

nsb Chain - Normal type
















» General information

Item	Value
Material	CPS-Amid(PA6+GF), RoHs
Speed	5m/s
Acceleration	15m/s²
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

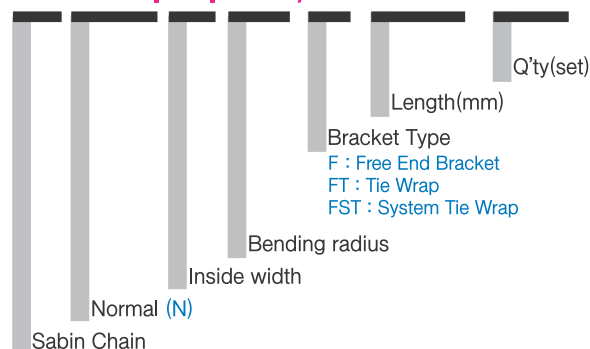
» Dimension table

nsb Chain N Type	Pitch	Bending Radius (R)	Weight kg/m	Speed m/s	Temperature °C	Size				Frame style	Section - composition
						A	B	C	D		
nsb 028N	28		0.79	5	-30 ~ +130	55	70	35			
			0.82			70	75	50			
			0.85			75	80	55			
			0.90			95	100	75			
			0.98			120	125	100	26		
			1.08			145	150	125			
			1.18			170	175	150			
			1.45			195	200	175			
			1.59			220		200			
nsb 035N	35		1.10	5	-30 ~ +130	55	70	35			
			1.13			70	75	50			
			1.15			75	80	55			
			1.18			95	100	75			
			1.25			120	125	100	40		
			1.32			145	150	125			
			1.41			170	175	150			
			1.62			195	200	175			
			1.72			220		200			
nsb 045N	45		2.06	5	-30 ~ +130	80	105	50			
			2.14			105	110	75			
			2.22			130	135	100			
			2.32			155	160	125			
			2.38			170	175	140			
			2.42			180	185	150			
			2.47			195	200	165	45		
			2.51			205	210	175			
			2.72			220	225	190			
			2.86			230	235	200			
nsb 060N	60		3.30	5	-30 ~ +130	115	140	75			
			3.35			140	145	100			
			3.51			165	170	125			
			3.60			190	195	150			
			3.69			215	220	175			
			3.78			230	235	190	56		
			3.84			240	245	200			
			4.01			280	285	240			
			4.05			290	295	250			
			4.26			340	345	300			
nsb 075N	75		4.57	5	-30 ~ +130	390	395	350			
			4.85			440	445	400			
			4.80			115	140	75			
			4.90			140	145	100			
			4.97			155	160	115			
			5.02			165	170	125			
			5.12			190	195	150			
			5.25			215	220	175			
			5.46			240	245	200	78		
			5.67			280	285	240			

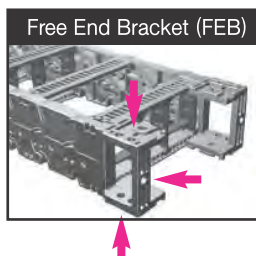
(Dimensions in mm)

» Ordering

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



» Bracket type



» Application of nsb Chain Normal type

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

► NSB 045N & 035N

Application
Machine tools
Location
Korea
Remark
Stroke : 2 meters



► NSB 060N

Application
Machine tools
Location
Korea
Remark
Stroke : 2 meters



► NSB 045N

Application
Factory production line
Location
Korea

- CPS can produce customized product for customers for ESD and special color.

