

nsb Chain - Enclosed type

» General information

Item	Value
Material	CPS-Amid(PA6+GF), RoHs
Speed	5m/s
Acceleration	15m/s ²
Temperature	-30°C ~ +130°C
Special production	ESD, UV, Customized color
Certificate	CE, ATEX(Ex)

» Calculation table

Item	Value
Length of Cable Chain	$L = \frac{1}{2} \times LS + LP$
Bending Radius	
The biggest Cable inserted	Multiply 8~10 and the biggest cable
The biggest Hydraulic Hose inserted	Multiply 15~20 and the biggest hose

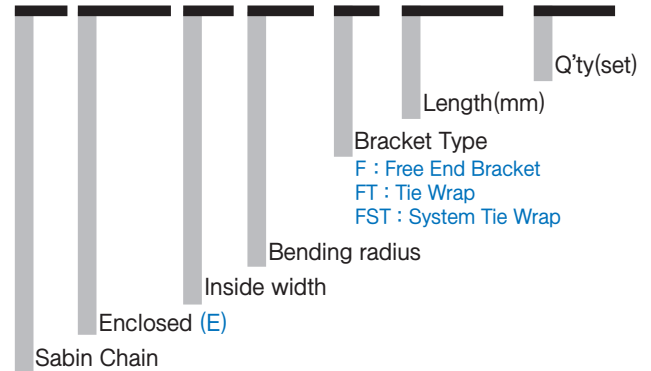
» Dimension table

nsb Chain E Type	Pitch	Bending Radius (R)	Weight kg/m	Speed m/s	Temperature °C	Size				Frame style	Section - composition
						A	B	C	D		
nsb 028E	28	66, 86, 116, 146	1.00 1.13 1.30 1.50	5	-30 ~ +130	55 75 95 120	38	35 55 75 100	26		
nsb 035E	35	90, 115, 140, 190	1.45 1.64 1.83 2.06 2.28	5	-30 ~ +130	70 95 120 145 170	52	50 75 100 125 150	40		
nsb 045E	45	90, 110, 135, 165, 185, 235, 285	2.78 3.07 3.35 3.58	5	-30 ~ +130	105 130 155 180	66	75 100 125 150	45		
nsb 060E	60	125, 135, 150, 180, 230, 270, 340	4.32 4.86 5.41	5	-30 ~ +130	140 190 240	82	100 150 200	56		
nsb 075E	75	160, 180, 230, 280, 330, 380, 480	7.01 7.97 9.48	5	-30 ~ +130	190 240 340	108	150 200 300	78		

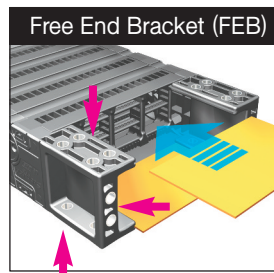
(Dimensions in mm)

» Ordering

nsb 028E, 50, R66 / F - 1000L : 10ST

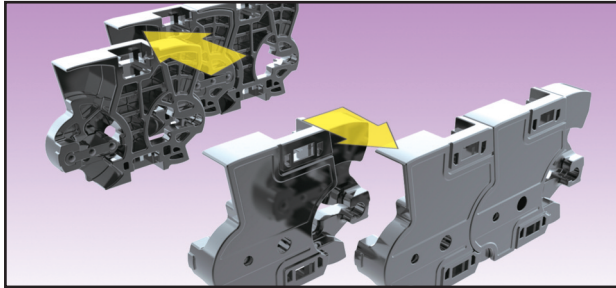


» Bracket type

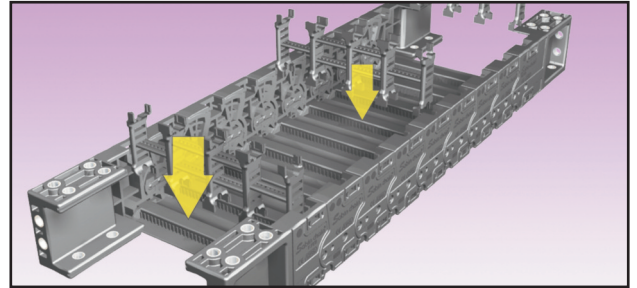


» Assembly procedure of nsb Chain Enclosed Type

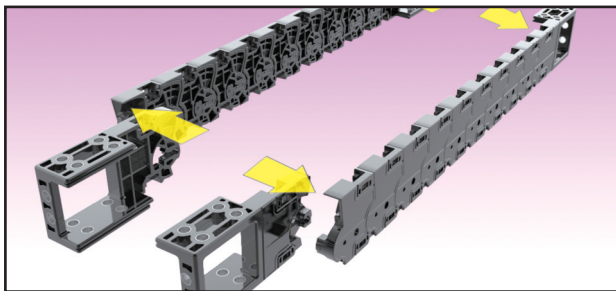
The assembling process of E-Type of New Sabin Chain is like below and user must use rubber hammer with careful combination of Divider and Separator.



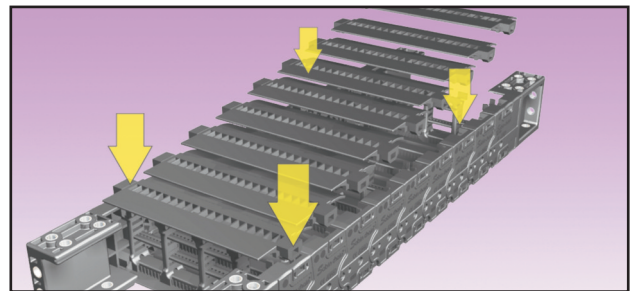
1 Connect each side band as many as you need.



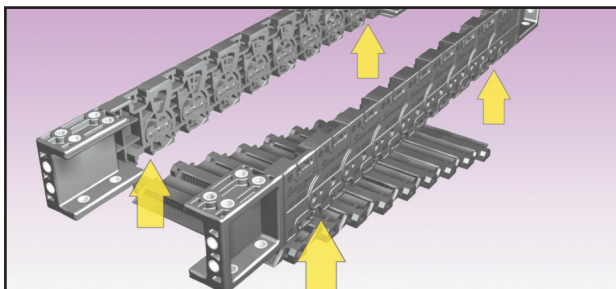
5 Fix the separator and divider patterns to the bottom-side frames as needed.



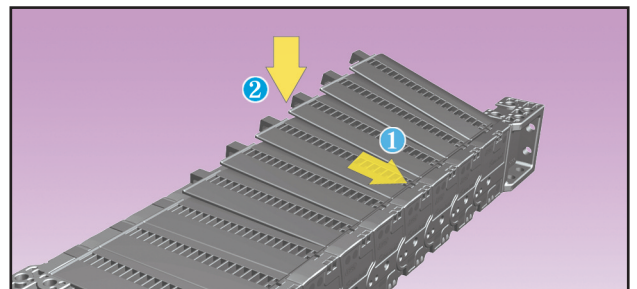
2 Assemble the end brackets on both ends.



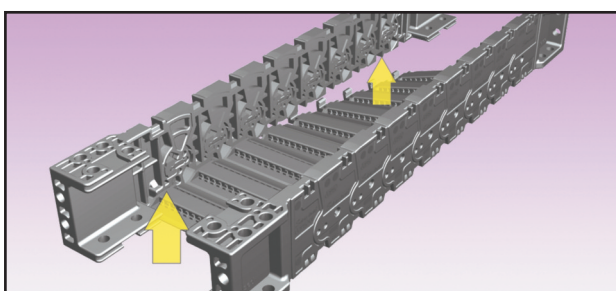
6 Fix the topside frames to the carrier.



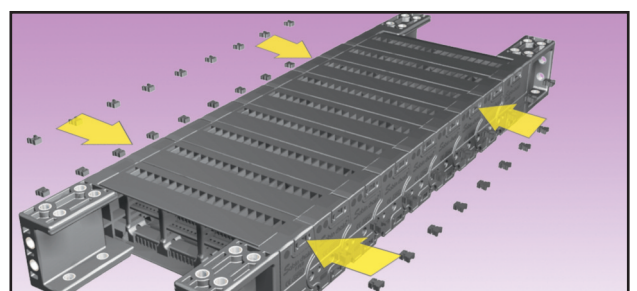
3 Attach frames starting with the bottom side of the carrier.



