

MILA GARANT **M-5** beslagsprogram til skandinaviske vinduer



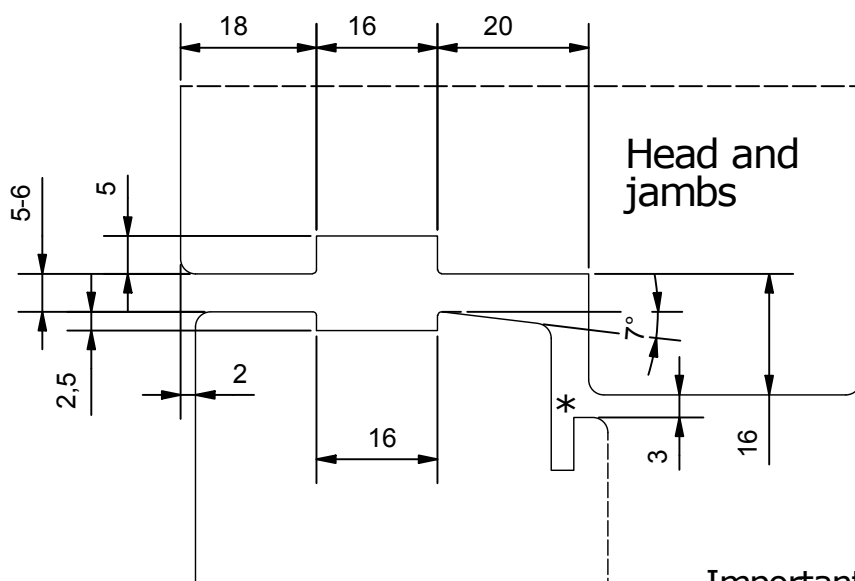
Teknisk manual

www.mila.dk

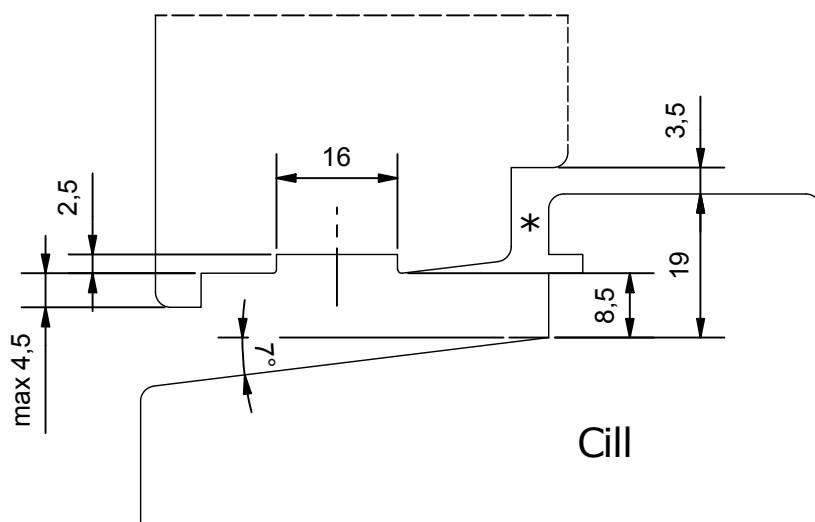


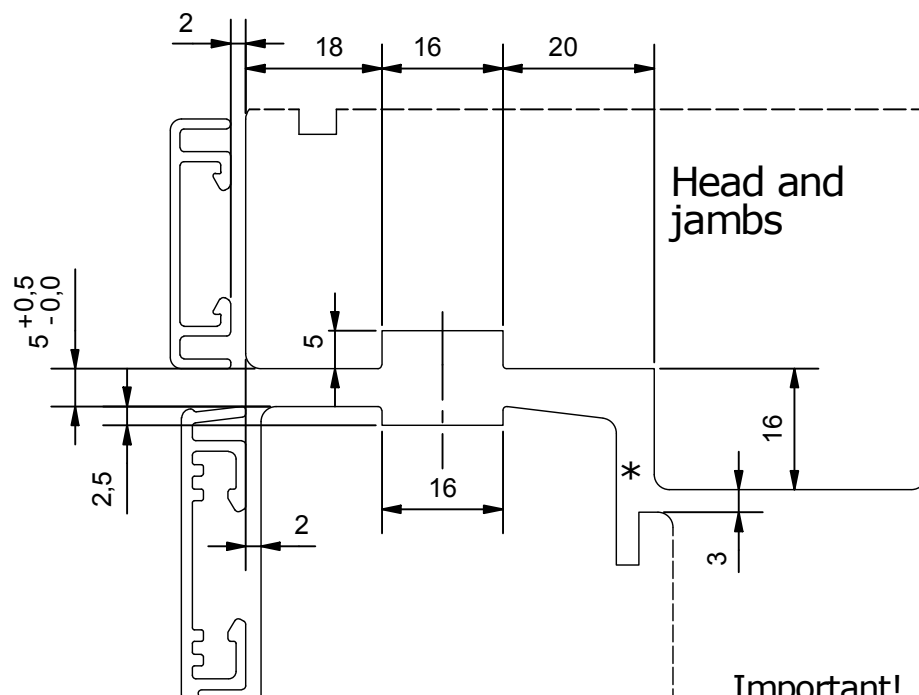
MILA

Quality & service | It's in our DNA

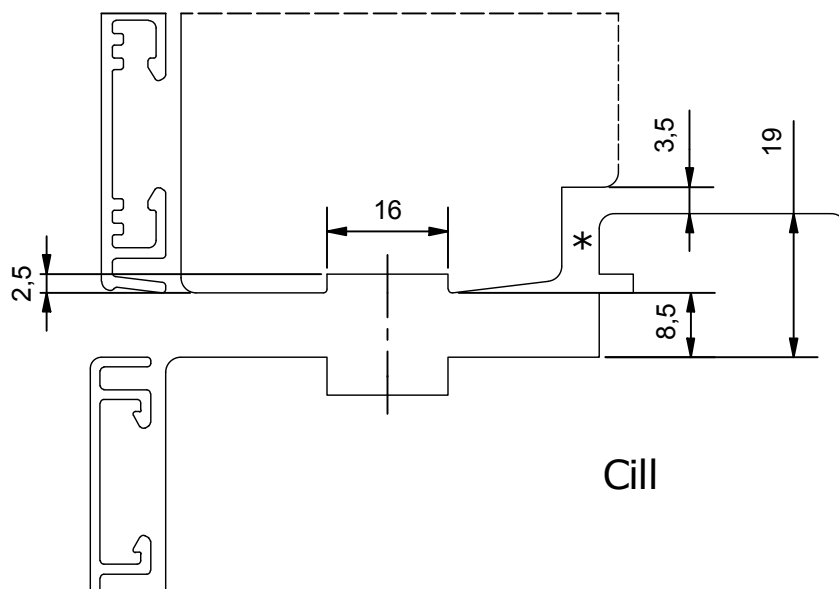


Important!
The grooves must be min.
16x5 og 16x2,5 where the
hardware has to be fitted.





Important!
The grooves must be min.
16x5 and 16x2,5 when the
gearing has to be fitted.



GARANT M-5 hardware are tested and are under continuous quality control.
All tests are carried out accordance to EN 13126-6 for weight load and functionality.
Surfaces tested accordance to EN 1670 grade 5, > 480 hours in NSST

Classification of M-5 hardware for windows accordance to EN 13126-6

The below scheme is made in accordance to EN 13126-1.

Art. No	Description	1	2	3	4	5	6	7	8	9
200504	Proj. Tophung, Flex-fit		4	45	0	1	5		11	Height =< 420 mm
200505	Proj. Tophung, Flex-fit		4							Height =< 620 mm
200506	Proj. Tophung, Flex-fit		4	60						Height =< 1320 mm
200514	Proj. Tophung, double friction		4	45						Height =< 1015 mm
200516	Proj. Tophung 100 kg version		5	100						Height =< 1530 mm
200520	Proj. Sidehung Top + Bottom		4	45						Width =< 800 mm
200521	Proj. Sidehung Bottom Track R+L		4	45						

All size satments are made at the maximum sash height or width depending on function. The load as minimum the specified maximum weight.

Explanation of the above table:

Column:

- | | |
|-------------------------|----------------------------------|
| 1. Application category | -(no requirement) |
| 2. Durability | Grade 5 (25.000 cycles) |
| 3. Load | Hardware maximum load in kg |
| 4. Fire resistance | Grade 0 (no requirement) |
| 5. Safety of use | Grade 1 |
| 6. Duration in NSST | Grade 5 |
| 7. Security | -(no requirement) |
| 8. Application | Test accordance to hardware type |
| 9. Test size of sash | Maximum sash height (mm) |

All hardware parts are surface-treated in a special process where a multi-layer coating is applied
Which finishes with a finish that ensures a uniform and dense surface. Tests on these surfaces are made
before assembly and after the hardware have been assembled. This ensures that
rivets etc. meets our high standard requirements.

GARANT M-5 hardware are tested and are under continuous quality control.
All tests are carried out accordance to EN 13126-6 for weight load and functionality.
Surfaces tested accordance to EN 1670 grade 5, > 480 hours in NSST

Classification of M-7 hardware for windows accordance to EN 13126-11

The below scheme is made in accordance to EN 13126-1.

Art. No	Description	1	2	3	4	5	6	7	8	9
205116	Topswing, aluclad timber		4	70	0	1	5		11	Height = <1573 mm
205136	Topswing, timber		4	70	0	1	5		11	Height = <1573 mm

All size satments are made at the maximum sash height or width depending on function. The load as minimum the specified maximum weight.

Explanation of the above table:

Column:

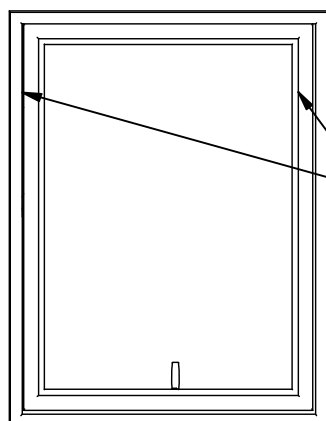
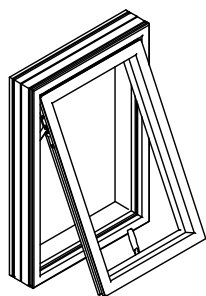
- | | |
|-------------------------|----------------------------------|
| 1. Application category | -(no requirement) |
| 2. Durability | Grade 4 (15.000 cycles) |
| 3. Load | Hardware maximum load in kg |
| 4. Fire resistance | Grade 0 (no requirement) |
| 5. Safety of use | Grade 1 |
| 6. Duration in NSST | Grade 5 |
| 7. Security | -(no requirement) |
| 8. Application | Test accordance to hardware type |
| 9. Test size of sash | Maximum sash height (mm) |

All hardware parts are surface-treated in a special process where a multi-layer coating is applied
Which finishes with a finish that ensures a uniform and dense surface. Tests on these surfaces are made
before assembly and after the hardware have been assembled. This ensures that
rivets etc. meets our high standard requirements.

Garant M-5

Proj. Top hung

Standard timber- / aluclad timber profile



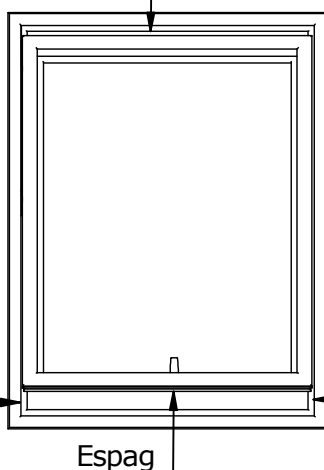
Projecting top hung:

- Art. no. 200504, Top hung, SH 273-400 mm, 45 kg
- Art. no. 200505, Top hung, SH 323-620 mm, 45 kg
- Art. no. 200506, Top hung, SH 451-1320 mm, 60 kg
- Art. no. 200516, Top hung, SH 720-1530 mm, 100 kg

Art. no. 200514, Top hung double friction,
SH 545-1015 mm, 45 kg

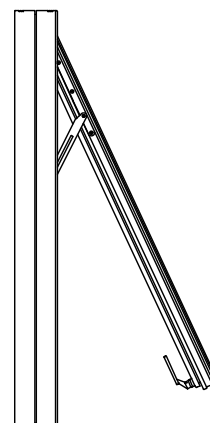
Security block: Block for additional compression
(recommmended if the sash is wider than 1100 mm)
Art. no 200902

Art. no. 200904
Guide block



Art. no. 200904
Guide block

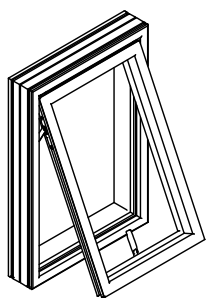
Espag



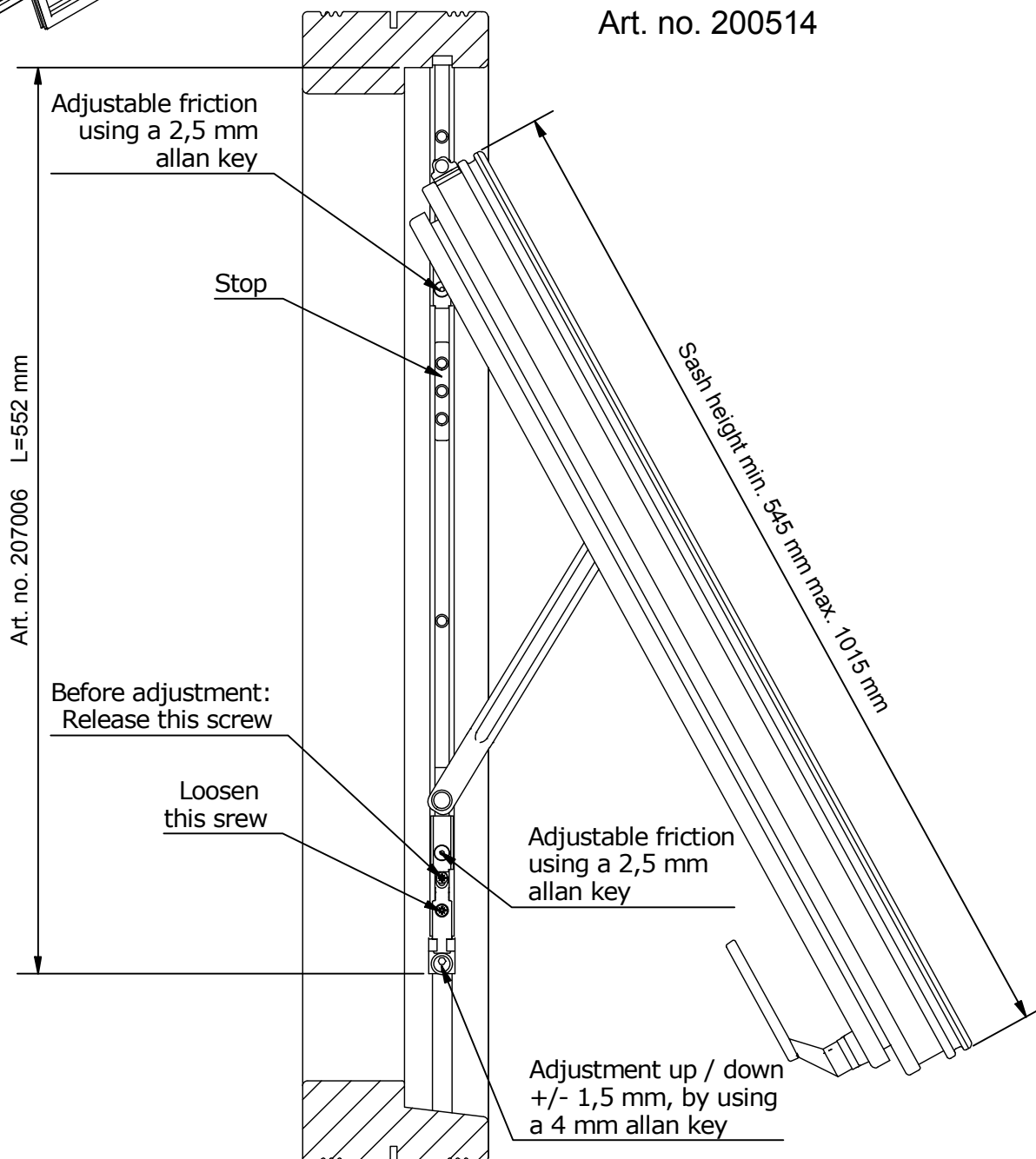
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Garant M-5
Proj. Top hung
double friction

Standard timber- / aluclad timber profile



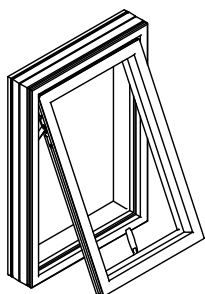
Art. no. 200514



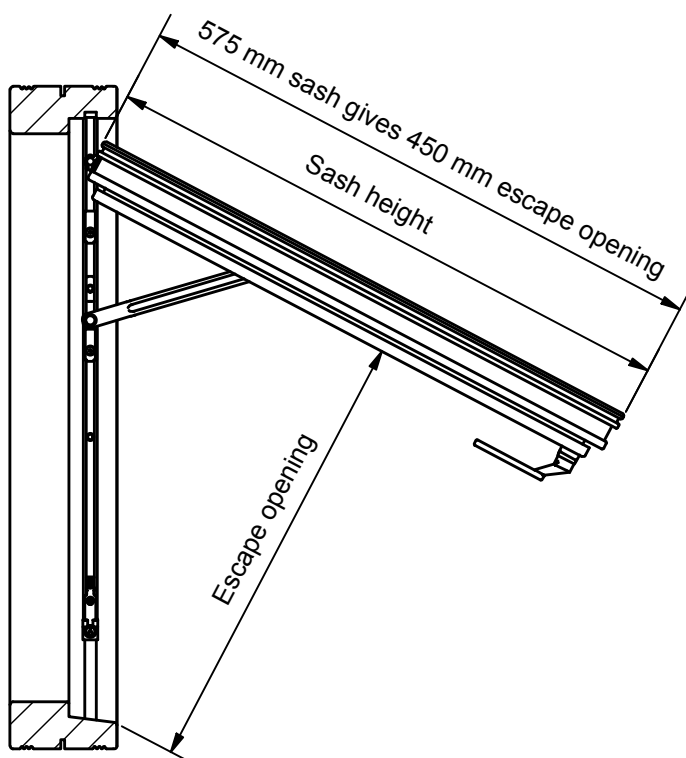
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Garant M-5
Proj. Top hung
double friction

Standard timber- / aluclad timber profile



Art. no. 200514



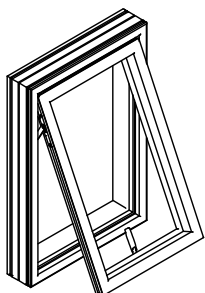
Fire Escape Opening

Art. No	Description 1	Description 2	Fire escape
200504	Proj. Top hung, Flex-Fit	Sash height 273-420 mm, 45 kg	95-210 mm
200505	Proj. Top hung, Flex-Fit	Sash height 323-620 mm, 45 kg	195-405 mm
200506	Proj. Top hung, Flex-Fit	Sash height 503-1320 mm, 60 kg	210-750 mm
200514	Proj. Top hung, Flex-Fit, double friction	Sash height 545-1015 mm, 45 kg	420-840 mm
200516	Proj. Top hung, Flex-Fit	Sash height 711-1530 mm, 100 kg	285-745 mm

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Garant M-5
Proj. Top hung
Double friction

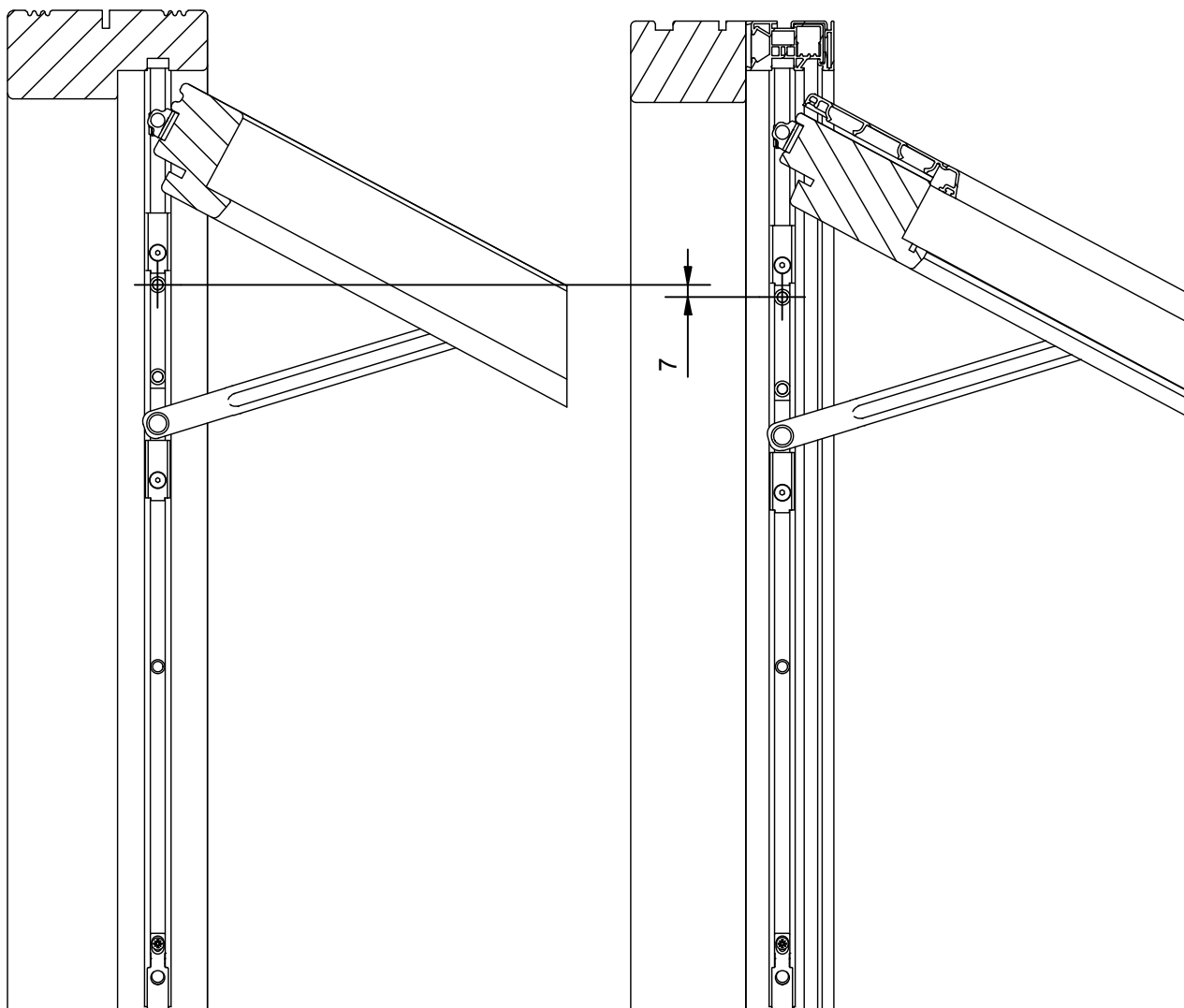
Standard timber- / aluclad timber profile



Art. no. 200514

There are 2 different sets of holes for the stop.

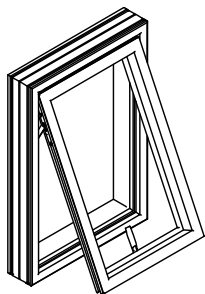
1. The top set is used for standard timber profiles
2. The position 7 mm lower is used for wider rebates, or by alu-clad profiles, that can not open otherwise.



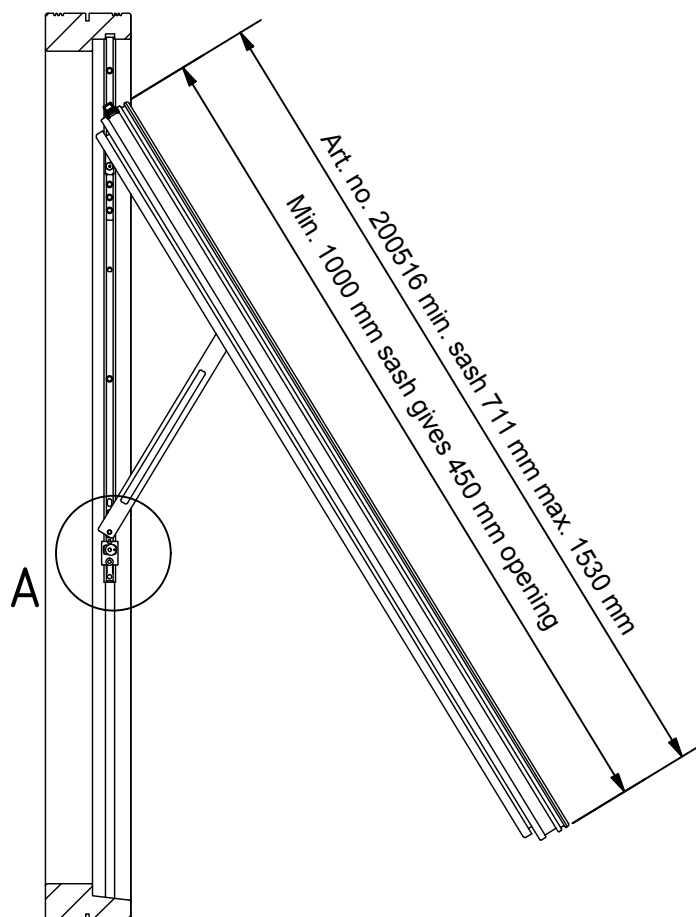
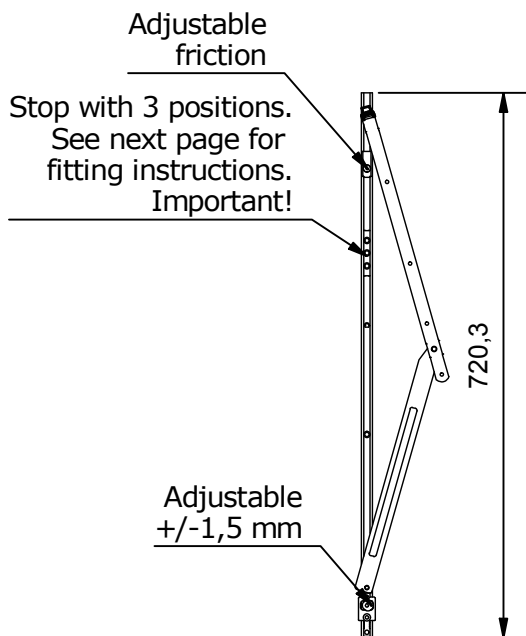
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Garant M-5
Proj. Top hung, 100 kg

Standard timber- / aluclad timber profile



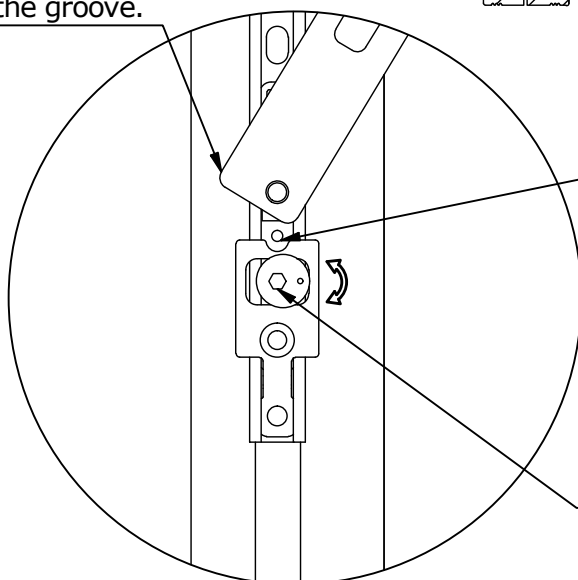
Art. no. 200516



Art. no. 200516

This corner is placed towards the inside of the groove.

A (1 : 2)



Remember to loosen the security screw before height adjustment.
Remember to tighten the security screw after adjustment.