► NSB 035N

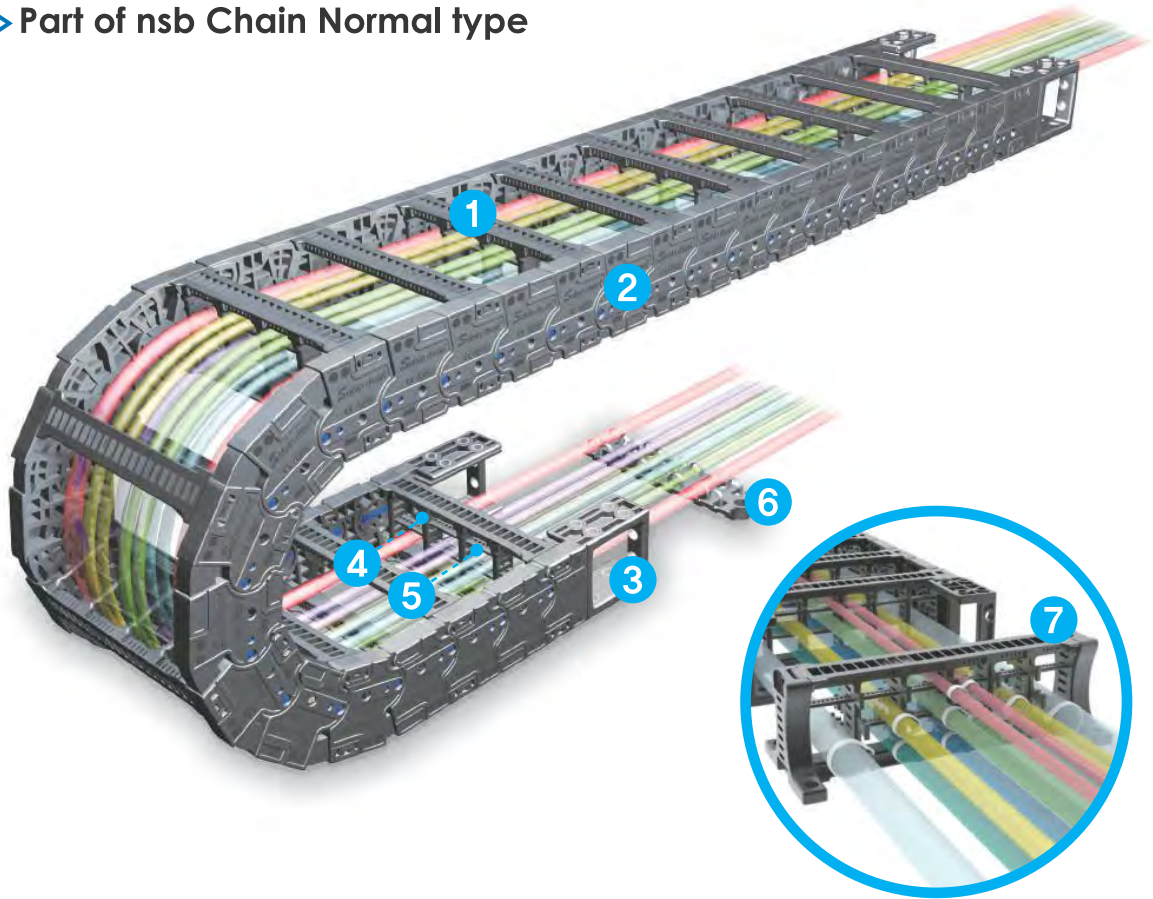


Application
PCTC Ship
Location
Korea (H-heavy industry)
Remark
ESD, Orange color



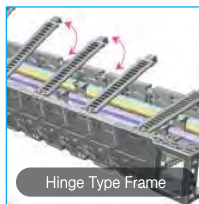
nsb Chain - Normal type

>> Part of nsb Chain Normal type



1 Frame (FR)

Hinged-type frame, open one side, supports connection of both side of side band and have tongue and groove system plate to secure the position of the divider on the frame.

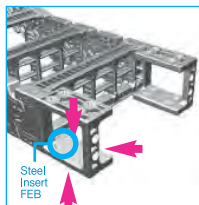


2 Side Band (SB)

It's part of cable chain that each side band's connected by holding band.

3 FREE END BRACKET (FEB)

A unit that connects at last side band (left&right). It can be fixed stronger using steel washers.



4 Dividers (DV)

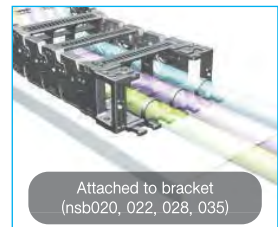
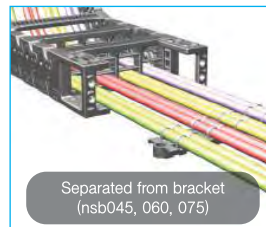
Divider sets the inside of chain vertically to prevent cable from twisting and sheath damage caused by friction. There are S, M, R and T type.

