

Terrace roof TR/TF-series 600type Standard installation Assembling manual

Thank you very much for choosing our company's products.

Please be sure to thoroughly read these instructions for assembly in order to properly and smoothly assemble or attach this product.

The precautions provided herein contain important information to ensure product performance, function, strength and safety.

Please be sure to follow them during construction.

- Construction shall be implemented by professionals. Problems may occur if the product is installed by someone without the proper knowledge.

Notice ▶ Please be sure to return this manual to the owner after construction.

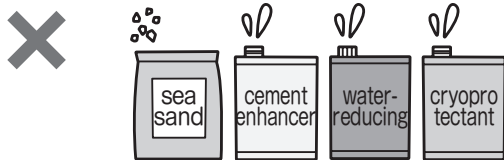
Precautions during installation

- Do not change or remodel it for another purpose except terrace roof.
- This product is for general areas. It has a snow accumulation strength of 600N/m²(61.2kg/m²), which corresponds to 20cm of fresh snowfall (specific weight 0.3). Do not install in heavy snow area.
- This product can be installed on the ground floor level. Please do not install on more than two -story.
- Do not install it in the place where snow slides down from the building roof directly or strong wind blow up this terrace roof.
- Standard installation of this product is installing on wooden body. When installing on the reinforced concrete structure or steel structure except wooden house, please install by using optional parts and screws.
- Please check the house construction drawing and wall thickness before installation so that rear frame install firmly in the right position of the house structural reinforcing materials (reinforced post, crossbeam, etc.). Do not install on the mortar part by using plug anchors etc.
- Position the posts not to affect underground objects (water supply, drain pipes, etc.).
- When moving the posts, please follow the company specifications.
- Install it so that the exhaust of hot-water supply, heating and/or the car do not hit directly to the products and do not retain around products. There is a possibility that the surface abnormality occurs as the coating film stripping.

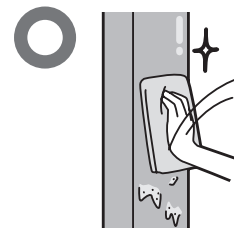
Precautions during construction

- Follow the instructions and be sure that all the specified screws and bolts for assembly are tightened securely. Please tighten the screws not to lean against the installation face.
- Tighten the M8 bolts at approx. 13Nm (130kgfcm) tightening torque.
- Do not use anything other than the specified parts or optional parts.
- The foundation should comply with or exceed dimension specifications.
- Please use the concrete and install the foundations.
- Allow sufficient curing time for the concrete (4 to 7 days) and do not place heavy objects on it or subject it to vibrations during the curing period.
- Be sure to keep the note below to prevent aluminum materials corrode.

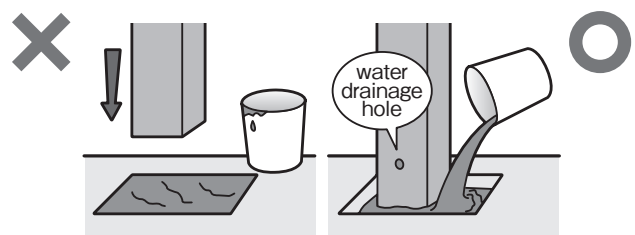
(1) Do not use sea sand for the foundation since it contains salt and may cause corrosion. Do not use a cement enhancer, water-reducing agent or cryoprotectant. They may cause the posts to corrode.



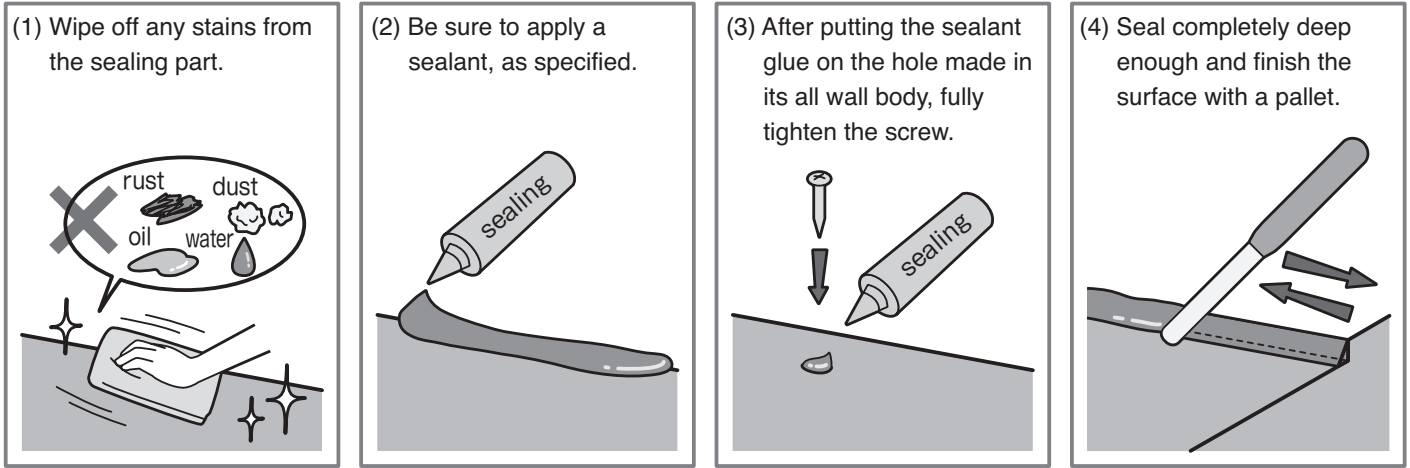
(2) Immediately wipe off any mortar or stains from the surface of aluminum parts since they may cause corrosion.



(3) Be sure to provide gravel for the foundation to allow drainage, insert water drainage holes (φ5) at the base of the posts and foundation. Failure to do so may lead to water accumulation inside the posts and damage them if the water freezes and expands inside.



Be sure to put the sealant glue as the following.



After construction, check the products to see if the bolts, screws, nuts, etc. loosen or any dangerous places exist.

Be sure to check if the product has scratches, dents or dint.

Be sure to explain product operation procedures, maintenance and inspection methods to the owner.

Necessary tools and materials for installation

Electric drill, Drill, Tapping drill (M5)

Ratchet wrench, Adjustable end wrench

Electric screwdriver

Measure, Level, Plumb bob, Cutter, Pillar, Plastic hammer


Cropper or Saw

Foundation materials (Cement, Aggregate, etc)

Sealant, Caulk gun, Pallet, Back-up materials, Glue

Please prepare tools and materials as needed.

■  marks indicate making holes on-site. Please make holes referring the manual.

■  marks indicate doing sealing work. Please do sealing work referring the manual.

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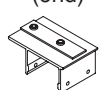
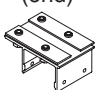

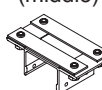

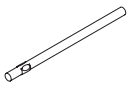

Packaging detail

- Please open the captioned carton and check all contents in advance.
- Please check the parts defective or damage.
- After opening the carton box, please stock not to deface the products.
- We packed some extra screws in the parts box. (X) number is necessary quantity for installation.






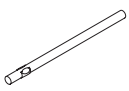

■ Post set

(Depth type 30 to 15)

●part (N: Standard post, L: Long post)

Shape name	Materials	Parts						
	post 	post fixing part A (end) 	post fixing part B (end) 	post fixing part A (middle) 	post fixing part B (middle) 	small truss screw 5×10×10 	anchor rod 	round gutter 
Parts ID		GB8631	GB8633	GB8632	GB8634		GA0073	GA4923
TRH●-2	2	2	—	—	—	9(8)	2	1
TRH●B-2	2	—	2	—	—	9(8)	2	1
TRH●-1	1	—	—	1	—	5(4)	1	1
TRH●B-1	1	—	—	—	1	7(6)	1	1


(Depth type 18 to 2A)

Shape name	Materials	Parts					
	post 	post connecting part (for 18, 2A) 	front frame support part (for 18, 2A) 	hexagon bolt (sems) 	small truss screw 5×10×10 	anchor rod 	round gutter 
Parts ID		GB8637	GB8638	M8×40		GA0073	GA4923
TRHNC-2	2	2	2	8	13(12)	2	1
TRHNC-1	1	1	—	4	7(6)	1	1


■ Furring strip set

○part (E: rafter pitch 909mm type, M: rafter pitch 1000mm type)

(Depth type 30 to 80)

Shape name	Materials
	furring strip 
Parts ID	
TRN-○-1	1
TRN-○-2	2
TRN-○-3	3
TRN-○-4	4
TRN-○-5	5
TRN-○-6	6
TRN-○-8	8
TRN-○-9	9
TRN-○-10	10
TRN-○-12	12
TRN-○-15	15
TRN-E-18	18



(Depth type 90 to 2A)

Shape name	Materials
	furring strip 
Parts ID	
TRN-○H-2	2
TRN-○H-4	4
TRN-○H-6	6
TRN-○H-8	8
TRN-○H-10	10
TRN-○H-12	12
TRN-○H-16	16
TRN-○H-18	18
TRN-○H-20	20
TRN-○H-24	24
TRN-○H-30	30
TRN-EH-36	36
TRN-EH-40	40



■ Width set

(Depth type 30 to 80)




□ part (R: R type, F: F type)

Shape name	Materials								Parts	
	standard front frame A		standard front frame B		standard front frame C		standard front frame D		rear frame A	coach screw (sems) 6×90
Parts ID	R type	F type	R type	F type	R type	F type	R type	F type		
T□MN-60A,-200A	1	—	—	—	—	—	—	—	1	3
T□MN-60B,-200B	—	—	1	—	—	—	—	—	1	3
T□MN-60C,-200C	—	—	—	—	1	—	—	—	1	3
T□MN-90A,-300A	1	—	—	—	—	—	—	—	1	4
T□MN-90B,-300B	—	—	1	—	—	—	—	—	1	4
T□MN-90C,-300C	—	—	—	—	1	—	—	—	1	4
T□MN-12A,-400A	1	—	—	—	—	—	—	—	1	5
T□MN-12B,-400B	—	—	1	—	—	—	—	—	1	5
T□MN-12C,-400C	—	—	—	—	1	—	—	—	1	5
T□MN-15C,-500C	—	—	—	—	1	—	—	—	1	6
T□MN-15D,-500D	—	—	—	—	—	—	1	—	1	6
T□MN-18D	—	—	—	—	—	—	1	—	1	7

(Depth type 90 to 12)




Shape name	Materials		Parts	
	standard front frame D		rear frame B	coach screw (sems) 6×90
Parts ID	R type	F type		
T□MN-60DH,-200DH	1	—	1	5
T□MN-90DH,-300DH	1	—	1	7
T□MN-12DH,-400DH	1	—	1	9
T□MN-15DH,-500DH	1	—	1	11
T□MN-18DH	1	—	1	13

(Depth type 13 to 2A)

Shape name	Materials		Parts	
	F standard front frame	rear frame B	coach screw (sems) 6×90	
Parts ID				
TFMN-60EH,-200EH	1	1	5	
TFMN-90EH,-300EH	1	1	7	
TFMN-12EH,-400EH	1	1	9	
TFMN-15EH,-500EH	1	1	11	
TFMN-18EH	1	1	13	










■ Side frame set

□ part (R: R type, F: F type), ■ part (R: R type, S: F type)

Shape name		Materials						Parts			
		side frame A		side frame B		side frame C		roof retainer (end)		small truss screw 5×10×10	
Parts ID	①	②	①	②	①	②					
							R type	F type	R type	F type	
T□SN-30	Y■SN-30	right left each 1pc	—	—	—	—	right left each 1pc	2	18(16)	15(14)	2
T□SN-40	Y■SN-40	right left each 1pc	—	—	—	—	right left each 1pc	2	20(18)	18(16)	2
T□SN-50	Y■SN-50	right left each 1pc	—	—	—	—	right left each 1pc	2	24(22)	22(20)	2
T□SN-60	Y■SN-60	right left each 1pc	—	—	—	—	right left each 1pc	2	26(24)	24(22)	2
T□SN-70	Y■SN-70	right left each 1pc	—	—	—	—	right left each 1pc	2	42(40)	40(38)	2
T□SN-80	Y■SN-80	right left each 1pc	—	—	—	—	right left each 1pc	2	46(44)	44(42)	2
T□SN-90	Y■SN-90	right left each 1pc	—	—	—	—	right left each 1pc	2	32(30)	32(30)	2
T□SN-10	Y■SN-10	right left each 1pc	—	—	—	—	right left each 1pc	2	34(32)	34(32)	2
T□SN-11	Y■SN-11	—	right left each 1pc	—	—	—	right left each 1pc	2	38(36)	34(32)	2
T□SN-12	Y■SN-12	—	right left each 1pc	—	—	—	right left each 1pc	2	40(38)	36(34)	2
TFSN-13	YSSN-13	—	right left each 1pc	—	—	—	—	2	—	38(36)	2
TFSN-14	YSSN-14	—	right left each 1pc	—	—	—	—	2	—	40(38)	2
TFSN-15	YSSN-15	—	right left each 1pc	—	—	—	—	2	—	42(40)	2
TFSN-18	YSSN-18	—	—	right left each 1pc	—	—	—	2	—	61(58)	2
TFSN-2A	YSSN-2A	—	—	right left each 1pc	—	—	—	2	—	65(62)	2

■ Rafter set




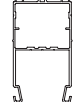
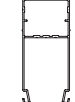




□part (R: R type, F: F type)

Shape name Parts ID	Materials						Parts		
	rafter A	rafter B	rafter C	rafter D	rafter E	roof retainer	small truss screw 5x10x10		upset bolt M5x12
									
T□TN-30-3	3	—	—	—	—	3	R type 29(27)	F type 26(24)	ES0446 3
T□TN-30-2	2	—	—	—	—	2	20(18)	18(16)	2
T□TN-30-1	1	—	—	—	—	1	10(9)	9(8)	1
T□TN-40-3	3	—	—	—	—	3	32(30)	29(27)	3
T□TN-40-2	2	—	—	—	—	2	22(20)	20(18)	2
T□TN-40-1	1	—	—	—	—	1	11(10)	10(9)	1
T□TN-50-3	3	—	—	—	—	3	41(39)	38(36)	3
T□TN-50-2	2	—	—	—	—	2	28(26)	26(24)	2
T□TN-50-1	1	—	—	—	—	1	14(13)	13(12)	1
T□TN-60-3	3	—	—	—	—	3	44(42)	41(39)	3
T□TN-60-2	2	—	—	—	—	2	30(28)	28(26)	2
T□TN-60-1	1	—	—	—	—	1	15(14)	14(13)	1
T□TN-70-3	—	3	—	—	—	3	72(69)	69(66)	3
T□TN-70-2	—	2	—	—	—	2	48(46)	46(44)	2
T□TN-70-1	—	1	—	—	—	1	25(23)	24(22)	1
T□TN-80-3	—	—	3	—	—	3	79(75)	76(72)	3
T□TN-80-2	—	—	2	—	—	2	53(50)	50(48)	2
T□TN-80-1	—	—	1	—	—	1	27(25)	26(24)	1
T□TN-90-5	—	5	—	—	—	5	89(85)	89(85)	5
T□TN-90-4	—	4	—	—	—	4	71(68)	71(68)	4
T□TN-90-3	—	3	—	—	—	3	54(51)	54(51)	3
T□TN-10-5	—	5	—	—	—	5	95(90)	95(90)	5
T□TN-10-4	—	4	—	—	—	4	76(72)	76(72)	4
T□TN-10-3	—	3	—	—	—	3	57(54)	57(54)	3
T□TN-11-3	—	—	—	3	—	3	66(63)	60(57)	3
T□TN-11-2	—	—	—	2	—	2	44(42)	40(38)	2
T□TN-12-3	—	—	—	3	—	3	69(66)	63(60)	3
T□TN-12-2	—	—	—	2	—	2	46(44)	42(40)	2
TFTN-13-3	—	—	—	3	—	3	—	66(63)	3
TFTN-13-2	—	—	—	2	—	2	—	44(42)	2
TFTN-14-3	—	—	—	3	—	3	—	69(66)	3
TFTN-14-2	—	—	—	2	—	2	—	46(44)	2
TFTN-15-3	—	—	—	3	—	3	—	72(69)	3
TFTN-15-2	—	—	—	2	—	2	—	48(46)	2
TFTN-18-3	—	—	—	—	3	3	—	107(102)	3
TFTN-18-2	—	—	—	—	2	2	—	71(68)	2
TFTN-2A-3	—	—	—	—	3	3	—	113(108)	3
TFTN-2A-2	—	—	—	—	2	2	—	76(72)	2

Packaging detail

■ Connecting rafter set

□part (R: R type, F: F type)

Shape name Parts ID	Materials						Parts		
	connecting rafter A	connecting rafter B	connecting rafter C	connecting rafter D	connecting rafter E	roof retainer	small truss screw 5x10x10		upset bolt M5x12
									
