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Product Application

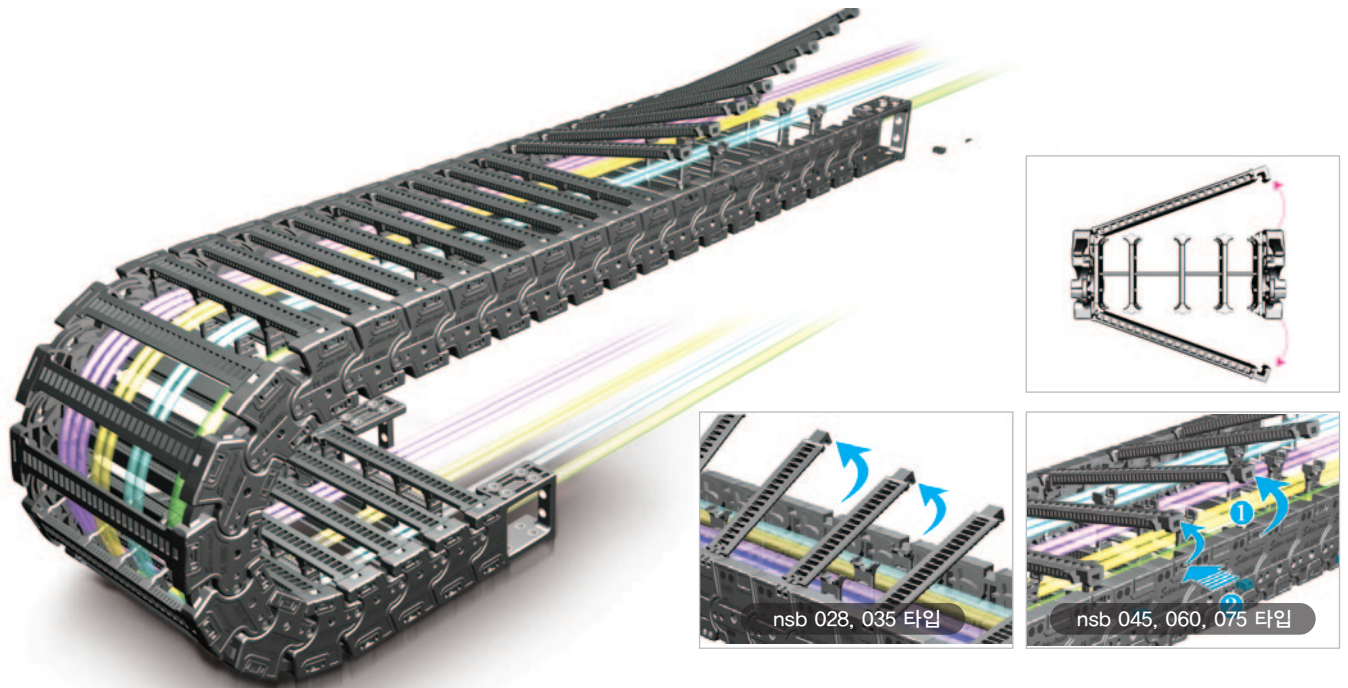


nsb Normal, Sliding Type



nsb065S

Feature of nsb Chain Clearin Room, Normal, Enclosed Type



Convenient Feature of Hinge Type of Frame

One side of Frame is pin type and the other side of Frame is hinge type that makes easy maintenance of assembly and disassembly.

Applicable at new Sabin Chain Cleanroom(nsb020/022CR excluded), Normal and Enclosed Type.

Nsb045/060/075E' frame is Alignment pin applied type

It is convenient to insert cables and hoses by opening upper and lower frame. Frame Alignment pin is applied to nsb045/060/075CR,N type to prevent separation of frame.

Effective Use of Divider

There are various types of Divider such as DV-S, DV-R, DV-M to establish effective section composition.

DV/S :

Used to fix a separator that is the same length as the frames

DV/R :

Roller applied Divider to prevent abrasion of cables

DV/M :

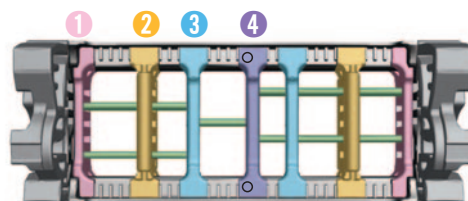
Used to separate individual cables

DV/T :

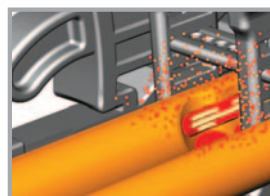
Used to not be separated from frame. It is used with Divider Pin.

DV/W :

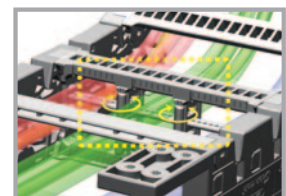
Used to hold the cables in place at both ends of the cable chain



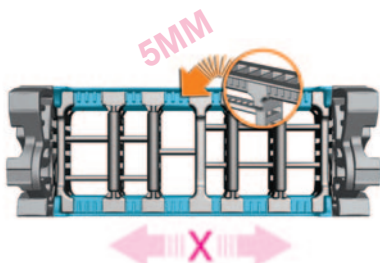
DV-R, DV-M are adopted to nsb045, 060, 075 size of Cable Chain.



Friction occurred and it causes damage of cable's sheath



DV-R is designed to prevent damage of Cable's sheath. When cables are not securely tightened, they rub surface of Roller. In this case, roller unit prevents damage of Cable's sheath. (When dust is strictly prohibited environment, DV-R is recommended to be used.)



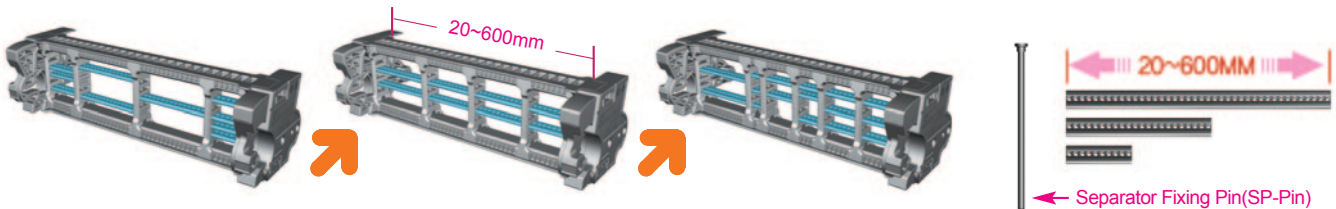
Frame with teeth every 5mm makes frame does not move to left and right side but placed firmly.
(Applied to nsb028/035/045/060/075)

Feature of nsb Chain Clearin Room, Normal, Enclosed Type

Secure Space by utilizing Divider and Separator

You should make section composition every second frames to make sure long lifetime of cables by preventing from twisting and lost of cables inside. (It's strongly recommended for customers who want to use for long time). It's basic issue and one of the most important factors showing long lifetime of cables.

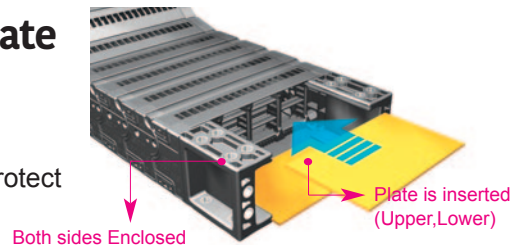
You can make suitable section composition by using our diverse our dividers and separators that can be modified from 20mm ~ 600mm.



FEB can be fully enclosed by inserting Steel Plate like in the image.

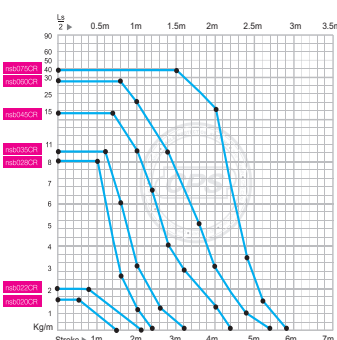
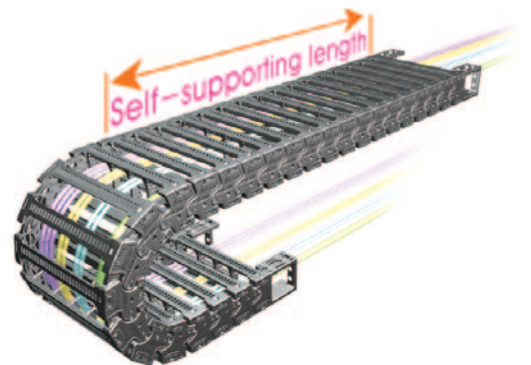
(Steel Plate can be ordered separately)

Steel Plate is inserted thru the connecting groove of FEB. It helps to protect cables more securely from external particles.

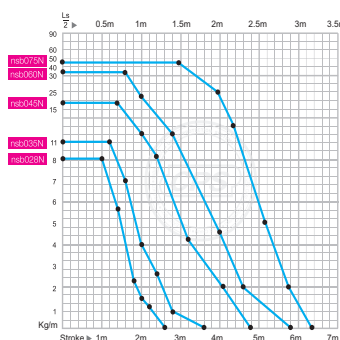


Unsupported Length

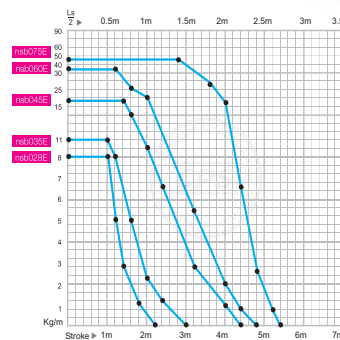
Unsupported Length means Cable Chain maintained in rigid linear state while it is moving forward like in the image. Generally, when size of Cable Chain become bigger, its Unsupported Length also become increased. So if Unsupported Length is an important factor to the application, please check each Cable Chain's property of Unsupported Length to select correct Cable Chain model.



nsb Cleanroom Type (CR)



nsb Normal Type (N)

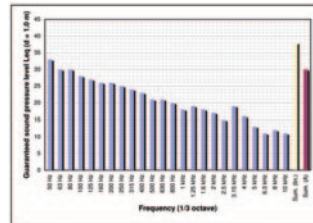


nsb Enclosed Type (E)

Feature of nsb Chain Clearin Room, Normal, Enclosed Type

The Quietest Cable Chain In The World

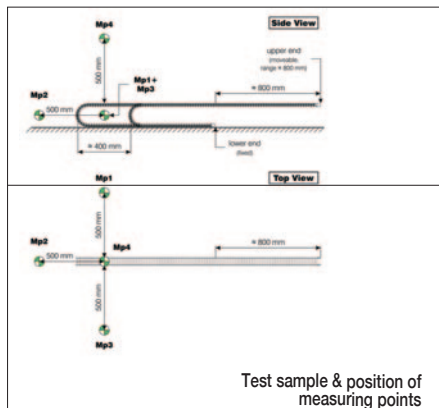
30dB noise level was recorded at TUV testing facility in Germany.
Patent obtained!



3 Measurement Procedure

3.1 Fundamentals

- Date and time of measurements: March 15th 2007
- Environmental conditions:
 - Temperature: 21 °C (indoor, air conditioned)
 - Background noise level: $L_{pA} \leq 29$ dB(A) (air condition off during measurements) $\Rightarrow$ no correction was made for the influence of background noise (see Annex 2, p. 9)
 - Environmental correction K_{pA} : $K_{pA} = 0$ dB



All measurement results in detail are compiled in Annex 2 (p. 9). The summary below describes the evaluation of the measurements according to 2000/14/EC [1] and the guidelines belonging to this directive [2].

- Arithmetic mean of the L_{pA} ($d = 0.5$ m (as measured)): 33.1 dB
- Product standard deviation S_p : 0.8 dB
- Estimated comparative standard deviation S_c : 1.0 dB
- Total standard deviation S_t : 1.3 dB
- Confidence level: 95 %
- Quantity of samples: 5
- Coverage factor (see [2], annex A to part 4, table A1): 2.132
- Correction value K ($K = S_t \times$ coverage factor): 2.8
- Guaranteed sound pressure level L_{pA} ($d = 1.0$ m): 30 dB

Figure 2 shows the guaranteed sound pressure level L_{pA} for frequencies from 50 Hz to 10 kHz (1/3 octave). The values for each frequency band are calculated as given above.

Measurement results

- [1] DIRECTIVE 2000/14/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 May 2000 on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors
- [2] Position paper on guidelines for the application of the European Parliament and Council Directive 2000/14/EC on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors, December 2001
- [3] DIN EN ISO 3744 (ISO 3744 : 1995), Acoustics – Determination of sound power level of noise sources using sound pressure – Engineering method in an essentially free field over a reflecting plane, November 1995
- [4] DIN EN ISO 4871 (ISO 4871 : 1996), Acoustics – Declaration a verification of noise emission values of machinery and equipment, March 1997
- [5] DIN EN 61672-1 (IEC 61672-1:2002), Electroacoustics – Sound level meters – Part 1: Specification, October 2003

Reference documents



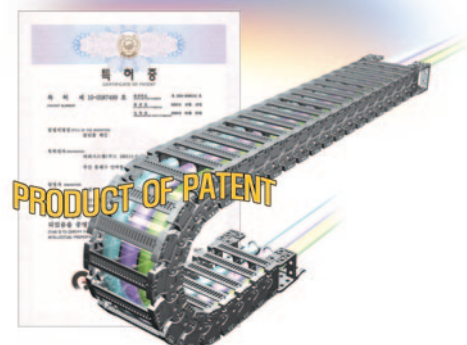
Low Dust Cable Chain That Is Appropriate At Clean Room Environment

sabin Chain is 'NET' certified product by Ministry of Science and Technology in terms of level of low dust and noise.

Next Cable Chain developed by CPS' Own Technology

Sabin Chain was developed by CPS' independent Technology and patent registered in USA, China, Republic of Korea, Germany and Italy.

* CR-Type: 10-0587499, E-Type: 10-0838583, S-Type: 10-0854053

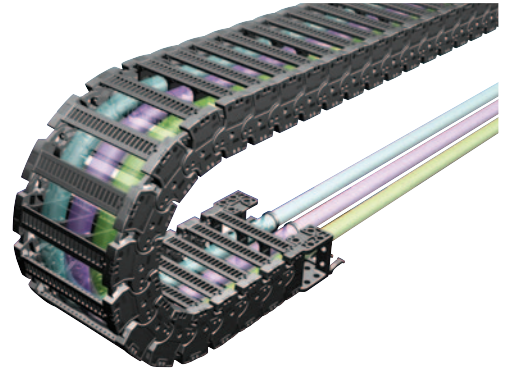


Feature of Each nsb Chain Series

nsb-CR : Cleanroom Type

Cable Chain that performs Low Noise and Low Dust applying to production line of Semiconductors, LCD and PDP where dust and noise is strictly regulated environment.

It can be produced ATEX, ESD retardant type to prevent damage of High Concentration circuit, Explosion and static electricity.

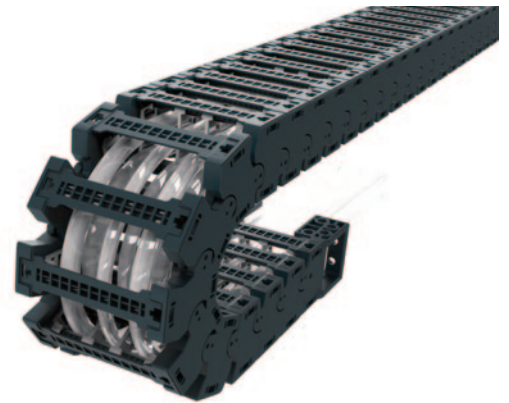


G Clean Chain

Cable Chain that performs Low Noise and Low Dust applying to production line of Semiconductors, LCD and PDP where dust and noise is strictly regulated environment.

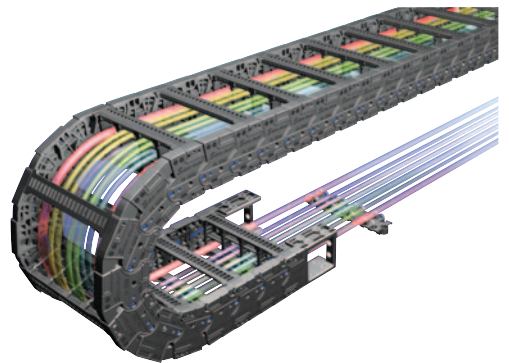
G Clean Chain is newly launched made of UHMW-PE material(molecular 6.7M) which could substitute "Gore cable chain and GUR Pad cable chain.

World first Certificates IPA ISO CLASS 1 as cable inserted test.



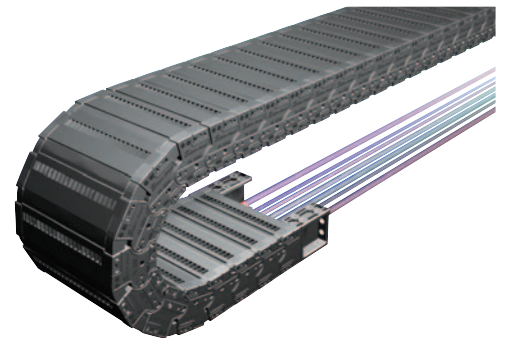
nsb-N : Normal Type

Cable Chain that performs Low Noise and Low Dust as its durability and elastic force improved.



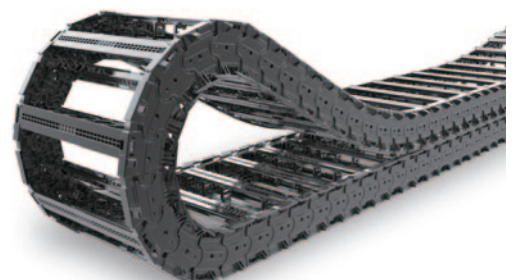
nsb-E : Enclosed Type

Cable Chain that used in external particle-exposed environment such as Welding Line of Automobile Manufacturer, Painting Shop. It protects cables and hoses by using fully enclosed type of frame.



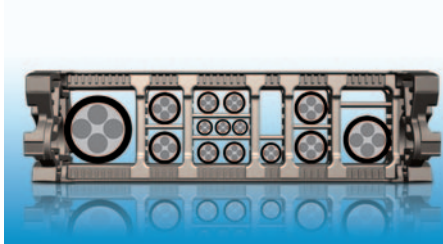
nsb-S : Sliding Type (for Long Travel)

Cable Chain that is used for Long Travel Operation required environment. It is sliding type of Cable Chain and widely used where Low noise, low dust and Speedy Operation is required.



Installation Method of Cable Chain

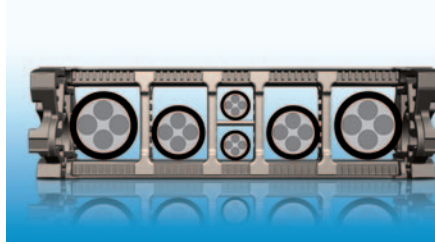
Arrangement and Installation of cable



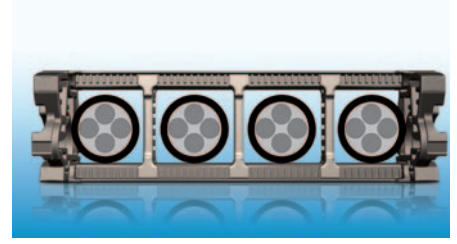
Available Space

Rounded Cable : 10% of space to be guaranteed based on Dia. of cable
 Flat Cable : 10% of space to be guaranteed based on thickness of cable
 Hose : 20% of space to be guaranteed based on Dia. of hose

10% of space should be secured between cables. When different dia. of cables are inserted, divider should be used. When there is 10% of space between cables, separator should be used.



Single layer arrangement of cables are a standard. Big sized cables are placed outside and small sized cables are placed at center. Do not overlap cables but separate them by using separator.



Cables should be placed straightly and arrange them to maintain balance of weight like in the image.

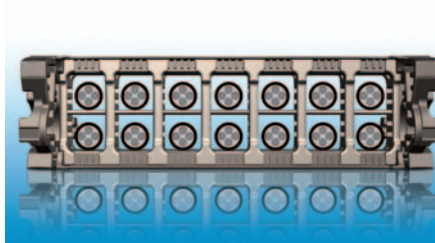
Bending Radius Value, "R"



Minimum "R" Value of Cable :
 Multiply 8 to 10 against the biggest cable
Minimum "R" Value of Hose :
 Multiply 15 to 20 against the biggest hose

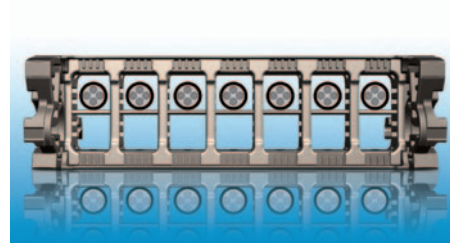
R value of Cable Chain should exceeds the R value of cable or hose.

Arrangement of Cable and Hose



When sum of 2 cables are bigger than X1.2, Inner Height of Cable Chain, Divider does not to be installed. But when it does not exceed X1.2, Divider is recommended to be used.
 In case of separator, when cable or hose' dia is lower than X0.5, separators is recommended to be used.

Arrangement of Cable and Hose



Cables should be placed the upper section when it designed one row arrangement



When cable is inserted inside of Cable Chain, its condition should be maintained straightly to prevent cable that to be entangled.

General Information

Material	: CPS-Amide (PA6+G.F)
Noise level	: 30dB(DIN EN 61672-1)
Speed	: 10m/s
Acceleration	: 20m/s²
Temperature	: -30℃ ~ +130℃
Special production	: ESD, UV, Customized color
Certificate	: CE, IPA, ATEX(Ex), TUV, RoHs2

Value of Speed/Acceleration is subject to change according to cable's amount and travel length.

Calculation Table

Length of Cable Chain

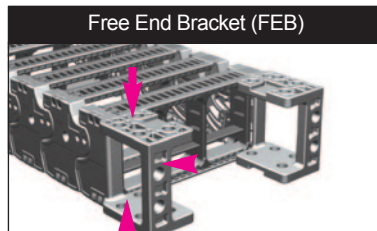
: $L = \frac{1}{2} \times L_s + L_p$

Bending Radius

: Multiply 8~10 of the biggest cable

: Multiply 15~20 of the biggest hose

Bracket Type



IPA Test result

nsb020CR.20.R48 : ISO Class1
nsb035CR.55.R75 : ISO Class2
nsb045CR.75.R75 : ISO Class1

Dimension Table

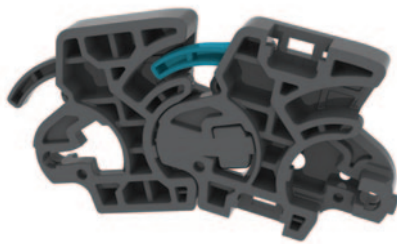
nsb Chain Clean Room Type	Pitch	Bending Radius (R)	Weight kg/m	Speed m/s	Temperature ℃	Size				Frame Type	Section- Composition
						A	B	C	D		
nsb020CR	20	28, 38, 48	0.32 0.35	10	-30 ~ +130	34 54	22	20 40	15		
nsb022CR	22	35	0.43	10	-30 ~ +130	30	29	16	22		
		45	0.47			41		27			
		75	0.51			51		37			
		100	0.55			61		47			
		120	0.67			81		67			
nsb028CR	28	50	0.90	10	-30 ~ +130	55	38	35	26		
		70	0.98			70		50			
		90	1.02			75		55			
		120	1.12			95		75			
		150	1.27			120		100			
nsb035CR	35	75	1.41	10	-30 ~ +130	145	52	125	40		
		100	1.59			170		150			
		125	1.74			195		175			
		150	1.84			220		200			
		200	1.00			55		35			
nsb045CR	45	75	1.06	10	-30 ~ +130	70	70	50	49		
		100	1.09			75		55			
		120	1.17			95		75			
		140	1.29			120		100			
		200	1.39			145		125			
nsb060CR	60	125	1.53	10	-30 ~ +130	170	82	150	56		
		140	1.65			195		175			
		190	1.73			220		200			
		220	2.59			80		50			
		270	2.74			105		75			
nsb075CR	75	180	2.90	10	-30 ~ +130	130	108	100	78		
		200	3.11			155		125			
		250	3.23			170		140			
		300	3.31			180		150			
		350	3.41			195		165			

Ordering

nsb 028CR 35. R50 / F 840L : (DV:2)

- Quantity of Divider(Link)
- Length(mm)
- Bracket Type : F-Free End Bracket FT-Tie Wrap
FST-System Tie Wrap
- Bending radius
- Inside width
- Clean Room type (CR)
- Sabin Chain

Low Noise due to innovative design of side band.



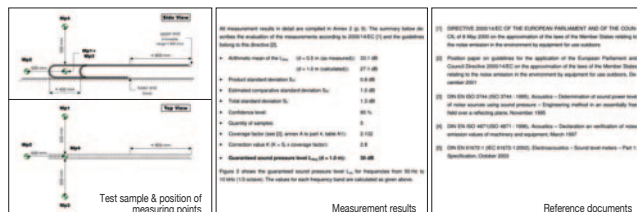
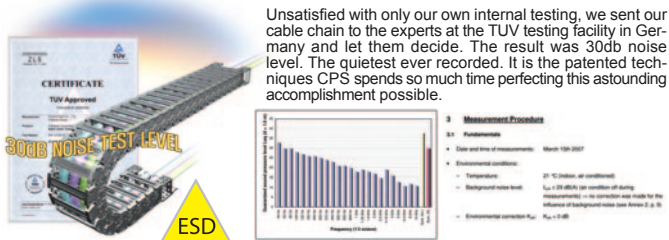
nsb CR type



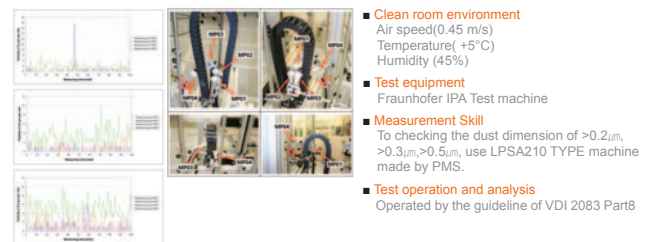
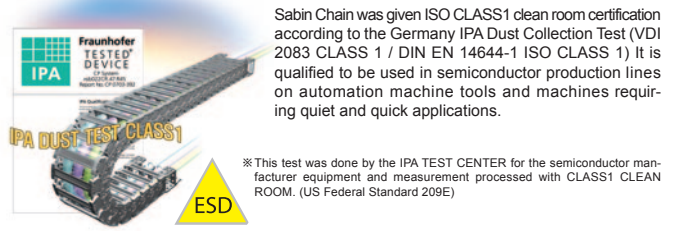
nsb N type

As it's designed differently compared to Normal type that has more friction space when assembled. It means that CR type has less friction space each other when assembled, thus, it makes low noise during operation.

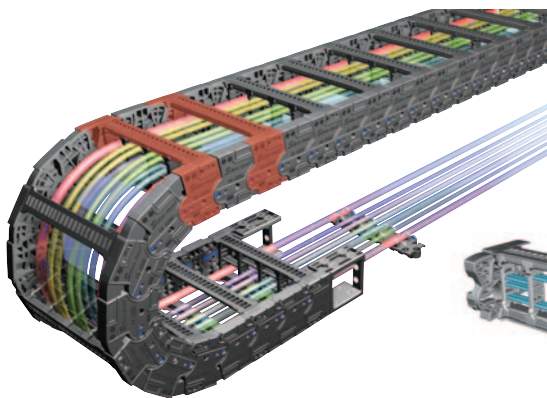
The Quietest Cable Chain in the world



Low Dust Cable Chain

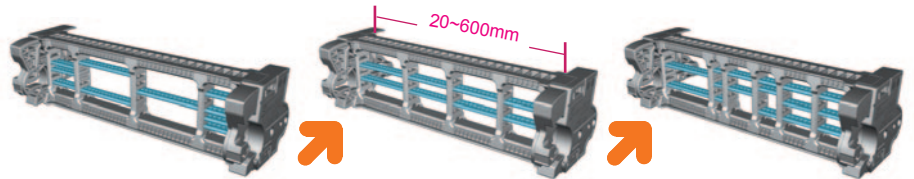


Section composition method



You should make section composition every second frames to make sure long lifetime of cables by preventing from twisting and lost of cables inside. (It's strongly recommended for customers who want to use for long time). It's basic issue and one of the most important factors showing long lifetime of cables.

You can make suitable section composition by using our diverse our dividers and separators that can be modified from 20mm ~ 600mm.

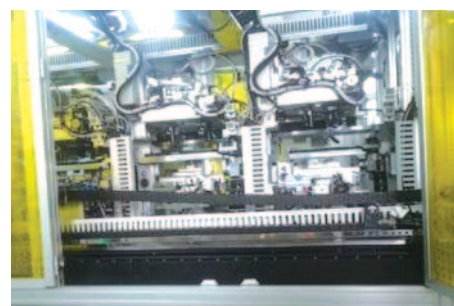


Application of nsb Chain Clean Room type



NSB 022CR

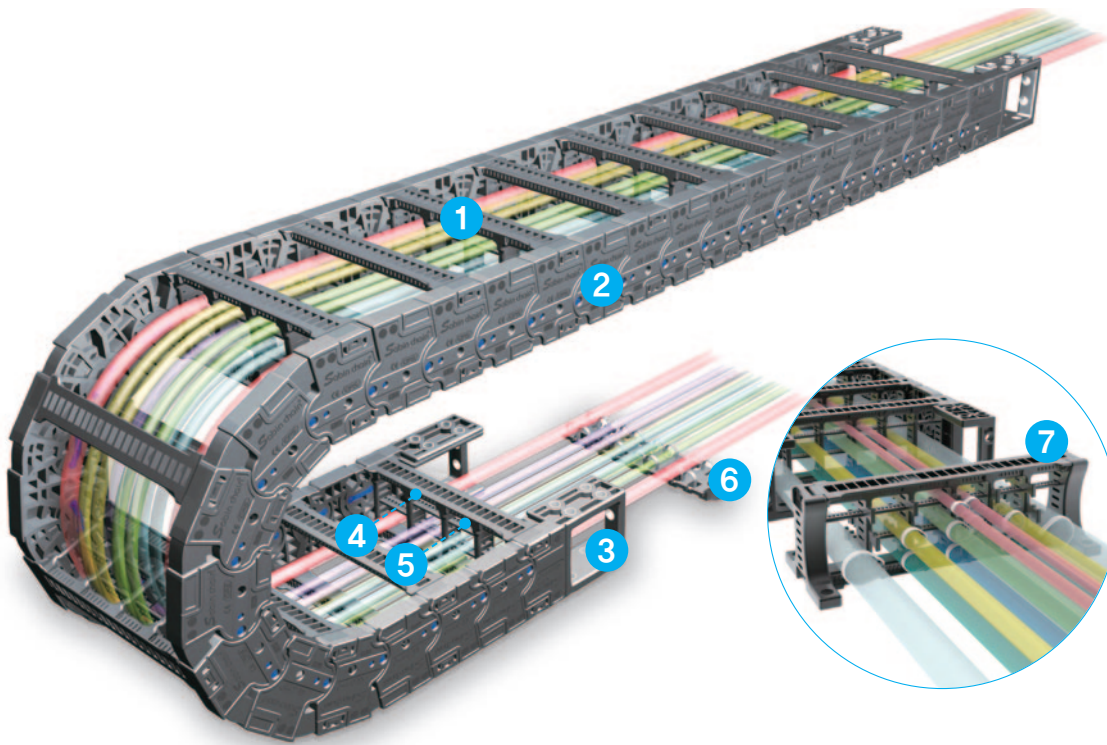
Application: Testing machine for Lead application
Location: Korea



NSB 035CR

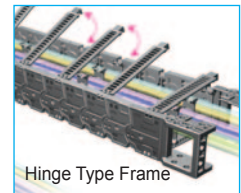
Application: LCD Cleaner Line
Location: Korea

Part of nsb Chain Clean Room Type



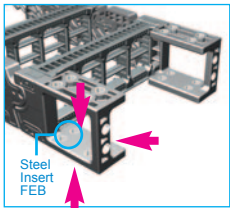
❶ Frame (Hinge Type) (FR)

A part that connects with LH, RH Side Band. There are every 5mm bumps that prevent dividers to be securely positioned at a place. One side of frame has a hinge structure that helps easy assembly and disassembly.



❷ Side Band (SB)

A part that connects upper and lower frame. There are LH and RH type.



❸ FREE END BRACKET (FEB)

A part that connects to each end of Cable Chain. There are holes are formed where steel washers are inserted to fix FEB to fixing plate securely.

❹ Divider (DV-S, M, R, T)

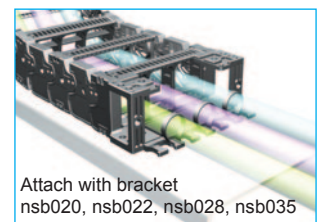
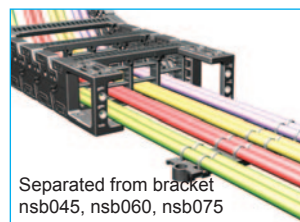
A part that prevents entanglement risk of cables and hoses by being installed vertically.

❺ Separators (SP)

A part that prevent entanglement risk of cable and hoses by being installed horizontally.

❻ Tie wrap (TW)

A part that prevents damage of the cable and hose by twisting & pulling movements. It can be used as assembling with bracket or separating from the bracket at end position of chain.

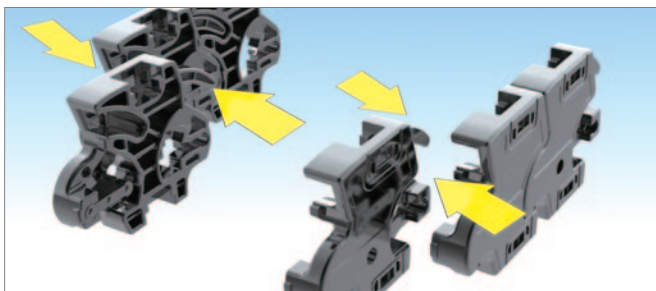


❼ System tie wrap (STW)

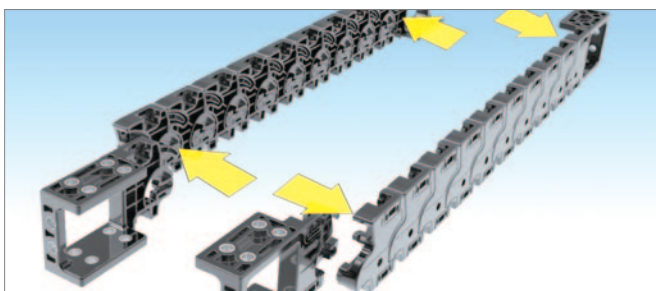
A part that connects to first or end of Cable Chain. Cables and hoses are arranged at System Tie Wrap by several layers and being tightened using Cable Tie. There are 2 types. One is separated from FEB and the other one is assembled to FEB.

Assembly procedure of nsb Chain Clean Room Type

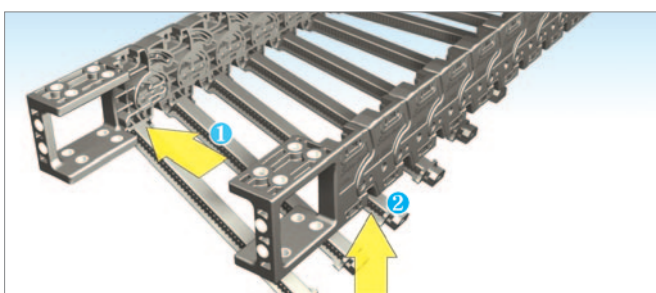
The assembling process of CR-Type of New Sabin Chain is like below and users must use rubber hammer with careful combination of Divider and Separator.



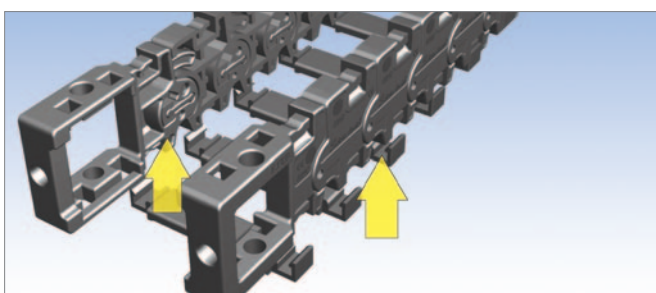
1 Connect each side band as many as you need.



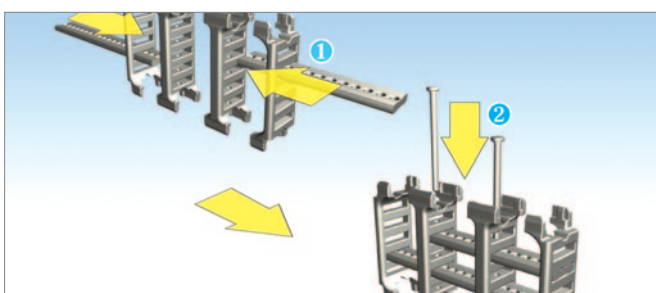
2 Assemble the end brackets on both ends.



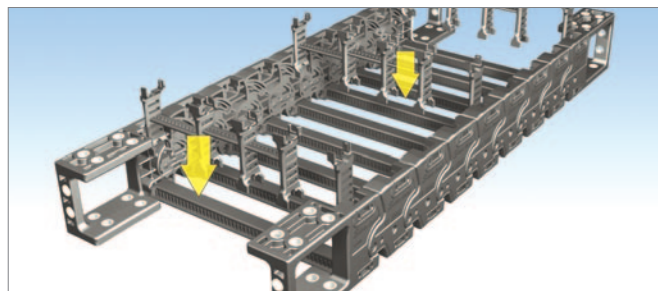
3 Attach frames to one side groove on the frames, then the other side.



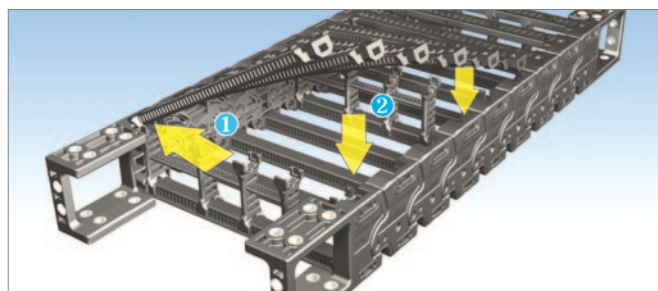
3-1 For nsb020CR and nsb022CR, they are not Hinge Type for method to connect frames, but Hook Type on both sides.



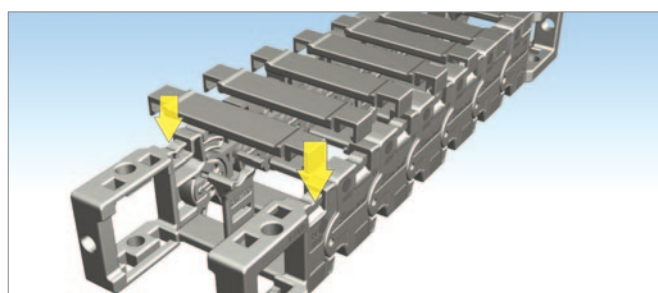
4 For nsb045, 060 and 075, connect the pin of separator in hole of divider after inserting separator in hole of divider.
For nsb028 and nsb035, separator fixing pins are not used.



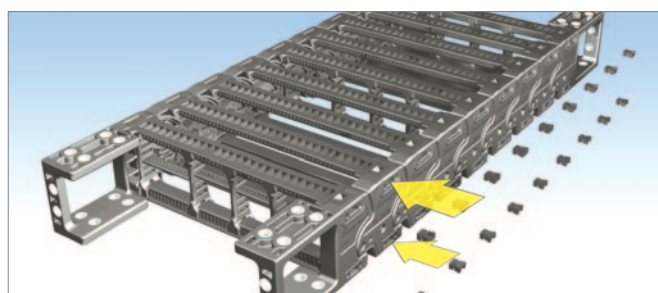
5 Fix the separator and divider patterns to the bottom-side frames as needed.



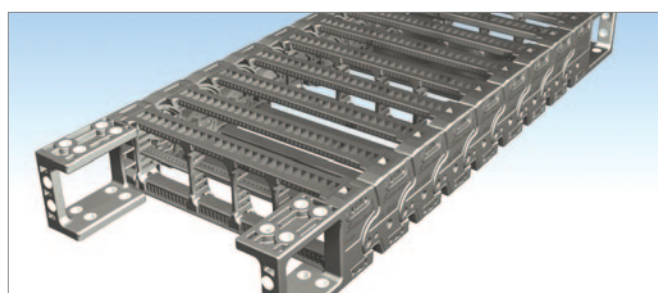
6 Attach frames to one side groove on the frames, then the other side.



6-1 For nsb020CR and nsb022CR, they are not Hinge Type for method to connect frames, but Hook Type on both sides.



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.)