5 Separators (SP)

A unit that divides inserted cables vertically to prevent twisting and breaking problem.

6 Tie wrap (TW)

A unit that ties cables to maintain straightness of them. It can be assembled to bracket directly or installed separately from bracket.



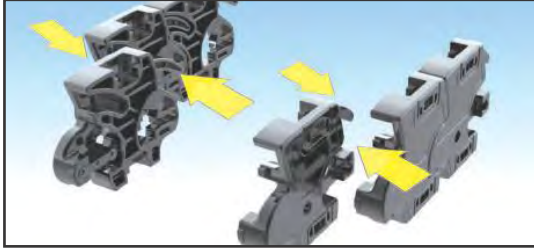
7 System tie wrap (STW)

System-Tie Wrap has to be assembled on fixing and moving point of bracket and can be assembled without any tie wrap plate. This tie wrap is used to stay the cables on several floors prevent the cables from being twisting and it can also be assemble without any tools or bolt. This tie wrap has two types, one is to assemble inside bracket the other one is outside.

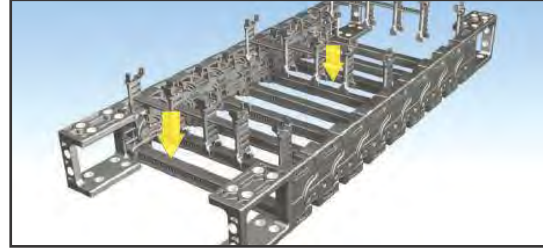


>> Assembly procedure of nsb Chain Normal Type

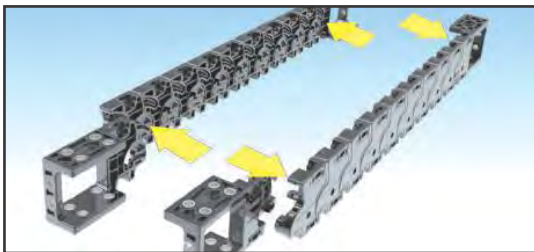
The assembling process of CR-Type of New Sabin Chain is like below and user must use rubber hammer with careful combination of Divider and Separator.



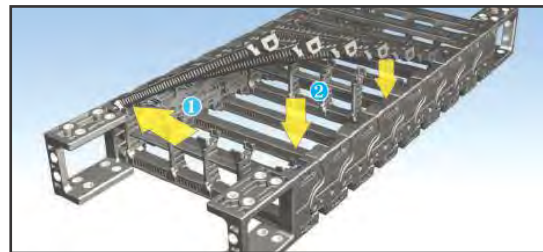
1 Connect each side band as many as you need.



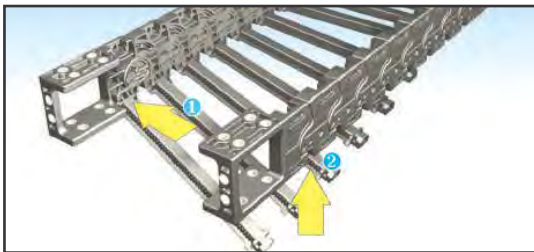
5 Fix the separator and divider patterns to the bottom-side frames as needed.



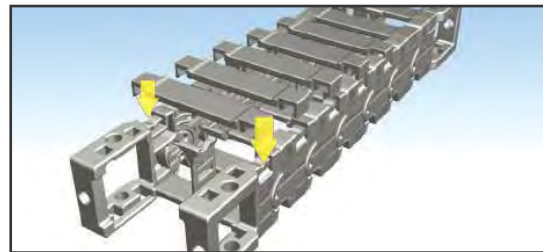
2 Assemble the end brackets on both ends.



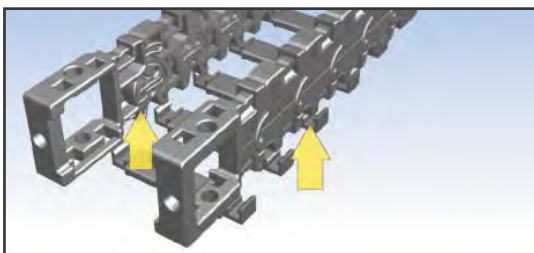
6 Attach frames to one side groove on the frames, then the other side.



