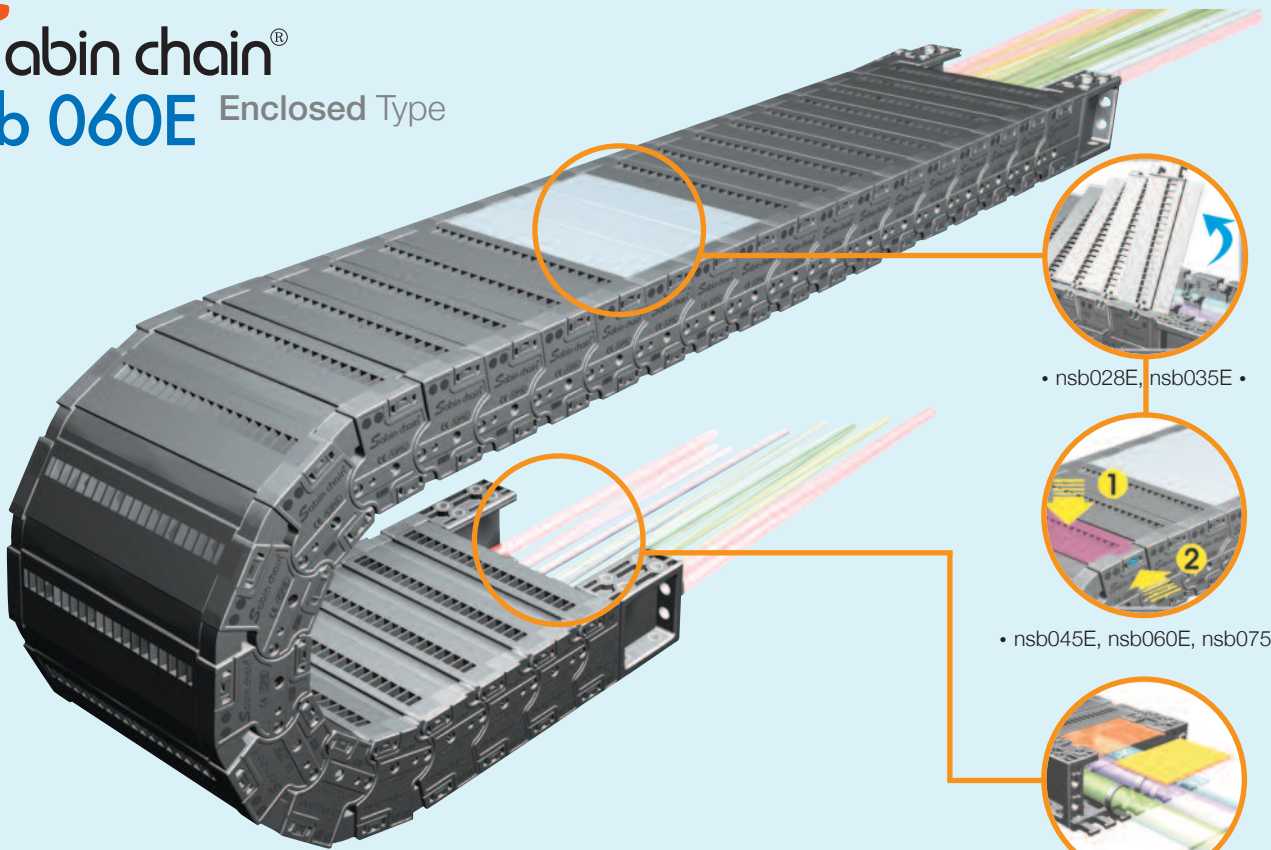
Tie wrap은 Sabin Chain의 브라켓을 기준으로 바깥쪽으로 설치함으로써 체인의 움직임으로 인해 **케이블의 유동**을 방지하고자 **고정하는 시스템**으로 케이블의 피복손상 및 단선을 방지하는 역할을 합니다.

Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	148



Min ●●●●●●●●●● Max

# Sabin chain® nsb 060E Enclosed Type



• nsb028E, nsb035E •

• nsb045E, nsb060E, nsb075E •

• nsb E-Type End Bracket •

- Aluminum material for nsb E-Type frame is available on customer request.
- nsb-E Type 프레임 재질은 고객의 요청시 알루미늄 재질로 제작가능.

## MATERIAL

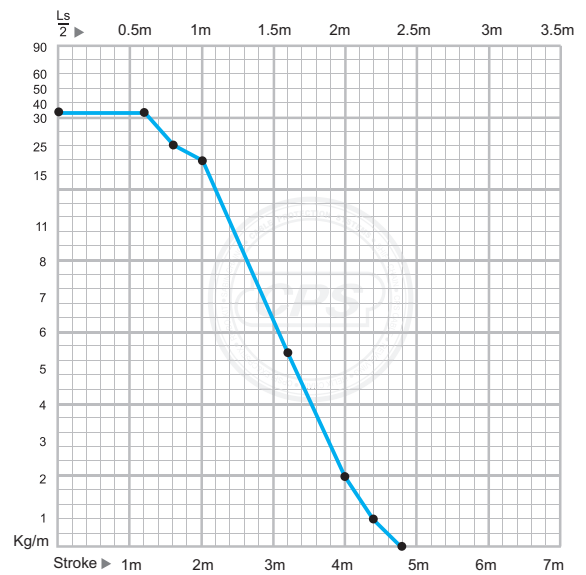
- **Chain material:**  
CPS-amide UL94-HB
- **Low Noise:**
- **Low Mote:**
- **Speed :** 15m/sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length:**  
Vertical curve above= max 6.0m  
Vertical curve below= max 100m  
Side Mounted, Unsupported= max 3.0m

- **Applications**  
Sabin Chain E 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.  
저분진, 저소음을 요구하는 산업현장, 외부위험 요소로부터 케이블의 보호가 필요한 용접라인, 도장라인 등에 적용.

### Calculation of the chain length

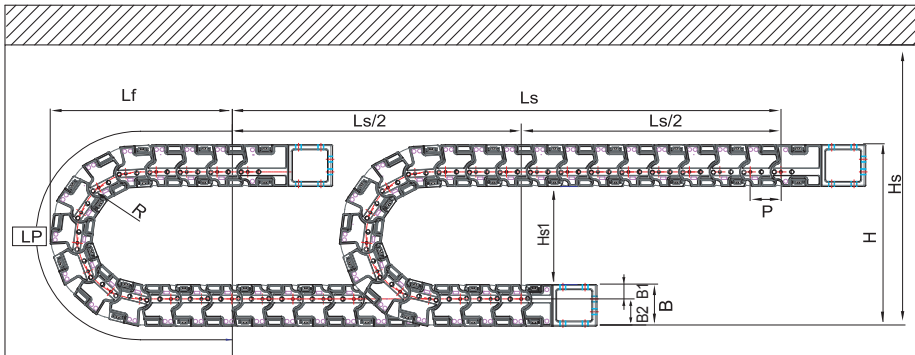
$$[ L = \frac{L_s}{2} + L_p ]$$

### Load diagrams self-supporting length





**LAYOUT OF THE CHAIN**



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

**nsb 060E Type**

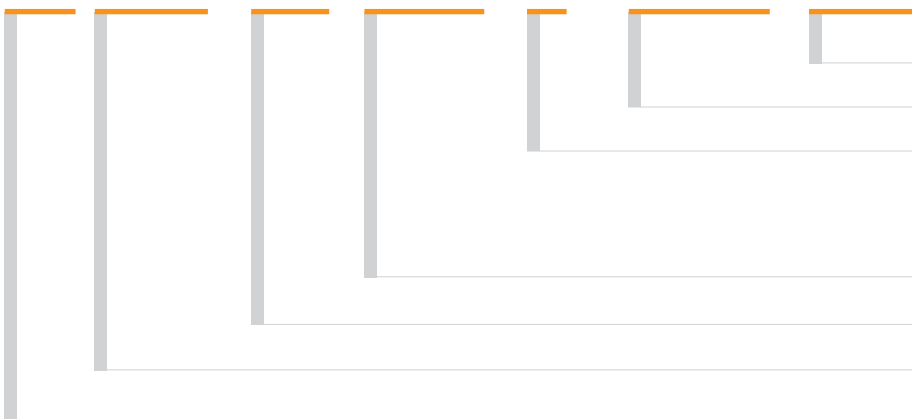
- Pitch P:** 60mm
- Height B:** 82mm
- Height H:** 2R+107mm
- Hs ≥ H+40mm**
- B1:** 28.5mm **B2:** 53.5mm