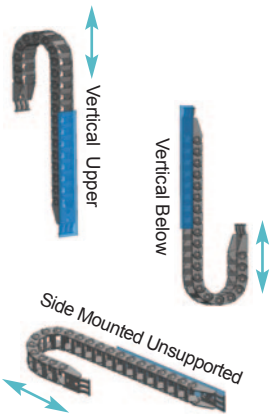
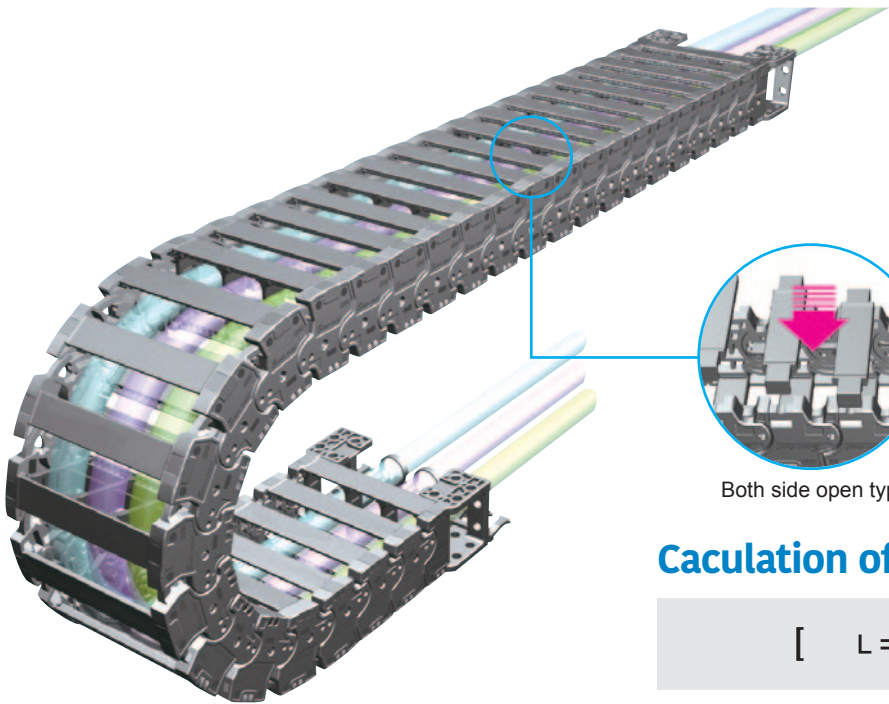


8 Complete to assemble New Sabin CR-Type, Sabin Chain.

Part list of Shift Chain-Normal Type

Model	Classification	Part number	Description
nsb020CR	SIDE BAND	nsb-SB020CR.R*(LH) nsb-SB020CR.R*(RH)	Left side band of nsb020CR Right side band of nsb020CR
	FRAME	sb-FR018CR.20 sb-FR018CR.40	Frame, 20mm Frame, 40mm
	FREE END BRACKET	nsb-FEB020CR	Free End bracket of nsb020CR
	DIVIDER	nsb-DV020CR	Normal divider, clean room type
	TIE WRAP	sb-TW018CR.20 sb-TW018CR.40	Tie wrap for end bracket to fix cables, 20mm Tie wrap for end bracket to fix cables, 40mm
nsb022CR	SIDE BAND	nsb-SB022CR.R*(LH) nsb-SB022CR.R*(RH)	Left side band of nsb022CR Right side band of nsb022CR
	FRAME	sb-FR020CR.16 S-FR033/020CR.27 S-FR033/020CR.37 S-FR033/020CR.47 S-FR033/020CR.67 S-FR033/020CR.77 sb-FR020CR.100	Frame, 16mm Frame, 27mm Frame, 37mm Frame, 47mm Frame, 67mm Frame, 77mm Frame, 100mm
	FREE END BRACKET	nsb-FEB022CR	Free End bracket of nsb022CR
	DIVIDER	nsb-DV022CR	Normal divider, cleanroom type
	TIE WRAP	sb-TW020CR.16 S-TW033/020CR.27 S-TW033/020CR.37 S-TW033/020CR.47 S-TW033/020CR.67 S-TW033/020CR.77	Tie wrap for end bracket to fix cables, 16mm Tie wrap for end bracket to fix cables, 27mm Tie wrap for end bracket to fix cables, 37mm Tie wrap for end bracket to fix cables, 47mm Tie wrap for end bracket to fix cables, 67mm Tie wrap for end bracket to fix cables, 77mm
nsb028CR	SIDE BAND	nsb-SB028CR.R*(LH) nsb-SB028CR.R*(RH)	Left side band of nsb028CR Right side band of nsb028CR
	FRAME	sb-FR/M.35 sb-FR/M.50 sb-FR/M.55 sb-FR/M.75 sb-FR/M.100 sb-FR/M.125 sb-FR/M.150 sb-FR/M.175 sb-FR/M.200	Frame, 35mm Frame, 50mm Frame, 55mm Frame, 75mm Frame, 100mm Frame, 125mm Frame, 150mm Frame, 175mm Frame, 200mm
	FREE END BRACKET	nsb-FEB028CR	Free End bracket of nsb028CR
	DIVIDER	sb-DV028/M sb-DV028/S	Normal divider, cleanroom type To fix separstors at the both side section
	SEPARATOR	S-SP/M.35 S-SP/M.50 S-SP/M.75 S-SP/M.100 S-SP/M.125 S-SP/M.150 S-SP/M.175 S-SP/M.200	Separator, 35mm Separator, 50mm Separator, 75mm Separator, 100mm Separator, 125mm Separator, 150mm Separator, 175mm Separator, 200mm
	TIE WRAP	S-TW036/025CR.35 S-TW036/025CR.50 S-TW036/025CR.55 S-TW036/025CR.75 S-TW036/025CR.100 S-TW036/025CR.125 S-TW036/025CR.150	Tie wrap for end bracket to fix cables, 35mm Tie wrap for end bracket to fix cables, 50mm Tie wrap for end bracket to fix cables, 55mm Tie wrap for end bracket to fix cables, 75mm Tie wrap for end bracket to fix cables, 100mm Tie wrap for end bracket to fix cables, 125mm Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV028/W S-TW.EB028	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
nsb035CR	SIDE BAND	nsb-SB035CR.R*(LH) nsb-SB035CR.R*(RH)	Left side band of nsb035CR Right side band of nsb035CR
	FRAME	sb-FR/M.35 sb-FR/M.50 sb-FR/M.55 sb-FR/M.75 sb-FR/M.100 sb-FR/M.125 sb-FR/M.150 sb-FR/M.175 sb-FR/M.200	Frame, 35mm Frame, 50mm Frame, 55mm Frame, 75mm Frame, 100mm Frame, 125mm Frame, 150mm Frame, 175mm Frame, 200mm
	FREE END BRACKET	nsb-FEB035CR	Free End bracket of nsb035CR
	DIVIDER	sb-DV035/M sb-DV035/S	Normal divider, cleanroom type To fix separstors at the both side section
	SEPARATOR	S-SP/M.35 S-SP/M.50 S-SP/M.75 S-SP/M.100 S-SP/M.125 S-SP/M.150 S-SP/M.175 S-SP/M.200	Separator, 35mm Separator, 50mm Separator, 75mm Separator, 100mm Separator, 125mm Separator, 150mm Separator, 175mm Separator, 200mm
	TIE WRAP	S-TW050/035N.50 S-TW050/035N.55 S-TW050/035N.75 S-TW050/035N.100 S-TW050/035N.125 S-TW050/035N.150 S-TW050/035N.175	Tie wrap for end bracket to fix cables, 50mm Tie wrap for end bracket to fix cables, 55mm Tie wrap for end bracket to fix cables, 75mm Tie wrap for end bracket to fix cables, 100mm Tie wrap for end bracket to fix cables, 125mm Tie wrap for end bracket to fix cables, 150mm Tie wrap for end bracket to fix cables, 175mm
	SYSTEM TIE WRAP	S-TW050/035N.200 sb-DV035/W S-TW.EB035	Tie wrap for end bracket to fix cables, 200mm Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket

Model	Classification	Part number	Description
nsb045CR	SIDE BAND	nsb-SB045CR.R*(LH) nsb-SB045CR.R*(RH)	Left side band of 045CR Right side band of 045CR
	FRAME PIN	S-FP/S1	Frame Pin
	FRAME	sb-FR045.50	Frame, 50mm
		sb-FR045.75	Frame, 75mm
		sb-FR045.100	Frame, 100mm
		sb-FR045.125	Frame, 125mm
		sb-FR045.140	Frame, 140mm
		sb-FR045.150	Frame, 150mm
		sb-FR045.165	Frame, 165mm
		sb-FR045.175	Frame, 175mm
		sb-FR045.190	Frame, 190mm
		sb-FR045.200	Frame, 200mm
		sb-FR045.240	Frame, 240mm
		sb-FR045.250	Frame, 250mm
		sb-FR045.300	Frame, 300mm
nsb060CR nsb060CRL	FREE END BRACKET	nsb-FEB045CR sb-FEB/WH045	Free End bracket of nsb045CR Steel washer
	DIVIDER	sb-DV045CR/M sb-DV045CR/S sb-DV045CR/R sb-DV045CR/T sb-DV045/TP	Normal divider To fix separators at the both side section Roller divider to reduce friction with cables, Clean room type T divider T divider pin
	SEPARATOR	sb-SP/400.Frame SP-PIN045	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50	Tie wrap for end bracket to fix cables, 50mm
		S-TW75	Tie wrap for end bracket to fix cables, 75mm
		S-TW100	Tie wrap for end bracket to fix cables, 100mm
		S-TW125	Tie wrap for end bracket to fix cables, 125mm
		S-TW150	Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV045/W S-TW.EB045	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
nsb075CR	SIDE BAND	nsb-SB060CR.R*(LH) nsb-SB060CR.R*(RH)	Left side band of 060CR Right side band of 060CR
	FRAME PIN	S-FP/S1	Frame Pin
	FRAME	sb-FR060.75	Frame, 75mm
		sb-FR060.100	Frame, 100mm
		sb-FR060.125	Frame, 125mm
		sb-FR060.150	Frame, 150mm
		sb-FR060.175	Frame, 175mm
		sb-FR060.190	Frame, 190mm
		sb-FR060.200	Frame, 200mm
		sb-FR060.230	Frame, 230mm
		sb-FR060.250	Frame, 250mm
		sb-FR060.300	Frame, 300mm
		sb-FR060.350	Frame, 350mm
		sb-FR060.400	Frame, 400mm
nsb075CR	FREE END BRACKET	nsb-FEB060CR sb-FEB/WH060	Free End bracket of nsb060CR Steel washer
	DIVIDER	sb-DV060/M sb-DV060/S sb-DV060/R sb-DV060/T sb-DV060/TP	Normal divider To fix separators at the both side section Roller divider to reduce friction with cables, Clean room type T divider T divider pin
	SEPARATOR	sb-SP/400.Frame SP-PIN060	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50	Tie wrap for end bracket to fix cables, 50mm
		S-TW75	Tie wrap for end bracket to fix cables, 75mm
		S-TW100	Tie wrap for end bracket to fix cables, 100mm
		S-TW125	Tie wrap for end bracket to fix cables, 125mm
		S-TW150	Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV060/W S-TW.EB060	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
nsb075CR	SIDE BAND	nsb-SB075CR.R*(LH) nsb-SB075CR.R*(RH)	Left side band of 075CR Right side band of 075CR
	FRAME PIN	S-FP/S2	Frame Pin
	FRAME	sb-FR075/100.75	Frame, 75mm
		sb-FR075/100.100	Frame, 100mm
		sb-FR075/100.115	Frame, 115mm
		sb-FR075/100.125	Frame, 125mm
		sb-FR075/100.150	Frame, 150mm
		sb-FR075/100.175	Frame, 175mm
		sb-FR075/100.200	Frame, 200mm
		sb-FR075/100.240	Frame, 240mm
		sb-FR075/100.250	Frame, 250mm
		sb-FR075/100.290	Frame, 290mm
		sb-FR075/100.300	Frame, 300mm
		sb-FR075/100.350	Frame, 350mm
		sb-FR075/100.400	Frame, 400mm
		sb-FR075/100.450	Frame, 450mm
		sb-FR075/100.500	Frame, 500mm
		sb-FR075/100.550	Frame, 550mm
		sb-FR075/100.600	Frame, 600mm
nsb075CR	STEEL END BRACKET	nsb-FEB075CR sb-FEB/WH075	Free End bracket of nsb075CR Steel washer
	DIVIDER	sb-DV075/M sb-DV075/S sb-DV075/R sb-DV075/T sb-DV075/TP	Normal divider To fix separators at the both side section Roller divider to reduce friction with cables, Clean room type T divider T divider pin
	SEPARATOR	sb-SP/400.Frame SP-PIN075	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50	Tie wrap for end bracket to fix cables, 50mm
		S-TW75	Tie wrap for end bracket to fix cables, 75mm
		S-TW100	Tie wrap for end bracket to fix cables, 100mm
		S-TW125	Tie wrap for end bracket to fix cables, 125mm
		S-TW150	Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV075/W S-TW.EB075	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket

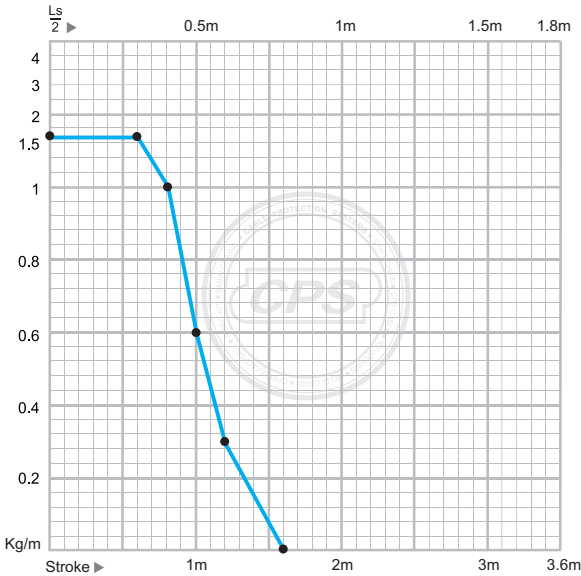


Both side open type

Caculation of the Chain Length

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

Unsupported Length



Other Length Restrictions

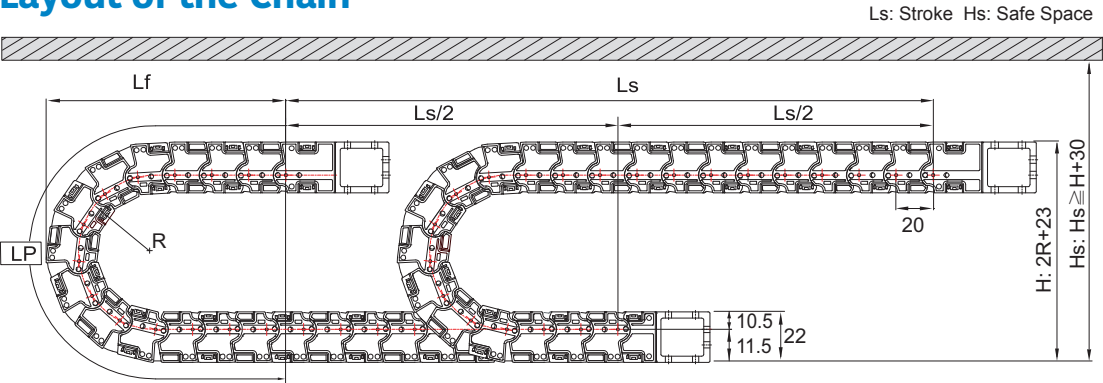
- Vertical Upper(Max)
- = 1.0m
- Vertical Below(Max)
- = 5.0m
- Side Mounted Unsupported(Max)
- = 0.5m

Ordering

nsb 020CR, 20, R48 / F-600L : (DV:2)

Clean Room Type (CR)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loop Projection)	H(Moving Height)
28	168	80	79
38	200	90	99
48	231	100	119

Dividers (DV) Assemble divider every third links.



Chain Cross Section



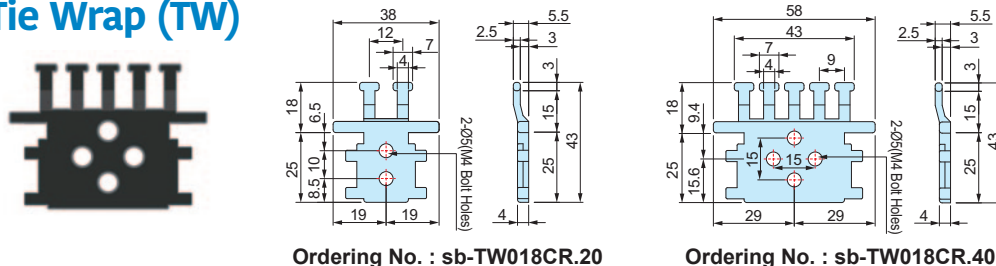
Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb020CR	34 54	22	20 40	15	0.32 0.35

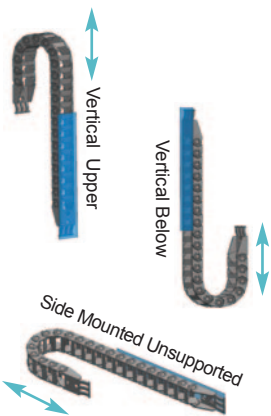
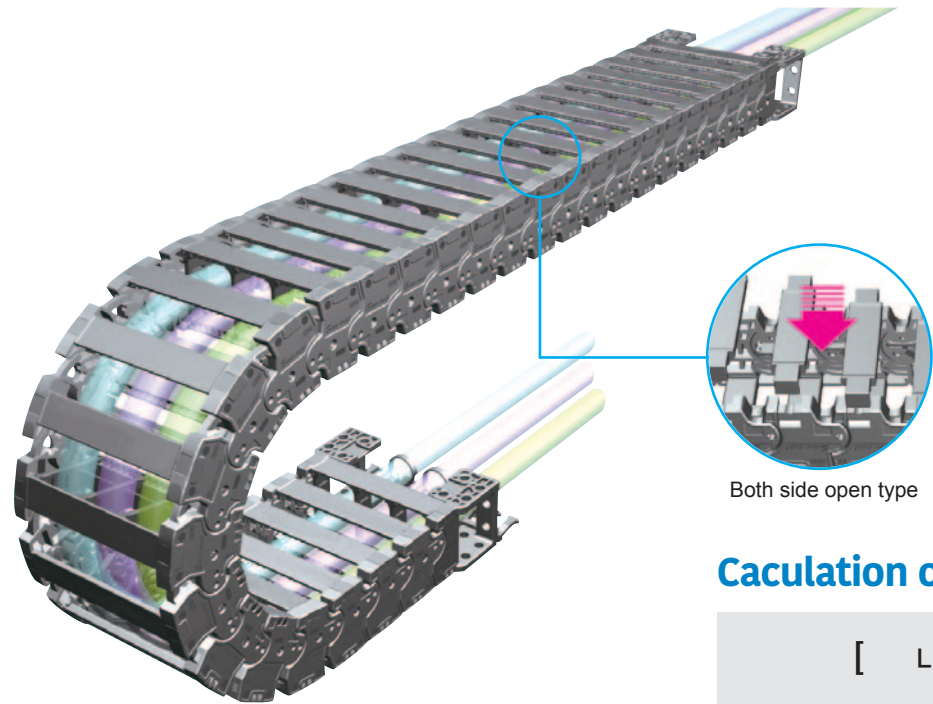
Free End Bracket (FEB)

Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb020CR	38 58	22	20 40	15	16 36	M4 Bolt Holes

Moving End	Fixing End	Front point
2-Ø5(M4 Bolt Holes)	2-Ø5(M4 Bolt Holes)	2-Ø5(M4 Bolt Holes)

Tie Wrap (TW)





Both side open type

Caculation of the Chain Length

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

Other Length Restrictions

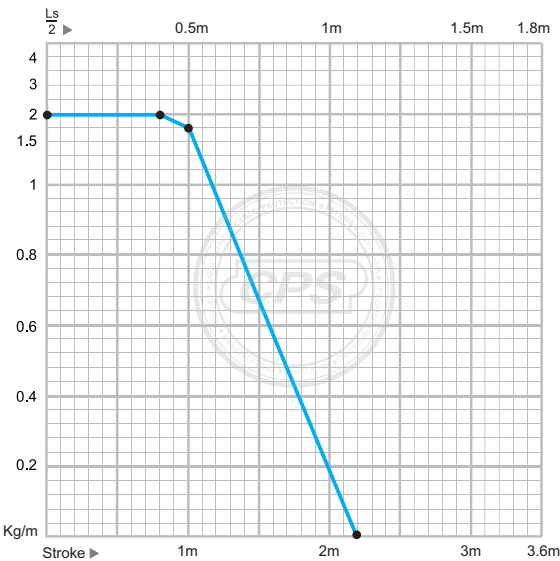
- Vertical Upper(Max) = 1.0m
- Vertical Below(Max) = 5.0m
- Side Mounted Unsupported(Max) = 0.5m

Ordering

nsb 022CR. 16. R35 / F – 660L : (DV:2)

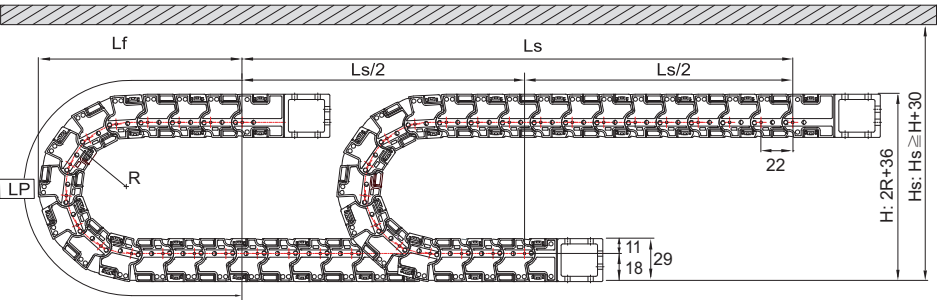
Clean Room Type (CR)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Unsupported Length



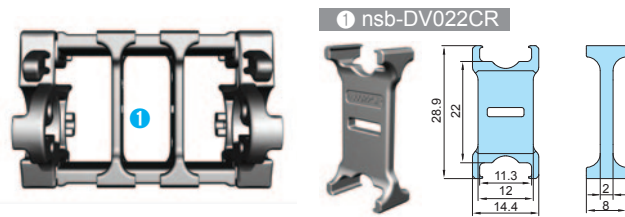
Layout of the Chain

Ls: Stroke Hs: Safe Space

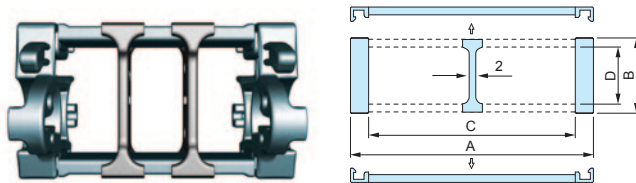


Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
35	198	97	106
45	230	107	126
75	324	137	186
100	402	162	236
120	465	182	276

Dividers (DV) Assemble divider every third links.

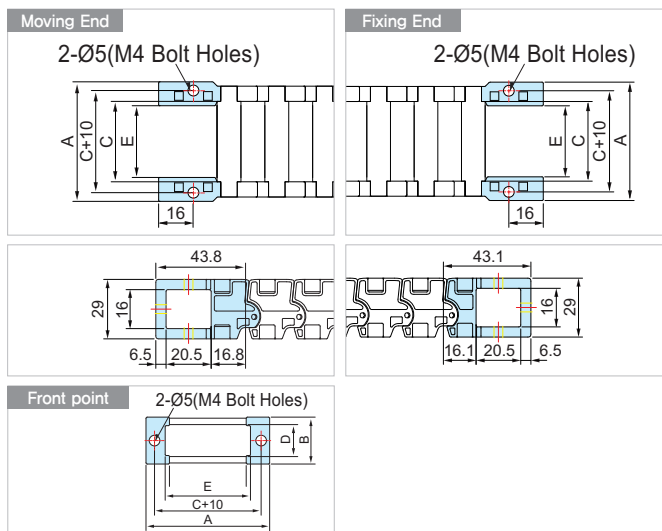


Chain Cross Section



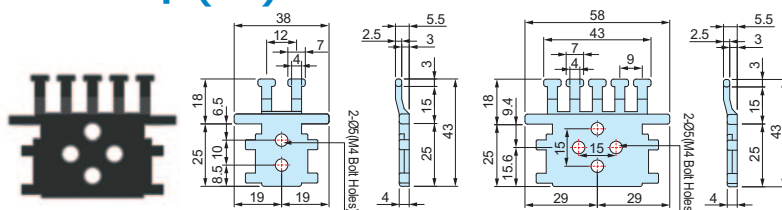
Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb022CR	30	29	16	22	0.43
	41		27		0.47
	51		37		0.51
	61		47		0.55
	81		67		0.67
	91		77		0.69
	114		100		0.81

Free End Bracket (FEB)



Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb022CR	34	29	16	22	26	M4 Bolt Holes
	45		27		37	
	55		37		47	
	65		47		57	
	85		67		77	
	95		77		87	
	118		100		110	

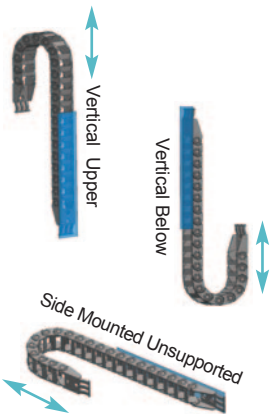
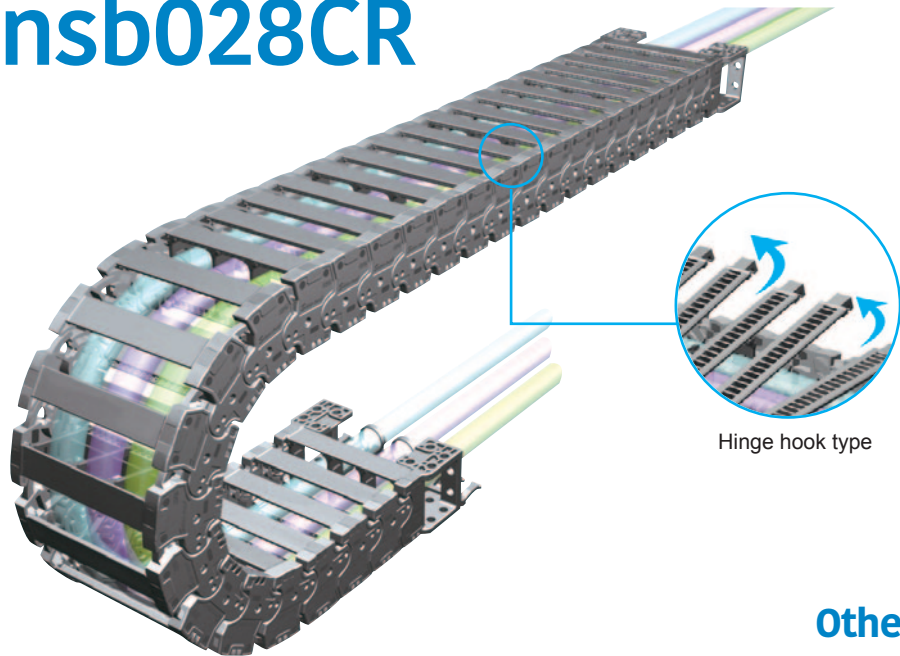
Tie Wrap (TW)



Ordering No. : sb-TW018CR.20 Ordering No. : sb-TW018CR.40

Chain Type	Ordering No.	A	B	C	D
nsb022CR	sb-TW020CR.16	34	-	10.00	-
	S-TW033/020CR.27	45	27.5	10.20	12
	S-TW033/020CR.37	55	41.0	8.50	22
	S-TW033/020CR.47	65	48.0	10.40	32
	S-TW033/020CR.67	85	68.0	10.00	52
	S-TW033/020CR.77	95	78.0	8.87	62

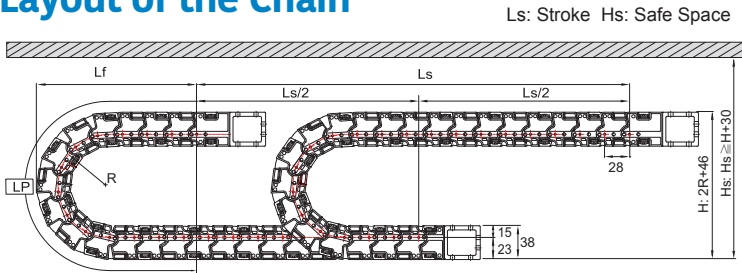
nsb028CR



Caculation of the Chain Length

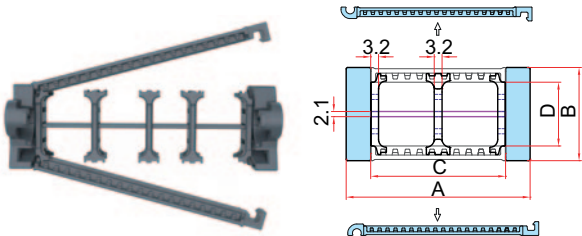
[
$$L = \frac{L_s}{2} + L_p$$
]

Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
50	269	129	146
70	332	149	186
90	395	169	226
120	489	199	286
150	583	229	346

Chain Cross Section



Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb028CR	55	38	35	26	0.90
	70		50		0.98
	75		55		1.02
	95		75		1.12
	120		100		1.27
	145		125		1.41
	170		150		1.59
	195		175		1.74
	220		200		1.84

Other Length Restrictions

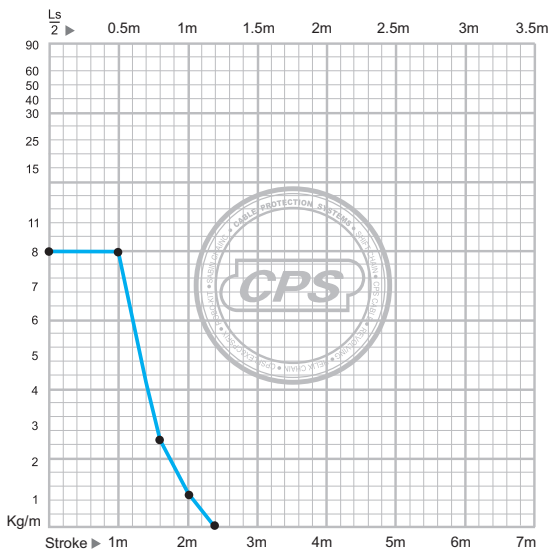
- Vertical Upper(Max) = 2.0m
- Vertical Below(Max) = 40.0m
- Side Mounted Unsupported(Max) = 1.0m

Ordering

nsb028CR.35.R50 / F-616L : (DV:2)

Clean Room Type (CR)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Unsupported Length

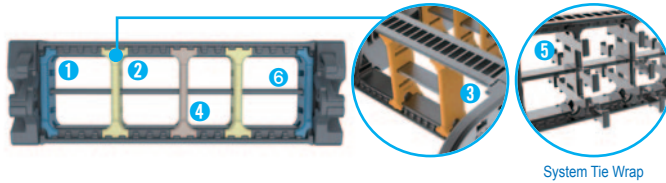


nsb Chain-Clean Room Type

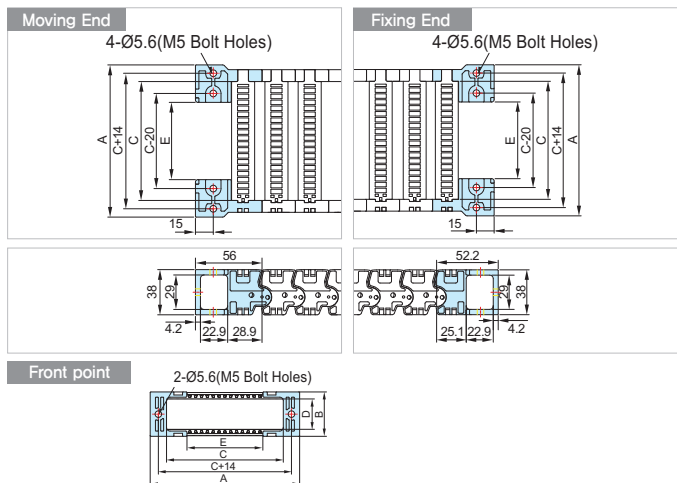
Sabin Chain®

Dividers (DV)

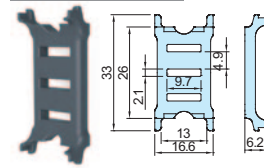
Assemble divider every fourth frame
DV/T Applied to Frame 125~200
(connect upper&below frame)
DV/M Normal Divider
DV/W
Can be assembled at System Tie Wrap or FEB



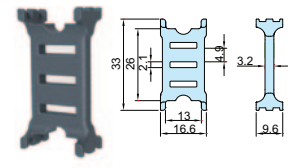
Free End Bracket (FEB)



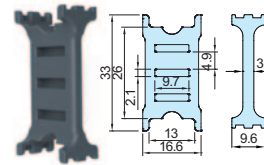
① sb-DV028/S



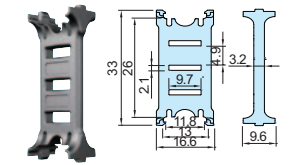
② sb-DV028/M1



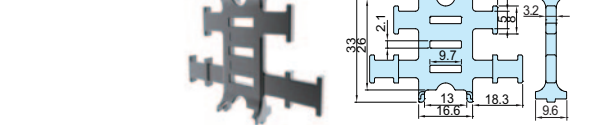
③ sb-DV028/M2



④ sb-DV028/T

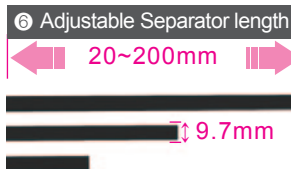
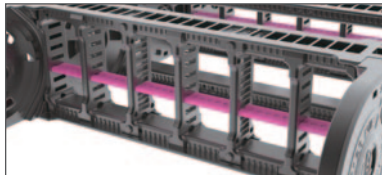


⑤ sb-DV028/W



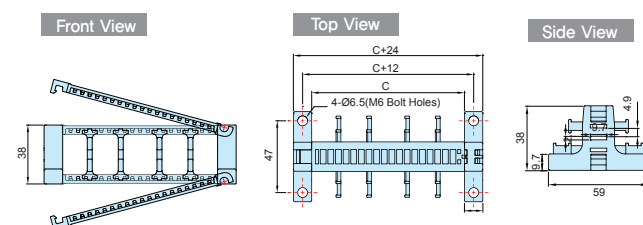
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb 028CR	63	38	35	26	0	M5 Bolt Holes
	78		50		15	
	83		55		20	
	103		75		40	
	128		100		65	
	153		125		90	
	178		150		115	
	203		175		140	
	228		200		165	

Separators (SP)



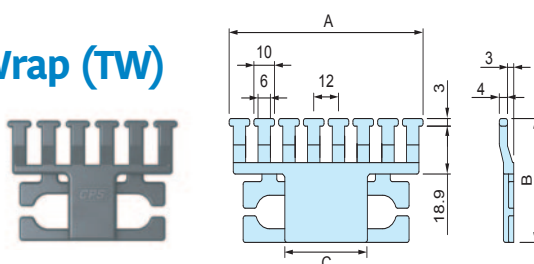
Chain Type	Ordering No.	Frame
nsb028CR	S-SP/M.35	35
	S-SP/M.50	50
	S-SP/M.55	55
	S-SP/M.75	75
	S-SP/M.100	100
	S-SP/M.125	125
	S-SP/M.150	150
	S-SP/M.175	175
	S-SP/M.200	200

System Tie Wrap (STW)



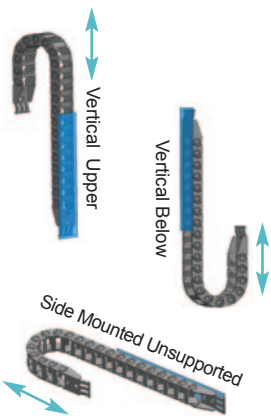
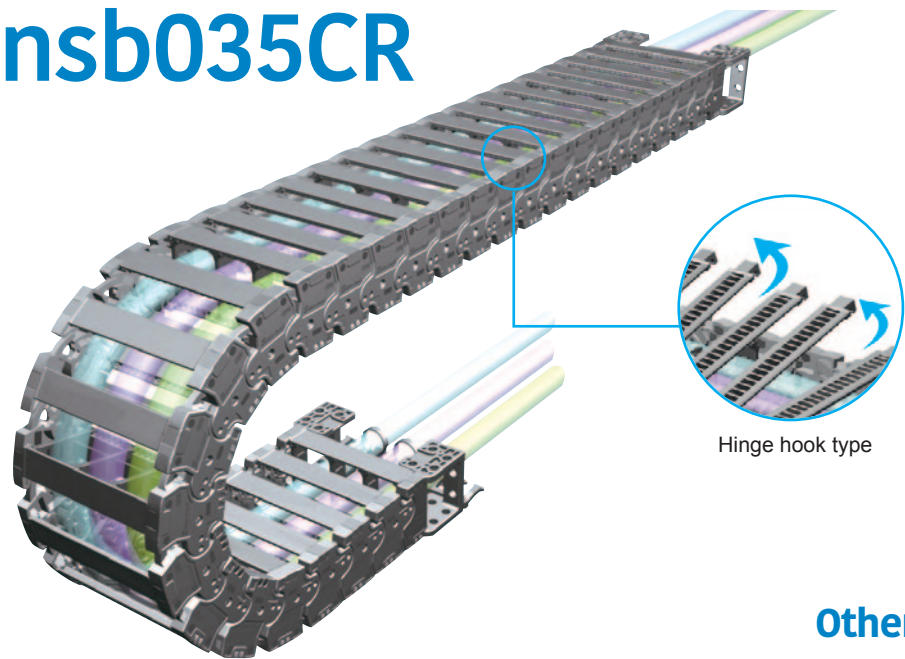
Chain Type	Ordering No.	C Frame	Hole Type
nsb028CR	S-TW.EB028.35	35	M6 Bolt Holes
	S-TW.EB028.50	50	
	S-TW.EB028.55	55	
	S-TW.EB028.75	75	
	S-TW.EB028.100	100	
	S-TW.EB028.125	125	
	S-TW.EB028.150	150	
	S-TW.EB028.175	175	
	S-TW.EB028.200	200	

Tie Wrap (TW)



Chain Type	Ordering No.	A	B	C
nsb028CR	S-TW036/025CR.35	46	35.4	-
	S-TW036/025CR.50	69	48.9	15
	S-TW036/025CR.55	70	48.9	20
	S-TW036/025CR.75	94	48.9	40
	S-TW036/025CR.100	118	48.9	65
	S-TW036/025CR.125	142	48.9	90
	S-TW036/025CR.150	166	49	115

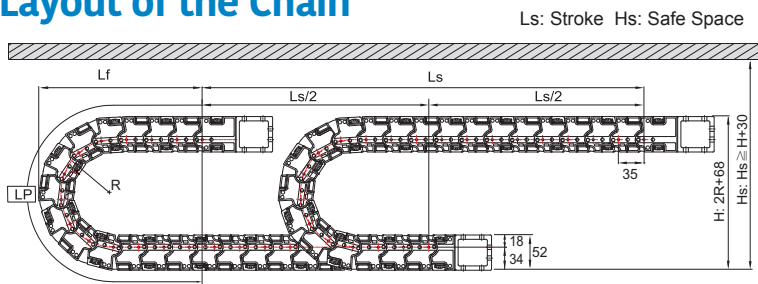
nsb035CR



Caculation of the Chain Length

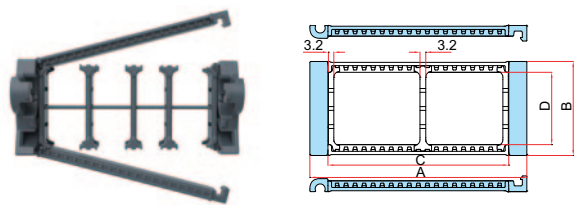
$$\left[L = \frac{L_s}{2} + L_p \right]$$

Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
75	376	179	218
100	454	204	268
125	533	229	318
150	611	254	368
200	768	304	468

Chain Cross Section



Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb035CR	55	52	35	40	1.00
	70		50		1.06
	75		55		1.09
	95		75		1.17
	120		100		1.29
	145		125		1.39
	170		150		1.53
	195		175		1.65
	220		200		1.73

Other Length Restrictions

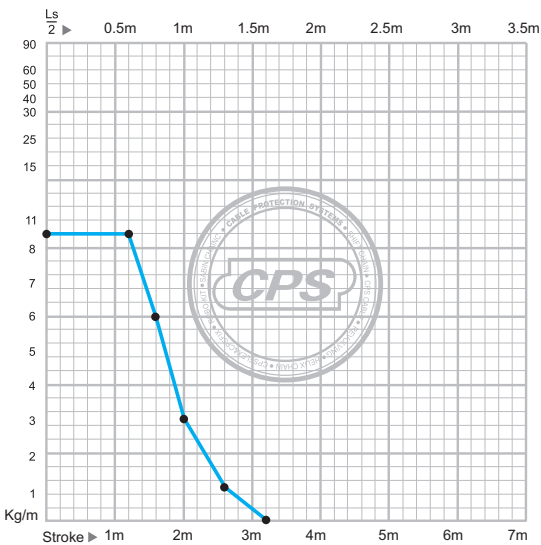
- Vertical Upper(Max) = 2.0m
- Vertical Below(Max) = 40.0m
- Side Mounted Unsupported(Max) = 1.0m

Ordering

nsb 035CR. 35. R75 / F – 1050L : (DV:2)

Clean Room Type (CR)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

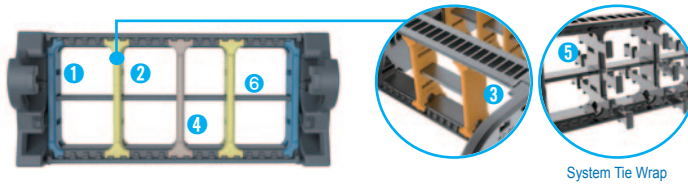
Unsupported Length



nsb Chain-Clean Room Type

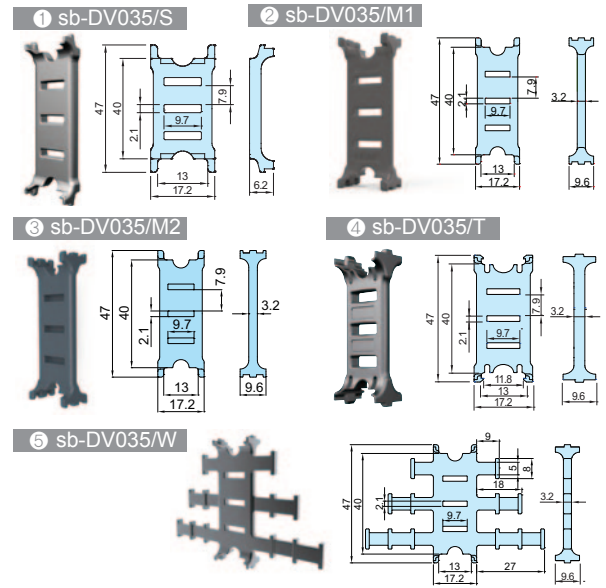
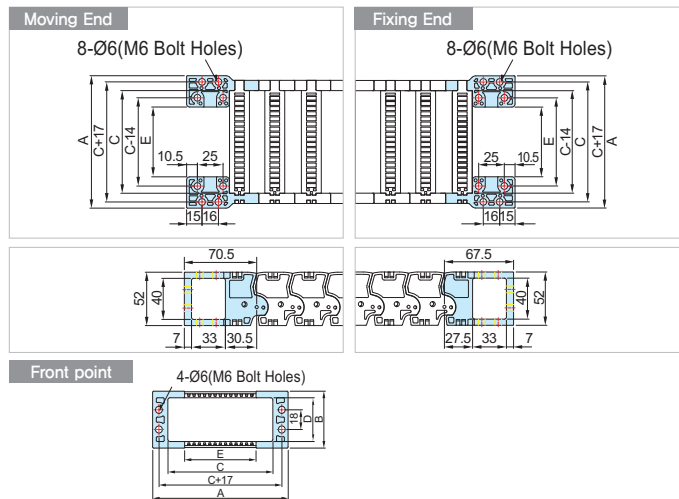
Sabin Chain®

Dividers (DV) Assemble divider every fourth frame
 DV/T Applied to Frame 125~200
 (connect upper&below frame)
 DV/M Normal Divider
 DV/W Can be assembled at System Tie Wrap or FEB



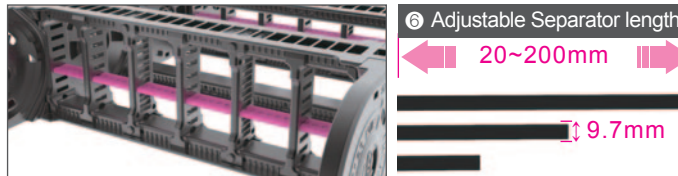
System Tie Wrap

Free End Bracket (FEB)



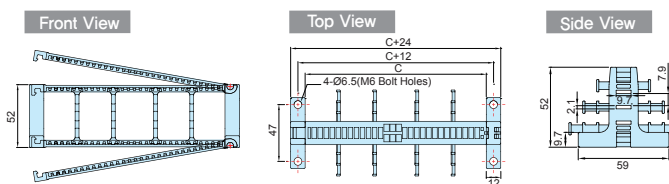
Chain-Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb035CR	64	52	35	40	3	M6 Bolt Holes
	79		50		18	
	84		55		23	
	104		75		43	
	129		100		68	
	154		125		93	
	179		150		118	
	204		175		143	
	229		200		168	

Separators (SP)



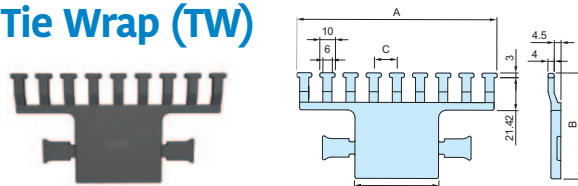
Chain Type	Ordering No.	Frame
nsb035CR	S-SP/M.35	35
	S-SP/M.50	50
	S-SP/M.55	55
	S-SP/M.75	75
	S-SP/M.100	100
	S-SP/M.125	125
	S-SP/M.150	150
	S-SP/M.175	175
	S-SP/M.200	200

System Tie Wrap (STW)