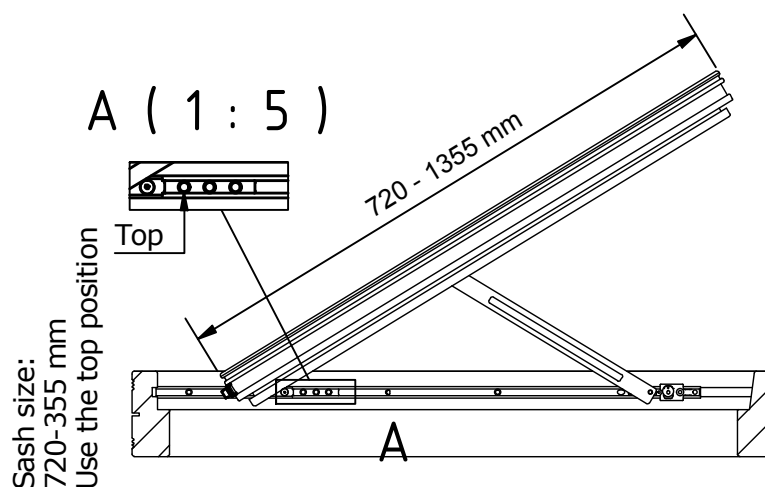
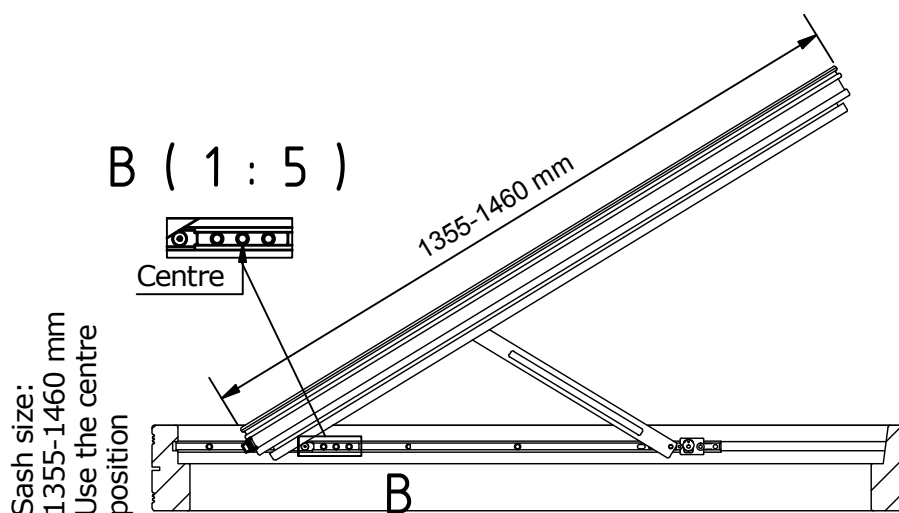
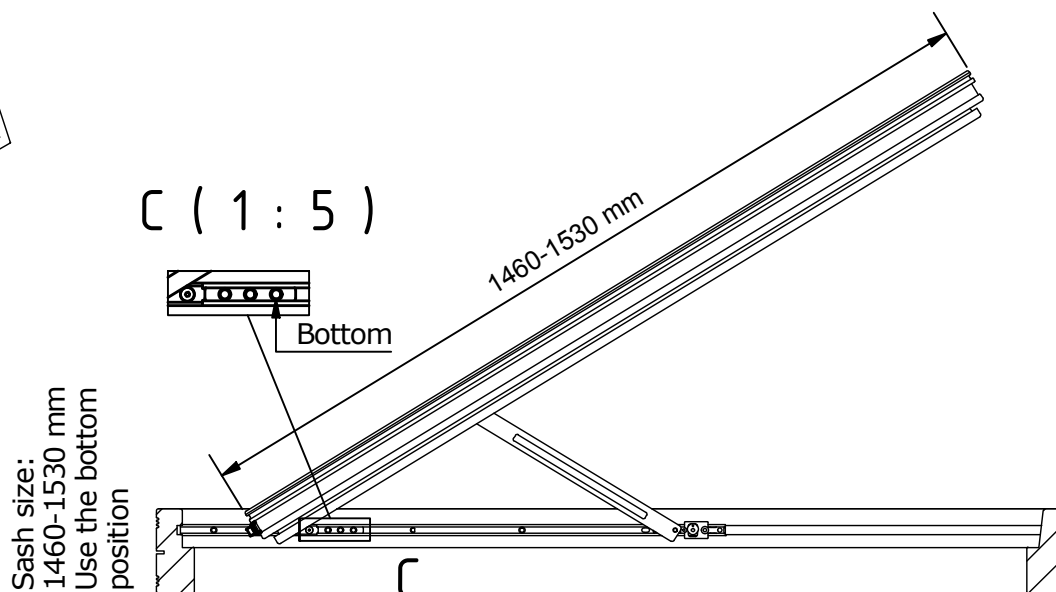
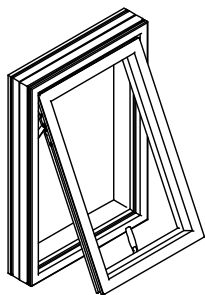
Height adjustment
Raise/ lower +/- 1,5 mm.
Use a 4 mm allen key

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Garant M-5

Proj. Top hung, 100 kg

Standard timber- / aluclad timber profile



Art. no 200516

There are 3 positions for the stop.

Which one has to be used depends of the sash size

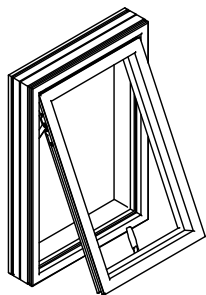
Its important that this is complied to.

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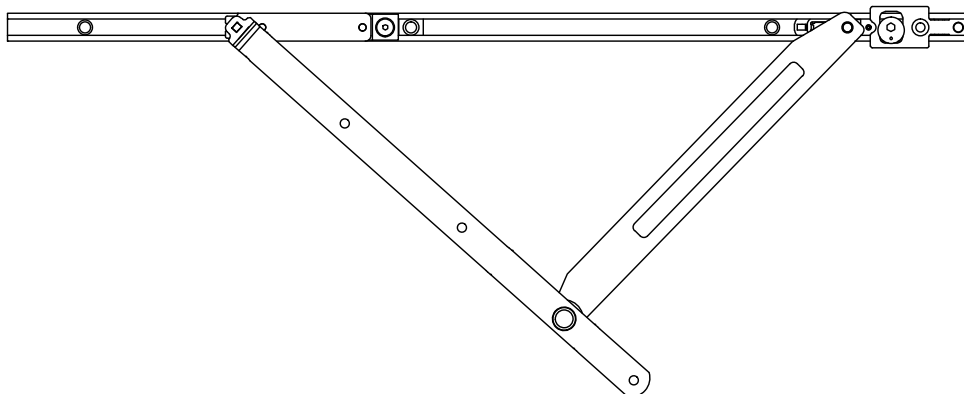
Garant M-5

Proj. Top hung, Flex-Fit
Patented!

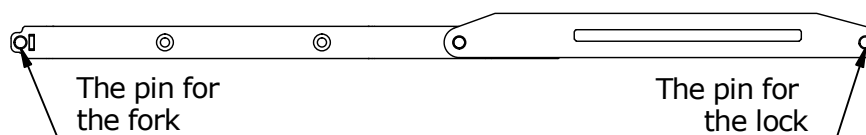
Standard timber- / aluclad timber profile



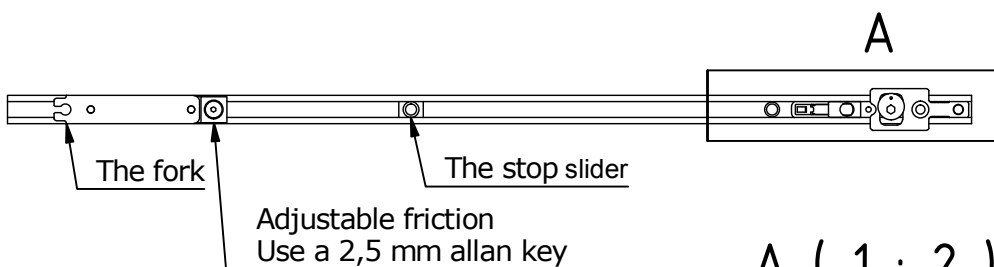
Projecting top hung hardware
Frame and sash part
are assembled at delivery



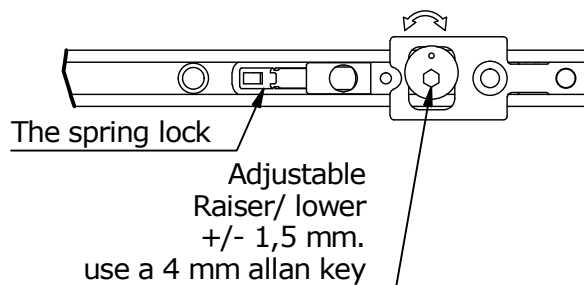
Separate top hung hardware
Sash part



Separate top hung hardware
Frame part



A (1 : 2)

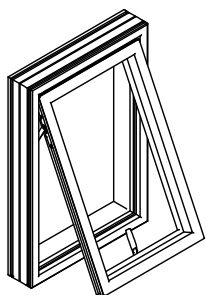


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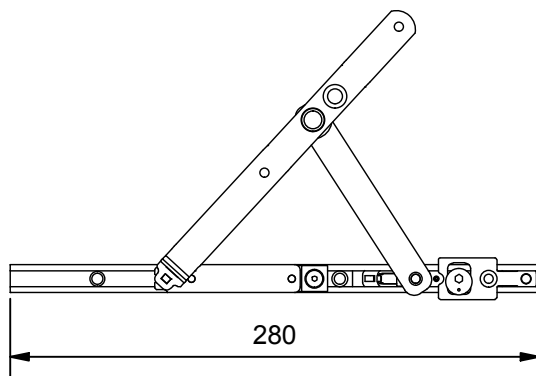
Garant M-5

Proj. Top hung, Flex-Fit
Patented!

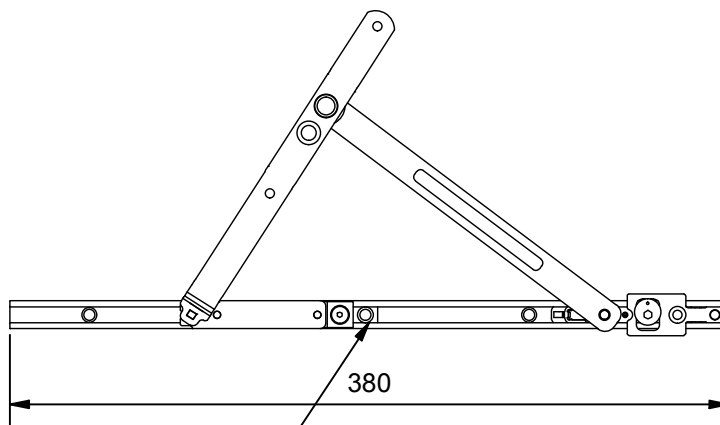
Standard timber- / aluclad timber profile



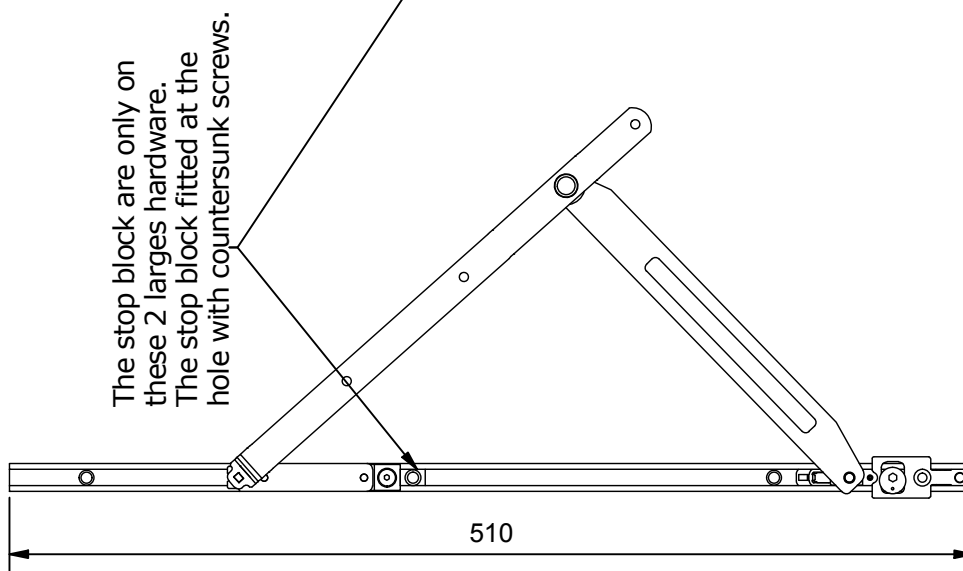
Art. no. 200504



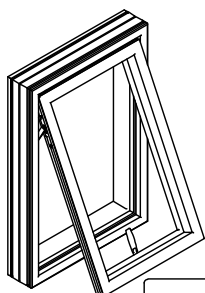
Art. no. 200505



Art. no. 200506

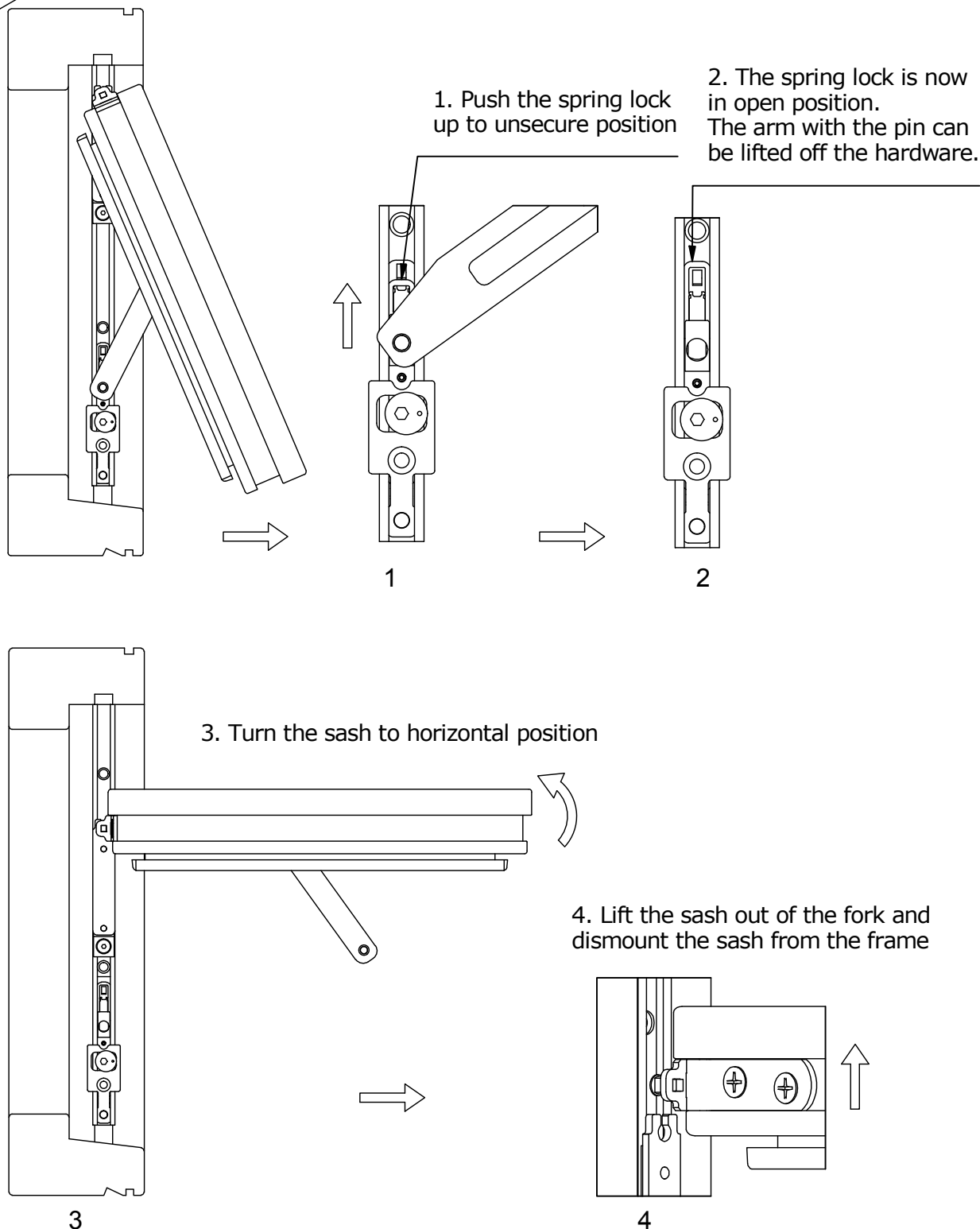


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Disconnecting the sash from the frame

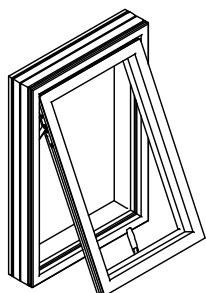
In order to disconnect the sash of the frame:



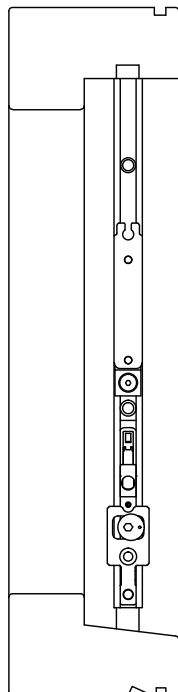
Garant M-5

Proj. Top hung, Flex-Fit
Patented!

Standard timber- / aluclad timber profile



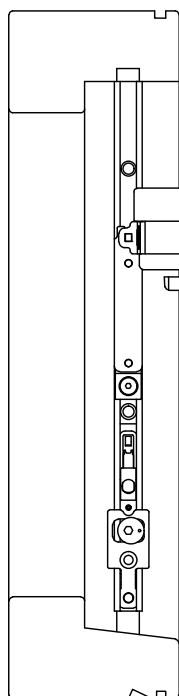
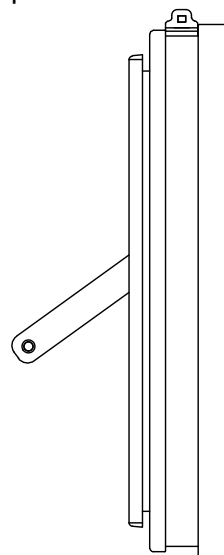
Frame



Assembly of frame and sash

1. Hardware for frame- and sash part fitted separately, as shown

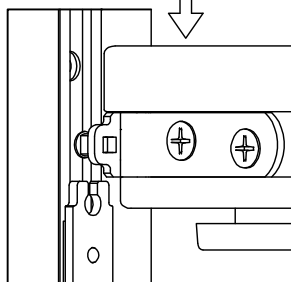
Sash



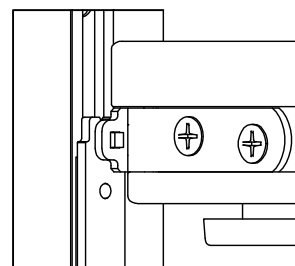
2. The sash with the hardware must be in horizontal position



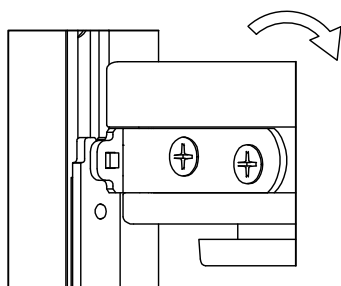
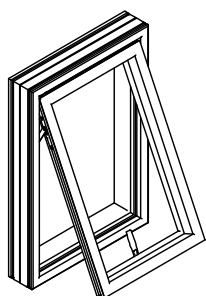
3. The pin lowered vertically downwards into the fork on both sides



4. Before turn the sash, the pin must be in the bottom of the fork.



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Assembly of frame and sash

4. Before turn the sash part, the pin must be in the bottom of the fork

5. Turn the sash down and slide the sash and the slider upward.

6. Slide the arm with the pin above the hole, and than press the pin into the hole.

7. Press the spring lock into closed position by using a screw driver.

8. Check the arm is secured fixed into the hole with spring lock.

Hole with spring lock

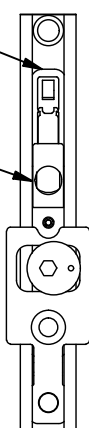
Spring lock in open position, not secured

Hole with spring lock

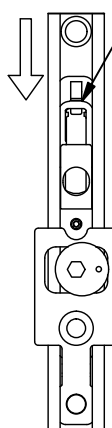
Spring lock in closed position, secured

Groove screw tightened by using 2,5 mm allen key. Max torque 4,5 Nm

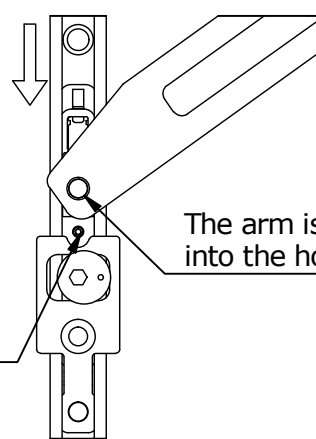
The arm is secured fixed into the hole.



A



B



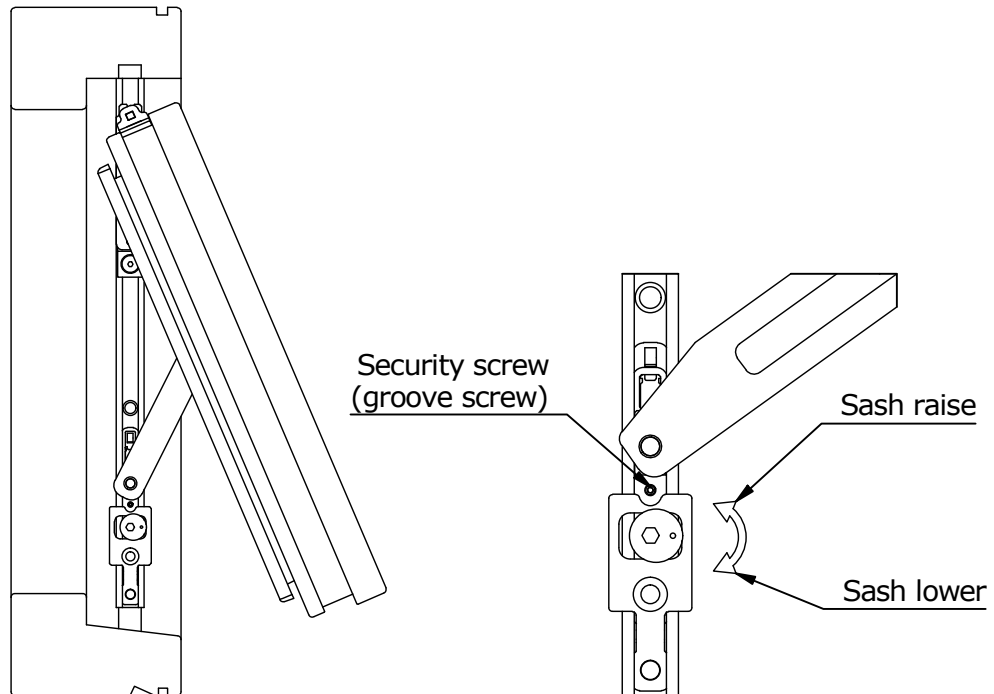
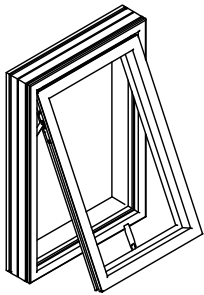
C

Garant M-5

Proj. Top hung

Height adjustment, generally

Standard timber- / aluclad timber profile



The hardware is fitted with an eccentric adjusting screw in the lower part of the hardware. This can raise or lower the sash so that if necessary drops or wearers can be compensated.

Adjustment is as follows: First, loosen the groove screw by using a 2,5 mm allen key. Then turn with a 4 mm allen key the eccentric in clockwise or counterclockwise.

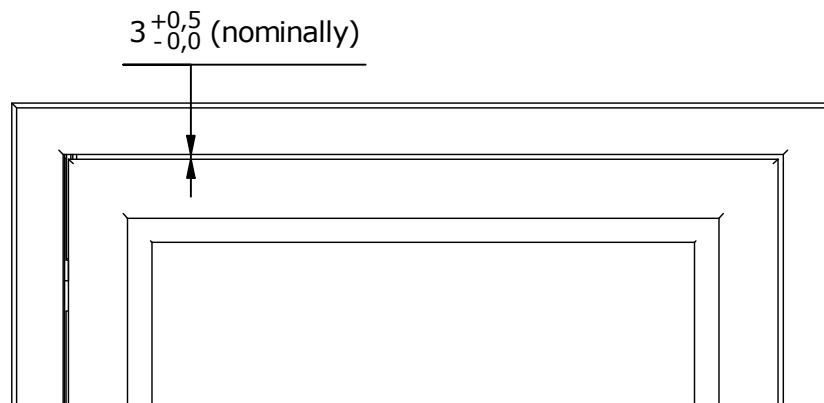
The marking found on the eccentric shows the position.

If the mark is turned down, the sash is lowered. Turning upwards raises the sash.

It is recommended to lift the sash upwards to relieve motion and ease the turn.

When the sash is at the desired height, tighten the groove screw again.

Do not forget to overload the groove screw !. Torque max. 4,5 Nm

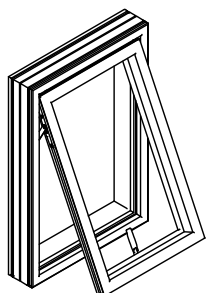


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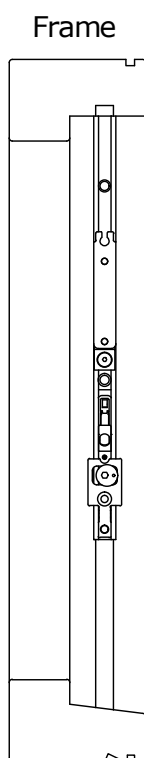
Garant M-5

Proj. Top hung, Flex-Fit
Patented!

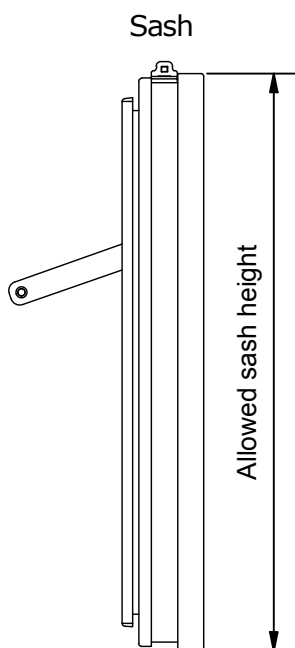
Standard timber- / aluclad timber profile



Allowed sash height:
See below table

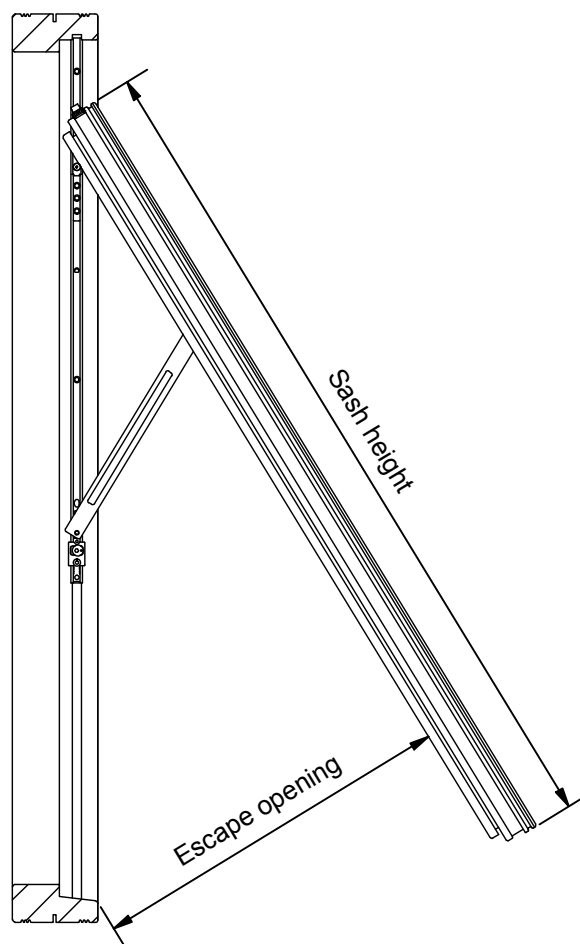


Frame



Sash

Allowed sash height



Sash height

Escape opening

Fire Escape Opening

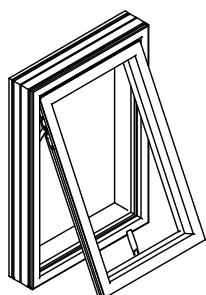
Art. No	Description 1	Description 2	Fire escape
200504	Proj. Top hung, Flex-Fit	Sash height 273-420 mm, 45 kg	95-210 mm
200505	Proj. Top hung, Flex-Fit	Sash height 323-620 mm, 45 kg	195-405 mm
200506	Proj. Top hung, Flex-Fit	Sash height 503-1320 mm, 60 kg	210-750 mm

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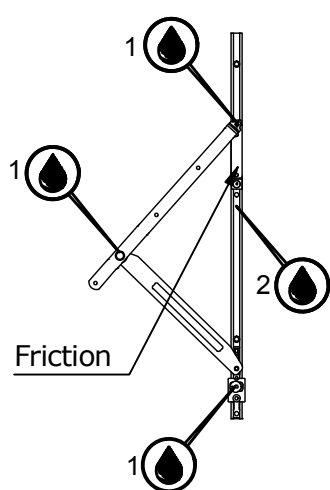
Garant M-5

Proj. Top hung
generally

Standard timber- / aluclad timber profile



Maintenance and lubrication of proj. top hung hardware



The following places to be lubricated
at least once a year.
If the gearing is placed in aggressive
environment, lubricate when necessary.

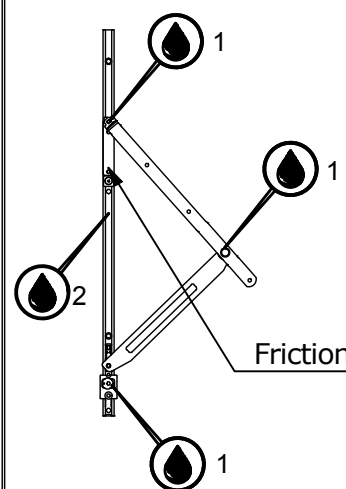
Use acid free oil of all places, except inside
the alu-rail, use white vaseline.

When dirty, wash the gear by using
normal dishwasher detergent with neutral
Ph value.

- 1: The connection/ rivet between
the parts (oil)
- 2: Inside the alu-rail (vaseline)

It is important to clean and lubricate
the alu-rail sliding surface, this will ease
the gearing movement.

The friction slider must not be lubricated.