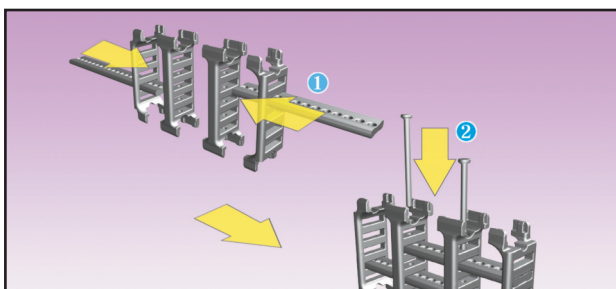
6-1 028E, 035E Type are Hinge Frame Type.



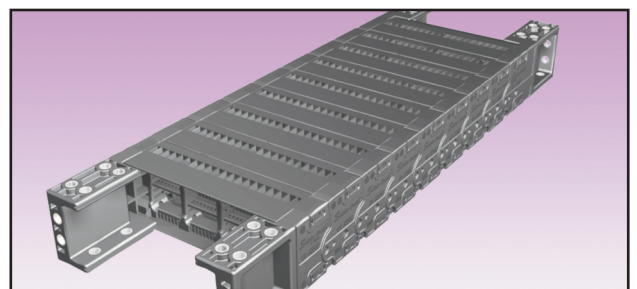
3-1 028E, 035E Type are Hinge Frame Type.



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.)



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.



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

nsb Chain - Enclosed type

» Part list of nsb Chain Enclosed type

- Composition of Cable chain(Standard)
= Side band(RH) + Frame + Side band(LH) + Bending radius Unit + 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(DOWN) FRAME(UP)	ST-FRD028.35 ST-FRU028.35 ST-FRD028.55 ST-FRU028.55 ST-FRD028.75 ST-FRU028.75 ST-FRD028.100 ST-FRU028.100	Inside frame, 35mm Outside frame, 35mm Inside frame, 55mm Outside frame, 55mm Inside frame, 75mm Outside frame, 75mm Inside frame, 100mm Outside frame, 100mm
	FREE END BRACKET	nsb-FEB028E	End bracket of nsb028E
	DIVIDER	sb-DV028/M sb-DV028/S	Normal divider To fix separstors at the both side section
	SEPARATOR	S-SP/M.35 S-SP/M.55 S-SP/M.75 S-SP/M.100	Separator, 35mm Separator, 55mm Separator, 75mm Separator, 100mm
	TIE WRAP	S-TW036/025CR.35 S-TW036/025CR.55 S-TW036/025CR.75 S-TW036/025CR.100	Tie wrap for end bracket to fix cables, 35mm 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
	SYSTEM TIE WRAP	sb-DV028/W S-TWEB028	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
nsb035E	SIDE BAND	nsb-SB035E.R*(LH) nsb-SB035E.R*(RH)	Left side band of nsb035E Right side band of nsb035E
	FRAME(DOWN) FRAME(UP)	ST-FRD035.50 ST-FRU035.50 ST-FRD035.75 ST-FRU035.75 ST-FRD035.100 ST-FRU035.100 ST-FRD035.125 ST-FRU035.125 ST-FRD035.150 ST-FRU035.150	Inside frame, 50mm Outside frame, 50mm Inside frame, 75mm Outside frame, 75mm Inside frame, 100mm Outside frame, 100mm Inside frame, 125mm Outside frame, 125mm Inside frame, 150mm Outside frame, 150mm
	FREE END BRACKET	nsb-FEB035E	End bracket of nsb035E
	DIVIDER	sb-DV035/M sb-DV035/S	Normal divider 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	Separator, 35mm Separator, 50mm Separator, 75mm Separator, 100mm Separator, 125mm Separator, 150mm
	TIE WRAP	S-TW050/035N.50 S-TW050/035N.75 S-TW050/035N.100 S-TW050/035N.125 S-TW050/035N.150	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-DV035/W S-TWEB035	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket

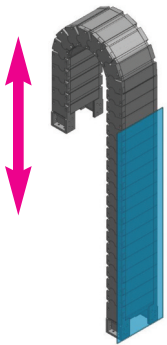
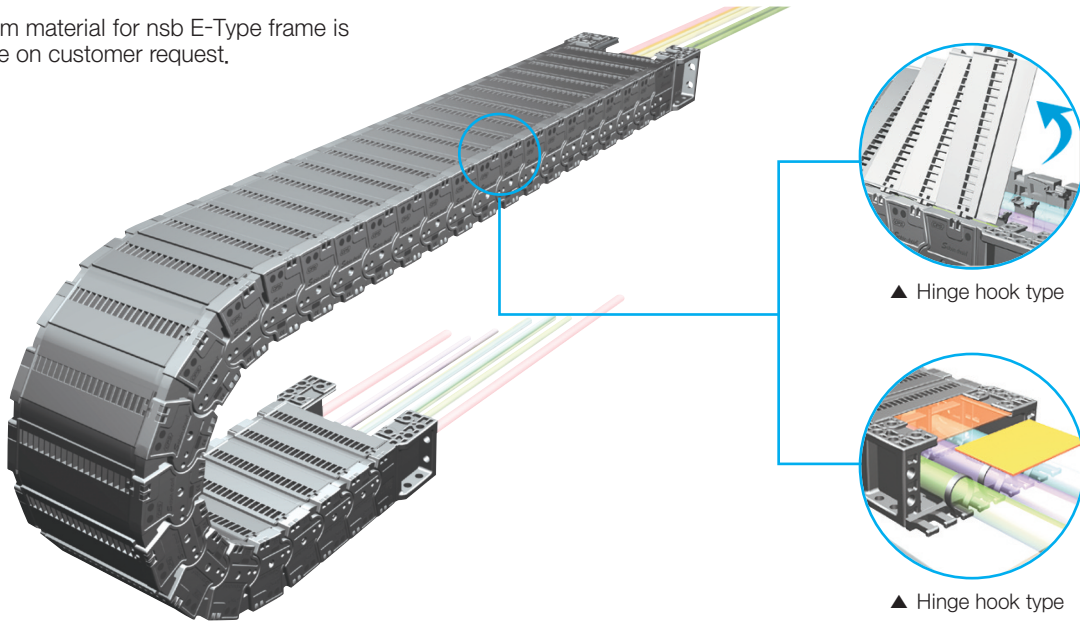
Model	Classification	Part number	Description
nsb045E	SIDE BAND	nsb-SB045E.R*(LH) nsb-SB045E.R*(RH)	Left side band of nsb045E Right side band of nsb045E
	FRAME PIN	S-FP/S1	Frame pin
	FRAME(DOWN) FRAME(UP)	ST-FRD045.75 ST-FRU045.75 ST-FRD045.100 ST-FRU045.100 ST-FRD045.125 ST-FRU045.125 ST-FRD045.150 ST-FRU045.150	Inside frame, 75mm Outside frame, 75mm Inside frame, 100mm Outside frame, 100mm Inside frame, 125mm Outside frame, 125mm Inside frame, 150mm Outside frame, 150mm
	FREE END BRACKET	nsb-FEB045E sb-FEB/WH045	End bracket of nsb045E 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/400.400 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-TWEB045	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(DOWN) FRAME(UP)	sb-FRU060,100 sb-FRU060,100 sb-FRU060,150 sb-FRU060,150 sb-FRU060,200 sb-FRU060,200	Inside frame, 100mm Outside frame, 100mm Inside frame, 150mm Outside frame, 150mm Inside frame, 200mm Outside frame, 200mm
	FREE END BRACKET	nsb-FEB060E sb-FEB/WH060	End bracket of nsb060E 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/400,400 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

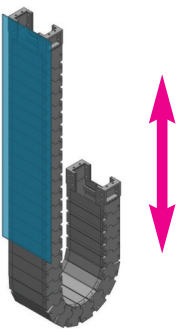
Model	Classification	Part number	Description
nsb075E	SIDE BAND	nsb-SB075E,R*(LH) nsb-SB075E,R*(RH)	Left side band of nsb075E Right side band of nsb075E
	FRAME PIN	S-FP/S2	Frame pin
	FRAME(DOWN) FRAME(UP)	sb-FRU075,150 sb-FRU075,150 sb-FRU075,200 sb-FRU075,200 sb-FRU075,300 sb-FRU075,300	Inside frame, 150mm Outside frame, 150mm Inside frame, 200mm Outside frame, 200mm Inside frame, 300mm Outside frame, 300mm
	FREE END BRACKET	nsb-FEB075E sb-FEB/WH075	End bracket of nsb075E 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/400,400 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

nsb 028E

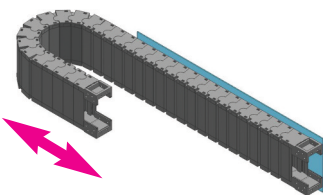
• Aluminum material for nsb E-Type frame is available on customer request.