T□TN-30W	1	—	—	—	—	1	R type 12(11)	F type 11(10)	ES0446 4
T□TN-40W	1	—	—	—	—	1	13(12)	12(11)	4
T□TN-50W	1	—	—	—	—	1	16(15)	15(14)	2
T□TN-60W	1	—	—	—	—	1	18(16)	16(15)	2
T□TN-70W	—	1	—	—	—	1	27(25)	26(24)	2
T□TN-80W	—	—	1	—	—	1	29(27)	28(26)	2
T□TN-90W	—	1	—	—	—	1	21(19)	21(19)	2
T□TN-10W	—	1	—	—	—	1	22(20)	22(20)	2
T□TN-11W	—	—	—	1	—	1	25(23)	23(21)	2
T□TN-12W	—	—	—	1	—	1	26(24)	24(22)	2
TFTN-13W	—	—	—	1	—	1	—	25(23)	2
TFTN-14W	—	—	—	1	—	1	—	26(24)	2
TFTN-15W	—	—	—	1	—	1	—	27(25)	2
TFTN-18W	—	—	—	—	1	1	—	38(36)	2
TFTN-2AW	—	—	—	—	1	1	—	40(38)	2

■ Parts box

□ part (R: R type, F: F type), ◇ part (D: R type, DE: F type)

Shape name	Parts											
	R front frame cap		F front frame cap		R front frame cap		F front frame cap		R front frame cap	F front frame cap	rear frame cap	elbow
	A	A	B	B	C	C						
Parts ID												
	GB8640	GB8643	GB8641	GB8644	GB8642	GB8645	GB8653	GA4932	GA6461			
T□BN-ABS	right left each 1pc		—		—		right left each 1pc		right left each 1pc		2	1
T□BN-CS	—		right left each 1pc		—		right left each 1pc		right left each 1pc		2	1
T□BN-◇S	—		—		right left each 1pc		right left each 1pc		right left each 1pc		2	1

Shape name	Parts							
	saddle	drain gutter	gutter cap	gasket	drilling screw 4×13×8	caution label 20cm	instruction manual	assembling manual
Parts ID								
	GB8077	GA6456	GA6455	GS1651	ES0063	GL-PCI	GD-W40B	HZ1878
T□BN-ABS	3	1	1	1	8(7)	1	1	1
T□BN-CS	3	1	1	1	8(7)	1	1	1
T□BN-◇S	3	1	1	1	8(7)	1	1	1

■ Parts box (for connecting)

□ part (R: R type, F: F type), ◇ part (D: R type, DE: F type)

Shape name	Parts									
	R front frame sleeve	F front frame sleeve	R front frame sleeve (for front frame C)	F front frame sleeve (for front frame D)	front frame connecting sleeve (W)	small truss screw 5×10×10	tapping truss screw 5×20×10	front frame cover	elbow	
Parts ID										
	GB8655	GB8657	GB8656	GB8658	GB8662			GA9337	GA4932	
T□BN-ABW	1		—		—		9(8)	9(8)	1	2
T□BN-CW	—		1		—		9(8)	9(8)	1	2
T□BN-◇W	1		—		1		9(8)	5(4)	1	2

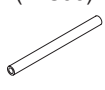
Shape name	Parts					
	drain elbow	saddle	drain gutter	gutter cap	gasket	drilling screw 4×13×8
Parts ID						
	GA6461	GB8077	GA6456	GA6455	GS1651	ES0063
T□BN-ABW	1	3	1	1	1	10(9)
T□BN-CW	1	3	1	1	1	10(9)
T□BN-◇W	1	3	1	1	1	10(9)


■ Rain gutter parts set


Shape name	Parts					
	elbow	drain elbow	saddle	drain gutter	drilling screw 4×13×8	round gutter
Parts ID						
	GA4932	GA6461	GB8077	GA6456	ES0063	GA4923
TRTAD	2	1	3	1	6(5)	1

■Non-wooden house parts box



(Aeration construction method (siding panel installation)) (RC structure)

Shape name	Parts
	spacer (L=300) 
Parts ID	GS1040
BTB-B13	3


Shape name	Parts
	coach screw (sems) 6x120 
Parts ID	ES0445
BTB-B23	10

Shape name	Parts
	Anchor bolt M6x60 
Parts ID	ES0325
BTB-B11	10

(Light-gauge steel structure)

Shape name	Parts	
	HEX screw 6x70 	washer 
Parts ID	ES0326	
BTB-B12	10	10

■Hexagon bolts set

Shape name	Parts
	hexagon bolt (sems) M5x12 
Parts ID	
BTB-V14	50

■Roof panel set

□part (R: R type, F: F type)

◆part (P: polycarbonate, S: polycarbonate mat SI, CM: Heat protection polycarbonate mat SI, B: Stain proofing polycarbonate clear)

○part (E: rafter pitch 909mm, M: rafter pitch 1000mm)

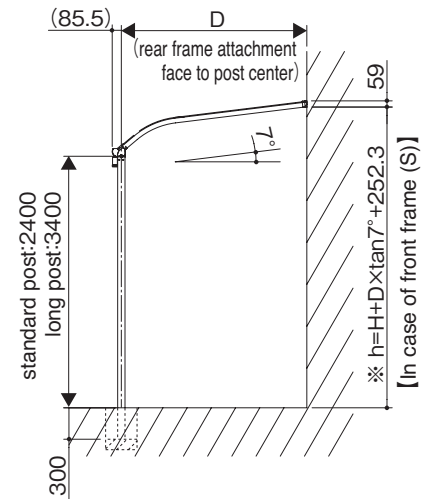
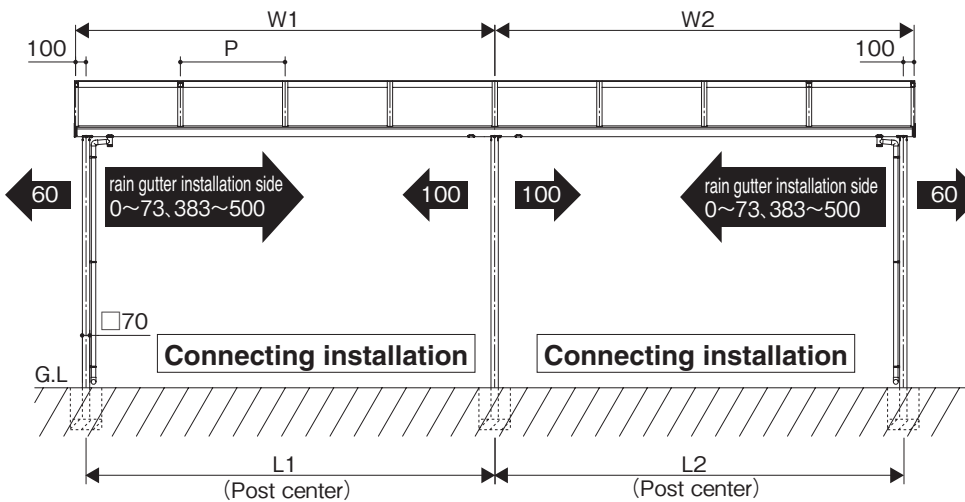
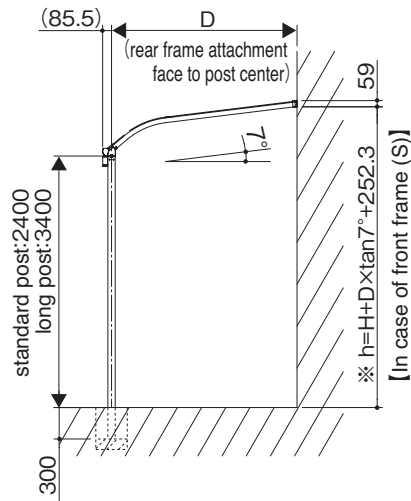
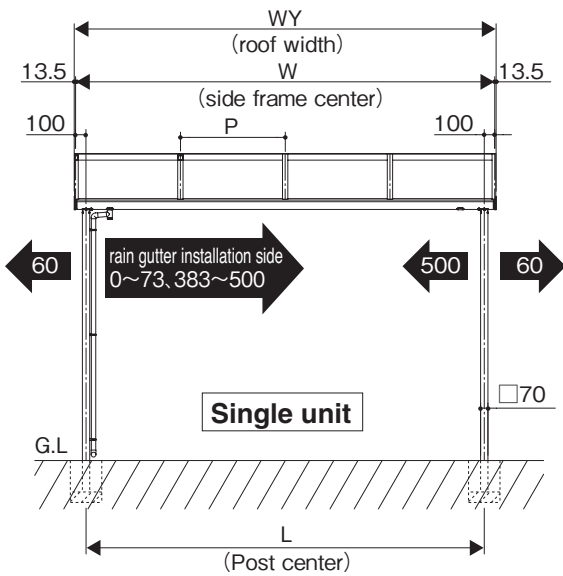
	Quantity
T□P◆-○30-2	2
T□P◆-○30-3	3
T□P◆-○30-4	4
T□P◆-○40-2	2
T□P◆-○40-3	3
T□P◆-○40-4	4
T□P◆-○50-2	2
T□P◆-○50-3	3
T□P◆-○50-4	4
T□P◆-○60-2	2
T□P◆-○60-3	3
T□P◆-○60-4	4
T□P◆-○70-2	2
T□P◆-○70-3	3
T□P◆-○70-4	4
T□P◆-○80-2	2
T□P◆-○80-3	3
T□P◆-○80-4	4

	Quantity
T□P◆-○90-4	4
T□P◆-○90-6	6
T□P◆-○10-4	4
T□P◆-○10-6	6
T□P◆-○11-2	2
T□P◆-○11-3	3
T□P◆-○12-2	2
T□P◆-○12-3	3
TFP◆-○13-2	2
TFP◆-○13-3	3
TFP◆-○14-2	2
TFP◆-○14-3	3
TFP◆-○15-2	2
TFP◆-○15-3	3
TFP◆-E18-2	2
TFP◆-E18-3	3
TFP◆-E2A-2	2
TFP◆-E2A-3	3

[R type]

When installing the side panel, move the post 60mm toward the side frame from the standard post position (L).

Drawings · Dimension table



■ Width dimension

Nominal width	Post center L	Side frame center W, W1, W2	Roof width WY
909 type	60	1618	1818
	90	2527	2727
	12	3436	3636
	15	4345	4545
	18	5254	5454
1000 type	200	1800	2027
	300	2800	3027
	400	3800	4027
	500	4800	5027

■ Depth dimension · Height

Nominal depth	D	H	h ※
30	870	standard post 2400 (long post 3400)	2759.1
40	1170		2796.0
50	1470		2832.8
60	1770		2869.6
70	2070		2906.5
80	2370		2943.3
90	2670		2980.1
10	2970		3017.0
11	3270		3053.8
12	3570		3090.6

- ※ • h dimension formula (in case of front frame (S))
 $h = H + D \times \tan 7^\circ + 252.3$
($\tan 7^\circ \doteq 0.123$)
- In case of long post, add 1000mm to h dimension.
- h dimension differs depending on the front frame size, add the additional value to h dimension referring "h dimension additional value" in the table on next page.

In case of connecting installation

$L1 = W1 - 100$

$L2 = W2 - 100$

Material instruction guide table

Nominal depth		30	40	50	60	70	80	90	10	11	12	
Nominal width	W	870	1170	1470	1770	2070	2370	2670	2970	3270	3570	
	D	Front frame A (h dimension additional value 0)				Front frame B (h dimension additional value 0)		Front frame D (h dimension additional value : 70)				
60	1818	Front frame A (h dimension additional value 0)				Front frame B (h dimension additional value 0)		Front frame D (h dimension additional value : 70)				
200	2000											
90	2727											
300	3000											
12	3636											
400	4000											
15	4545	Front frame C (h dimension additional value : 20)										
500	5000											
18	5454											
rear frame		A						B				
rafter		A				B	C	B		D		
side frame		A						B				
rafter pitch P		909(1000)						454.5(500)				
number of furring strip per panel		1		2		3		2		3		

Front frame

Front frame (S)		Front frame (M)		Front frame (L)	
A	B	C	D	A	B

Rear frame

A	B

Rafter

A	B	C	D
for connecting			

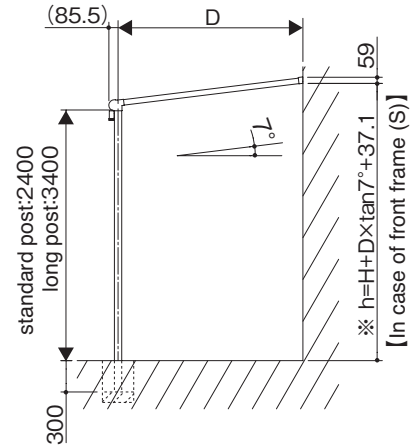
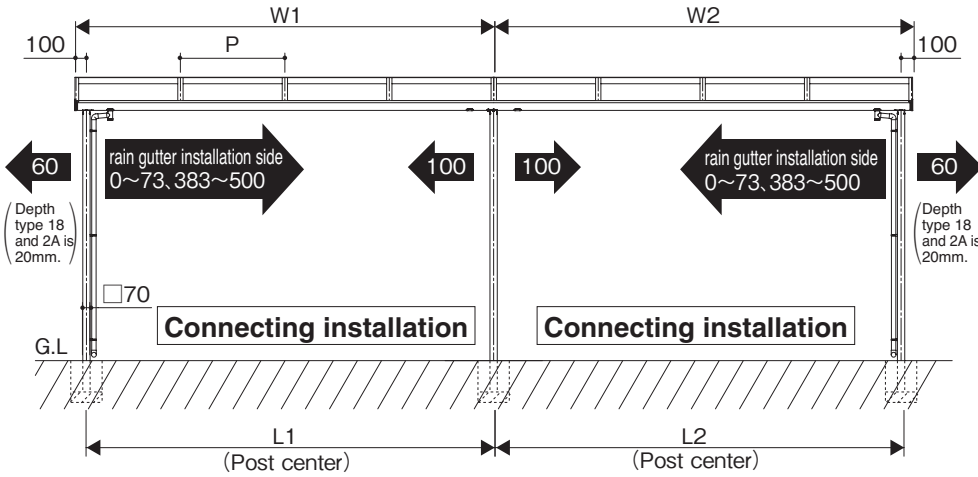
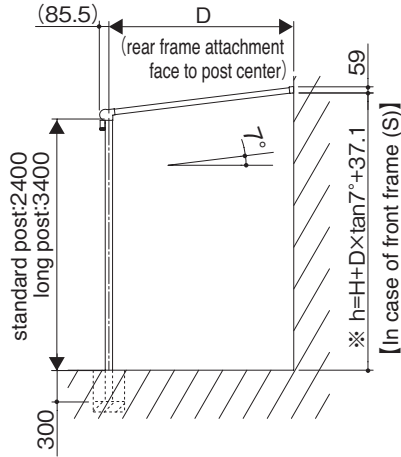
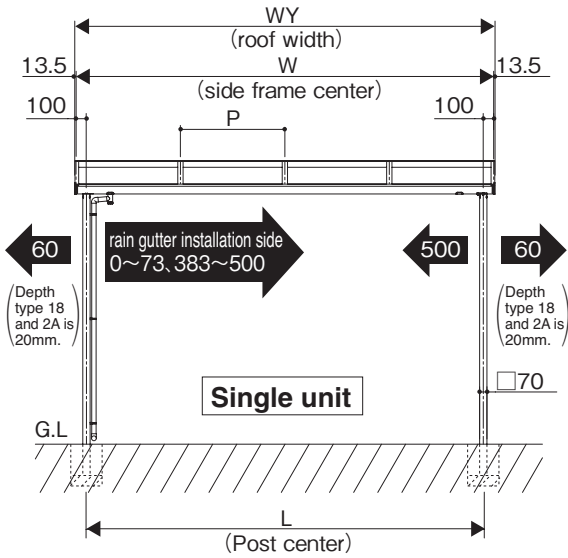
Side frame

A	B

[F type]

When installing the side panel, move the post 60mm toward the side frame from the standard post position (L).

Drawings · Dimension table



Width dimension

Nominal width	Post center L	Side frame center W, W1, W2	Roof width WY
909 type	60	1618	1818
	90	2527	2754
	12	3436	3663
	15	4345	4572
	18	5254	5481
1000 type	200	1800	2027
	300	2800	3027
	400	3800	4027
	500	4800	5027

In case of connecting installation

$$L1 = W1 - 100$$

$$L2 = W2 - 100$$

Depth dimension · Height

Nominal depth	D	H	h ※
30	870	standard post 2400 (long post 3400)	2543.9
40	1170		2580.8
50	1470		2617.6
60	1770		2654.4
70	2070		2691.3
80	2370		2728.1
90	2670		2764.9
10	2970		2801.8
11	3270		2838.6
12	3570		2875.4
13	3870		2912.3
14	4170		2949.1
15	4470		2985.9
18	5370		3096.5
2A	5970		3170.1

- ※ • h dimension formula (in case of front frame (S))
 $h = H + D \times \tan 7^\circ + 37.1$
($\tan 7^\circ \approx 0.123$)
- In case of long post, add 1000mm to h dimension.
- h dimension differs depending on the front frame size, add the additional value to h dimension referring "h dimension additional value" in the table on next page.