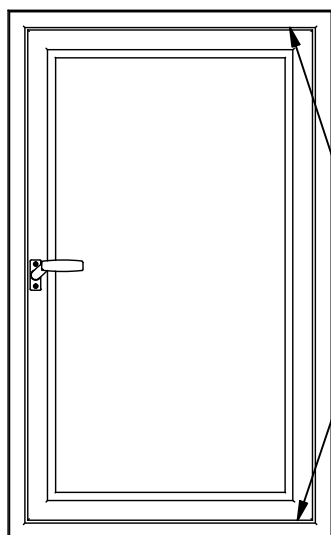
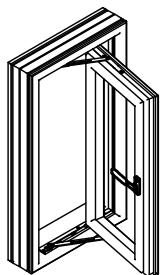


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Garant M-5

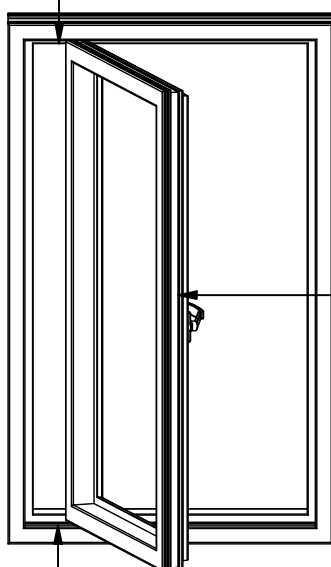
Proj. Side hung, 7° rebate

Standard timber profile



Gearing:
Art. no. 200520, RH/LH, proj. Side hung, top/bottom
Art. no. 200521, RH/LH, proj. Side hung, bottom 7° rebate

Top gear



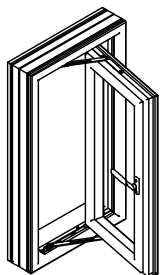
Espag

Bottom gear

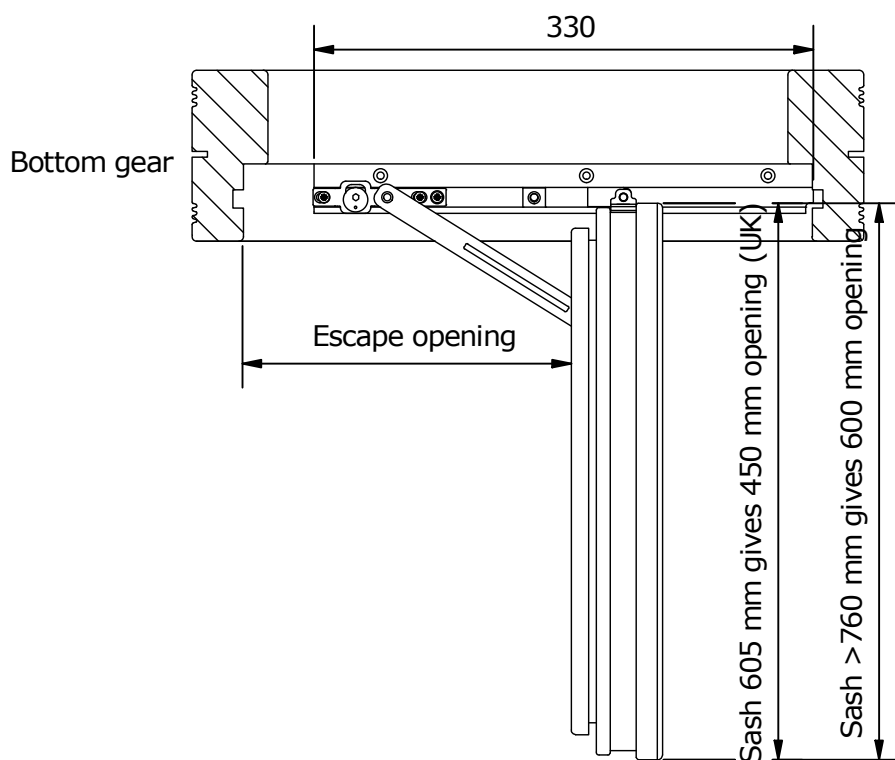
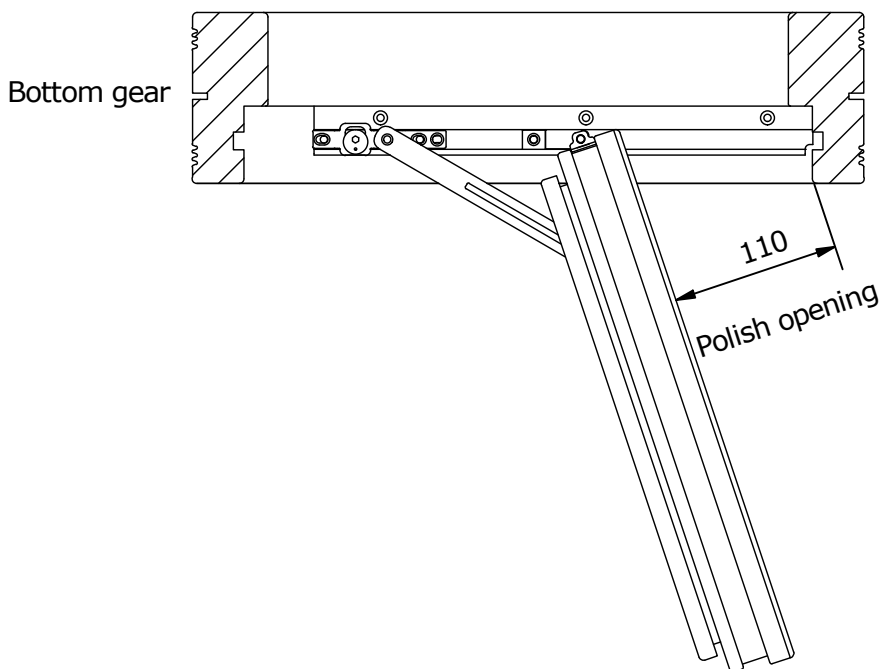
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Garant M-5
Proj. Side hung, 7° rebate

Standard timber profile



Art. no. 200520, proj. Side hung, 7° rebate
Art. no. 200521, proj. Side hung, 7° rebate

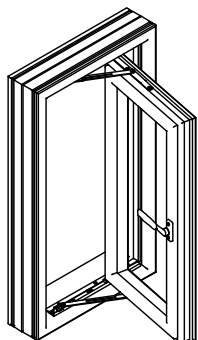


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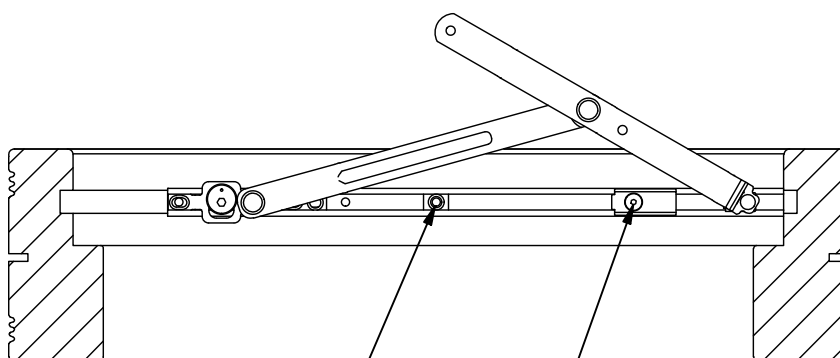
Garant M-5

Proj. side hung, 7° rebate

Standard timber profile



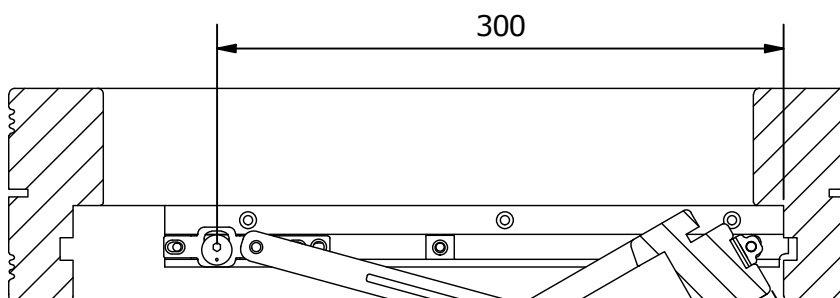
Top gear



Stop fitted here

Friction stay always in the top

bottom gear



300

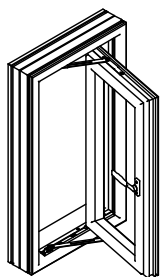
Min. 325 mm max. 800 mm

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Garant M-5

Proj. Side hung, 7° rebate

Standard timber profile



Art. No. 200520/ 200521

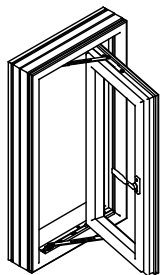
1: Sash weight max 60 kg

2: The glass should be fitted correctly by using the " diagonal" glazing method

Sash height	1600			45	45	60	60
	1500			45	45	60	60
	1400			45	45	60	60
	1300			45	45	60	60
	1200			45	45	60	60
	1100			45	45	60	60
	1000			45	45	60	60
	900			45	45	60	60
	800			45	45	45	60
	700			45	45	45	
	600			45	45	45	
	500			45	45		
	400						
	300						
		300	400	500	605	700	800
Sash width							

60	Min. 60 cm opening height, min. 50 cm opening width and H+W = min. 150 cm
45	Min. 45 cm opening and HxW= min. 0,33 m² (UK)

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**Art. no: 200520 & 200521****Proj. Side hung, 60 kg sash weight**

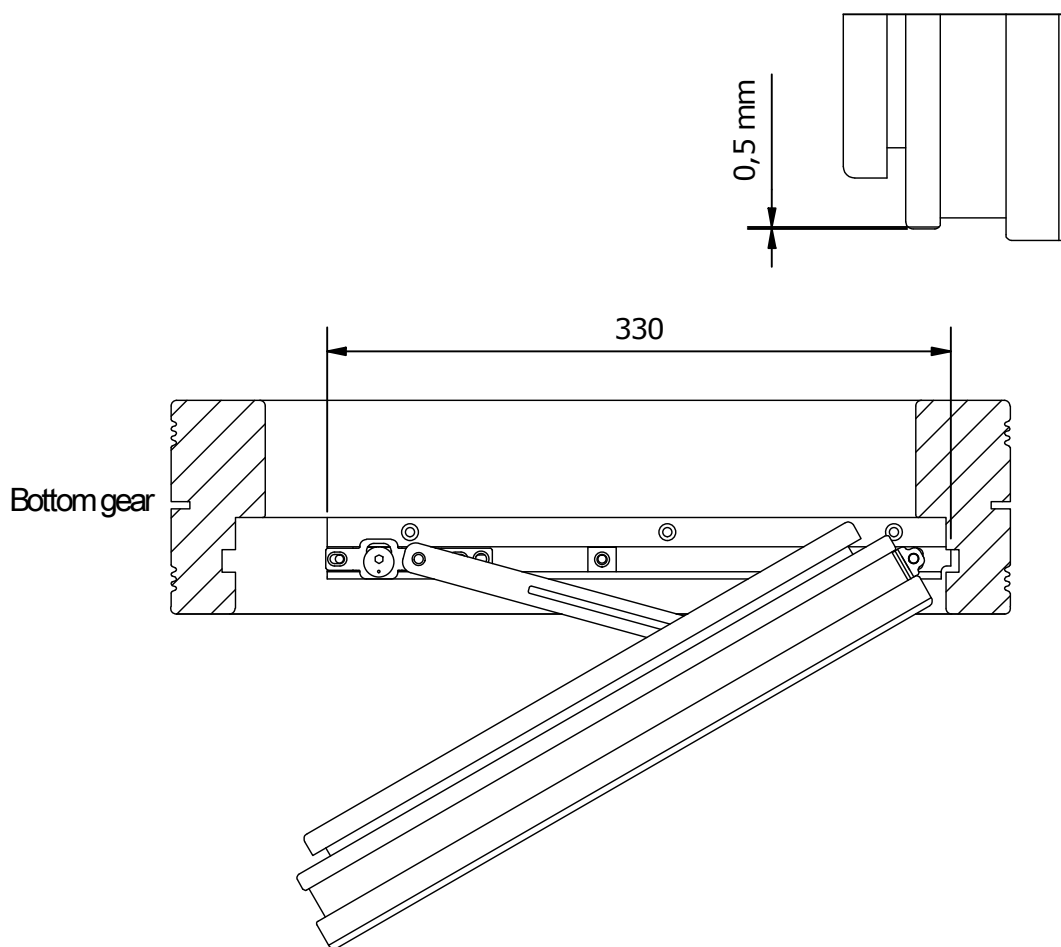
It is possible to use sash weight up to 60 kg

It can be necessary to machine the bottom of the sash, to avoid that the arm on the hardware and the sash scrabs against each other.

Remove 0.5 mm behind the groove, to avoid that the paint is damaged by the hardware.

It is necessary to be careful when assembling the window and installing it into the building, to avoid that the sash drops too much opposite the hardware.

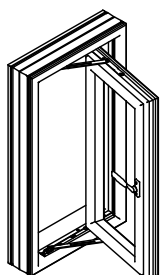
It is necessary to be careful when assembling the hardware on the frame and sash part, as well as when the window installing into the building. To avoid that the sash drops, the window should be fitted correctly by using the diagonal method. Cf. Window industry instructions.



Garant M-5

Proj. Side hung
side adjustment generally

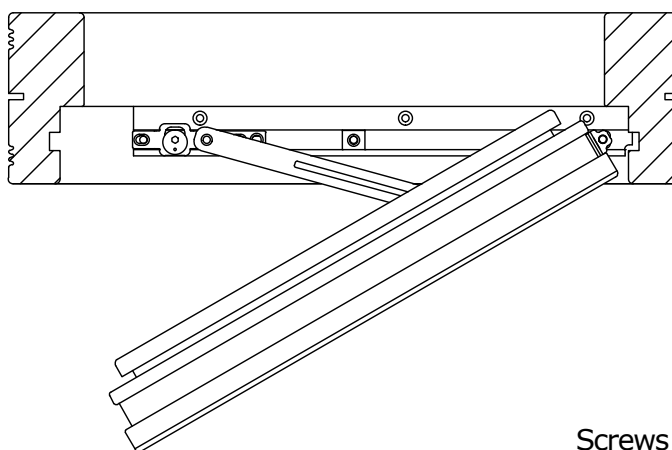
Standard timber profile



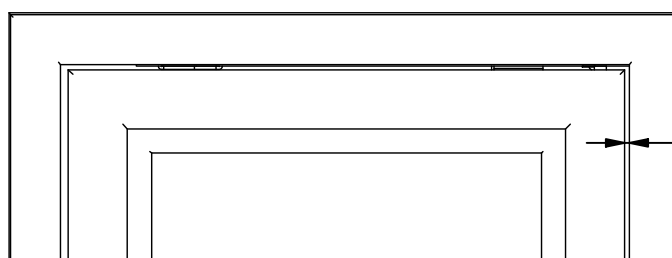
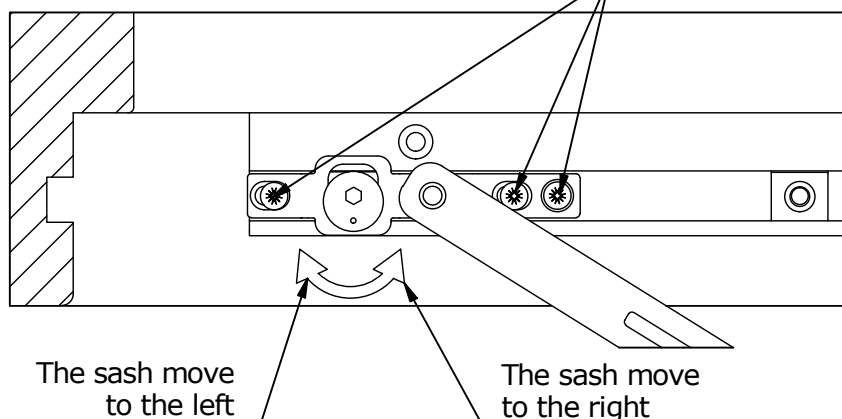
The hardware is fitted with an eccentric adjusting screw in the right/ left part of the hardware. This can adjust the sash to the right or left side so that if necessary drops or wearers can be compensated.

Adjustment is as follows: First, loosen the groove screws. Then turn with a 4 mm allen key the eccentric in clockwise or counterclockwise. The marking found on the eccentric shows the position. If the mark is turned to the right, the sash is moved to the right. If the mark is turned to the left, the sash is moved to the left.

When the sash is at the desired position, tighten the groove screw again. Do not forget to overload the groove screw !. Torque max. 4,5 Nm

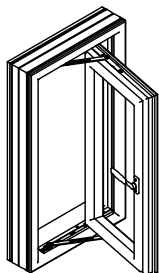


Bottom gear shown

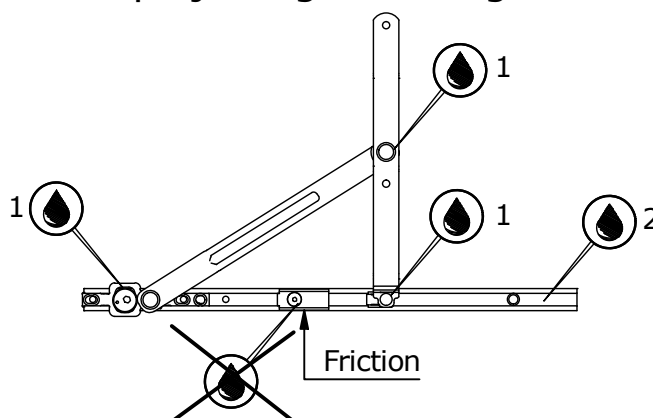


3 +0,5
-0,0 (nominally)

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Maintenance and lubrication of projecting side hung hardware



The following places to be lubricated at least once a year.
If the gearing is placed in aggressive environment, lubricate when necessary.

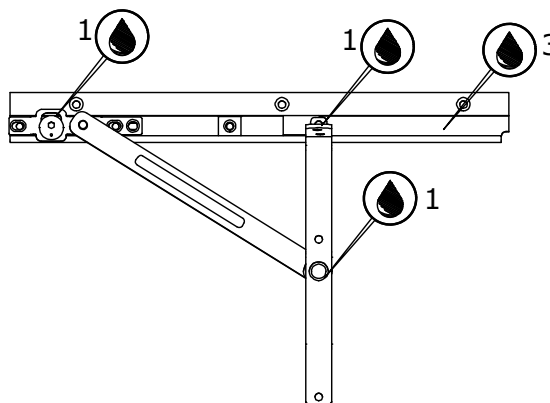
Use acid free oil of all places, except inside the alu-rail, use white vaseline.

When dirty, wash the gear by using normal dishwasher detergent with neutral Ph value.

- 1: The connection/ rivet between the parts (oil)
- 2: Inside the alu-rail (vaseline)
- 3: The bottom alu-rail gliding surface (vaseline)

It is important to clean and lubricate the alu-rail sliding surface, this will ease the gearing movement.

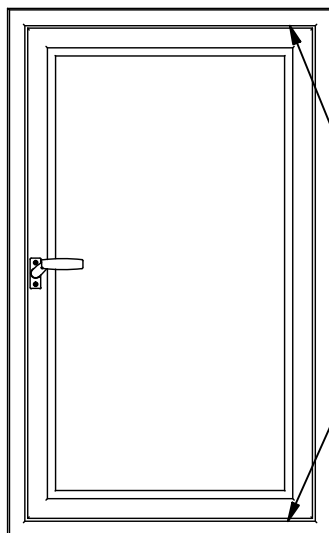
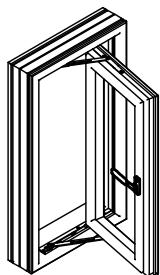
The friction slider must not be lubricated.



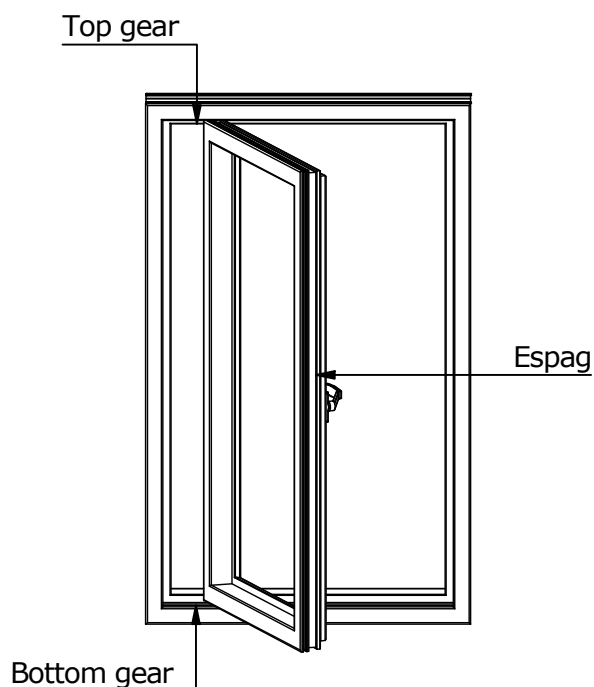
Garant M-5

Proj. Side hung, level rebate

Standard aluclad timber profile



Art. no. 200520
Projecting side hung, level rebate hardware

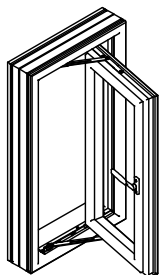


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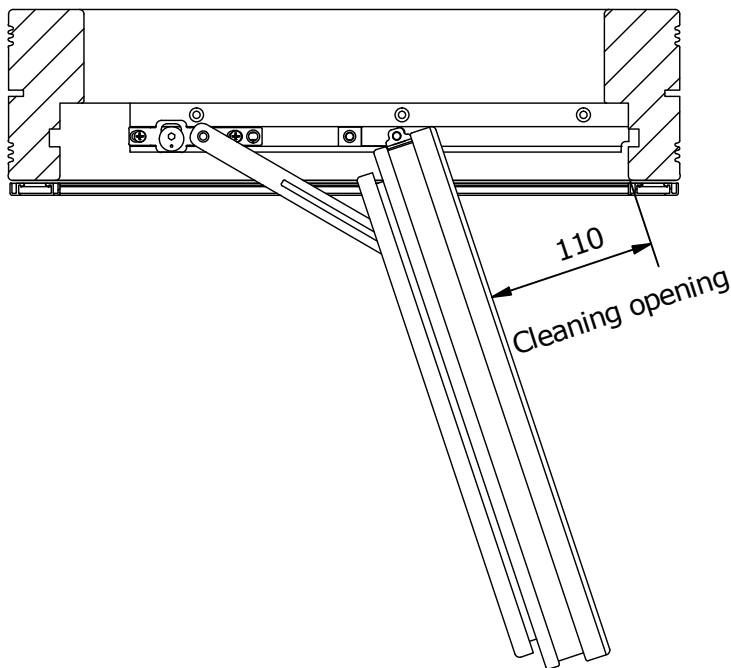
Garant M-5

Proj. Side hung, level rebate

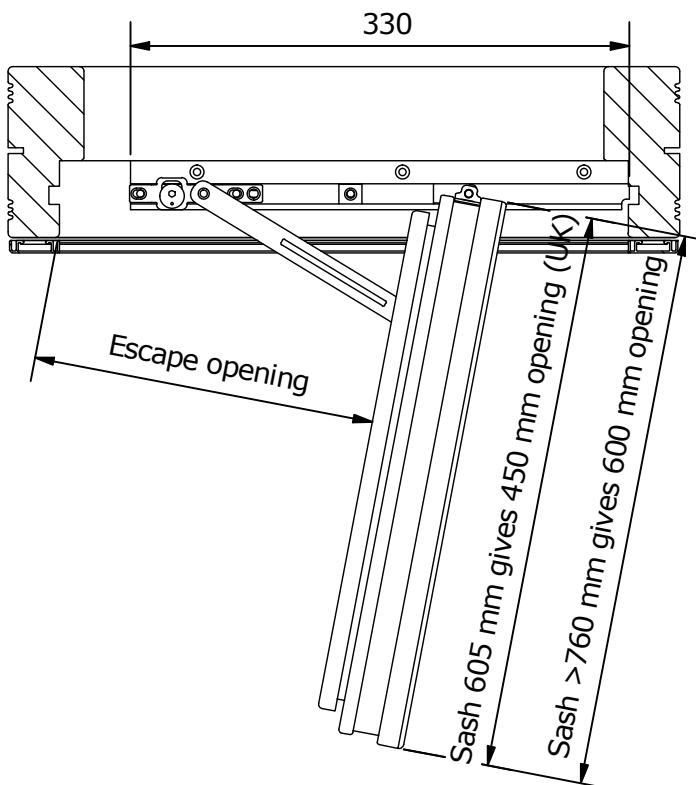
Standard aluclad-timber profile



Bottom gear



Bottom gear

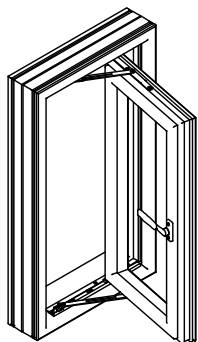


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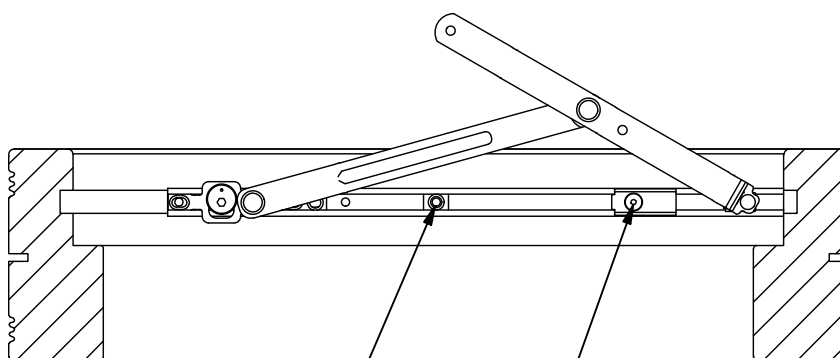
Garant M-5

Proj. side hung, level rebate

Standard aluclad-timber profile



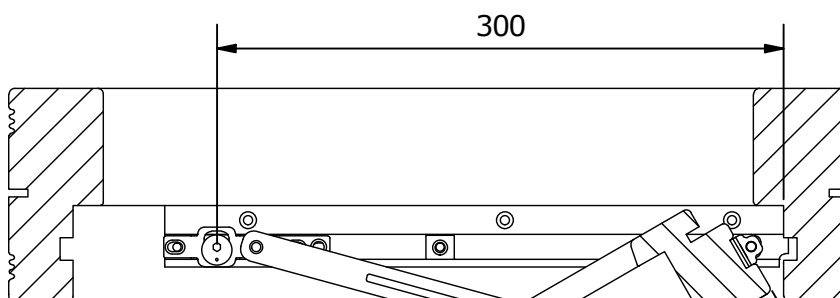
Top gear



Stop fitted here

Friction stay always in the top

bottom gear



300

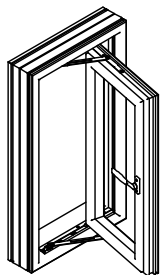
Min. 325 mm max. 800 mm

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Garant M-5

Proj. Side hung, level rebate

Standard aluclad-timber profile



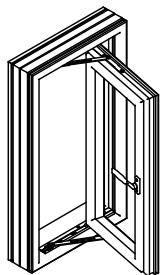
Art. Nr. 200520

1: Sash weight max 60 kg

2: The glass should be fitted correctly by using the " diagonal" glazing method

Sash height	1600			45	45	60	60
	1500			45	45	60	60
	1400			45	45	60	60
	1300			45	45	60	60
	1200			45	45	60	60
	1100			45	45	60	60
	1000			45	45	60	60
	900			45	45	60	60
	800			45	45	45	60
	700			45	45	45	
	600			45	45	45	
	500			45	45		
	400						
	300						
		300	400	500	605	700	800
		Sash width					

60	Min. 60 cm opening height, min. 50 cm opening width and H+W = min. 150 cm
45	Min. 45 cm opening and HxW= min. 0,33 m ² (UK)

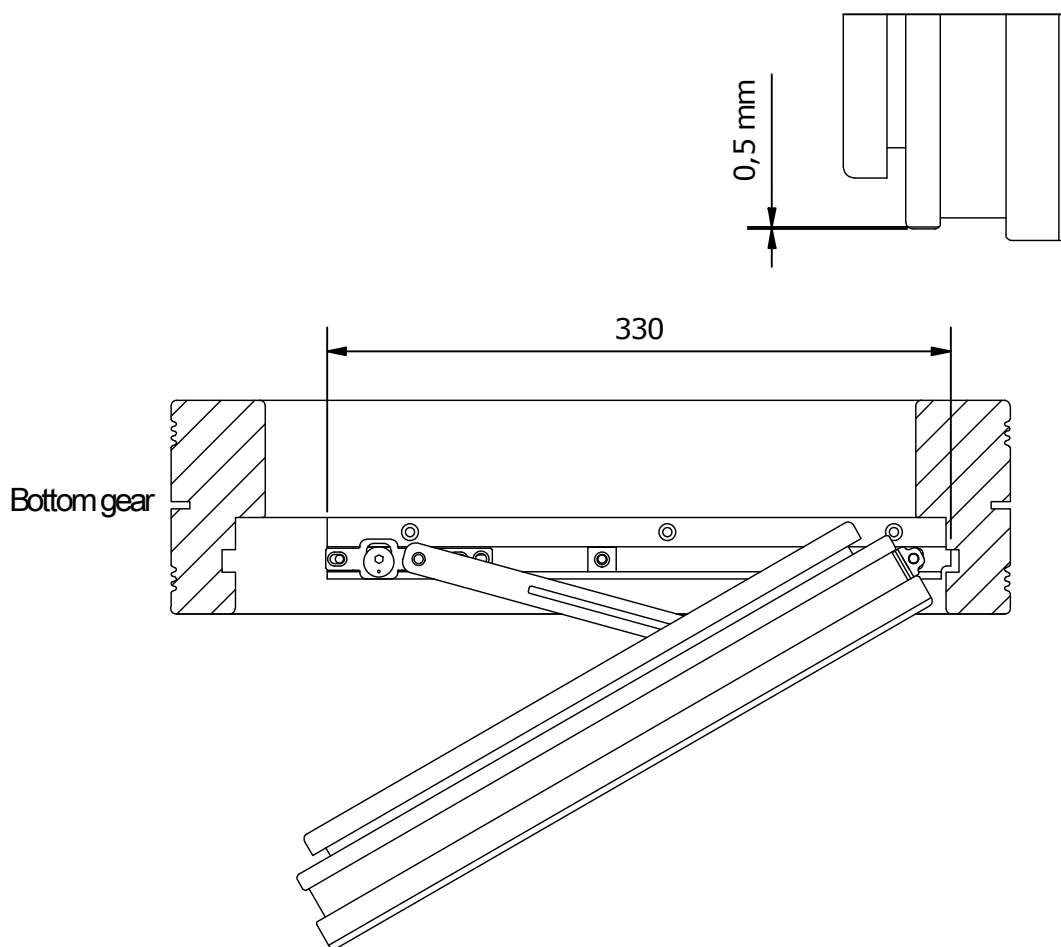
**Art. no: 200520****Projecting side hung, 60 kg sash weight**

It is possible to use sash weight up to 60 kg

It can be necessary to machine the bottom of the sash slightly, to avoid the stay arm scratching the sash.