Vertical with curve above



Vertical with curve below



Horizontal application mounted on its side

» Calculation of the chain length

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

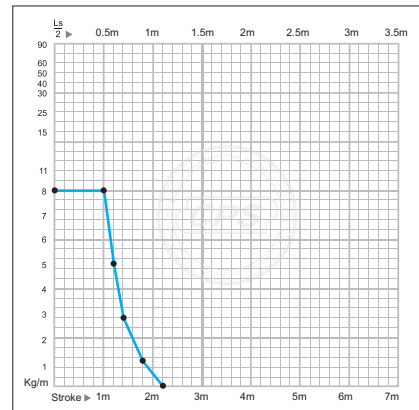
» Other installation length

Vertical curve above = max 2.0m

Vertical curve below = max 40m

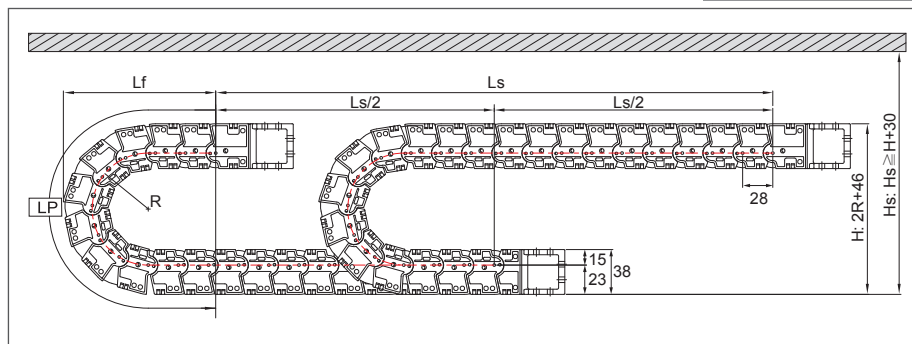
Side Mounted, Unsupported = max 1.0m

» Load diagrams self-supporting length



» Layout of the chain

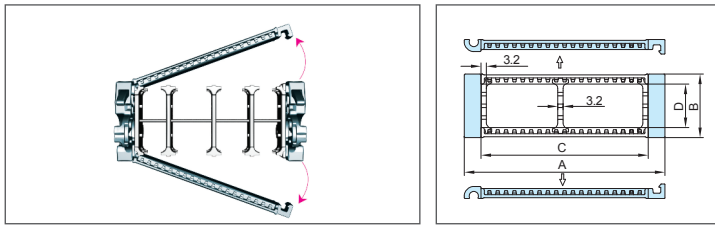
Ls: Stroke Hs: Safe Space



Bending Radius (R)	Lp Loop Length	Lf Loof Projection	H Moving Height
66	376	173	178
86	439	193	218
116	533	223	278
146	627	253	338

(Dimensions in mm)

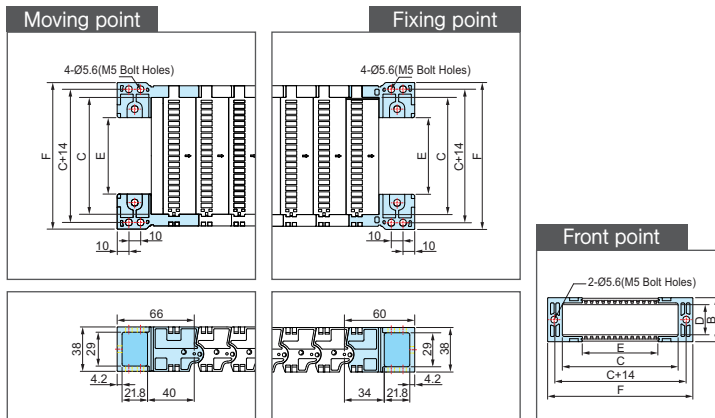
» Chain cross section



Chain Type	A Width (Outer)	B Height (Outer)	C Frame	D Height (Inner)	Weight kg/m
nsb 028E	55	38	35	26	1.00
	75		55		1.13
	95		75		1.30
	120		100		1.50

(Dimensions in mm)

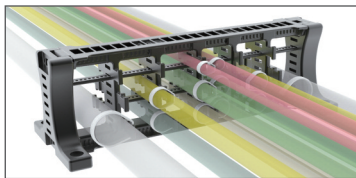
» Free end bracket



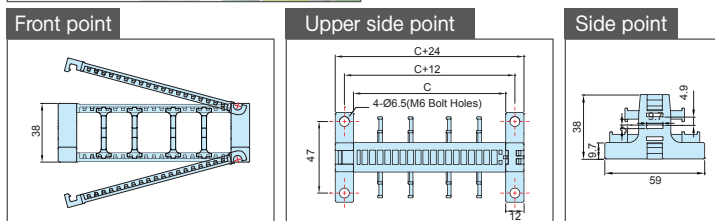
Chain Type	F Width(Outer)	B Height(Outer)	C Frame	D Height(Inner)	E M,EB Bolt hole width	Hole Type
nsb 028E	60.4	38	35	26	0.4	M5
	80.4		55		20.4	Bolt
	100.4		75		40.4	Holes
	125.4		100		65.4	

(Dimensions in mm)

» System tie wrap (STW)



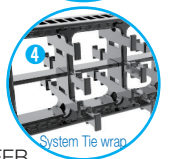
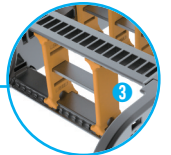
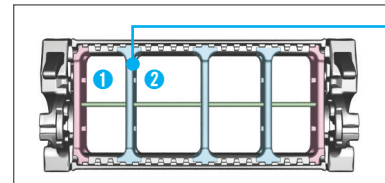
It is a unit to classify each cable for preventing entanglement of cables. It can either be installed to free end bracket or installed separately according its application environment.



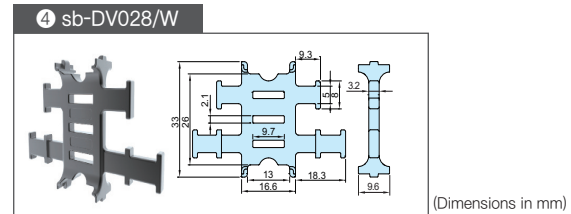
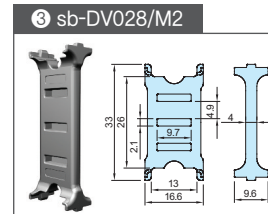
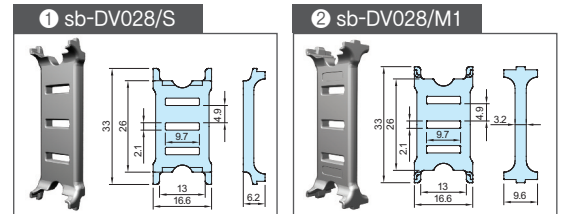
Chain Type	Ordering No.	C Frame	Hole Type
nsb 028E	S-TW,EB028,35	35	M6 Bolt Holes
	S-TW,EB028,55	55	
	S-TW,EB028,75	75	
	S-TW,EB028,100	100	

(Dimensions in mm)

» Dividers(DV)

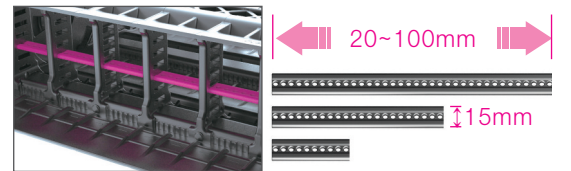


Assemble divider every second frame.
DV.M : Normal divider.
DV.W : Applicable to System Tie Wrap or FEB.