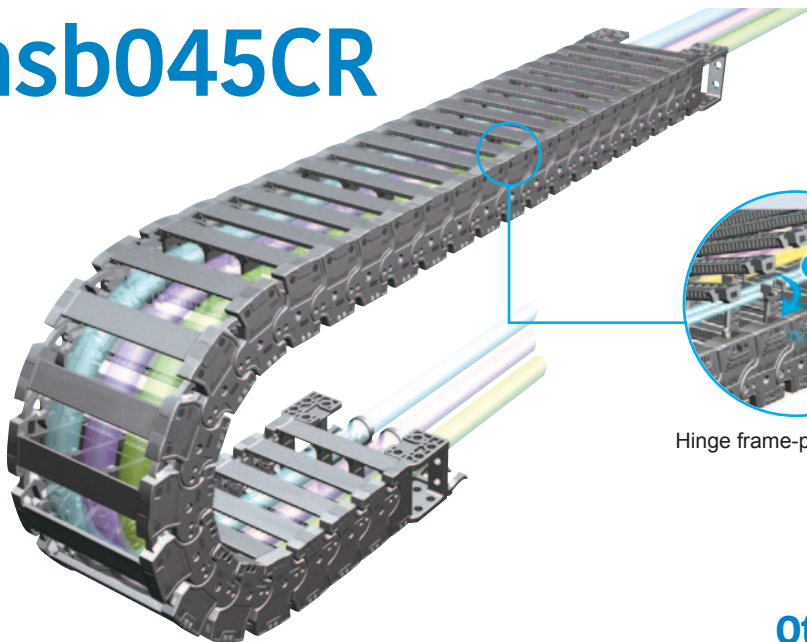
Chain Type	Ordering No.	C Frame	Hole Type
nsb035CR	S-TW.EB035.35	35	M6 Bolt Holes
	S-TW.EB035.50	50	
	S-TW.EB035.55	55	
	S-TW.EB035.75	75	
	S-TW.EB035.100	100	
	S-TW.EB035.125	125	
	S-TW.EB035.150	150	
	S-TW.EB035.175	175	
	S-TW.EB035.200	200	

Tie Wrap (TW)



Chain Type	Ordering No.	A	B	C	D
nsb035CR	S-TW050/035N.50	82	64.5	12.00	5
	S-TW050/035N.55	82		12.00	10
	S-TW050/035N.75	107		12.13	30
	S-TW050/035N.100	132		15.25	55
	S-TW050/035N.125	157		14.70	80
	S-TW050/035N.150	182		14.35	105
	S-TW050/035N.175	203		12.31	130
	S-TW050/035N.200	232		13.88	155

nsb045CR



Hinge frame-pin lock type

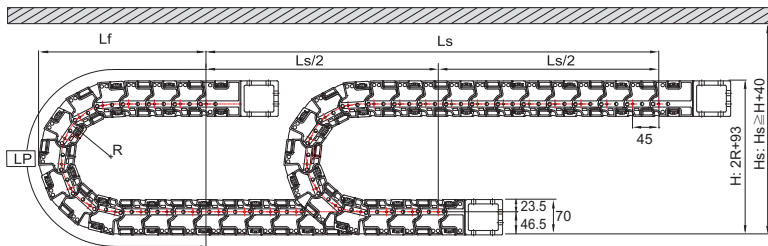


Caculation of the Chain Length

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

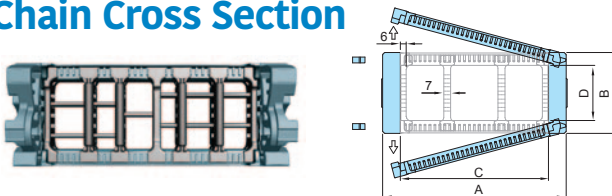
Layout of the Chain

Ls: Stroke Hs: Safe Space



Bending Radius(R)	Lp(Loop Length)	Lf(Loop Projection)	H(Moving Height)
75	506	257	243
100	584	282	293
120	647	302	333
140	710	322	373
200	898	382	493
250	1055	432	593
300	1212	482	693

Chain Cross Section



Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb045CR	80	70	50	49	2.59
	105		75		2.74
	130		100		2.90
	155		125		3.11
	170		140		3.23
	180		150		3.31
	195		165		3.41
	205		175		3.48
	220		190		3.90
	230		200		4.18
	270		240		4.64
	280		250		4.76
	330		300		5.32

Other Length Restrictions

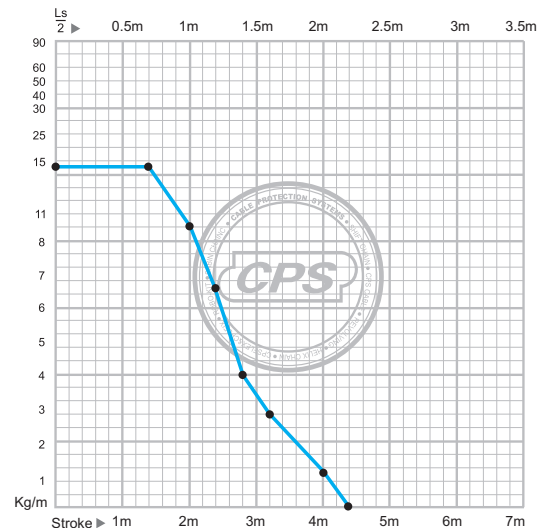
Vertical Upper(Max)	= 6.0m
Vertical Below(Max)	=100.0m
Side Mounted Unsupported(Max)	= 2.5m

Ordering

nsb 045CR. 50. R75 / F – 1350L : (DV:2)

Clean Room Type (CR)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Unsupported Length

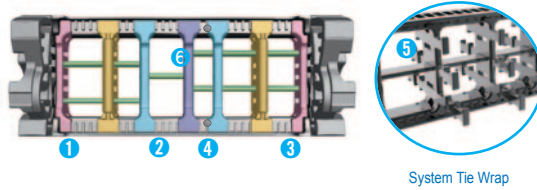


nsb Chain-Clean Room Type

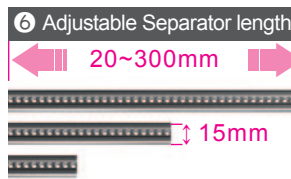
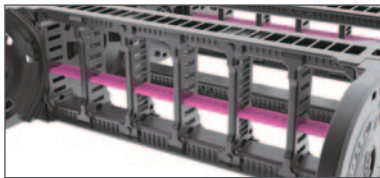
Sabin Chain®

Dividers (DV)

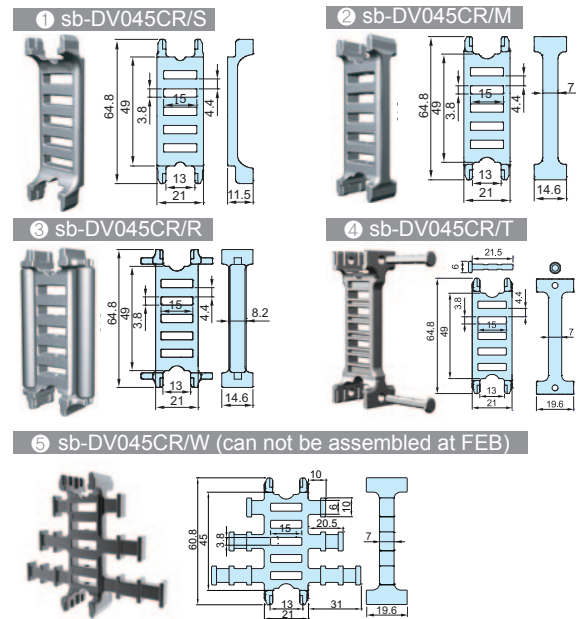
Assemble divider every fourth frame
DV/T Applied to Frame 125~200
 (connect upper&below frame)
DV/M Normal Divider
DV/W
 Can be assembled at System Tie Wrap or FEB



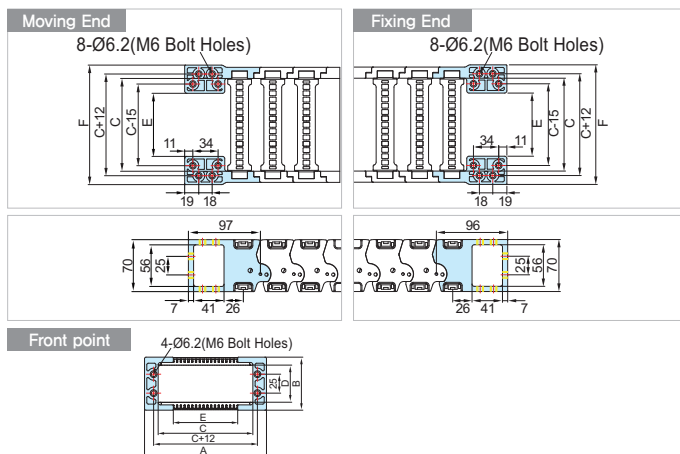
Separators (SP)



Chain Type	Ordering No.
nsb045CR	sb-SP/400.Frame

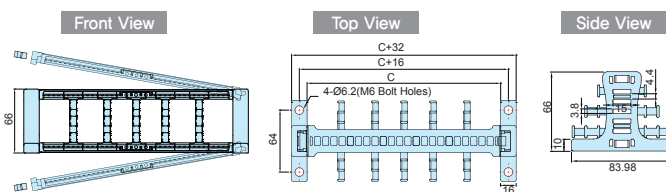


Free End Bracket (FEB)



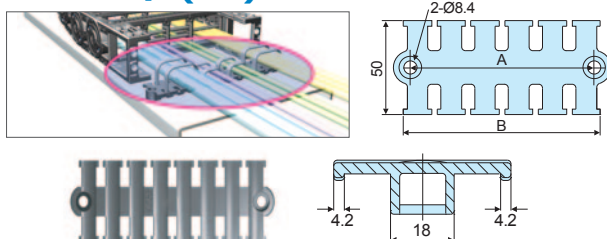
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb045CR	86	70	50	49	10	M6 Bolt Holes
	111		75		35	
	136		100		60	
	161		125		85	
	176		140		100	
	186		150		110	
	201		165		125	
	211		175		135	
	226		190		150	
	236		200		160	
	276		240		200	
	286		250		210	
	336		300		260	

System Tie Wrap (STW)



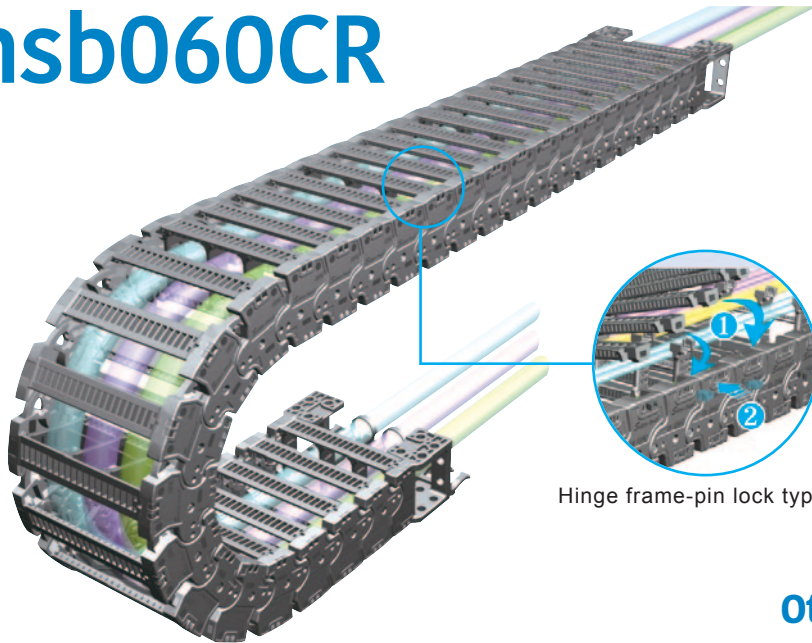
Chain Type	Ordering No.	C Frame	Hole Type
nsb045CR	S-TW.EB045.50	50	M6 Bolt Holes
	S-TW.EB045.75	75	
	S-TW.EB045.100	100	
	S-TW.EB045.125	125	
	S-TW.EB045.140	140	
	S-TW.EB045.150	150	
	S-TW.EB045.165	165	
	S-TW.EB045.175	175	
	S-TW.EB045.190	190	
	S-TW.EB045.200	200	
	S-TW.EB045.240	240	
	S-TW.EB045.250	250	
	S-TW.EB045.300	300	

Tie Wrap (TW)

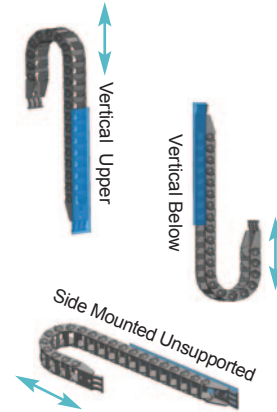


Chain Type	Ordering No.	A	B
nsb045CR	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

nsb060CR



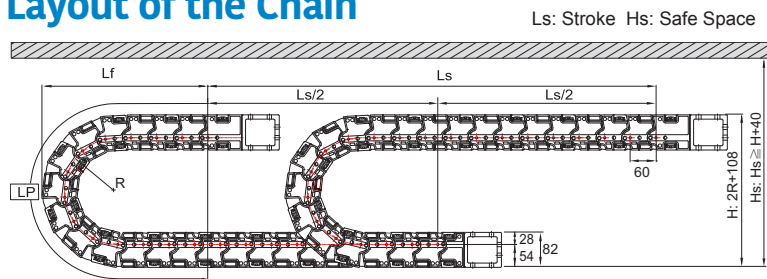
Hinge frame-pin lock type



Caculation of the Chain Length

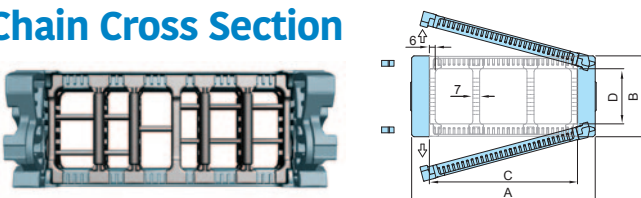
$$\left[L = \frac{L_s}{2} + L_p \right]$$

Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loop Projection)	H(Moving Height)
125	753	359	358
140	800	374	388
190	957	424	488
220	1051	454	548
270	1208	504	648
390	1585	624	888

Chain Cross Section



Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb060CR	115	82	75	55	3.56
	140		100		3.66
	165		125		3.97
	190		150		4.16
	215		175		4.33
	230		190		4.52
	240		200		4.64
	270		230		4.90
	280		240		4.98
	290		250		5.06
	340		300		5.48
	390		350		6.09
	440		400		6.66

Other Length Restrictions

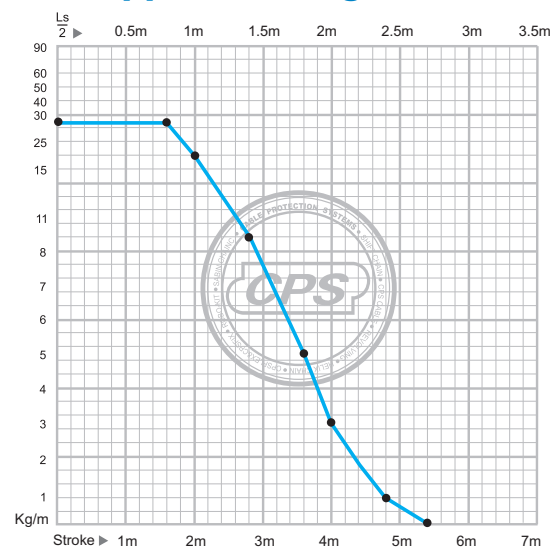
Vertical Upper(Max)	= 6.0m
Vertical Below(Max)	= 100.0m
Side Mounted Unsupported(Max)	= 3.0m

Ordering

nsb060CR.75.R125/F-1800L:(DV:2)

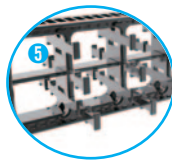
Clean Room Type (CR)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Unsupported Length



Assemble divider every fourth frame
DV/T Applied at Frame 250~400 Size
 (connect upper&below frame)

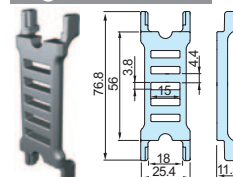
A cross-sectional diagram of a vehicle chassis. The diagram shows various structural components labeled with blue numbers 1 through 6. 1 points to the front suspension assembly, 2 to the front cross-member, 4 to the front longitudinal beam, 3 to the rear suspension assembly, 6 to the rear cross-member, and 5 to the rear longitudinal beam.



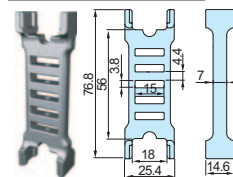
System Tie Wrap

20~400mm

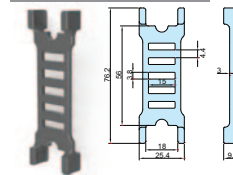
15mm

1 sb-DV060/S

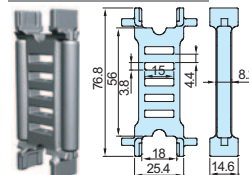
② sb-DV060/M



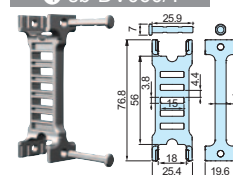
② sb-DV060/MS



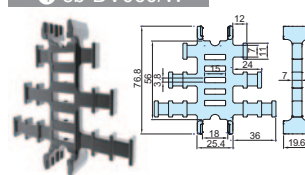
③ sb-DV060/R



④ sb-DV060/T

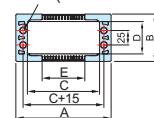


④ sb-DV060/W



Front point

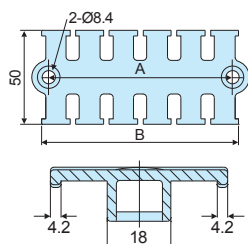
4-Ø10(M10 Bolt Holes)



The technical drawings show the following dimensions and features:

- Front View:** Shows a component with a total width of 62 and a series of vertical slots.
- Top View:** Shows a component with a total length of 118.8 and a central section with a width of 94.8. It includes 4-Ø10(M10 Bolt Holes) and dimensions C+42 and C.
- Side View:** Shows a component with a total height of 62 and a base width of 118.8. It includes a central section with a height of 3.8 and a base section with a height of 14.4.

A close-up photograph of a multi-lane microarray slide. The slide contains several lanes of DNA probes, each represented by a different color (yellow, green, blue, red, purple). A blue circle highlights a specific region on the slide, likely indicating the area of interest for the experiment.

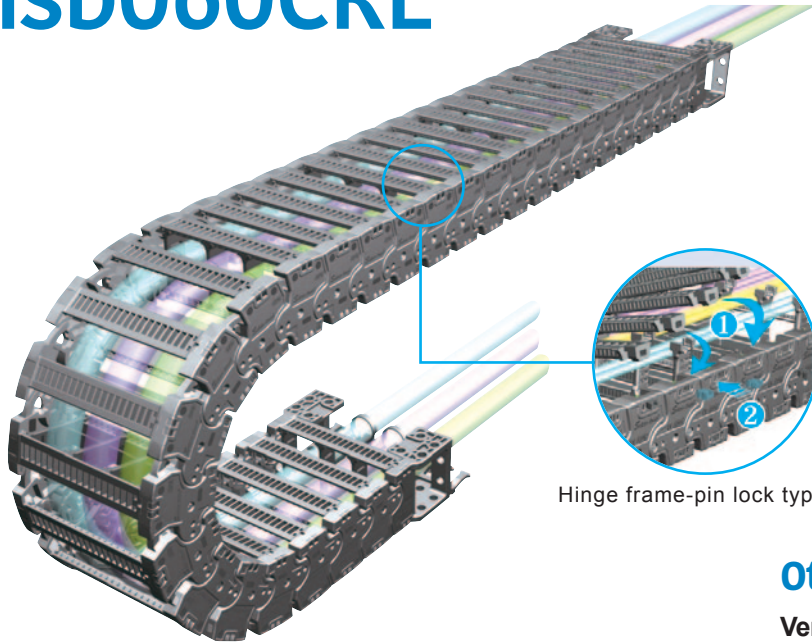


Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb060CR	115	82	75	55	24	M10 Bolt Holes
	140		100		49	
	165		125		74	
	190		150		99	
	215		175		124	
	230		190		139	
	240		200		149	
	270		230		179	
	280		240		189	
	290		250		199	
	340		300		249	
	390		350		299	
440	400	349				

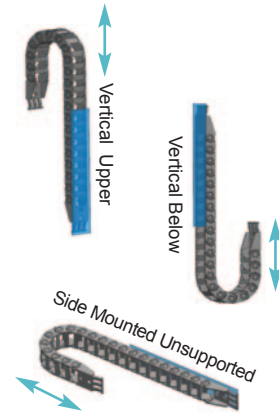
Chain Type	Ordering No.	C Frame	Hole Type
nsb060CR	S-TW.EB060.75	75	M10 Bolt Holes
	S-TW.EB060.100	100	
	S-TW.EB060.125	125	
	S-TW.EB060.150	150	
	S-TW.EB060.175	175	
	S-TW.EB060.190	190	
	S-TW.EB060.200	200	
	S-TW.EB060.230	230	
	S-TW.EB060.240	240	
	S-TW.EB060.250	250	
	S-TW.EB060.300	300	
	S-TW.EB060.350	350	
S-TW.EB060.400	400		

Chain Type	Ordering No.	A	B
nsb060CR	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

nsb060CRL



Hinge frame-pin lock type



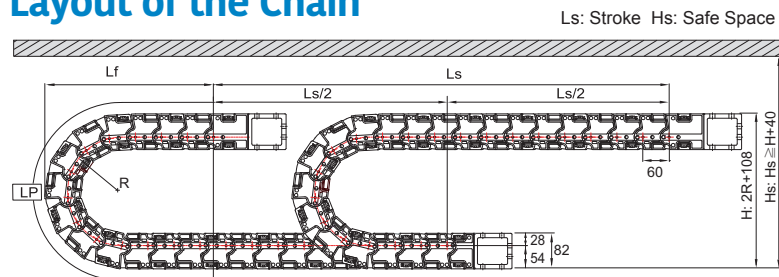
Other Length Restrictions

Vertical Upper(Max)	= 6.0m
Vertical Below(Max)	= 100.0m
Side Mounted Unsupported(Max)	= 3.0m

Caculation of the Chain Length

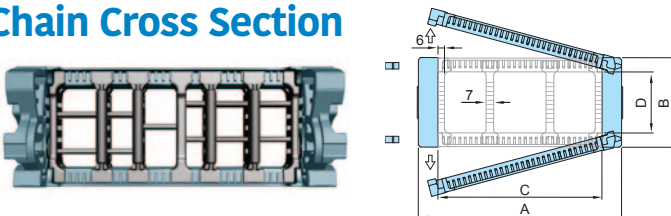
$$\left[L = \frac{L_s}{2} + L_p \right]$$

Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loop Projection)	H(Moving Height)
125	753	359	358
140	800	374	388

Chain Cross Section



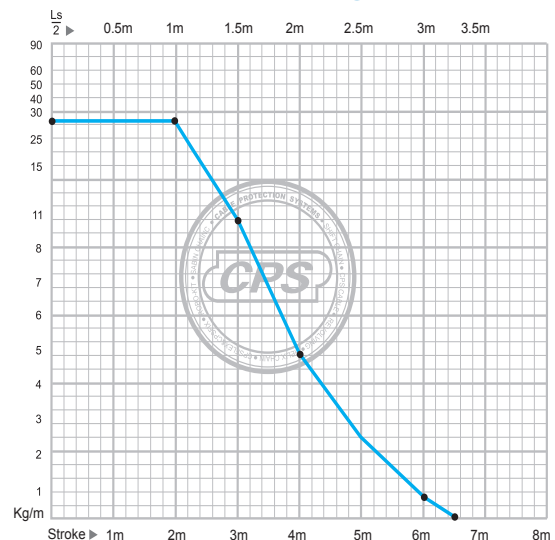
Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb060CRL	130	82	75	55	5.55
	155		100		5.75
	180		125		5.95
	205		150		6.15
	230		175		6.33
	245		190		6.44
	255		200		6.51
	285		230		6.73
	295		240		6.80
	305		250		6.84
	355		300		7.22
	455		400		8.02

Ordering

nsb060CRL.75.R140/F-1800L:(DV:2)

Clean Room Type (CR)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

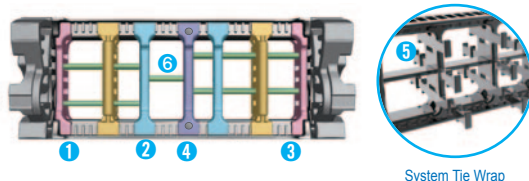
Unsupported Length



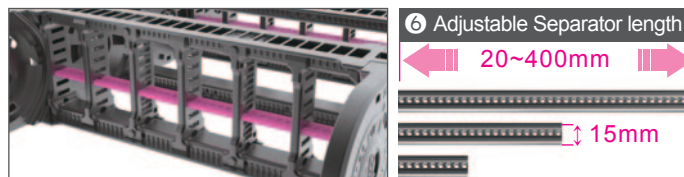
nsb Chain-Clean Room Type

Sabin Chain®

Dividers (DV) Assemble divider every fourth frame
DV/T Applied at Frame 250~400 Size
(connect upper&below frame)
DV/W
Applicable to System Tie Wrap or FEB

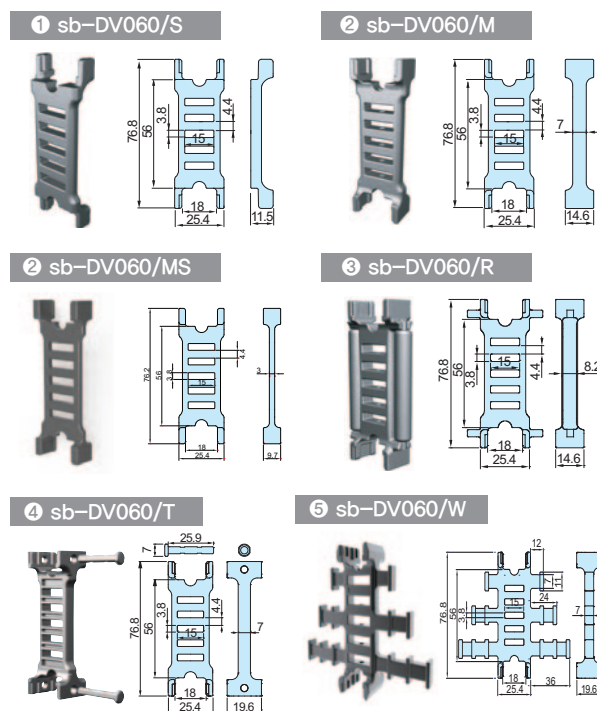
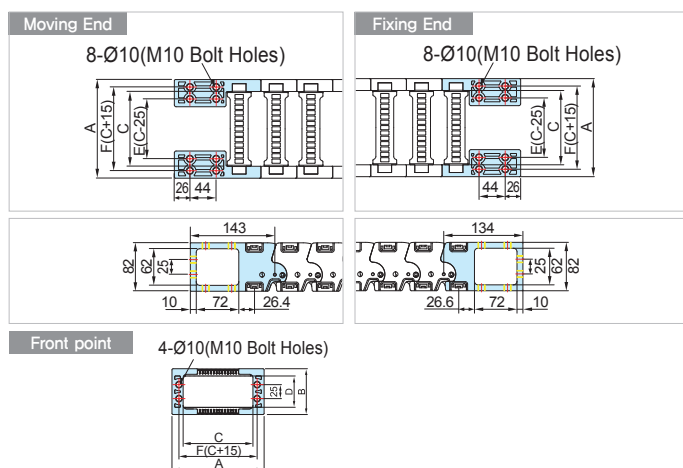


Separators (SP)



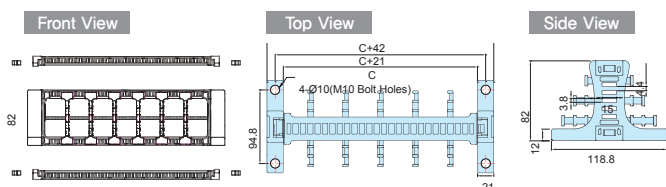
Chain Type	Ordering No.
nsb060CRL	sb-SP/400.75~400

Free End Bracket (FEB)



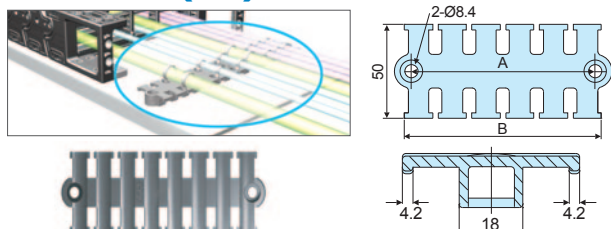
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb060CRL	130	82	75	55	50	M10 Bolt Holes
	155		100		75	
	180		125		100	
	205		150		125	
	230		175		150	
	245		190		165	
	255		200		175	
	285		230		205	
	295		240		215	
	305		250		225	
	355		300		275	
	455		400		375	

System Tie Wrap (STW)



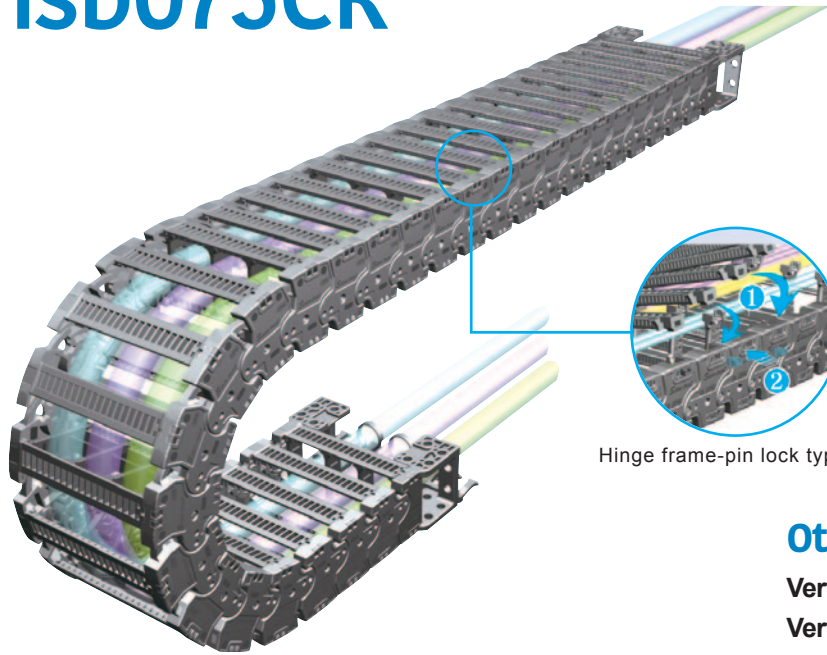
Chain Type	Ordering No.	C Frame	Hole Type
nsb060CRL	S-TW.EB060.75	75	M10 Bolt Holes
	S-TW.EB060.100	100	
	S-TW.EB060.125	125	
	S-TW.EB060.150	150	
	S-TW.EB060.175	175	
	S-TW.EB060.200	200	
	S-TW.EB060.250	250	
	S-TW.EB060.300	300	
	S-TW.EB060.350	350	
	S-TW.EB060.400	400	

Tie Wrap (TW)

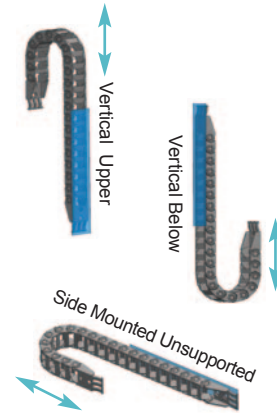


Chain Type	Ordering No.	A	B
nsb060CRL	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

nsb075CR



Hinge frame-pin lock type



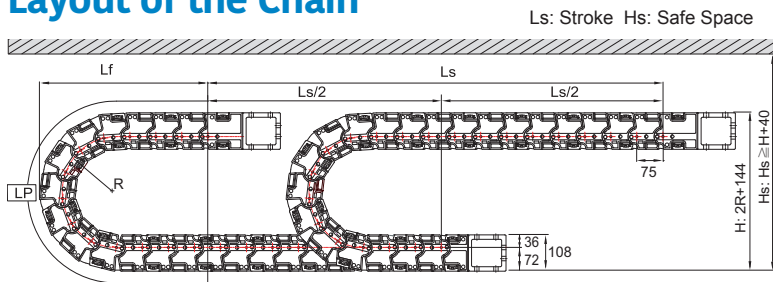
Other Length Restrictions

Vertical Upper(Max) = 6.0m
 Vertical Below(Max) = 100.0m
 Side Mounted Unsupported(Max) = 3.0m

Caculation of the Chain Length

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

Layout of the Chain



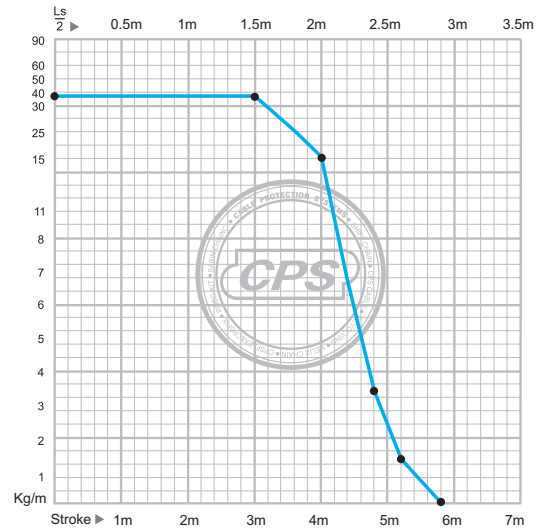
Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
180	1016	477	504
200	1078	497	544
250	1235	547	644
300	1392	597	744
350	1549	647	844
400	1706	697	944
500	2020	797	1,144

Ordering

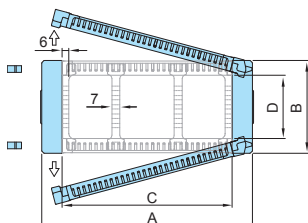
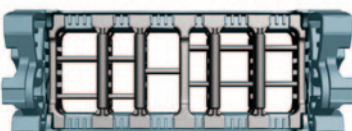
nsb075CR.75.R180/F-2250L:(DV:2)

Clean Room Type (CR)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Unsupported Length



Chain Cross Section

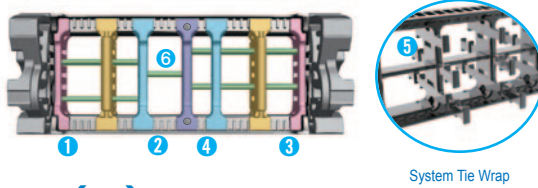


Chain Type	A Width (Outer)	B eight(Outer)	C Frame Width (Inner)	D Height (Inner)	Weight kg/m
nsb075CR	115	108	75	78	5.37
	140		100		5.57
	155		115		5.72
	165		125		5.82
	190		150		6.01
	215		175		6.26
	240		200		6.68
	280		240		7.11
	290		250		7.22
	330		290		7.80
	340		300		7.94
	390		350		8.67
	440		400		9.43
	490		450		10.01
	540		500		10.41
	590		550		11.88
	640		600		12.17

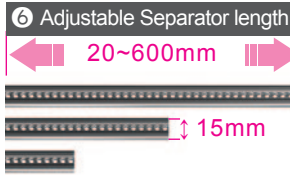
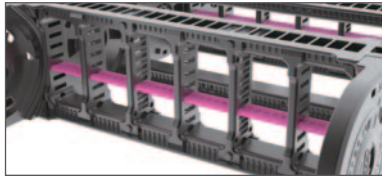
nsb Chain-Clean Room Type

Dividers (DV)

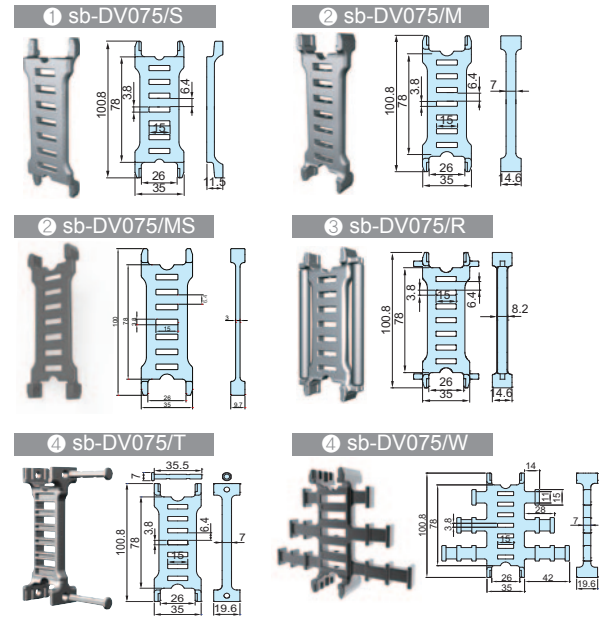
Assemble divider every fourth frame
DV/T Applied at Frame 250~400 Size
 (connect upper&below frame)
DV/W
 Applicable to System Tie Wrap or FEB



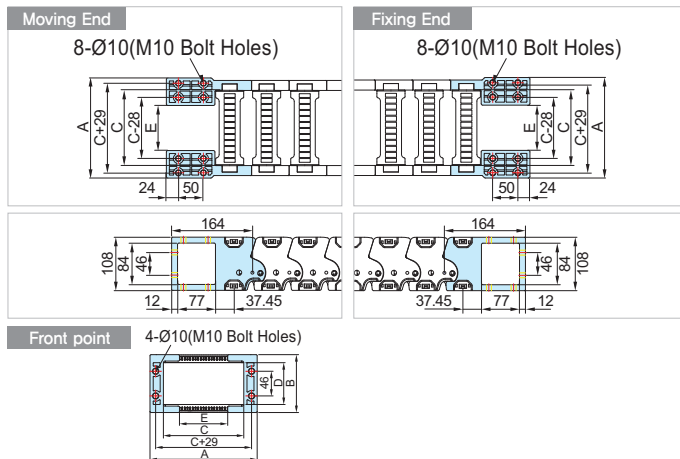
Separators (SP)



Chain Type	Ordering No.
nsb075CR	sb-SP/400.Frame

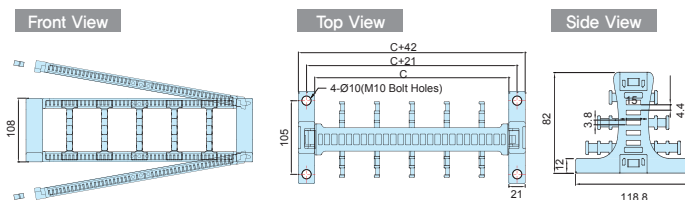


Free End Bracket (FEB)



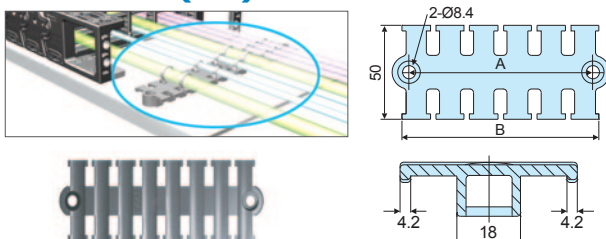
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb075CR	125	108	75	78	15	M10 Bolt Holes
	150		100		40	
	165		115		55	
	175		125		65	
	200		150		90	
	225		175		115	
	250		200		140	
	290		240		180	
	300		250		190	
	340		290		230	
	350		300		240	
	400		350		290	
	450		400		340	
	500		450		390	
	550		500		440	
	600		550		490	
	650		600		540	

System Tie Wrap (STW)

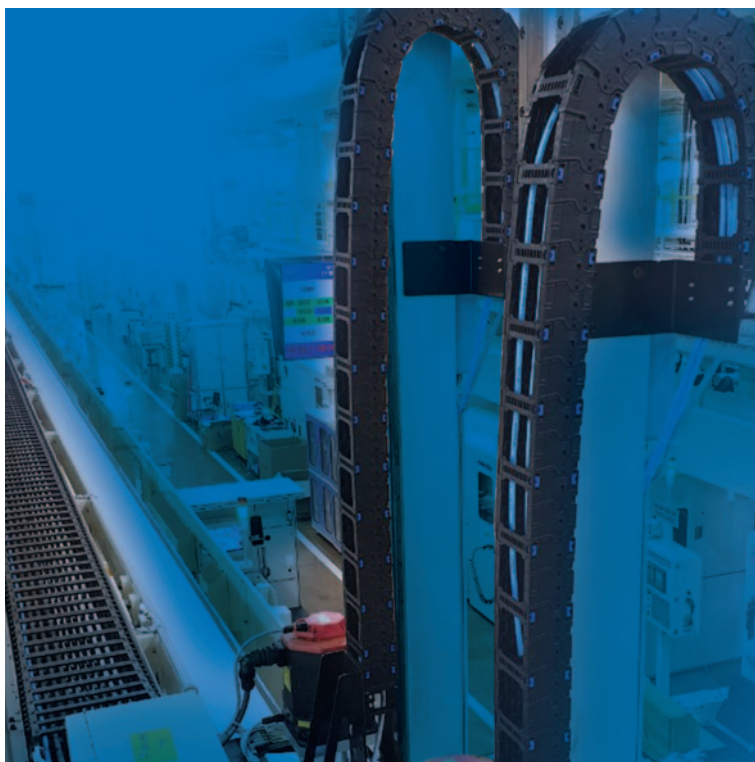


Chain Type	Ordering No.	C Frame	Hole Type
nsb075CR	S-TW.EB075.75	75	M10 Bolt Holes
	S-TW.EB075.100	100	
	S-TW.EB075.115	115	
	S-TW.EB075.125	125	
	S-TW.EB075.150	150	
	S-TW.EB075.175	175	
	S-TW.EB075.200	200	
	S-TW.EB075.240	240	
	S-TW.EB075.250	250	
	S-TW.EB075.290	290	
	S-TW.EB075.300	300	
	S-TW.EB075.350	350	
	S-TW.EB075.400	400	
	S-TW.EB075.450	450	
	S-TW.EB075.500	500	
	S-TW.EB075.550	550	
	S-TW.EB075.600	600	

Tie Wrap (TW)



Chain Type	Ordering No.	A	B
nsb075CR	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148



nsb028N

200

nsb035N

202

nsb045N

204

nsb060N

206

nsb075N

208

General Information

Material : CPS-Amide (PA6+G.F)
Speed : 10m/s
Acceleration : 20m/s²
Temperature : -30℃ ~ +130℃
Special production : ESD, UV, Customized color
Certificate : CE, ATEX(Ex), RoHs2

Value of Speed/Acceleration is subject to change according to cable's amount and travel length.