Material instruction guide table

Nominal width	Nominal depth		30	40	50	60	70	80	90	10	11	12	13	14	15	18	2A		
	W	D	870	1170	1470	1770	2070	2370	2670	2970	3270	3570	3870	4170	4470	5370	5970		
60	1818	Front frame A (h dimension additional value 0)	Front frame B (h dimension additional value 0)	Front frame D (h dimension additional value : 70)				Front frame E (h dimension additional value : 70)											
200	2000																		
90	2727																		
300	3000																		
12	3636																		
400	4000	Front frame C (h dimension additional value : 20)	Front frame D (h dimension additional value : 70)				Front frame E (h dimension additional value : 70)												
15	4545																		
500	5000																		
18	5454	Front frame D (h dimension additional value : 70)				Front frame E (h dimension additional value : 70)													
rear frame											A				B				
rafter											A		B	C	B		D		E
side frame											A				B		C		
rafter pitch P											909 (1000)				454.5 (500)				
number of furring strip per panel		1		2		3		2		3		5							

Type 18 and 2A is rafter pitch 909mm only.

Front frame

Front frame (S)		Front frame (M)		Front frame (L)	
A	B	C	D	E	

Rear frame

A	B

Rafter

A	B	C	D	E
for connecting				

Side frame

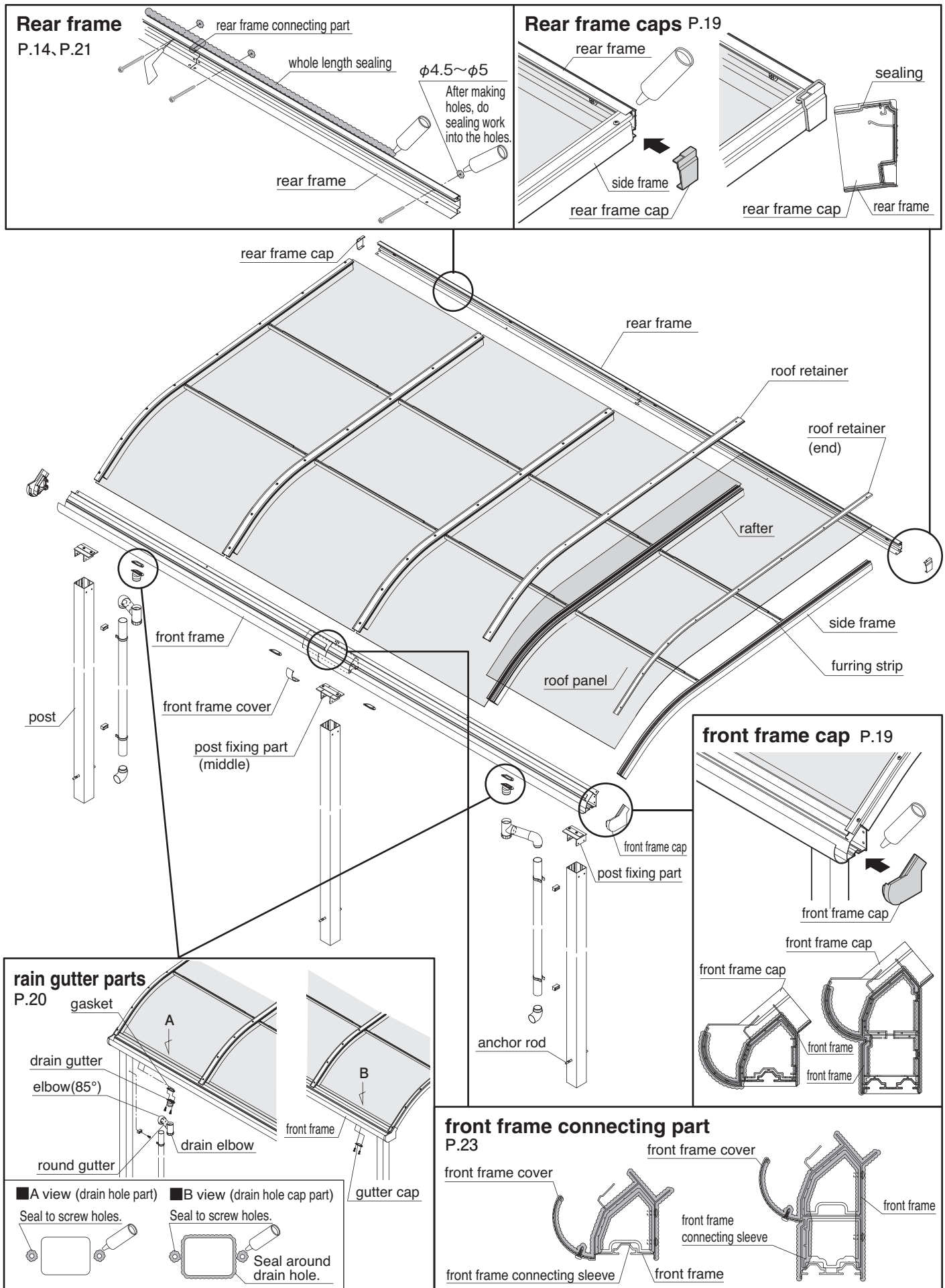
A	B	C

Installation procedure

This manual shows typical examples of R-type. F-type is same procedure, but the different points are indicated.

Configuration diagram · sealing point

Installation procedure

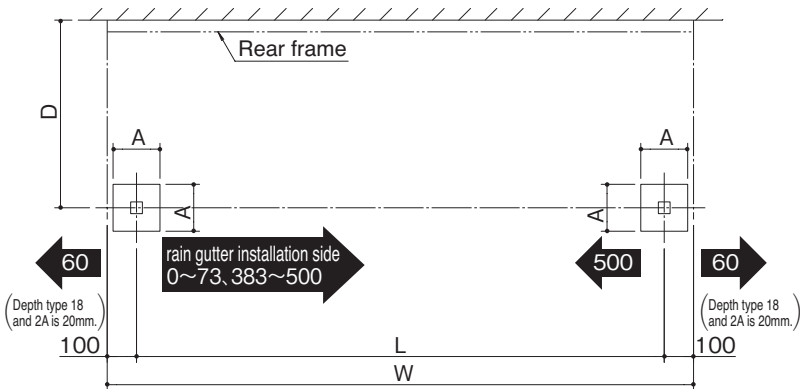


Embedding post

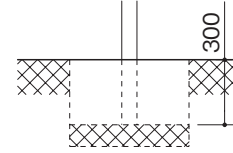
When installing the side panel, move the post 60mm toward the side frame from the standard post position (L).

➡ indicates post movable range dimension.

Single unit



Depth of basement

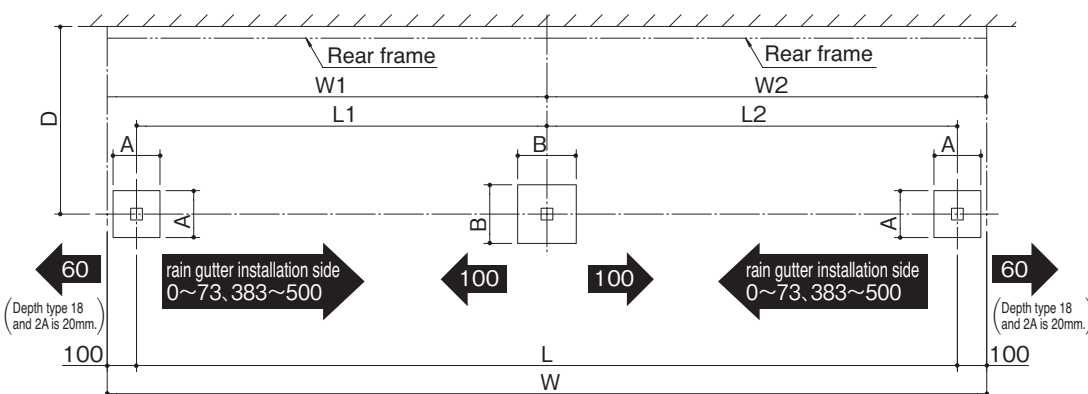


Base dimension A

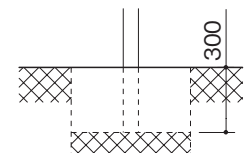
Depth	Width					
	Nominal width	60	90	12	15	18
909 type	Nominal width	60	90	12	15	18
	L (mm)	1618	2527	3436	4345	5254
1000 type	Nominal width	200	300	400	500	
	L (mm)	1800	2800	3800	4800	
Nominal depth	D (mm)	1800	2800	3800	4800	
30	870	□300		□400		
40	1170	□300		□400		
50	1470	□300		□400		
60	1770	□300		□400		
70	2070	□300		□400		
80	2370	□400		□500		
90	2670	□400		□500		
10	2970	□400		□500		

Depth	Width					
	Nominal width	60	90	12	15	18
909 type	Nominal width	60	90	12	15	18
	L (mm)	1618	2527	3436	4345	5254
1000 type	Nominal width	200	300	400	500	
	L (mm)	1800	2800	3800	4800	
Nominal depth	D (mm)	1800	2800	3800	4800	
11	3270	□500		□600		
12	3570	□500		□600		
13	3870	□500		□600		
14	4170	□500		□600		
15	4470	□500		□600		
18	5370	□600		□650		
2A	5970	□600		□650		

Connecting installation



Depth of basement



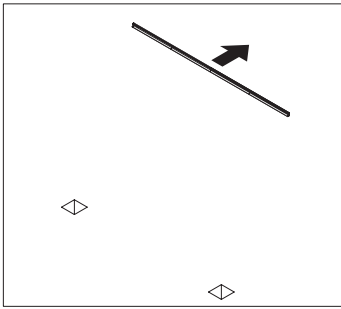
Base dimension B (connecting part) •• Base dimension A is indicated above table.

Depth	Width						
	Nominal width	15	18	21	24	27	30
909 type	Nominal width	15	18	21	24	27	30
	L (mm)	4345	5254	6163	7072	7981	8890
1000 type	Nominal width	500	600	700	800	900	1000
	L (mm)	4800	5800	6800	7800	8800	9800
Nominal depth	D (mm)	4800	5800	6800	7800	8800	9800
30	870	□500		□650			
40	1170	□500		□650			
50	1470	□500		□650			
60	1770	□500		□650			
70	2070	□500		□650			
80	2370	□650		□850			
90	2670	□650		□850			
10	2970	□650		□850			

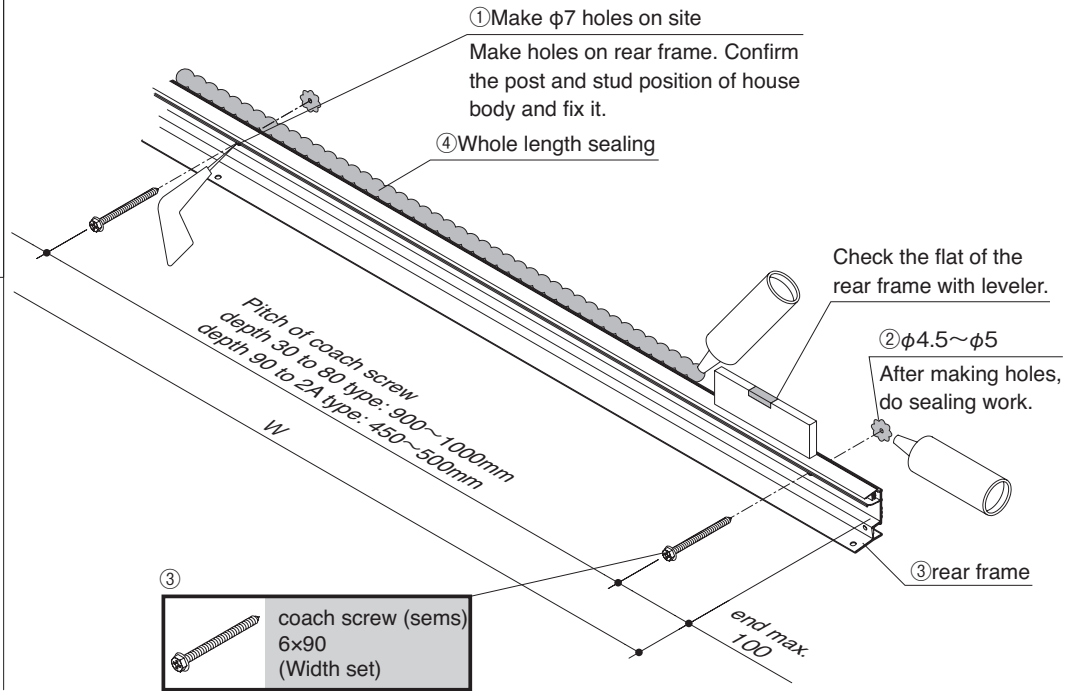
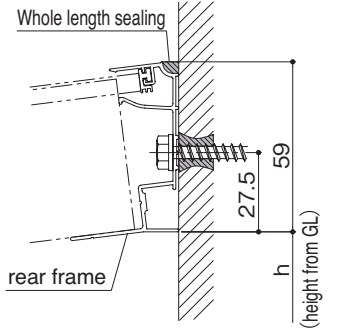
Depth	Width						
	Nominal width	15	18	21	24	27	30
909 type	Nominal width	15	18	21	24	27	30
	L (mm)	4345	5254	6163	7072	7981	8890
1000 type	Nominal width	500	600	700	800	900	1000
	L (mm)	4800	5800	6800	7800	8800	9800
Nominal depth	D (mm)	4800	5800	6800	7800	8800	9800
11	3270	□850		□950			
12	3570	□850		□950			
13	3870	□850		□950			
14	4170	□850		□950			
15	4470	□850		□950			
18	5370	□950		□950			
2A	5970	□950		□950			

1. Single unit installation procedure

1 Rear frame installation



Wooden structure

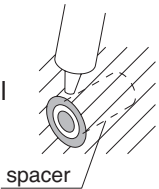


Single unit installation procedure

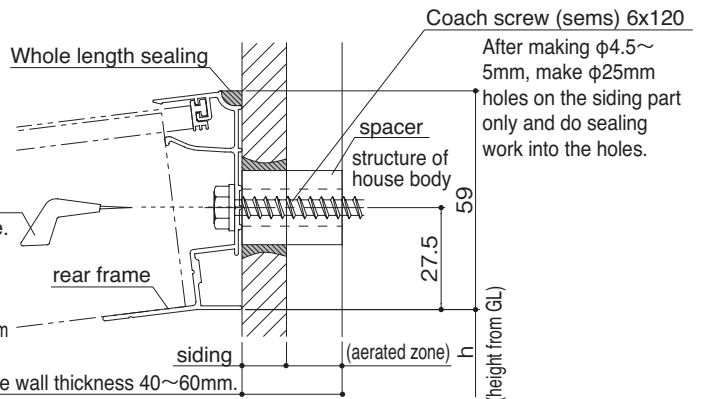
Aeration construction method

- Before installation, confirm the wall thickness (included the aerated zone).
- ※ Available wall thickness (included the aerated zone) is 40~60mm.

Do sealing work around the spacer and the holes of wall to prevent the rain water seeping.

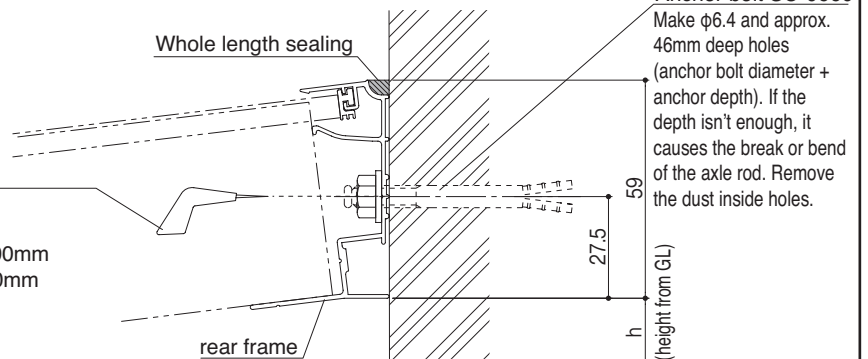


Make φ7 holes
Make holes on rear frame. Confirm the position of post and stud and fix it.
Coach screw pitch is
depth 30 to 80 type: 900~1000mm
depth 90 to 2A type: 450~500mm
Available wall thickness 40~60mm.