(Dimensions in mm)

Bending radius R	125	135	150	180	230	270	340
Lp	854	885	932	1,026	1,183	1,309	1,529
Lf	389	399	414	444	494	534	604
H	357	377	407	467	567	647	787

**ORDERING (주문방법)**

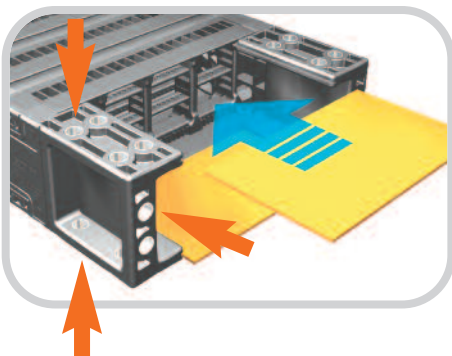
**nsb 060E . 200. R230 /F- 2000L : 10ST**



- 주문수량 Q'ty(set)
- 체인길이 Length(mm)
- 브라켓 F : Free End Bracket  
G : Guide Channel Type  
V : Vertical Guide Type
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclosed Type

**New Sabin Chain**

**BRACKET TYPE (브라켓타입)**



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

**FEB (Free End Bracket)**

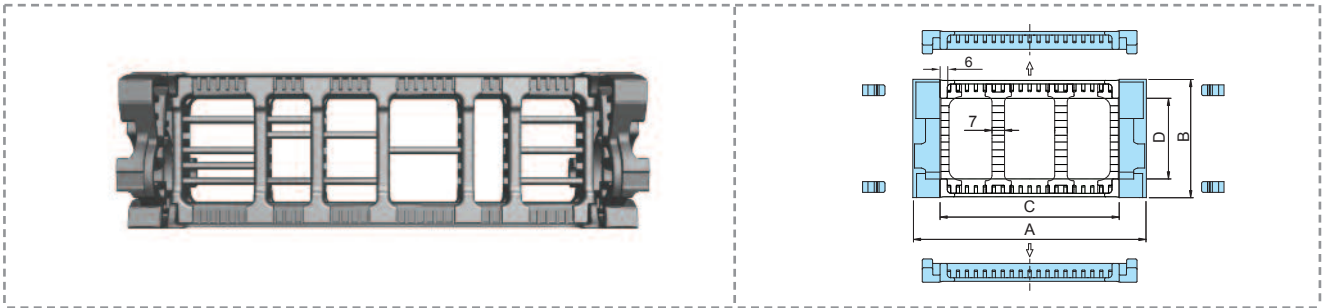
Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket. For added strength, steel spacers are inserted into the fixing holes of each Free End Bracket. Any contaminants can't get into through the gap of bracket by inserted subsidiary parts in the FEB.

체인을 고정하는 끝부분으로 기존 Easy End bracket 과 Normal End bracket 을 하나로 통합한 방식으로 취부의 효율성을 높임. 또한 스틸와셔를 결합하여 더욱 견고한 취부가 가능.

New Sabin chain의 밀폐형 Type의 FEB(브라켓)부분에 부자재를 삽입하여 브라켓 부분을 통해 외부 이물질이 체인안으로 침투하는 현상을 방지하고 완벽한 밀폐로 입선된 케이블을 보호할 수 있습니다.

## Enclosed Type nsb 060E

### CHAIN CROSS SECTION

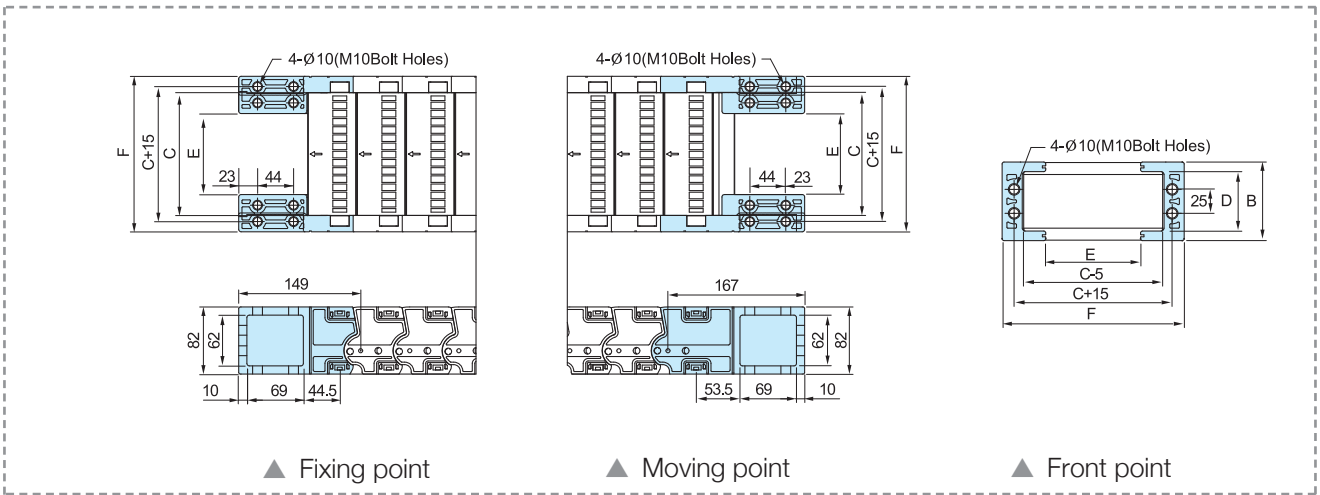


Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
nsb 060E.100	140		100		125, 135, 150, 180, 230, 270, 340	4.32
nsb 060E.150	190	82	150	56		4.86
nsb 060E.200	240		200			5.41

▲ 특수 프레임 적용 가능. (C:190,240)

▲ Application of special frame. (C:190,240)

### FREE END BRACKET



▲ Fixing point

▲ Moving point

▲ Front point

Chain Type	F	B	C	D	E	Hole Type
nsb 060E.100	140		100		49	M10 Bolt Holes
nsb 060E.150	190	82	150	56	99	
nsb 060E.200	240		200		149	

▲ 특수 프레임 적용 가능. (C:190,240)

▲ Application of special frame. (C:190,240)

**2014 NEW PRODUCT**

## Unity Systems®

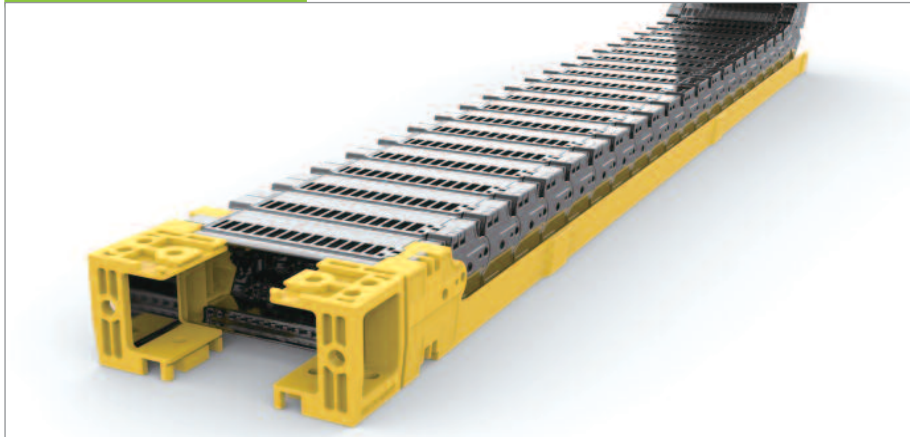
**PREPARE (준비중)**

Enclosed Type **nsb 060E**

This type of bracket is to protect deflection of chain which will support the weight of certain section start from bracket, also will protect the damage of chain.