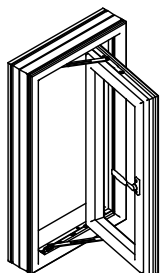
Great care must be taken when the windows as sash are put together in the factory.

when installing the window in to the building the diagonal wedging method must be used. secure the sash has even space on all 4 sides.
Please insert wedges and blocks as outlined in the recommendation
Cf. Window industry instructions.



Garant M-5

Proj. Side hung
side adjustment generally



Art. no: 200520

Projecting side hung, 60 kg sash weight

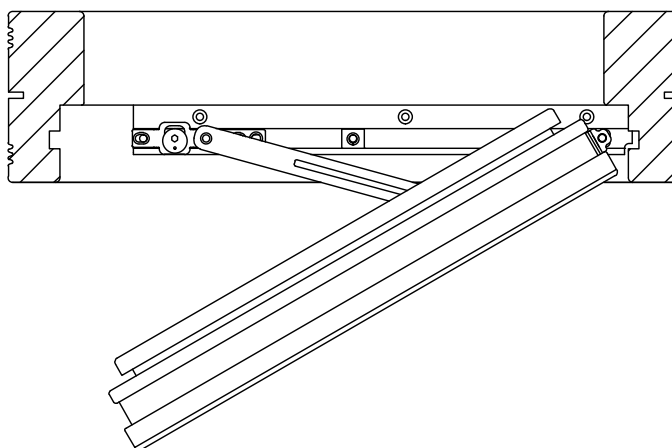
It is possible to use sash weight up to 60 kg

It can be necessary to machine the bottom of the sash slightly,
to avoid the stay arm scratching the sash.

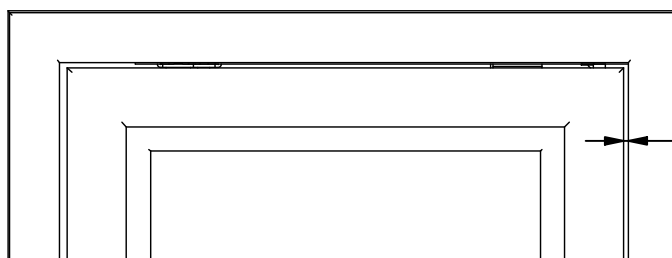
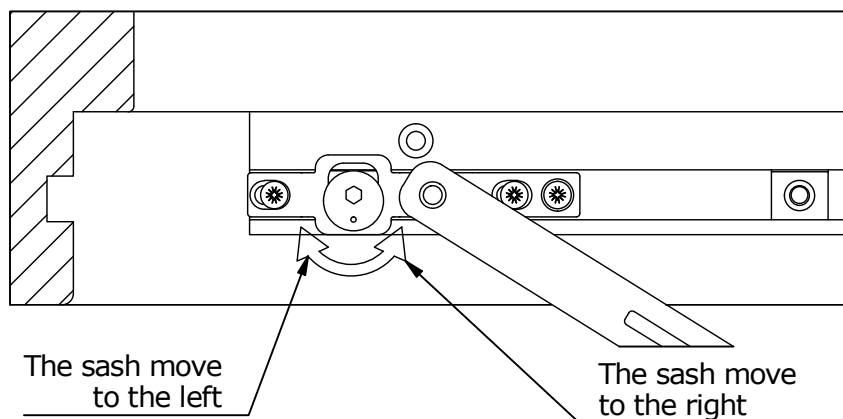
Great care must be taken when the windows as sash are put together in
the factory.

when installing the window in to the building the diagonal wedging method
must be used. secure the sash has even space on all 4 sides.

Please insert wedges and blocks as outlined in the recommendation
Cf. Window industry instructions.

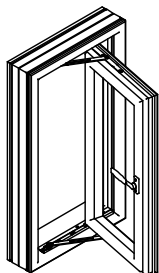


Bottom gear
shown

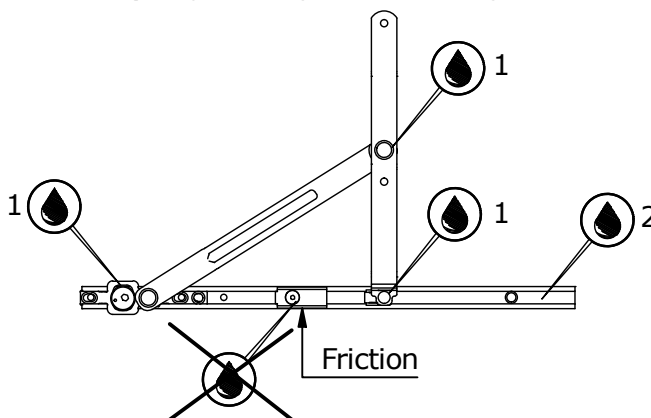


$3^{+0,5}_{-0,0}$ (nominally)

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Maintenance and lubrication of projecting side hung hardware



The following positions must be lubricated at least once a year.

If the hardware is placed in aggressive environment, like costal areas more often lubricate will be required necessary.

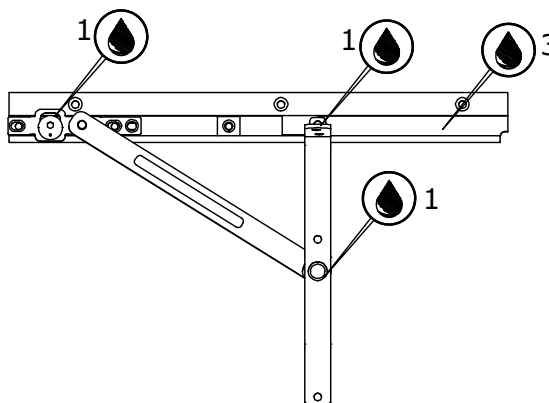
Use acid free oil of all places, except inside the alu-rail, use white vaseline.

When dirty, wash the hardware by using normal washing up liquid detergent with neutral Ph value.

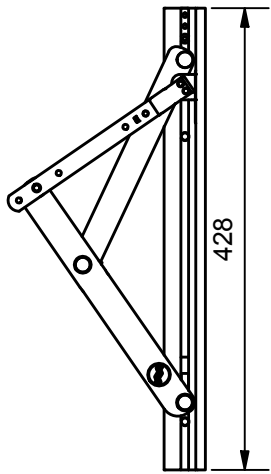
- 1: The connection/ rivet between the parts (oil, acid free)
- 2: Inside the alu-rail (vaseline)
- 3: The bottom alu-rail gliding surface (vaseline)

It is important to clean and lubricate the alu-rail sliding surface, this will ease the hardware movement.

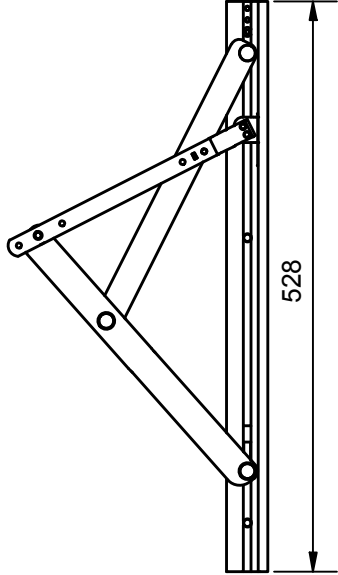
The friction slider must not be lubricated.



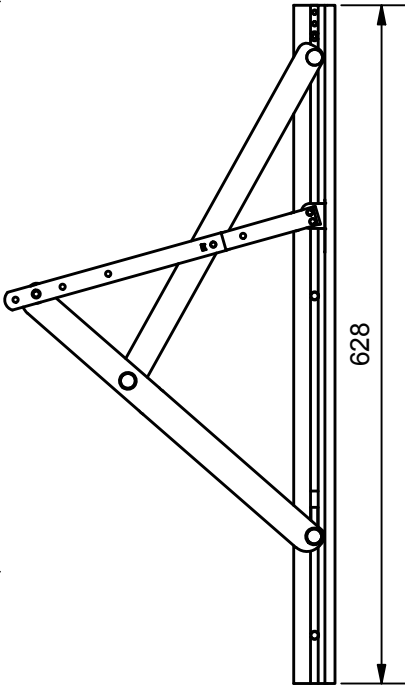
Art. no. 205105
Top swing, timber, M5
Sash weight max. 70 kg



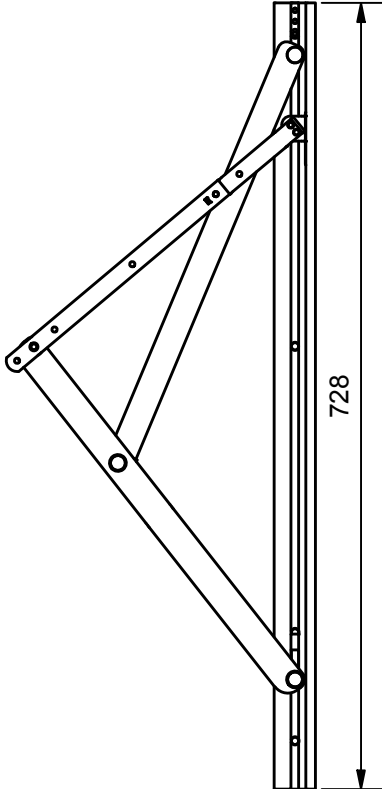
Art. no. 205106
Top swing, timber, M6
Sash weight max. 70 kg



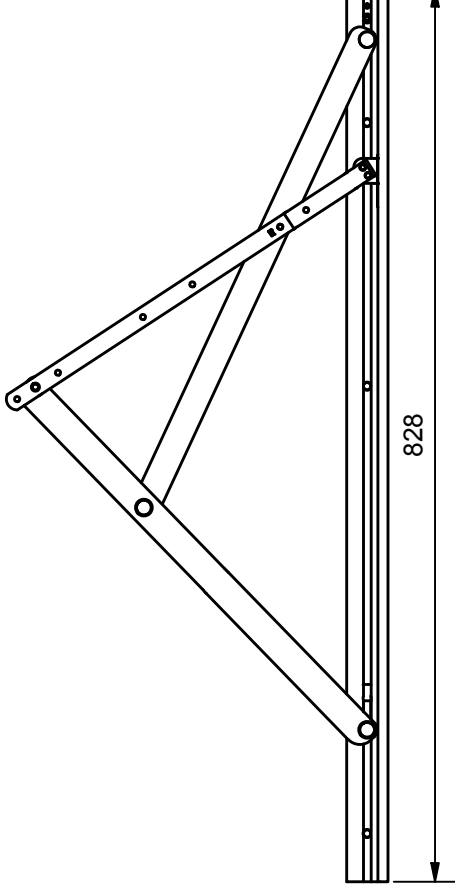
Art. no. 205107
Top swing, timber, M7
Sash weight max. 70 kg



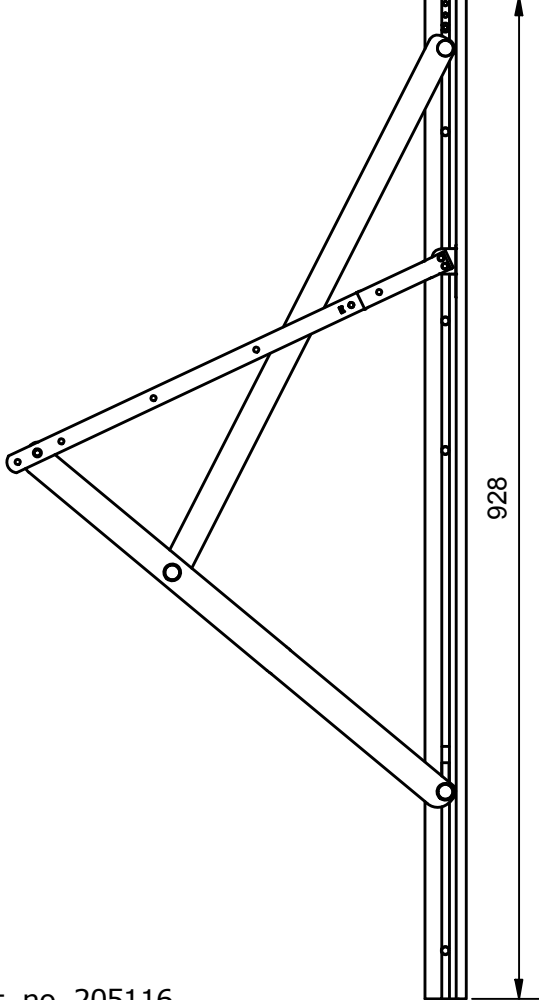
Art. no. 205108
Top swing, timber, M8
Sash weight max. 70 kg



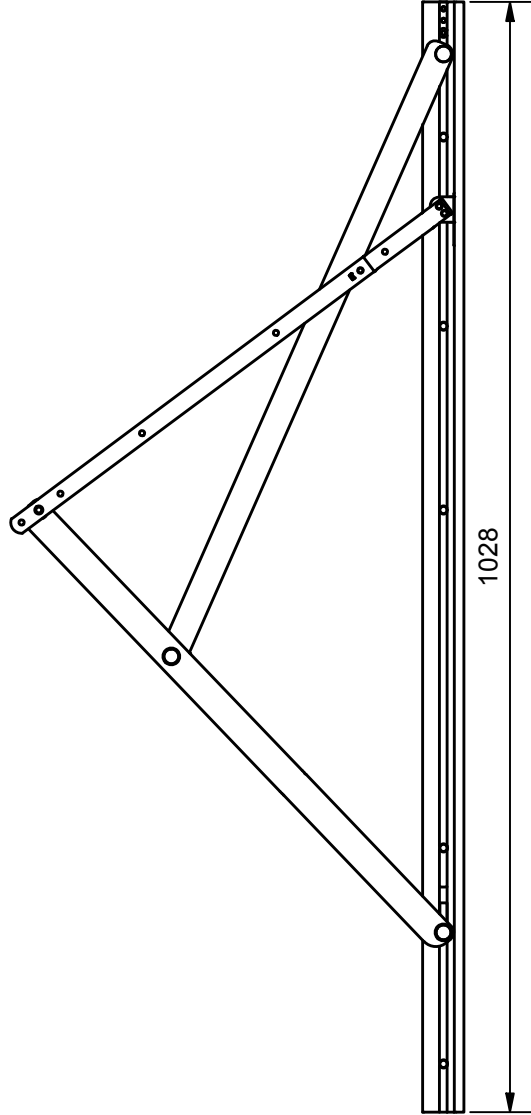
Art. no. 207509
Top swing, timber, M9
Sash weight max. 70 kg



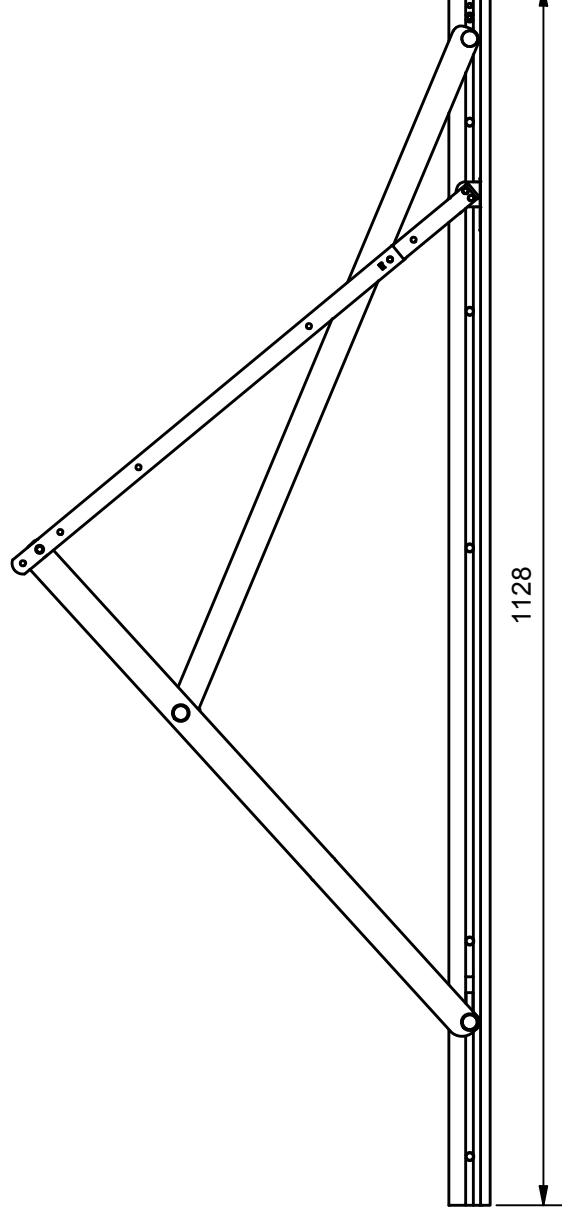
Art. no. 205110
Top swing, timber, M10
Sash weight max. 70 kg



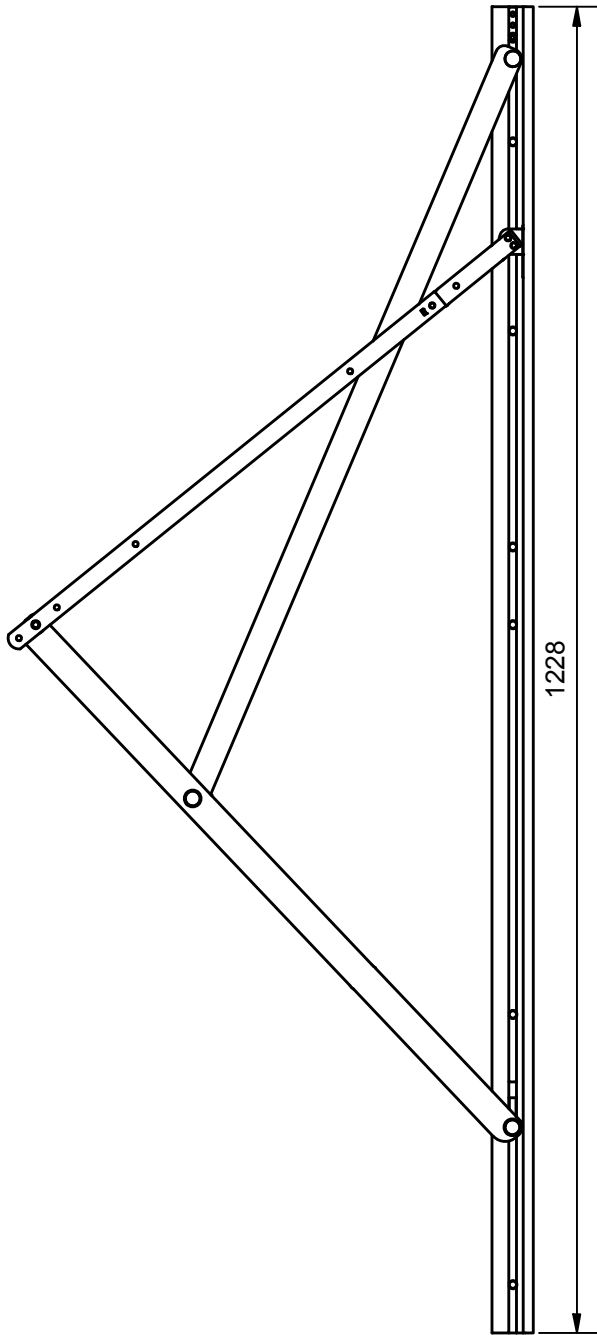
Art. no. 205111
Top swing, timber, M11
Sash weight max. 70 kg



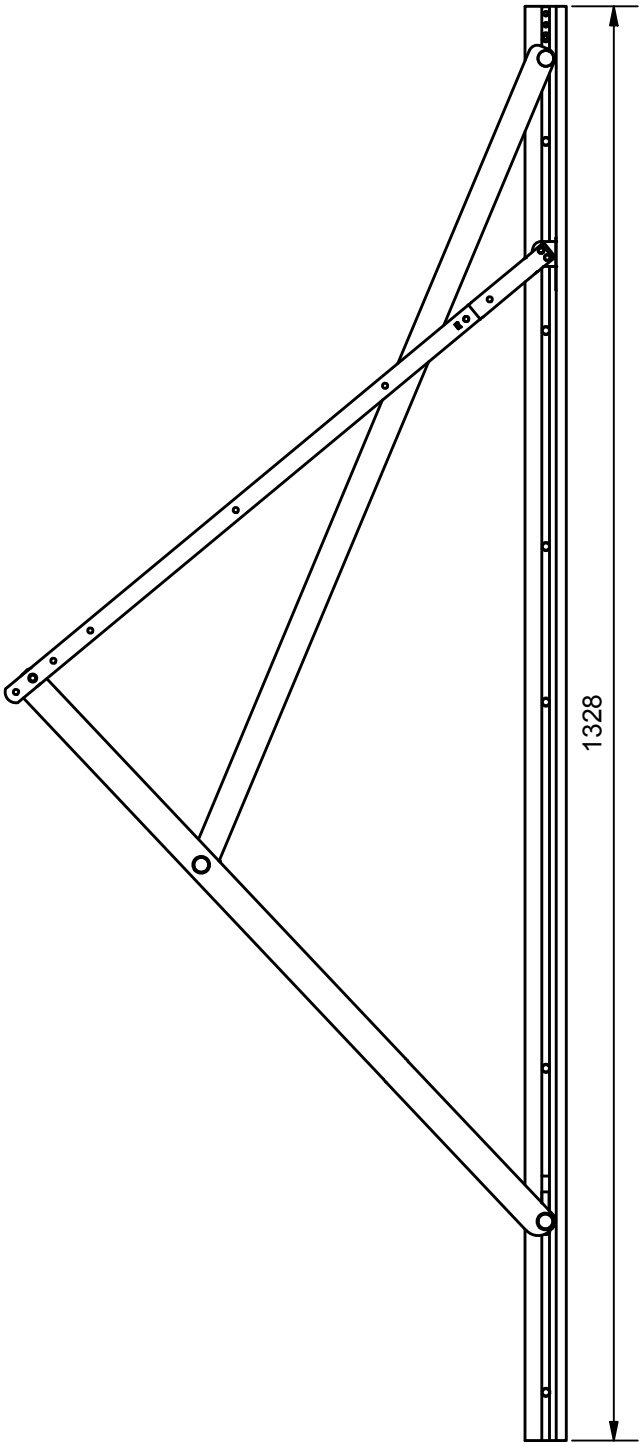
Art. no. 205112
Top swing, timber, M12
Sash weight max. 70 kg



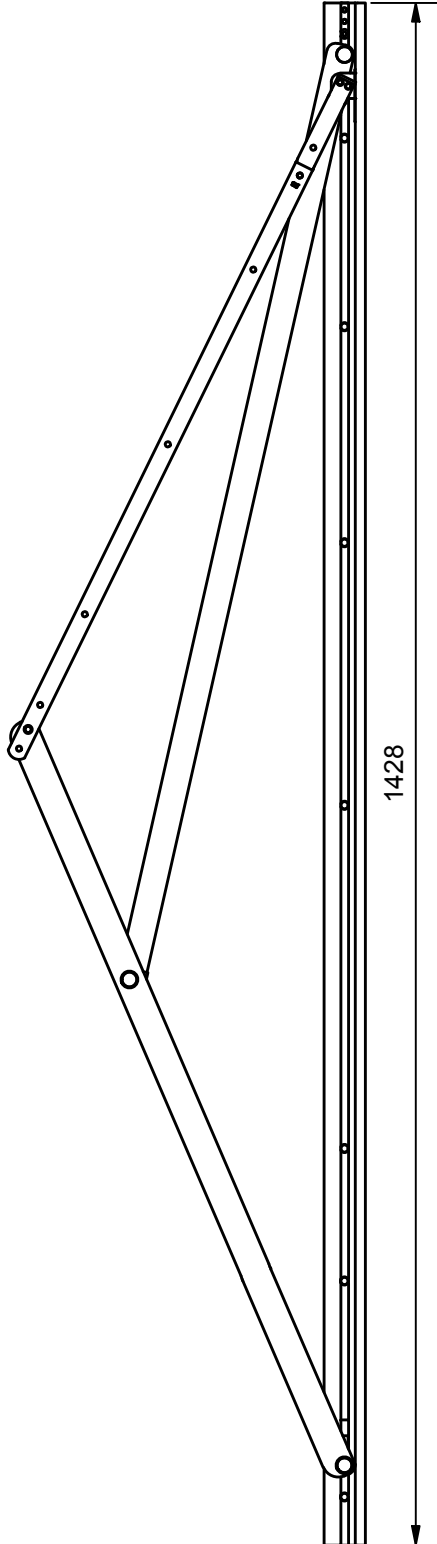
Art. no. 205113
Top swing, timber, M13
Sash weight max. 70 kg



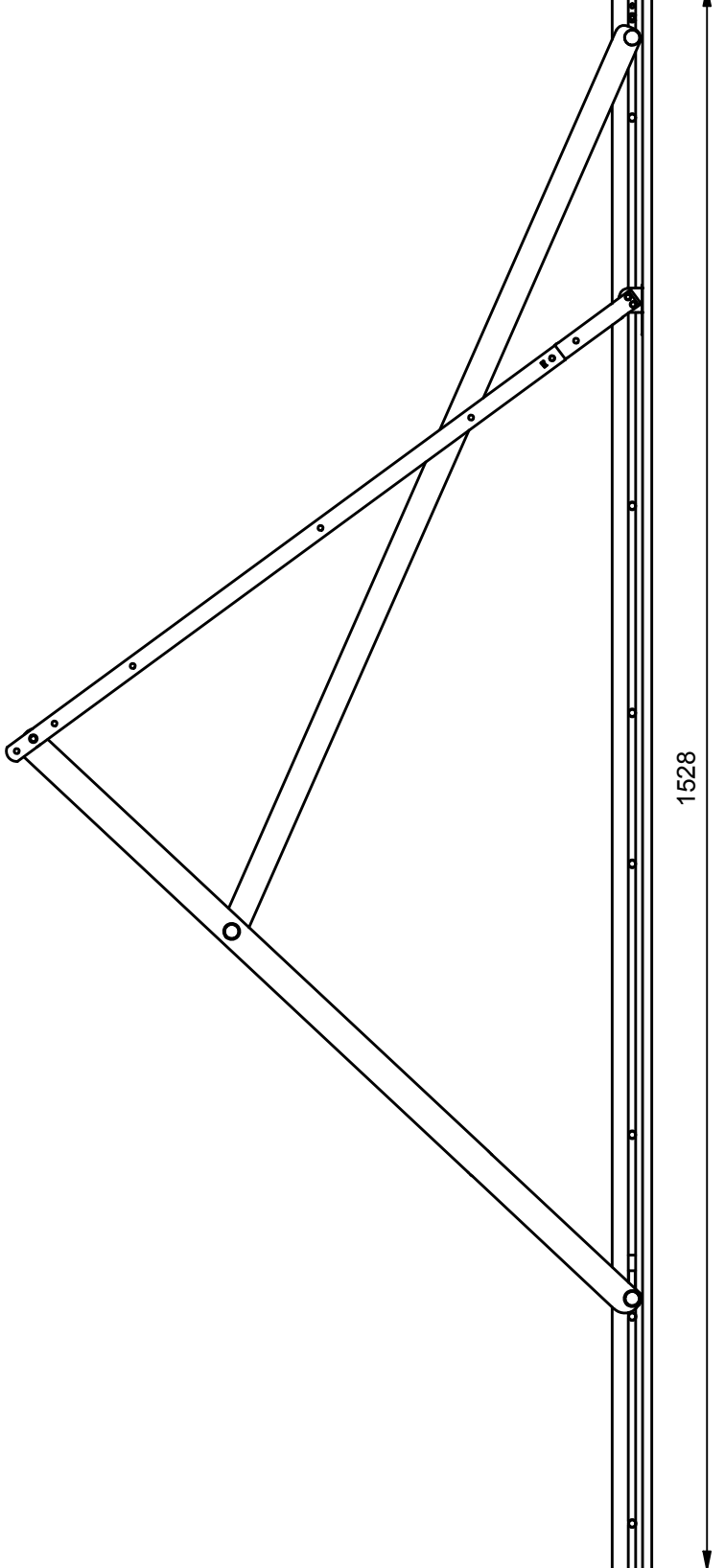
Art. no. 205114
Top swing, timber, M14
Sash weight max. 70 kg



Art. no. 205115
Top swing, timber, M15
Sash weight max. 70 kg



Art. no. 205116
Top swing, timber, M16
Sash weight max. 70 kg

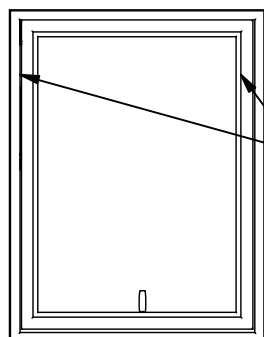
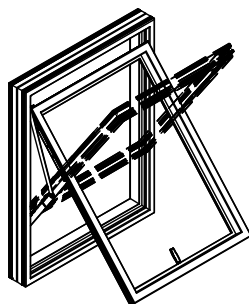


Use screws as Red Horse:

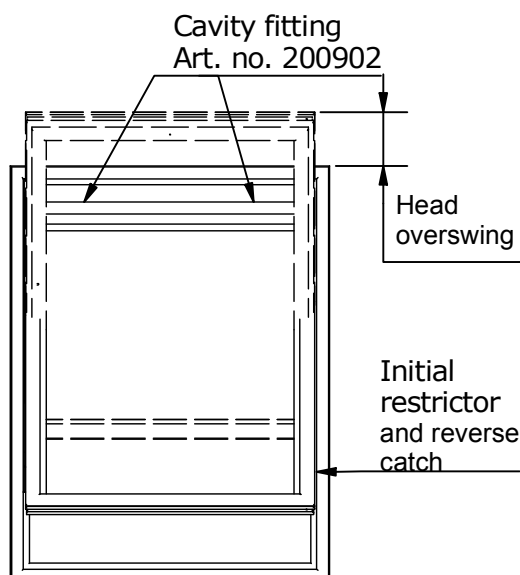
 Countersunk head
SPS CSH-R 3,3 x 23 TX 10 TC

Garant M-5 Top swing

Standard timber profile



Topswing hardware, timber
Art. no. 205105-205116



Cavity fitting
Art. no. 200902

Head
overswing

Initial
restrictor
and reverse
catch

Standard Mila M-7 Topswing gear

Art. no.	Sash height mm Min - Max.	Gear lenght mm	Head-Overswing mm
205105	423-522	428	Approx. 38-137 mm
205106	523-622	528	Approx. 38-137 mm
205107	623-722	628	Approx. 38-137 mm
205108	723-822	728	Approx. 38-137 mm
205109	823-922	828	Approx. 38-137 mm
205110	923-1022	928	Approx. 38-137 mm
205111	1023-1122	1028	Approx. 38-137 mm
205112	1123-1222	1128	Approx. 38-137 mm
205113	1223-1322	1228	Approx. 38-137 mm
205114	1323-1422	1328	Approx. 38-137 mm
205115	1423-1522	1428	Approx. 38-137 mm
205116	1523-1573	1528	Approx. 38-137 mm

A window with min. sash height gives 38 mm over swing in reversed position.
A window with max. sash height gives 137 mm over swing in reversed position.