RC structure

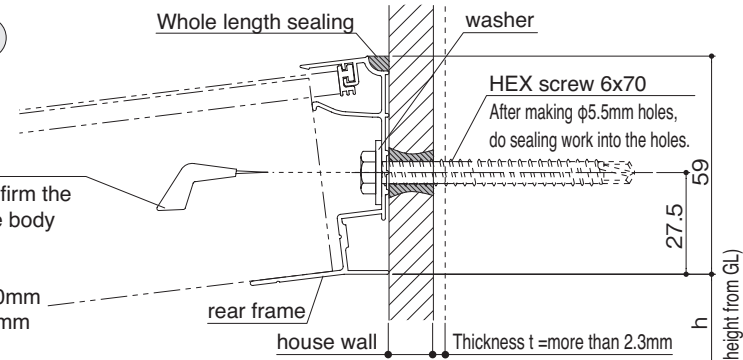
Make φ7 holes on site
Make holes on rear frame.
Coach screw pitch is
depth 30 to 80 type: 900~1000mm
depth 90 to 2A type: 450~500mm



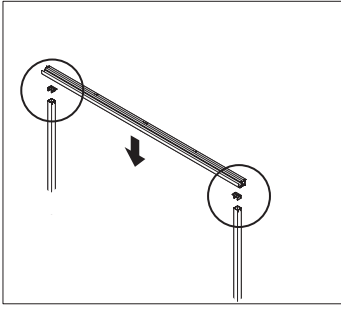
Light-gauge steel construction

- Before installation confirm the thickness of the steel frame is more than 2.3mm.

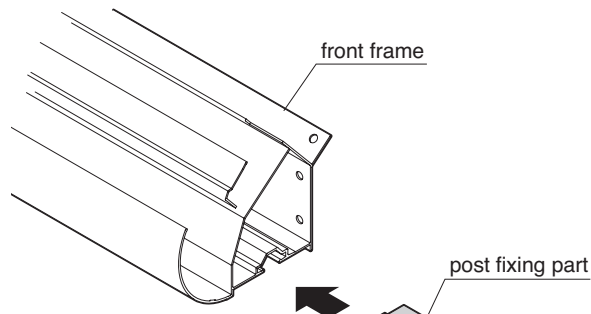
Make φ7 holes on site
Make holes on rear frame. Confirm the position of steel frame of house body and install the rear frame.
Screw pitch is
depth 30 to 80 type: 900~1000mm
depth 90 to 2A type: 450~500mm



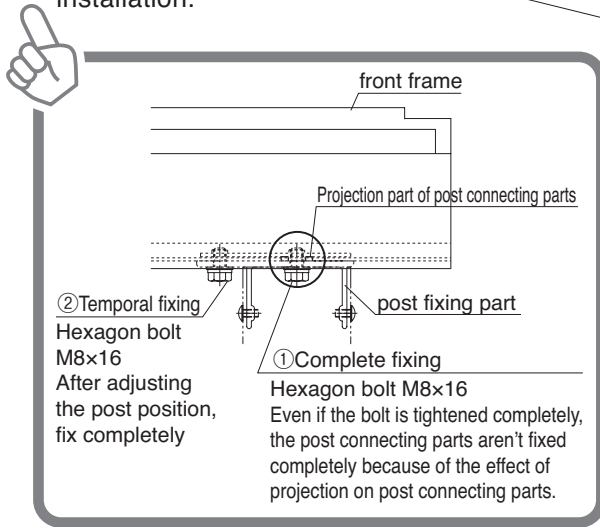
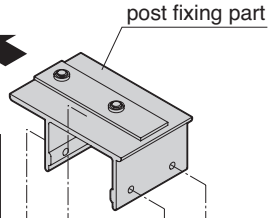
2 Post and front frame installation



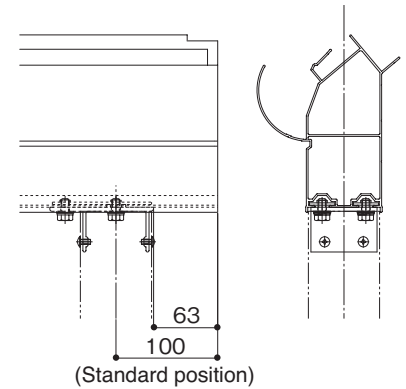
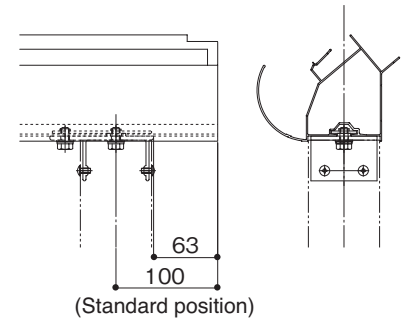
※When installing the support post of the front panel, insert the back plate to the front frame in advance for easy installation.



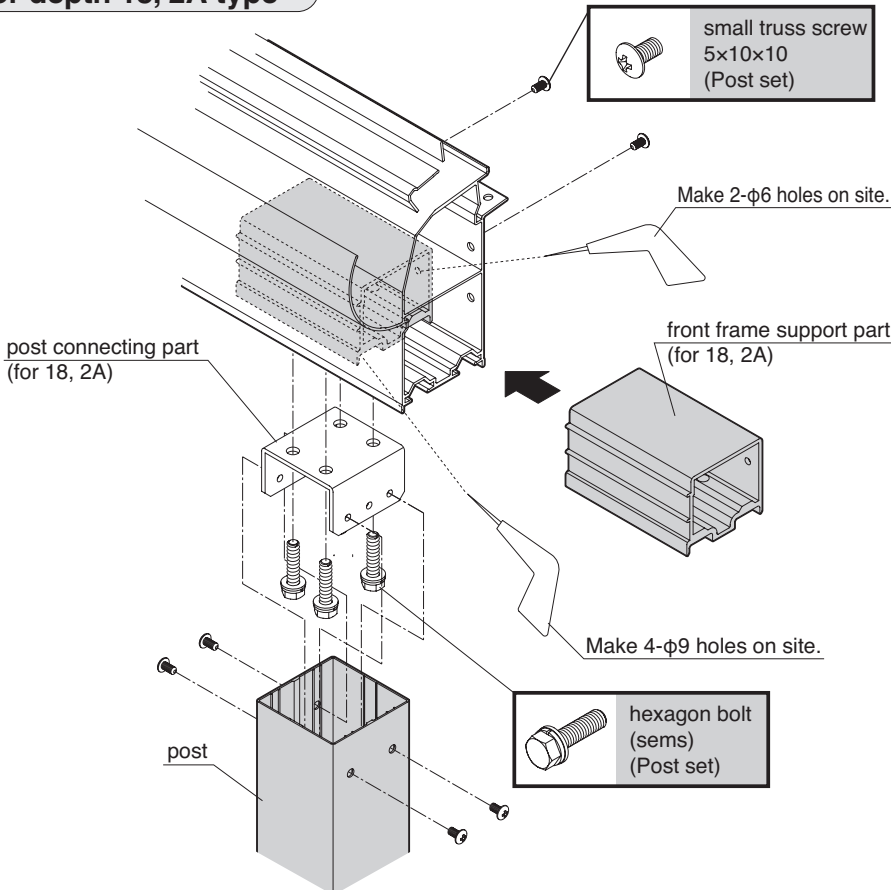
small truss screw
5×10×10
(Post set)



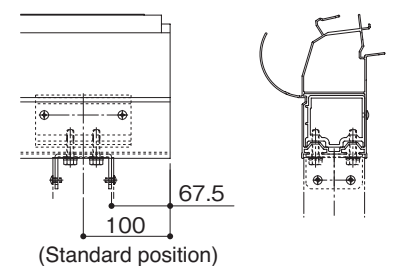
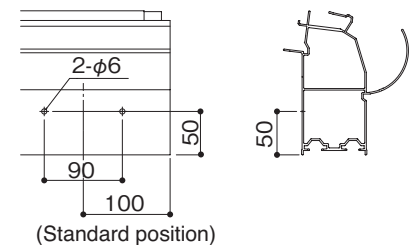
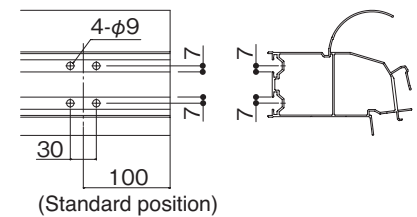
Standard position of post connecting parts



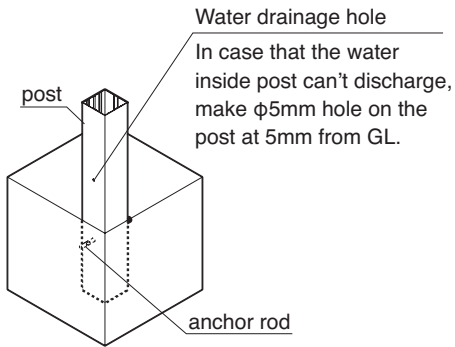
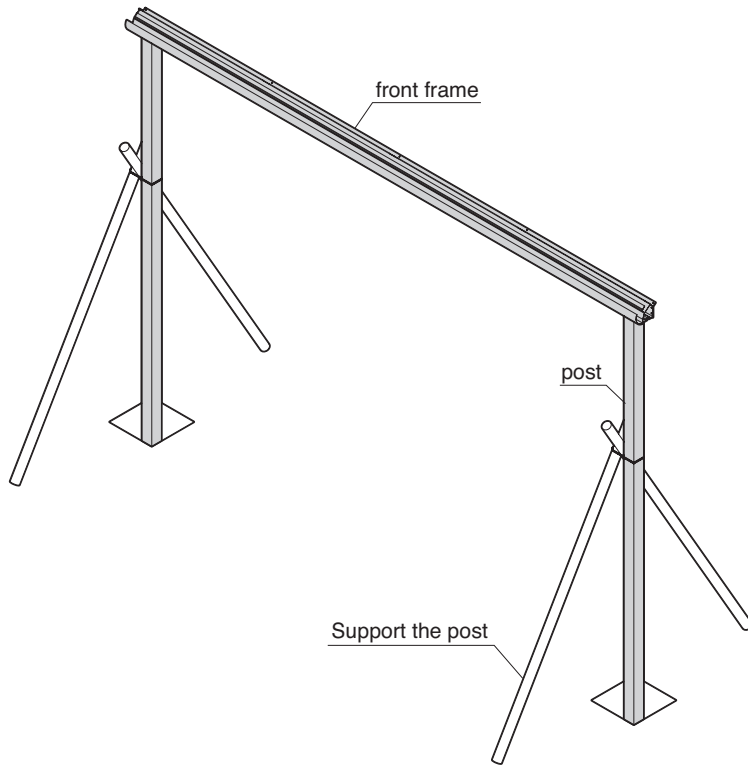
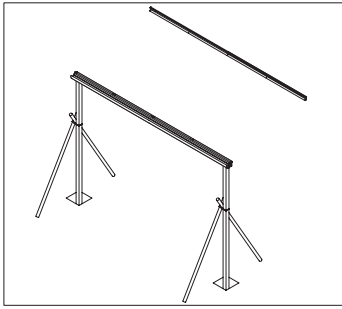
For depth 18, 2A type



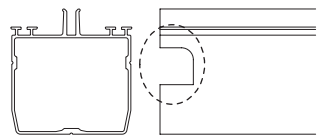
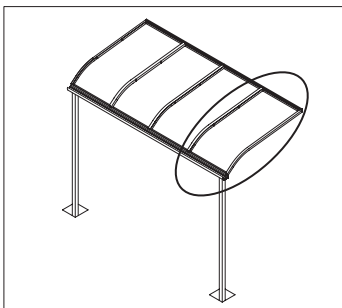
Standard position of post connecting parts and front frame processing part.



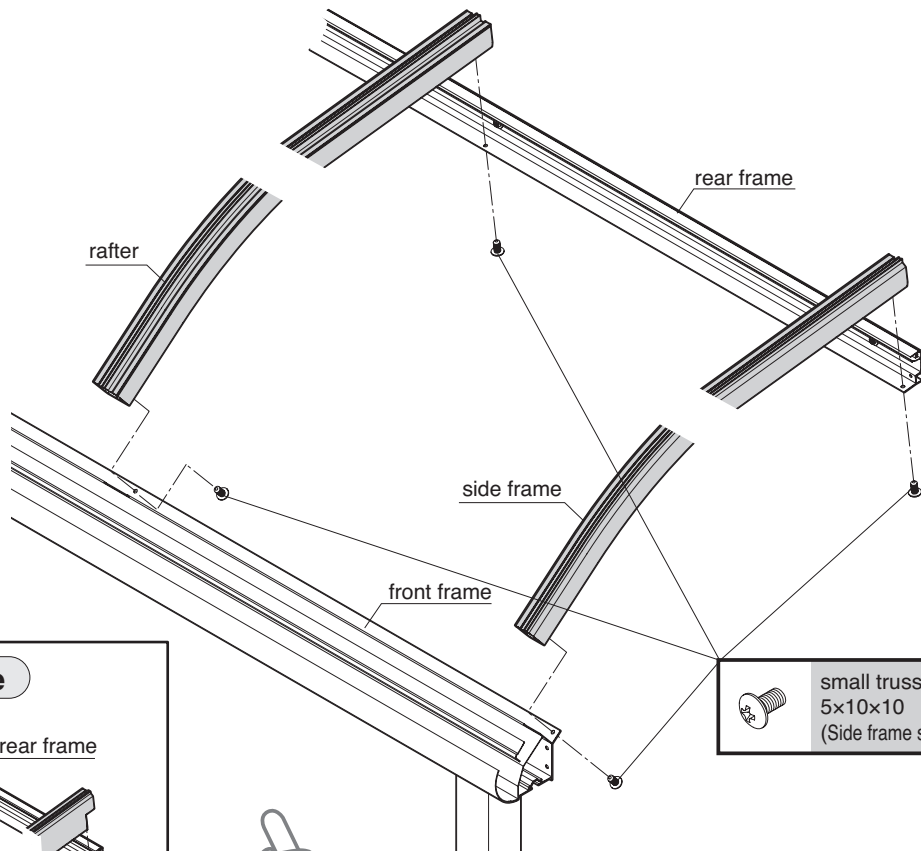
3 Temporal fixing of post and front frame



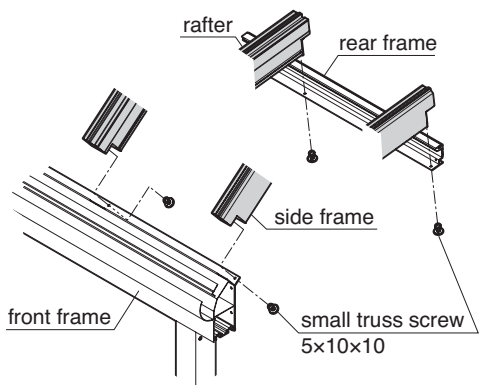
4 Side frame and rafter installation



In case of F type, the processing part is front frame side.



For depth 11~2A type

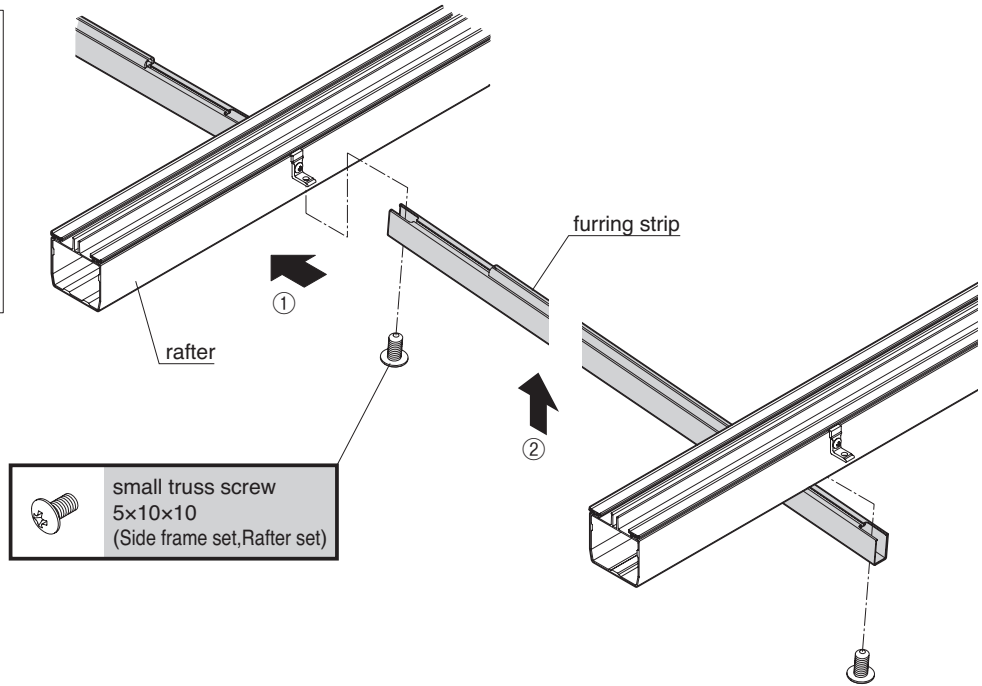
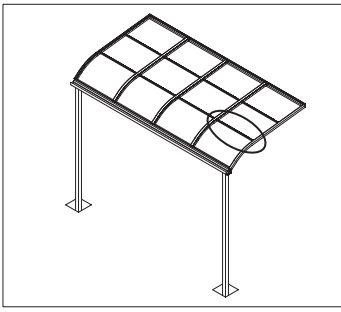


In case that there isn't enough space to use driver, do M5 topping work into $\phi 4.5$ pre-holes and use upset bolts to install the rafters. It can be tightened with the wrench.