케이블 보호 장치에 전해지는 하중을 지지하여 케이블 체인의 처짐이 없이 일정구간을 끈게 유지하므로, 케이블 체인의 파손을 방지하는 Guide Channel 일체형 브라켓입니다.

▼ Horizon Type 수평형

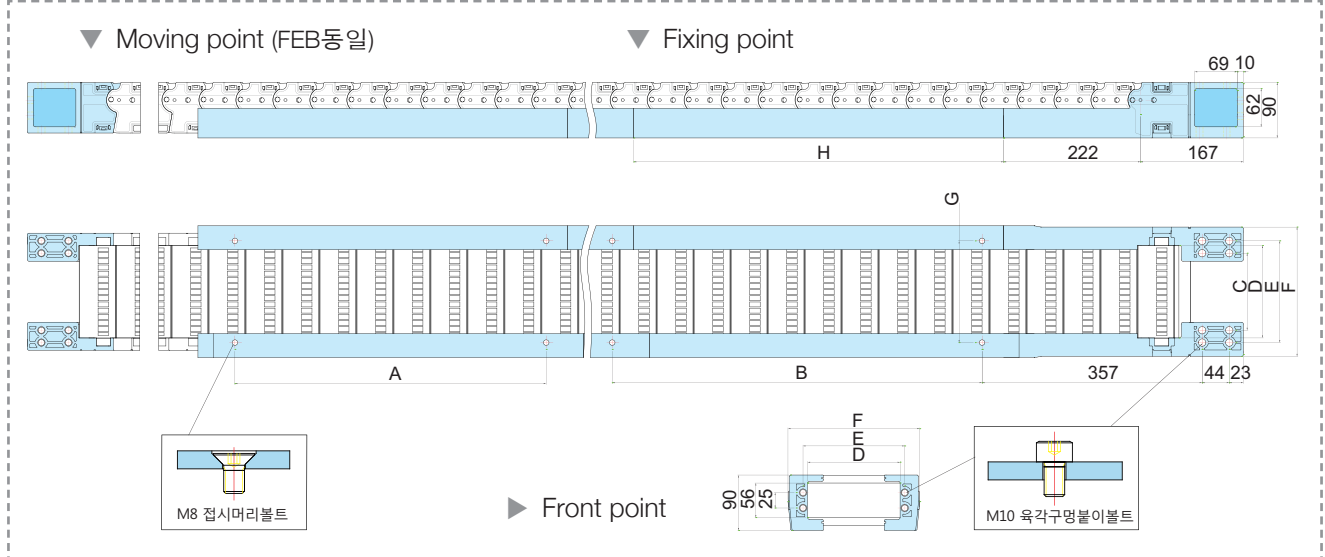


▼ Vertical Type 수직형



### GUIDE CHANNEL TYPE END BRACKET

(Dimensions in mm)



Chain Type	C FEB fix hole(inner)	D Frame length dimension	E FEB width	F FEB width	G GC hole width	GC TYPE	H GC length	B GC fixing hole	A GC hole dimension
nsb 060E.100	75	100	115	164	115	GC600	600	601	505
nsb 060E.150	125	150	165	214	165	GC800	800	801	705
nsb 060E.200	175	200	215	264	215				

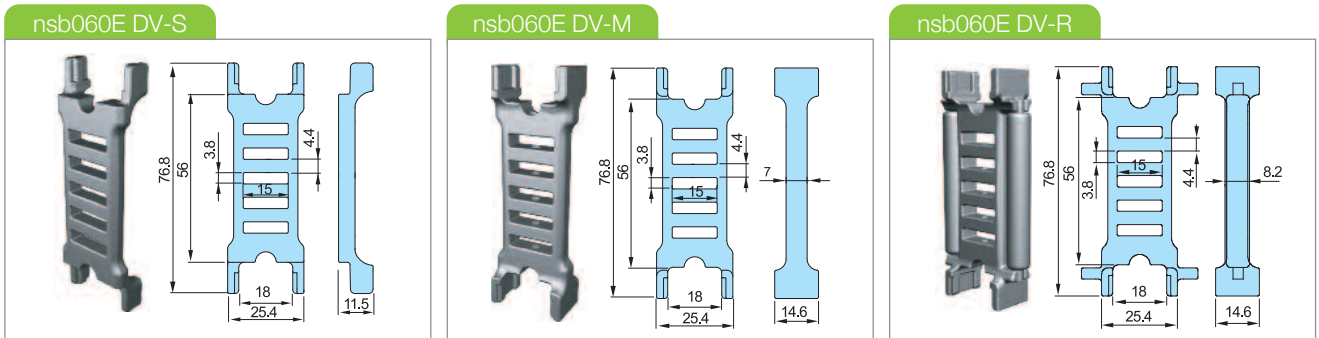
## Enclosed Type nsb 060E

### 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 a 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.

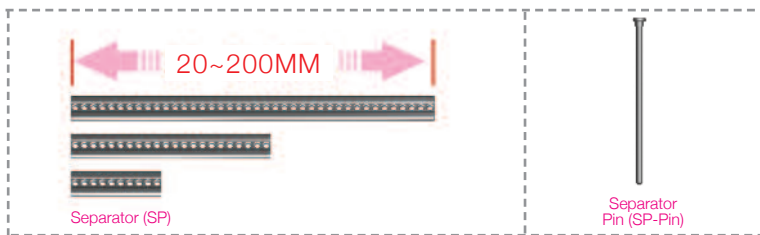
디바이더(세로분리대)와 세퍼레이터(가로분리대)는 체인내에 많은 케이블들이 입선될 시 케이블들을 서로 분리하여 케이블상호간의 마찰로 인한 **피복손상 및 단선을 방지하는 역할**을 하며 케이블과 10%이상의 여유공간을 확보해야 합니다.

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



▶ Assemble divider every four links.(4링크마다 결합.)

### SEPARATORS (SP)

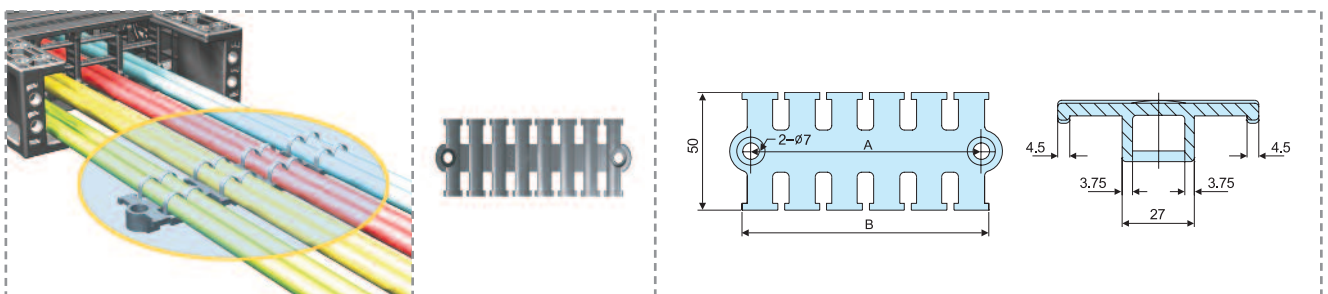


Separator is available in length from 20mm to 200mm and can be cut every 5mm for use.

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 최소 20mm부터 최대 200mm까지 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)

The tie wrap separated from the Sabin Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation.