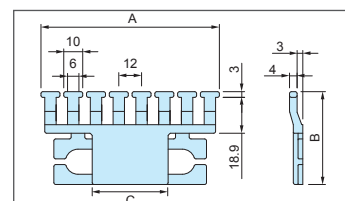
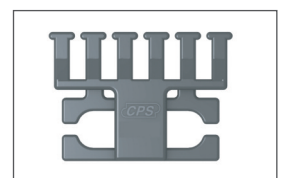
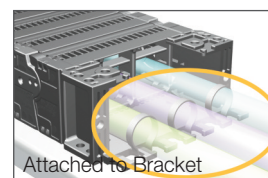
(Dimensions in mm)

» Separators(SP)



Chain Type	Ordering NO.	Frame
nsb 028E	S-SP/M,35	35
	S-SP/M,55	55
	S-SP/M,75	75
	S-SP/M,100	100

» Tie wrap (TW)

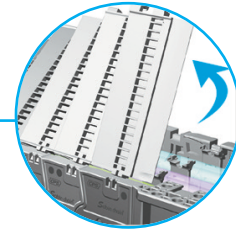
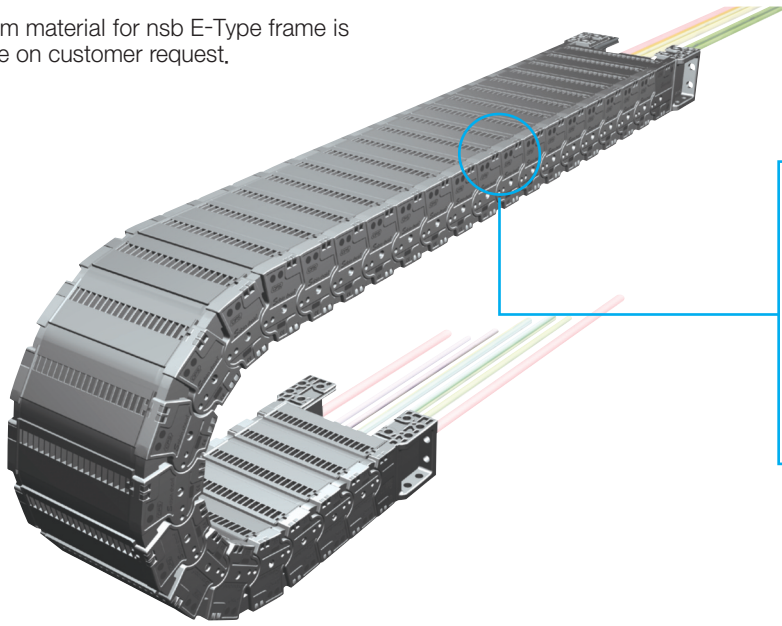


Chain Type	Ordering No.	A	B	C
nsb 028E	S-TW036/025CR,35	46	35.4	-
	S-TW036/025CR,55	70	48.9	20
	S-TW036/025CR,75	94	48.9	40
	S-TW036/025CR,100	118	48.9	65

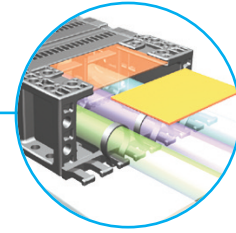
(Dimensions in mm)

nsb 035E

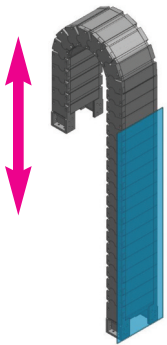
• Aluminum material for nsb E-Type frame is available on customer request.



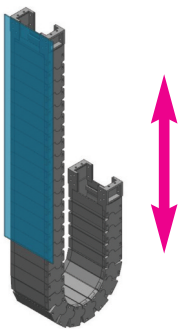
▲ Hinge hook type



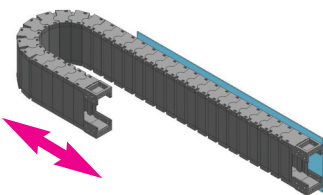
▲ Hinge hook type



Vertical with curve above



Vertical with curve below



Horizontal application mounted on its side

» Calculation of the chain length

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

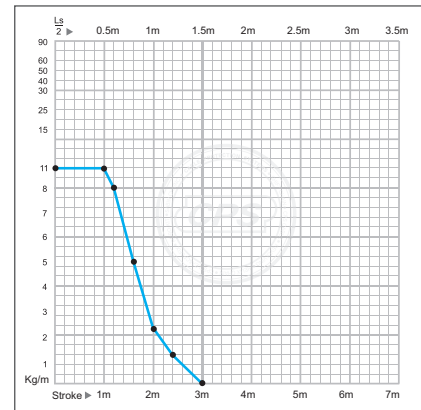
» Other installation length

Vertical curve above = max 3.0m

Vertical curve below = max 50m

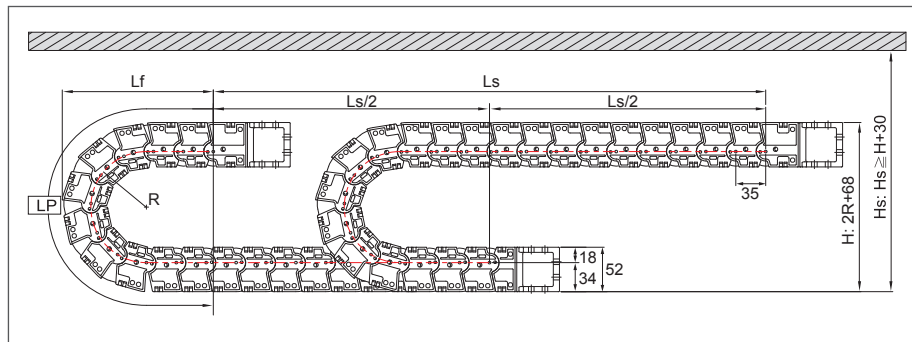
Side Mounted, Unsupported = max 1.0m

» Load diagrams self-supporting length



» Layout of the chain

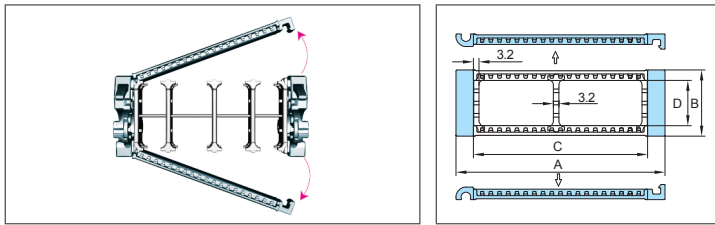
Ls: Stroke Hs: Safe Space



Bending Radius (R)	Lp Loop Length	Lf Loof Projection	H Moving Height
90	493	229	248
115	572	254	298
140	650	279	348
190	807	329	448

(Dimensions in mm)

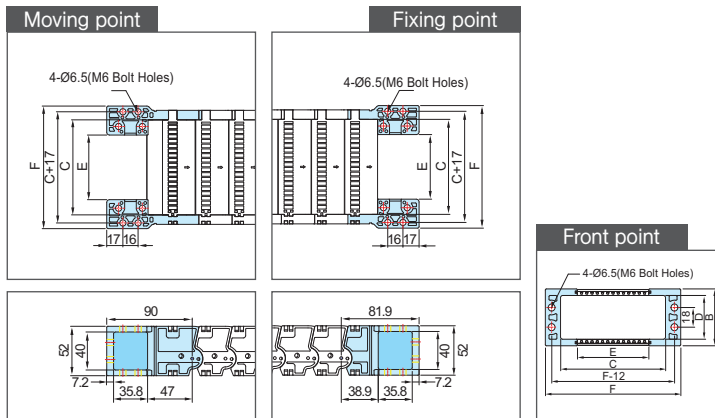
» Chain cross section



Chain Type	A Width (Outer)	B Height (Outer)	C Frame	D Height (Inner)	Weight kg/m
nsb 035E	70	52	50	40	1.45
	95		1.64		
	120		1.83		
	145		2.06		
	170		2.28		

(Dimensions in mm)