Calculation Table

Length of Cable Chain

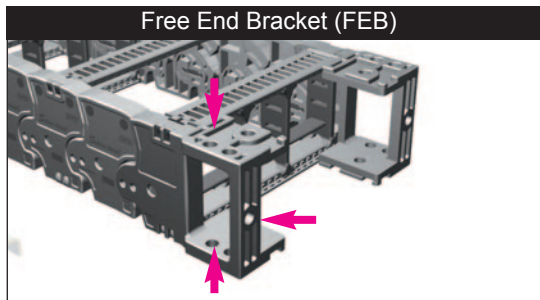
: $L = \frac{1}{2} \times L_s + L_p$

Bending Radius

: Multiply 8~10 of the biggest cable

: Multiply 15~20 of the biggest hose

Bracket Type



Dimension Table

nsb Chain-Normal Type	Pitch	Bending Radius (R)	Weight kg/m	Speed m/s	Temperature ℃	Size				Frame Type	Section-Composition
						A	B	C	D		
nsb028N	28		0.79	10	-30 ~ +130	55	38	35	26		
			0.82			70		50			
			0.85			75		55			
			0.90			95		75			
			0.98			120		100			
			1.08			145		125			
			1.18			170		150			
			1.45			195		175			
			1.59			220		200			
nsb035N	35		1.10	10	-30 ~ +130	55	52	35	40		
			1.13			70		50			
			1.15			75		55			
			1.18			95		75			
			1.25			120		100			
			1.32			145		125			
			1.41			170		150			
			1.62			195		175			
			1.72			220		200			
nsb045N	45		2.06	10	-30 ~ +130	80	66	50	45		
			2.14			105		75			
			2.22			130		100			
			2.32			155		125			
			2.38			170		140			
			2.42			180		150			
			2.47			195		165			
			2.51			205		175			
			2.72			220		190			
			2.86			230		200			
			3.09			270		240			
			3.15			280		250			
			3.43			330		300			
nsb060N	60		3.30	10	-30 ~ +130	115	82	75	56		
			3.35			140		100			
			3.51			165		125			
			3.60			190		150			
			3.69			215		175			
			3.78			230		190			
			3.84			240		200			
			4.01			280		240			
			4.05			290		250			
			4.26			340		300			
			4.57			390		350			
			4.85			440		400			
nsb075N	75		4.80	10	-30 ~ +130	115	108	75	78		
			4.90			140		100			
			4.97			155		115			
			5.02			165		125			
			5.12			190		150			
			5.25			215		175			
			5.46			240		200			
			5.67			280		240			
			5.72			290		250			
			6.02			330		290			
			6.09			340		300			
			6.45			390		350			
			6.83			440		400			
			7.12			490		450			
			7.32			540		500			
			8.06			590		550			
			8.20			640		600			

Ordering

nsb 028N. 50. R66 / F 1000L : (DV:2)

Quantity of Divider(Link)

Length(mm)

Bracket Type : F-Free End Bracket

Bending radius FT-Tie Wrap

Inside width FST-System Tie Wrap

nsb Chain-Normal Type (N)

Sabin Chain

Application of nsb Chain Normal type

nsb Chain can be applied to all kinds of machine tools and factory lines.

nsb045N & 035N

Application

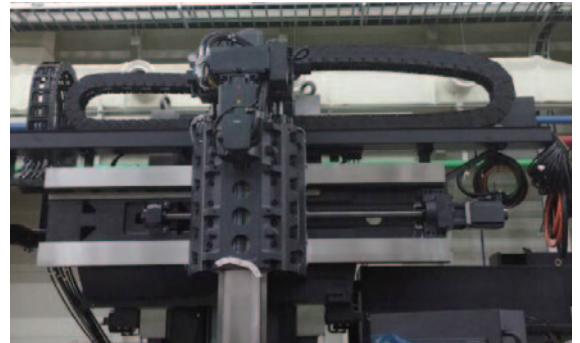
Machine tools

Location

Korea

Remark

2 meters of Stroke



nsb060N

Application

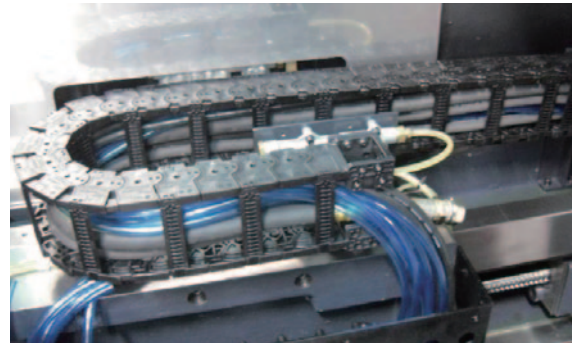
Machine tools

Location

Korea

Remark

2 meters of Stroke



nsb045N

Application

Factory production line

Location

Korea

CPS can produce customized product such as ESD type of cable chain and Special color applied type of cable chain.

nsb035N



Application

PCTC Ship

Location

Korea(H-Heavy Industries)

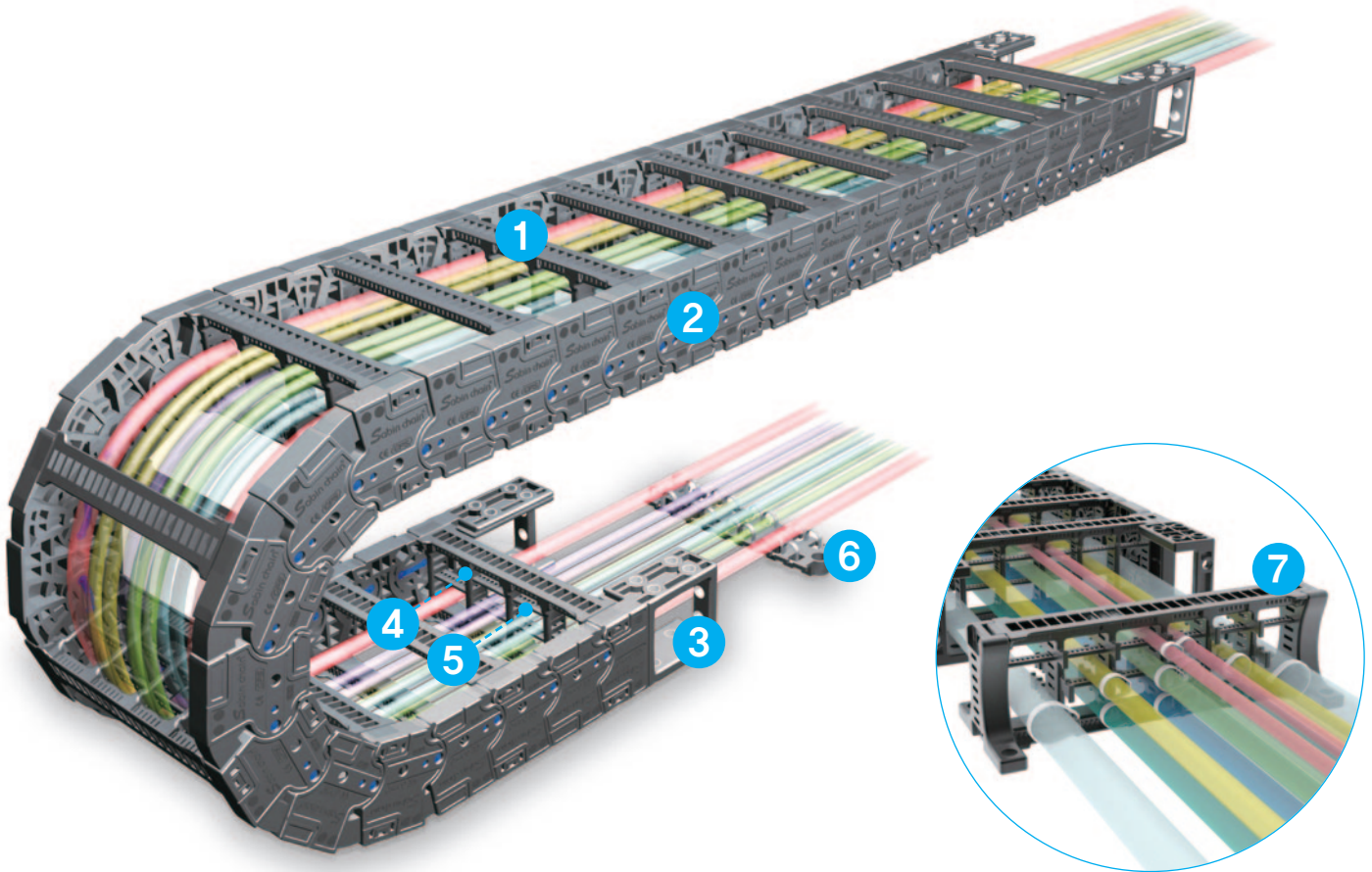
Remark

ESD,

Orange Color Applied

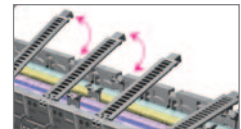


Part of Shift Chain-Normal Type



❶ Frame (FR) (Hinge Type)

A part that connects with LH, RH Side Band. There are every 5mm bumps that prevent dividers to be securely positioned at a place. One side of frame has a hinge structure that helps easy assembly and disassembly.



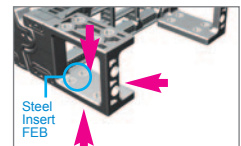
Hinge Type Frame

❷ Side Band (SB)

A part that connects upper and lower frame. There are LH and RH type.

❸ Free End Bracket (FEB)

A part that connects to each end of Cable Chain. There are holes are formed where steel washers are inserted to fix FEB to fixing plate securely.



❹ Divider (DV-S, M, R, T)

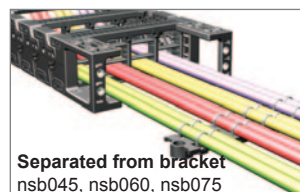
A part that prevents entanglement risk of cables and hoses by being installed vertically.

❺ Separator (SP)

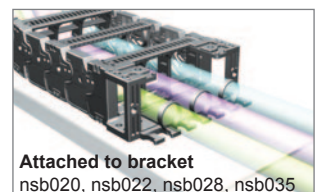
A part that prevent entanglement risk of cable and hoses by being installed horizontally.

❻ Tie Wrap (TW)

A part that prevents damage of the cable and hose by twisting & pulling movements. It can be used as assembling with bracket or separating from the bracket at end position of chain.



Separated from bracket
nsb045, nsb060, nsb075



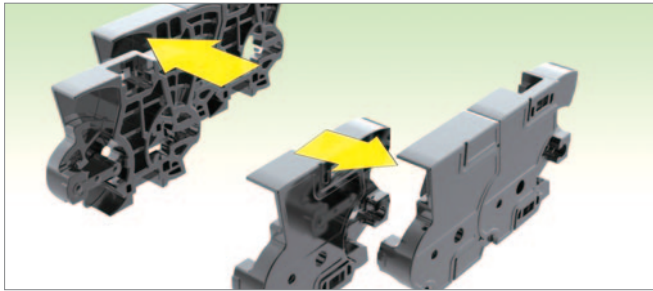
Attached to bracket
nsb020, nsb022, nsb028, nsb035

❼ System Tie Wrap (STW)

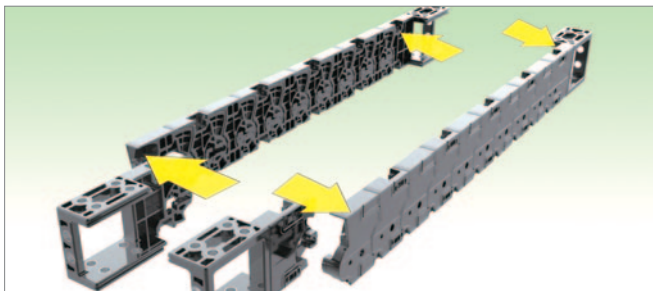
A part that connects to first or end of Cable Chain. Cables and hoses are arranged at System Tie Wrap by several layers and being tightened using Cable Tie. There are 2 types. One is separated from FEB and the other one is assembled to FEB.

Assembly procedure of nsb Chain Normal Type

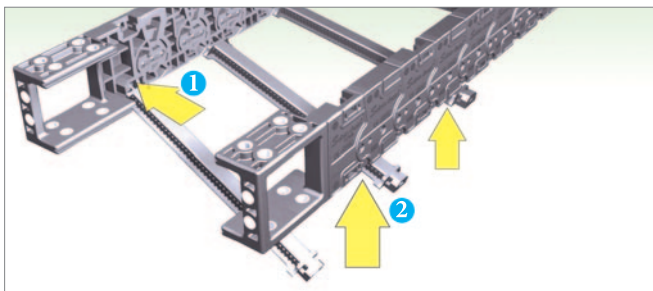
The assembling process of N-Type of New Sabin Chain is like below and user must use rubber hammer with careful combination of Divider and Separator.



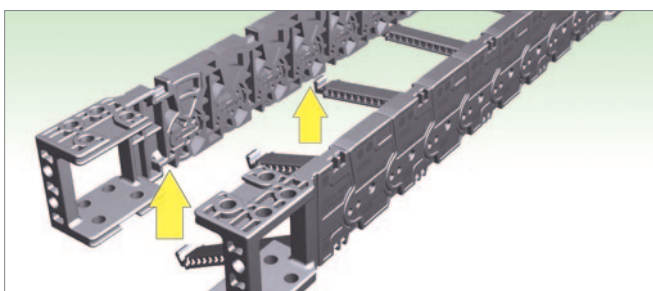
1 Connect each side band as many as you need.



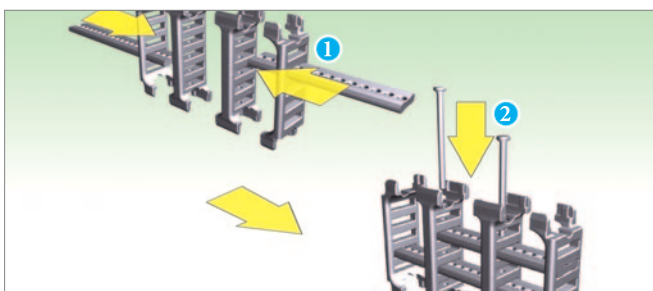
2 Assemble the end brackets on both ends.



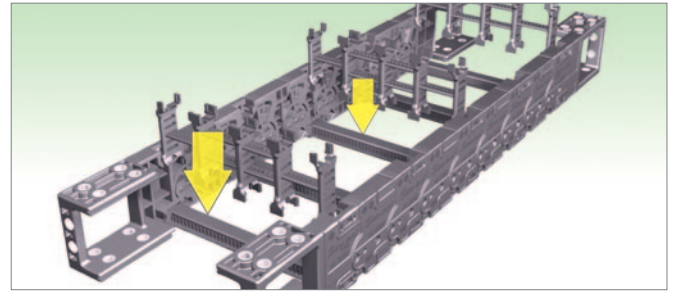
3 Attach frames to one side groove on the frames, then the other side.



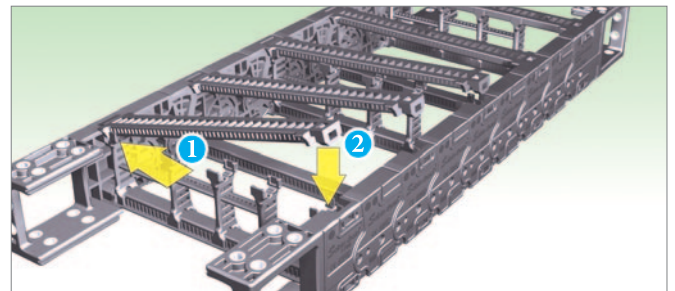
3-1 028N, 035N Type are Hinge Frame Type.



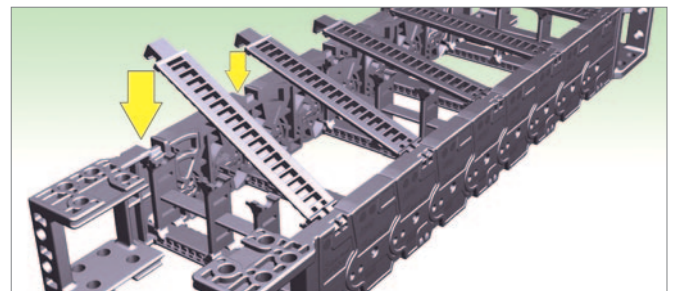
4 For nsb 045, 060, and 075, connect the pin of separator in hole of divider after inserting separator in hole of divider.
For nsb028 and nsb035, separator fixing pins are not used.



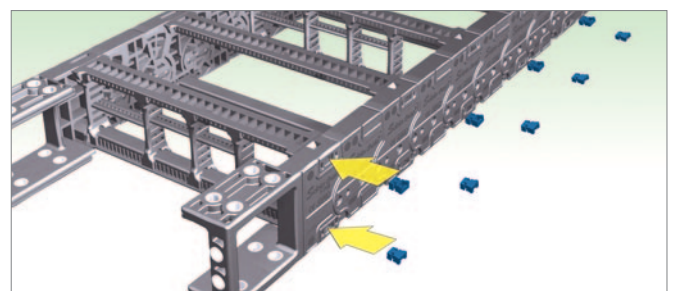
5 Fix the separator and divider patterns to the bottom-side frames as needed.



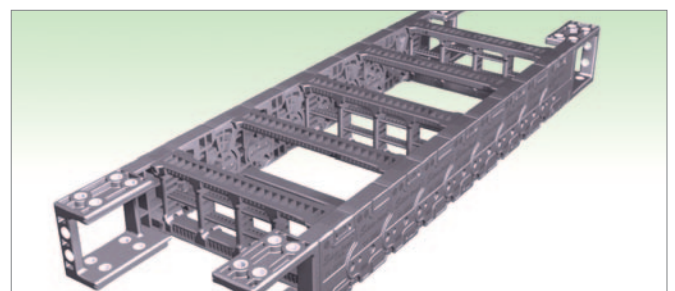
6 Attach frames to one side groove on the frames, then the other side.



6-1 028N, 035N 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.)



8 Complete to assemble New Sabin N-Type, Sabin Chain.

Part list of nsb Chain-Normal Type



Composition of nsb Chain Normal

= Side Band(RH/LH) + Frame(Upper/Lower) + Free End Bracket

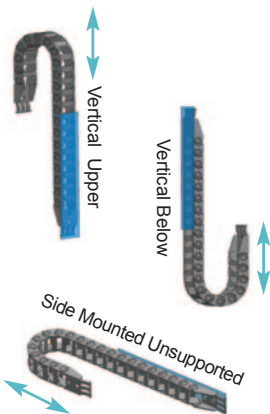
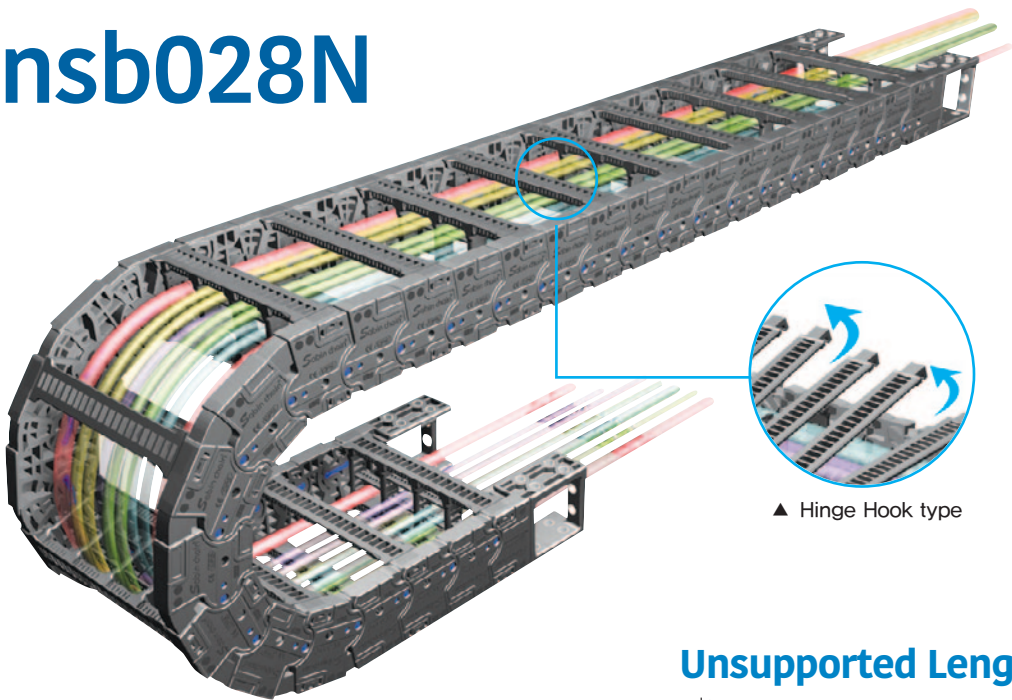
M divider(normal divider) should be applied every second frames to make a section composition.

※ Please refer to below part list and description to understand composition of cable chain.

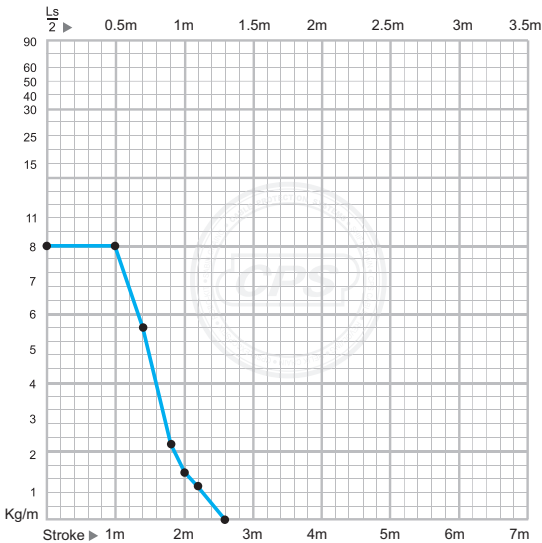
Model	Classification	Part number	Description
nsb028N	SIDE BAND	nsb-SB028N.R*(RH) nsb-SB028N.R*(LH)	Left side band of nsb028N Right side band of nsb028N
	FRAME	sb-FR/M.35	Frame, 35mm
		sb-FR/M.50	Frame, 50mm
		sb-FR/M.55	Frame, 55mm
		sb-FR/M.75	Frame, 75mm
		sb-FR/M.100	Frame, 100mm
		sb-FR/M.125	Frame, 125mm
		sb-FR/M.150	Frame, 150mm
		sb-FR/M.175	Frame, 175mm
		sb-FR/M.200	Frame, 200mm
	FREE END BRACKET	nsb-FEB028N	Free End bracket of nsb028N
	DIVIDER	sb-DV028/M sb-DV028/T sb-DV028/S	Normal divider To fix separstors at the both side section
	SEPARATOR	S-SP/M.35	Separator, 35mm
		S-SP/M.50	Separator, 50mm
		S-SP/M.75	Separator, 75mm
		S-SP/M.100	Separator, 100mm
		S-SP/M.125	Separator, 125mm
		S-SP/M.150	Separator, 150mm
		S-SP/M.175	Separator, 175mm
		S-SP/M.200	Separator, 200mm
nsb035N	TIE WRAP	S-TW036/025CR.35	Tie wrap for end bracket to fix cables, 35mm
		S-TW036/025CR.50	Tie wrap for end bracket to fix cables, 50mm
		S-TW036/025CR.55	Tie wrap for end bracket to fix cables, 55mm
		S-TW036/025CR.75	Tie wrap for end bracket to fix cables, 75mm
		S-TW036/025CR.100	Tie wrap for end bracket to fix cables, 100mm
		S-TW036/025CR.125	Tie wrap for end bracket to fix cables, 125mm
		S-TW036/025CR.150	Tie wrap for end bracket to fix cables, 150mm
		S-TW036/025CR.200	Tie wrap for end bracket to fix cables, 200mm
	SYSTEM TIE WRAP	sb-DV028/W S-TW.EB028	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
nsb035N	SIDE BAND	nsb-SB035N.R*(RH) nsb-SB035N.R*(LH)	Left side band of nsb035N Right side band of nsb035N
	FRAME	sb-FR/M.35	Frame, 35mm
		sb-FR/M.50	Frame, 50mm
		sb-FR/M.55	Frame, 55mm
		sb-FR/M.75	Frame, 75mm
		sb-FR/M.100	Frame, 100mm
		sb-FR/M.125	Frame, 125mm
		sb-FR/M.150	Frame, 150mm
		sb-FR/M.175	Frame, 175mm
		sb-FR/M.200	Frame, 200mm
	FREE END BRACKET	nsb-FEB035N	Free End bracket of nsb035N
nsb035N	DIVIDER	sb-DV028/M sb-DV028/T sb-DV028/S	Normal divider To fix separstors at the both side section
	SEPARATOR	S-SP/M.35	Separator, 35mm
		S-SP/M.50	Separator, 50mm
		S-SP/M.75	Separator, 75mm
		S-SP/M.100	Separator, 100mm
		S-SP/M.125	Separator, 125mm
		S-SP/M.150	Separator, 150mm
		S-SP/M.175	Separator, 175mm
		S-SP/M.200	Separator, 200mm
	TIE WRAP	S-TW050/035N.50	Tie wrap for end bracket to fix cables, 50mm
		S-TW050/035N.75	Tie wrap for end bracket to fix cables, 75mm
		S-TW050/035N.100	Tie wrap for end bracket to fix cables, 100mm
		S-TW050/035N.125	Tie wrap for end bracket to fix cables, 125mm
		S-TW050/035N.150	Tie wrap for end bracket to fix cables, 150mm
		S-TW050/035N.175	Tie wrap for end bracket to fix cables, 175mm
		S-TW050/035N.200	Tie wrap for end bracket to fix cables, 200mm
		S-TW050/035N.200	Tie wrap for end bracket to fix cables, 200mm
nsb045N	SYSTEM TIE WRAP	sb-DV035/W S-TW.EB035	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
	SIDE BAND	nsb-SB045N.R*(LH) nsb-SB045N.R*(RH)	Left side band of nsb045N Right side band of nsb045N
	FRAME PIN	S-FP/S1	Frame pin
	FRAME	sb-FR/M.50	Frame, 50mm
		sb-FR/M.75	Frame, 75mm
		sb-FR/M.100	Frame, 100mm
		sb-FR/M.125	Frame, 125mm
		sb-FR/M.140	Frame, 140mm
		sb-FR/M.150	Frame, 150mm
		sb-FR/M.165	Frame, 165mm
		sb-FR/M.175	Frame, 175mm
		sb-FR/M.190	Frame, 190mm
		sb-FR/M.200	Frame, 200mm
		sb-FR/M.240	Frame, 240mm
		sb-FR/M.250	Frame, 250mm
		sb-FR/M.300	Frame, 300mm
	FREE END BRACKET	nsb-FEB045N sb-FEB/WH045	Free End bracket of nsb045N Steel washer for end bracket
	DIVIDER	sb-DV045/M sb-DV045/S sb-DV045/T	Normal divider To fix separstors at the both side section T divider
	SEPARATOR	sb-SP/400.Frame SP-PIN045	Separator, 400mm Separator pin to fix

Model	Classification	Part number	Description
nsb045N	TIE WRAP	S-TW50	Tie wrap for end bracket to fix cables, 50mm
		S-TW75	Tie wrap for end bracket to fix cables, 75mm
	SYSTEM TIE WRAP	S-TW100 S-TW125 S-TW150	Tie wrap for end bracket to fix cables, 100mm Tie wrap for end bracket to fix cables, 125mm Tie wrap for end bracket to fix cables, 150mm
nsb060N	SIDE BAND	nsb-SB060N.R*(LH) nsb-SB060N.R*(RH)	Left side band of nsb060N Right side band of nsb060N
	FRAME PIN	S-FP/S1	Frame pin
	FRAME	sb-FR060.75	Frame, 75mm
		sb-FR060.100	Frame, 100mm
		sb-FR060.125	Frame, 125mm
		sb-FR060.150	Frame, 150mm
		sb-FR060.175	Frame, 175mm
		sb-FR060.190	Frame, 190mm
		sb-FR060.200	Frame, 200mm
		sb-FR060.230	Frame, 230mm
		sb-FR060.240	Frame, 240mm
		sb-FR060.250	Frame, 250mm
		sb-FR060.300	Frame, 300mm
		sb-FR060.350	Frame, 350mm
		sb-FR060.400	Frame, 400mm
	FREE END BRACKET	nsb-FEB060N sb-FEB/WH060	Free End bracket of nsb060N Steel washer for end bracket
	DIVIDER	sb-DV060/M sb-DV060/S sb-DV060/R sb-DV060/T sb-DV060/TP	Normal divider To fix separstors at the both side section Roller divider to reduce friction with cables, Clean room type T divider T divider pin
	SEPARATOR	sb-SP/400.Frame SP-PIN060	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50 S-TW75 S-TW100 S-TW125 S-TW150	Tie wrap for end bracket to fix cables, 50mm Tie wrap for end bracket to fix cables, 75mm Tie wrap for end bracket to fix cables, 100mm Tie wrap for end bracket to fix cables, 125mm Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV060/W S-TW.EB060	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
nsb075N	SIDE BAND	nsb-SB075N.R*(LH) nsb-SB075N.R*(RH)	Left side band of nsb075N Right side band of nsb075N
	FRAME PIN	S-FP/S2	Frame pin
	FRAME	sb-FR075/100.75	Frame, 75mm
		sb-FR075/100.100	Frame, 100mm
		sb-FR075/100.115	Frame, 115mm
		sb-FR075/100.125	Frame, 125mm
		sb-FR075/100.150	Frame, 150mm
		sb-FR075/100.175	Frame, 175mm
		sb-FR075/100.200	Frame, 200mm
		sb-FR075/100.240	Frame, 240mm
		sb-FR075/100.250	Frame, 250mm
		sb-FR075/100.290	Frame, 290mm
		sb-FR075/100.300	Frame, 300mm
		sb-FR075/100.350	Frame, 350mm
		sb-FR075/100.400	Frame, 400mm
		sb-FR075/100.450	Frame, 450mm
		sb-FR075/100.500	Frame, 500mm
		sb-FR075/100.550	Frame, 550mm
		sb-FR075/100.600	Frame, 600mm
	FREE END BRACKET	nsb-FEB075N sb-FEB/WH075	Free End bracket of nsb075N Steel washer for end bracket
	DIVIDER	sb-DV075/M sb-DV075/S sb-DV075/R sb-DV075/T sb-DV075/TP	Normal divider To fix separstors at the both side section Roller divider to reduce friction with cables, Clean room type T divider T divider pin
	SEPARATOR	sb-SP/400.Frame SP-PIN075	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50 S-TW75 S-TW100 S-TW125 S-TW150	Tie wrap for end bracket to fix cables, 50mm Tie wrap for end bracket to fix cables, 75mm Tie wrap for end bracket to fix cables, 100mm Tie wrap for end bracket to fix cables, 125mm Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV075/W S-TW.EB075	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket

nsb028N



Unsupported Length



Other Length Restrictions

- Vertical Upper(Max) = 2.0m
- Vertical Below(Max) = 40.0m
- Side Mounted Unsupported(Max) = 1.0m

Caculation of the Chain Length

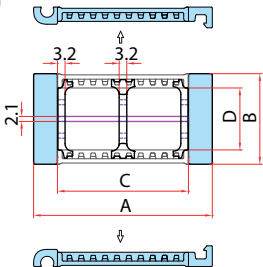
[
$$L = \frac{L_s}{2} + L_p$$
]

Ordering

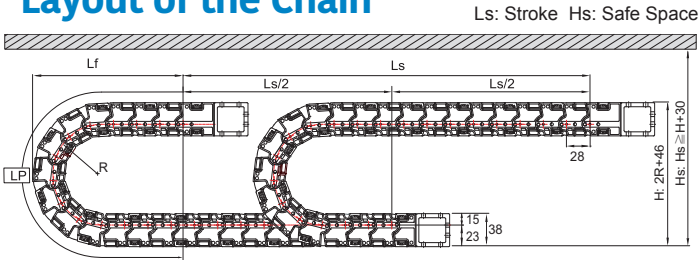
nsb 028N. 100.R46/F-840L:(DV:2)

Normal Type (N)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Chain Cross Section



Layout of the Chain

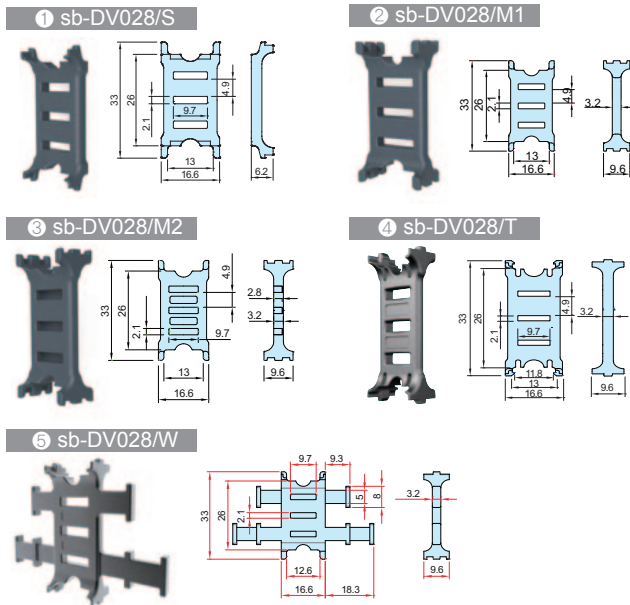
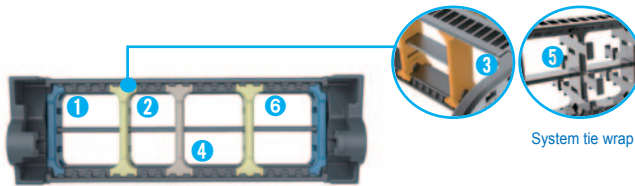


Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
46	257	125	138
66	320	145	178
86	383	165	218
116	477	195	278
146	571	225	338

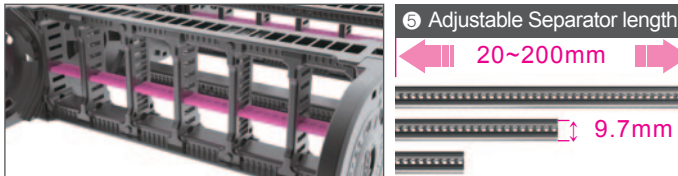
Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb028N	55	38	35	26	0.79
	70		50		0.82
	75		55		0.85
	95		75		0.90
	120		100		0.98
	145		125		1.08
	170		150		1.18
	195		175		1.45
	220		200		1.59

Dividers (DV)

Assembled to every 4th link
DV/T Applied to Frame 125~200
DV/M There are two types: M1 and M2
DV/W
Applicable to System Tie Wrap or FEB

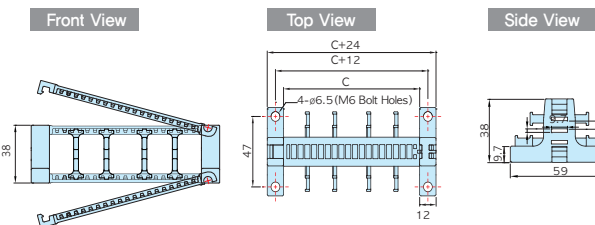


Separators (SP)

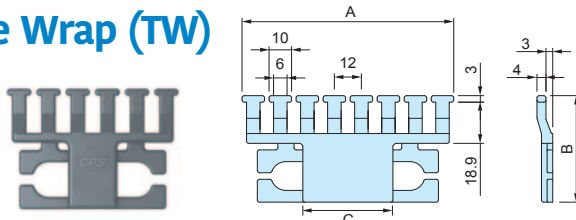


Adjustable Separator length
20~200mm
9.7mm

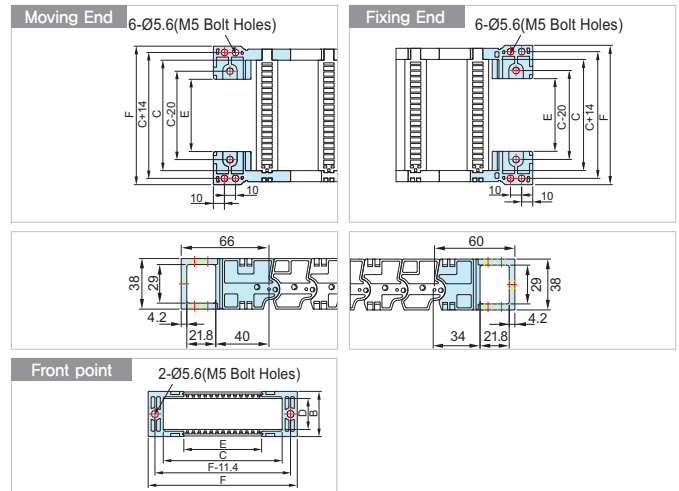
System Tie Wrap (STW)



Tie Wrap (TW)



Free End Bracket (FEB)



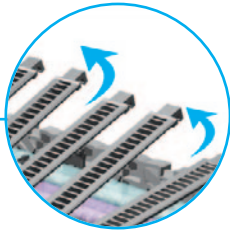
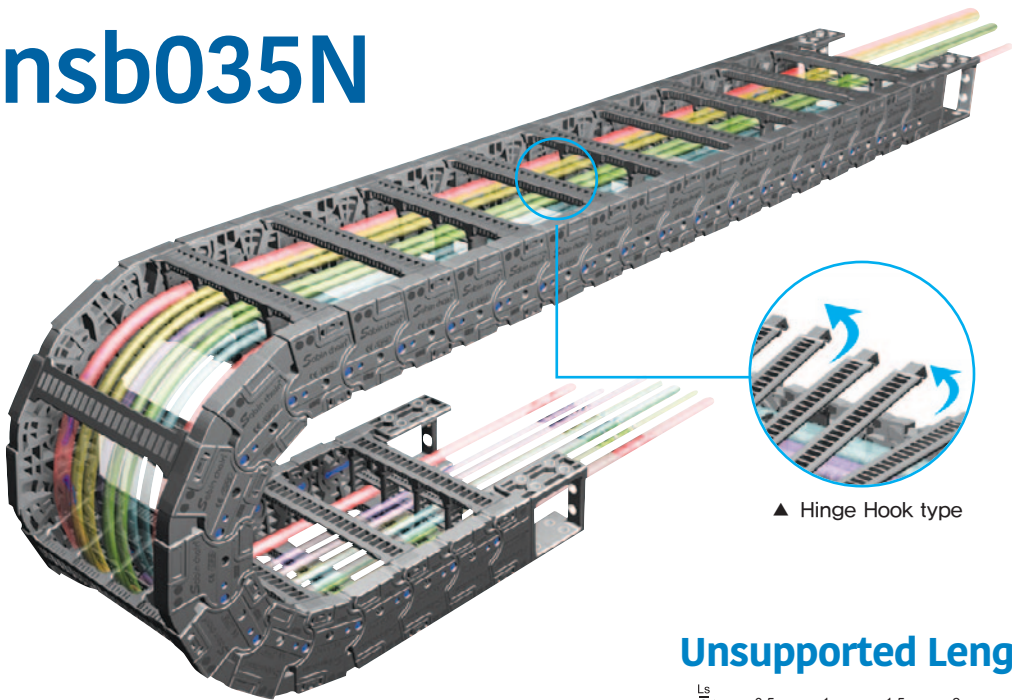
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E	Hole Type
ST028N	60.4	38	35	26	0.4	M5 Bolt Holes
	75.4		50		15.4	
	80.4		55		20.4	
	100.4		75		40.4	
	125.4		100		65.4	
	150.4		125		90.4	
	175.4		150		115.4	
	200.4		175		140.4	
	225.4		200		165.4	

Chain Type	Ordering No.	Frame
nsb028N	S-SP/M.35	35
	S-SP/M.50	50
	S-SP/M.55	55
	S-SP/M.75	75
	S-SP/M.100	100
	S-SP/M.125	125
	S-SP/M.150	150
	S-SP/M.175	175
	S-SP/M.200	200

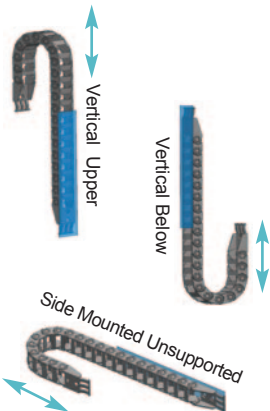
Chain Type	Ordering No.	C Frame	Hole Type
nsb028N	S-TW.EB028.35	35	M6 Bolt Holes
	S-TW.EB028.50	50	
	S-TW.EB028.55	55	
	S-TW.EB028.75	75	
	S-TW.EB028.100	100	
	S-TW.EB028.125	125	
	S-TW.EB028.150	150	
	S-TW.EB028.175	175	
	S-TW.EB028.200	200	

Chain Type	Ordering No.	A	B	C
nsb028N	S-TW036/025CR.35	46	35.4	-
	S-TW036/025CR.50	69	48.9	15
	S-TW036/025CR.55	70	48.9	20
	S-TW036/025CR.75	94	48.9	40
	S-TW036/025CR.100	118	48.9	65
	S-TW036/025CR.125	142	48.9	90
	S-TW036/025CR.150	166	49	115

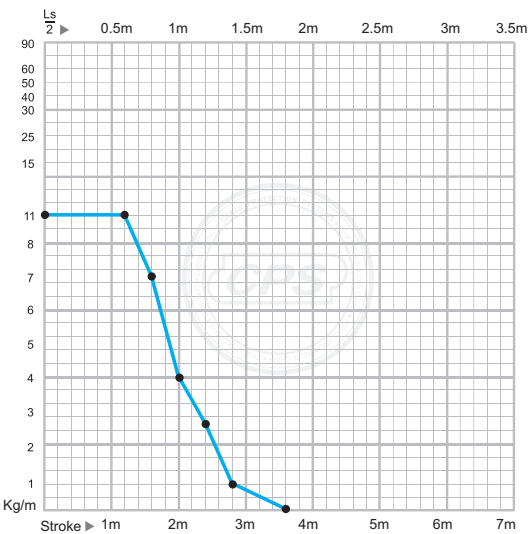
nsb035N



▲ Hinge Hook type



Unsupported Length



Other Length Restrictions

- Vertical Standing(Max) = 2.0m
- Vertical Hanging(Max) = 40.0m
- Side Mounted Unsupported(Max) = 1.0m

Caculation of the Chain Length

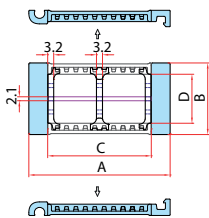
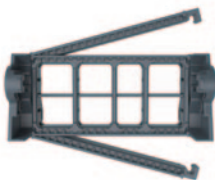
$$\left[L = \frac{L_s}{2} + L_p \right]$$

Ordering

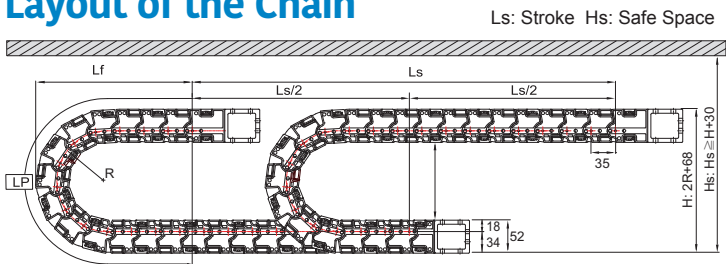
nsb 035N. 100. R115/F-1050L:(DV:2)

	Nomal Type (N)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type		

Chain Cross Section



Layout of the Chain

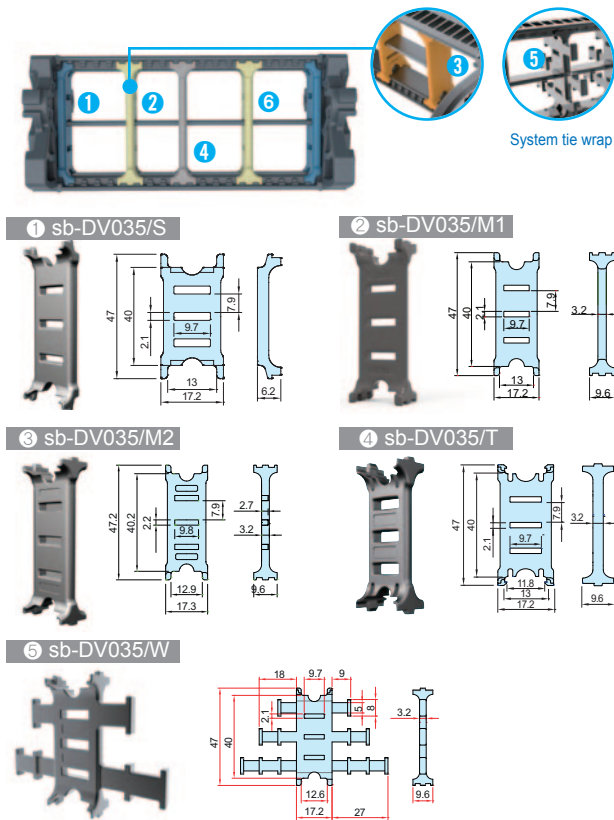


Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
55	313	159	178
65	345	169	198
90	423	194	248
115	502	219	298
140	580	244	348
190	737	294	448