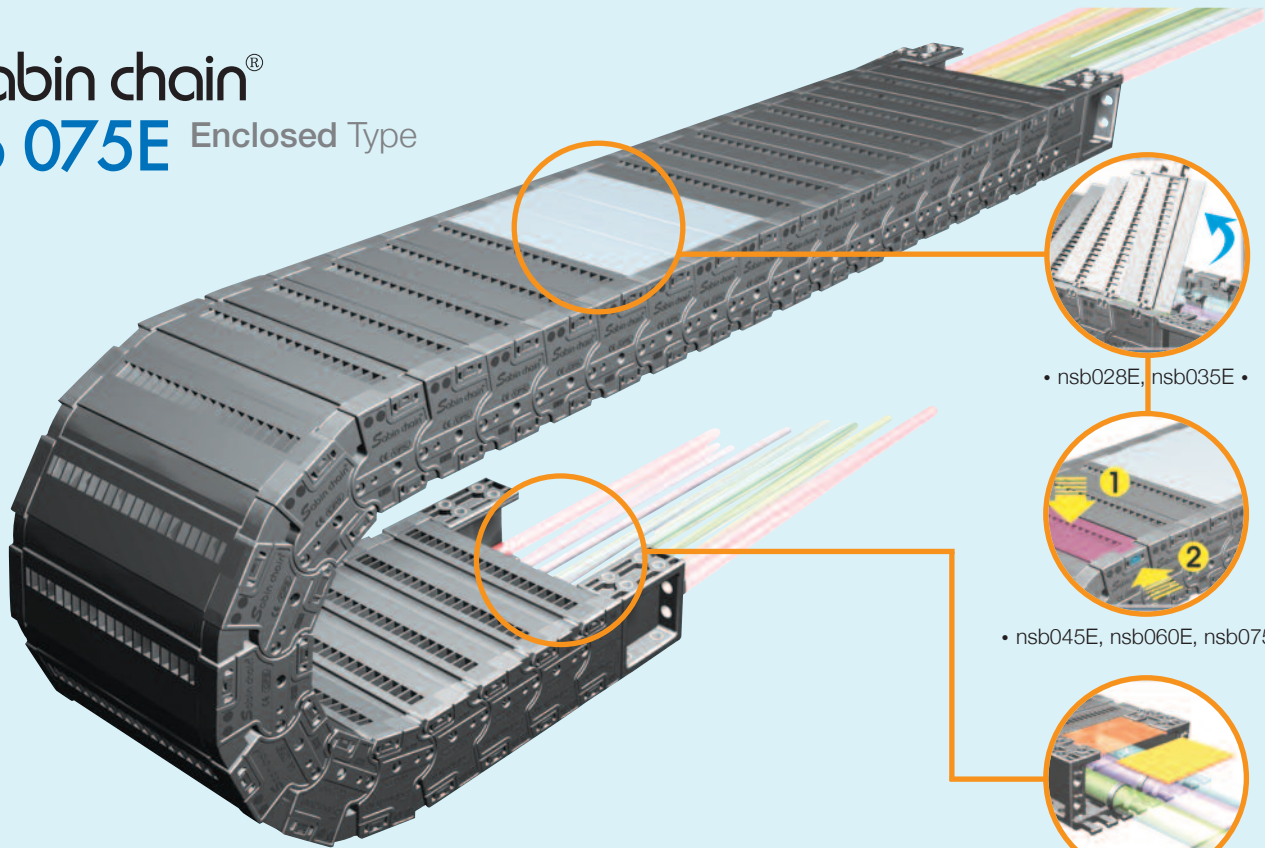
Tie wrap은 Sabin Chain의 브라켓을 기준으로 바깥쪽으로 설치함으로써 체인의 움직임으로 인해 **케이블의 유동을 방지**하고자 **고정하는 시스템**으로 케이블의 피복손상 및 단선을 방지하는 역할을 합니다.

Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	148



Min ●●●●●●●● Max

## Sabin chain® nsb 075E Enclosed Type



• nsb028E, nsb035E •

• nsb045E, nsb060E, nsb075E •

• nsb E-Type End Bracket •

- Aluminum material for nsb E-Type frame is available on customer request.
- nsb-E Type 프레임 재질은 고객의 요청시 알루미늄 재질로 제작가능.

### MATERIAL

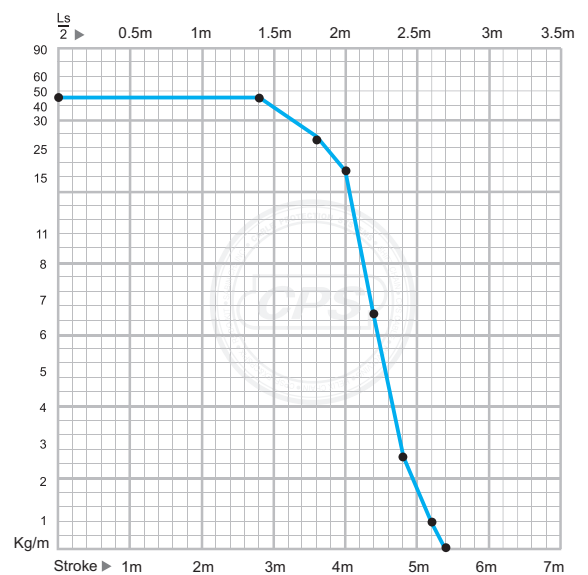
- **Chain material:**  
CPS-amide UL94-HB
- **Low Noise:**
- **Low Mote:**
- **Speed :** 15m/sec
- **Temperature :** -30°C ~ +130°C
- **Other installation Length:**  
Vertical curve above= max 6.0m  
Vertical curve below= max 120m  
Side Mounted, Unsupported= max 3.0m

- **Applications**  
Sabin Chain E 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.  
저분진, 저소음을 요구하는 산업현장, 외부위험 요소로부터 케이블의 보호가 필요한 용접라인, 도장라인 등에 적용.

### Calculation of the chain length

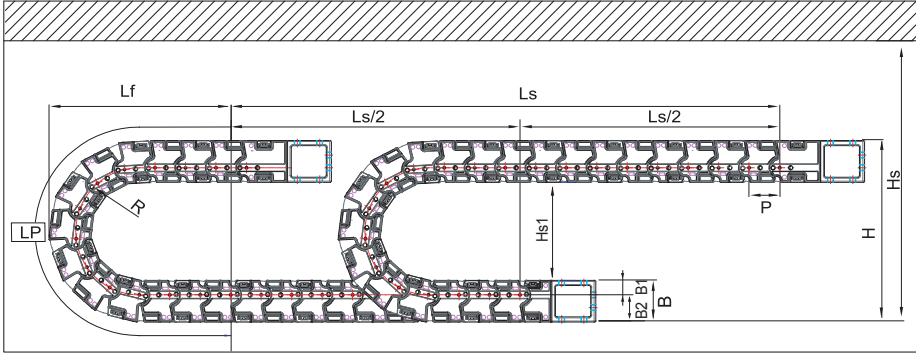
$$\left[ L = \frac{L_s}{2} + L_p \right]$$

### Load diagrams self-supporting length



## Enclosed Type **nsb 075E**

### LAYOUT OF THE CHAIN



(Dimensions in mm)

Bending radius R	160	180	230	280	330	380	480
$L_p$	1,084	1,147	1,304	1,461	1,618	1,775	2,089
$L_f$	495	515	565	615	665	715	815
$H$	464	504	604	704	804	904	1,104