The above is based on Mila proposed profile geometry.
A large frame will reduce the over swing, a slim frame increase the over swing.

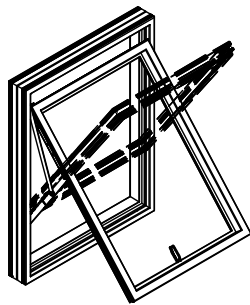
Installing the window into the building:

It is necessary to be careful when fitting the hardware in to the frame and sash, as well as when the window is installed into the building.
To avoid the window mall function, it should be fitted correctly by using the diagonal method, as well as securing the bottom are lined up by the usage of a spirit level. support blocks under each jam. Cf. Window industry instructions.

The frame must be adjusted and maintained to achieve the correct distance of the sides, between the frame and the sash. The prescribed distance for top swing hardware is $9.5 + 1 / -0$ mm for the frame.

Garant M-5

Top swing

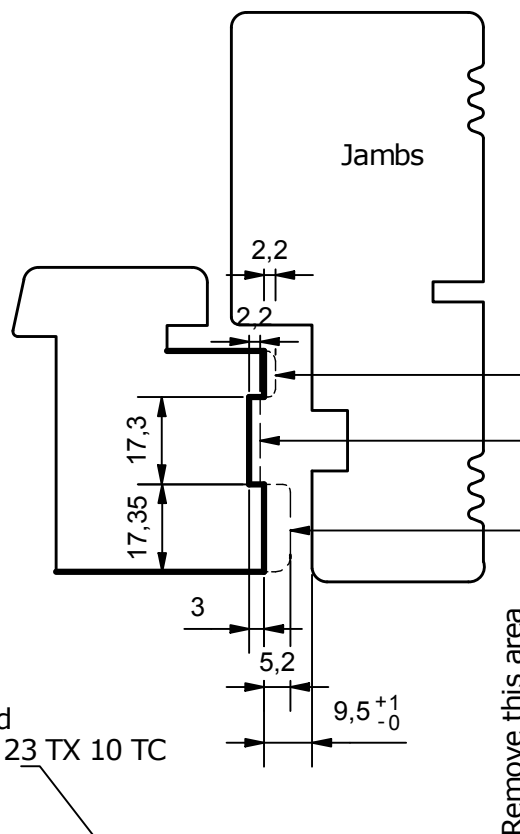
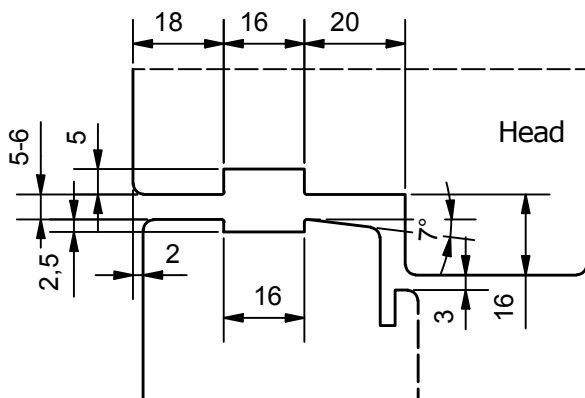


Standard timber profile



Art. no. 205105 - 205116 and 205125 - 205136

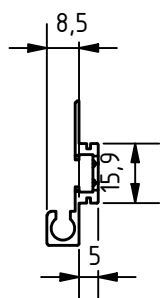
Distance between frame and sash



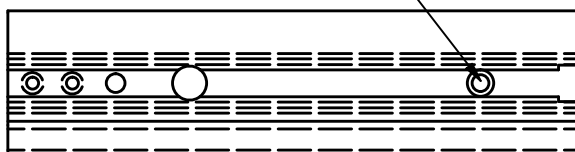
Use screws like Red Horse:



Countersunk head
SPS CSH-R 3,3 x 23 TX 10 TC

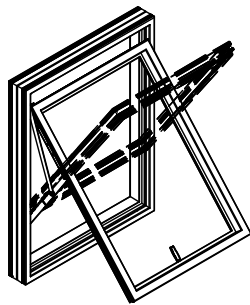


Alu-rail



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Garant M-5 Top swing



Standard timber profile



Topswing hardware.

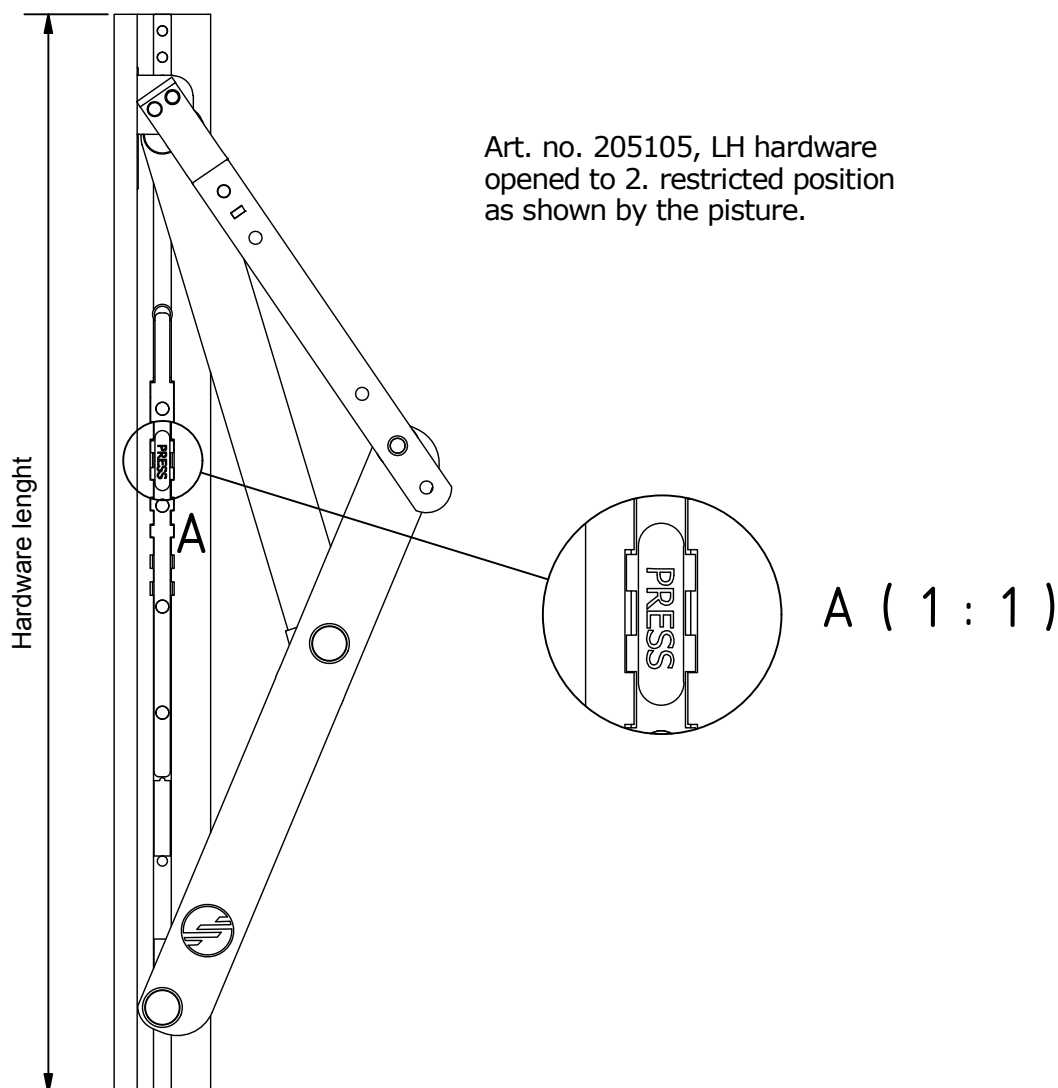
A set of hardware consist of 2 parts, a left and a right part.

The initial and reverse restrictor is placed in left hand hardware.

The restrictor has 2 positions, both can be used in opening and reverse positions.

When the frame is retraced, the restrictor will automatically engage without further operation.

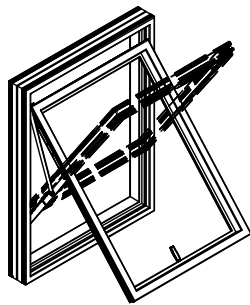
Always use the largest possible hardware, lengths and approximate responding sash sizes see page 7-2



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Garant M-5

Top swing



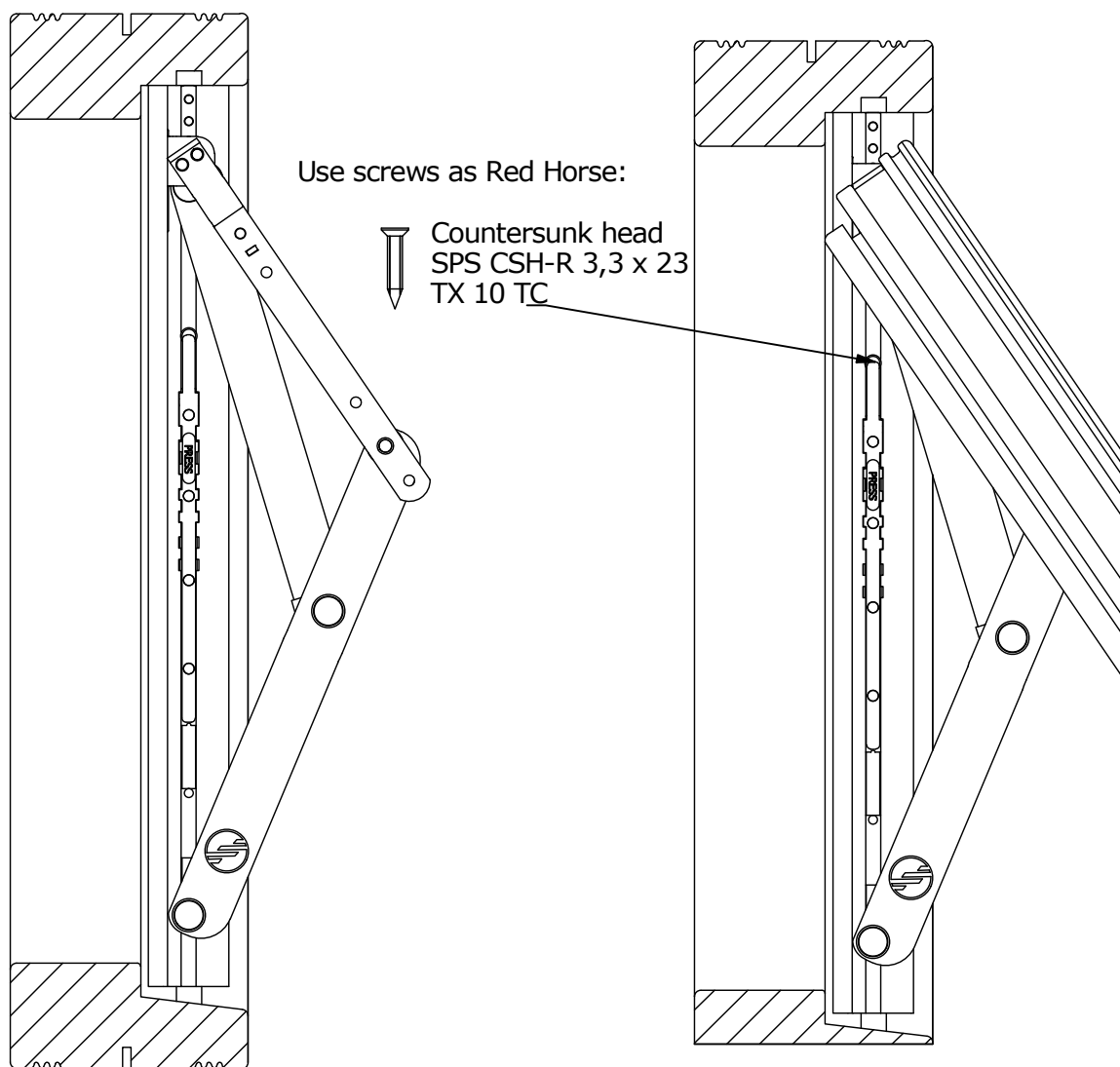
Standard timber profile



How to fit:

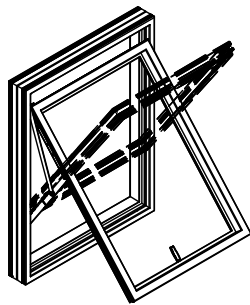
1. Fit the hardware into the frame

2. slide the sash into the arms and fasten

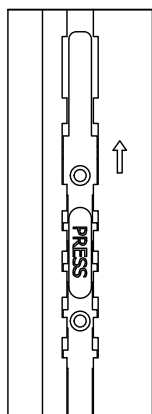


3. Close and reverse the sash to check that the window and hardware works correct.
The hardware has to be lubricated before the window is sent out to the customer.

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Operating of the restrictor:



When the window is closed the restrictor is pressed below the aluminium track and is not engaged.

Fig. 1

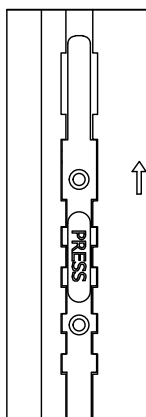


Fig. 2

When the sash is opened, the integral restrictor bar will move until it engages into the first pre punched slots in the aluminium track.
The sash movement is limited to an opening of approx 90 mm.

To close the window:
When the sash is retracted, the restrictor will automatically engage without further operation.

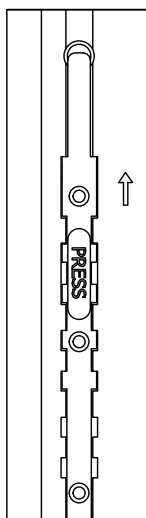


Fig. 3

Opening in addition to first position
See Fig. 2

Hold the handle of the sash with one hand and press down until the restrictor is free of the pre punched slots with the free hand.
The sash can be pulled to close the window.

For Reversing and polish position:

When the frame is turned to polish position, press down the restrictor bar and pass both the pre punched restricted positions in aluminium track by control the sash from closing by holding the window handle with the other hand. Continue the opening until to the arm length. Then continue rotating of the sash by pulling down the sash top
Keep control of the movement of the sash throughout the turn until the restrictor is engaged again, as shown in Fig. 3. The frame is now maintained in the cleaning position.

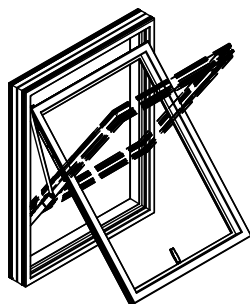
Further reverse to position as shown in fig. 2 is possible by pulling the sash towards the frame in the direction of cleaning.

After cleaning the restrictor bar is depressed to pass both pre punched restricted positions, the sash pushed gently in the direction away from the frame and back towards the restricted position. When rotated to a position where the handle can be reached safely at the arms lenght, pull the sash to the closed position.

Garant M-5

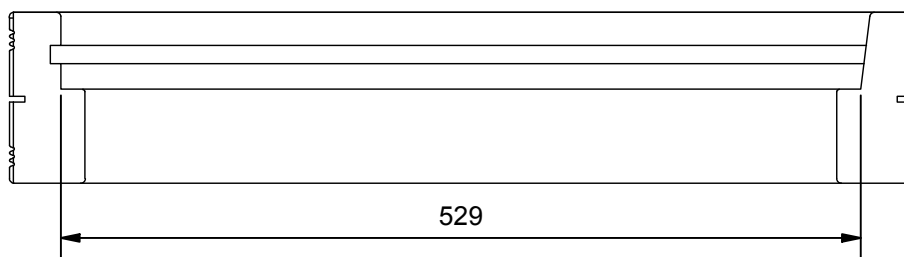
Top swing

Standard timber profile



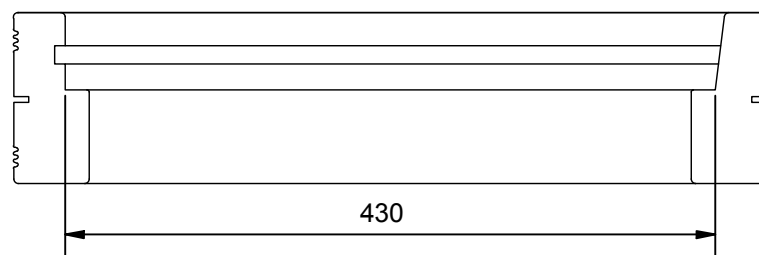
Maximum sash height 522 mm

Maximum sash height is reached, when there is almost space for the next, larger size of hardware.



Minimum sash height is 423 mm

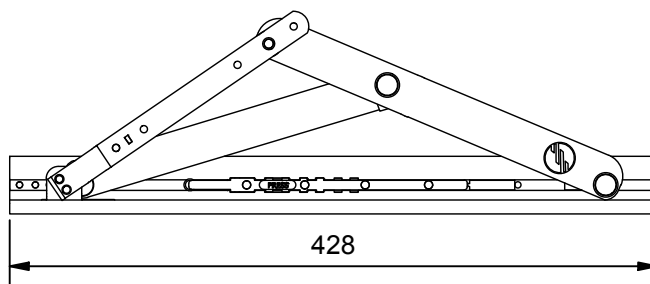
Allow a bit of extra space below the hardware to avoid scratching the sill when fitting the hardware.



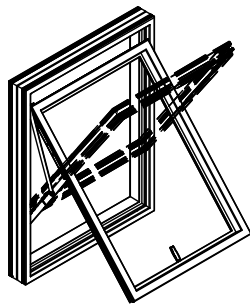
Sash height:

The length of hardware Art. no. 205105 is 428 mm

The length increases 100 mm for each size.



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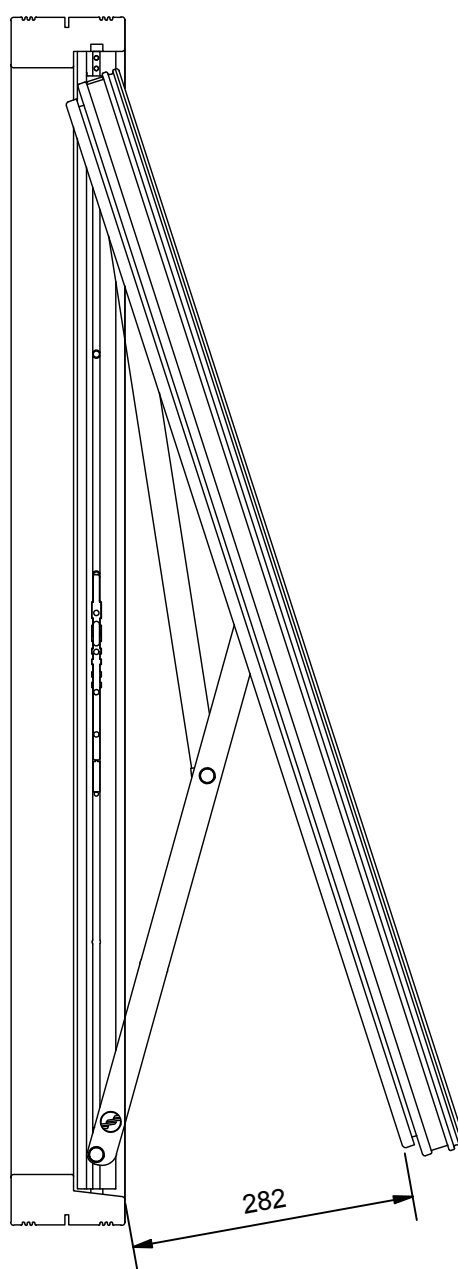
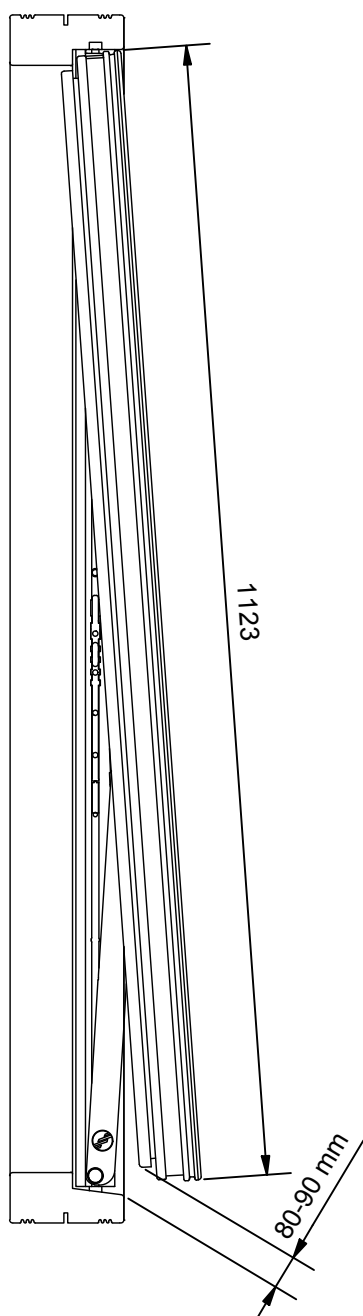


Restricted positions:

The drawing shows M12, 1126 mm sash in two different restricted positions.

The 1. restricted position, the opening for the sash is to 80-90 mm.

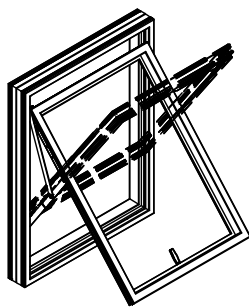
The 2. restricted is designed as a ventilation position, with a larger opening.



Garant M-5

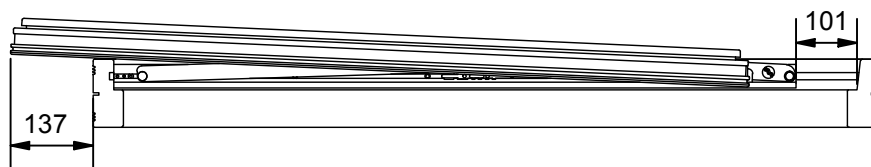
Top swing

Standard timber profile

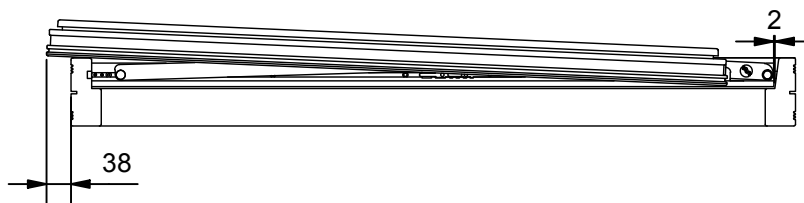


If the sash is reversed until it hits the head, the overswing should be approx. min 37 mm and max 137 mm

M12 max. sash
1222 mm sash



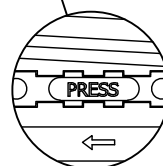
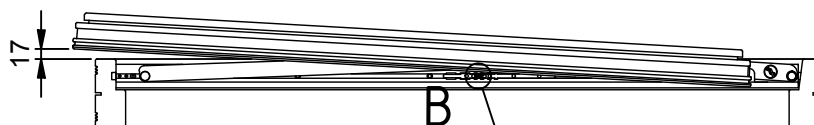
M12 min. sash
1123 mm sash



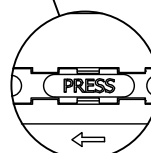
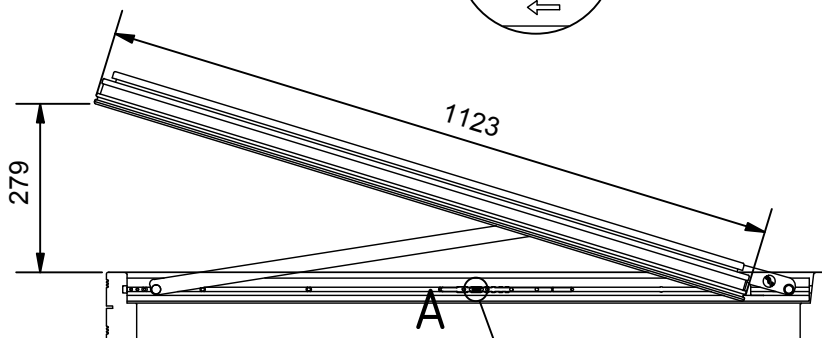
Overswing when the frame is turned to cleaning position:

Turn the sash until it engage into the 1st restricted position, there should be a good distance between sash and the wall and the overswing will have no consequences.

Turn into 2st restricted position



B (1 : 2)

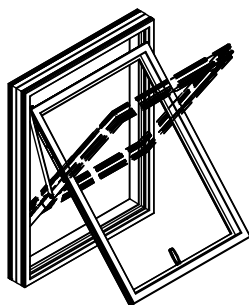


A (1 : 2)

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Garant M-5

Top swing



Standard timber profile



Art. No. 205105-205116

Sash sizes and escape openings instructive

Sash weight max. 70 kg

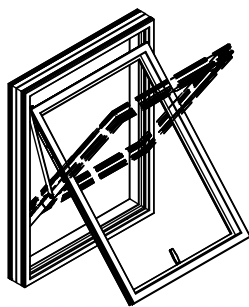
Sash height	1573		45	60	60	60	60	60	60	60	60	60	60	60
	1500		45	45	60	60	60	60	60	60	60	60	60	60
	1400		45	45	45	60	60	60	60	60	60	60	60	60
	1300		45	45	45	60	60	60	60	60	60	60	60	60
	1200			45	45	45	60	60	60	60	60	60	60	
	1100			45	45	45	45	60	60	60	60	60		
	950				45	45	45	45	60	60	60			
	900					45	45	45	45	45				
	800						45	45	45					
	700							45	45					
	600													
	500													
	423													
		400	470	520	600	700	800	900	1030	1100	1200	1300	1400	1515
		Sash width												

60	Min. 60 cm opening height, min. 50 cm opening width and H+W = min. 1
45	Min. 45 cm opening and HxW= min. 0,33 m ² (UK)

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Garant M-5 Top swing

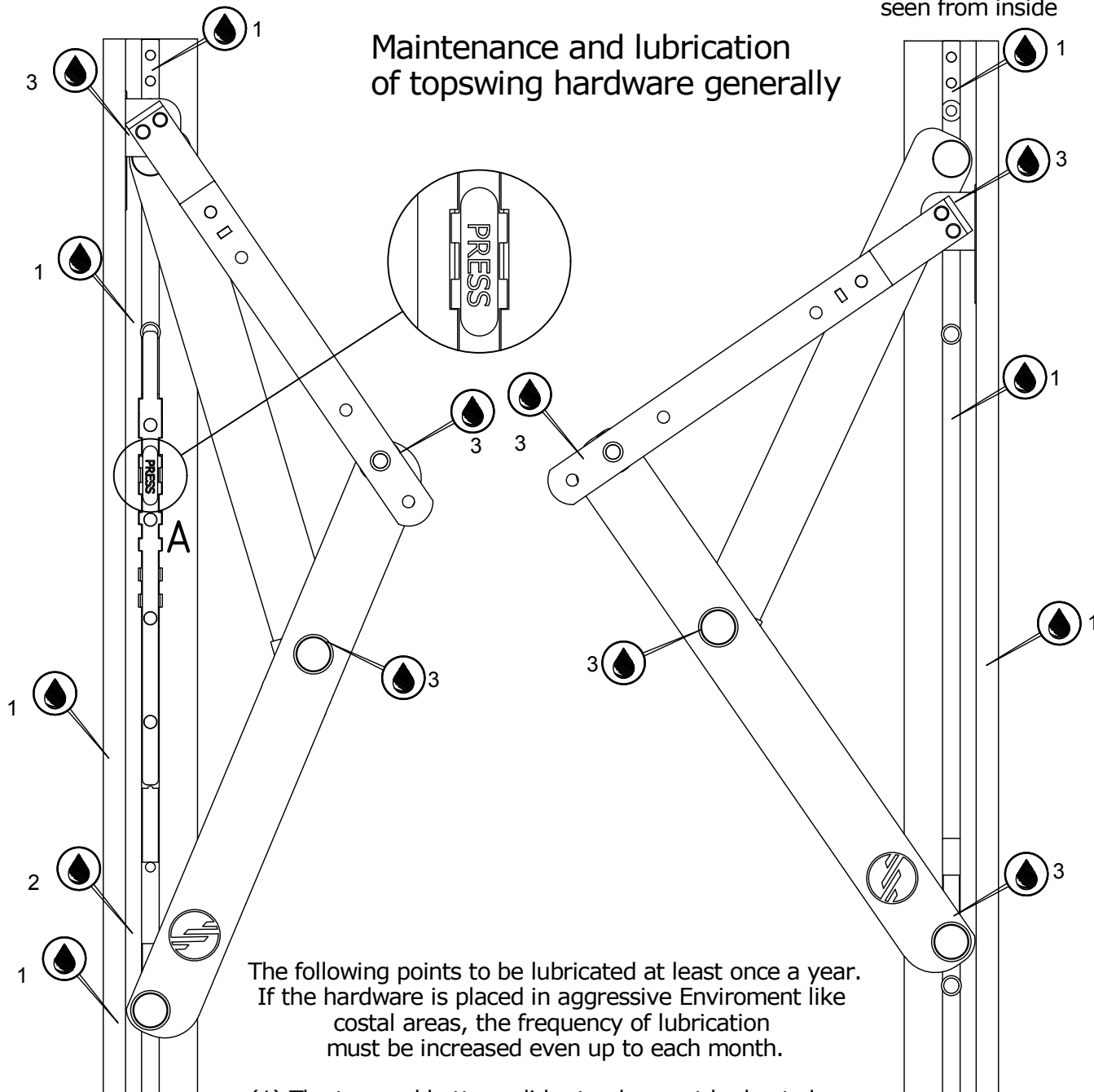
Standard timber profile



LH hardware
seen fom inside

RH hardware
seen from inside

Maintenance and lubrication of topswing hardware generally



The following points to be lubricated at least once a year.
If the hardware is placed in aggressive Enviroment like
costal areas, the frequency of lubrication
must be increased even up to each month.