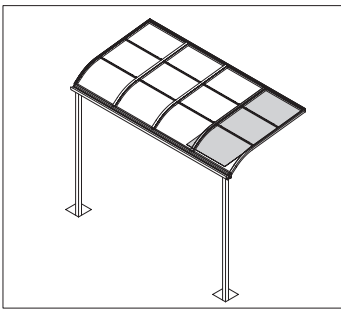


Upset bolts M5x12 (Side frame set / Rafter set)

5 Furring strips installation



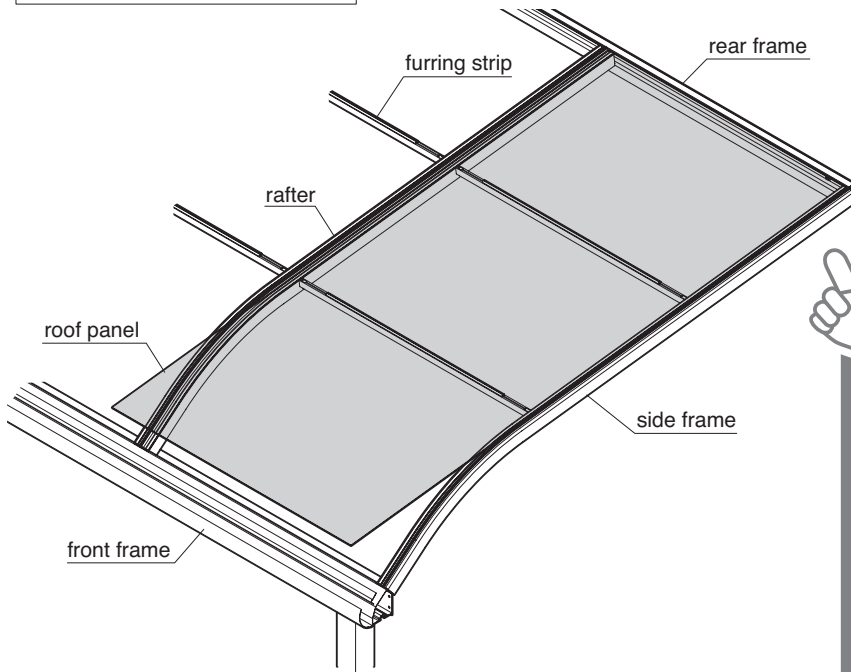
6 Roof panel installation



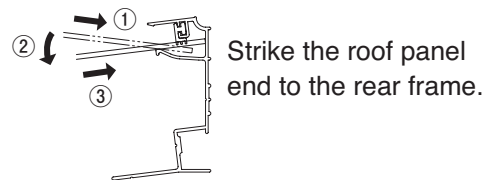
Be careful not to scratch the roof panels.

Notice

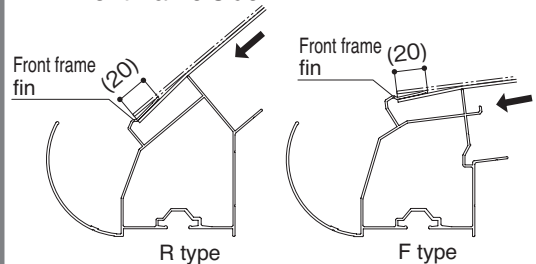
- In case of mat panel, attach the unevenness side down. Otherwise the panel is easy to get dirty.
- In case of heat absorb self-cleaning polycarbonate, the stain proof layer is only one side. Attach the face attached label down.



• Rear frame side

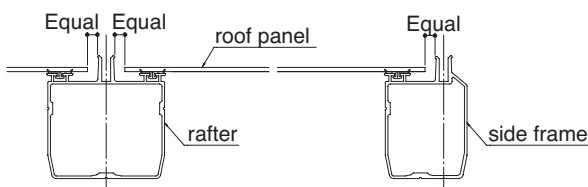


• Front frame side

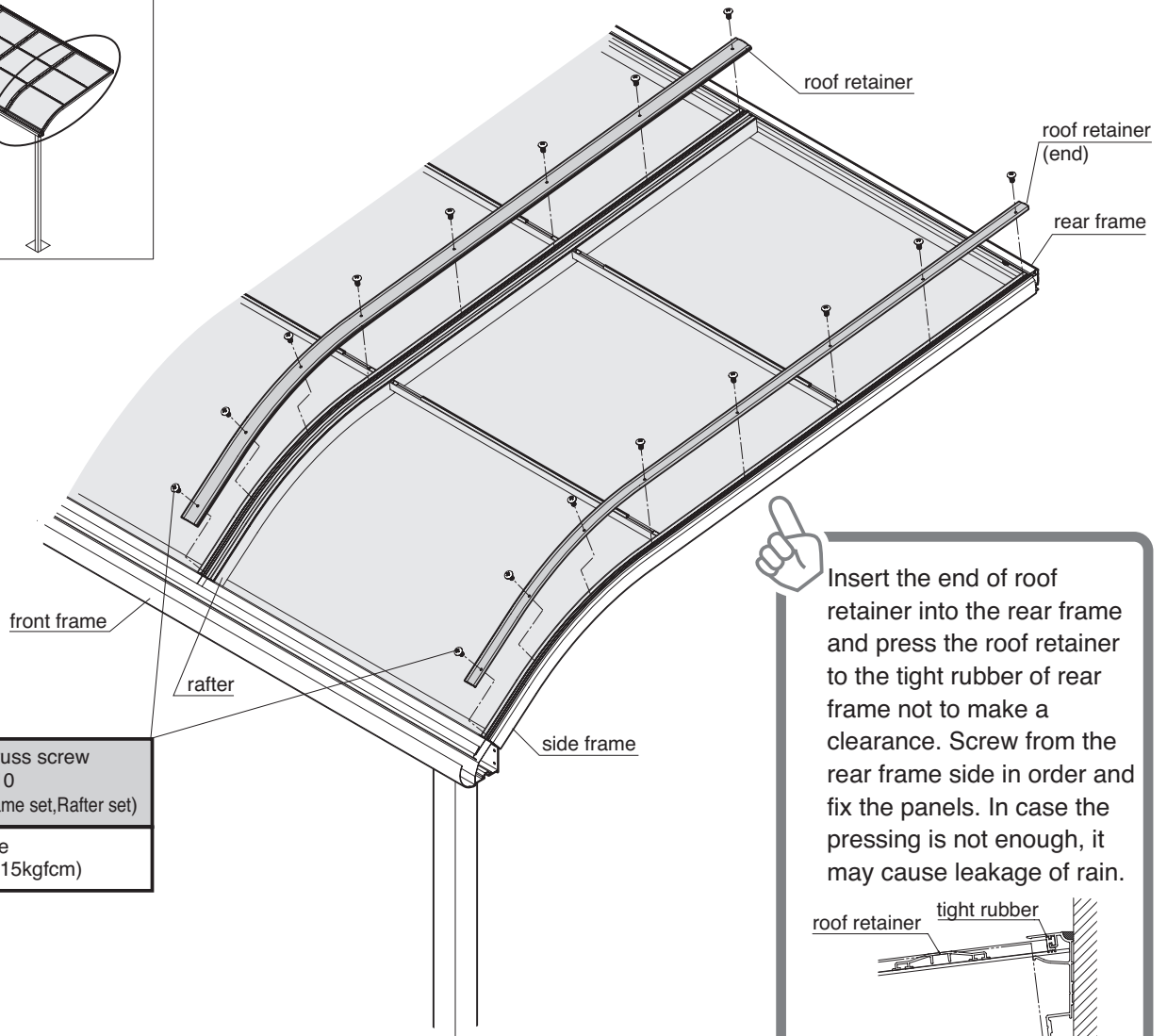
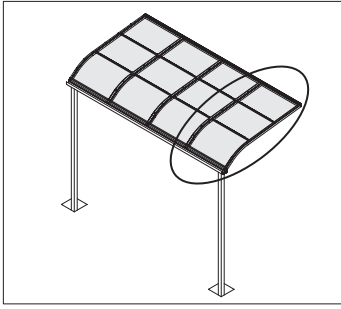


Insert the roof panel end into front frame fin part about 20mm.


Sort the roof panel right-left equally.




7 Roof retainer installation





Insert the end of roof retainer into the rear frame and press the roof retainer to the tight rubber of rear frame not to make a clearance. Screw from the rear frame side in order and fix the panels. In case the pressing is not enough, it may cause leakage of rain.

 small truss screw
5×10×10
(Side frame set, Rafter set)

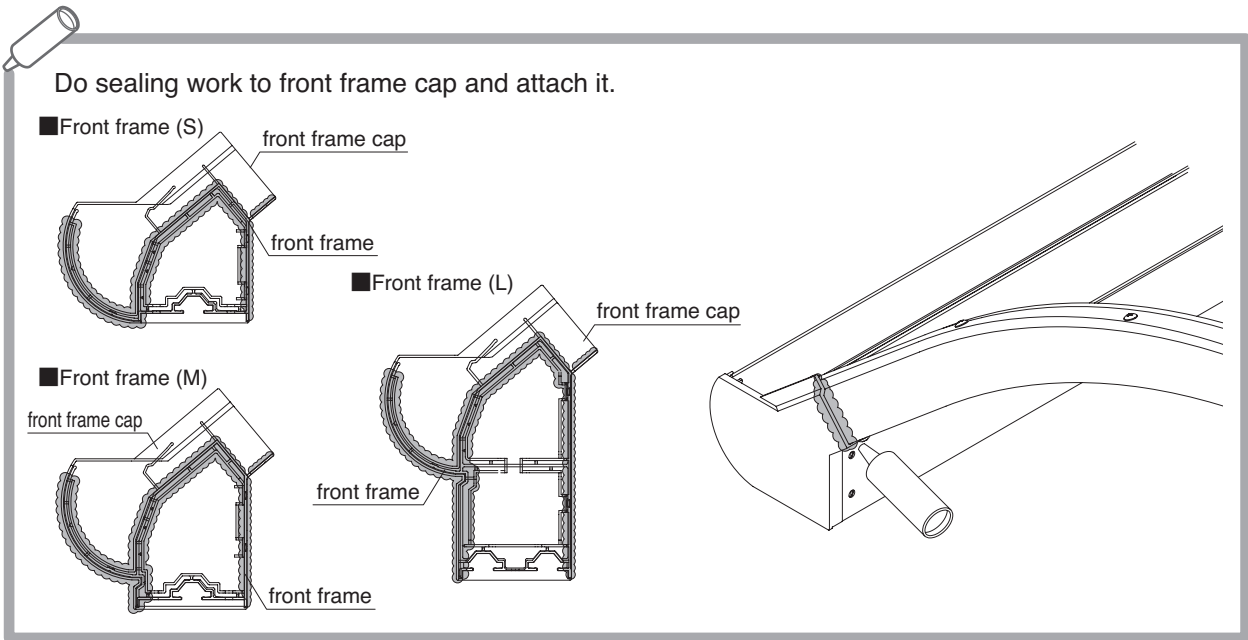
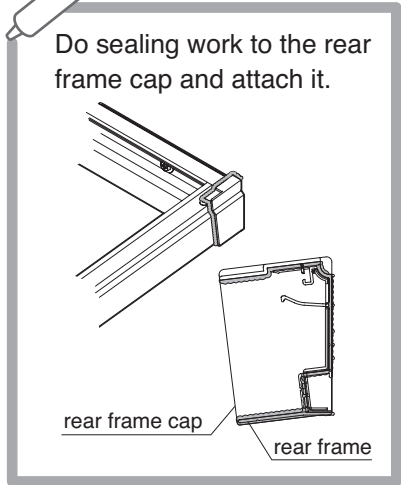
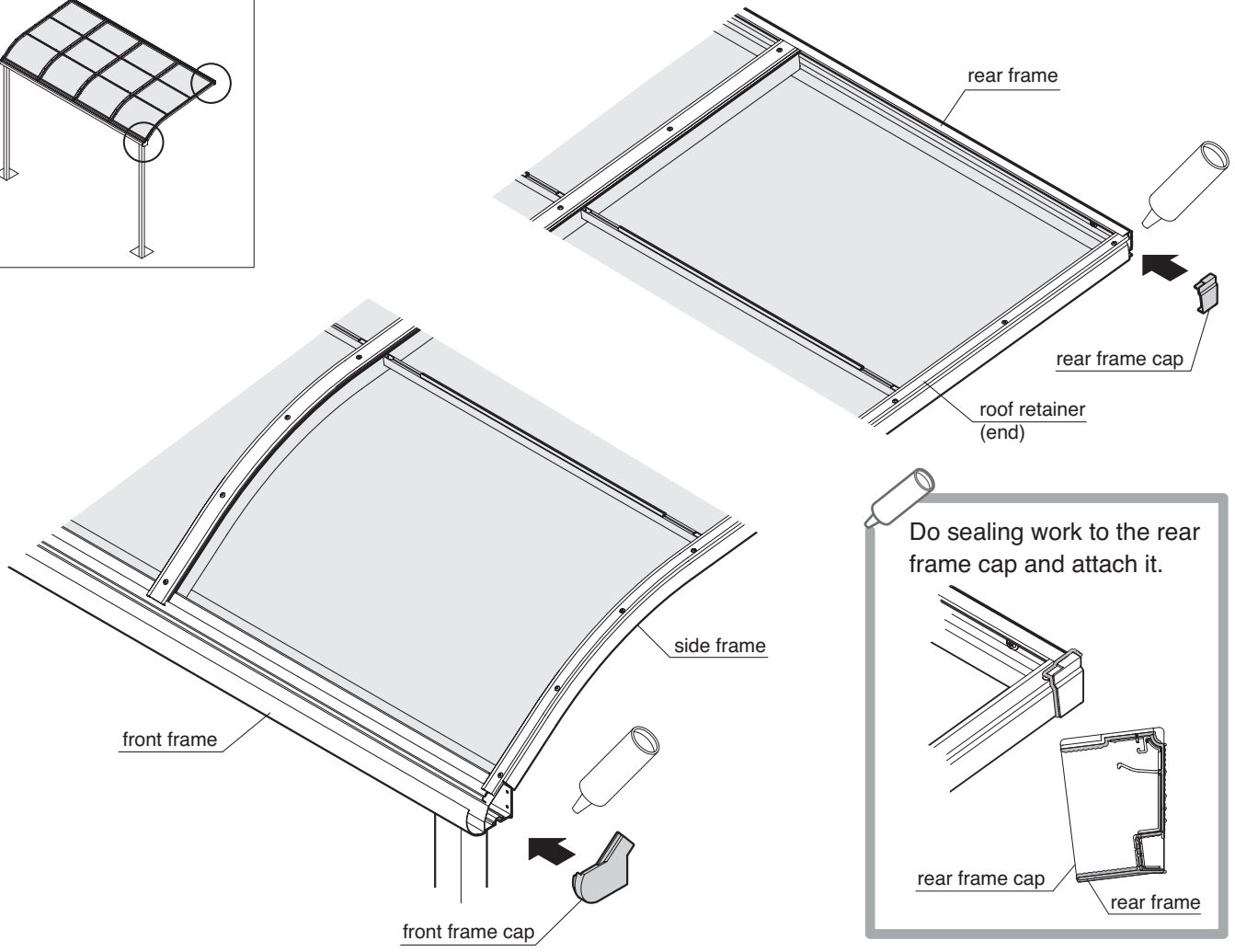
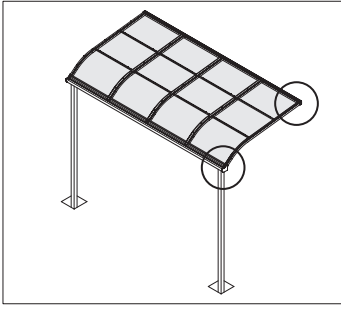
Tightening torque
Approx. 1.5Nm (15kgfcm)

 If the screw head leans when installing the roof retainers, it will cause water leakage (the rain water enters from the screw head clearance), so install it not to make clearance.

 Use the hexagon bolts (sems) when it's difficult to use the driver. It can be tightened with the wrench.