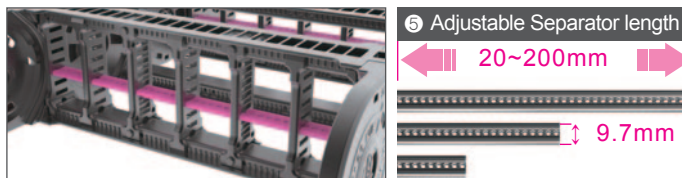
Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb035N	55	52	35	40	1.10
	70		50		1.13
	75		55		1.15
	95		75		1.18
	120		100		1.25
	145		125		1.32
	170		150		1.41
	195		175		1.62
	220		200		1.72

Dividers (DV)

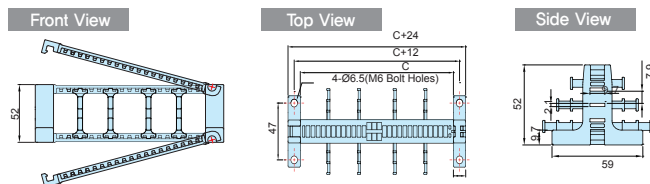
Assembled to every 4th link
DV/T Applied to Frame 125~200
DV/M There are two types: M1 and M2
DV/W
Tie wrap divider for free end bracket(FEB)



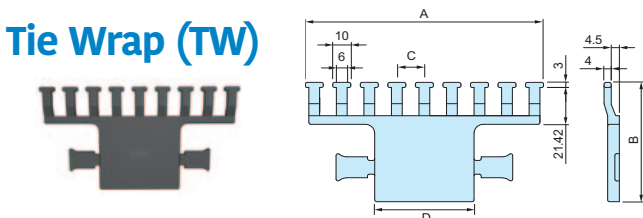
Separators (SP)



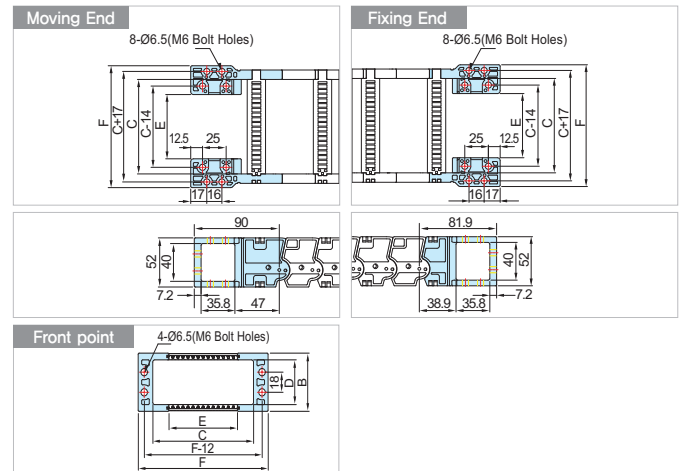
System Tie Wrap (STW)



Tie Wrap (TW)



Free End Bracket (FEB)



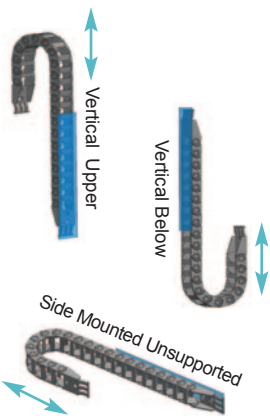
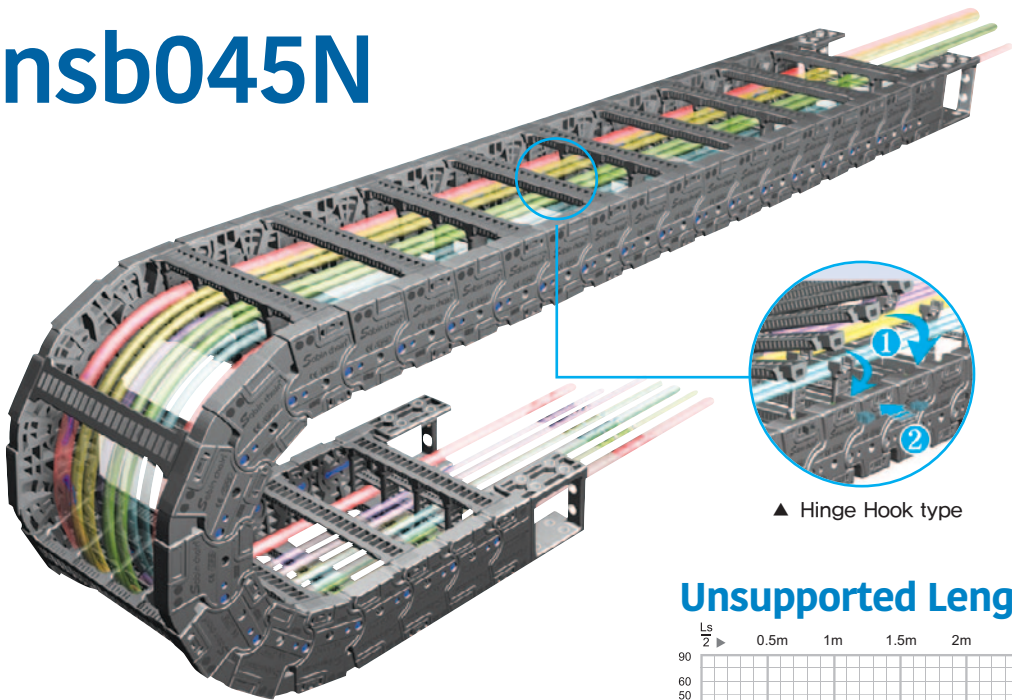
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB Inner	Hole Type
nsb035N	64	52	35	40	3	M6 Bolt Holes
	79		50		18	
	84		55		23	
	104		75		43	
	129		100		68	
	154		125		93	
	179		150		118	
	204		175		143	
	229		200		168	

Chain Type	Ordering No.	Frame
nsb035N	S-SP/M.35	35
	S-SP/M.50	50
	S-SP/M.55	55
	S-SP/M.75	75
	S-SP/M.100	100
	S-SP/M.125	125
	S-SP/M.150	150
	S-SP/M.175	175
	S-SP/M.200	200

Chain Type	Ordering No.	C Frame	Hole Type
nsb035N	S-TW.EB035.35	35	M6 Bolt Holes
	S-TW.EB035.50	50	
	S-TW.EB035.55	55	
	S-TW.EB035.75	75	
	S-TW.EB035.100	100	
	S-TW.EB035.125	125	
	S-TW.EB035.150	150	
	S-TW.EB035.175	175	
	S-TW.EB035.200	200	

Chain Type	Ordering No.	A	B	C	D
nsb035N	S-TW050/035N.50	82	64.5	12.00	5
	S-TW050/035N.55	82		12.00	10
	S-TW050/035N.75	107		12.13	30
	S-TW050/035N.100	132		15.25	55
	S-TW050/035N.125	157		14.70	80
	S-TW050/035N.150	182		14.35	105
	S-TW050/035N.175	203		12.31	130
	S-TW050/035N.200	232		13.88	155

nsb045N



▲ Hinge Hook type

Other Length Restrictions

- Vertical Standing(Max) = 6.0m
- Vertical Hanging(Max) = 100.0m
- Side Mounted Unsupported(Max) = 2.5m

Caculation of the Chain Length

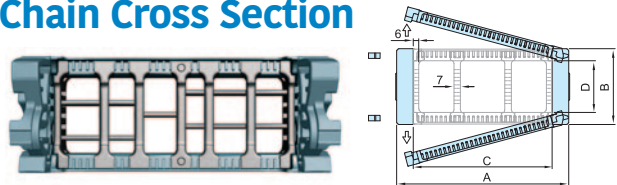
[
$$L = \frac{L_s}{2} + L_p$$
]

Ordering

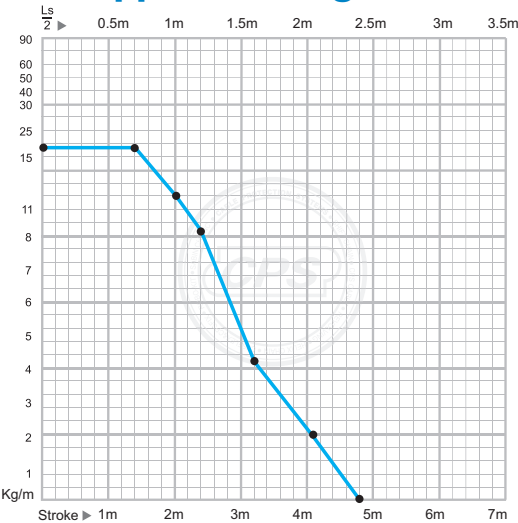
nsb 045N. 100.R135/F-1050L:(DV:2)

	Nomal Type (N)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type		

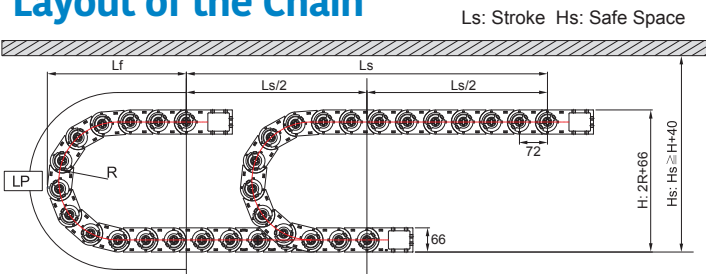
Chain Cross Section



Unsupported Length



Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
90	553	272	266
110	616	292	306
135	694	317	356
165	789	347	416
185	851	367	456
235	1008	417	556
285	1165	467	656

Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb045N	80	66	50	45	2.06
	105		75		2.14
	130		100		2.22
	155		125		2.32
	170		140		2.38
	180		150		2.42
	195		165		2.47
	205		175		2.51
	220		190		2.72
	230		200		2.86
	270		240		3.09
	280		250		3.15
	330		300		3.43

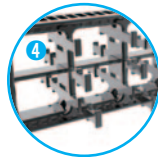
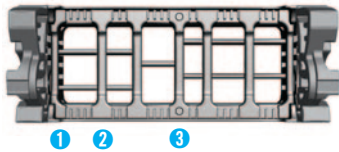
Dividers (DV)

Assembled to every 4th link

DV/T

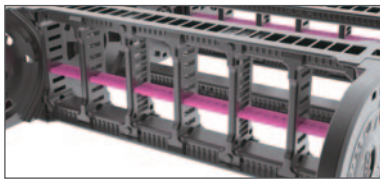
Applied to Frame 200 ~ 300(Connects Upper and Lower Frame)

DV/W Applicable to System Tie Wrap or FEB



System tie wrap

Separators (SP)



Adjustable Separator length

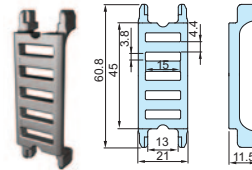
20~300mm



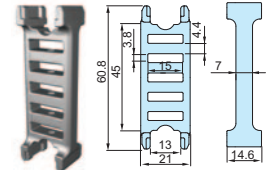
15mm

Chain Type	Ordering No.
nsb045N	sb-SP/400.Frame

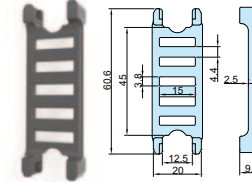
① sb-DV045/S



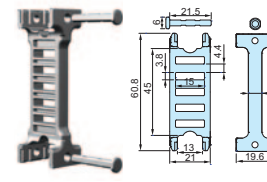
② sb-DV045/M



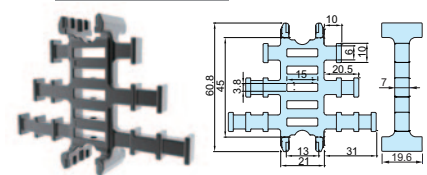
② sb-DV045/MS



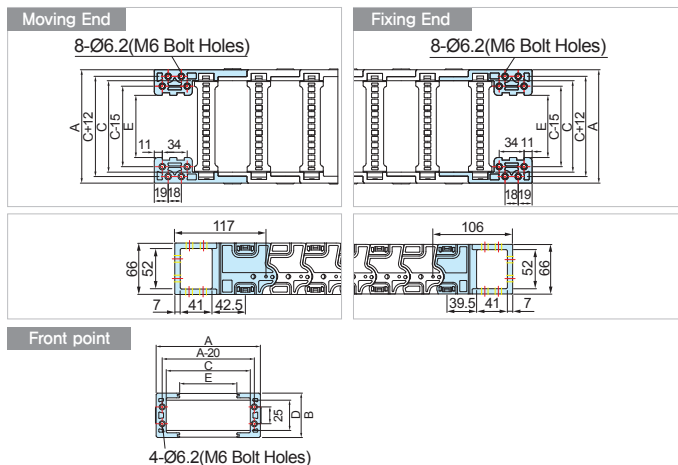
③ sb-DV045/T



④ sb-DV045/W

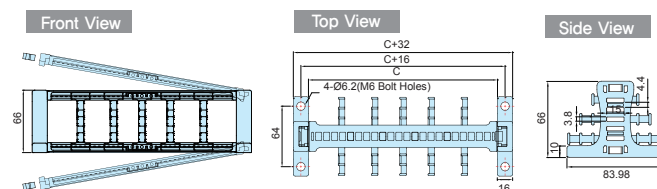


Free End Bracket (FEB)

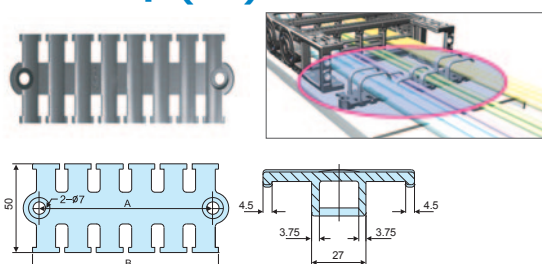


Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB B width	Hole Type
nsb045N	86	66	50	45	10	M6 Bolt Holes
	111		75		35	
	136		100		60	
	161		125		85	
	176		140		100	
	186		150		110	
	201		165		125	
	211		175		135	
	226		190		150	
	236		200		160	
	276		240		200	
	286		250		210	
	336		300		260	

System Tie Wrap (STW)



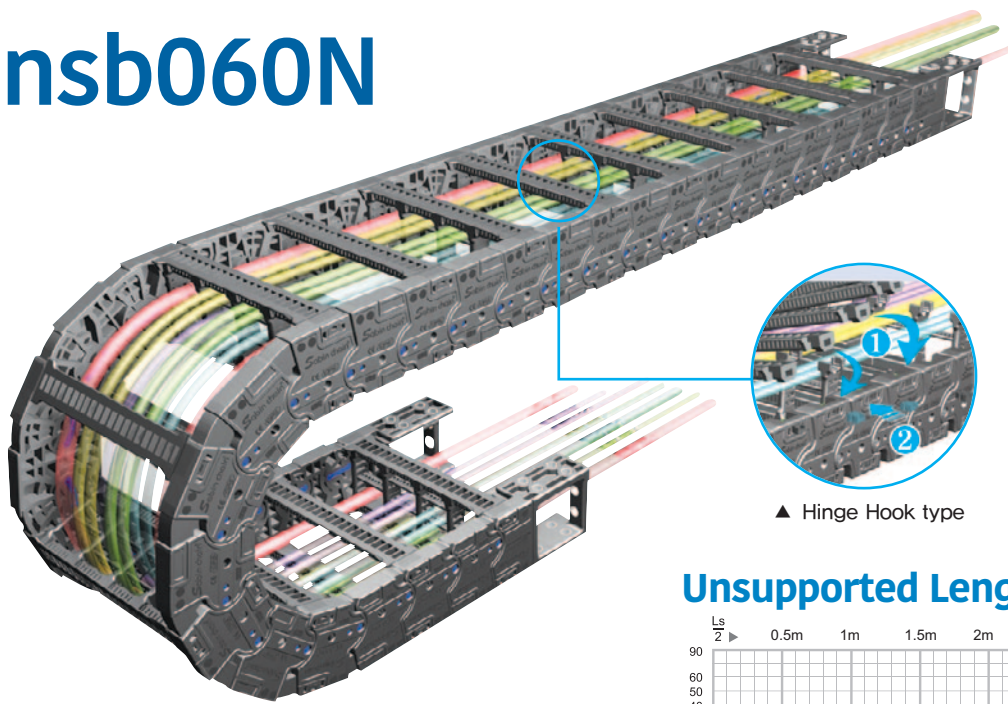
Tie Wrap (TW)



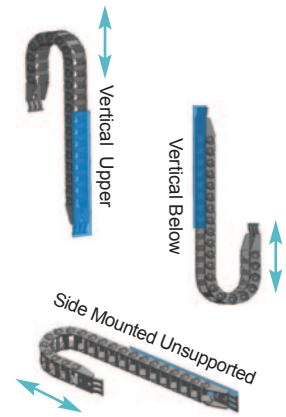
Chain Type	Ordering No.	C Frame	Hole Type
nsb045N	S-TW.EB045.50	50	M6 Bolt Holes
	S-TW.EB045.75	75	
	S-TW.EB045.100	100	
	S-TW.EB045.125	125	
	S-TW.EB045.140	140	
	S-TW.EB045.150	150	
	S-TW.EB045.165	165	
	S-TW.EB045.175	175	
	S-TW.EB045.190	190	
	S-TW.EB045.200	200	
	S-TW.EB045.240	240	
	S-TW.EB045.250	250	
	S-TW.EB045.300	300	

Chain Type	Ordering No.	A	B
nsb045N	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

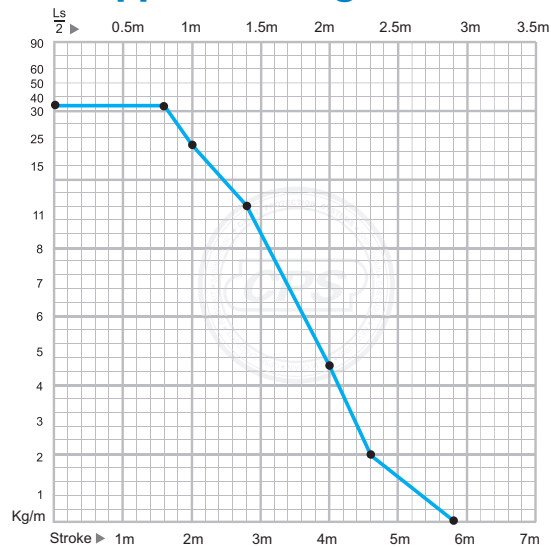
nsb060N



▲ Hinge Hook type



Unsupported Length



Other Length Restrictions

Vertical Standing(Max) = 6.0m
 Vertical Hanging(Max) = 100.0m
 Side Mounted Unsupported(Max) = 3.0m

Caculation of the Chain Length

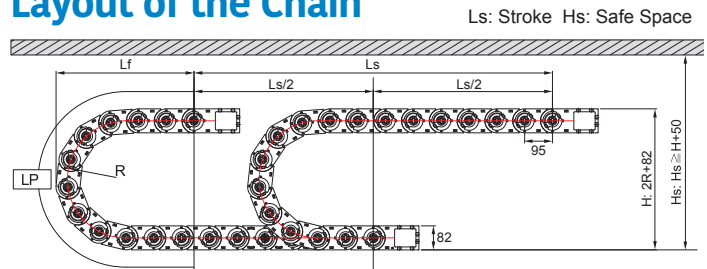
$$\left[L = \frac{L_s}{2} + L_p \right]$$

Ordering

nsb 060N, 100, R125/F-1800L : (DV:2)

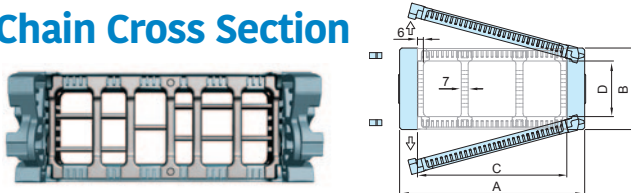
Normal Type (N)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	Lf(Loop Projection)	H(Moving Height)
125	753	359	357
135	784	369	377
150	831	384	407
180	926	414	467
230	1083	464	567
270	1208	504	647
340	1428	574	787

Chain Cross Section



Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
ST060N	115	82	75	55	3.30
	140		100		3.35
	165		125		3.51
	190		150		3.60
	215		175		3.69
	230		190		3.78
	240		200		3.84
	270		230		3.97
	280		240		4.01
	290		250		4.05
	340		300		4.26
	390		350		4.57
	440		400		4.86

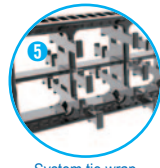
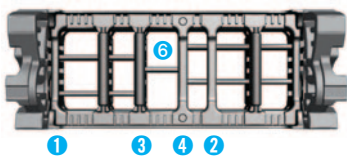
Dividers (DV)

Assembled to every 4th link

DV/T

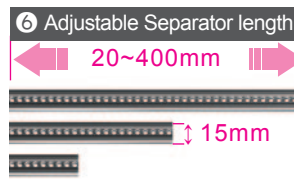
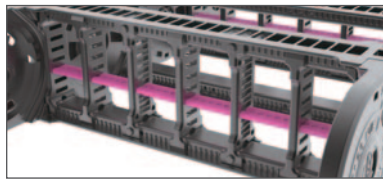
Applied to Frame 250 ~ 400(Connects Upper and Lower Frame)

DV/W Applicable to System Tie Wrap or FEB



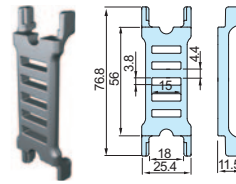
System tie wrap

Separators (SP)

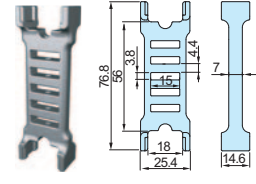


Chain Type	Ordering No.
nsb060N	sb-SP/400.Frame

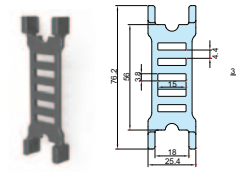
1 sb-DV060/S



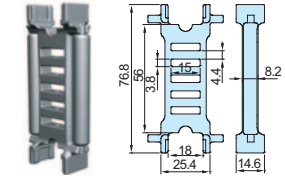
2 sb-DV060/M



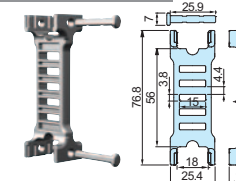
2 sb-DV060/MS



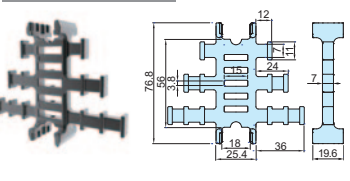
3 sb-DV060/R



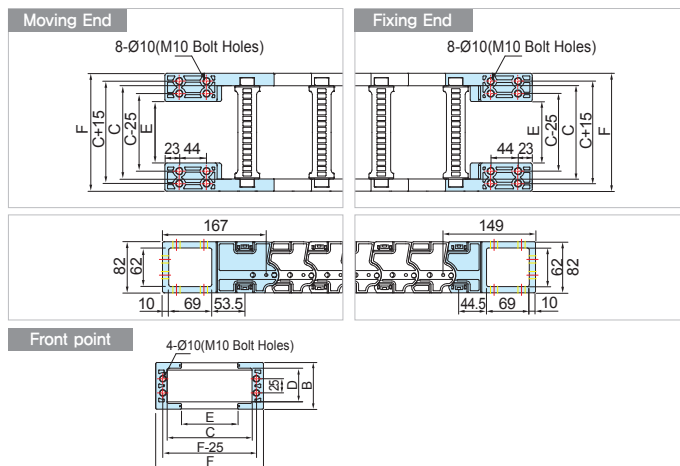
4 sb-DV060/T



5 sb-DV060/W

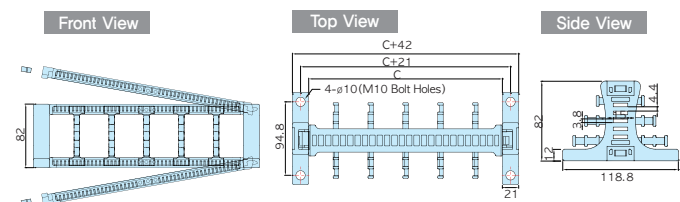


Free End Bracket (FEB)

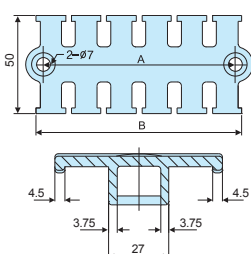
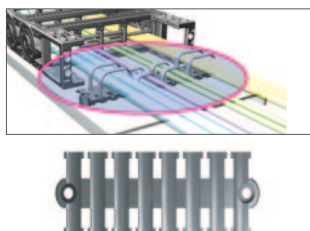


Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB width	Hole Type
nsb060N	115	82	75	55	24	M10 Bolt Holes
	140		100		49	
	165		125		74	
	190		150		99	
	215		175		124	
	230		190		139	
	240		200		149	
	270		230		179	
	280		240		189	
	290		250		199	
	340		300		249	
	390		350		299	
	440		400		349	

System Tie Wrap (STW)



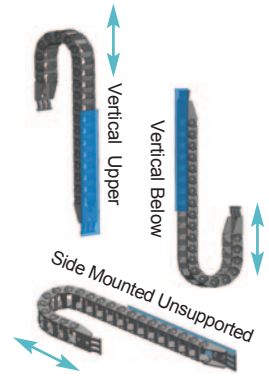
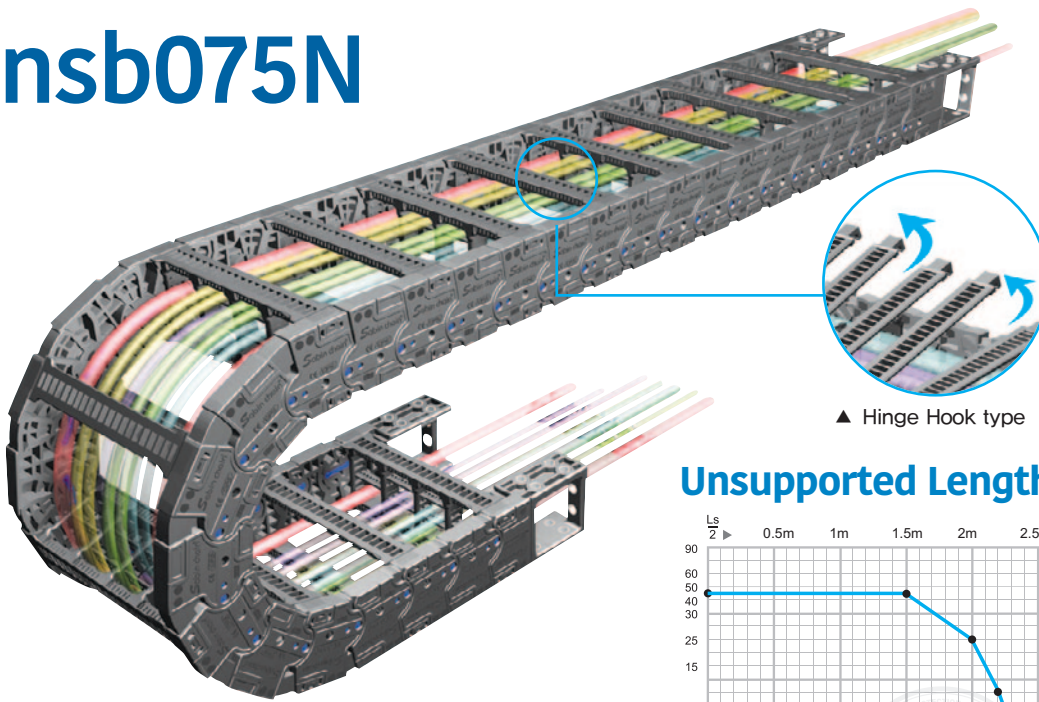
Tie Wrap (TW)



Chain Type	Ordering No.	C Frame	Hole Type
nsb060N	S-TW.EB060.75	75	M10 Bolt Holes
	S-TW.EB060.100	100	
	S-TW.EB060.125	125	
	S-TW.EB060.150	150	
	S-TW.EB060.175	175	
	S-TW.EB060.190	190	
	S-TW.EB060.200	200	
	S-TW.EB060.230	230	
	S-TW.EB060.240	240	
	S-TW.EB060.250	250	
	S-TW.EB060.300	300	
	S-TW.EB060.350	350	
	S-TW.EB060.400	400	

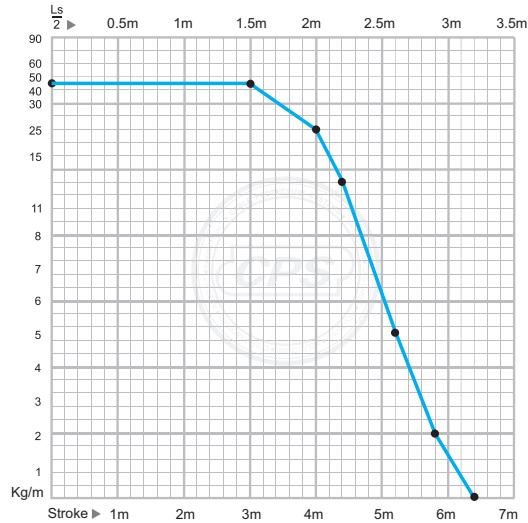
Chain Type	Ordering No.	A	B
nsb060N	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

nsb075N



▲ Hinge Hook type

Unsupported Length



Other Length Restrictions

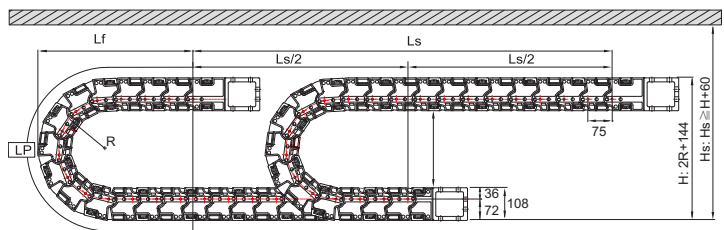
- Vertical Standing(Max) = 6.0m
- Vertical Hanging(Max) = 100.0m
- Side Mounted Unsupported(Max) = 3.0m

Calculation of the Chain Length

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

Layout of the Chain

Ls: Stroke Hs: Safe Space



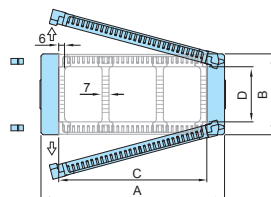
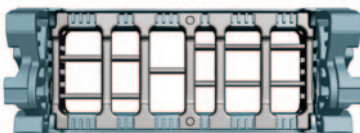
Bending Radius(R)	Lp(Loop Length)	LF(Loop Projection)	H(Moving Height)
160	953	457	464
180	1016	477	504
230	1173	527	604
280	1330	577	704
330	1487	627	804
380	1644	677	904
480	1958	777	1,104

Ordering

nsb075N. 100.R160/F-1875L:(DV:2)

Nomal Type (N)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

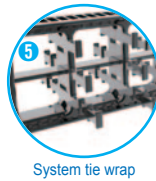
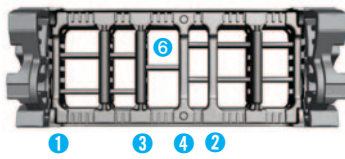
Chain Cross Section



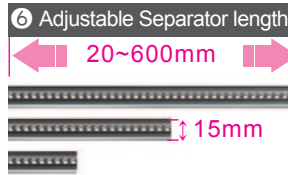
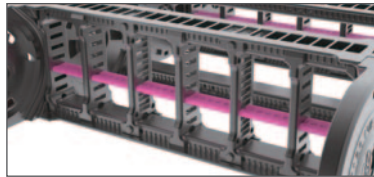
Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb075N	115	108	75	78	4.80
	140		100		4.90
	155		115		4.97
	165		125		5.02
	190		150		5.12
	215		175		5.25
	240		200		5.46
	280		240		5.67
	290		250		5.72
	330		290		6.02
	340		300		6.09
	390		350		6.45
	440		400		6.83
	490		450		7.12
	540		500		7.32
	590		550		8.06
	640		600		8.20

Dividers (DV)

Assemble divider every second frame
DV/T Applied to Frame 300~600
DV/M Normal Divider

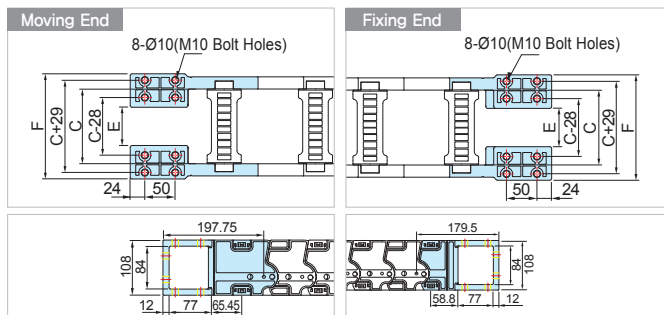


Separators (SP)

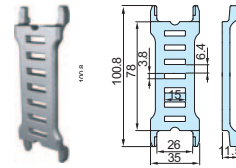


Chain Type	Ordering No.
nsb075N	sb-SP/400.Frame

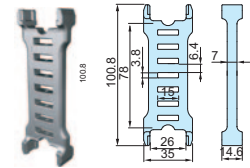
Free End Bracket(FEB)



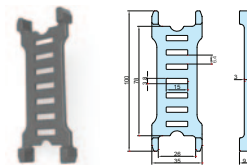
1 sb-DV075/S



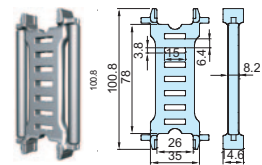
2 sb-DV075/M



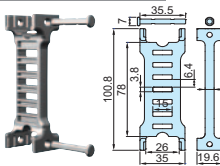
2 sb-DV075/MS



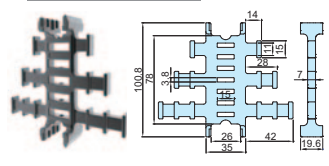
4 sb-DV075/R



4 sb-DV075/T

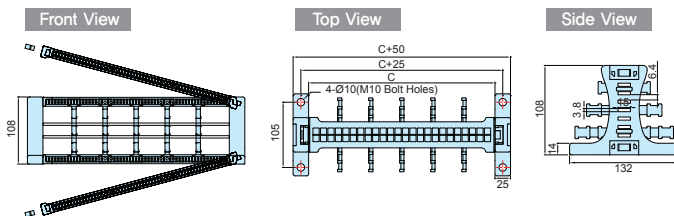


5 sb-DV075/W

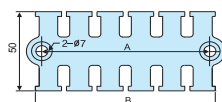
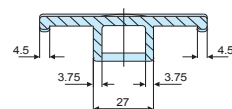
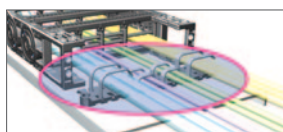


Chain Type	A Width (Outer)	B Height(Outer)	C Frame Width	D Height(Inner)	E EB width	Hole Type
nsb 075N	115	108	75	78	15	M10 Bolt Holes
	140		100		40	
	155		115		55	
	165		125		65	
	190		150		90	
	215		175		115	
	240		200		140	
	280		240		180	
	290		250		190	
	330		290		230	
	340		300		240	
	390		350		290	
	440		400		340	
	490		450		390	
	540		500		440	
	590		550		490	
	640		600		540	

System Tie Wrap (STW)



Tie Wrap (TW)



Chain Type	Ordering No.	C Frame	Hole Type
nsb075N	S-TW.EB075.75	75	M10 Bolt Holes
	S-TW.EB075.100	100	
	S-TW.EB075.115	115	
	S-TW.EB075.125	125	
	S-TW.EB075.150	150	
	S-TW.EB075.175	175	
	S-TW.EB075.200	200	
	S-TW.EB075.240	240	
	S-TW.EB075.250	250	
	S-TW.EB075.290	290	
	S-TW.EB075.300	300	
	S-TW.EB075.350	350	
	S-TW.EB075.400	400	
	S-TW.EB075.450	450	
	S-TW.EB075.500	500	
	S-TW.EB075.550	550	
	S-TW.EB075.600	600	

Chain Type	Ordering No.	A	B
nsb075N	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

General Information

- Material : CPS-Amide (PA6+G.F)
- Speed : 10%
- Acceleration : 20%
- Temperature : -30℃ ~ +130℃
- Special production : ESD, UV, Customized color
- Certificate : CE, ATEX(Ex), RoHs2

Value of Speed/Acceleration is subject to change according to cable's amount and travel length.

Calculation Table

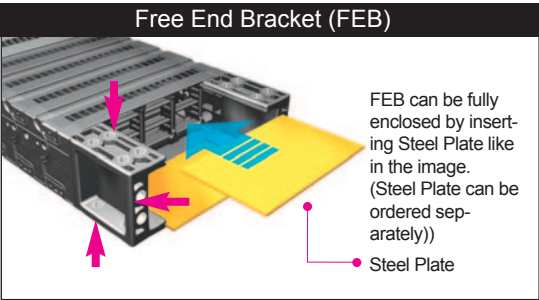
Length of Cable Chain

: $L = \frac{1}{2} \times L_s + L_p$

Bending Radius

- : Multiply 8~10 of the biggest cable
- : Multiply 15~20 of the biggest hose

Bracket Type



Dimension Table

nsb Chain-Enclosed Type	Pitch	Bending Radlus (R)	Weight kg/m	Speed m/s	Temperature ℃	Size				Frame Type	Section-Composition
						A	B	C	D		
nsb028E	28	66 86 116 146	1.00 1.13 1.30 1.50	10	-30 ~ +130	55 75 95 120	38	35 55 75 100	26		
nsb035E	35	90 115 140 190	1.45 1.64 1.83 2.06 2.28	10	-30 ~ +130	70 95 120 145 170	52	50 75 100 125 150	40		
nsb045E	45	90 110 135 165 185 235 285	2.78 3.07 3.35 3.58	10	-30 ~ +130	105 130 155 180	66	75 100 125 150	45		
nsb060E	60	125 135 150 180 230 270 340	4.32 4.86 5.41	10	-30 ~ +130	140 190 240	82	100 150 200	56		
nsb075E	75	160 180 230 280 330 380 480	7.01 7.97 9.48	10	-30 ~ +130	190 240 340	108	150 200 300	78		

Ordering

nsb028E.55.R66 / F980L : (DV:2)

nsb

028E.

55.

R66

/

F

980L

:

(DV:2)

Quantity of Divider(Link)

Length(mm)

Bracket Type : F-Free End Bracket

Bending radius FT-Tie Wrap

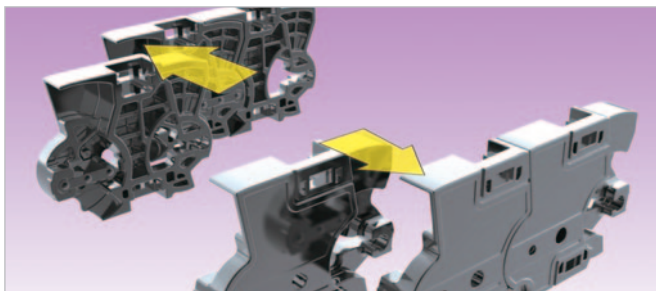
Inside width FST-System Tie Wrap

nsb Chain-Enclosed Type (E)

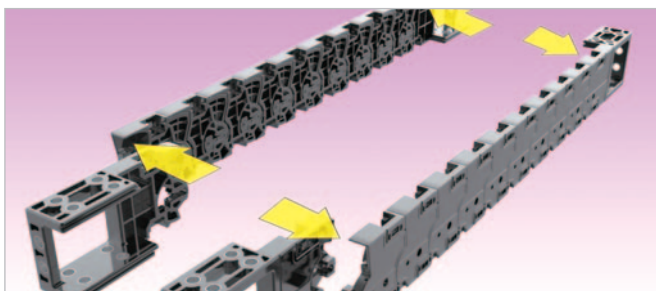
Sabin Chain

Assembly procedure of nsb Chain-Enclosed Type

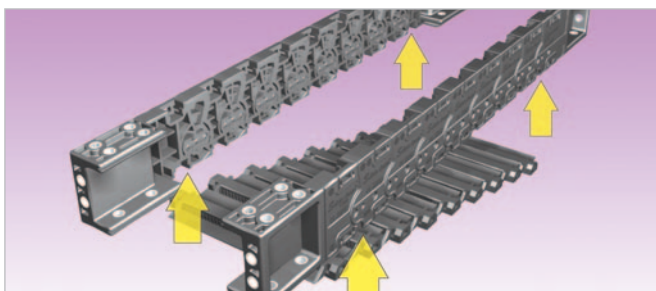
The assembling process of E-Type of New Sabin Chain is like below and user must use rubber hammer with careful combination of Divider and Separator.



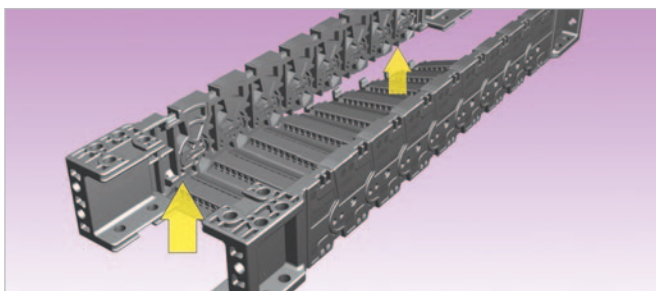
1 Connect each side band as many as you need.



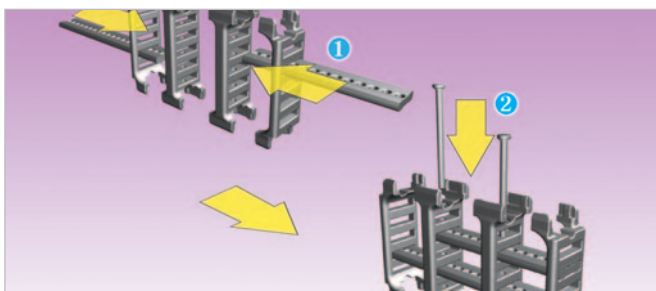
2 Assemble the end brackets on both ends.



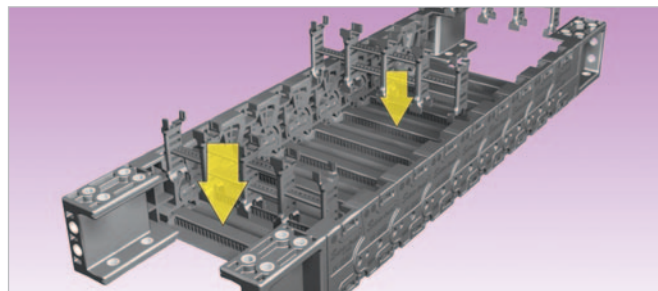
3 Attach frames starting with the bottom side of the carrier.