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



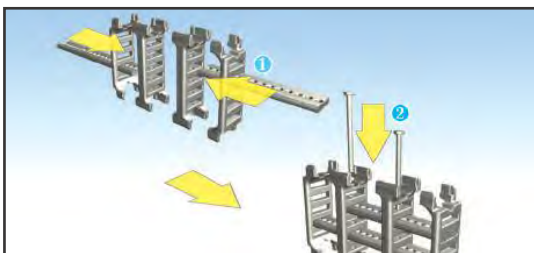
6-1 For nsb020CR and nsb022CR, they are not Hinge Type for method to connect frames, but Hook Type on both sides.



3-1 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.)



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 CR-Type, Sabin Chain.



nsb Chain - Normal type

» Part list of nsb Chain Normal 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
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	End bracket of nsb028N
	DIVIDER	sb-DV028/M	Normal divider
		sb-DV028/S	To fix separators 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-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
		S-TW036/025CR,125	Tie wrap for end bracket to fix cables, 125mm
	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
nsb035N	SIDE BAND	nsb-SB035N,R*(LH) nsb-SB035N,R*(RH)	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	End bracket of nsb035N
	DIVIDER	sb-DV035/M	Normal divider
		sb-DV035/S	To fix separators 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
	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
nsb045N	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	End bracket of nsb045N Steel washer for end bracket
	DIVIDER	sb-DV045/M	Normal divider
		sb-DV045/S	To fix separators at the both side section
	SEPARATOR	sb-DV045/T	T divider
		sb-SP/400,400 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-TWEB045	Divider for fixing cables at end bracket System tie wrap to arrange for cables right after moving bracket or fixing bracket

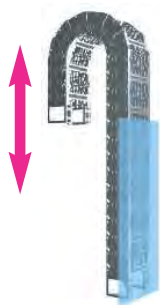
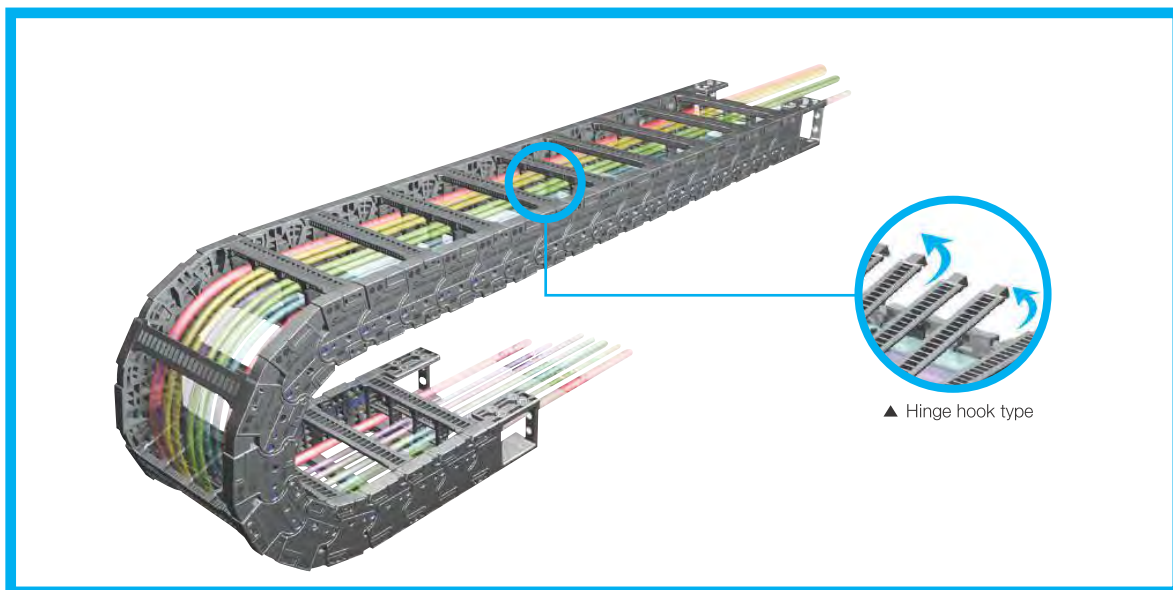