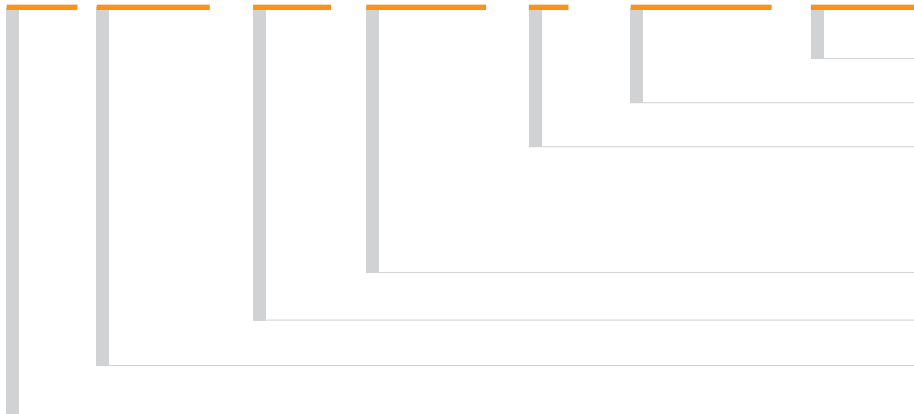
- Ls:** Stroke
- Lp:** Loop Length
- Lf:** Loop Projection
- Hs:** Safe Space

### nsb 075E Type

- Pitch P:** 75mm
- Height B:** 108mm
- Height H:**  $2R+144$ mm
- Hs**  $\geq H+40$ mm
- B1:** 36mm **B2:** 72mm

### ORDERING (주문방법)

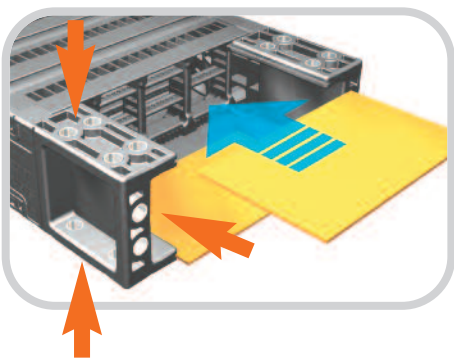
## nsb 075E. 300. R330 /F- 2500L : 10ST



- 주문수량 Q'ty(set)
- 체인길이 Length(mm)
- 브라켓 F : Free End Bracket  
G : Guide Channel Type  
V : Vertical Guide Type
- 곡률반경 Bending Radius
- 내폭 Inside Width
- 밀폐형태입 Enclosed Type

### New Sabin Chain

### BRACKET TYPE (브라켓타입)



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

### FEB (Free End Bracket)

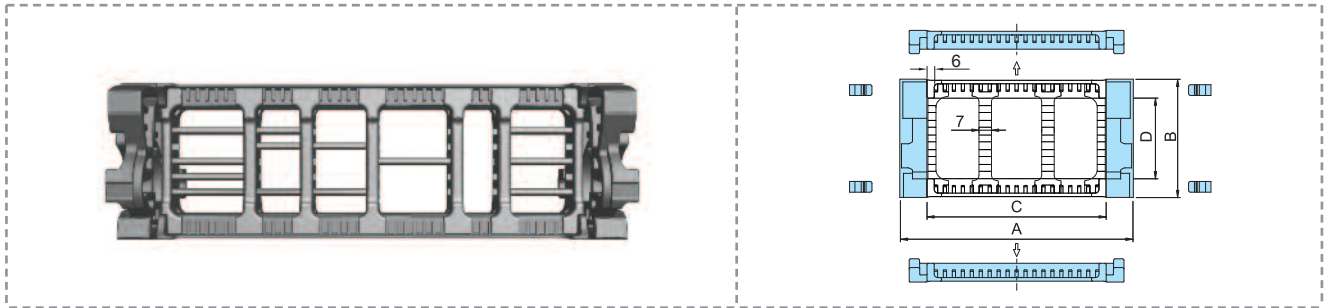
Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket. For added strength, steel spacers are inserted into the fixing holes of each Free End Bracket. Any contaminants can't get into through the gap of bracket by inserted subsidiary parts in the FEB.

체인을 고정하는 끝부분으로 기존 Easy End bracket과 Normal End bracket 을 하나로 통합한 방식으로 취부의 효율성을 높임. 또한 스틸와셔를 결합하여 더욱 견고한 취부가 가능.

New Sain chain의 밀폐형 Type의 FEB(브라켓)부분에 부자재를 삽입하여 브라켓부분을 통해 외부 이물질이 체인안으로 침투하는 현상을 방지하고 완벽한 밀폐로 입선된 케이블을 보호할 수 있습니다.

## Enclosed Type **nsb 075E**

### CHAIN CROSS SECTION

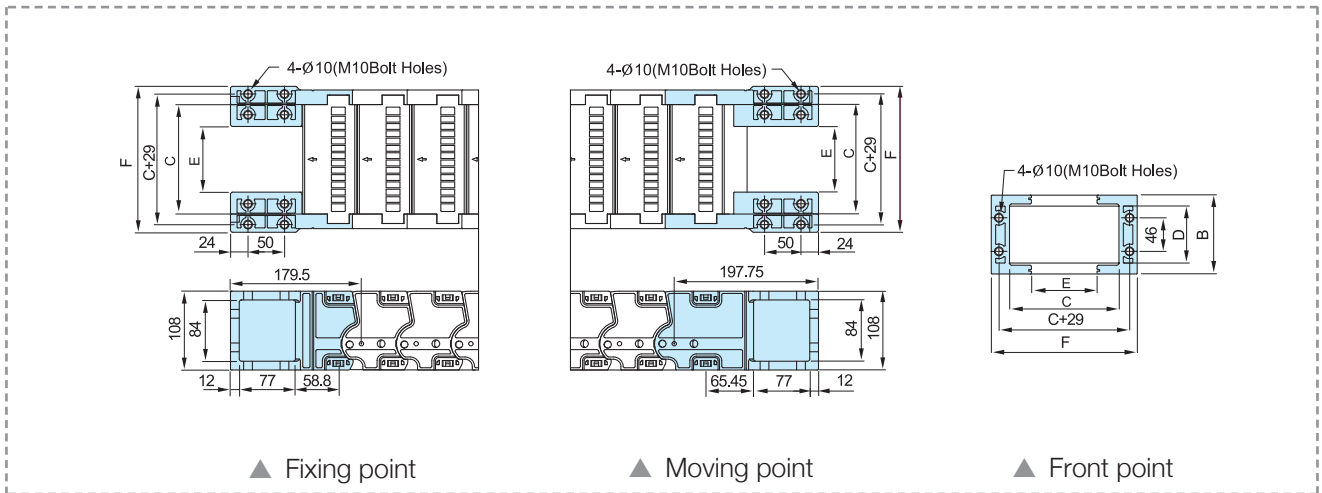


Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
nsb 075E.150	190		150		160, 180, 230, 280, 330, 380, 480	7.01
nsb 075E.200	240	108	200	78		7.97
nsb 075E.300	340		300			9.48

▲ 특수 프레임 적용 가능. (C:115,240,290)

▲ Application of special frame. (C:115,240,290)

### FREE END BRACKET



▲ Fixing point

▲ Moving point

▲ Front point

Chain Type	F	B	C	D	E	Hole Type
nsb 075E.150	200		150		90	M10 Bolt Holes
nsb 075E.200	250	108	200	78	140	
nsb 075E.300	350		300		240	

▲ 특수 프레임 적용 가능. (C:115,240,290)

▲ Application of special frame. (C:115,240,290)



2014 NEW PRODUCT

Unity Systems®

PREPARE (준비중)

Enclosed Type nsb 075E

This type of bracket is to protect deflection of chain which will support the weight of certain section start from bracket, also will protect the damage of chain.

케이블 보호 장치에 전해지는 하중을 지지하여 케이블 체인의 처짐이 없이 일정구간을 끈게 유지하므로, 케이블 체인의 파손을 방지하는 Guide Channel 일체형 브라켓입니다.