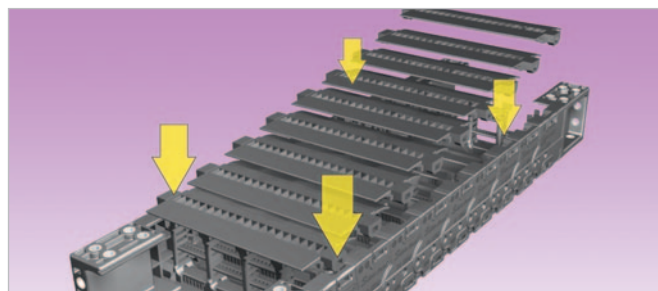
3-1 028E, 035E Type are Hinge Frame Type.



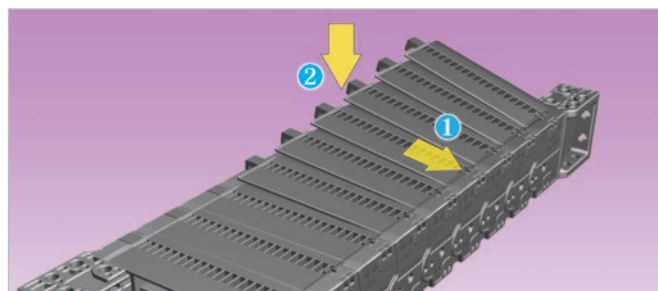
4 For nsb 045, 060, and 075, connect the pin of separator in hole of divider after inserting separator in hole of divider. For nsb028 and nsb035, separator fixing pins are not used.



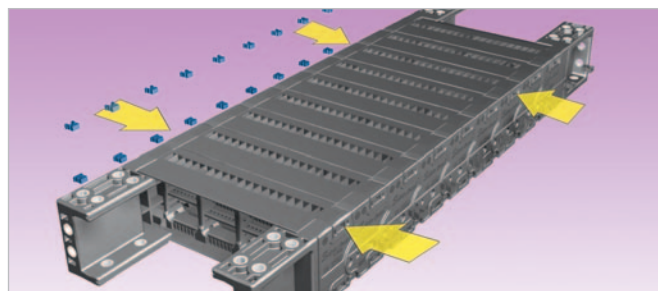
5 Fix the separator and divider patterns to the bottom-side frames as needed.



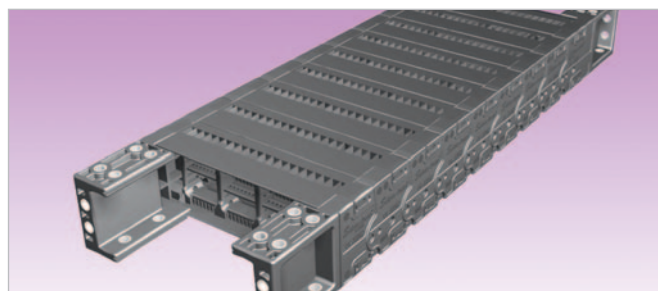
6 Fix the topside frames to the carrier.



6-1 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.)



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

Part list of nsb Chain-Enclosed Type



Composition of nsb Chain Enclosed Type

= Side band (RH/LH) + Frame (Upper/Lower) + Free End Bracket

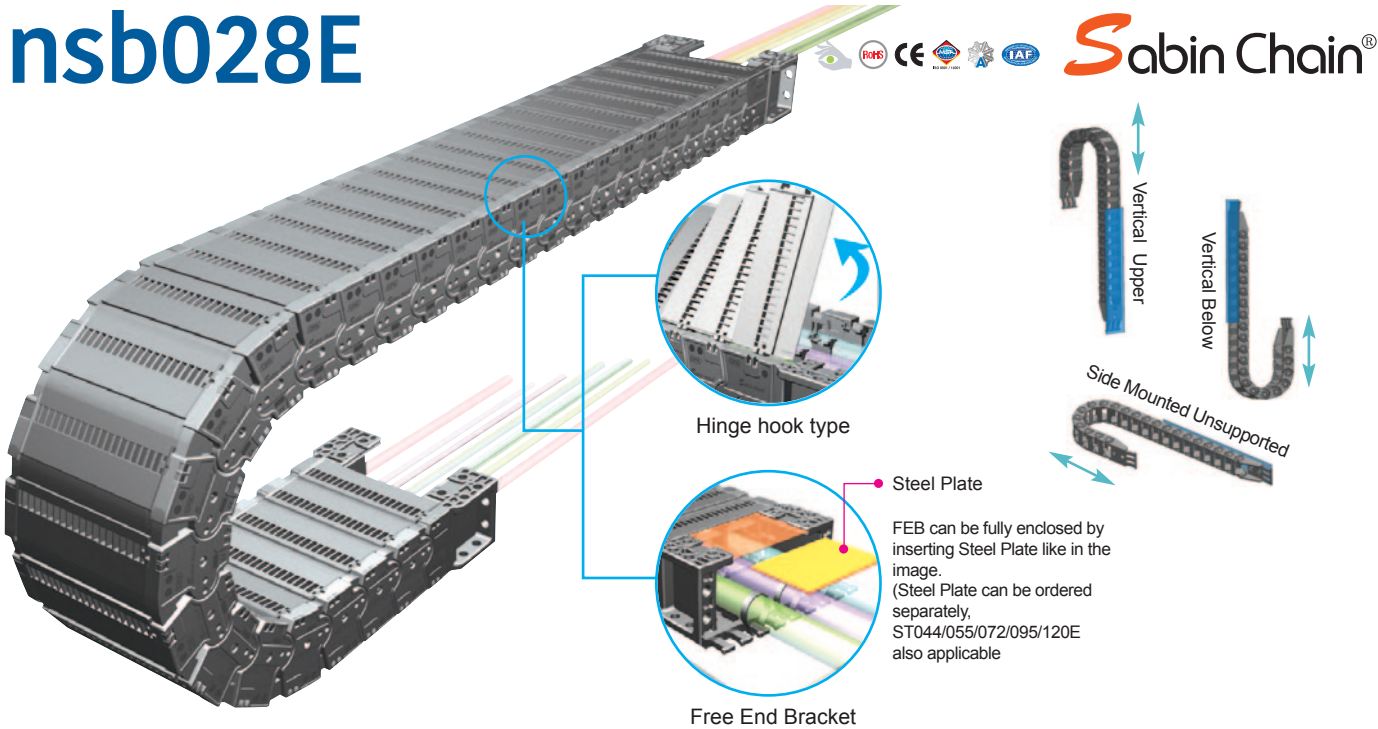
M divider(normal divider) should be applied every second frames to make a section composition.

※ Please refer to below part list and description to understand composition of cable chain.

Model	Classification	Part number	Description
nsb028E	SIDE BAND	nsb-SB028E.R*(LH) nsb-SB028E.R*(RH)	Left side band of nsb028E Right side band of nsb028E
	FRAME	sb-FRD028.35	Frame, 35mm
		sb-FRU028.35	Frame, 35mm
		sb-FRD028.55	Frame, 55mm
		sb-FRU028.55	Frame, 55mm
		sb-FRD028.75	Frame, 75mm
		sb-FRU028.75	Frame, 75mm
		sb-FRD028.100	Frame, 100mm
		sb-FRU028.100	Frame, 100mm
	FREE END BRACKET	nsb-FEB028E	Free End bracket of nsb028E
	DIVIDER	sb-DV028/M	Normal divider
		sb-DV028/S	To fix separstors at the both side section
	SEPARATOR	S-SP/M.35	Separator, 35mm
		S-SP/M.55	Separator, 50mm
		S-SP/M.75	Separator, 75mm
		S-SP/M.100	Separator, 100mm
	TIE WRAP	S-TW036/025CR.35	Tie wrap for end bracket to fix cables, 35mm
		S-TW036/025CR.55	Tie wrap for end bracket to fix cables, 55mm
		S-TW036/025CR.75	Tie wrap for end bracket to fix cables, 75mm
		S-TW036/025CR.100	Tie wrap for end bracket to fix cables, 100mm
	SYSTEM TIE WRAP	sb-DV028/W S-TW.EB028	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
nsb035E	SIDE BAND	nsb-SB035E.R*(LH) nsb-SB035E.R*(RH)	Left side band of nsb035E Right side band of nsb035E
	FRAME	sb-FRD035.50	Frame, 50mm
		sb-FRU035.50	Frame, 50mm
		sb-FRD035.75	Frame, 75mm
		sb-FRU035.75	Frame, 75mm
		sb-FRD035.100	Frame, 100mm
		sb-FRU035.100	Frame, 100mm
		sb-FRD035.125	Frame, 125mm
		sb-FRU035.125	Frame, 125mm
		sb-FRD035.150	Frame, 150mm
		sb-FRU035.150	Frame, 150mm
	FREE END BRACKET	nsb-FEB035E	Free End bracket of nsb035E
	DIVIDER	sb-DV035/M	Normal divider
		sb-DV035/S	To fix separstors at the both side section
	SEPARATOR	S-SP/M.35	Separator, 35mm
		S-SP/M.50	Separator, 50mm
		S-SP/M.75	Separator, 75mm
		S-SP/M.100	Separator, 100mm
		S-SP/M.125	Separator, 125mm
		S-SP/M.150	Separator, 150mm
	TIE WRAP	S-TW050/035N.50	Tie wrap for end bracket to fix cables, 50mm
		S-TW050/035N.75	Tie wrap for end bracket to fix cables, 75mm
		S-TW050/035N.100	Tie wrap for end bracket to fix cables, 100mm
		S-TW050/035N.125	Tie wrap for end bracket to fix cables, 125mm
		S-TW050/035N.150	Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV035/W S-TW.EB035	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
nsb045E	SIDE BAND	nsb-SB045E.R*(LH) nsb-SB045E.R*(RH)	Left side band of nsb045E Right side band of nsb045E
	FRAME PIN	S-FP/S1	Frame pin
	FRAME	sb-FRD045.75	Frame, 75mm
		sb-FRU045.75	Frame, 75mm
		sb-FRD045.100	Frame, 100mm
		sb-FRU045.100	Frame, 100mm
		sb-FRD045.125	Frame, 125mm
		sb-FRU045.125	Frame, 125mm
		sb-FRD045.150	Frame, 150mm
		sb-FRU045.150	Frame, 150mm
	FREE END BRACKET	nsb-FEB045E sb-FEB/WH045	Free End bracket of nsb045N Steel washer for end bracket
	DIVIDER	sb-DV045/M	Normal divider
		sb-DV045/S sb-DV045/T	To fix separstors at the both side section T divider
	SEPARATOR	sb-SP/400.Frame SP-PIN045	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50	Tie wrap for end bracket to fix cables, 50mm
		S-TW75	Tie wrap for end bracket to fix cables, 75mm
		S-TW100	Tie wrap for end bracket to fix cables, 100mm
		S-TW125	Tie wrap for end bracket to fix cables, 125mm
		S-TW150	Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV045/W S-TW.EB045	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket

Model	Classification	Part number	Description
nsb060E	SIDE BAND	nsb-SB060E.R*(LH) nsb-SB060E.R*(RH)	Left side band of nsb060E Right side band of nsb060E
	FRAME PIN	S-FP/S1	Frame pin
	FRAME	sb-FRD060.100	Frame, 100mm
		sb-FRU060.100	Frame, 100mm
		sb-FRD060.150	Frame, 150mm
		sb-FRU060.150	Frame, 150mm
		sb-FRD060.200	Frame, 200mm
		sb-FRU060.200	Frame, 200mm
	FREE END BRACKET	nsb-FEB060E sb-FEB/WH060	Free End bracket of nsb060E Steel washer for end bracket
	DIVIDER	sb-DV060/M	Normal divider
		sb-DV060/S	To fix separstors at the both side section
		sb-DV060/R	Roller divider to reduce friction with cables, Clean room type
		sb-DV060/T sb-DV060/TP	T divider T divider pin
	SEPARATOR	sb-SP/400.Frame SP-PIN060	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50	Tie wrap for end bracket to fix cables, 50mm
		S-TW75	Tie wrap for end bracket to fix cables, 75mm
		S-TW100	Tie wrap for end bracket to fix cables, 100mm
		S-TW125 S-TW150	Tie wrap for end bracket to fix cables, 125mm Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV060/W S-TW.EB060	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
nsb075E	SIDE BAND	nsb-SB075E.R*(LH) nsb-SB075E.R*(RH)	Left side band of nsb075E Right side band of nsb075E
	FRAME PIN	S-FP/S2	Frame pin
	FRAME	sb-FRD075.150	Frame, 150mm
		sb-FRU075.150	Frame, 150mm
		sb-FRD075.200	Frame, 200mm
		sb-FRU075.200	Frame, 200mm
		sb-FRD075.300 sb-FRU075.300	Frame, 300mm Frame, 300mm
	FREE END BRACKET	nsb-FEB075E sb-FEB/WH075	Free End bracket of nsb075E Steel washer for end bracket
	DIVIDER	sb-DV075/M	Normal divider
		sb-DV075/S	To fix separstors at the both side section
		sb-DV075/R	Roller divider to reduce friction with cables, Clean room type
		sb-DV075/T sb-DV075/TP	T divider T divider pin
	SEPARATOR	sb-SP/400.Frame SP-PIN075	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50	Tie wrap for end bracket to fix cables, 50mm
		S-TW75	Tie wrap for end bracket to fix cables, 75mm
		S-TW100	Tie wrap for end bracket to fix cables, 100mm
		S-TW125 S-TW150	Tie wrap for end bracket to fix cables, 125mm Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV075/W S-TW.EB075	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket

nsb028E



Other Length Restrictions

Vertical Upper(Max) = 2.0m
Vertical Below(Max) = 40.0m
Side Mounted Unsupported(Max) = 1.0m

Caculation of the Chain Length

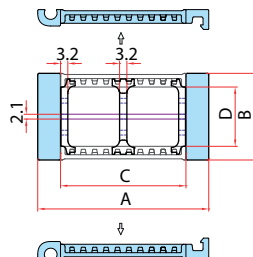
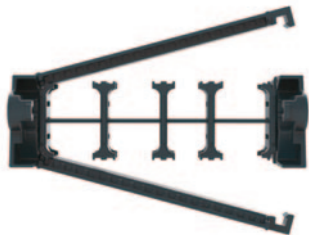
$$[L = \frac{L_s}{2} + L_p]$$

Ordering

nsb 028E. 55. R66/F-980L : (DV:2)

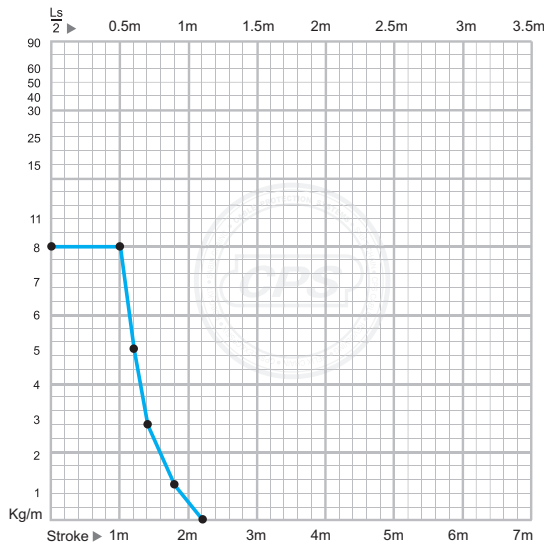
Enclosed Type (E)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Chain Cross Section

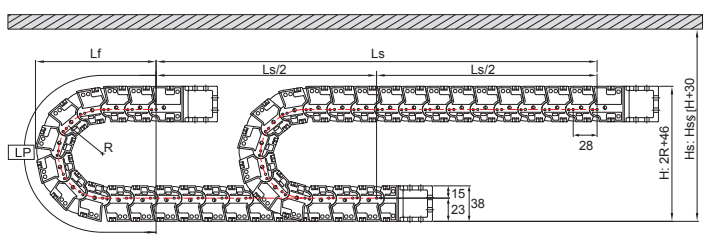


Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb028E	55 75 95 120	38	35 55 75 100	26	1.00 1.13 1.30 1.50

Unsupported Length

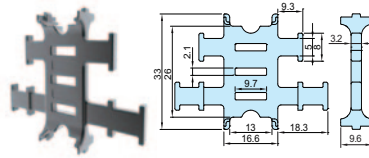
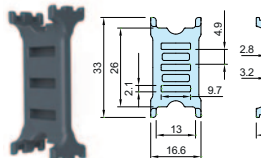
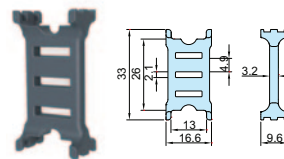
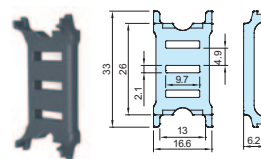
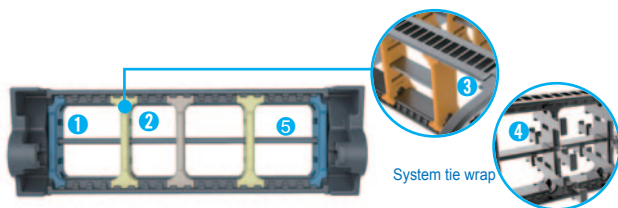


Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loop Projection)	H(Moving Height)
66	320	145	178
86	383	165	218
116	477	195	278
146	571	225	338

Assembled to every 4th link
DV/T Applied to Frame 125~200
DV/M There are two types: M1 and M2
DV/W
 Applicable to System Tie Wrap or FEB



Moving End

4-Ø5.6(M5 Bolt Holes)

A, C+14, C, E, 10, 10

Fixing End

4-Ø5.6(M5 Bolt Holes)

A, C+14, C, E, 10, 10

Side View Dimensions (Left): 66, 38, 29, 4.2, 21.8, 40

Side View Dimensions (Right): 60, 38, 29, 4.2, 34, 21.8

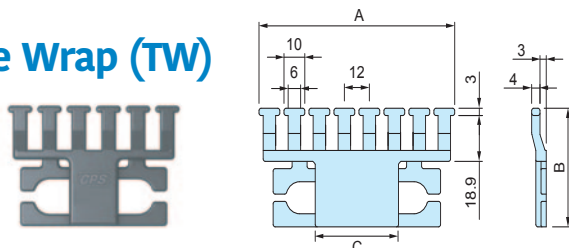
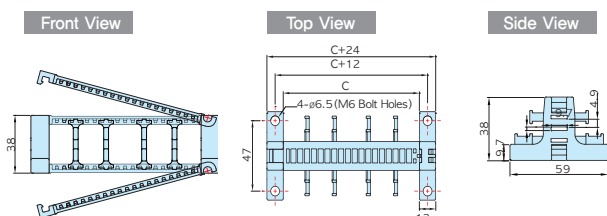
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E	Hole Type
nsb028E	60.4	38	35	26	0.4	M5 Bolt Holes
	80.4		55		20.4	
	100.4		75		40.4	
	125.4		100		65.4	

⑤ Adjustable Separator length

20~100mm

9.7mm

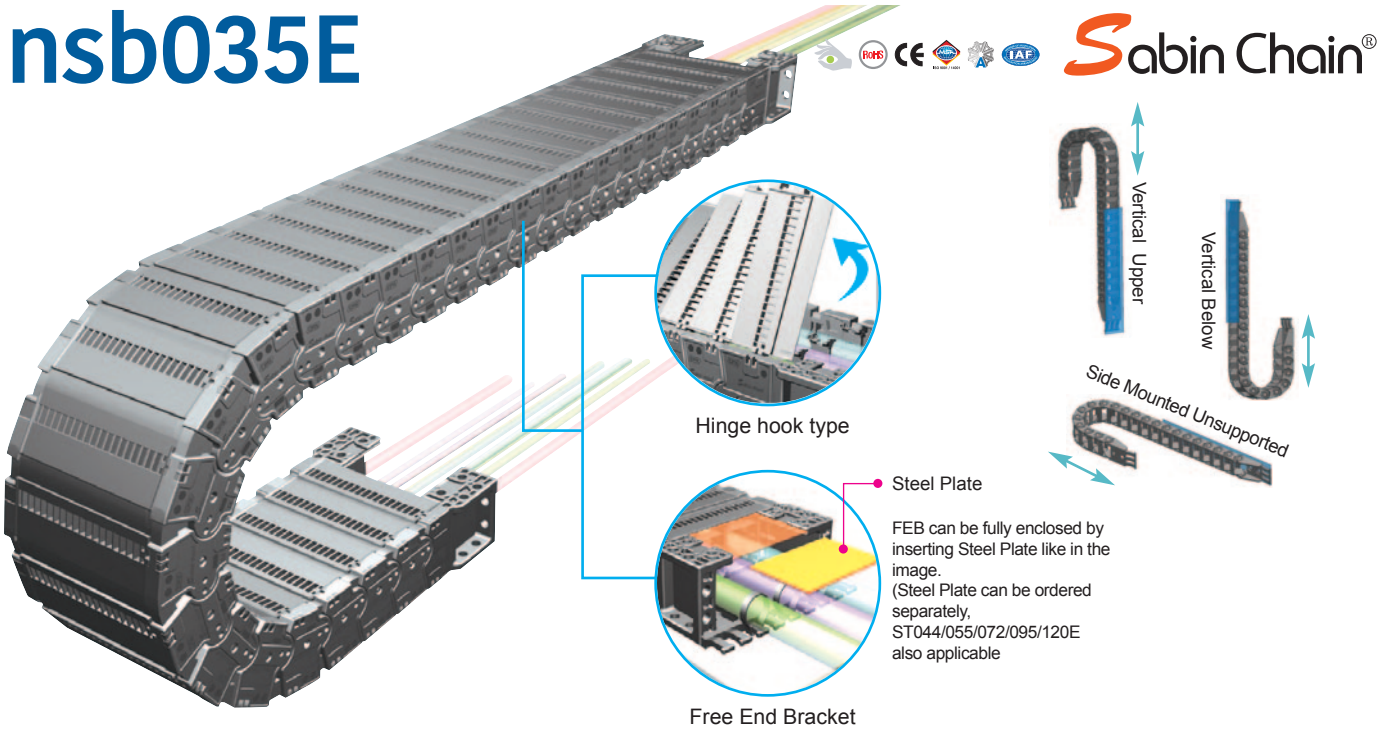
Chain Type	Ordering No.	Frame
nsb028E	S-SP/M.35	35
	S-SP/M.55	55
	S-SP/M.75	75
	S-SP/M.100	100



Chain Type	Ordering No.	C Frame	Hole Type
nsb028E	S-TW.EB028.35	35	M6 Bolt Holes
	S-TW.EB028.55	55	
	S-TW.EB028.75	75	
	S-TW.EB028.100	100	

Chain Type	Ordering No.	A	B	C
nsb028E	S-TW036/025CR.35	46	35.4	-
	S-TW036/025CR.55	70	48.9	20
	S-TW036/025CR.75	94	48.9	40
	S-TW036/025CR.100	118	48.9	65

nsb035E



Other Length Restrictions

- Vertical Standing(Max) = 3.0m
- Vertical Hanging(Max) = 50.0m
- Side Mounted Unsupported(Max) = 1.0m

Caculation of the Chain Length

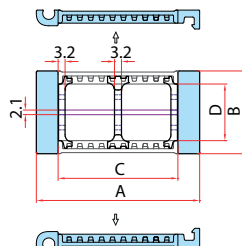
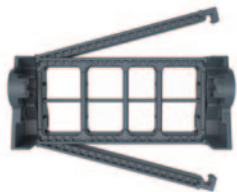
$$[L = \frac{L_s}{2} + L_p]$$

Ordering

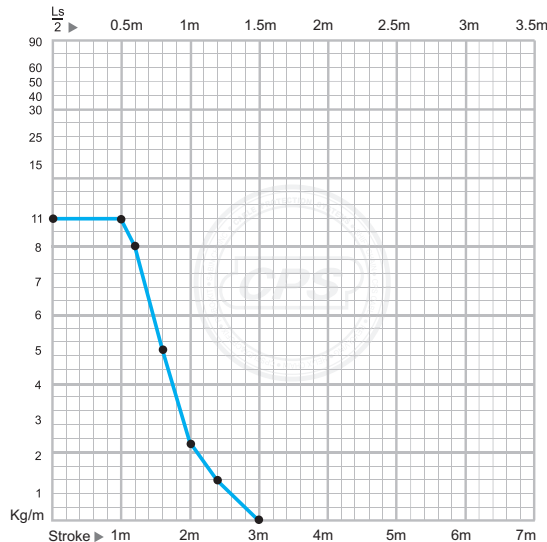
nsb 035E. 100.R115/F-1120L : (DV:2)

Enclosed Type (E)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

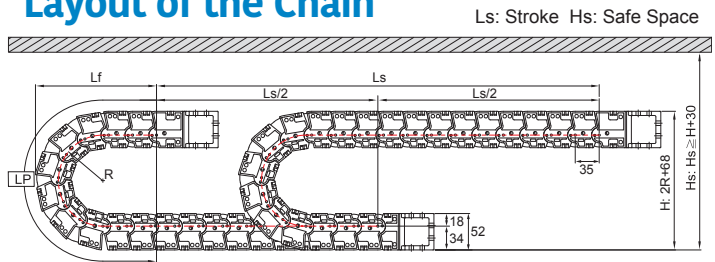
Chain Cross Section



Unsupported Length



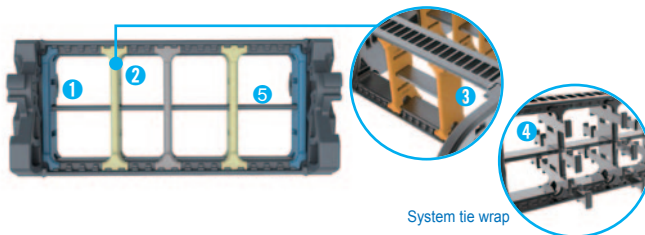
Layout of the Chain



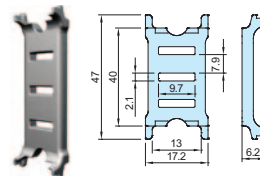
Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
90	423	194	248
115	502	219	298
140	580	244	348
190	737	294	448

Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb035E	70 95 120 145 170	52	50 75 100 125 150	40	1.45 1.64 1.83 2.06 2.28

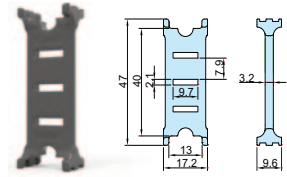
Dividers (DV) Assembled to every 4th link
DV/T Applied to Frame 125~200
DV/M There are two types: M1 and M2
DV/W Tie wrap divider for free end bracket(FEB)



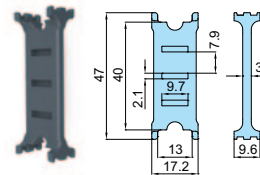
① sb-DV035/S



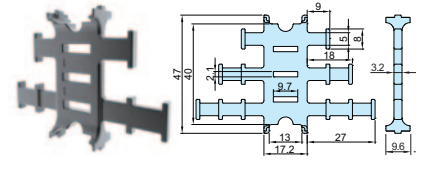
② sb-DV035/M1



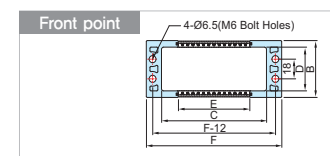
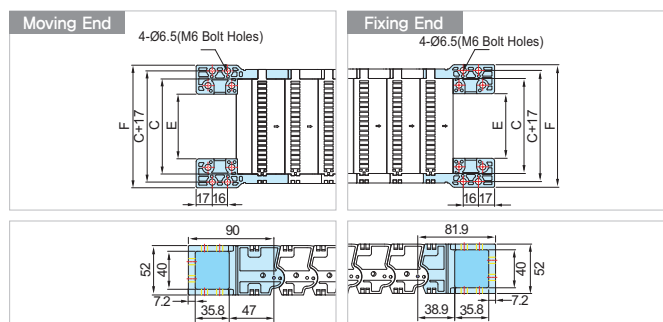
③ sb-DV035/M2



④ sb-DV035/W

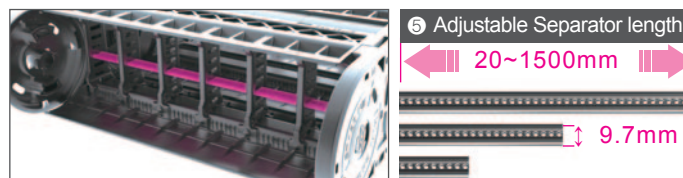


Free End Bracket (FEB)



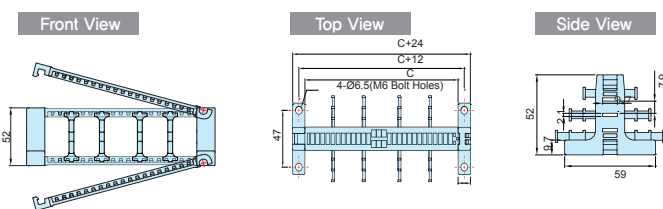
Chain Type	F Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb035E	79	52	50	40	18	M6 Bolt Holes
	104		75		43	
	129		100		68	
	154		125		93	
	179		150		118	

Separators (SP)



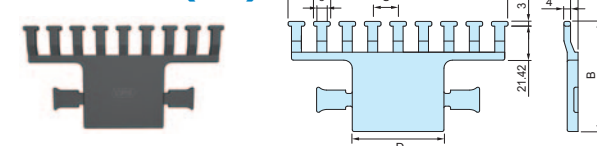
Chain Type	Ordering No.	Frame
nsb035E	S-SP/M.50	50
	S-SP/M.75	75
	S-SP/M.100	100
	S-SP/M.125	125
	S-SP/M.150	150

System Tie Wrap (STW)



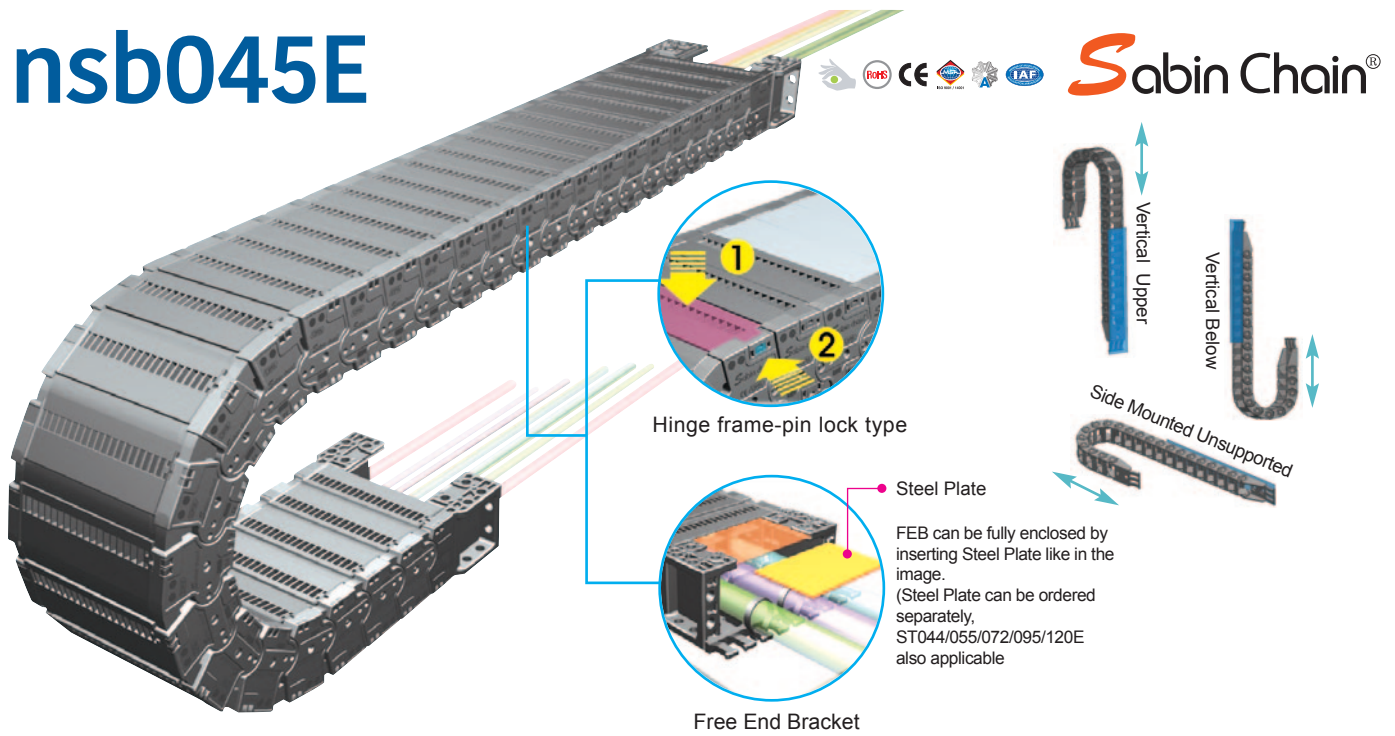
Chain Type	Ordering No.	C Frame	Hole Type
nsb035E	S-TW.EB035.50	50	M6 Bolt Holes
	S-TW.EB035.75	75	
	S-TW.EB035.100	100	
	S-TW.EB035.125	125	
	S-TW.EB035.150	150	

Tie Wrap (TW)



Chain Type	Ordering No.	A	B	C	D
nsb035E	S-TW050/035N.50	82	64.5	12.00	5
	S-TW050/035N.75	107		12.13	30
	S-TW050/035N.100	132		15.25	55
	S-TW050/035N.125	157		14.70	80
	S-TW050/035N.150	182		14.35	105

nsb045E



Other Length Restrictions

Vertical Standing(Max) = 6.0m
 Vertical Hanging(Max) = 100.0m
 Side Mounted Unsupported(Max) = 2.5m

Caculation of the Chain Length

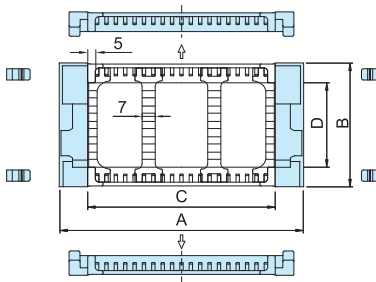
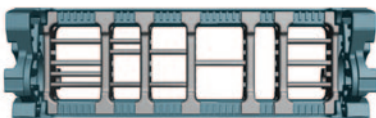
$$[L = \frac{L_s}{2} + L_p]$$

Ordering

nsb 045E. 100. R110/ F-1125L : (DV:2)

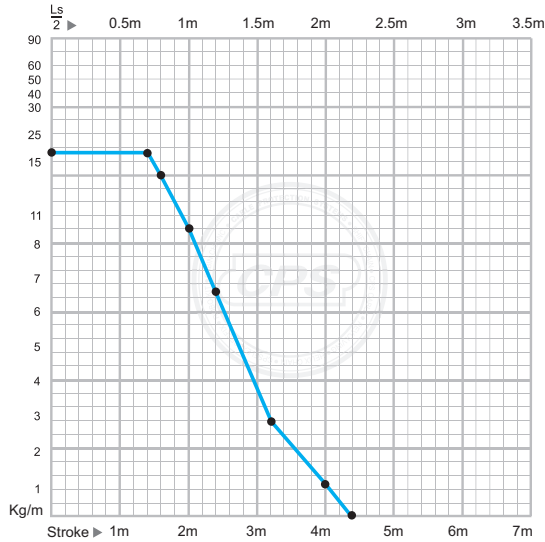
Enclosed Type (E)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Chain Cross Section



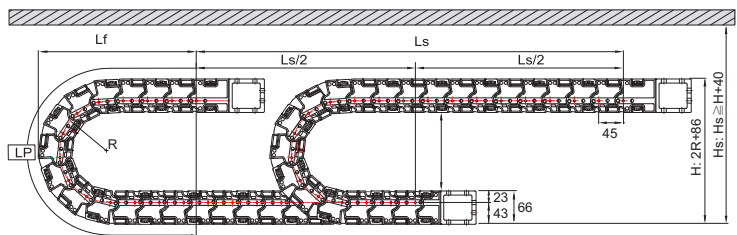
Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb045E	105	66	75	45	2.78
	130		100		3.07
	155		125		3.35
	180		150		3.58

Unsupported Length



Layout of the Chain

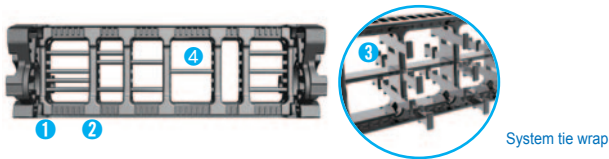
Ls: Stroke Hs: Safe Space



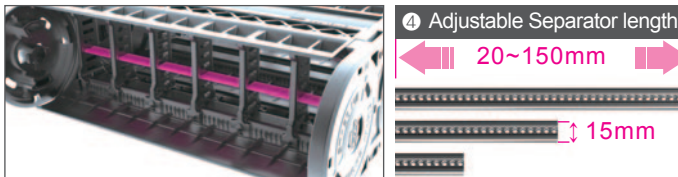
Bending Radius(R)	Lp(Loop Length)	LF(Loop Projection)	H(Moving Height)
90	553	272	266
110	616	292	306
135	694	317	356
165	789	347	416
185	851	367	456
235	1008	417	556
285	1165	467	656

Dividers (DV)

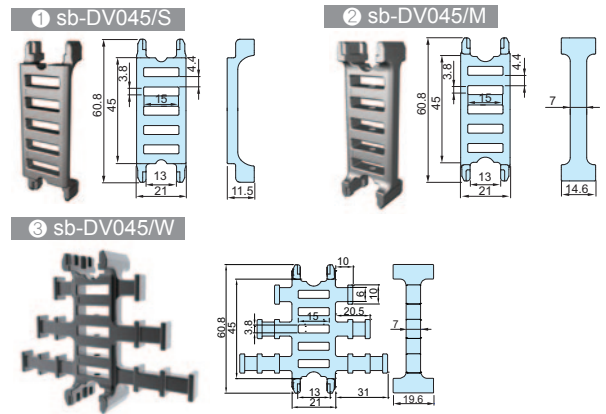
Assembled to every 4th link
DV/W Applicable to System Tie Wrap or FEB



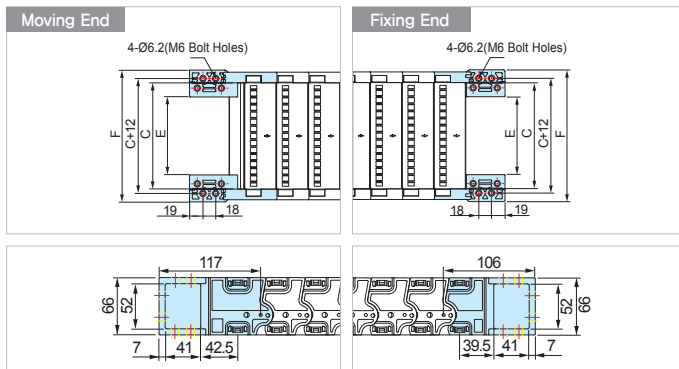
Separators (SP)



Chain Type	Ordering No.
nsb045E	sb-SP/400.Frame

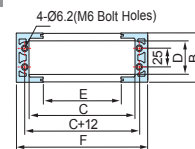


Free End Bracket (FEB)

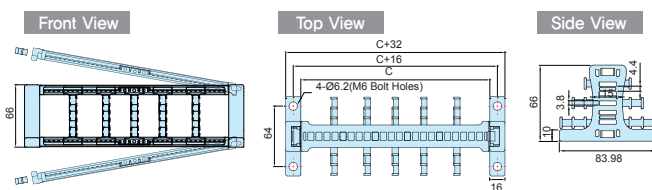


Chain Type	F Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb045E	111 136 161 186	66	75 100 125 150	45	35 60 85 110	M6 Bolt Holes

Front point

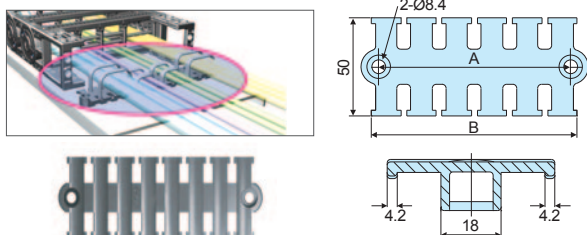


System Tie Wrap (STW)



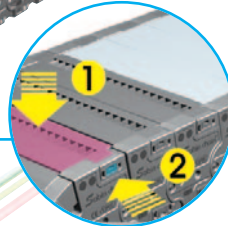
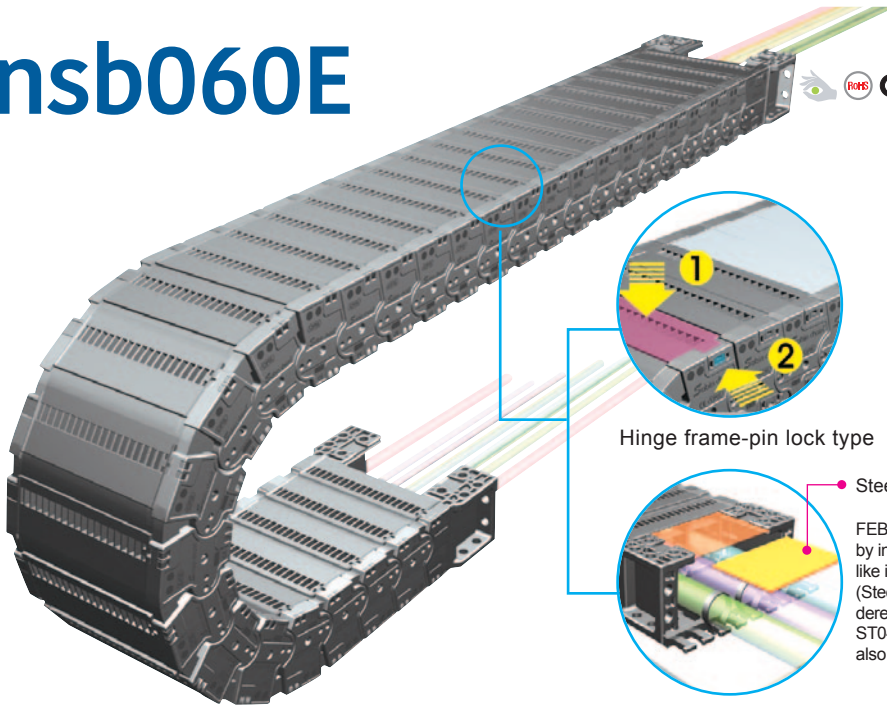
Chain Type	Ordering No.	C Frame	Hole Type
nsb045E	S-TW.EB045.75 S-TW.EB045.100 S-TW.EB045.125 S-TW.EB045.150	75 100 125 150	M6 Bolt Holes

Tie Wrap (TW)

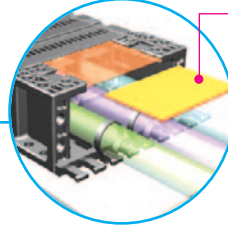


Chain Type	Ordering No.	A	B
nsb045E	S-TW50 S-TW75 S-TW100 S-TW125 S-TW150	58 75 98 122 141	65 82 105 129 148

nsb060E

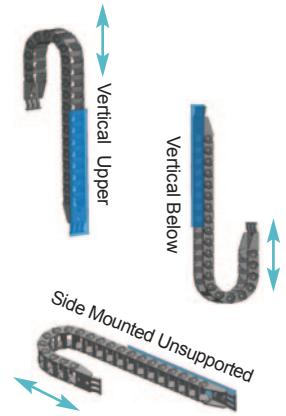


Hinge frame-pin lock type



Free End Bracket

Steel Plate
FEB can be fully enclosed by inserting Steel Plate like in the image.
(Steel Plate can be ordered separately, ST044/055/072/095/120E also applicable)



Other Length Restrictions

Vertical Standing(Max)	= 6.0m
Vertical Hanging(Max)	= 100.0m
Side Mounted Unsupported(Max)	= 3.0m