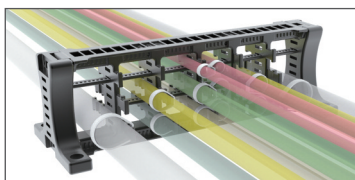
» Free end bracket



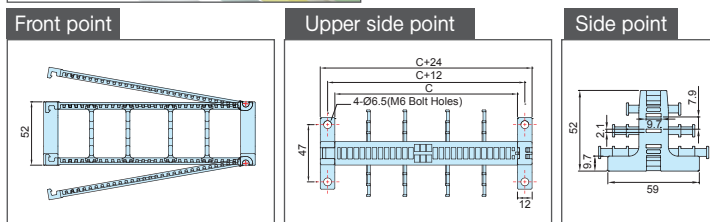
Chain Type	F Width(Outer)	B Height(Outer)	C Frame	D Height(Inner)	E M,EB Bolt hole width	Hole Type
nsb 035E	79	52	50	40	18	M6 Bolt Holes
	104		43			
	129		68			
	154		93			
	179		118			

(Dimensions in mm)

» System tie wrap (STW)

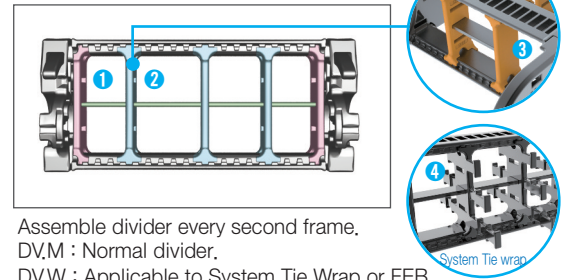


It is a unit to classify each cable for preventing entanglement of cables. It can either be installed to free end bracket or installed separately according its application environment.

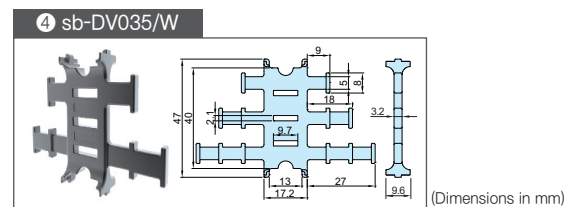
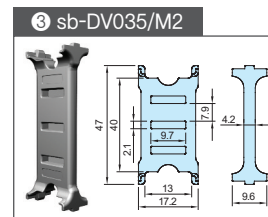
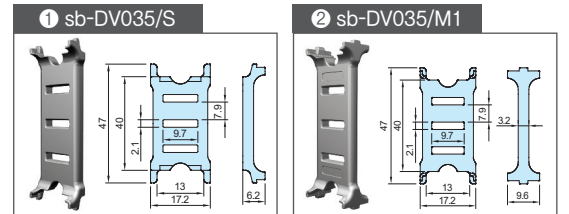


Chain Type	Ordering No.	C Frame	Hole Type
nsb 035E	S-TW,EB035,50	50	M6 Bolt Holes
	S-TW,EB035,75	75	
	S-TW,EB035,100	100	
	S-TW,EB035,125	125	
	S-TW,EB035,150	150	

» Dividers(DV)

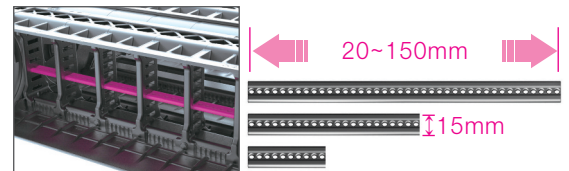


Assemble divider every second frame.
DV.M : Normal divider.
DV.W : Applicable to System Tie Wrap or FEB.



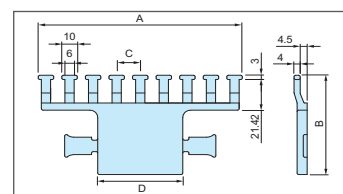
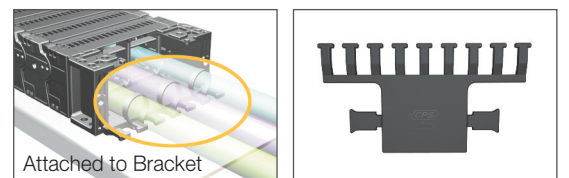
(Dimensions in mm)

» Separators(SP)



Chain Type	Ordering NO.	Frame
nsb 035E	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

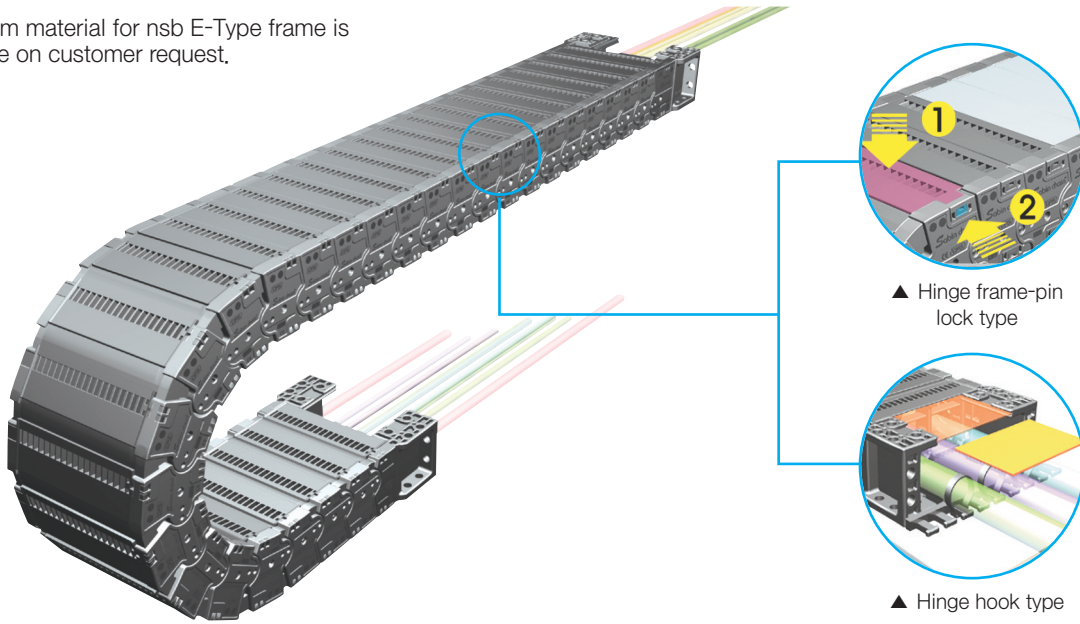
» Tie wrap (TW)



Chain Type	Ordering No.	A	B	C
nsb 035E	S-TW050/035N,50	82	64,5	12,00
	S-TW050/035N,75	107		12,13
	S-TW050/035N,100	132		15,25
	S-TW050/035N,125	157		14,70
	S-TW050/035N,150	182		14,35

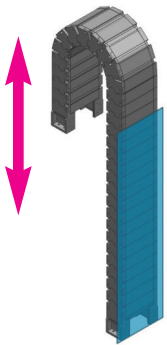
nsb 045E

• Aluminum material for nsb E-Type frame is available on customer request.

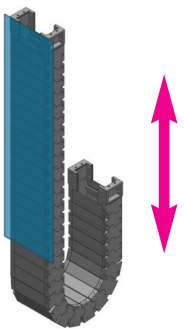


▲ Hinge frame-pin lock type

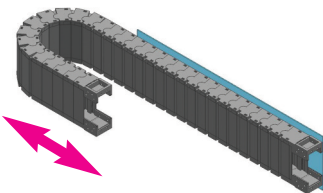
▲ Hinge hook type



Vertical with curve above



Vertical with curve below



Horizontal application mounted on its side

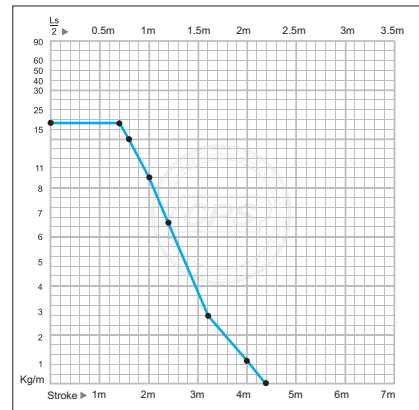
» Calculation of the chain length

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

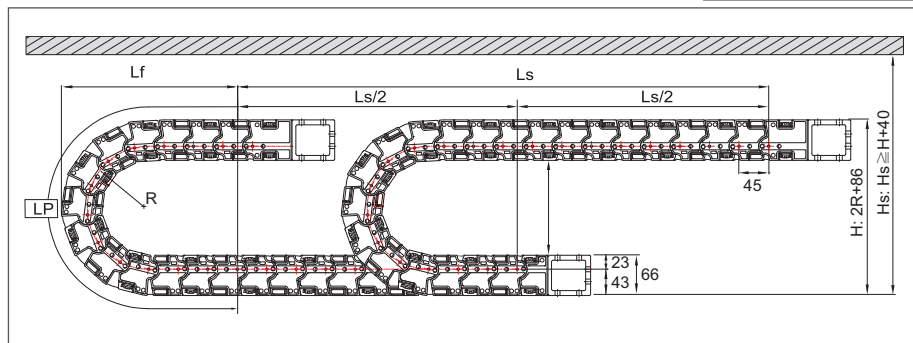
» Other installation length

Vertical curve above = max 6.0m
 Vertical curve below = max 100m
 Side Mounted, Unsupported = max 2.5m