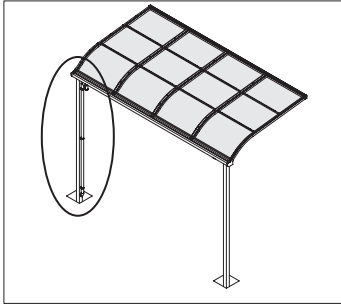
 hexagon bolt sems M5×12
(option)

8 Attaching caps

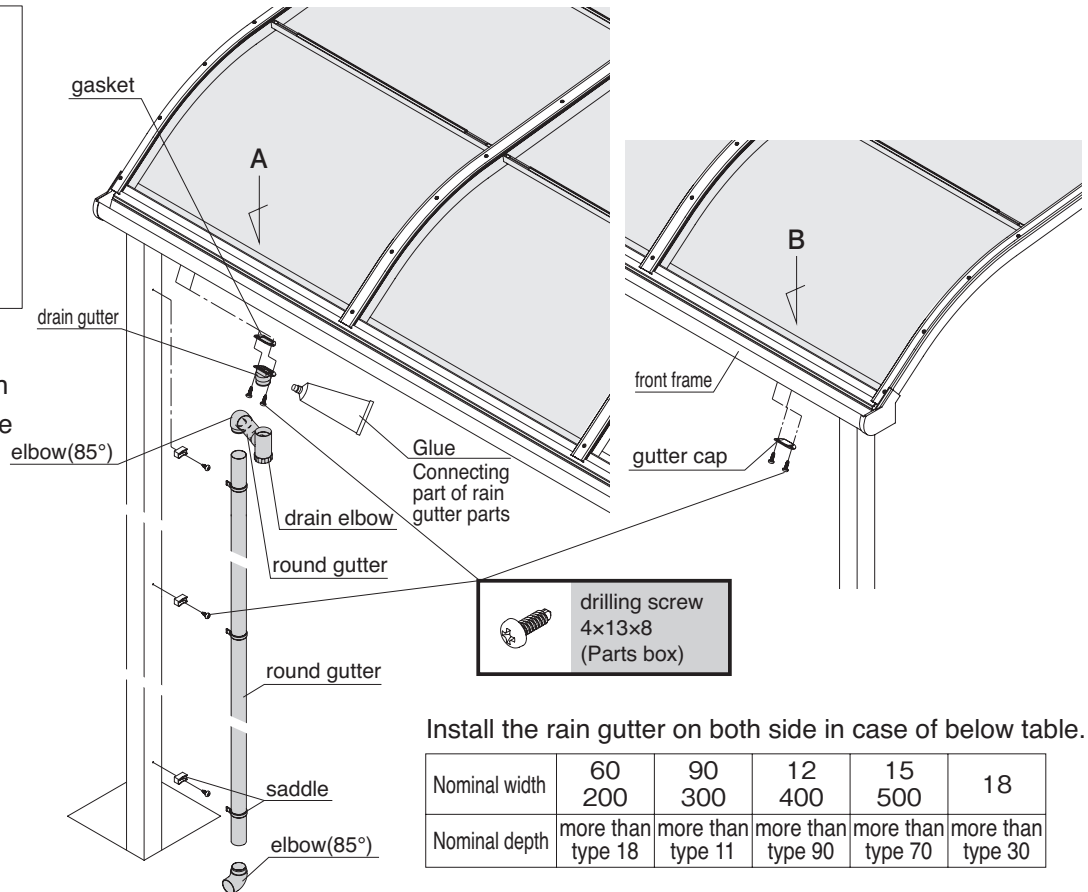


Single unit installation procedure

9 Attaching rain gutter parts

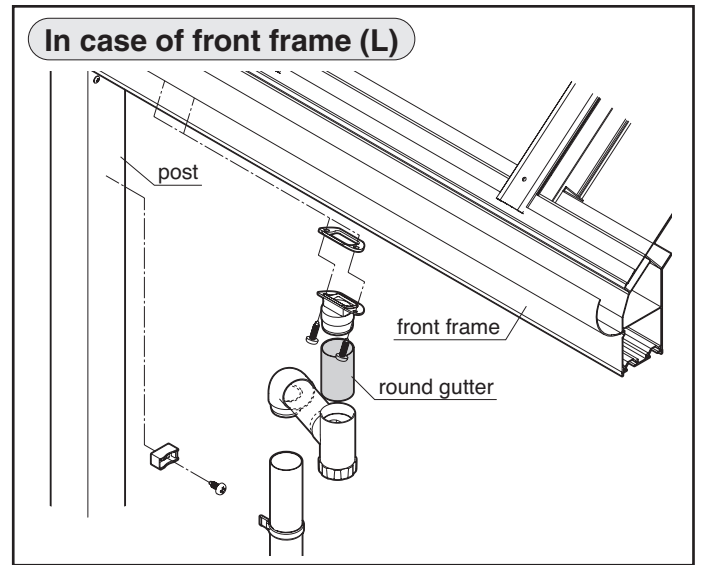
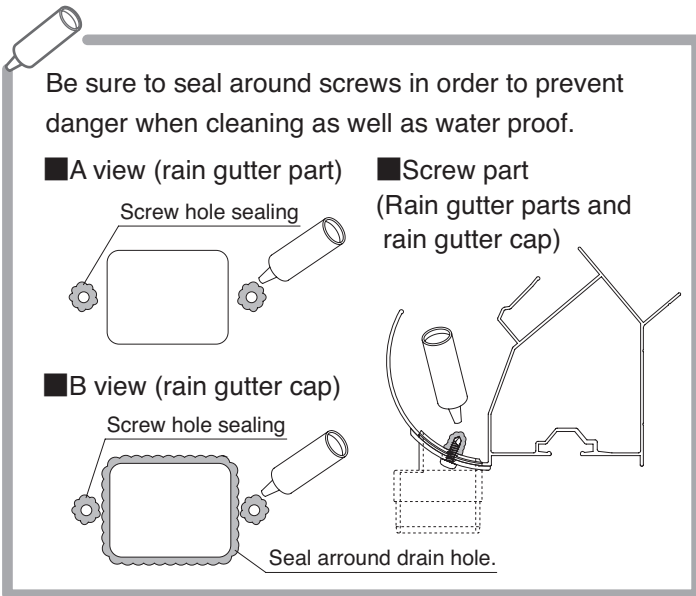


There is the case that rain gutters are installed on both side posts depending on the roof size.

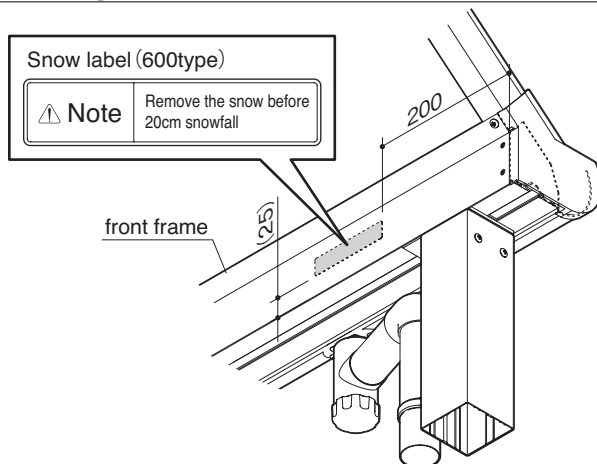


Install the rain gutter on both side in case of below table.

Nominal width	60 200	90 300	12 400	15 500	18
Nominal depth	more than type 18	more than type 11	more than type 90	more than type 70	more than type 30

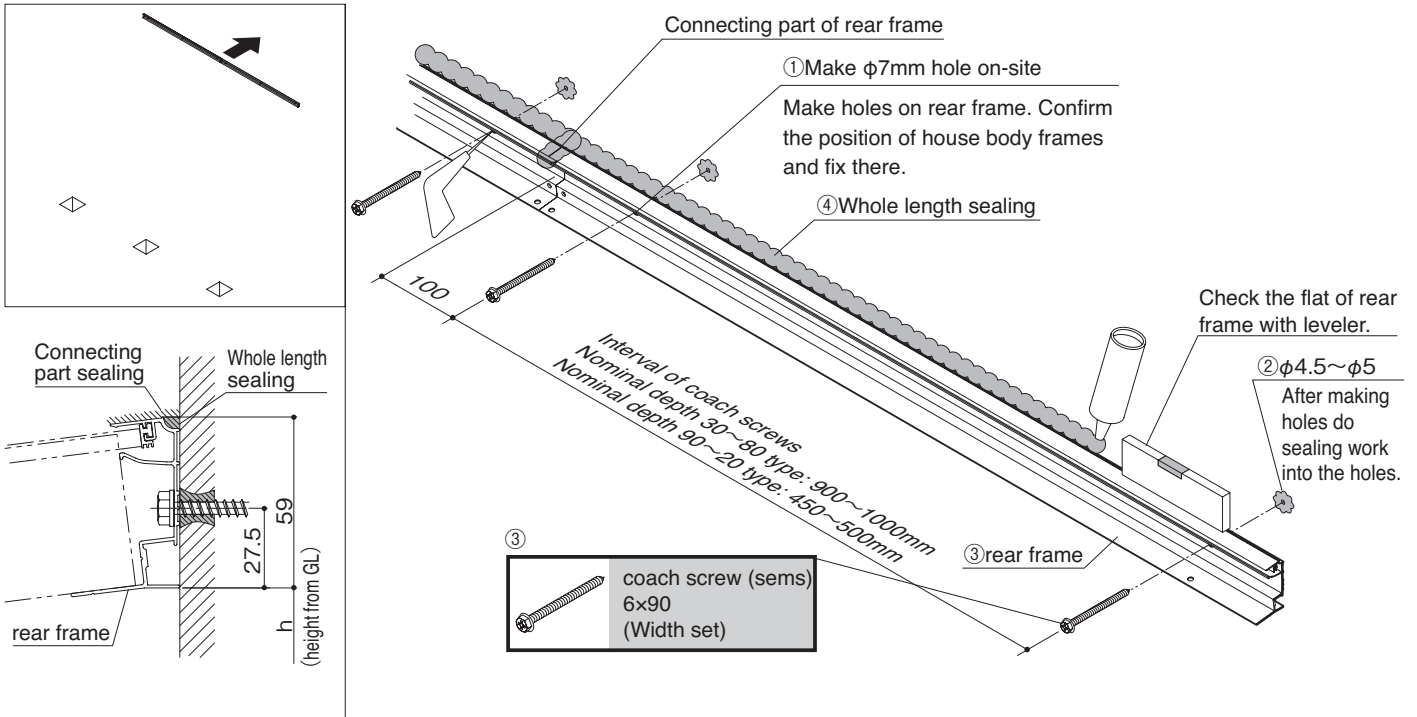


10 Attaching labels

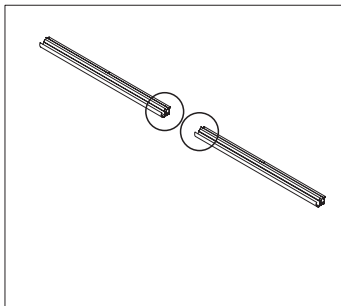


2. Installation procedure of connecting unit

1 Rear frame installation



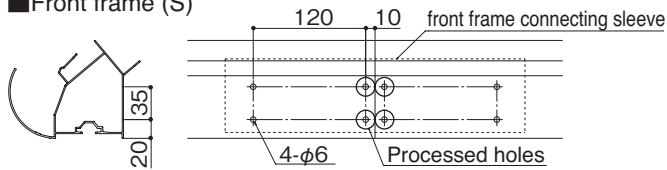
2-① Front frame processing



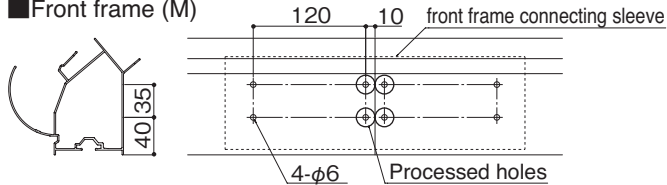
In case that the connecting post is moved, see page 24.

[R type]

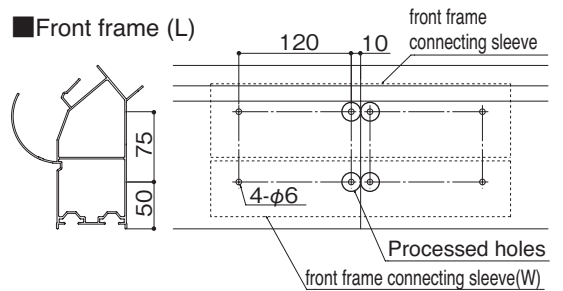
■ Front frame (S)



■ Front frame (M)

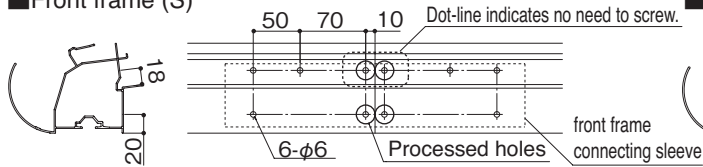


■ Front frame (L)

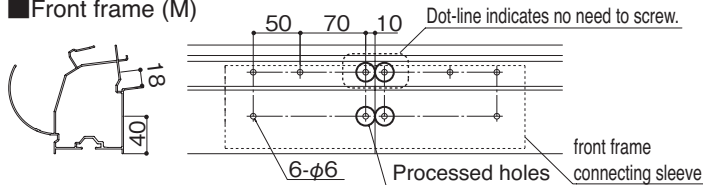


[F type]

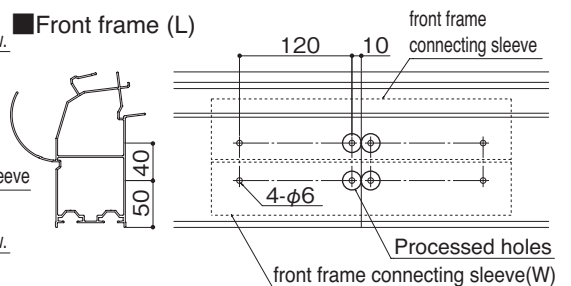
■ Front frame (S)



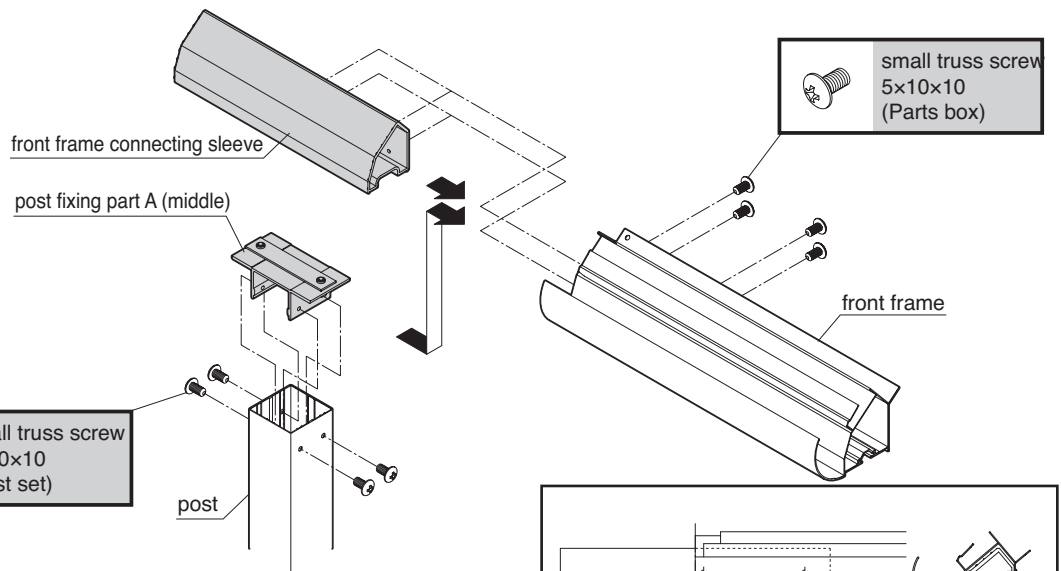
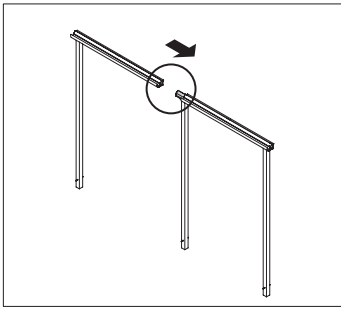
■ Front frame (M)