▼ Horizon Type 수평형

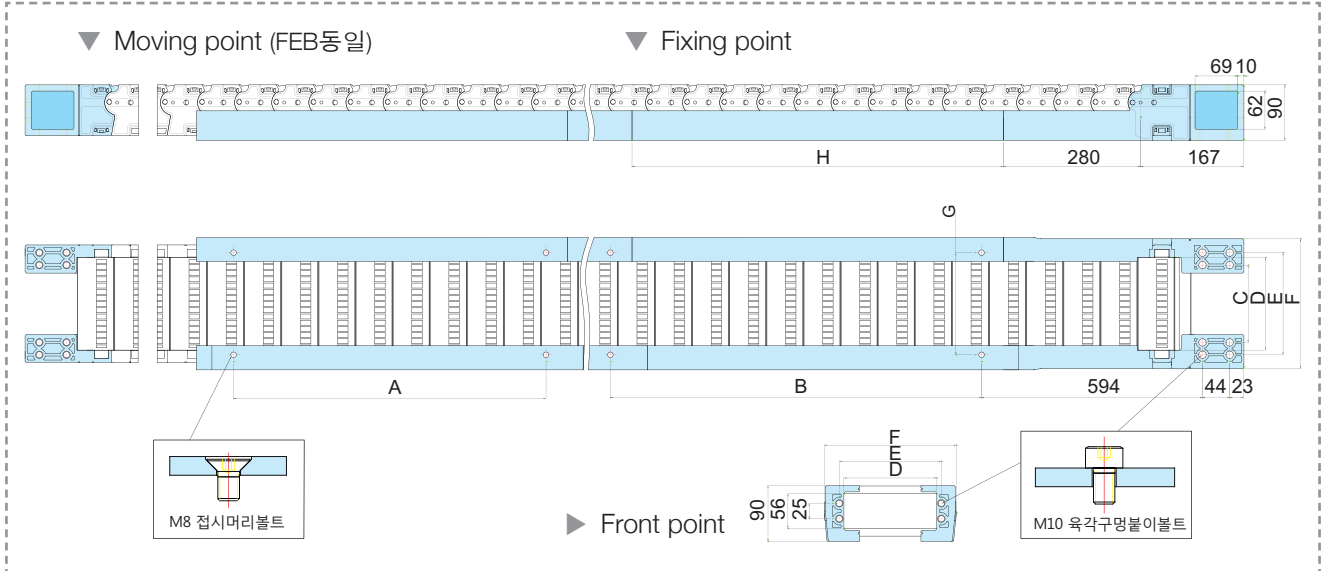


▼ Vertical Type 수직형



GUIDE CHANNEL TYPE END BRACKET

(Dimensions in mm)



Chain Type	C FEB fix hole(inner)	D Frame length dimension	E FEB width	F FEB width	G GC hole width	GC TYPE	H GC length	B GC fixing hole	A GC hole dimension
nsb 075E.150	122	150	179	214	165	GC600	600	601	505
nsb 075E.200	172	200	229	264	215				
nsb 075E.300	272	300	329	364	315	GC800	800	801	705

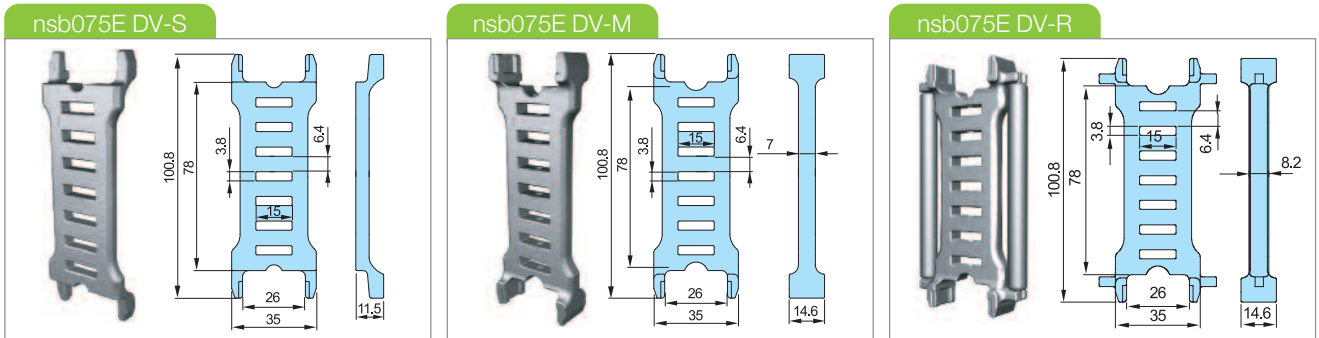
## Enclosed Type **nsb 075E**

### 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 a 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.

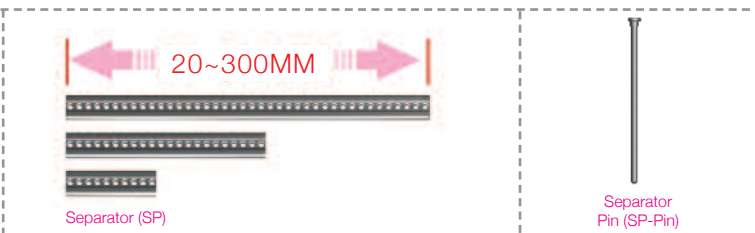
디바이더(세로분리대)와 세퍼레이터(가로분리대)는 체인내에 많은 케이블들이 입선될 시 케이블들을 서로 분리하여 케이블상호간의 마찰로 인한 **피복손상 및 단선을 방지하는 역할**을 하며 케이블과 10%이상의 여유공간을 확보해야 합니다.

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



▶ Assemble divider every four links.(4링크마다 결합.)

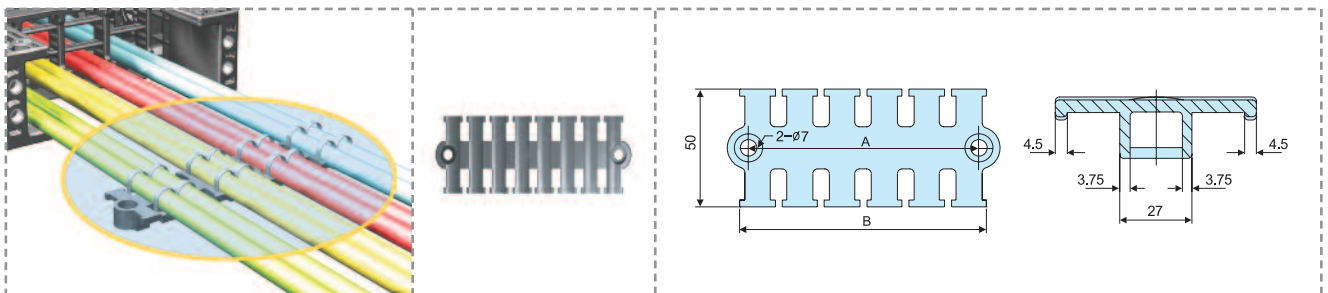
### SEPARATORS (SP)



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)

The tie wrap separated from the Sabin Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation.

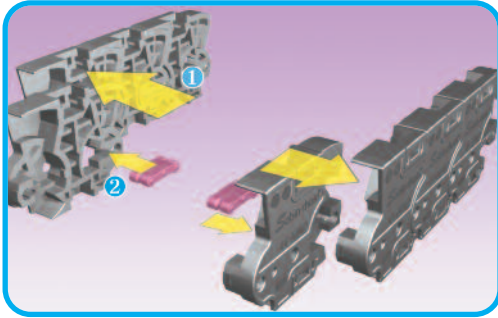
Tie wrap은 Sabin Chain의 브라켓을 기준으로 바깥쪽으로 설치함으로써 체인의 움직임으로 인해 **케이블의 유동을 방지하고자 고정하는 시스템**으로 케이블의 피복손상 및 단선을 방지하는 역할을 합니다.

Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	148

## ASSEMBLY PROCEDURE / ENCLOSED Type

The assembling process of E-Type of New Sabin Chain is like below and you must use rubber hammer with careful combination of Divider and Separator.