(1) The top-and bottom glider tracks must be kept clean
and free from any obstructions.

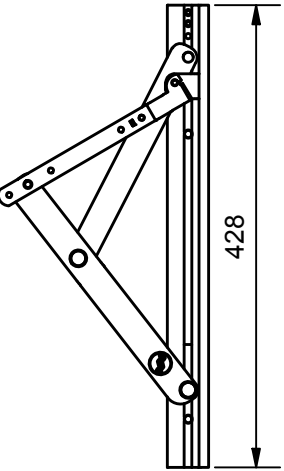
The tracks should be kept lightly lubricated. The Aluminium tracks must not be
repainted.

(2) Between the steel bar in the Restrictor and the Aluminium track (vaseline)

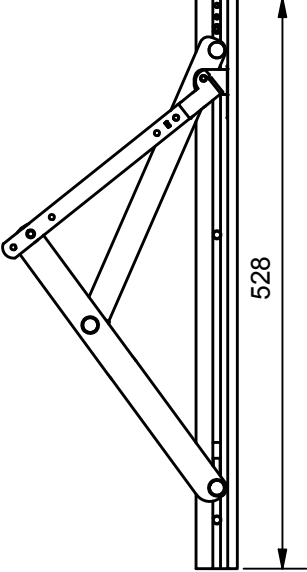
(3) All riveted joins (oil)

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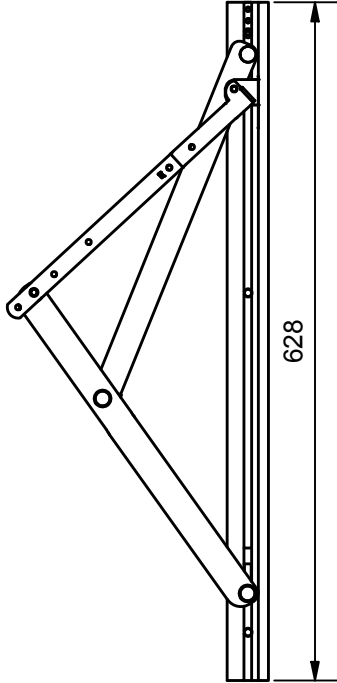
Art. no. 205125
Top swing, timber-alu, M5
Sash weight max. 70 kg



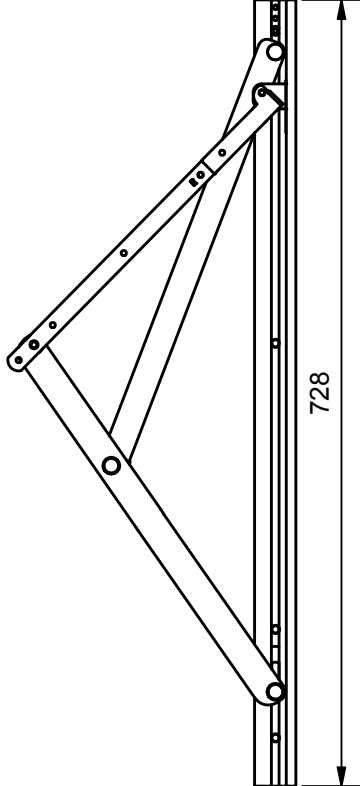
Art. no. 205126
Top swing, timber-alu, M6
Sash weight max. 70 kg



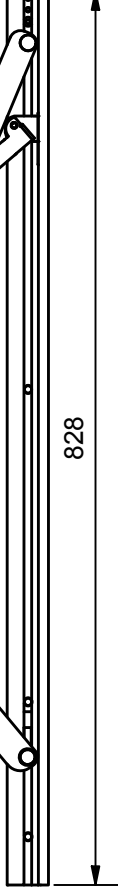
Art. no. 205127
Top swing, timber-alu, M7
Sash weight max. 70 kg



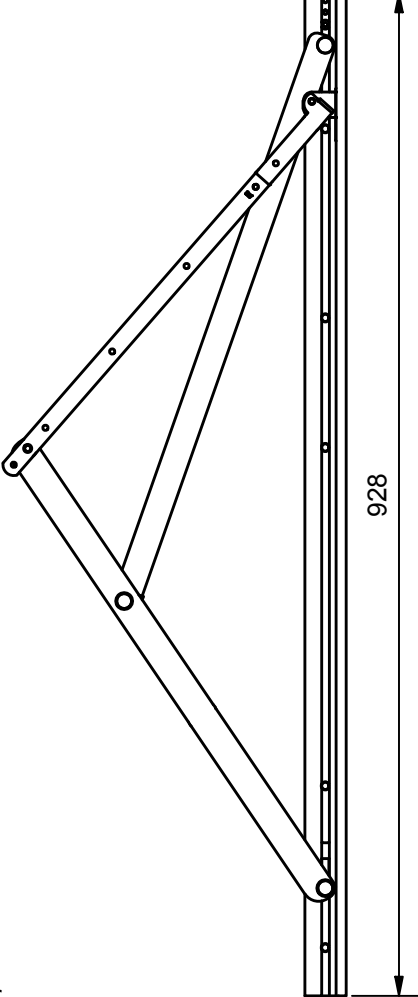
Art. no. 205128
Top swing, timber-alu, M8
Sash weight max. 70 kg



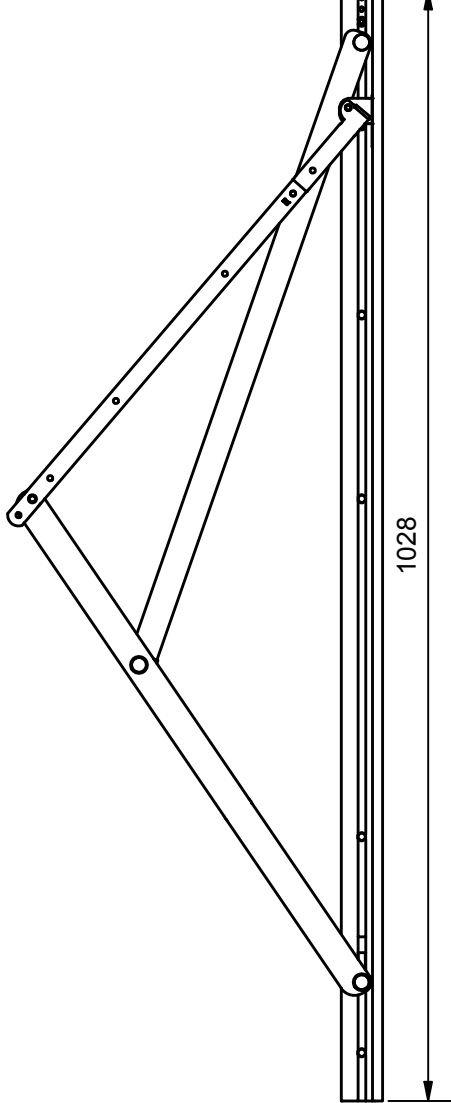
Art. no. 205129
Top swing, timber-alu, M9
Sash weight max. 70 kg



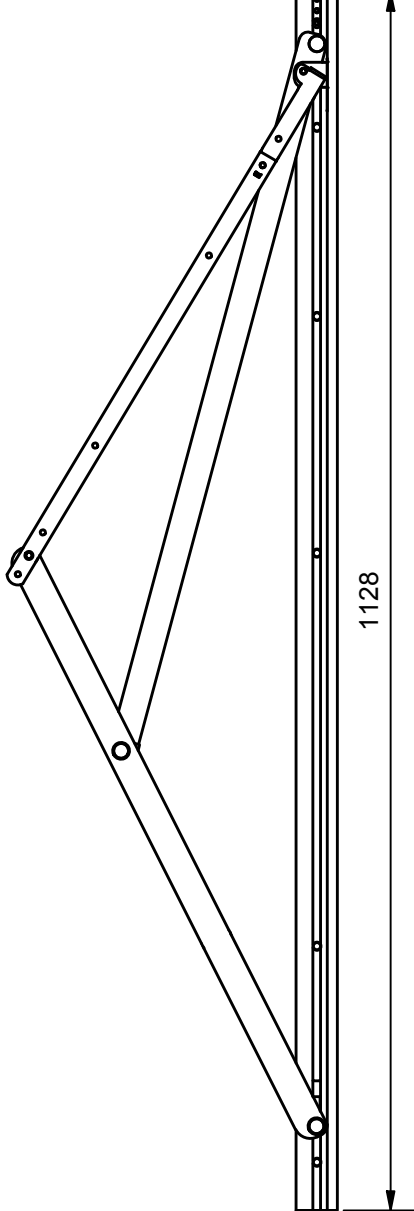
Art. no. 205130
Top swing, timber-alu, M10
Sash weight max. 70 kg



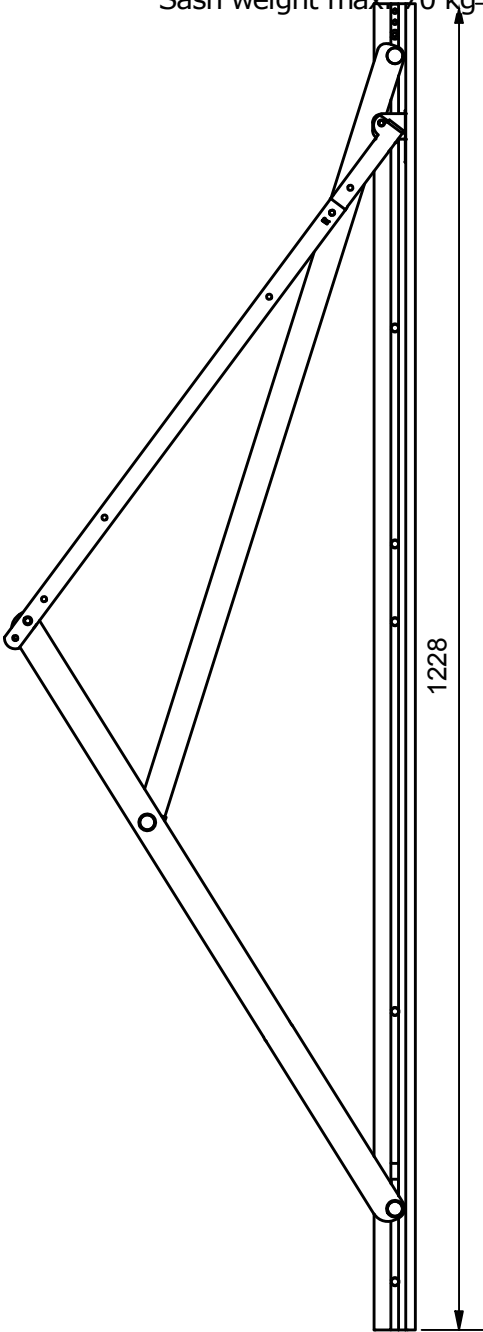
Art. no. 205131
Top swing, timber-alu, M11
Sash weight max. 70 kg



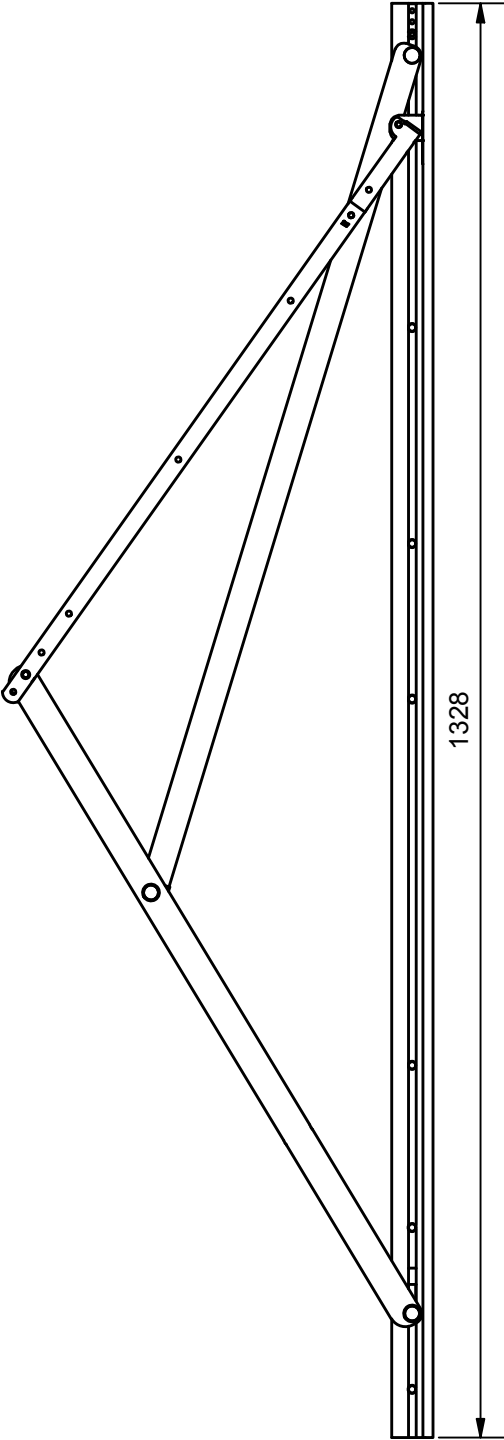
Art. no. 205132
Top swing, timber-alu, M12
Sash weight max. 70 kg



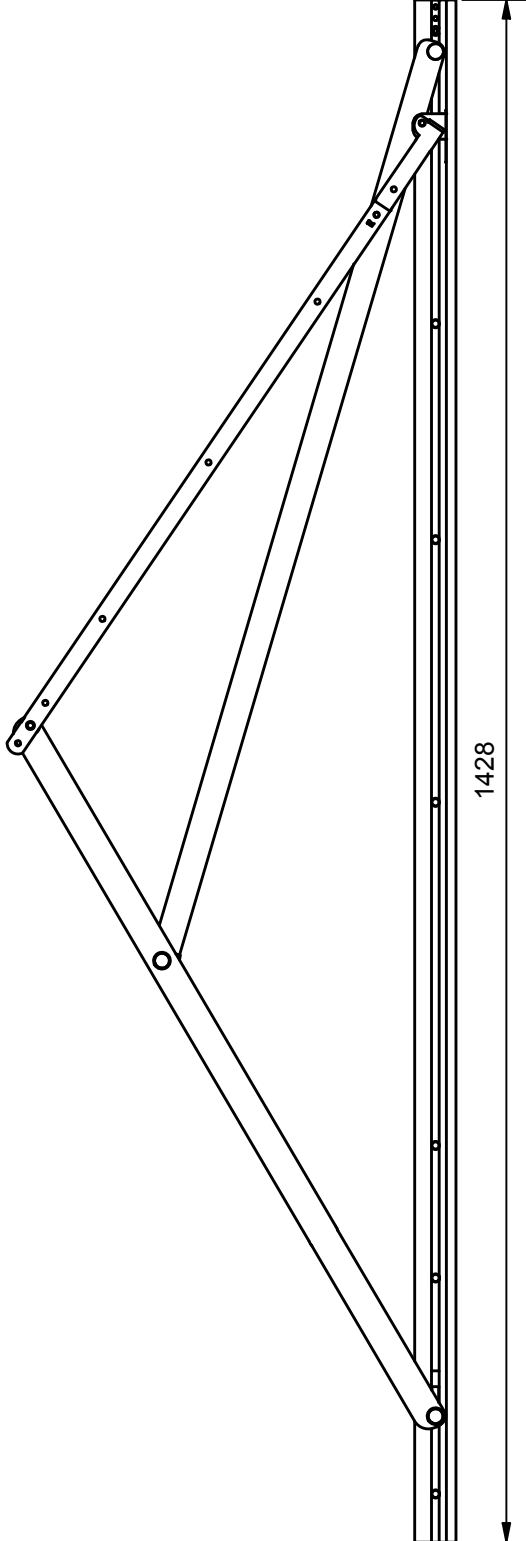
Art. no. 205133
Top swing, timber-alu, M13
Sash weight max. 70 kg



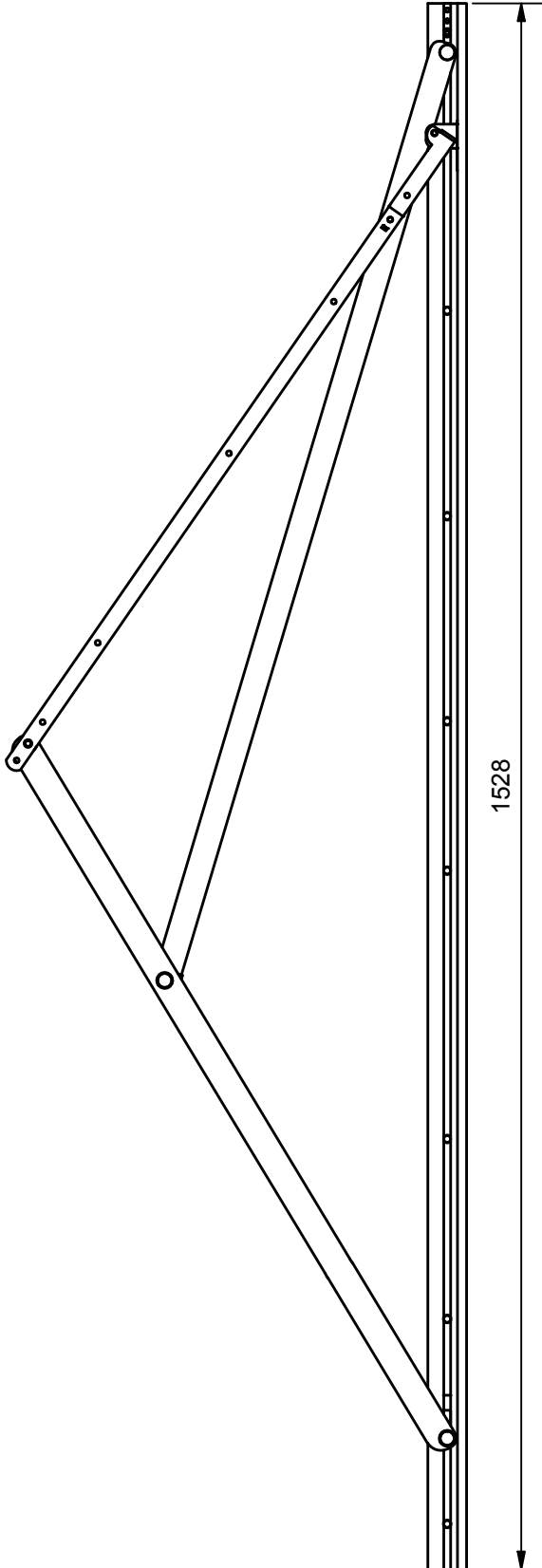
Art. no. 205134
Top swing, timber-alu, M14
Sash weight max. 70 kg



Art. no. 205135
Top swing, timber-alu, M15
Sash weight max. 70 kg



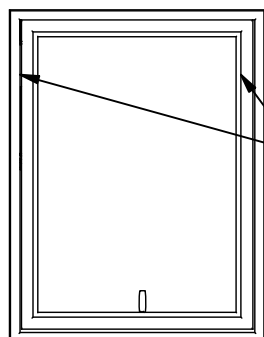
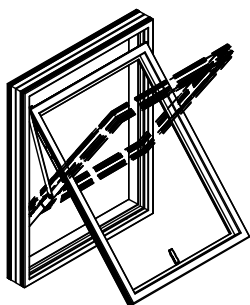
Art. no. 205136
Top swing, timber-alu, M16
Sash weight max. 70 kg



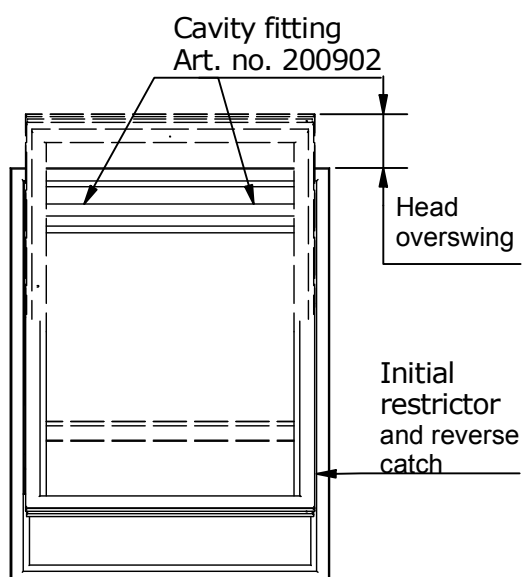
Use screws as Red Horse:

 Countersunk head
SPS CSH-R 3,3 x 23 TX 10 TC

Garant M-5 Top swing



Topswing hardware, alu-clad timber
Art. no. 205125-205136



Cavity fitting
Art. no. 200902

Head
overswing

Initial
restrictor
and reverse
catch

Standard Mila M-5 Topswing gear			
Art. no.	Sash height mm Min - Max.	Gear length mm	Head-Overswing mm
205125	423-522	428	Approx. 38-137 mm
205126	523-622	528	Approx. 38-137 mm
205127	623-722	628	Approx. 38-137 mm
205128	723-822	728	Approx. 38-137 mm
205129	823-922	828	Approx. 38-137 mm
205130	923-1022	928	Approx. 38-137 mm
207511	1023-1122	1028	Approx. 38-137 mm
205132	1123-1222	1128	Approx. 38-137 mm
205133	1223-1322	1228	Approx. 38-137 mm
205134	1323-1422	1328	Approx. 38-137 mm
205135	1423-1522	1428	Approx. 38-137 mm
205136	1523-1573	1528	Approx. 38-137 mm

A window with min. sash height gives 38 mm over swing in reversed position.
A window with max. sash height gives 137 mm over swing in reversed position.

The above is based on Mila proposed profile geometry.
A large frame will reduce the over swing, a slim frame increase the over swing.

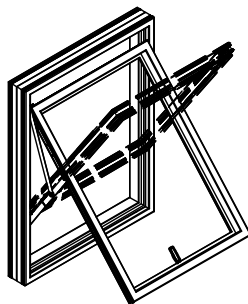
Installing the window into the building:

It is necessary to be careful when fitting the hardware in to the frame and sash, as well as when the window is installed into the building.
To avoid the window mall function, it should be fitted correctly by using the diagonal method, as well as securing the bottom are lined up by the usage of a spirit level. Support blocks under each jam. Cf. Window industry instructions.

The frame must be adjusted and maintained to achieve the correct distance of the sides, between the frame and the sash. The prescribed distance for top swing hardware is $9.5 + 1 / -0$ mm for the frame.

Garant M-5

Top swing

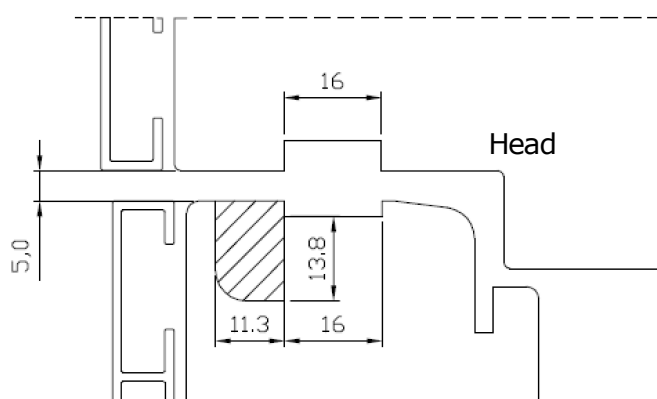


Standard Aluclad-timber profile

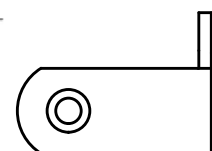
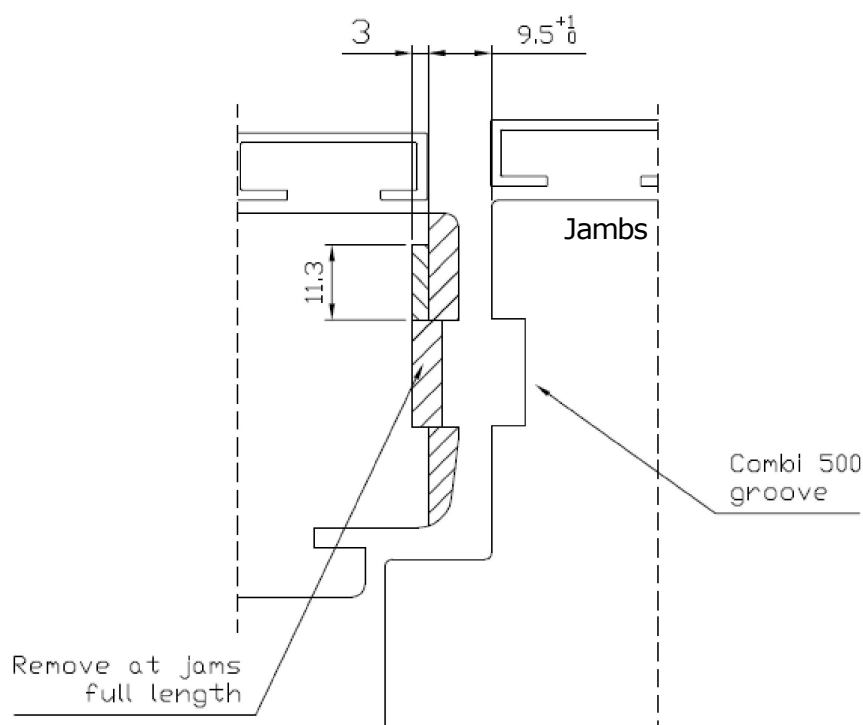
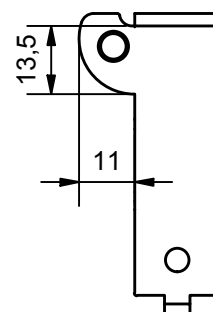


Mila 205125 - 205136.

Rework at the top corners of the sash:
The hardware is designed for alu-clad timber profiles.
The pivot point has been moved to the outside of the groove, (8,5 mm outwards), in order to make the sash able to reverse.
This requires rework of the top corners of the sash.

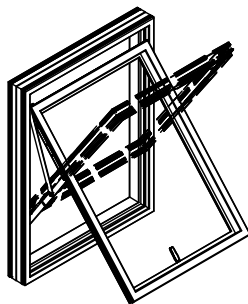


Art. no. 205125-205136



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Garant M-5 Top swing



Standard aluclad-timber profile



Topswing hardware.

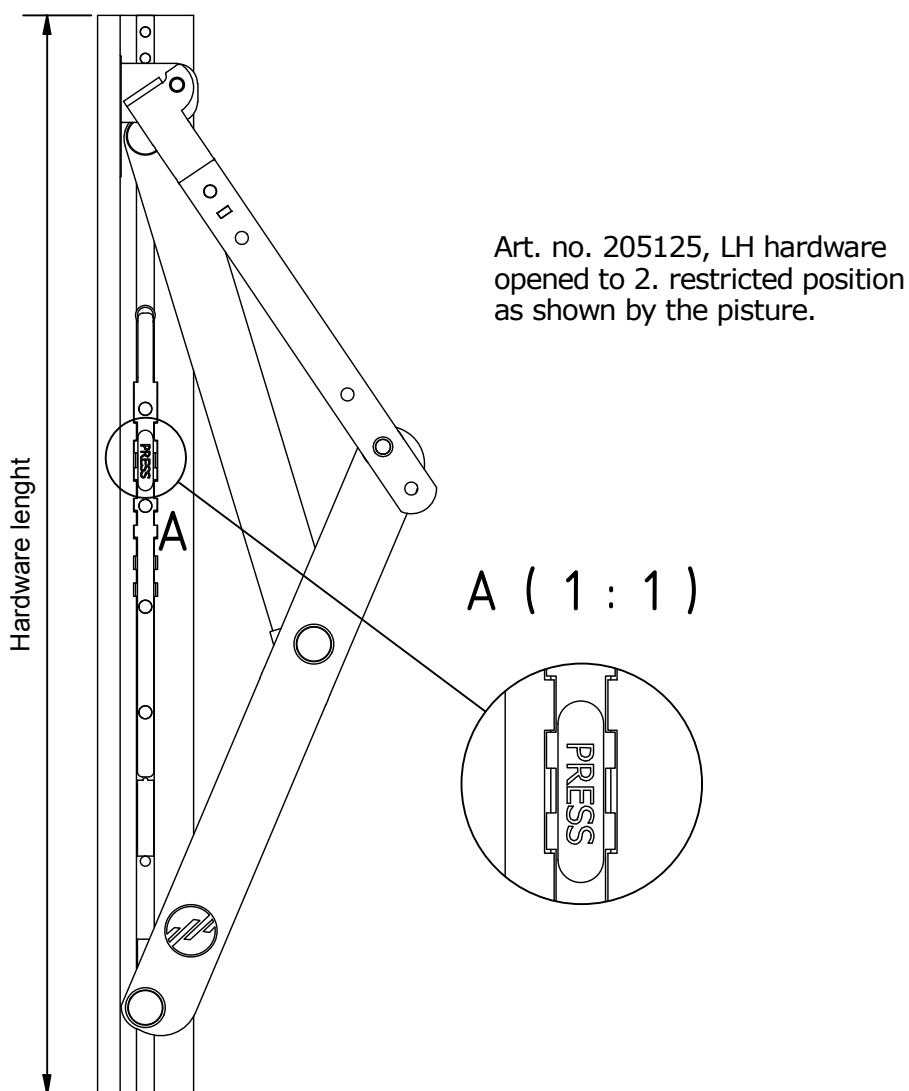
A set of hardware consist of 2 parts, a left and a right part.

The initial and reverse restrictor is placed in left hand hardware.

The restrictor has 2 positions, both can be used in opening and reverse positions.