Calculation of the Chain Length

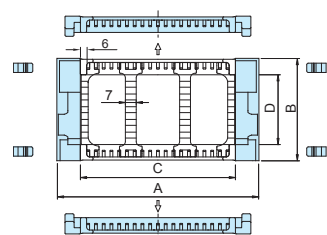
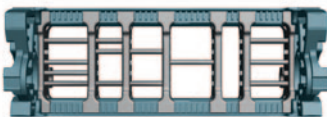
$$[L = \frac{L_s}{2} + L_p]$$

Ordering

nsb 060E. 100.R125/F-1200L : (DV:2)

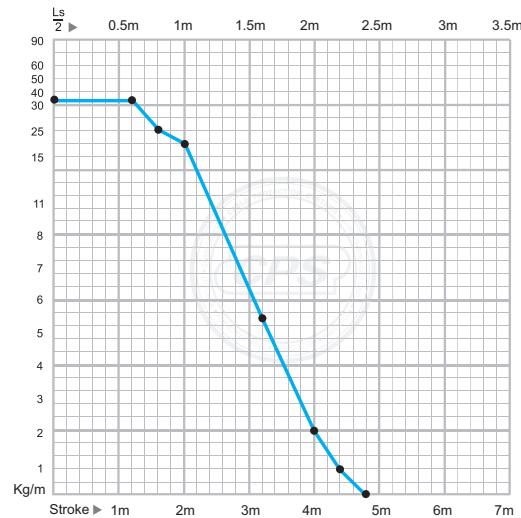
Enclosed Type (E)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Chain Cross Section

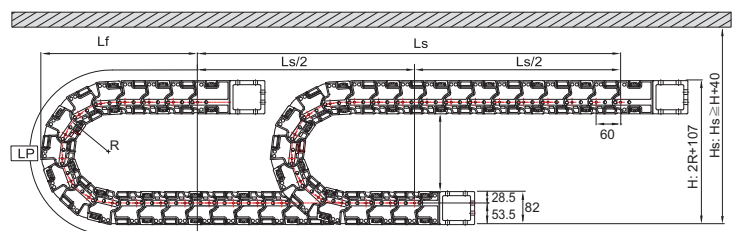


Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb060E	140 190 240	82	100 150 200	56	4.32 4.86 5.41

Unsupported Length



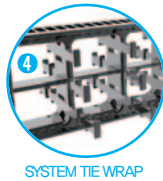
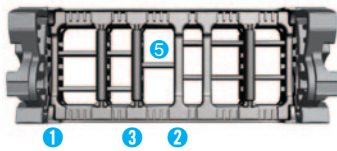
Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loop Projection)	H(Moving Height)
125	753	359	357
135	784	369	377
150	831	384	407
180	926	414	467
230	1083	464	567
270	1208	504	647
340	1427	574	787

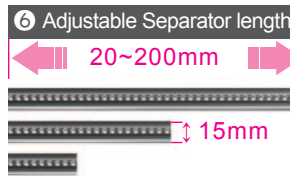
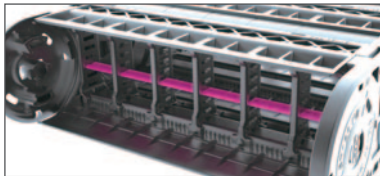
Dividers (DV)

Assembled to every 4th link
DV/W Applicable to System Tie Wrap or FEB



SYSTEM TIE WRAP

Separators (SP)



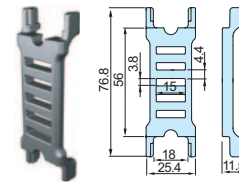
Adjustable Separator length

20~200mm

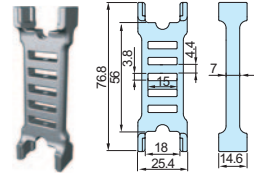
15mm

Chain Type	Ordering No.
nsb060E	sb-SP/400.Frame

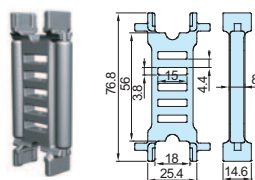
① sb-DV060/S



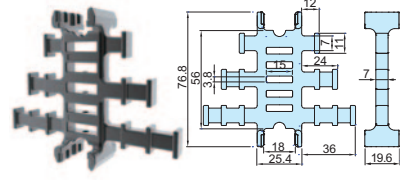
② sb-DV060/M



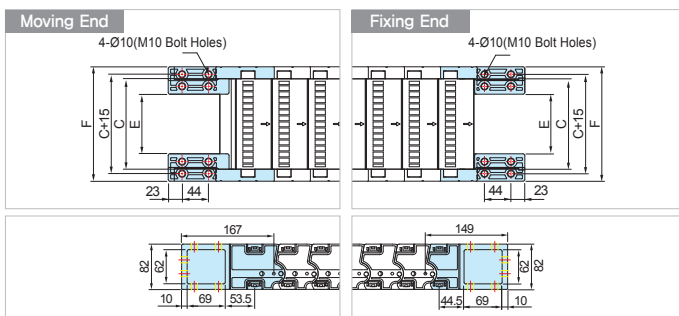
③ sb-DV060/R



④ sb-DV060/W

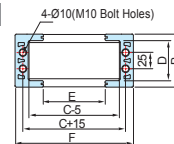


Free End Bracket (FEB)

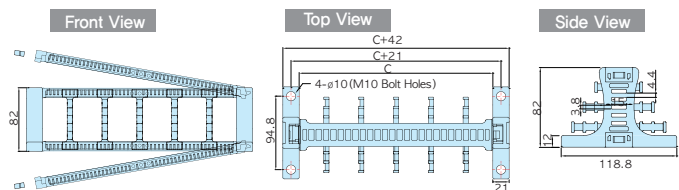


Chain Type	F Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	Hole Type
nsb060E	140 190 240	82	100 150 200	55	49 99 149	M10 Bolt Holes

Front point

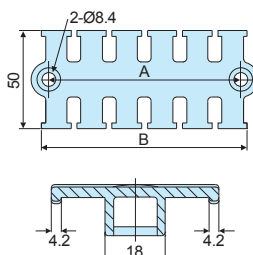
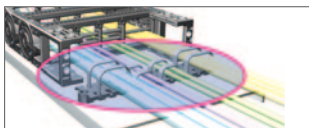


System Tie Wrap (STW)



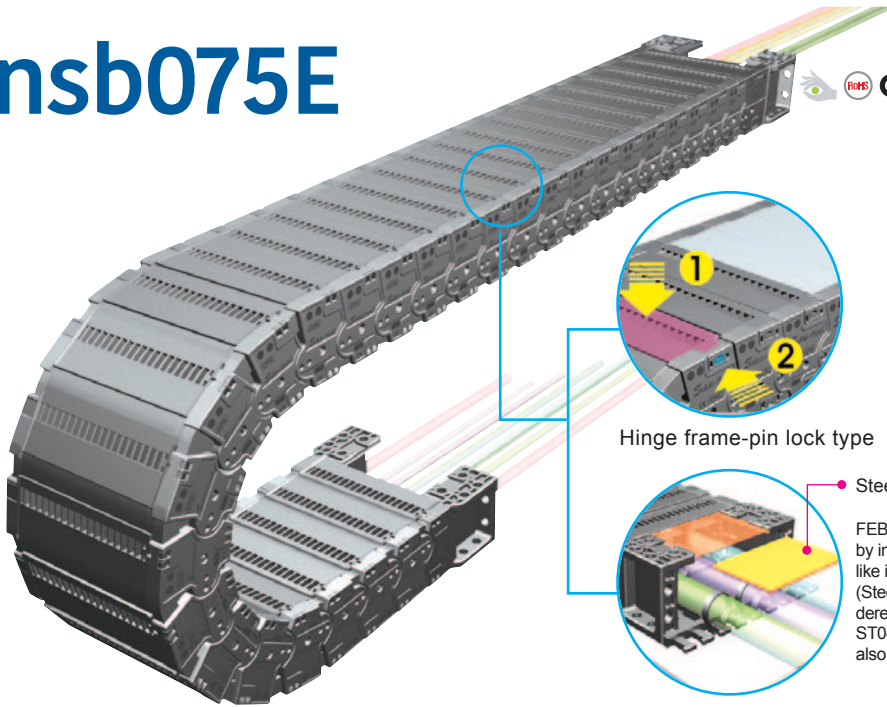
Chain Type	Ordering No.	C Frame	Hole Type
nsb060E	S-TW.EB060.100 S-TW.EB060.150 S-TW.EB060.200	100 150 200	M10 Bolt Holes

Tie Wrap (TW)

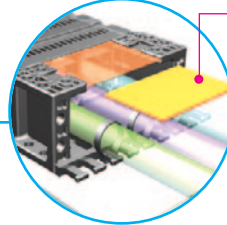


Chain Type	Ordering No.	A	B
nsb060E	S-TW50 S-TW75 S-TW100 S-TW125 S-TW150	58 75 98 122 141	65 82 105 129 148

nsb075E

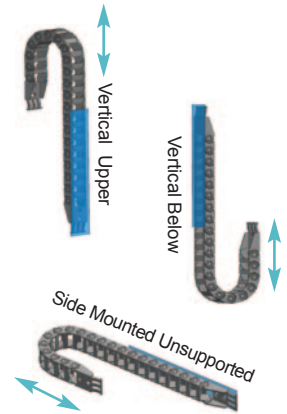


Hinge frame-pin lock type



Free End Bracket

Steel Plate
FEB can be fully enclosed by inserting Steel Plate like in the image. (Steel Plate can be ordered separately, ST044/055/072/095/120E also applicable)



Other Length Restrictions

- Vertical Standing(Max) = 6.0m
- Vertical Hanging(Max) = 120.0m
- Side Mounted Unsupported(Max) = 3.0m

Calculation of the Chain Length

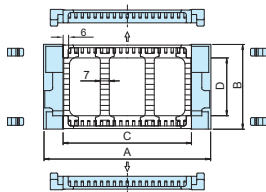
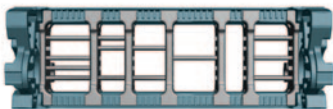
$$[L = \frac{L_s}{2} + L_p]$$

Ordering

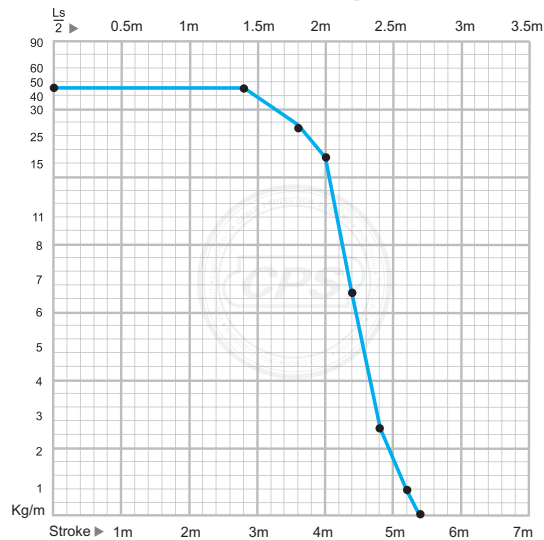
nsb 075E. 150. R160/F-1200L:(DV:2)

Enclosed Type (E)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

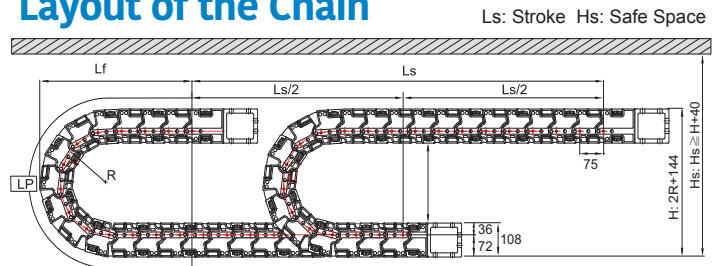
Chain Cross Section



Unsupported Length



Layout of the Chain



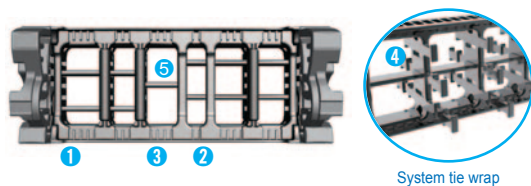
Bending Radius(R)	Lp(Loop Length)	Lf(Loop Projection)	H(Moving Height)
160	953	457	464
180	1016	477	504
230	1172	527	604
280	1329	577	704
330	1487	627	804
380	1644	677	904
480	1958	777	1,104

Chain Type	A Width (Outer)	B Height(Outer)	C Frame/Width(Inner)	D Height (Inner)	Weight kg/m
nsb075E	190 240 340	108	150 200 300	78	7.01 7.97 9.48

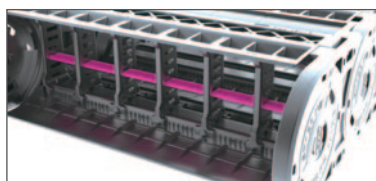
Dividers (DV)

Assembled to every 4th link

DV/W Applicable to System Tie Wrap or FEB



Separators (SP)



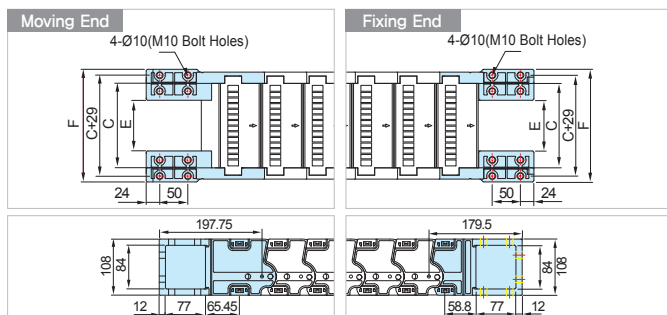
6 Adjustable Separator length

20~300mm

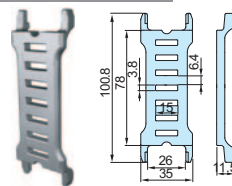
15mm

Chain Type	Ordering No.
nsb075E	sb-SP/400.Frame

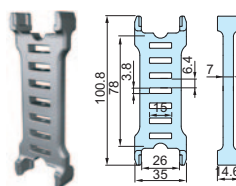
Free End Bracket(FEB)



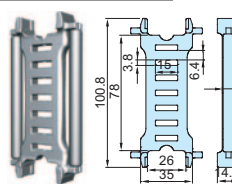
1 sb-DV075/S



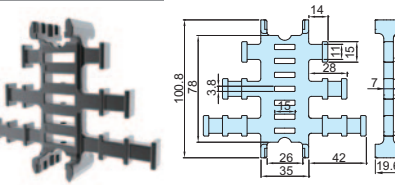
2 sb-DV075/M



3 sb-DV075/R

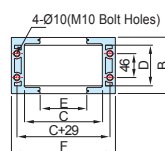


4 sb-DV075/W

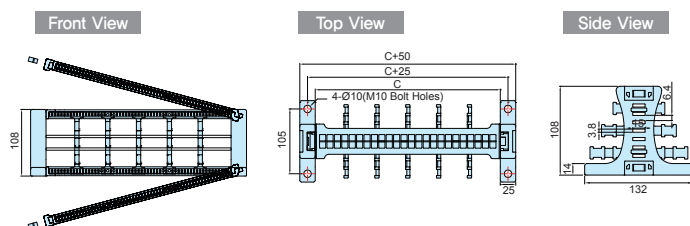


Chain Type	F Width (Outer)	B Height(Outer)	C Frame Width	D Height(Inner)	E EB internal width	Hole Type
nsb 075E	200 250 350	108	150 200 300	78	90 140 240	M10 Bolt Holes

Front point

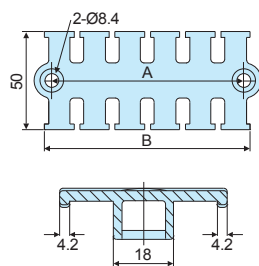
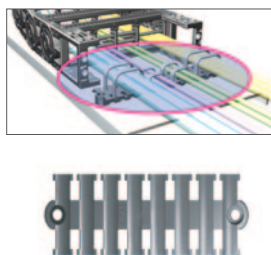


System Tie Wrap (STW)



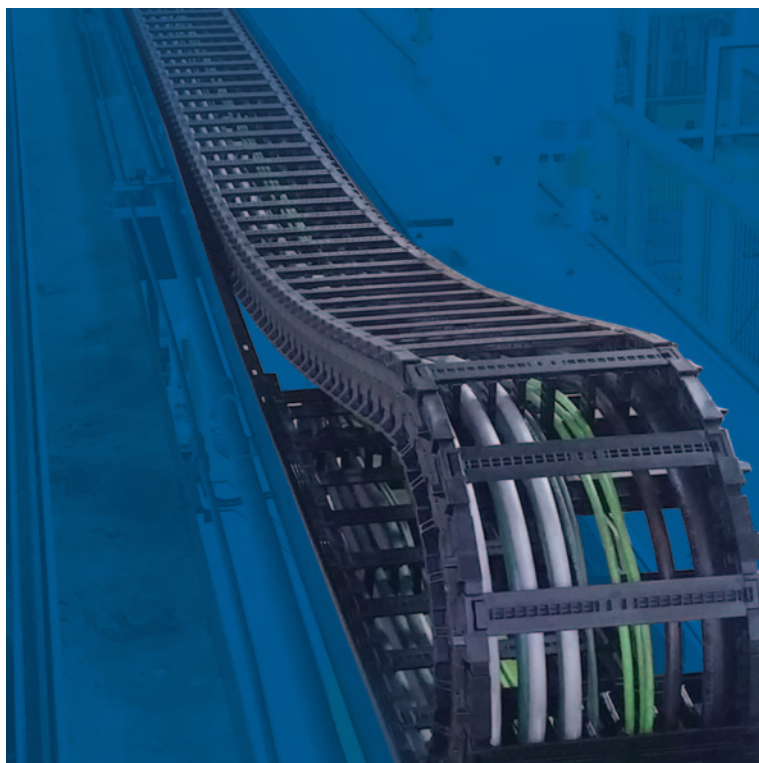
Chain Type	Ordering No.	C Frame	Hole Type
nsb075E	S-TW.EB075.150 S-TW.EB075.200 S-TW.EB075.300	150 200 300	M10 Bolt Holes

Tie Wrap (TW)



Chain Type	Ordering No.	A	B
nsb075E	S-TW50 S-TW75 S-TW100 S-TW125 S-TW150	58 75 98 122 141	65 82 105 129 148

nsb Chain-Sliding Type



nsb050S	232
nsb065S	234
nsb080S	236
nsb050SG	238
nsb065SG	239
nsb080SG	240

General Information

Material	: CPS-Amide (PA6+G.F)
Speed	: 6m/s
Acceleration	: 15m/s²
Temperature	: -30℃ ~ +130℃
Certificate	: CE, ATEX(Ex), RoHs2

Value of Speed/Acceleration is subject to change according to cable's amount and travel length.

Calculation Table

Length of Cable Chain

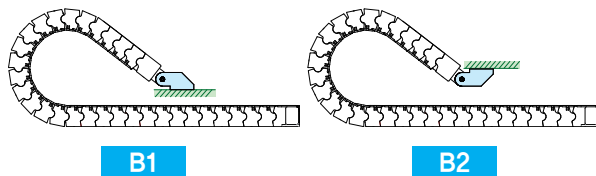
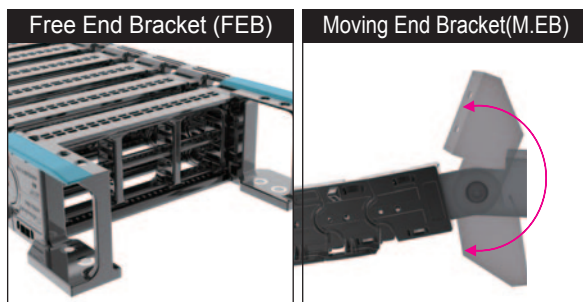
: $L = \frac{1}{2} \times L_s + L_p$

Bending Radius

: Multiply 8~10 of the biggest cable

: Multiply 15~20 of the biggest hose

Bracket Type



Dimension Table

nsb Chain-Sliding Type	Pitch	Bending Radius (R)	Weight kg/m	Speed m/s	Temperature °C	Size				Frame Type	Section-Composition
						A	B	C	D		
nsb050S	50	110, 135, 165, 185, 235, 285	2.38	6	-30 ~ +130	104	71.5	50	45		
			2.44			129		75			
			2.51			154		100			
			2.61			179		125			
			2.67			194		140			
			2.71			204		150			
			2.76			219		165			
			2.80			229		175			
			2.97			244		190			
			3.09			254		200			
			3.32			294		240			
			3.38			304		250			
			3.63			354		300			
nsb065S	65	140, 190, 220, 270, 390	3.29	6	-30 ~ +130	137	89	75	56		
			3.34			162		100			
			3.49			187		125			
			3.58			212		150			
			3.68			237		175			
			3.76			252		190			
			3.82			262		200			
			3.99			302		240			
			4.03			312		250			
			4.24			362		300			
			4.53			412		350			
			4.85			462		400			
nsb080S	80	180, 200, 250, 300, 350, 400, 500	4.27	6	-30 ~ +130	143	115	75	78		
			4.36			168		100			
			4.43			183		115			
			4.47			193		125			
			4.57			218		150			
			4.67			243		175			
			4.85			268		200			
			5.03			308		240			
			5.07			318		250			
			5.33			358		290			
			5.40			368		300			
			5.71			418		350			
			6.09			468		400			
			6.28			518		450			
			6.45			568		500			
			7.08			618		550			
			7.20			668		600			

The moving bracket is designed to move up and down according to movement of cable chain, or application requires.
Fixing holes are formed widely for its convenience to be applied to other brand of cable chain.
There are 2 type of bracket; B1, B2.

Ordering

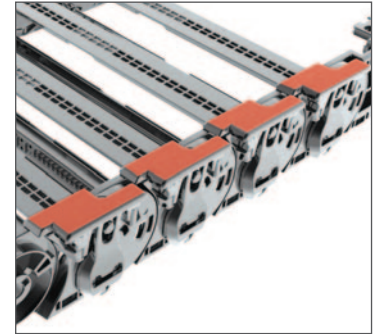
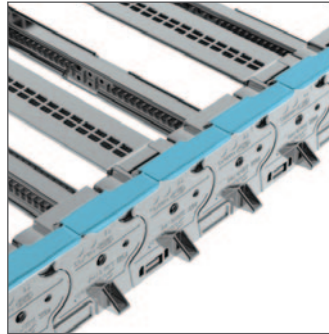
nsb	050S.	175.	R185	/ B1	10000L	:(DV:2)	
							Quantity of Divider(Link)
							Length(mm)
							Bracket Type : B1, B2 BT-Tie Wrap BST-System Tie Wrap
							Bending radius
							Inside width
							nsb Chain-Sliding type (S)
							Sabin Chain

Minimized noise level

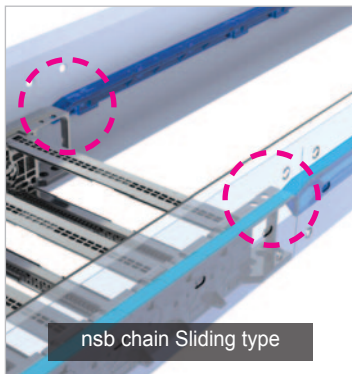


nsb sliding chain is also Holding band structure

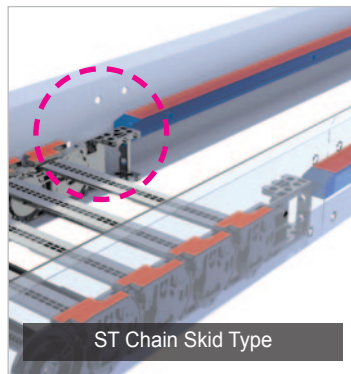
Feature-1



Feature-2



nsb chain Sliding type



ST Chain Skid Type

There are 3 factors for minimizing noise level of nsb sliding chain.

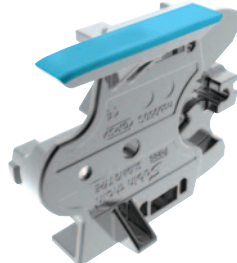
Firstly, it can minimize noise level than other sliding types including other brand due to Holding band inserted structure.

You can refer "feature-1"

Secondly, by reducing interval between skid to skid of side band. If you refer "feature-2", you can find out that it's minimum gap between each side band which makes low noise when sliding part is moving on fixing part. If creates some interval, it makes noise.

In third, by making it equal height between height of FEB and height of Nylon bar installed for chain movement.

Easy to assemble and disassemble



Minimize unnecessary friction on skids
(In particular, add skid surface grooves)
to minimize dust



Skid and Side Band Integral Type which helps to reduce Assembly & Disassembly time. Specialized for High Speed Operation!

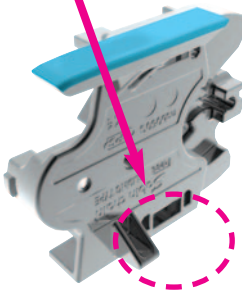
Stable operation and Suitable for high speed



nsb chain Sliding type

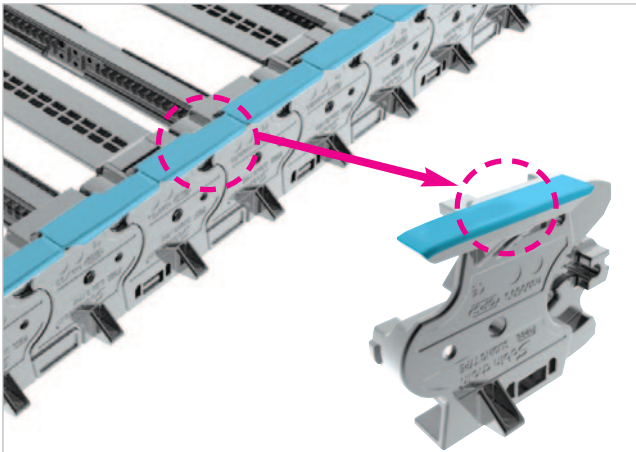


ST Chain Skid Type

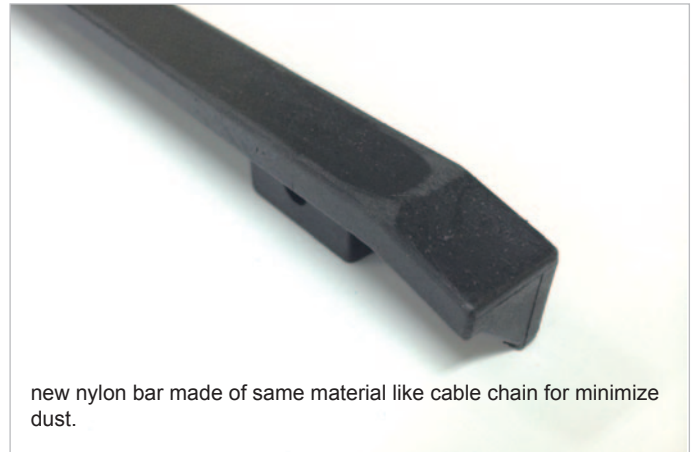


- Supporting Unit is applied to make a stable balance in cable chain's operation
- Specialized Cable chain for High Speed Operation(ex. Generally applied at Gantry Loader)

Minimized Dust



Feature-1



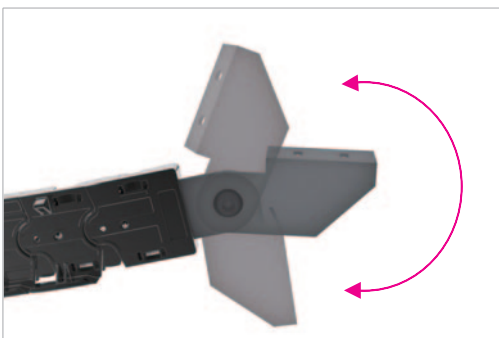
Feature-2

new nylon bar made of same material like cable chain for minimize dust.

Minimize Dust!

Adopt same material of Cable chain to Nylon bar to minimize coefficient of friction

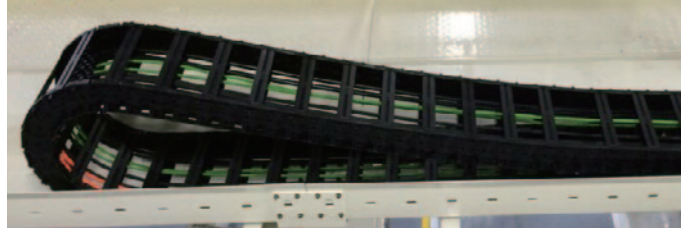
Can be substituted for other Brand of Cable Chain



Can be substituted for other Brand

The moving bracket is designed to move up and down according to movement of cable chain. Or application requires. Fixing holes are form widely for its convenience to be applied to other brand of cable chain. There are 2 type of bracket; B1, B2.

Application of nsb Chain Sliding type



nsb050S

Application : Gantry Loader
Location : Korea, China,
USA and India



nsb065S

Application : Crane(54m/Stroke)

Location : Korea

Remark:

Section composition with dividers and sperators

System tie-wrap dividers(DV/W) at fixing end brackets

nsb080S

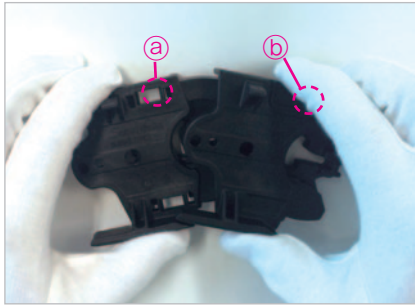
Application : Robot carriage

Location : Korea, China,
Mexico, Brazil



Assembly procedure of nsb Chain Sliding type

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



1

Classify LH and RH first, then assemble the Side band.
(Assemble from ① to ⑥ according to priority)



2

Connect the Side Band according to required length.



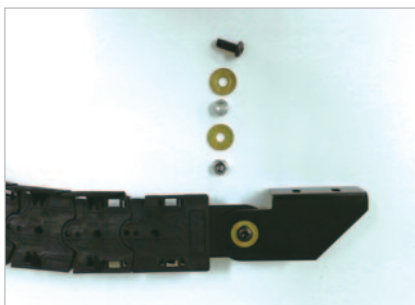
3

Install F.E.B. to the right and left direction.



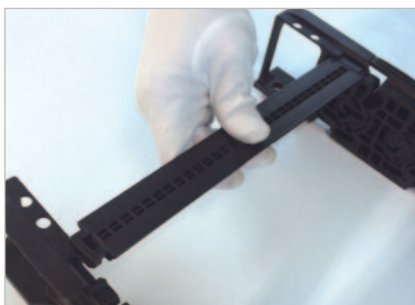
4

Install M.E.B. to the right and left direction.



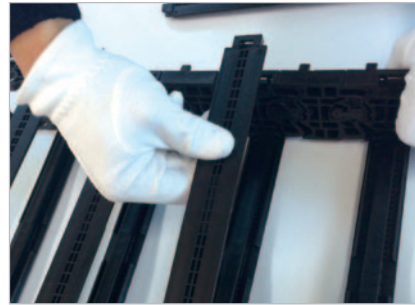
5

Assemble the Steel Bracket on the M.E.B by tightening bolt and nut.
(Bolt → flat washer → insert steel → flat washer → Nut)



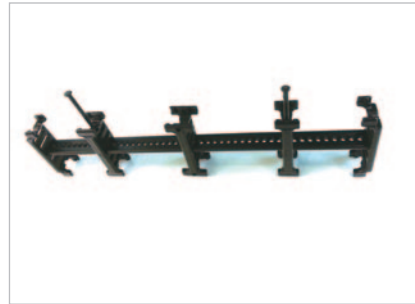
6

Assemble the left and right Side Band with specified frame.



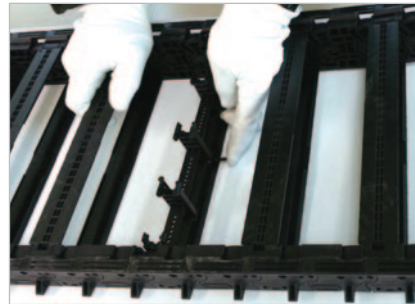
7

Frame of the opposite side also assemble in the same manner.



8

Assemble dividers and separators considering inserted number of cables.



9

Fix the dividers on lower frame.
(Assemble divider every Four links)



10

Combine the upper frame exactly on the groove of sideband and divider.



11

Fix the frame with side band by using the frame pin.



12

Complete by inserting the reinforce washer to fit in fixing hole of F.E.B.

Part list of nsb Chain-Sliding Type



Composition of nsb Chain Sliding Type

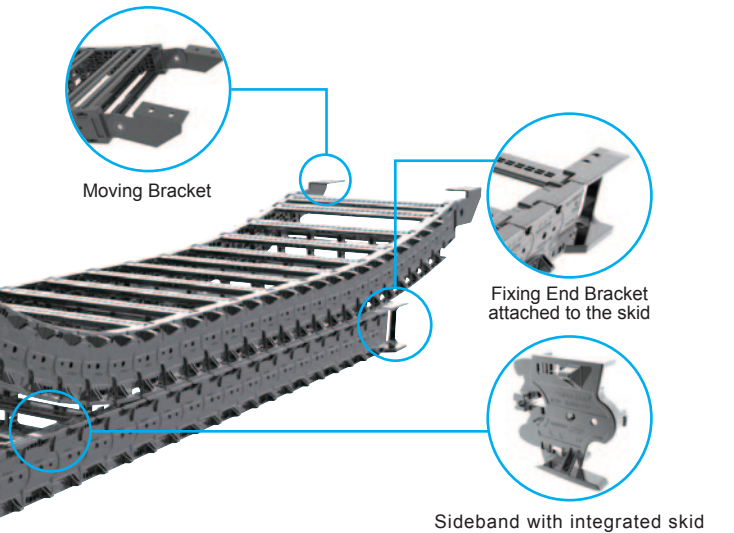
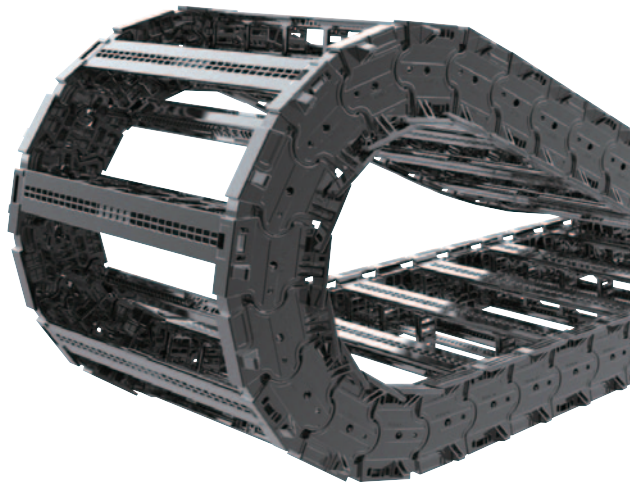
= Side Band (RH/LH) + Frame (Upper/Lower) + Holding Pin + Free End Bracket

M divider(normal divider) should be applied every second frames to make a section composition.

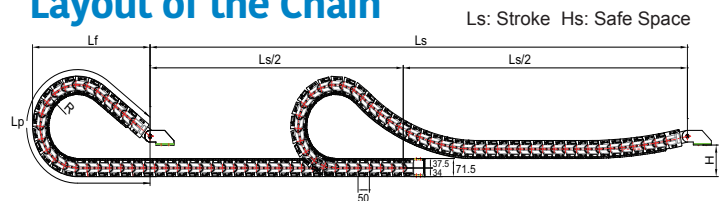
※ Please refer to below part list and description to understand composition of cable chain.

Model	Classification	Part number	Description
nsb050S	SIDE BAND	nsb-SB050S.R*(LH) nsb-SB050S.R*(RH)	Left side band of nsb050S Right side band of nsb050S
	FRAME PIN	S-FP/S1	Frame pin
	FRAME	sb-FR045.50	Frame, 50mm
		sb-FR045.75	Frame, 75mm
		sb-FR045.100	Frame, 100mm
		sb-FR045.125	Frame, 125mm
		sb-FR045.140	Frame, 140mm
		sb-FR045.150	Frame, 150mm
		sb-FR045.165	Frame, 165mm
		sb-FR045.175	Frame, 175mm
		sb-FR045.190	Frame, 190mm
		sb-FR045.200	Frame, 200mm
		sb-FR045.240	Frame, 240mm
		sb-FR045.250	Frame, 250mm
		sb-FR045.300	Frame, 300mm
	FREE END BRACKET	NSB-FEB050S/F NSB-FEB050S/M(SEB) nsb-FEB/WH050	Free End bracket of nsb050S Normal divider To fix separstors at the both side section
	DIVIDER	sb-DV045/M sb-DV045/S sb-DV045/T sb-DV045/TP	Normal divider To fix separstors at the both side section T divider T divider pin
	SEPARATOR	sb-SP/400.Frame SP-PIN045	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50 S-TW75 S-TW100 S-TW125 S-TW150	Tie wrap for end bracket to fix cables, 50mm Tie wrap for end bracket to fix cables, 75mm Tie wrap for end bracket to fix cables, 100mm Tie wrap for end bracket to fix cables, 125mm Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV045/W S-TW.EB045	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket
nsb065S	SIDE BAND	nsb-SB065S.R*(LH) nsb-SB065S.R*(RH)	Left side band of nsb065S Right side band of nsb065S
	FRAME PIN	S-FP/S1	Frame pin
	FRAME	sb-FR060.75	Frame, 75mm
		sb-FR060.100	Frame, 100mm
		sb-FR060.125	Frame, 125mm
		sb-FR060.150	Frame, 150mm
		sb-FR060.175	Frame, 175mm
		sb-FR060.190	Frame, 190mm
		sb-FR060.200	Frame, 200mm
		sb-FR060.230	Frame, 230mm
		sb-FR060.250	Frame, 250mm
		sb-FR060.300	Frame, 300mm
		sb-FR060.350	Frame, 350mm
		sb-FR060.400	Frame, 400mm
	END BRACKET	nsb-FEB065S/F nsb-FEB065S/M(SEB) nsb-FEB/WH065	Free End bracket of nsb065S Normal divider To fix separstors at the both side section
	DIVIDER	sb-DV060/M sb-DV060/S sb-DV060/R sb-DV060/T sb-DV060/TP	Normal divider To fix separstors at the both side section Roller divider to reduce friction with cables T divider T divider pin
	SEPARATOR	sb-SP/400.Frame SP-PIN060	Separator, 400mm Separator pin to fix
	TIE WRAP	S-TW50 S-TW75 S-TW100 S-TW125 S-TW150	Tie wrap for end bracket to fix cables, 50mm Tie wrap for end bracket to fix cables, 75mm Tie wrap for end bracket to fix cables, 100mm Tie wrap for end bracket to fix cables, 125mm Tie wrap for end bracket to fix cables, 150mm
	SYSTEM TIE WRAP	sb-DV060/W S-TW.EB060	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket

Model	Classification	Part number	Description
nsb080S	SIDE BAND	nsb-SB080S.R*(LH) nsb-SB080S.R*(RH)	Left side band of nsb080S Right side band of nsb080S
	FRAME PIN	S-FP/S2	Frame pin
	FRAME	sb-FR075/100.75	Frame, 75mm
		sb-FR075/100.100	Frame, 100mm
		sb-FR075/100.115	Frame, 115mm
		sb-FR075/100.125	Frame, 125mm
		sb-FR075/100.150	Frame, 150mm
		sb-FR075/100.175	Frame, 175mm
		sb-FR075/100.200	Frame, 200mm
		sb-FR075/100.240	Frame, 240mm
		sb-FR075/100.250	Frame, 250mm
		sb-FR075/100.290	Frame, 290mm
		sb-FR075/100.300	Frame, 300mm
		sb-FR075/100.350	Frame, 350mm
		sb-FR075/100.400	Frame, 400mm
		sb-FR075/100.450	Frame, 450mm
		sb-FR075/100.500	Frame, 500mm
		sb-FR075/100.550	Frame, 550mm
		sb-FR075/100.600	Frame, 600mm
	FREE END BRACKET	NSB-FEB080S /F	Free end bracket of nsb080S, Fixing
		NSB-FEB080S /M(SEB)	Steel end bracket of nsb080S, Moving
		nsb-FEB/WH080	Steel washer for end bracket
	DIVIDER	sb-DV075/M	Normal divider
		sb-DV075/S	To fix separstors at the both side section
		sb-DV075/R	Roller divider to reduce friction with cables
		sb-DV075/T	T divider
	SEPARATOR	sb-DV075/TP	T divider pin
		sb-SP/400.Frame	Separator, 400mm
	TIE WRAP	SP-PIN075	Separator pin to fix
		S-TW50	Tie wrap for end bracket to fix cables, 50mm
		S-TW75	Tie wrap for end bracket to fix cables, 75mm
		S-TW100	Tie wrap for end bracket to fix cables, 100mm
		S-TW125	Tie wrap for end bracket to fix cables, 125mm
	SYSTEM TIE WRAP	S-TW150	Tie wrap for end bracket to fix cables, 150mm
		sb-DV075/W	Divider for fixing cables at end bracket
		S-TW.EB075	System tie wrap to arrange for cables right after moving bracket or fixing bracket



Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
110	916	380	180
135	1,068	430	
165	1,255	490	
185	1,382	530	
235	1,703	630	
285	2,029	730	

Calculation of the Chain Length

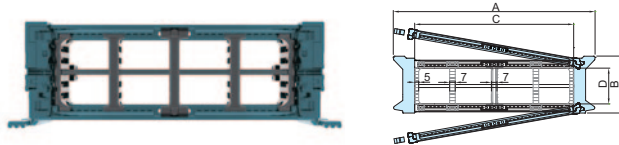
$$L = \frac{Ls}{2} + Lp$$

Ordering

nsb 050S. 175. R185/ B1 – 1000L : (DV:2)

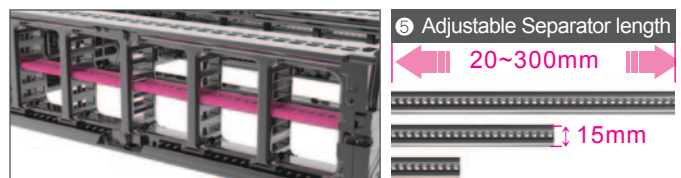
Chain Sliding Type (S)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Chain Cross Section



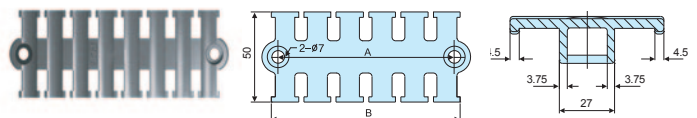
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width (Inner)	D Height (Inner)	Weight kg/m
nsb050S	104	71.5	50	45	2.38
	129		75		2.44
	154		100		2.51
	179		125		2.61
	194		140		2.67
	204		150		2.71
	219		165		2.76
	229		175		2.80
	244		190		2.97
	254		200		3.09
	294		240		3.32
	304		250		3.38
	354		300		3.63

Separators (SP)