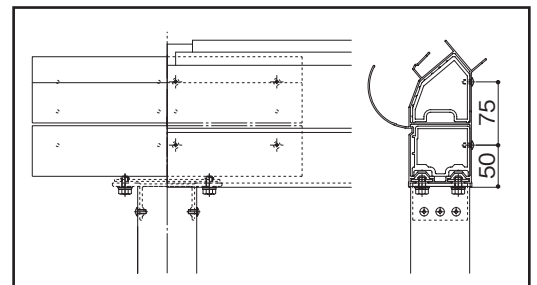
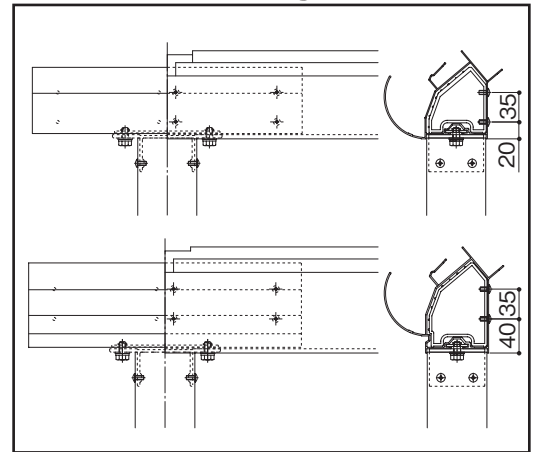
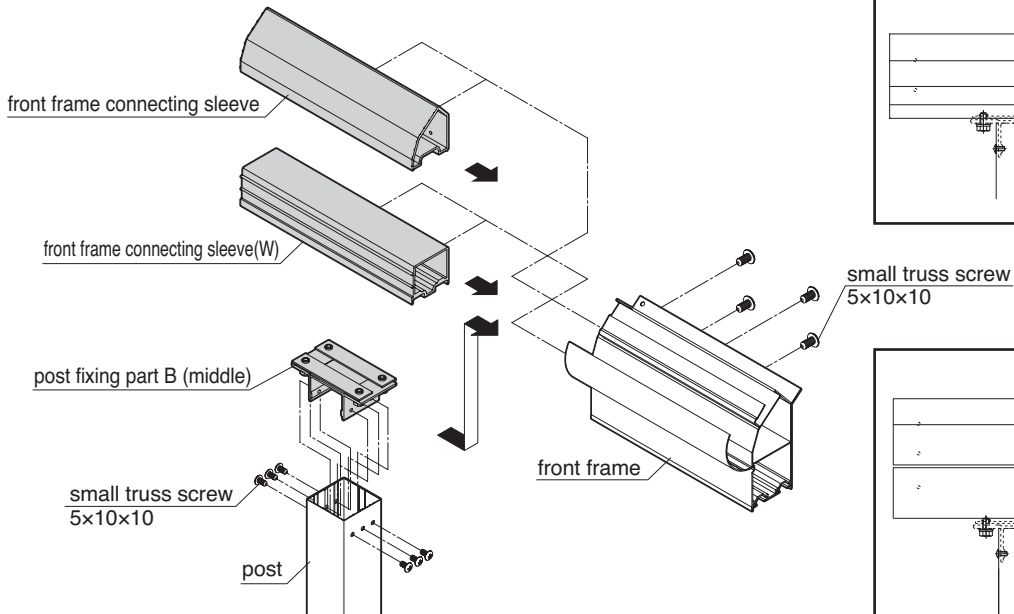
■ Front frame (L)



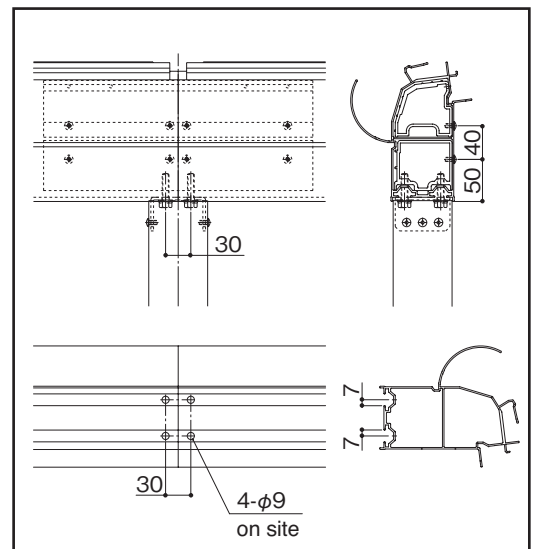
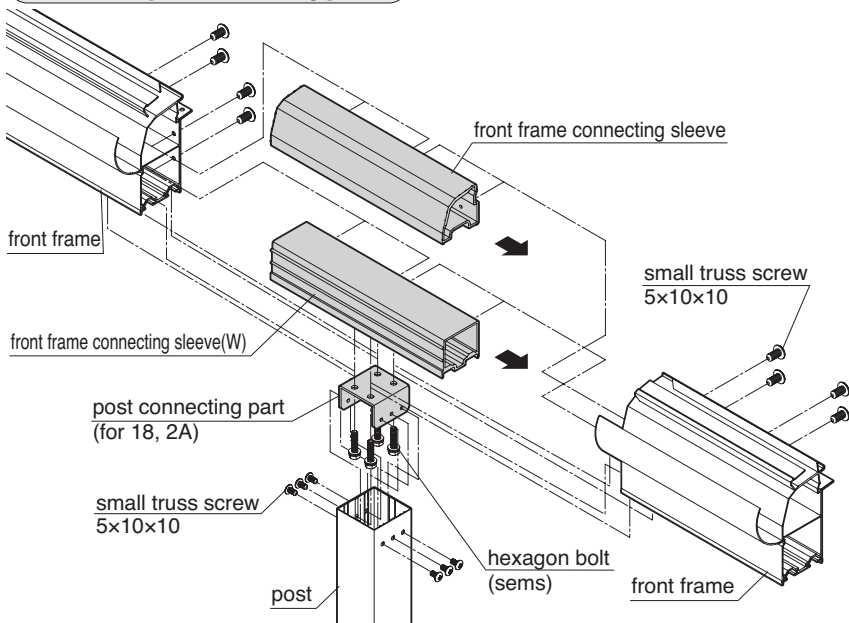
2-② Post and front frame assembling



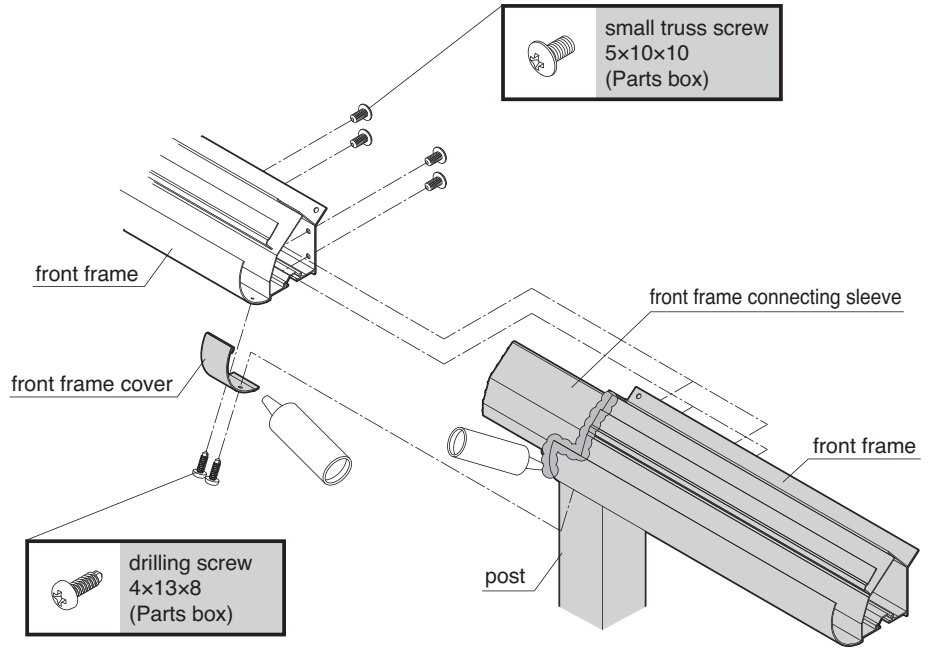
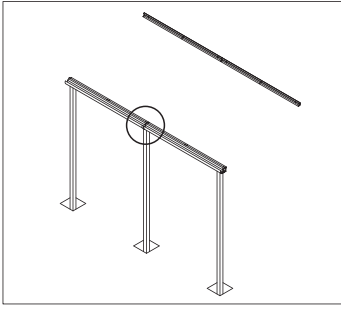
In case of front frame (L)



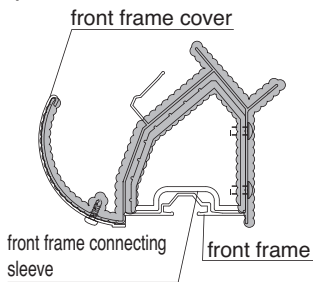
For depth 18·2A type



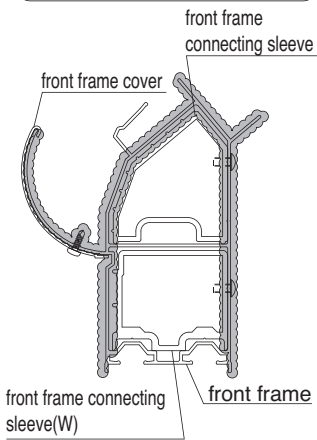
3-2 Connecting post and front frame



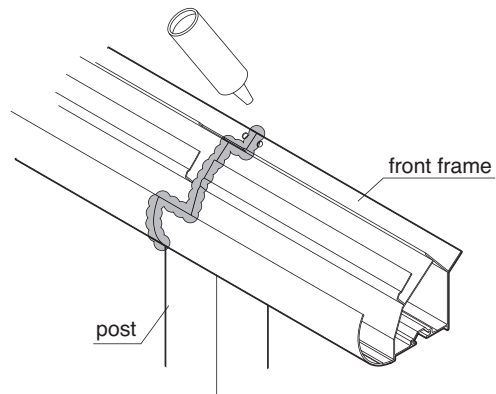
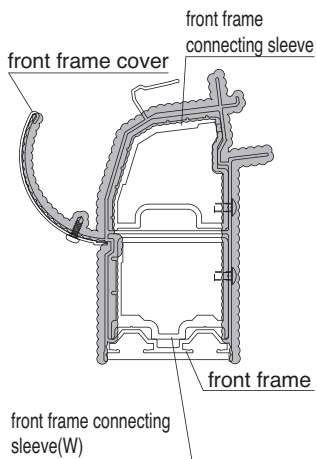
Be sure to seal around screws in order to prevent danger when cleaning as well as water proof.



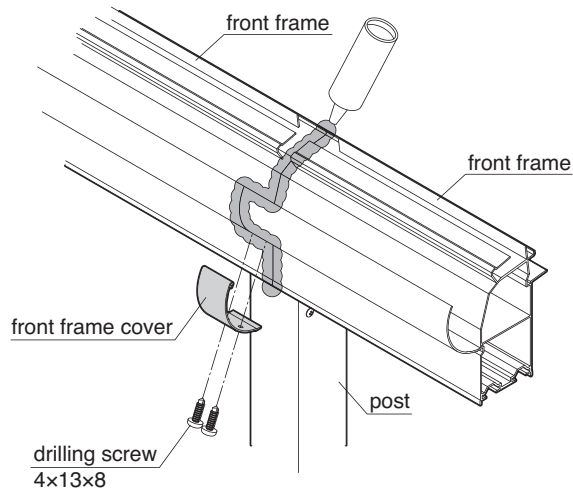
In case of front frame (L)



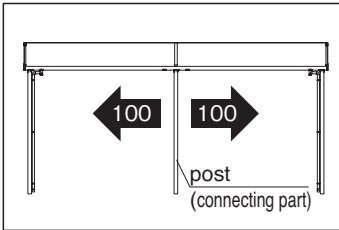
For depth 18·2A type



For depth 18·2A type



In case of moving the connecting post



Screw the post connecting parts to the joint sleeve.

※The position of screw and number of screws are different depending on the post moving range.

		Screwing position	
Post moving dimension	In case of $0 < A \leq 65$	<p><Front frame connecting part> 2-truss screw 5x20x10 Make holes on front frame: $\phi 6\text{mm}$ / sleeve: $\phi 4.5\text{mm}$ on-site Screw at 10mm from end of post connecting parts.</p> <p><post connecting parts> 4-truss screw 5x20x10 Make holes on post connecting parts/front frame: $\phi 6\text{mm}$ on-site. Sleeve: $\phi 4.5\text{mm}$ on-site</p>	
	In case of $65 < A \leq 80$	<p><Front frame connecting part> 2-truss screw 5x20x10 Make holes on front frame: $\phi 6\text{mm}$ / sleeve: $\phi 4.5\text{mm}$ on-site Screw at 10mm from connecting part.</p> <p><post connecting parts> 4-truss screw 5x20x10 Make holes on post connecting parts/front frame: $\phi 6\text{mm}$ on-site. Sleeve: $\phi 4.5\text{mm}$ on-site</p>	
	In case of $80 < A \leq 100$	<p><Front frame connecting part> 2-truss screw 5x20x10 Make holes on front frame: $\phi 6\text{mm}$ / sleeve: $\phi 4.5\text{mm}$ on-site Screw at 10mm from connecting part.</p> <p><post connecting parts> 4-truss screw 5x20x10 Make holes on post connecting parts/front frame: $\phi 6\text{mm}$ on-site/Sleeve: $\phi 4.5\text{mm}$ on-site Screw at 10mm from connecting part.</p>	

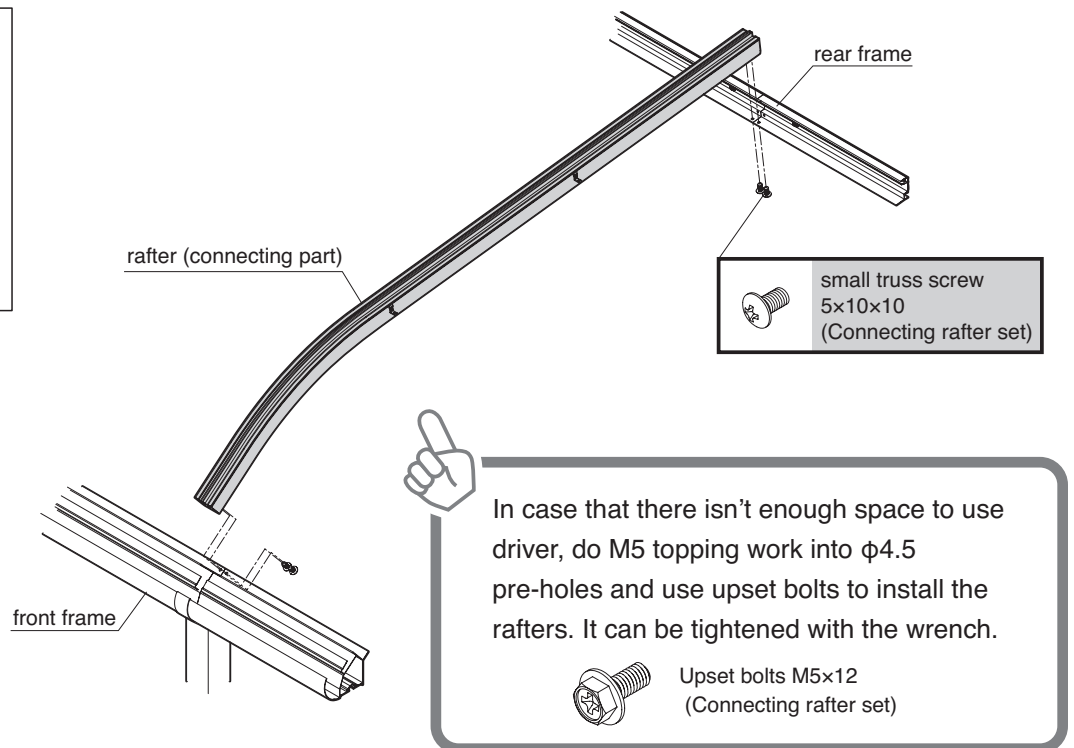
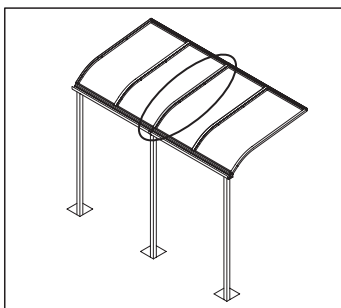
In case of front frame (L)

		Screwing position	
Post moving dimension	In case of $0 < A \leq 65$	<p><Front frame connecting part> 1-truss screw 5x20x10 Make holes on front frame: $\phi 6\text{mm}$ / sleeve: $\phi 4.5\text{mm}$ on-site Screw at 10mm from end of post connecting parts.</p> <p><post connecting parts> 2-truss screw 5x20x10 Make holes on post connecting parts/front frame: $\phi 6\text{mm}$ on-site. Sleeve: $\phi 4.5\text{mm}$ on-site</p>	
	In case of $65 < A \leq 80$	<p><Front frame connecting part> 1-truss screw 5x20x10 Make holes on front frame: $\phi 6\text{mm}$ / sleeve: $\phi 4.5\text{mm}$ on-site Screw at 10mm from connecting part.</p> <p><post connecting parts> 2-truss screw 5x20x10 Make holes on post connecting parts/front frame: $\phi 6\text{mm}$ on-site. Sleeve: $\phi 4.5\text{mm}$ on-site</p>	
	In case of $80 < A \leq 100$	<p><Front frame connecting part> 2-truss screw 5x20x10 Make holes on front frame: $\phi 6\text{mm}$ / sleeve: $\phi 4.5\text{mm}$ on-site Screw at 10mm from connecting part.</p> <p><post connecting parts> 2-truss screw 5x20x10 Make holes on post connecting parts/front frame: $\phi 6\text{mm}$ on-site. Sleeve: $\phi 4.5\text{mm}$ on-site Screw at 10mm from connecting part.</p>	