» Load diagrams self-supporting length



» Layout of the chain

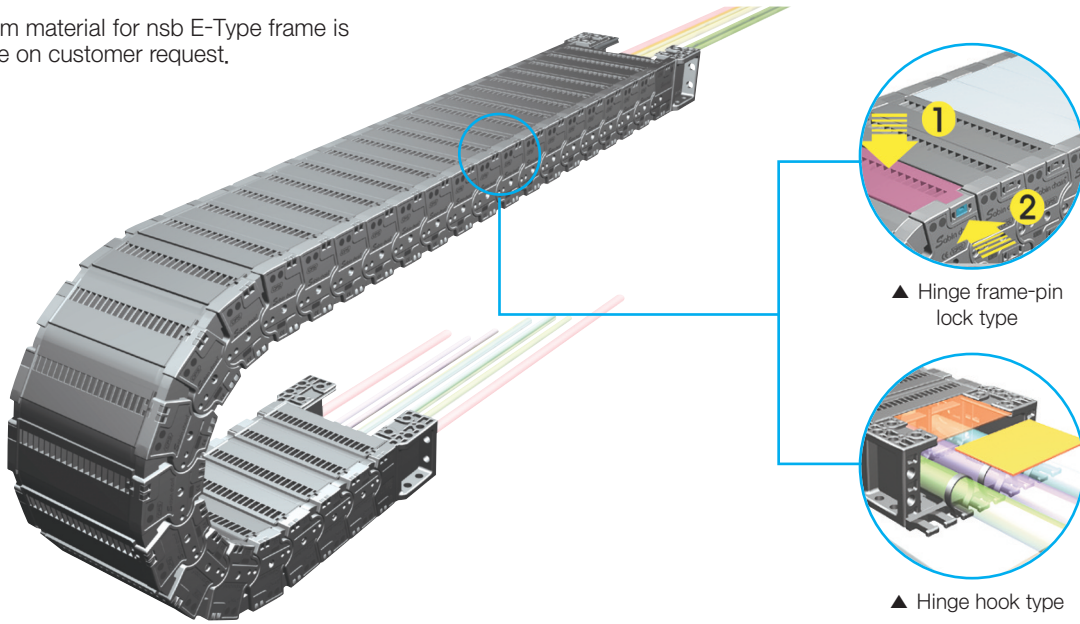


Bending Radius (R)	Lp Loop Length	Lf Loof Projection	H Moving Height
90	633	291	266
110	695	311	306
135	774	336	356
165	868	366	416
185	931	386	456
235	1,088	436	556
285	1,245	486	656

(Dimensions in mm)

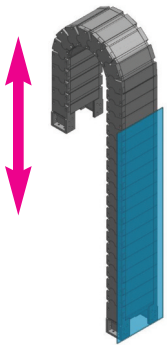
nsb 060E

• Aluminum material for nsb E-Type frame is available on customer request.

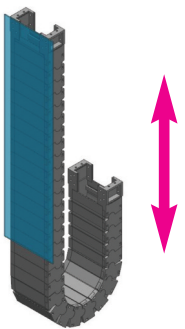


▲ Hinge frame-pin lock type

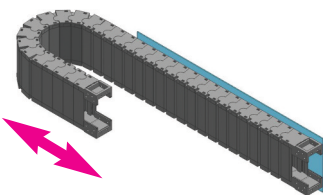
▲ Hinge hook type



Vertical with curve above



Vertical with curve below



Horizontal application mounted on its side

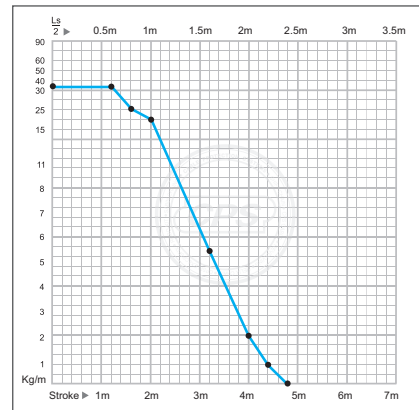
» Calculation of the chain length

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

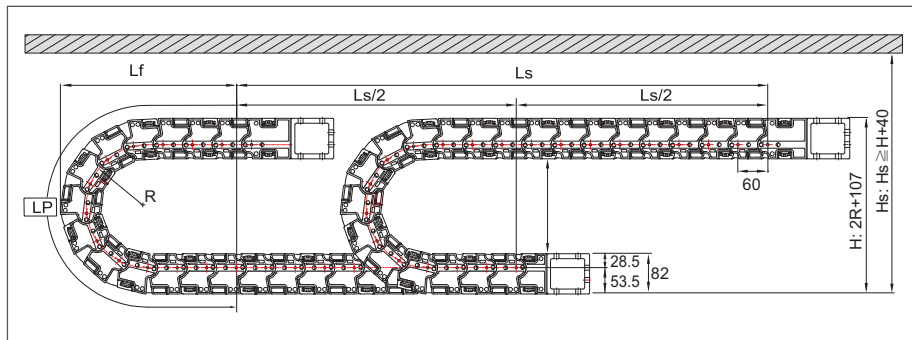
» Other installation length

Vertical curve above = max 6.0m
 Vertical curve below = max 100m
 Side Mounted, Unsupported = max 3.0m

» Load diagrams self-supporting length



» Layout of the chain

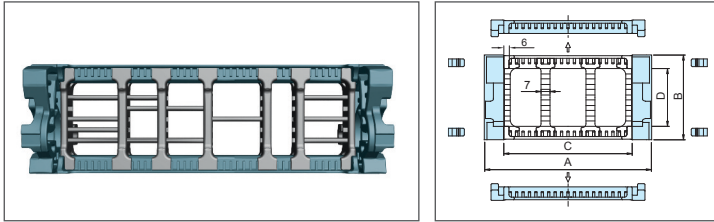


Ls: Stroke Hs: Safe Space

Bending Radius (R)	Lp Loop Length	Lf Loop Projection	H Moving Height
125	854	389	357
135	885	399	377
150	932	414	407
180	1,026	444	467
230	1,183	494	567
270	1,309	534	647
340	1,529	604	787

(Dimensions in mm)

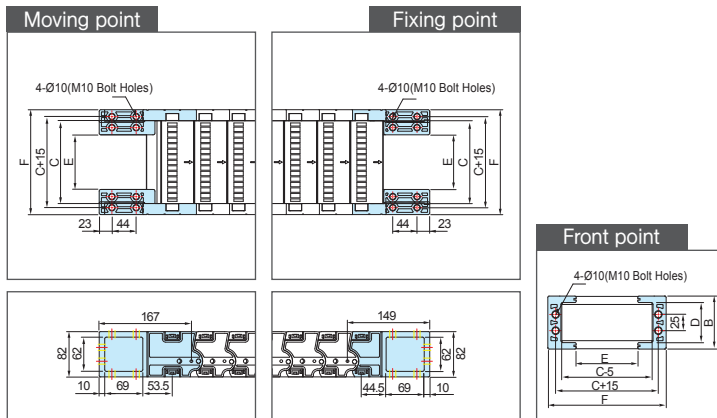
» Chain cross section



Chain Type	A Width (Outer)	B Height (Outer)	C Frame	D Height (Inner)	Weight kg/m
nsb 060E	140	82	100	56	4.32
	190		150		4.86
	240		200		5.41