Model	Classification	Part number	Description
nsb060N	SIDE BAND	nsb-SB060N,R*(LH) nsb-SB060N,R*(RH)	Left side band of nsb060N Right side band of nsb060N
	FRAME PIN	S-FP/S1	Frame pin
	FRAME	sb-FR/M,75	Frame, 75mm
		sb-FR/M,100	Frame, 100mm
		sb-FR/M,125	Frame, 125mm
		sb-FR/M,150	Frame, 150mm
		sb-FR/M,175	Frame, 175mm
		sb-FR/M,190	Frame, 190mm
		sb-FR/M,200	Frame, 200mm
		sb-FR/M,230	Frame, 230mm
		sb-FR/M,250	Frame, 250mm
		sb-FR/M,300	Frame, 300mm
		sb-FR/M,350	Frame, 350mm
		sb-FR/M,400	Frame, 400mm
	FREE END BRACKET	nsb-FEB060N sb-FEB/WH060	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/400,400 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

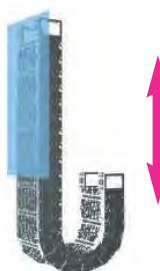
Model	Classification	Part number	Description
nsb075N	SIDE BAND	nsb-SB075N,R*(LH) nsb-SB075N,R*(RH)	Left side band of nsb075N Right side band of nsb075N
	FRAME PIN	S-FP/S2	Frame pin
	FRAME	sb-FR075/100,75	Frame, 75mm
		sb-FR075/100,100	Frame, 100mm
		sb-FR075/100,115	Frame, 115mm
		sb-FR075/100,125	Frame, 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	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/400,400 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



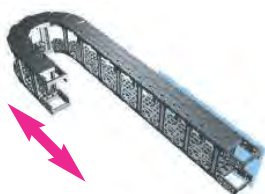
nsb 028N



Vertical with curve above



Vertical with curve below



Horizontal application
mounted on its side

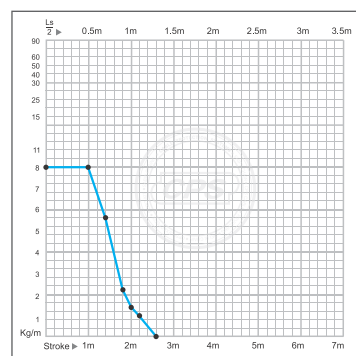
» Calculation of the chain length

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

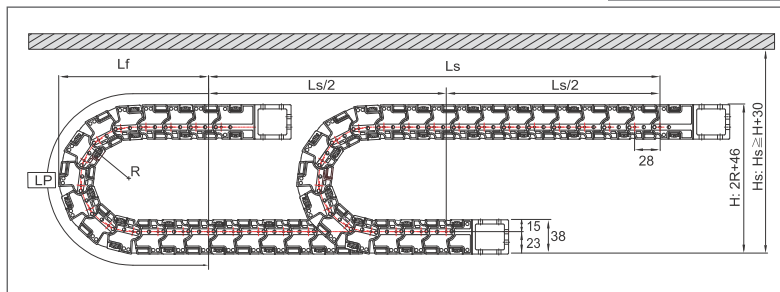
» Other installation length

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

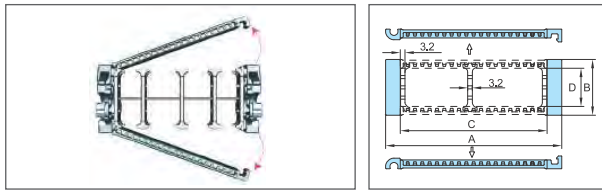


Bending Radius (R)	Lp Loop Length	Lf Loop Projection	H Moving Height
46	313	153	138
66	376	173	178
86	439	193	218
116	533	223	278
146	627	253	338

(Dimensions in mm)