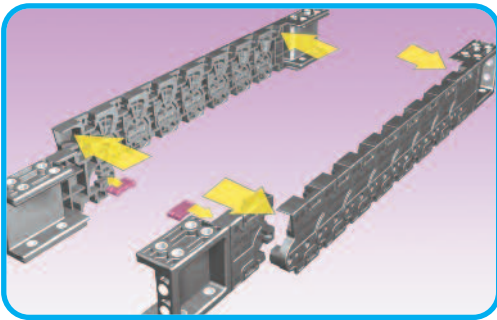
New Sabin Chain의 E-Type의 조립순서는 아래와 같이 진행하며 케이블의 입선수량에 따라 디바이더와 세퍼레이터의 조합을 유의하면서 반드시 고무망치를 사용하여 조립합니다.



1.

Connect each side band as many as you need, then insert holding pin to connecting groove.

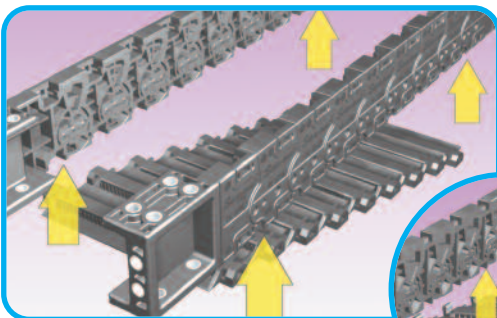
사이드밴드를 원하는 길이만큼 연결(1)하고 홀딩핀을 사이드밴드 연결홈에 끼워서 고정(2).



2.

Assemble the end brackets on both ends with holding pin.

사이드밴드 양쪽 끝부분에 브라켓을 연결하고 홀딩핀으로 결합하여 고정.

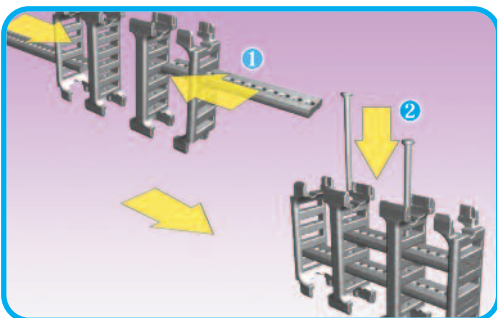


3.

Attach frames starting with the bottom side of the carrier.

하부 프레임은 사이드밴드에 결합.

● 028E, 035E Type are Hinge Frame Type.



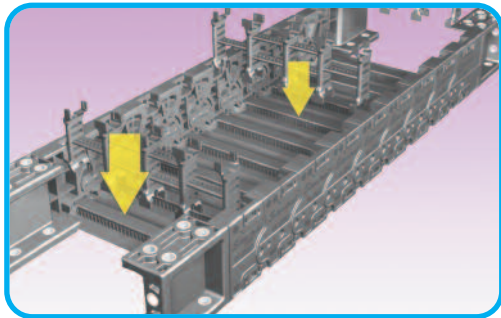
4.

For nsb 045, 060, and 075, connect the pin of separator in hole of divider after inserting separator in hole of divider.

For nsb028 and nsb035, separator fixing pins are not used.

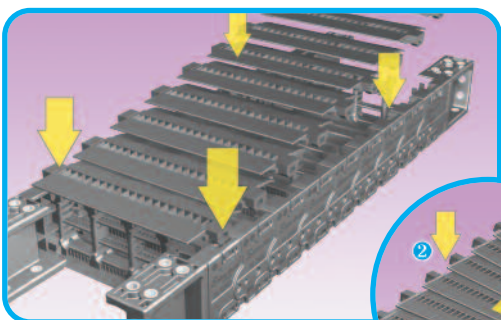
디바이더를 종류별로 구분하여 미리 절단된 세퍼레이터를 디바이더 홈에 결합시킨 후 세퍼레이터 고정핀을 디바이더 홈에 결합( nsb 045, 060, 075). 028, 035 Type은 세퍼레이터 고정핀 사용안함.

## ASSEMBLY PROCEDURE / ENCLOSED Type



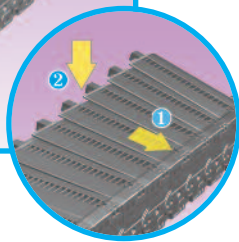
5.

Fix the separator and divider patterns to the bottom-side frames as needed.  
세퍼레이터가 결합된 디바이더를 하측프레임에 결합.

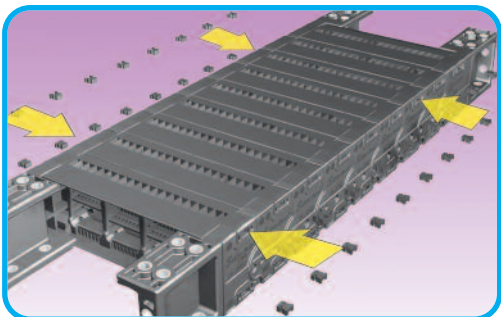


6.

Fix the topside frames to the carrier.  
상측 프레임을 사이드밴드와 디바이더의 홈에 정확하게 결합.



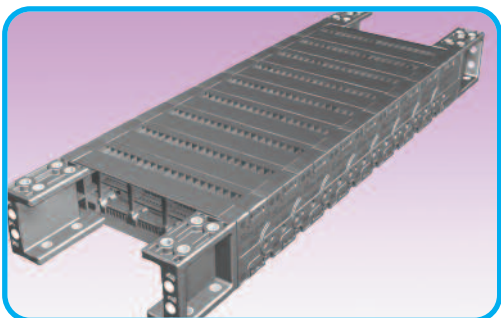
028E, 035E Type are Hinge Frame Type.



7.

Insert frame pins to secure the frames and complete carrier.  
(nsb045, 060, 075 are applied with frame pin, and nsb028, 035 are Hinge Type or Hook Type without frame pin.)

결합된 프레임과 사이드밴드의 측면의 홈에 프레임 고정핀으로 결합.  
(프레임 고정핀은 nsb045, 060, 075 Type에 적용되며 028, 035 Type의 경우 Hinge Type이나 프레임 고정핀 없이 Hook 고정방식.)



8.

Complete to assemble New Sabin E-Type, Sabin Chain.  
New Sabin Chain E-Type 조립완료.