For depth 18·2A type

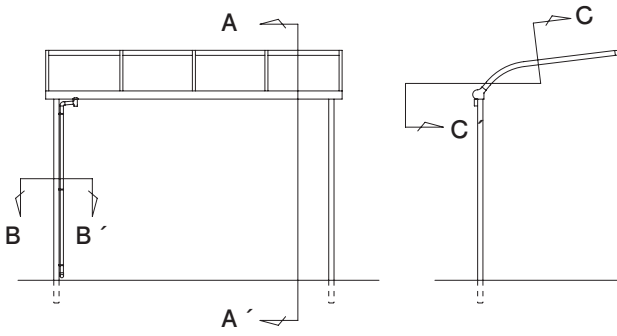
		Screwing position	
Post moving dimension	$0 < A < 50$	Not available for moving post	
	In case of $50 \leq A \leq 60$	<p>Truss screw 5x20x10 Make hole on front frame: $\phi 6\text{mm}$ / sleeve: $\phi 4.5\text{mm}$ on-site</p> <p>Screw at 10mm from connecting part.</p>	
	In case of $60 < A \leq 100$	<p>2-truss screw 5x20x10 Make holes on front frame: $\phi 6\text{mm}$ / sleeve: $\phi 4.5\text{mm}$ on-site</p> <p>Screw at 10mm from connecting part.</p>	<p>Screw at 10mm from connecting part.</p>

4-② Rafter (connecting part) installation



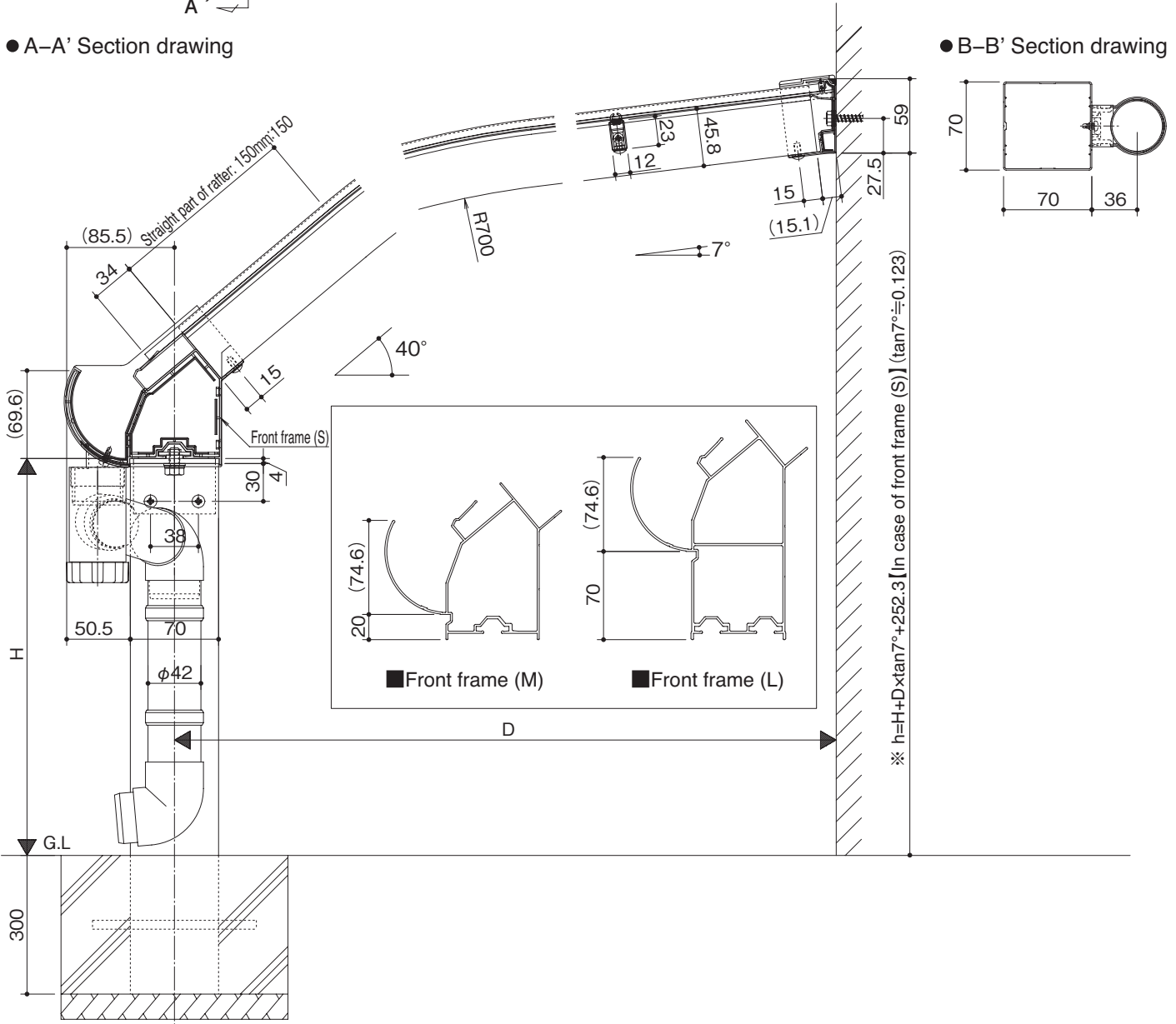
9-② Attaching the rain gutter parts

The number of rain gutters is different depending on the roof size. See page 20 about the number of rain gutters and installation.



● A-A' Section drawing

● B-B' Section drawing



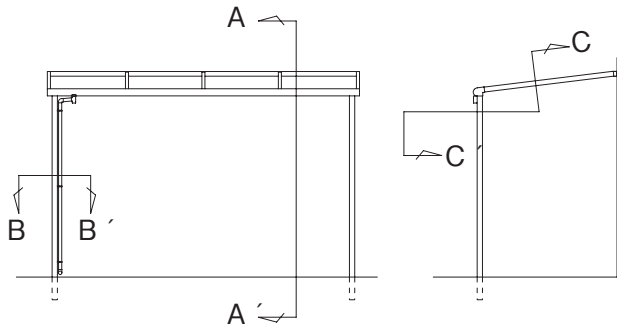
Basic drawing

Nominal depth	D	※ h(mm)	
		Front frame (S)	
		standard post H=2400	long post H=3400
30	870	2759.1	3759.1
40	1170	2796.0	3796.0
50	1470	2832.8	3832.8
60	1770	2869.6	3869.6
70	2070	2906.5	3906.5
80	2370	2943.3	3943.3
90	2670	2980.1	3980.1
10	2970	3017.0	4017.0
11	3270	3053.8	4053.8
12	3570	3090.6	4090.6

Nominal depth \ Nominal width	30	40	50	60	70	80	90	10	11	12	
60 · 200	Front frame (S) +0						Front frame (L) +70				
90 · 300											
12 · 400											
15 · 500	Front frame (M) +20										
18											

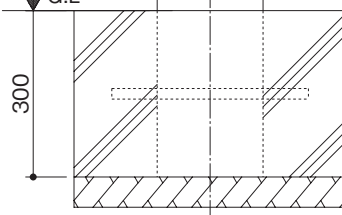
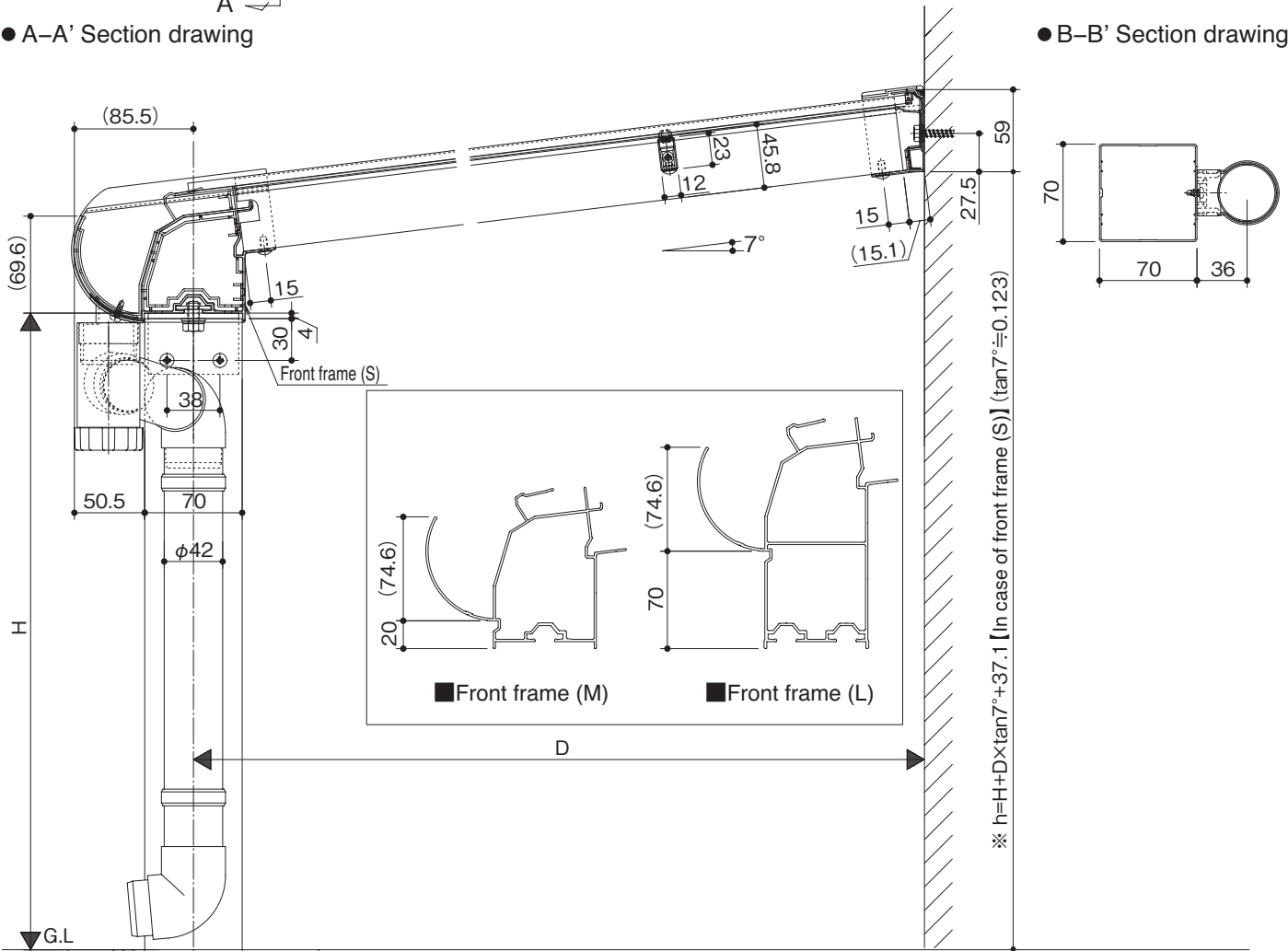
See material instruction guide table on page 9 about the details of material use.

※h dimension differ according to the front frame size, add the additional value to h dimension referring right table.



● A-A' Section drawing

● B-B' Section drawing



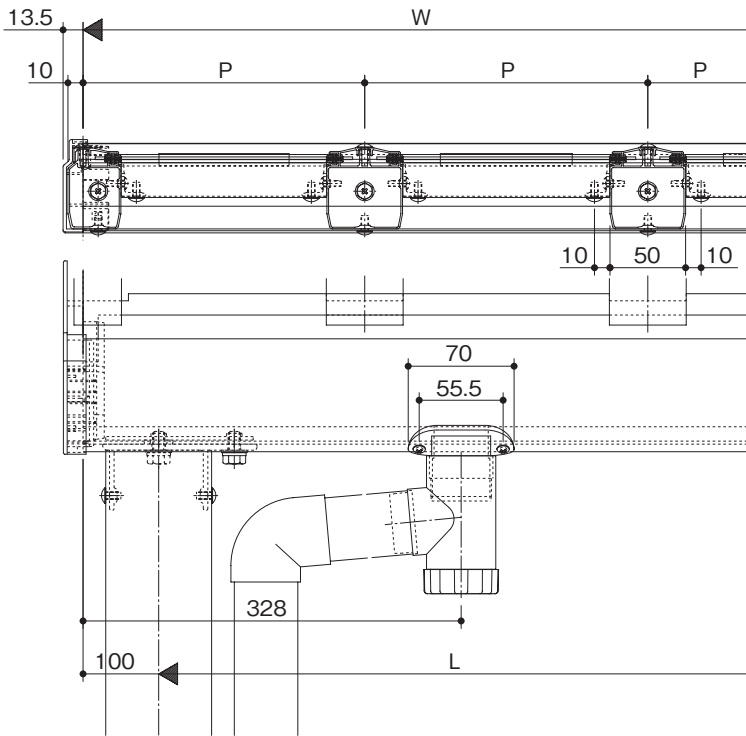
Nominal depth	D	* h(mm)		Nominal depth	D	* h(mm)	
		Front frame (S)				Front frame (S)	
		standard post H=2400	long post H=3400			standard post H=2400	long post H=3400
30	870	2543.9	3543.9	11	3270	2838.6	3838.6
40	1170	2580.8	3580.8	12	3570	2875.4	3875.4
50	1470	2617.6	3617.6	13	3870	2912.3	3912.3
60	1770	2654.4	3654.4	14	4170	2949.1	3949.1
70	2070	2691.3	3691.3	15	4470	2985.9	3985.9
80	2370	2728.1	3728.1	18	5370	3096.5	4096.5
90	2670	2764.9	3764.9	2A	5970	3170.1	4170.1
10	2970	2801.8	3801.8				

*h dimension differ according to the front frame size, add the additional value to h dimension referring below table.

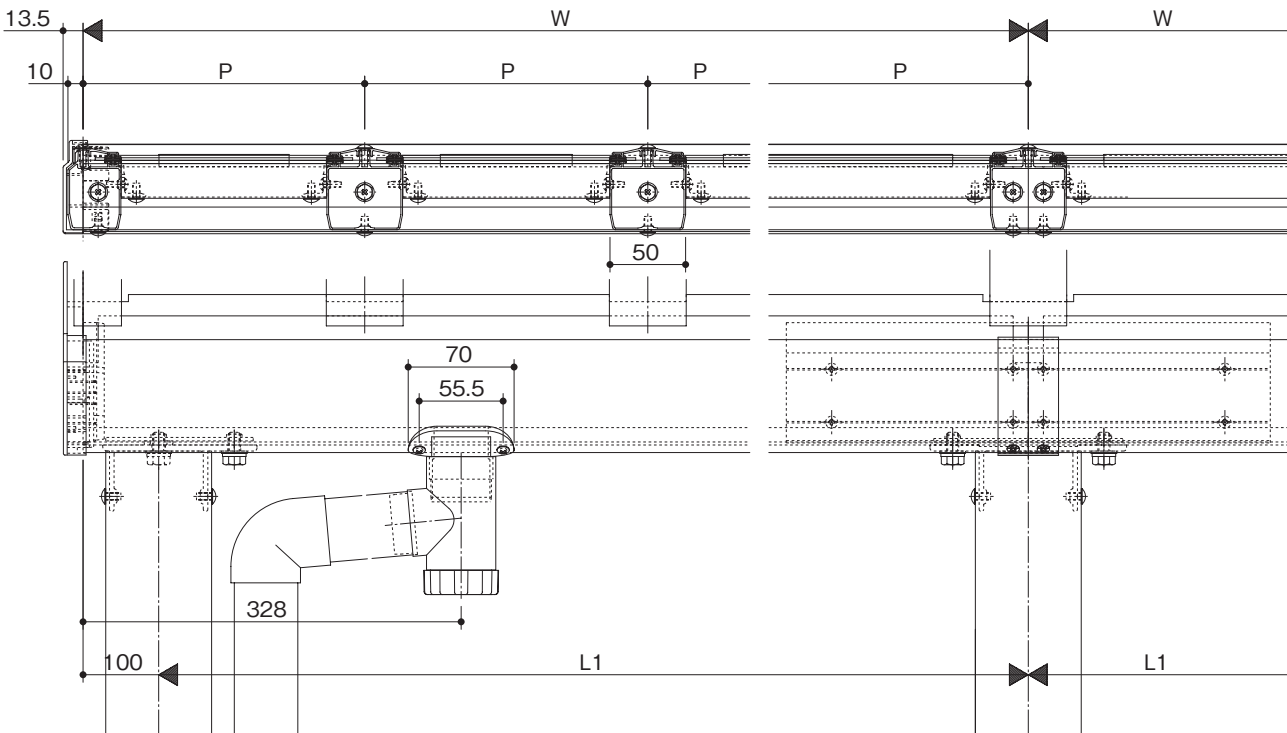
Nominal depth \ Nominal width	30	40	50	60	70	80	90	10	11	12	13	14	15	18	2A
60 · 200	Front frame (S) +0														
90 · 300															
12 · 400	Front frame (L) +70														
15 · 500															
18	Front frame (M) +20														

See material instruction guide table on page 11 about the details of material use.

● C-C' Section drawing Single unit installation



● C-C' Section drawing Connecting unit installation



	Nominal width	L	L1	W	P		
					Nominal depth 30~80	Nominal depth 90~15	Nominal depth 18·2A
909 type	60	1618	1718	1818	909	454.5	454.5
	90	2527	2627	2727			—
	12	3436	3536	3636			—
	15	4345	4445	4545			—
	18	5254	—	5454			—
1000 type	200	1800	1900	2000	1000	500	—
	300	2800	2900	3000			—
	400	3800	3900	4000			—
	500	4800	4900	5000			—