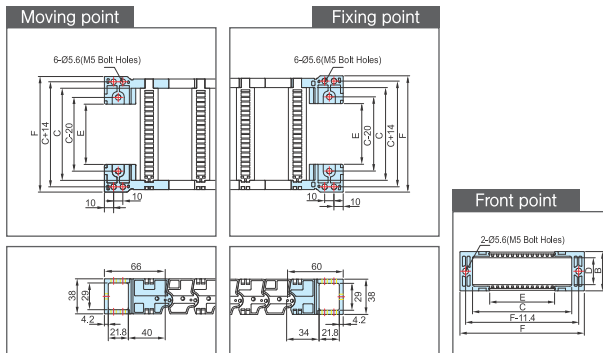
» Chain cross section



Chain Type	A Width (Outer)	B Height (Outer)	C Frame	D Height (Inner)	Weight kg/m
nsb 028N	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

(Dimensions in mm)

» Free end bracket



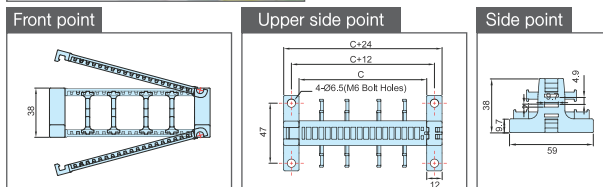
Chain Type	F Width(Outer)	B Height(Outer)	C Frame	D Height(Inner)	E M,EB Bolt hole width	Hole Type
nsb 028N	60.4	38	35	26	0.4	M5 Bolt Holes
	75.4		50		15.4	
	80.4		55		20.4	
	100.4		75		40.4	
	125.4		100		65.4	
	150.4		125		90.4	
	175.4		150		115.4	
	200.4		175		140.4	
	225.4		200		165.4	

(Dimensions in mm)

» System tie wrap (STW)



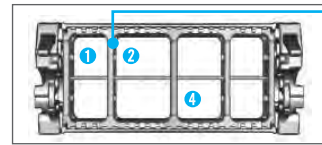
It is a unit to classify each cable for preventing entanglement of cables. It can either be installed to free end bracket or installed separately according its application environment.



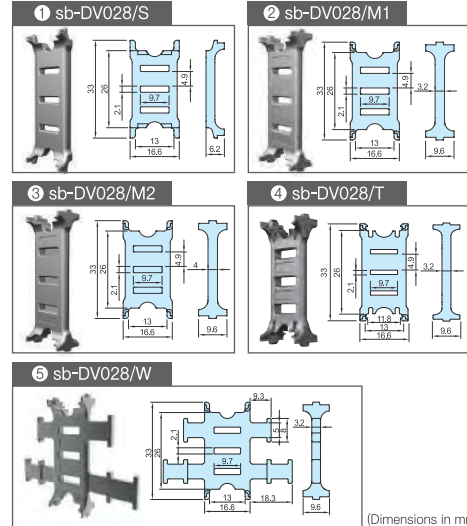
Chain Type	Ordering No.	C Frame	Hole Type
nsb 028N	S-TW.EB028.35	35	M6 Bolt Holes
	S-TW.EB028.50	50	
	S-TW.EB028.55	55	
	S-TW.EB028.75	75	
	S-TW.EB028.100	100	
	S-TW.EB028.125	125	
	S-TW.EB028.150	150	
	S-TW.EB028.175	175	
	S-TW.EB028.200	200	

(Dimensions in mm)

» Dividers(DV)

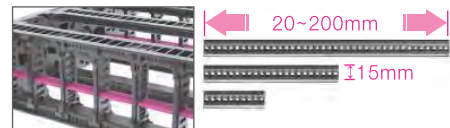


Assemble divider every second frame.
DV.T : Applied to Frame 125~200.
DV.M : Normal Divider.
DV.W : Applicable to System Tie Wrap or FEB.



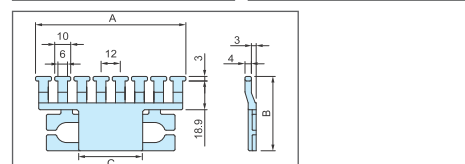
(Dimensions in mm)

» Separators(SP)



Chain Type	Ordering NO.	Frame
nsb 028N	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

» Tie wrap (TW)



Chain Type	Ordering No.	A	B	C
nsb 028N	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