(Dimensions in mm)

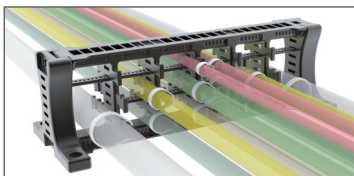
» Free end bracket



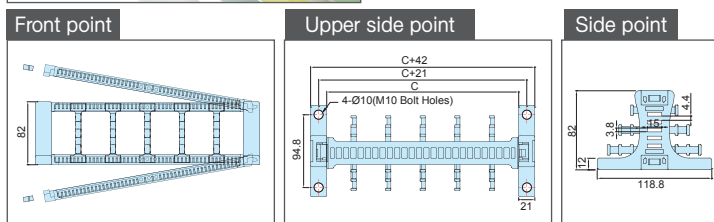
Chain Type	F Width(Outer)	B Height(Outer)	C Frame	D Height(Inner)	E M,EB Bolt hole width	Hole Type
nsb 060E	140	82	100	56	49	M10 Bolt Holes
	190				99	
	240				149	

(Dimensions in mm)

» System tie wrap (STW)



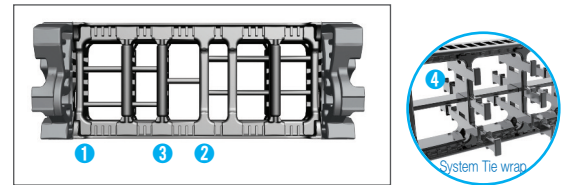
It is a unit to classify each cable for preventing entanglement of cables. It can either be installed to free end bracket or installed separately according its application environment.



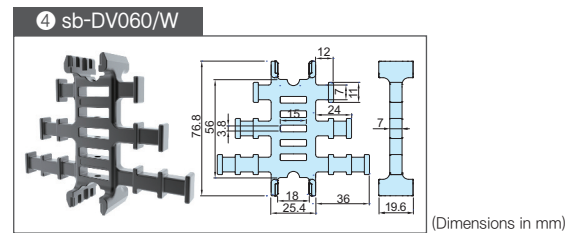
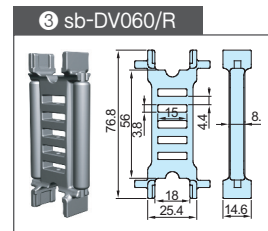
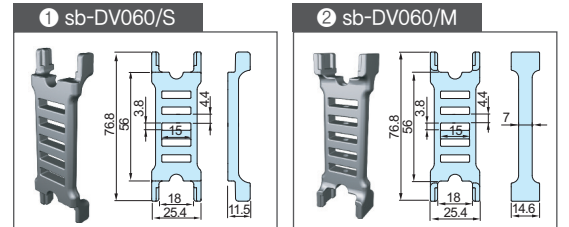
Chain Type	Ordering No.	C Frame	Hole Type
nsb 060E	S-TW.EB060.100	100	M10 Bolt Holes
	S-TW.EB060.150	150	
	S-TW.EB060.200	200	

(Dimensions in mm)

» Dividers(DV)

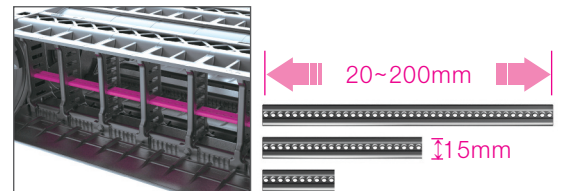


Assemble divider every second frame.
DV.M : Normal divider.
DV.W : Applicable to System Tie Wrap or FEB.



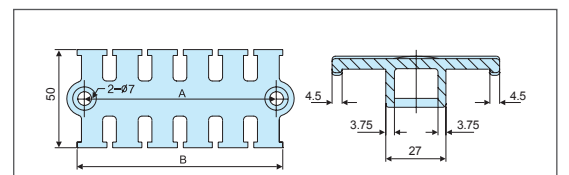
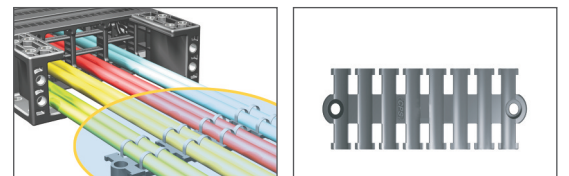
(Dimensions in mm)

» Separators(SP)



Chain Type	Ordering NO.
nsb 060E	sb-SP/400,400

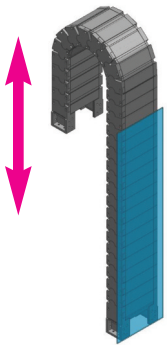
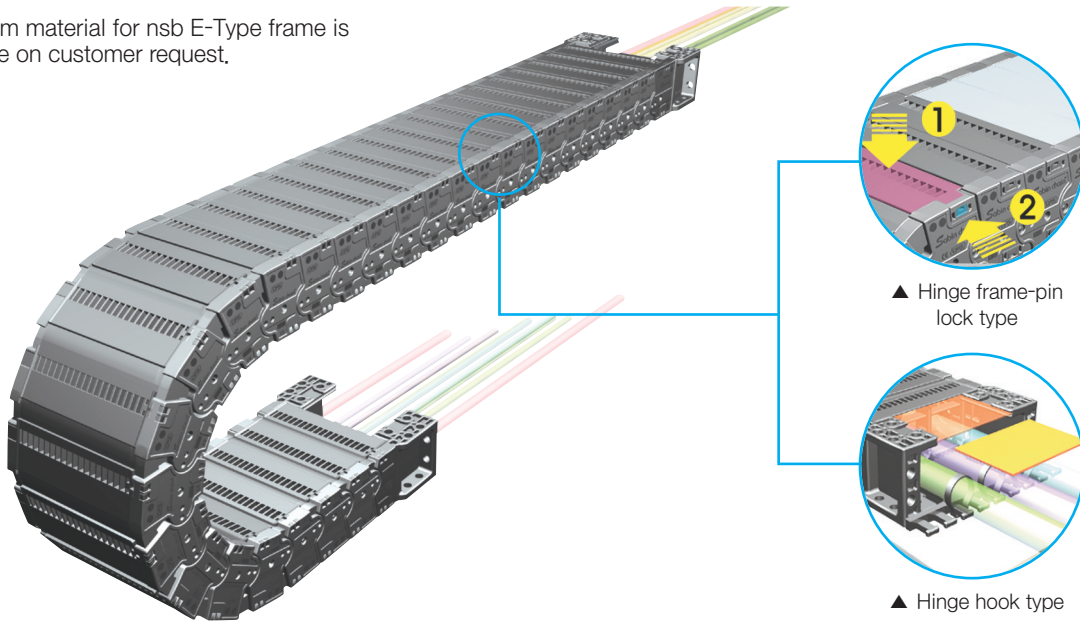
» Tie wrap (TW)



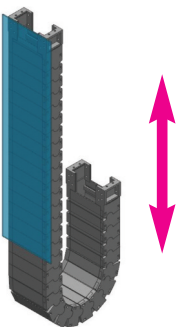
Chain Type	Ordering No.	A	B
nsb 060E	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148

nsb 075E

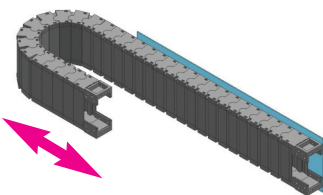
• Aluminum material for nsb E-Type frame is available on customer request.