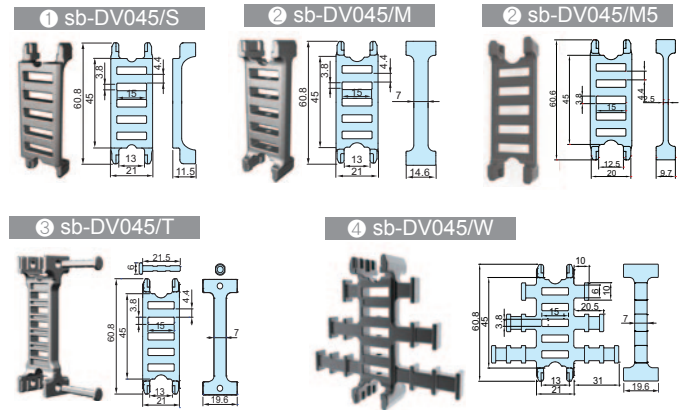
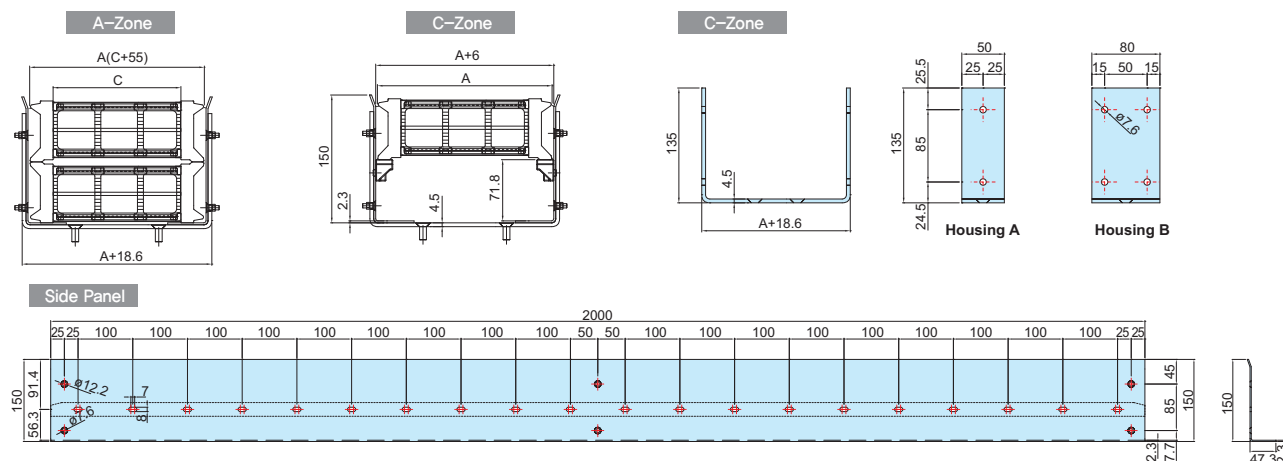
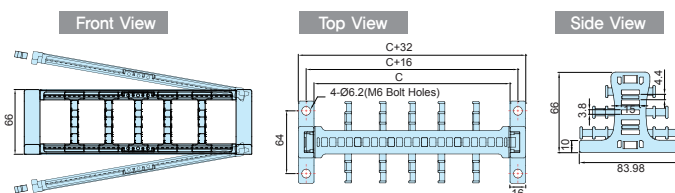
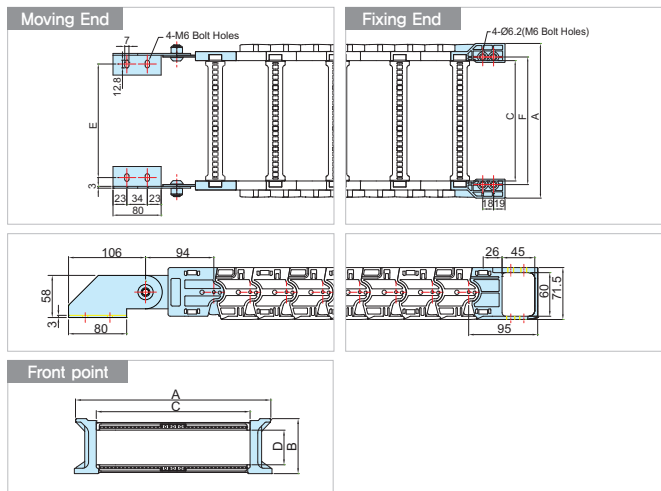


Chain Type	Ordering No.
nsb050S	sb-SP/400.Frame

Tie Wrap (TW)

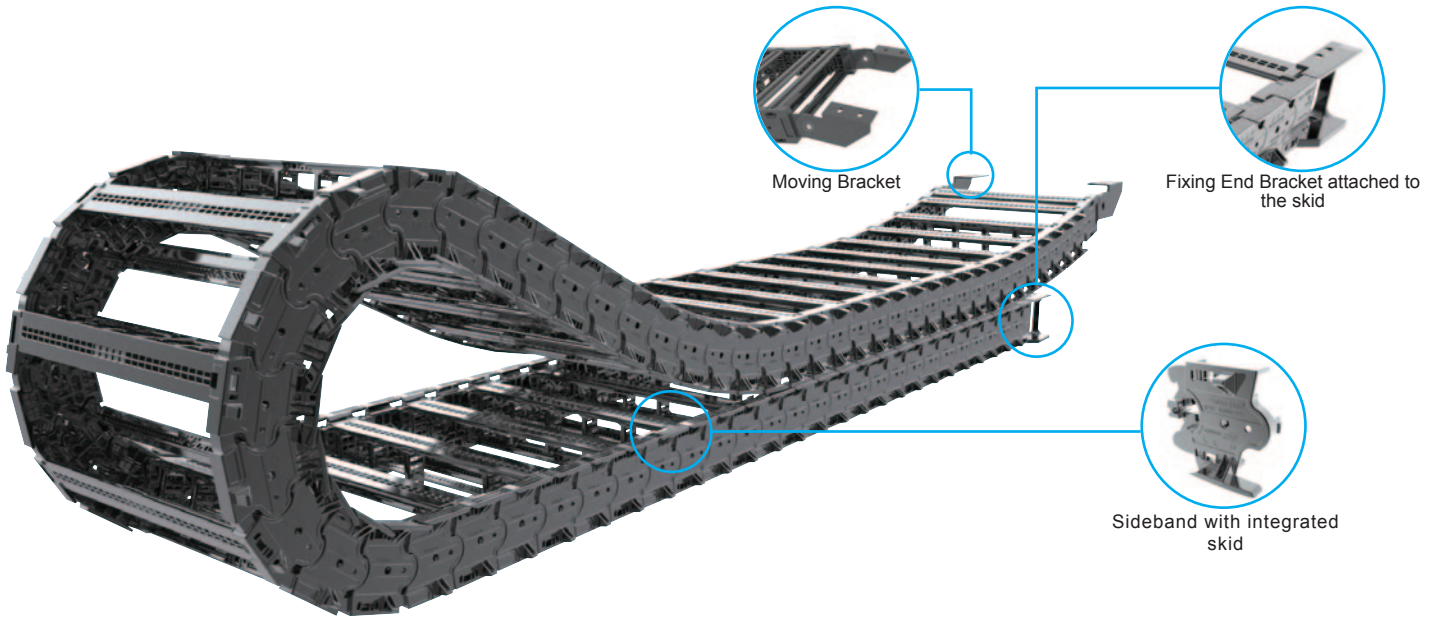


Chain Type	Ordering No.	A	B
nsb050S	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

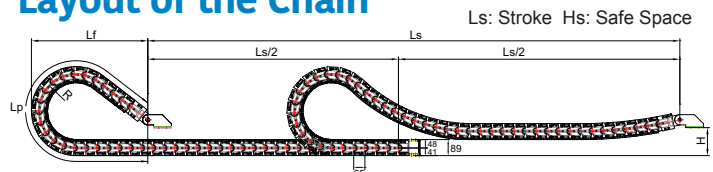


Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	F EB Bolt hole width
nsb050S	104	71.5	50	45	38.7	62
	129		75		63.7	87
	154		100		88.7	112
	179		125		113.7	137
	194		140		128.7	152
	204		150		138.7	162
	219		165		153.7	177
	229		175		163.7	187
	244		190		178.7	202
	254		200		188.7	212
	294		240		228.7	252
	304		250		238.7	262
354	300	288.7	312			

Chain Type	Ordering No.	C Frame	Hole Type
nsb050S	S-TW.EB045.50	50	M6 Bolt Holes
	S-TW.EB045.75	75	
	S-TW.EB045.100	100	
	S-TW.EB045.125	125	
	S-TW.EB045.140	140	
	S-TW.EB045.150	150	
	S-TW.EB045.165	165	
	S-TW.EB045.175	175	
	S-TW.EB045.190	190	
	S-TW.EB045.200	200	
	S-TW.EB045.240	240	
	S-TW.EB045.250	250	
S-TW.EB045.300	300		



Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	LF(Loop Projection)	H(Moving Height)
140	1,225	615	210
190	1,543	715	
220	1,734	775	
270	2,052	875	
390	2,814	1,115	

Calculation of the Chain Length

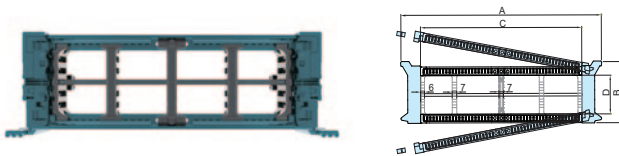
$$L = \frac{L_s}{2} + L_p$$

Ordering

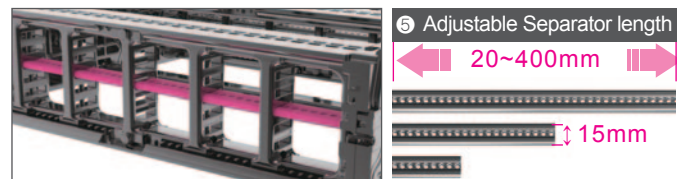
nsb 065S. 150. R220/B1-13000L : (DV:2)

Chain Sliding Type (S)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Chain Cross Section

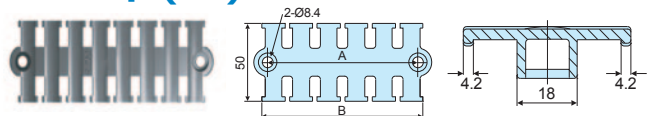


Separators (SP)



Chain Type	Ordering No.
nsb065S	sb-SP/400.Frame

Tie Wrap (TW)



Chain Type	Ordering No.	A	B
nsb065S	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width (Inner)	D Height (Inner)	Weight kg/m
nsb065S	137	89	75	56	3.29
	162		100		3.34
	187		125		3.49
	212		150		3.58
	237		175		3.68
	252		190		3.76
	262		200		3.82
	292		230		3.94
	302		240		3.99
	312		250		4.03
	362		300		4.24
	412		350		4.53
	462		400		4.85

Dividers (DV)

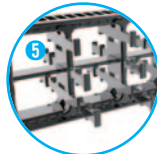
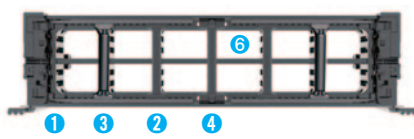
Assembled to every 4th link

DV/T Applied to Frame 250~400

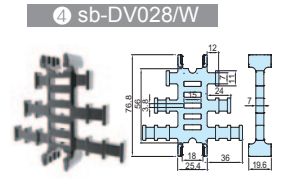
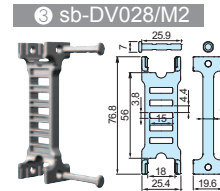
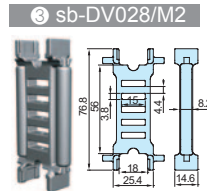
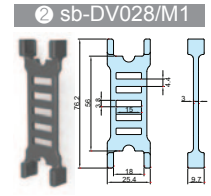
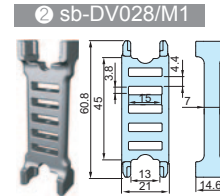
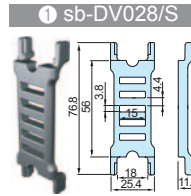
DV/M Normal divider

DV/W

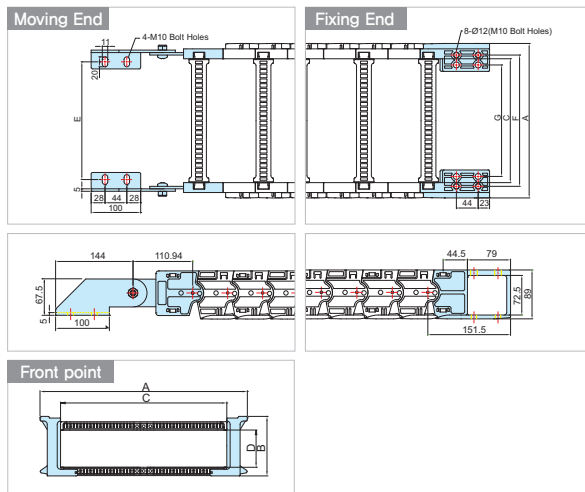
Applicable to System Tie Wrap or FEB



System tie wrap

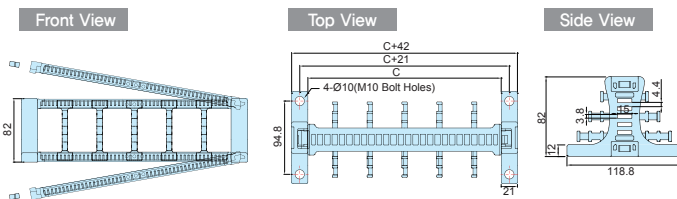


Free End Bracket (FEB)



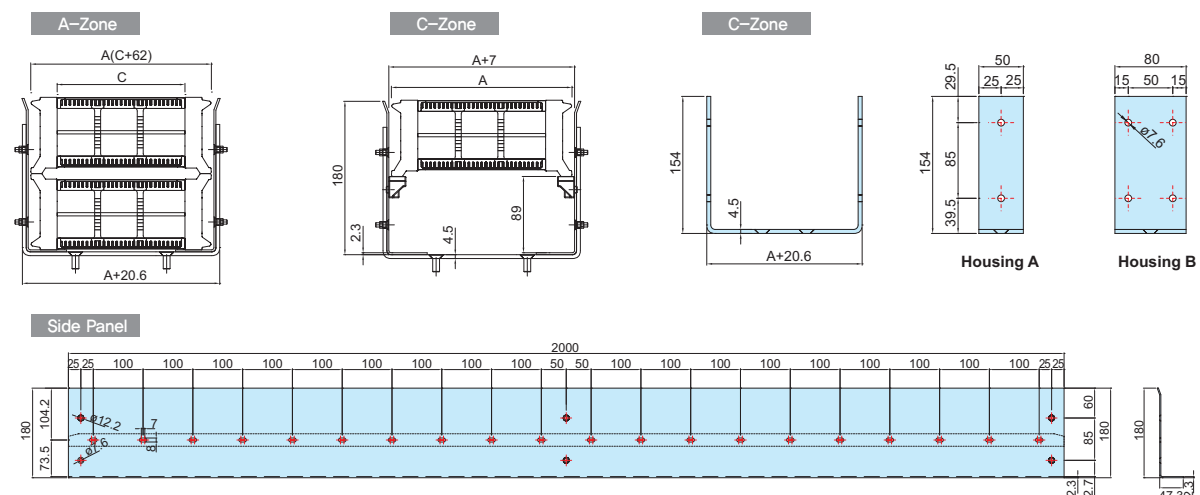
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	F F.EB Bolt hole width	G F.EB Bolt width
nsb 065S	137	89	75	56	62.6	90	50
	162		100		87.6	115	75
	187		125		112.6	140	100
	212		150		137.6	165	125
	237		175		162.6	190	150
	252		190		177.6	205	165
	262		200		187.6	215	175
	292		230		217.6	245	205
	302		240		227.6	255	215
	312		250		237.6	265	225
	362		300		287.6	315	275
	412		350		337.6	365	325
462	400	387.6	415	375			

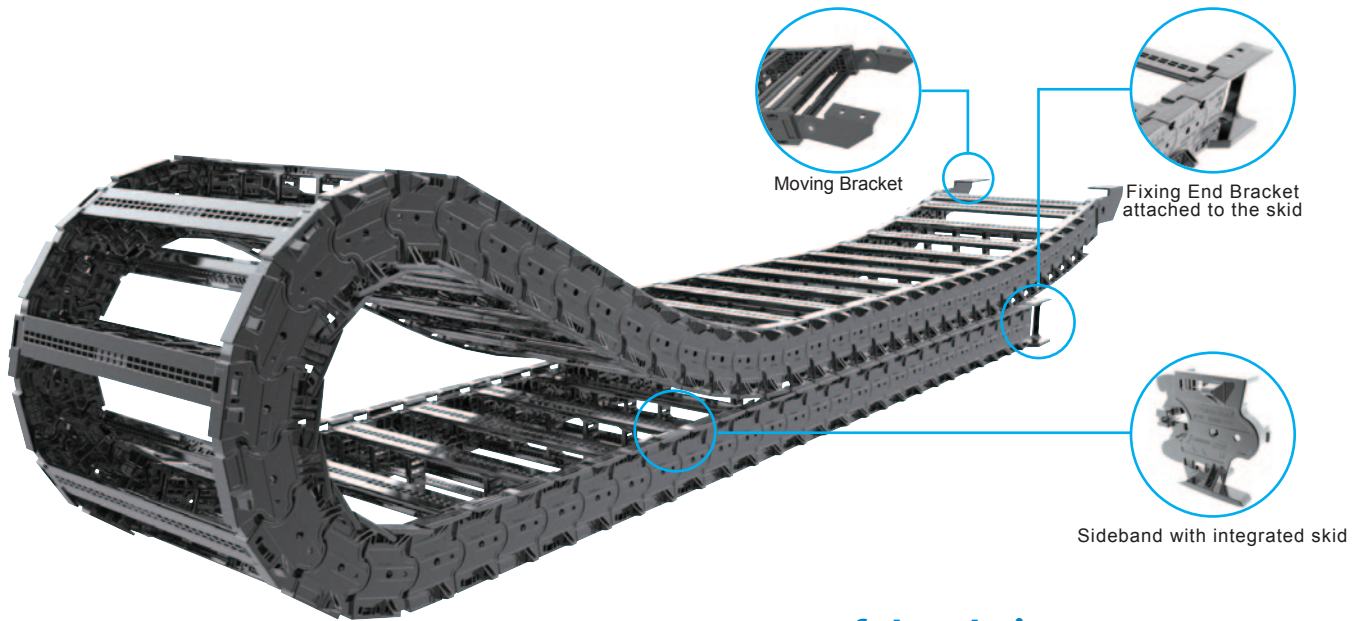
System Tie Wrap (STW)



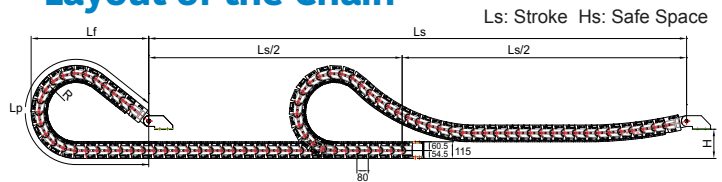
Chain Type	Ordering No.	C Frame	Hole Type
nsb065S	S-TW.EB060.75	75	M10 Bolt Holes
	S-TW.EB060.100	100	
	S-TW.EB060.125	125	
	S-TW.EB060.150	150	
	S-TW.EB060.175	175	
	S-TW.EB060.190	190	
	S-TW.EB060.200	200	
	S-TW.EB060.230	230	
	S-TW.EB060.240	240	
	S-TW.EB060.250	250	
	S-TW.EB060.300	300	
	S-TW.EB060.350	350	
S-TW.EB060.400	400		

Guide Channel





Layout of the Chain



Bending Radius(R)	Lp(Loop Length)	Lf(Loop Projection)	H(Moving Height)
180	1,490	690	260
200	1,617	730	
250	1,935	830	
300	2,253	930	
350	2,571	1,030	
400	2,889	1,130	
500	3,524	1,330	

Calculation of the Chain Length

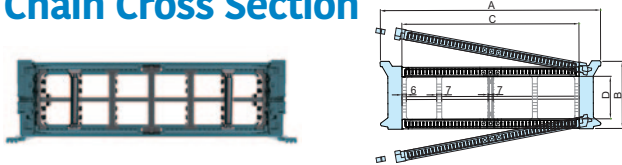
$$\left[L = \frac{L_s}{2} + L_p \right]$$

Ordering

nsb080S. 100.R220/B1-16000L:(DV:2)

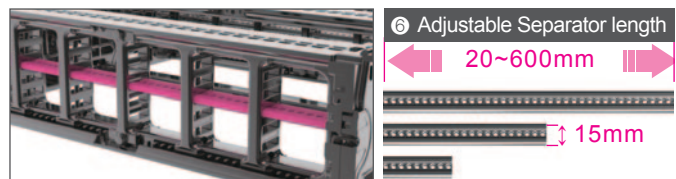
Chain Sliding Type (S)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Chain Cross Section



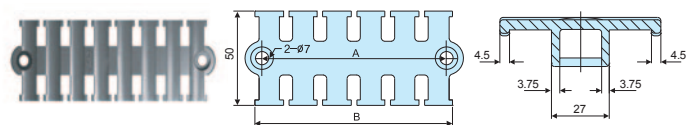
Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width (Inner)	D Height (Inner)	Weight kg/m
nsb080S	143	115	75	78	4.27
	168		100		4.36
	183		115		4.43
	193		125		4.47
	218		150		4.57
	243		175		4.67
	268		200		4.85
	308		240		5.03
	318		250		5.07
	358		290		5.33
	368		300		5.40
	418		350		5.71
	468		400		6.09
	518		450		6.28
	568		500		6.45
	618		550		7.08
	668		600		7.20

Separators (SP)



Chain Type	Ordering No.
nsb080S	sb-SP/400.Frame

Tie Wrap (TW)



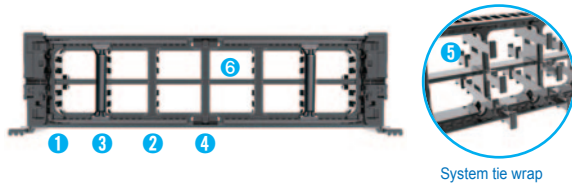
Chain Type	Ordering No.	A	B
nsb080S	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

nsb Chain-Sliding Type

Sabin Chain®

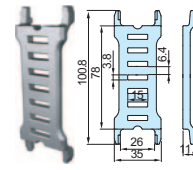
Dividers (DV)

Assembled to every 4th link
DV/T Applied to Frame 300~600
DV/M Normal divider
DV/W
Applicable to System Tie Wrap or FEB

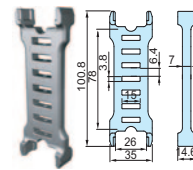


System tie wrap

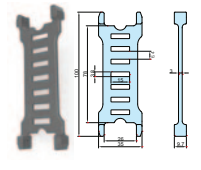
1 sb-DV075/S



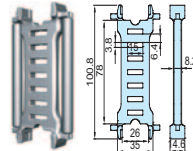
2 sb-DV075/M



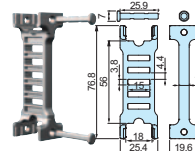
2 sb-DV075/MS



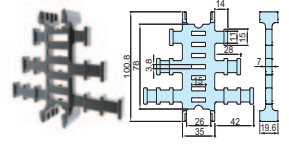
3 sb-DV075/R



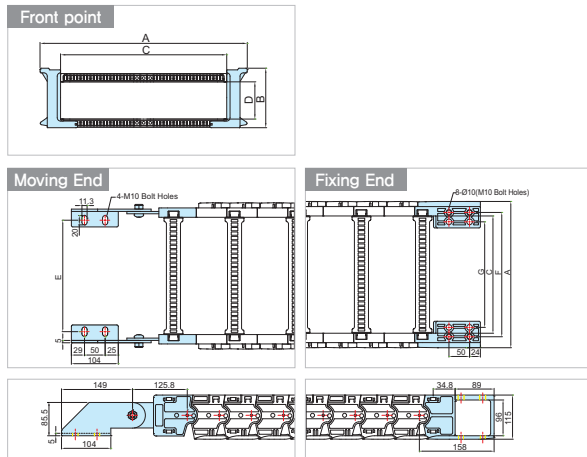
4 sb-DV075/T



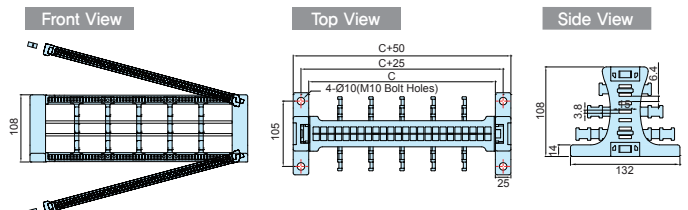
5 sb-DV075/W



Free End Bracket (FEB)



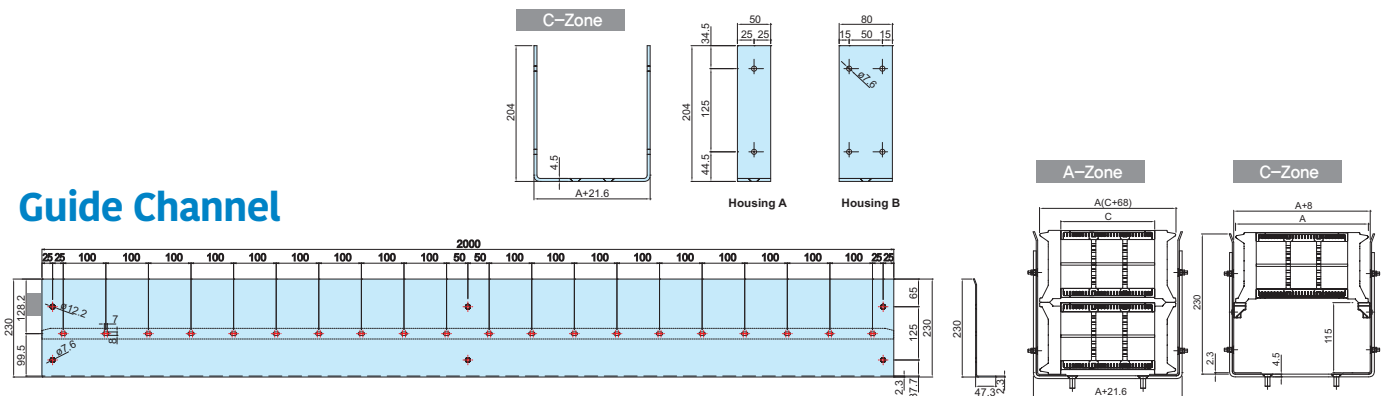
System Tie Wrap (STW)



Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width	D Height (Inner)	E EB internal width	F FEB Bolt hole width	G FEB Bolt width
nsb 080S	143	115	75	78	63	104	47
	168		100		88	129	72
	183		115		103	144	87
	193		125		113	154	97
	218		150		138	179	122
	243		175		163	204	147
	268		200		188	229	172
	308		240		228	269	212
	318		250		238	279	222
	358		290		278	319	262
	368		300		288	329	272
	418		350		338	379	322
	468		400		388	429	372
	518		450		438	479	422
	568		500		488	529	472
	618		550		538	579	522
	668		600		588	629	572

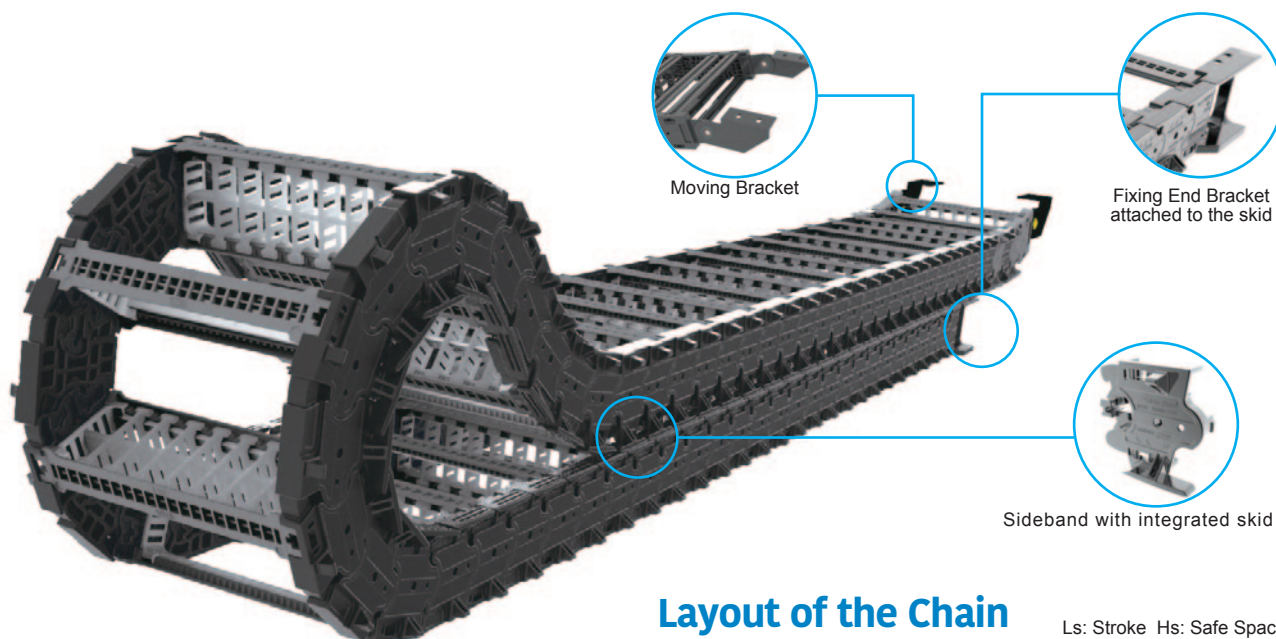
Chain Type	Ordering No.	C Frame	Hole Type
nsb080S	S-TW.EB075.75	75	M10 Bolt Holes
	S-TW.EB075.100	100	
	S-TW.EB075.115	115	
	S-TW.EB075.125	125	
	S-TW.EB075.150	150	
	S-TW.EB075.175	175	
	S-TW.EB075.200	200	
	S-TW.EB075.240	240	
	S-TW.EB075.250	250	
	S-TW.EB075.290	290	
	S-TW.EB075.300	300	
	S-TW.EB075.350	350	
	S-TW.EB075.400	400	
	S-TW.EB075.450	450	
	S-TW.EB075.500	500	
	S-TW.EB075.550	550	
	S-TW.EB075.600	600	

Guide Channel



nsb050SG (CRG Type)

Sabin Chain®



Calculation of the Chain Length

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

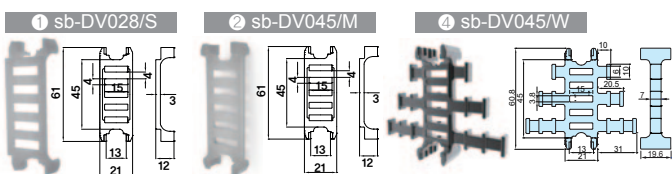
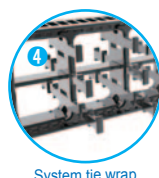
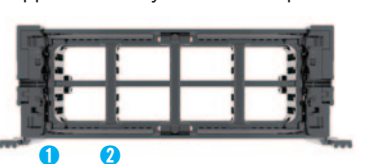
Ordering

nsb050SG.175.R185/B1-10000L:(DV:2)

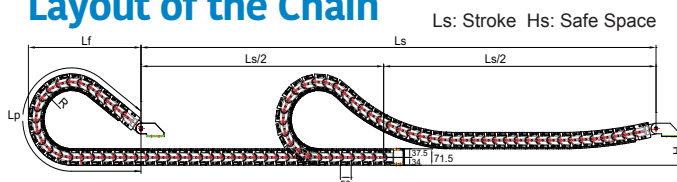
Chain Sliding Type (S)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Dividers (DV)

Assembled to every 4th link
 DV/T Applied to Frame 200~300
 DV/M Normal divider
 DV/W

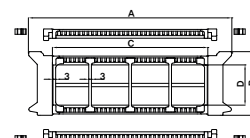


Layout of the Chain



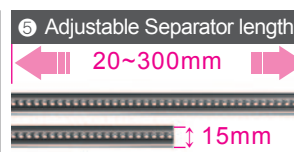
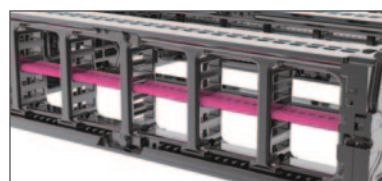
Bending Radius(R)	Lp(Loop Length)	LF(Loof Projection)	H(Moving Height)
110	916	380	180
135	1,068	430	
165	1,255	490	
185	1,382	530	
235	1,703	630	
285	2,029	730	

Chain Cross Section



Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width (Inner)	D Height (Inner)	Weight kg/m
nsb050S	129	71.5	75	45	2.65
	154		100		2.78
	179		125		2.91
	204		150		3.04
	229		175		3.17
	254		200		3.30

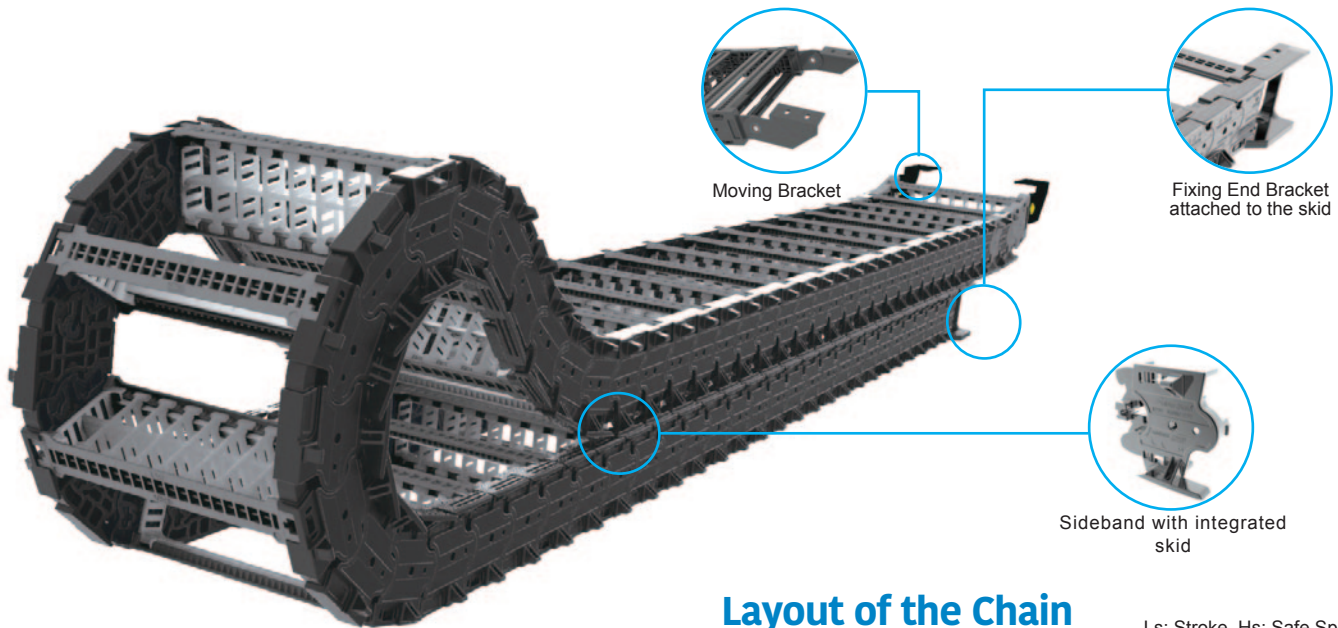
Separators (SP)



Chain Type	Ordering No.
nsb050S	sb-SP/400.Frame

nsb065SG (CRG Type)

Sabin Chain®



Calculation of the Chain Length

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

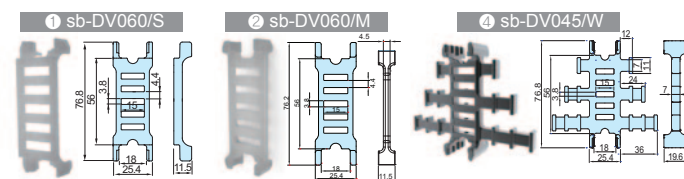
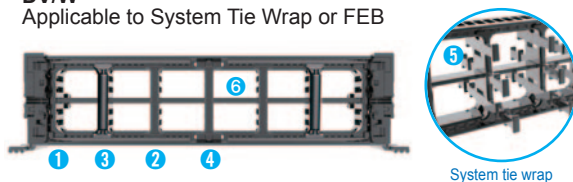
Ordering

nsb 065SG.150.R19/B1-9100L : (DV:2)

Sabin Chain	Chain Sliding Type (S)	Inside Width	Bending Radius	Bracket Type	Length (mm)	Quantity of Divider (Link)
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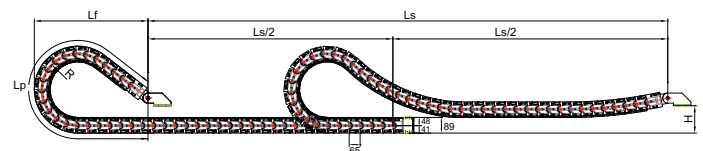
Dividers (DV)

Assembled to every 4th link
 DV/T Applied to Frame 250~400
 DV/M Normal divider
 DV/W
 Applicable to System Tie Wrap or FEB



Layout of the Chain

Ls: Stroke Hs: Safe Space



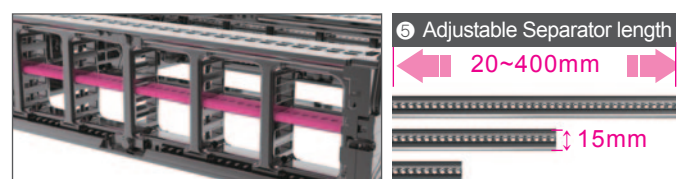
Bending Radius(R)	Lp(Loop Length)	LF(Loop Projection)	H(Moving Height)
140	1,225	615	210
190	1,543	715	
220	1,734	775	
270	2,052	875	
390	2,814	1,115	

Chain Cross Section



Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width (Inner)	D Height (Inner)	Weight kg/m
nsb065S	162	89	100	56	3.66
	212		150		4.00
	262		200		4.27
	312		250		4.61

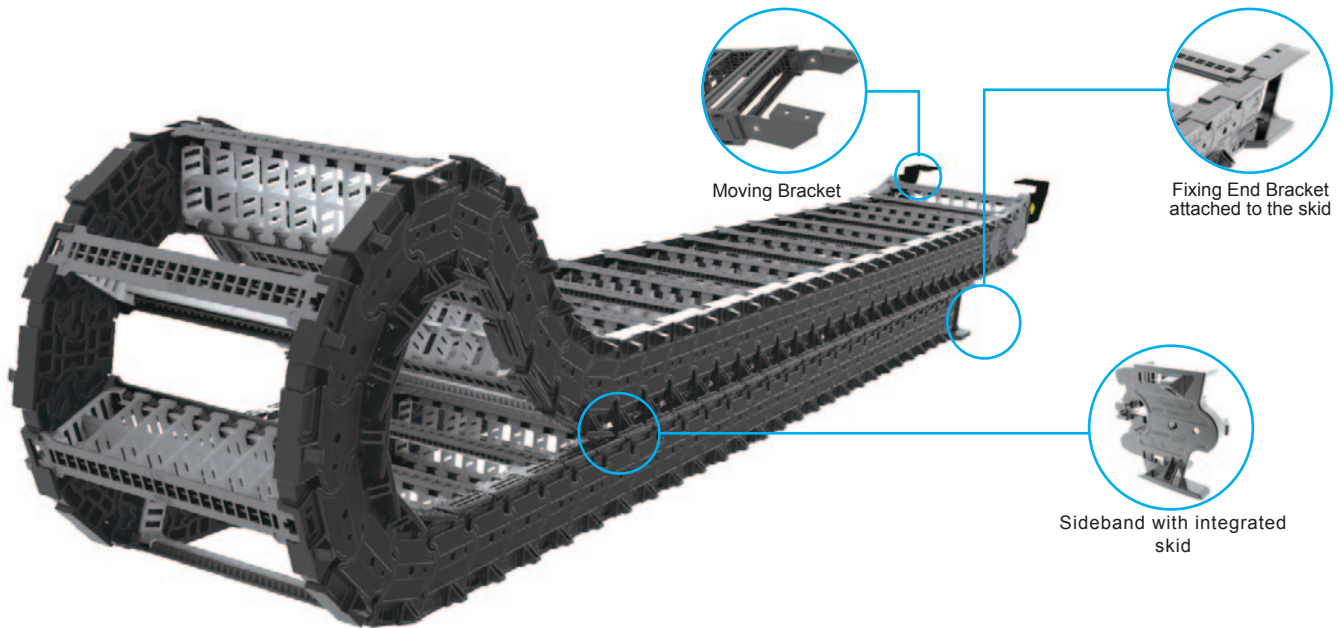
Separators (SP)



Chain Type	Ordering No.
nsb065S	sb-SP/400.Frame

nsb080SG (CRG Type)

Sabin Chain®



Calculation of the Chain Length

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

Ordering

nsb 080SG.300.R220/B1-16000L : (DV:2)

Chain Sliding Type (S)	Bending Radius	Length (mm)	Quantity of Divider (Link)
Sabin Chain	Inside Width	Bracket Type	

Dividers (DV)

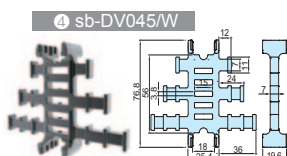
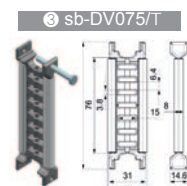
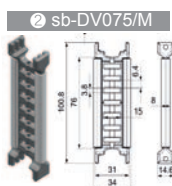
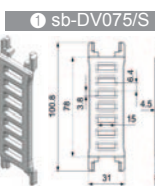
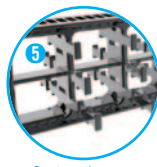
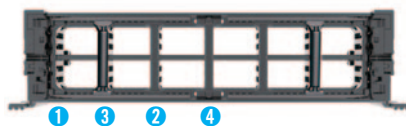
Assembled to every 4th link

DV/T Applied to Frame 300

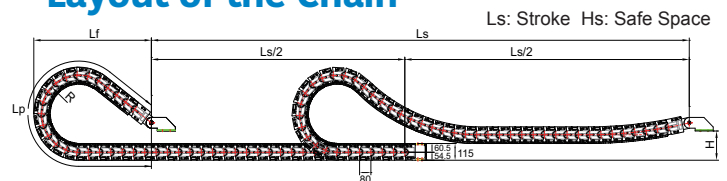
DV/T Normal divider

DV/W

Applicable to System Tie Wrap or FEB

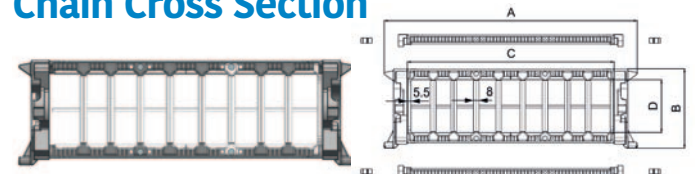


Layout of the Chain



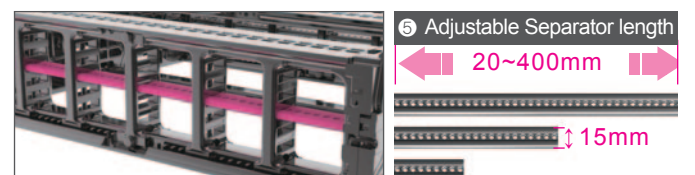
Bending Radius(R)	Lp(Loop Length)	Lf(Loop Projection)	H(Moving Height)
180	1,490	690	260
200	1,617	730	
250	1,935	830	
300	2,253	930	
350	2,571	1,030	
400	2,889	1,130	
500	3,524	1,330	

Chain Cross Section



Chain Type	A Width (Outer)	B Height (Outer)	C Frame Width (Inner)	D Height (Inner)	Weight kg/m
nsb085SG	368	115	300	76	5.40

Separators (SP)



Chain Type	Ordering No.
nsb085SG	sb-SP/400.Frame