## APPLICATION IMAGE / 적용이미지



▶ LCD Production E -Type



▶ Transfer Equipment N -Type



▶ Machine Tool Center N -Type



▶ Servo Robot CR -Type



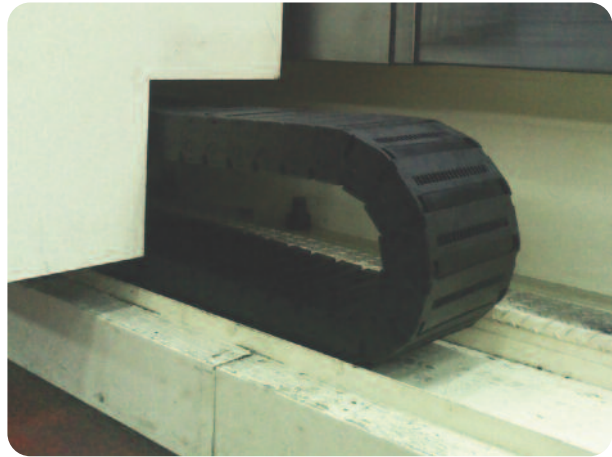
▶ LCD Production CR -Type



# APPLICATION IMAGE / 적용이미지



Transfer Equipment N-Type



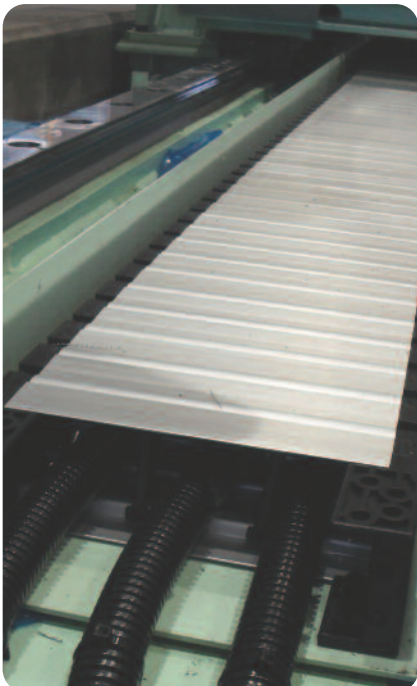
Transfer Equipment E-Type



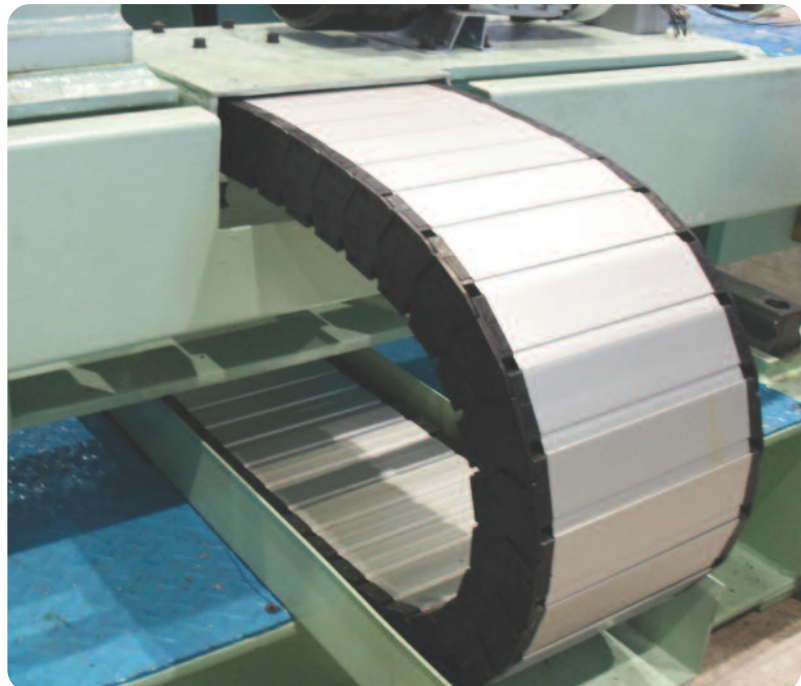
Transfer Equipment CR-Type



Transfer Equipment E-Type



Transfer Equipment E-Type

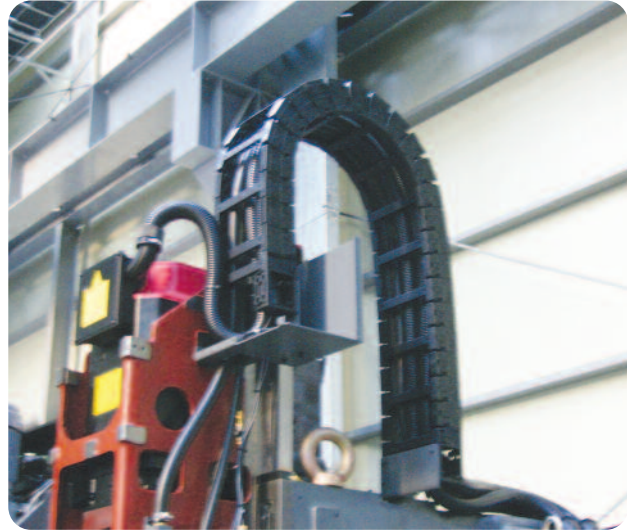


Transfer Equipment E-Type

## APPLICATION IMAGE / 적용이미지



Transfer Equipment CR -Type



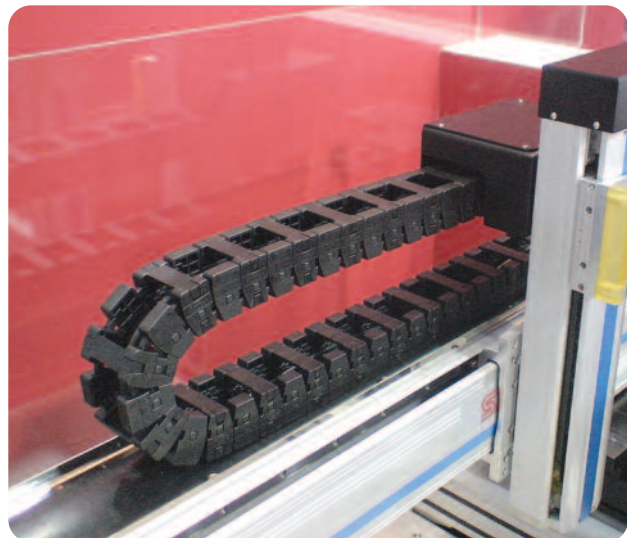
Machine Tool Center CR -Type



Transfer Equipment CR -Type

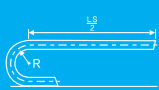
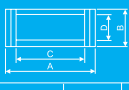




















Transfer Equipment E-Type



Servo Robot CR -Type

# CPS CABLECHAIN 대체사양안내

CPS Cable Chain Medium-Type	Pitch	Bending Radius R 	Weight kg/m	Speed m/sec	Temperature °C	Clearance 				Frame style	Divider possible with frame	Substitute specifications (대체사양) Shift Chain																					
CPS036.035 CPS036.055 CPS036.075 CPS036.100	36	70, 90, 120, 150	1.21 1.29 1.39 1.50	10	-30 ~ +130	59 38 35 27					ST044E																						
CPS050.050 CPS050.075 CPS050.100 CPS050.125 CPS050.150	50		100, 125, 150, 200			1.98 2.22 2.44 2.59 2.93						10	-30 ~ +130	78 52 50 38				ST044E															
CPS036N.035 CPS036N.055 CPS036N.075 CPS036N.100 CPS036N.125	36					50, 70, 90, 120, 150								1.18 1.21 1.29 1.40 1.47					10	-30 ~ +130	59 38 35 28				ST044N								
CPS050N.050 CPS050N.075 CPS050N.100 CPS050N.110 CPS050N.125 CPS050N.150 CPS050N.175 CPS050N.200	50													75, 100, 125, 150, 200							1.86 1.98 2.10 2.16 2.28 2.36 2.50 2.58					10	-30 ~ +130	78 52 50 40				ST055N	
Normail -Type	Pitch	Bending Radius R		Weight	Speed		Temperature	Clearance													Frame style							Divider possible with frame					
CPS068N CPS077N CPS095N CPS120N	68 77 95 120	75,100,150,200,250,300 100,120,140,200,250,300 135,150,200,230,280,400 180,200,250,300,350,400,500		3.57 3.72 5.29 5.68	10		-30 ~ +130	80-430 60 50-400 40																				ST072N ST095N ST120N					
Sliding -Type	Pitch	Bending Radius R	Weight	Speed				Temperature				Clearance				Frame style	Divider possible with frame																
CPS036S.035 CPS036S.055 CPS036S.075 CPS036S.100	36	70, 90,120,150	1.25 1.31 1.36 1.46	10		-30 ~ +130		67 41 35 28									ST044S,RS																
CPS068S CPS077S CPS095S CPS120S	68 77 95 120		100,150,200,250,300 120,140,200,250,300 135,150,200,230,280,400 180,200,250,300,350,400,500					3.89 4.11 5.81 6.26										10	-30 ~ +130	96-446 65 50-400 40					ST072S,RS ST095S,RS ST120S,RS								
Enclosed-Type	Pitch		Bending Radius R		Weight		Speed	Temperature	Clearance											Frame style	Divider possible with frame												
CPS036E.035 CPS036E.055 CPS036E.075 CPS036E.100	36		70, 90,120,150		1.23 1.35 1.46 1.63		10	-30 ~ +130	59 38 35 27																			ST044E					
CPS050E.050 CPS050E.075 CPS050E.100 CPS050E.150	50	100,125,150,200		2.07 2.35 2.61 3.23	10	-30 ~ +130			78 52 50 30.5						ST055E																		