Vertical with curve above



Vertical with curve below



Horizontal application mounted on its side

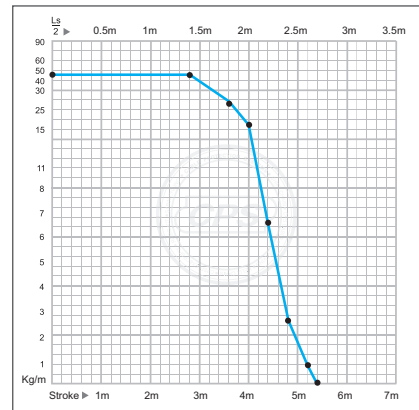
» Calculation of the chain length

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

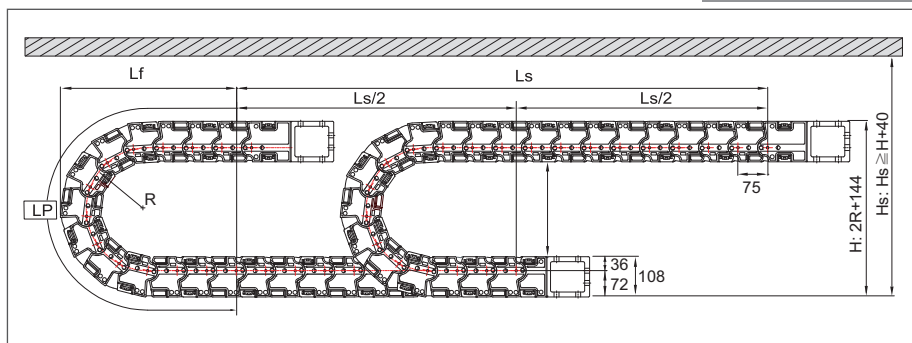
» Other installation length

Vertical curve above = max 6.0m
 Vertical curve below = max 120m
 Side Mounted, Unsupported = max 3.0m

» Load diagrams self-supporting length



» Layout of the chain

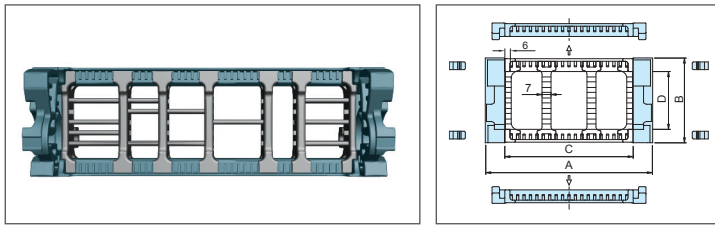


Ls: Stroke Hs: Safe Space

Bending Radius (R)	Lp Loop Length	Lf Loof Projection	H Moving Height
160	1,084	495	464
180	1,147	515	504
230	1,304	565	604
280	1,461	615	704
330	1,618	665	804
380	1,775	715	904
480	2,089	815	1,104

(Dimensions in mm)

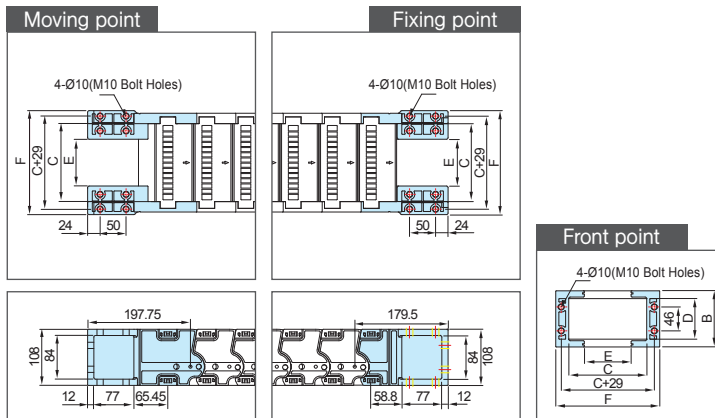
» Chain cross section



Chain Type	A Width (Outer)	B Height (Outer)	C Frame	D Height (Inner)	Weight kg/m
nsb 075E	190	108	150	78	7.01
	240		200		7.97
	340		300		9.48

(Dimensions in mm)

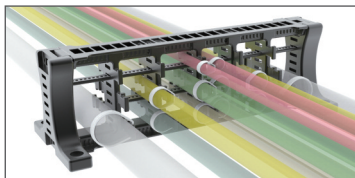
» Free end bracket



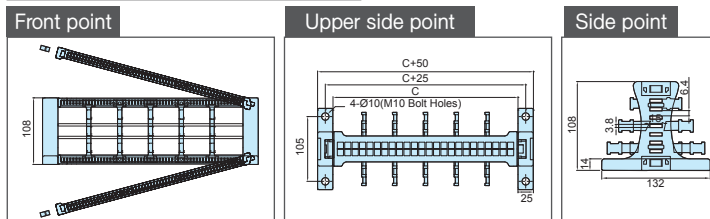
Chain Type	F Width(Outer)	B Height(Outer)	C Frame	D Height(Inner)	E M,EB Bolt hole width	Hole Type
nsb 075E	200	108	150	78	90	M10 Bolt Holes
	250		200		140	
	350		300		240	

(Dimensions in mm)

» System tie wrap (STW)



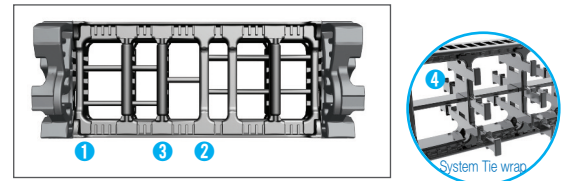
It is a utility to classify each cable for preventing entanglement of cables. It can either be installed to free end bracket or installed separately according to its application environment.



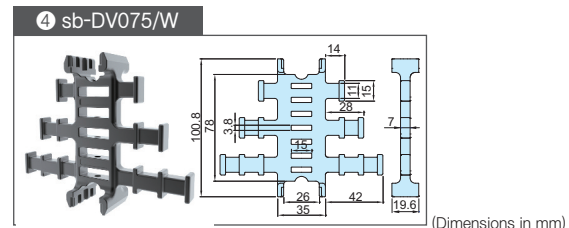
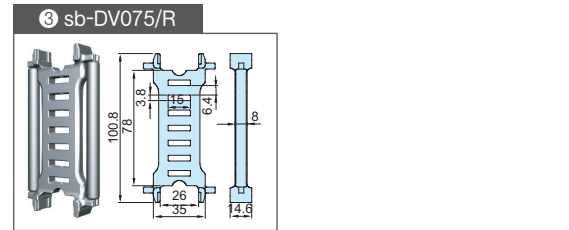
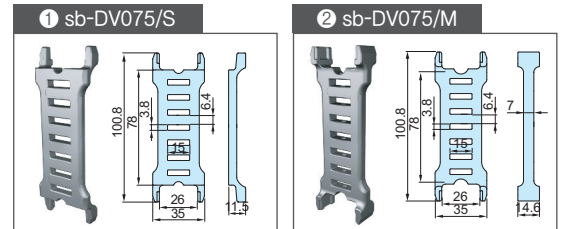
Chain Type	Ordering No.	C Frame	Hole Type
nsb 075E	S-TW,EB075,150	150	M10 Bolt Holes
	S-TW,EB075,200	200	
	S-TW,EB075,300	300	

(Dimensions in mm)

» Dividers(DV)

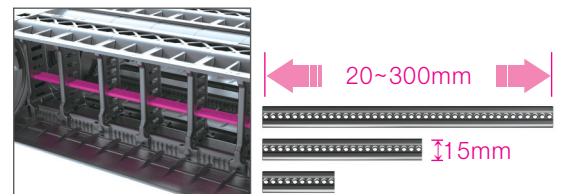


Assemble divider every second frame.
DV.M : Normal divider.
DV.W : Applicable to System Tie Wrap or FEB.



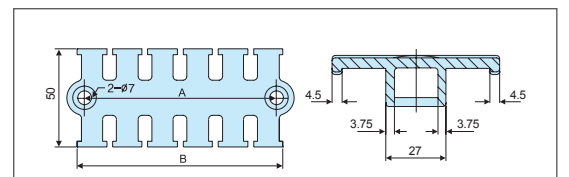
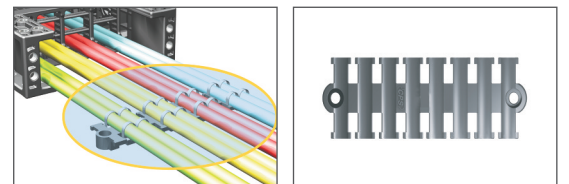
(Dimensions in mm)

» Separators(SP)



Chain Type	Ordering NO.
nsb 075E	sb-SP/400,400

» Tie wrap (TW)



Chain Type	Ordering No.	A	B
nsb 075E	S-TW50	58	65
	S-TW75	75	82
	S-TW100	98	105
	S-TW125	122	129
	S-TW150	141	148