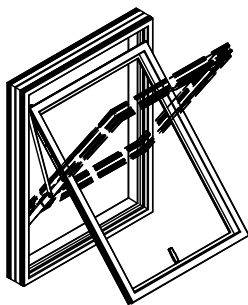
When the frame is retraced, the restrictor will automatically engage without further operation.

Always use the largest possible hardware, hardware lengths and approximate responding sash sizes see page 8-2



Garant M-5

Top swing

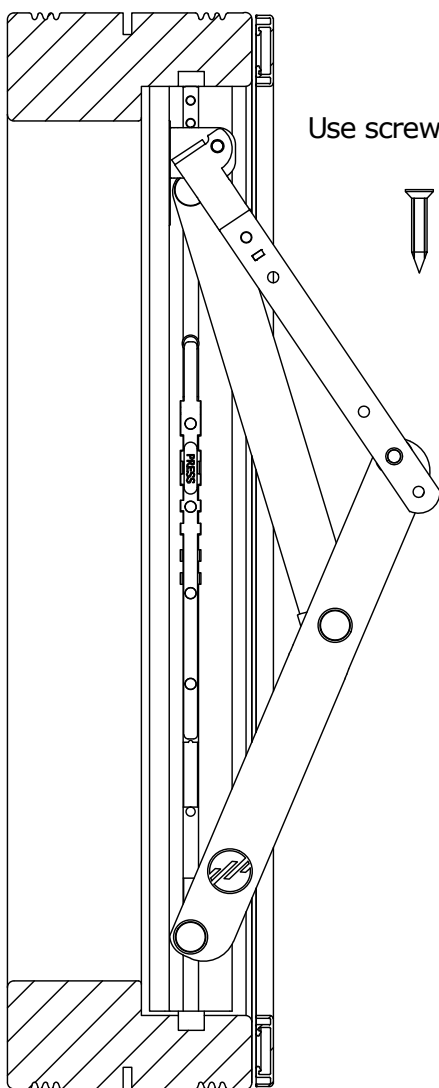


Standard aluclad-timber profile

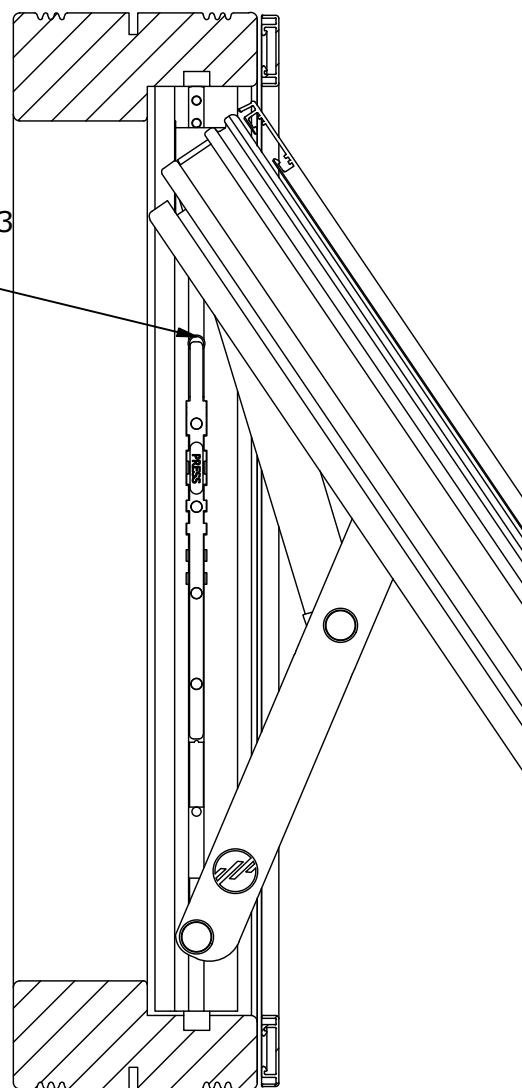


How to fit:

1. Fit the hardware into the frame



2. slide the sash into the arms and fasten

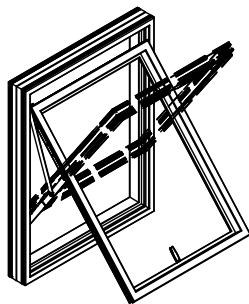


Use screws as Red Horse:

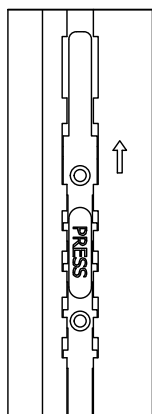
Countersunk head
SPS CSH-R 3,3 x 23
TX 10 TC

3. Close and reverse the sash to check that the window and hardware works correct.
The hardware has to be lubricated before the window is sent out to the customer.

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Operating of the restrictor:



When the window is closed the restrictor is pressed below the aluminium track and is not engaged.

Fig. 1

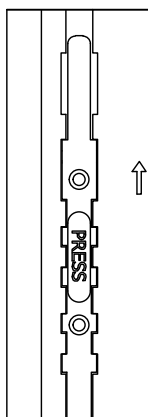


Fig. 2

When the sash is opened, the integral restrictor bar will move until it engages into the first pre punched slots in the aluminium track.
The sash movement is limited to an opening of approx 90 mm.

To close the window:
When the sash is retracted, the restrictor will automatically engage without further operation.

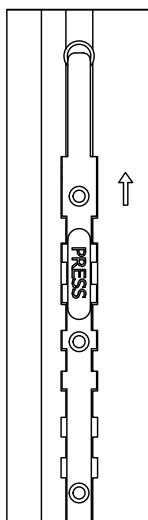


Fig. 3

Opening in addition to first position
See Fig. 2

Hold onto the handle of the sash with one hand and press down until the restrictor is free of the pre punched slots with your other hand.
The sash can be pulled to close the window.

For Reversing and polish position:

When the frame is turned to polish position, press down the restrictor bar and pass both the pre punched restrictor positions in Aluminium track and control the sash from closing by holding the window by the handle with the free hand. Continue the opening until to the arm length. Then continue rotating the sash by pulling down the sash top
Keep control of the movement of the sash throughout the turn until the restrictor is engaged again, as shown in Fig. 3. The frame is now held in the cleaning position.

Further reverse to position as shown in fig. 2 is possible by pulling the sash towards the frame in the direction of cleaning.

After cleaning, the restrictor bar is depressed to pass both the pre-punched restricted positions, the sash pushed gently in the direction away from the frame and back towards the restricted position. When rotated to the position where the handle can be reached safely, at the arms length, pull the sash to the closed position.

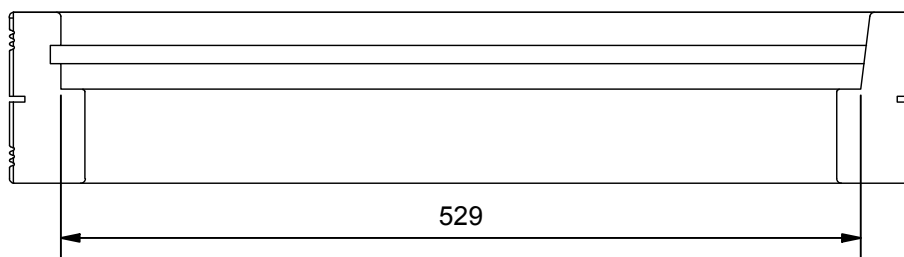
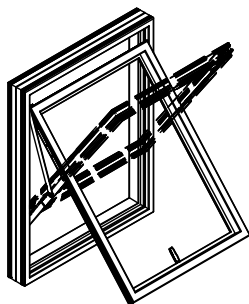
Garant M-5

Top swing



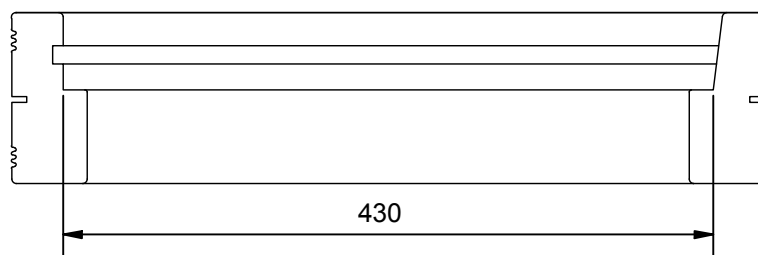
Maximum sash height 522 mm

Maximum sash height is reached, when there is almost space for the next, larger size of hardware.



Minimum sash height is 423 mm

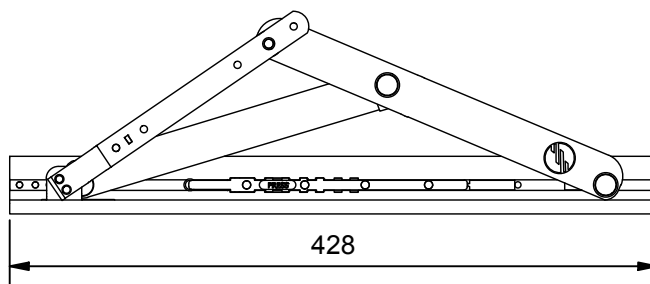
Allow a bit of extra space below the hardware to avoid scratching the sill when fitting the hardware.



Sash height:

The length of hardware Art. no. 205125 is 428 mm

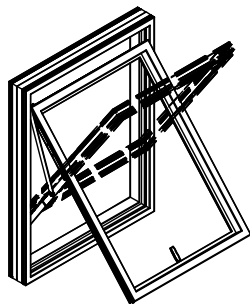
The length increases 100 mm for each size.



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Garant M-5

Top swing



Standard aluclad-timber profile

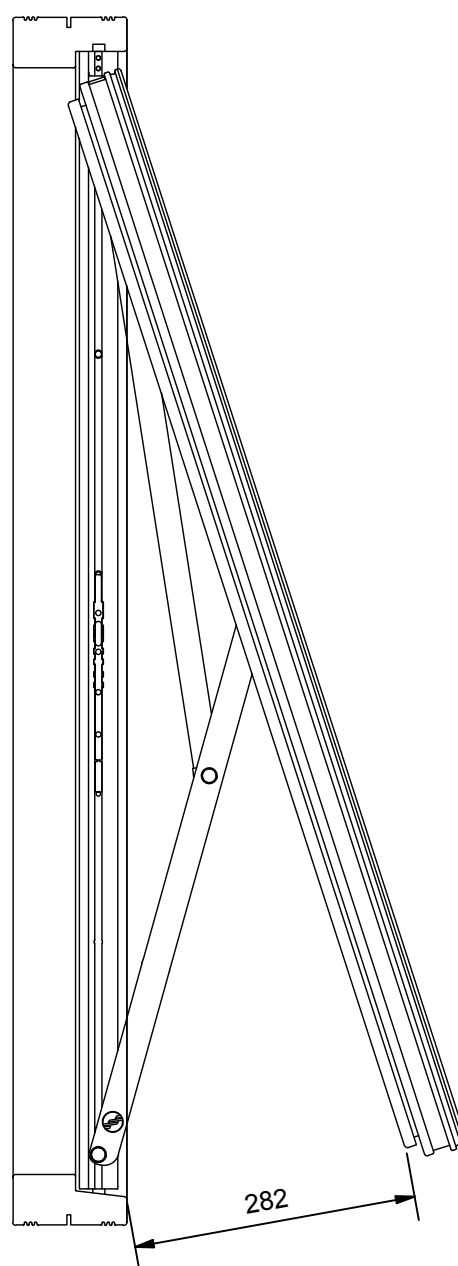
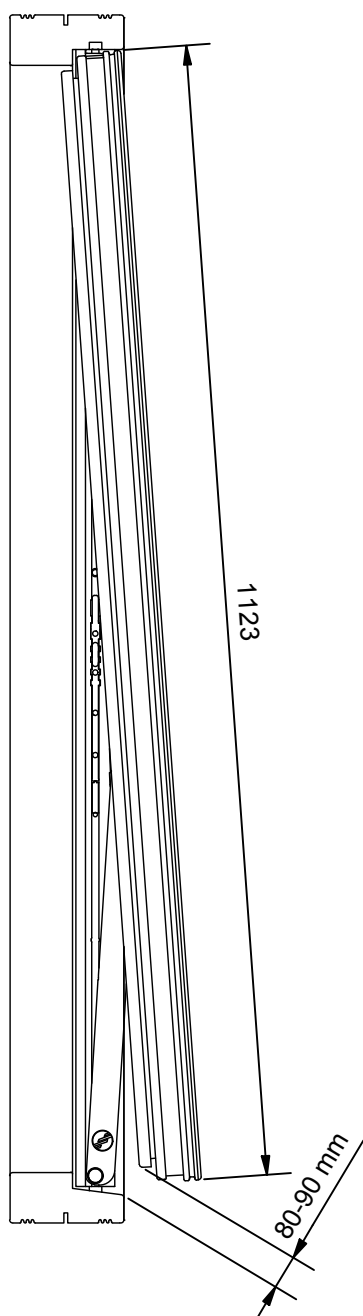


Restricted positions:

The drawing shows M12, 1126 mm sash in two different restricted positions.

The 1. restricted position, the opening for the sash is to 80-90 mm.

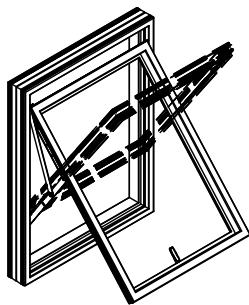
The 2. restricted is designed as a ventilation position, with a larger opening.



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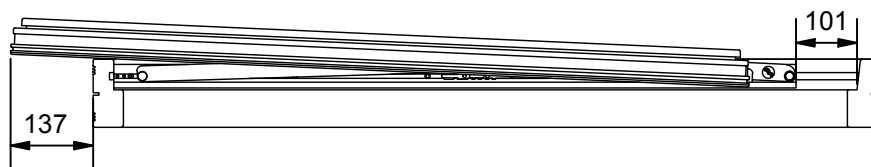
Garant M-5

Top swing

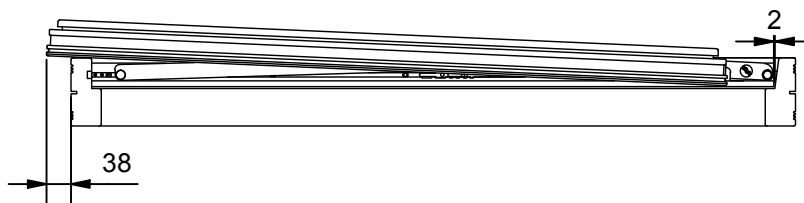


If the sash is reversed until it hits the head, the overswing should be approx. min 37 mm and max 137 mm

M12 max. sash
1222 mm sash



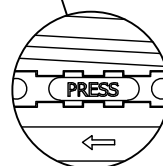
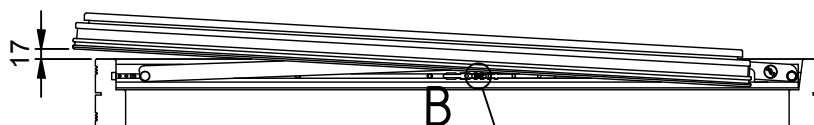
M12 min. sash
1123 mm sash



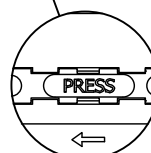
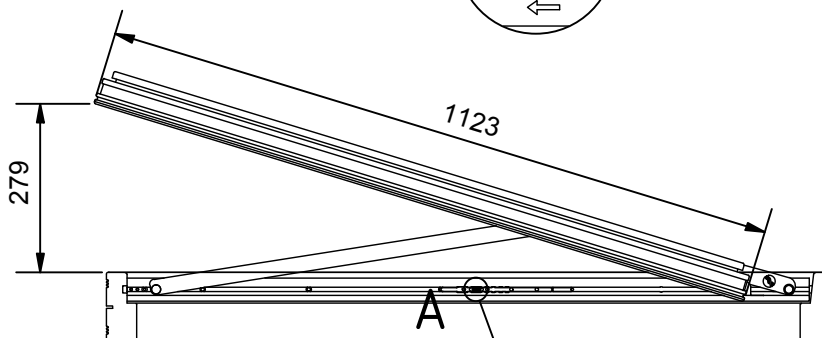
Overswing when the frame is turned to cleaning position:

Turn the sash until it engage into the 1st restricted position, there should be a good distance between sash and the wall and the overswing will have no consequences.

Turn into 2st
restricted position



B (1 : 2)

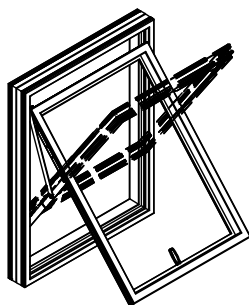


A (1 : 2)

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Garant M-5

Top swing



Standard aluclad-timber profile



Art. No. 205125-205136

Sash sizes and escape openings instructive

Sash weight max. 70 kg

Sash height	1573		45	60	60	60	60	60	60	60	60	60	60	60
	1500		45	45	60	60	60	60	60	60	60	60	60	60
	1400		45	45	45	60	60	60	60	60	60	60	60	60
	1300		45	45	45	60	60	60	60	60	60	60	60	60
	1200			45	45	45	60	60	60	60	60	60	60	
	1100			45	45	45	45	60	60	60	60	60	60	
	950				45	45	45	45	60	60	60	60	60	
	900					45	45	45	45	45	45	45	45	
	800						45	45	45	45	45	45	45	
	700						45	45	45	45	45	45	45	
	600							45	45	45	45	45	45	
	500								45	45	45	45	45	
	423									45	45	45	45	
		400	470	520	600	700	800	900	1030	1100	1200	1300	1400	1515
		Sash width												

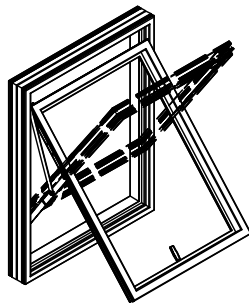
60	Min. 60 cm opening height, min. 50 cm opening width and H+W = min. 150 cm
45	Min. 45 cm opening and HxW= min. 0,33 m ² (UK)

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Garant M-5 Top swing

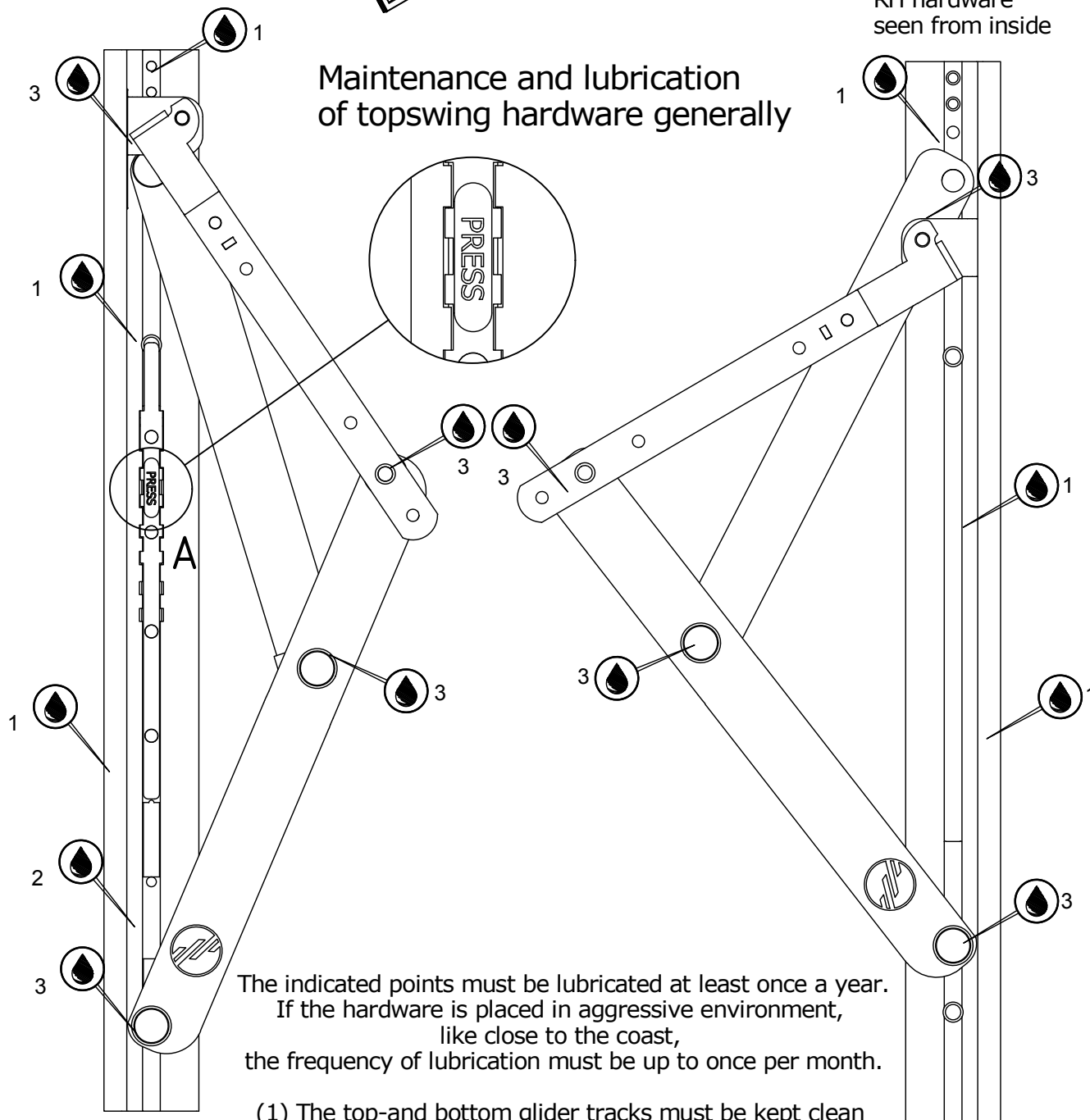


LH hardware
seen from inside



RH hardware
seen from inside

Maintenance and lubrication of topswing hardware generally



The indicated points must be lubricated at least once a year.
If the hardware is placed in aggressive environment,
like close to the coast,
the frequency of lubrication must be up to once per month.

(1) The top-and bottom glider tracks must be kept clean
and free from any obstructions.

The tracks should be kept lightly lubricated. The Aluminium tracks must not be
repainted.

(2) Between the steel bar (restrictor) and the Aluminium track use Vaseline
or other similar kind of grease.

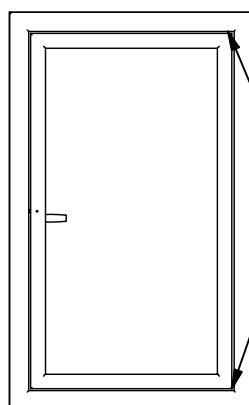
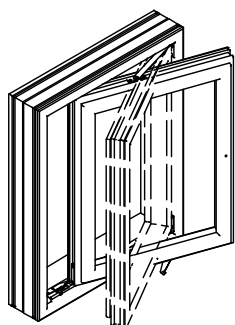
(3) All riveted joints use oil (acidfree)

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Garant M-5

Sideswing, 7° rebate

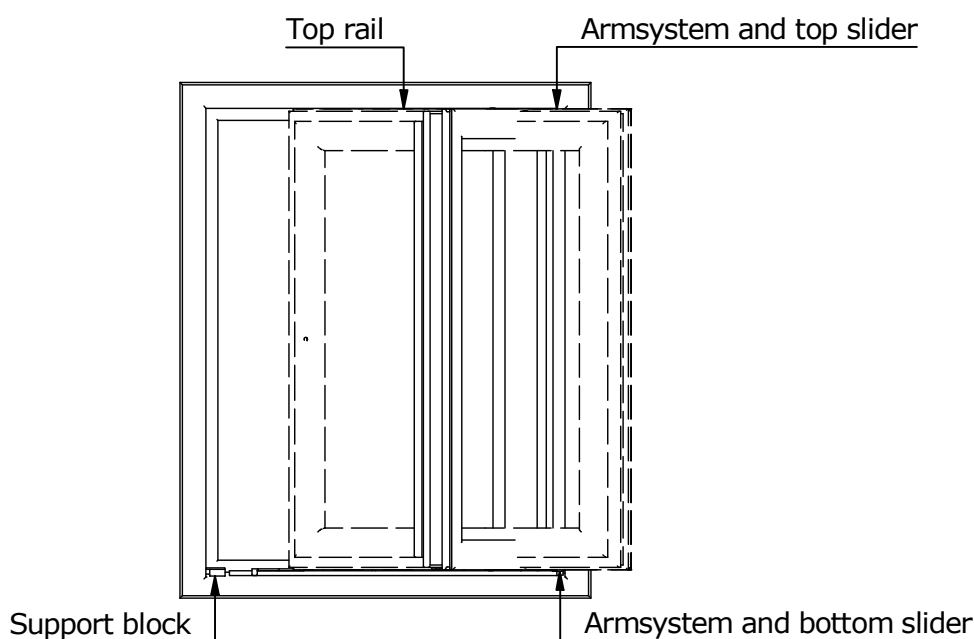
Standard timber profile



Sideswing hardware
Art. no. 207230 - 207240

Sideswing hardware			
Sash width	Art. No.	Text	Handing
302-468 mm	200450	Arm set vers. F	none
	200453	Alu Track top + 7°	none
469- 635 mm	200454	Arm set vers. F	none
	200457	Alu Track top + 7°	none
636-822 mm	200458	Arm set vers. F	none
	2004464	Alu Track top + 7°	none
302-822 mm	200470	Sash corner incl gliders	RH
	200471	Sash corner incl gliders	LH

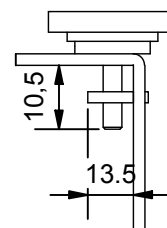
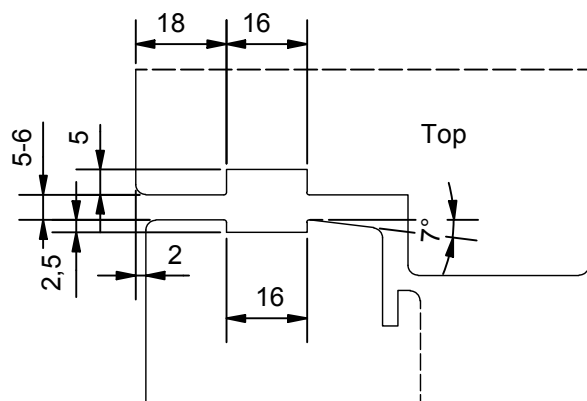
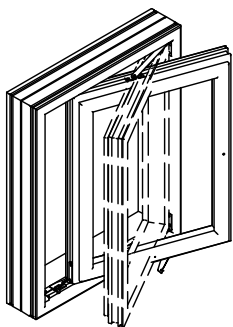
All sideswing hardwares are separate and onlt the track is depending of sash size.



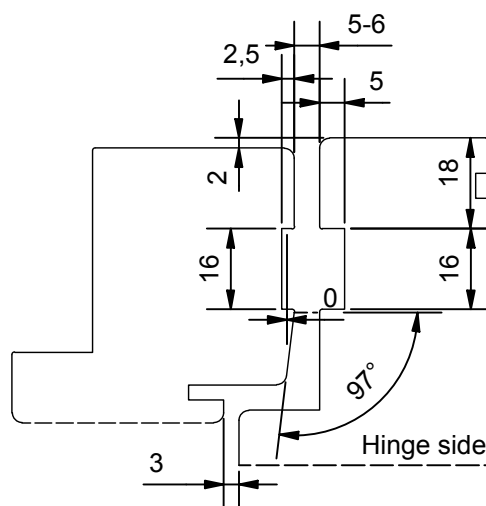
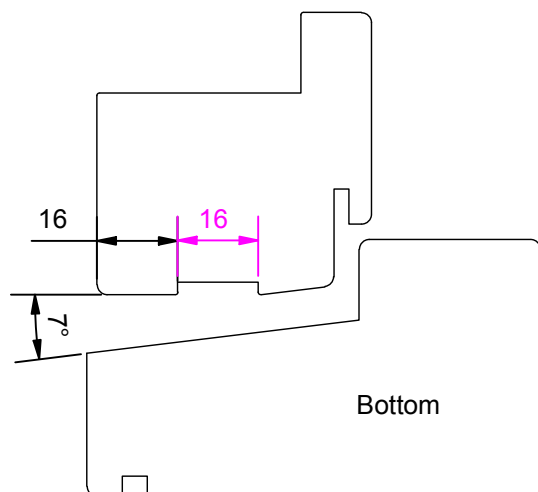
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Garant M-5

Sideswing, 7° rebate



Pls. Note!: The hardware requires min. 4 mm distance between sash-frame in the hinge side. The operation of sash has to be confirmed in the actual profile.

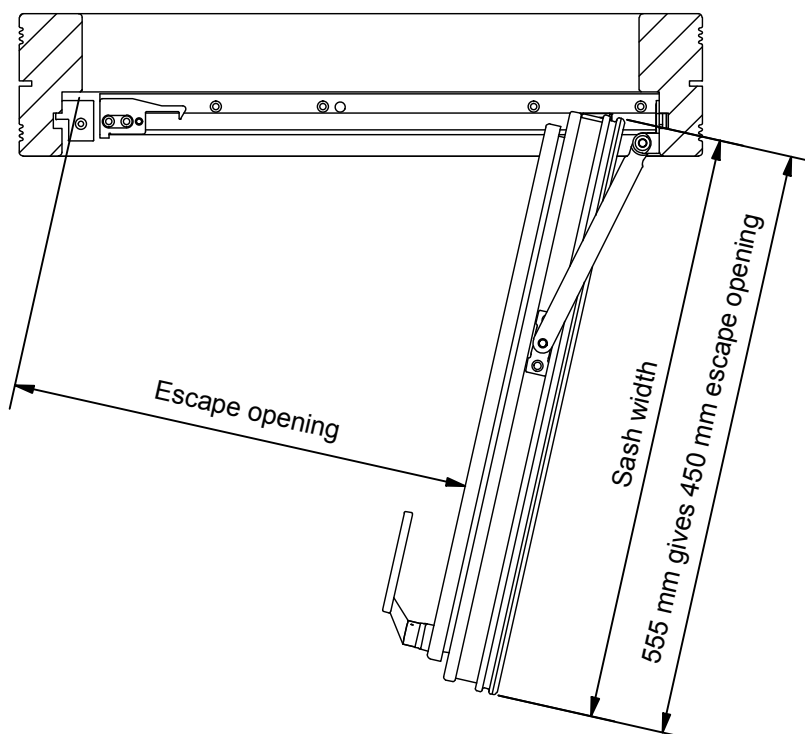
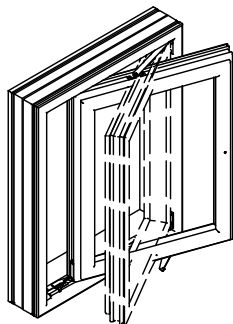


Note:

The profiles can differ from manufacturer to manufacturer, but the groove system remain the same. remember to make trial fittings if or when new profiles has been introduced.

Garant M-5

Sideswing, 7° rebate

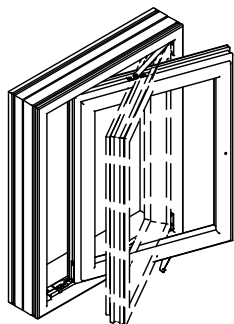


Escape opening			
Art. no.	Description 1	Description 2	Escape opening
200450	M-7 Sideswing, 7° rebate RH / LH	Sash width 302-468 mm, 45 kg	204-365 mm
200454	M-7 Sideswing, 7° rebate RH / LH	Sash width 469-635 mm, 45 kg	365- 520 mm
200458	M-7 Sideswing, 7° rebate RH / LH	Sash width 636-822 mm, 45 kg	520-697 mm

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Garant M-5

Sideswing, 7° rebate



Art. No.		
200450	M-7 Sideswing, 7° rebate	Sash width 302-468 mm, 45 kg
200454	M-7 Sideswing, 7° rebate	Sash width 469-635 mm, 45 kg
200458	M-7 Sideswing, 7° rebate	Sash width 636-822 mm, 45 kg

1: Sash weight max 45 kg

2: The glass should be fitted correctly by using the " diagonal" glazing method

Sash height	1200				45	45	45	45	60
	1100				45	45	45	45	60
	1000				45	45	45	45	60
	900				45	45	45	45	60
	800				45	45	45	45	60
	700					45	45	45	
	600								
	500								
	400								
	300								
		302	400	500	555	650	700	750	822
		Sash width							

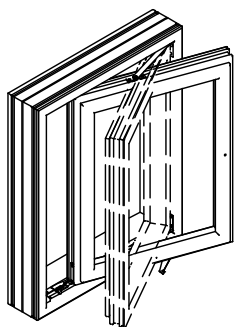
60	Min. 60 cm opening height, min. 50 cm opening width and H+W = min. 150 cm
45	Min. 45 cm opening and HxW= min. 0,33 m ² (UK)

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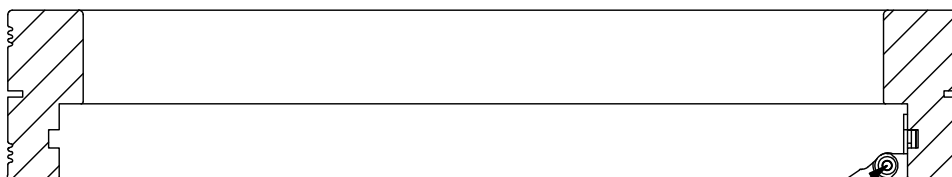
Garant M-5

Sideswing, 7° rebate

Standard timber profile

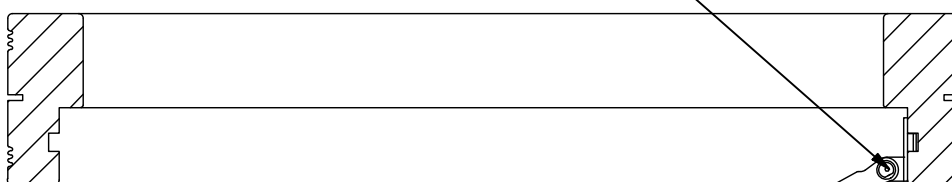


Top

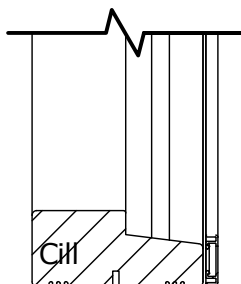
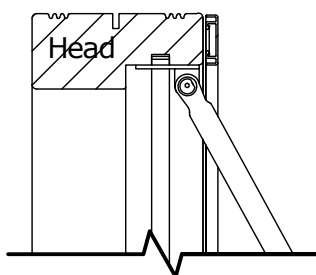


When the window is fitted into the building, the sash can be adjusted sideways, by turning the eccentric in clockwise or counterclockwise, by using a 4 mm allen key.

Bottom



Section view



Fit the armsystem:

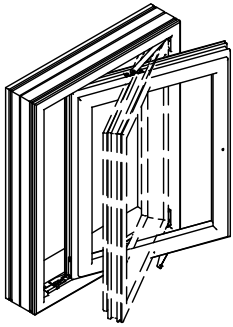
- For a right-handed sash, the frame console must be on the right side.
- Place the top hardware in the groove and push it against the head.
- Place the bottom hardware in the groove and push it against the cill.
- Fit with 4 mm screws of appropriate length.

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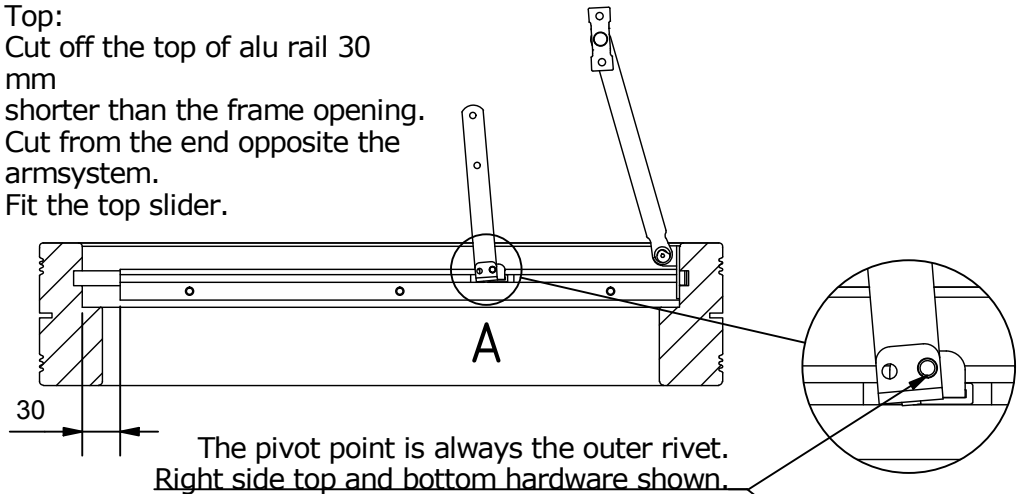
Garant M-5

Sideswing, 7° rebate

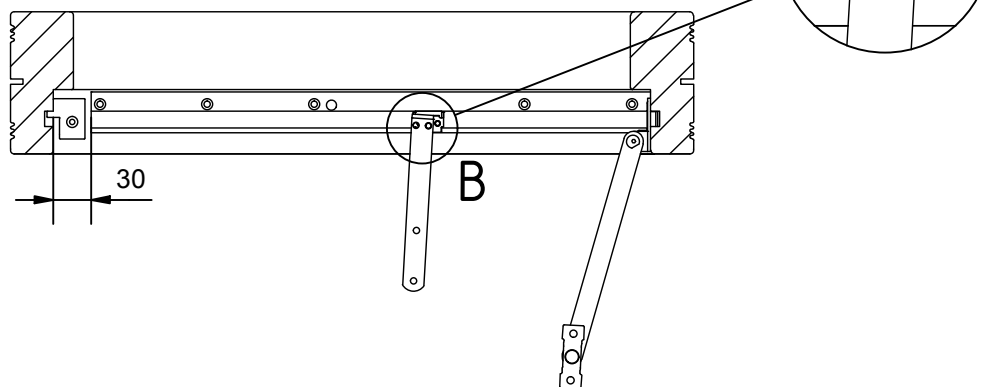
Standard timber profile



Top:
Cut off the top of alu rail 30 mm shorter than the frame opening. Cut from the end opposite the armsystem. Fit the top slider.



Bottom:
Fit support block art. no 200488 at the handle side. Cut off the bottom of alu rail 30 mm shorter than the frame opening, cut from the end opposite the of the armsystem. Insert the bottom slider into the alu rail before fastening the alu rail to the sill.



Fit of the reverse catch.

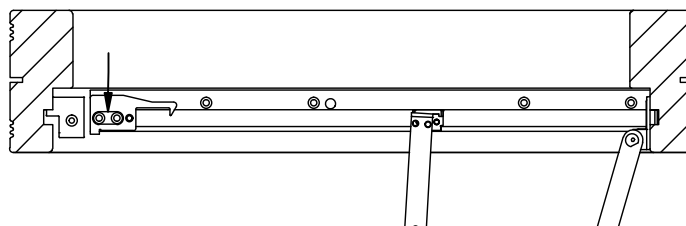
This reverse catch will hold the sash so that the glass can be polished on the outside.

The reverse catch is determined by the size of the sash and the desired polishing position. However the reverse catch bottom block should not protrude from the end of the alu rail.

The sash is fitted into the frame and reversed to the desired polish position.

The reverse catch will be placed to catch the bottom slider

Markings are made through the bottom block screw holes and drilled 2 pieces Ø4.5 mm holes through the bottom rail. The reverse catch is fitted with 2 pieces 4 mm screws

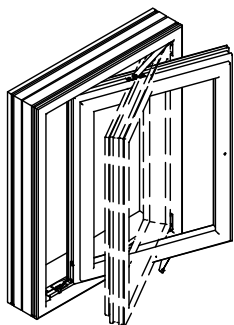


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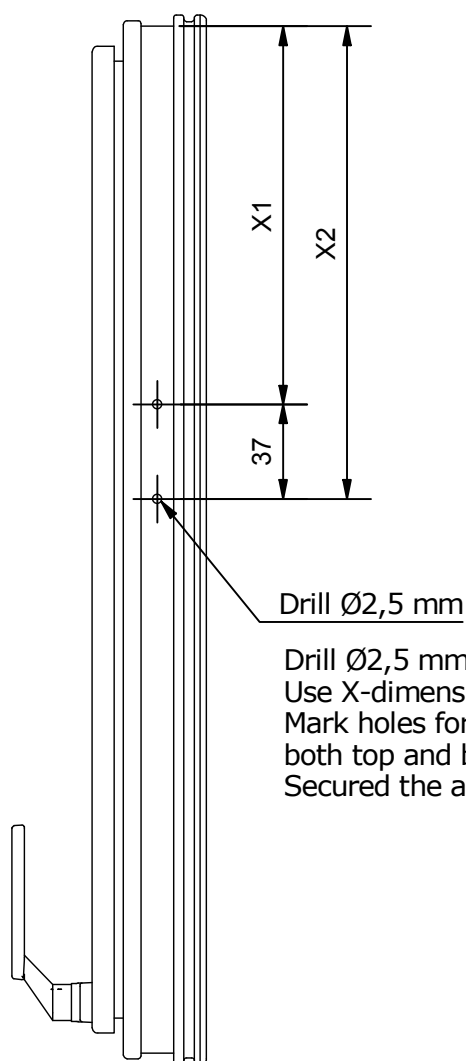
Garant M-5

Sideswing, 7° rebate

Standard timber profile



Hardware side



Sideswing hardware

Art. no.	X1	X2
200450	164 mm	201 mm
200454	264 mm	301 mm
200458	364 mm	401 mm

Drill Ø2,5 mm

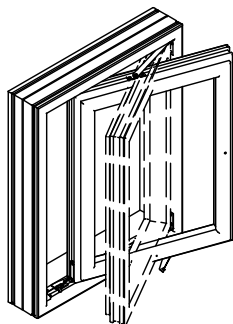
Drill Ø2,5 mm in the groove.
Use X-dimensions from the table.
Mark holes for the armsystem in both top and bottom of the sash.
Secured the armsystem by 2x3,5 mm screw of min. 25 mm lenght

Handle side

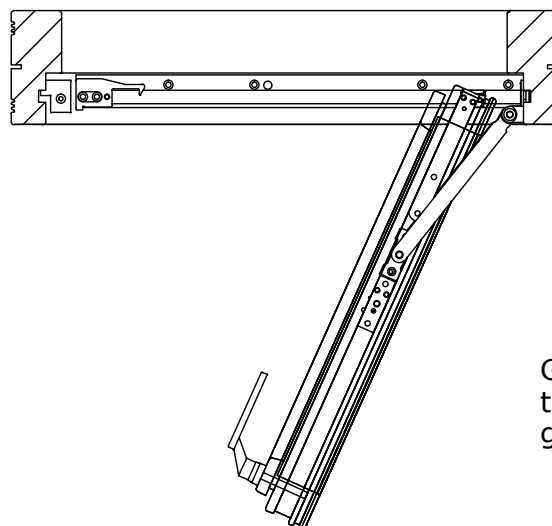
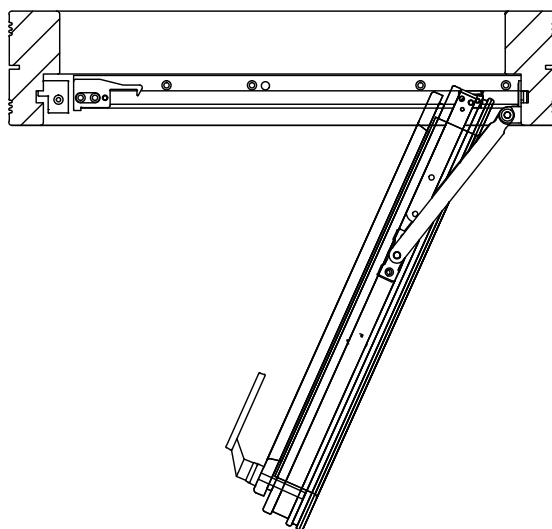
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Garant M-5

Sideswing, 7° rebate

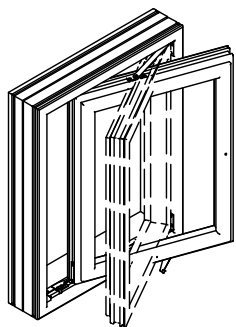


The sash is pushed over the arm system and fastened with 3.5 mm screws of appropriate length.

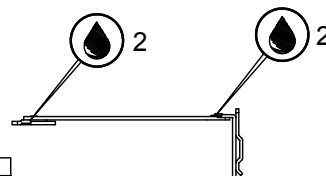
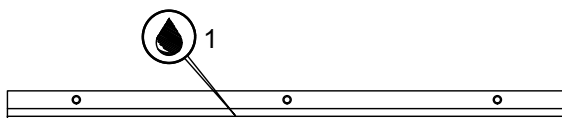
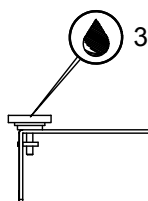


Glass to be fitted using the "Diagonal" glazing method.

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Maintenance and lubrication of sideswing hardware for timber- / aluclad timber windows



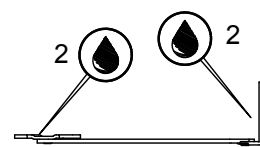
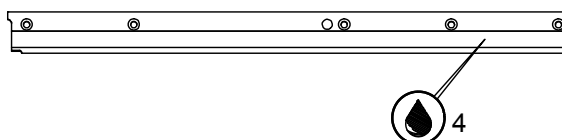
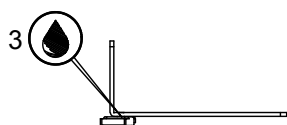
The following places to be lubricated
at least once a year.
If the gearing is placed in aggressive
environment, lubricate when necessary.

Use acid free oil of all places, except inside
the alu-rail, use white vaseline.

When dirty, wash the gear by using
normal dishwasher detergent with neutral
Ph value.

- 1: Top rail (Vaseline)
- 2: Arm system connection/ rivet between
the parts (Vaseline)
- 2: Top- and bottom slider rivet (oil)
- 3: The bottom alu-rail gliding surface (Vaseline)
- 4: Bottom alu-rail sliding surface (Vaseline)

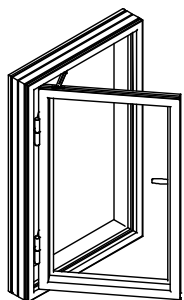
It is important to clean and lubricate
the alu-rail sliding surface, this will ease
the gearing movement.



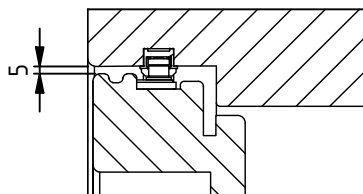
Garant M-5

Friction stay

Standard profile



Vertical section

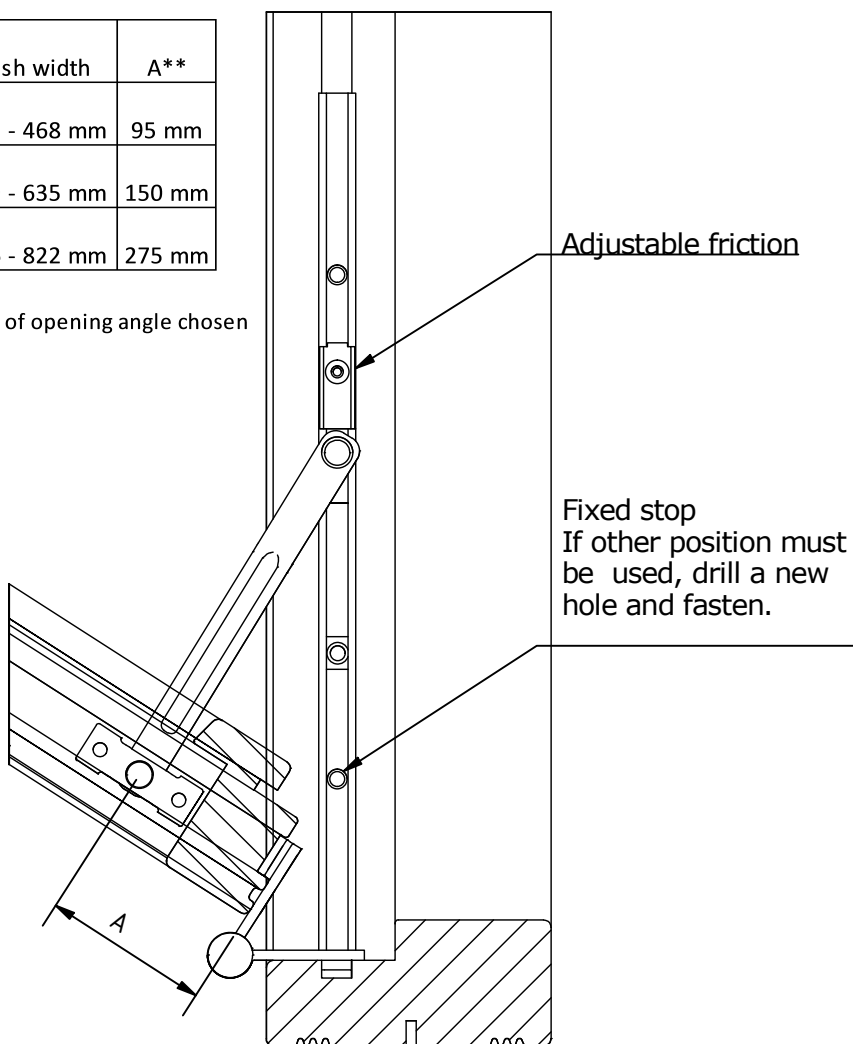


Horizontal section

FRW	Art. no.	Friction stay	Sash width	A**
478*	200482	Friction brake 344 mm	302 - 468 mm	95 mm
645*	200484	Friction brake 544 mm	469 - 635 mm	150 mm
832*	200486	Friction brake 744 mm	636 - 822 mm	275 mm

* Shortened as needed

** This dimension can be changed depending of opening angle chosen



Profile sketches might differ
the geometric profiles. principle is
correct

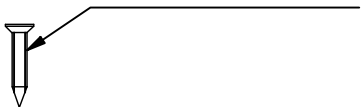
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Garant M-5 Restrictor

Standard profiles



Countersunk screw
3,8 - 4,0 x L



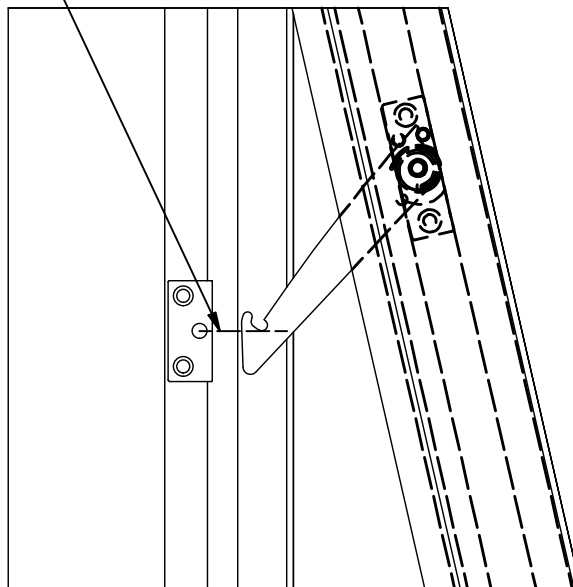
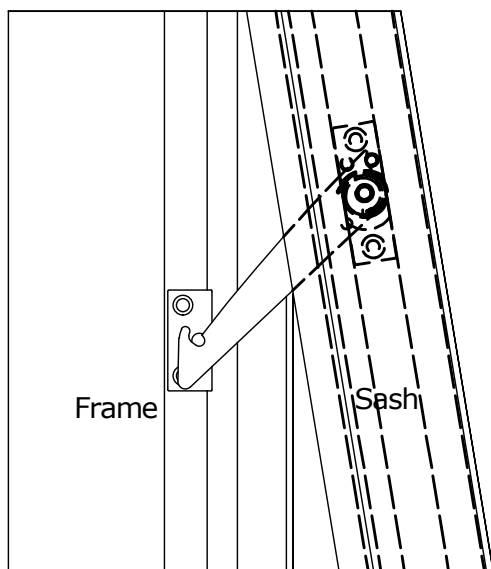
Restrictor

Art. no. 207357 RH

Art. no. 207358 LH

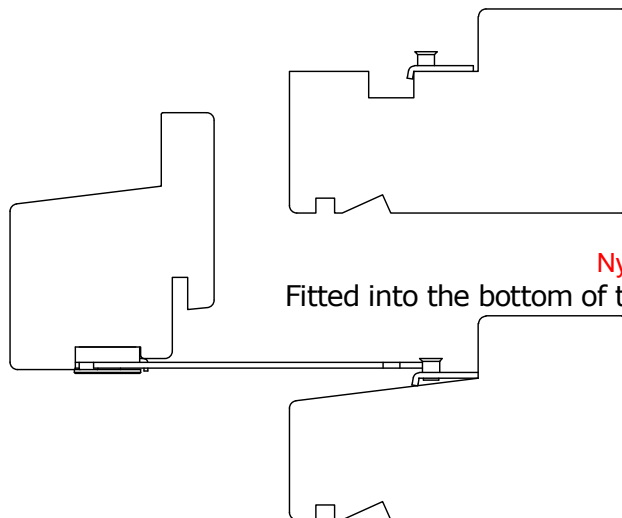
This restrictor can be fitted into the side or into the bottom of the window
The hook should be pointing away from the hinge

The pin fitted so this its slightly below the opening in the hook



The window is in open position
RH restrictor shown

Fitted into the side of window



Fitted into the bottom of the window

Nye tegninger mangler her

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Garant M-5 Restrictor

Standard profiles



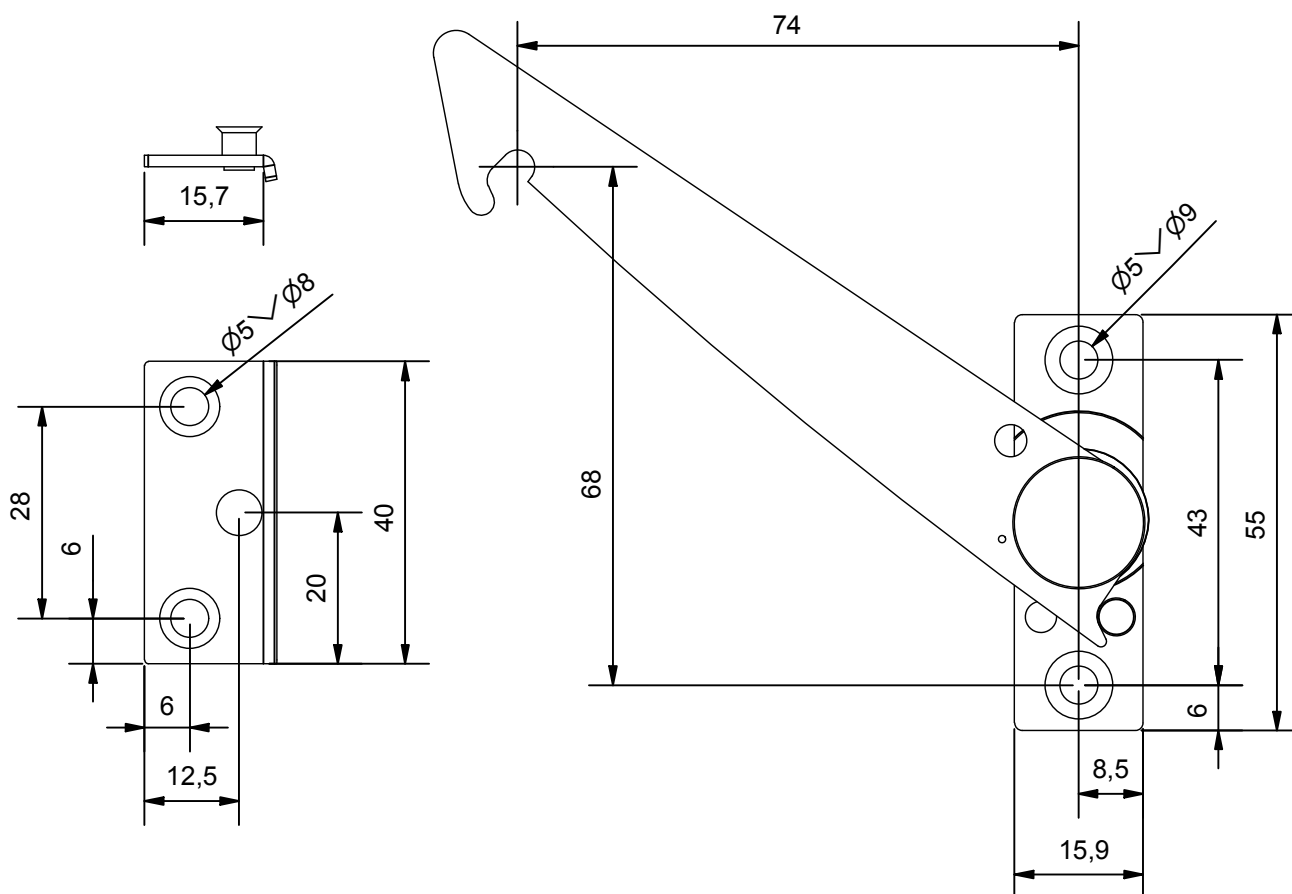
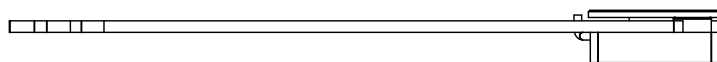
Countersunk screw
3,8 - 4,0 x L



Restrictor

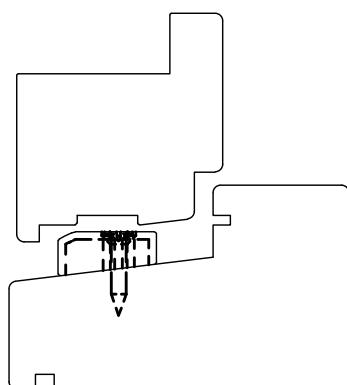
Art. no. 2004xx RH

Art. no. 2004xx LH

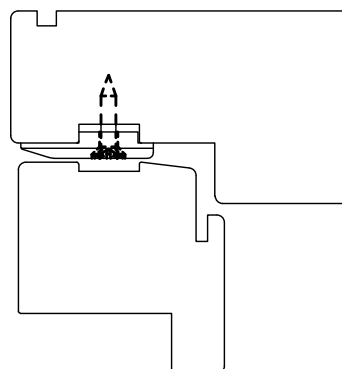


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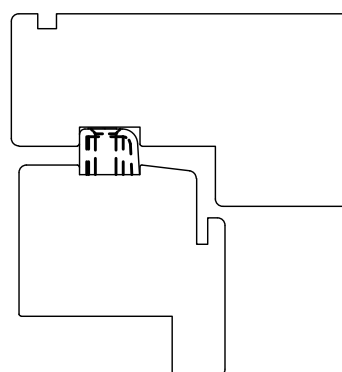
Countersunk screw
3,8 - 4,0 x L



Support block
Art. no. 200488



Guide block
Art. no. 200904



Block for additional compression
and security
Art. no. 200902

Operation and maintenance of hinges made of extruded aluminum profiles with plastic bushings:

Material: Extruded aluminum profile.

Surface: Anodizing or powder coated in RAL colour.

Bushings: Made of plastic material with fiber reinforcement.

Hinge pin: Made of stainless steel AISI 304 (A2) or AISI 316 (A4)

Height adjustment screws (where available): Made of stainless steel AISI 304 (A2) or AISI316 (A4).

Surface properties: Complies with the technical regulations of the windows industry (minimum 240 hours in salt spray test according to EN 1670, Grade 4).

Maintenance:

Surfaces are wiped or washed at least once a year. For coastal areas, cleaning is recommended more often. In extreme cases (swimming pools, directly at the coast or if there is a direct splash of salt water or the like) minimum every month. This process is to remove salt or other aggressive substances that can settle as deposits and thus reduce the durability of the surface.

Be aware of other materials that may adversely affect durability, including screws, etc.
Attention for the risk of galvanic corrosion (Materials voltage range).

Reservation:

If above recommendations regarding cleaning and use of other products (galvanic corrosion), if these are points not kept, void warranty on product surface properties.

"Squizz" from hinges:

It may occur that at low temperatures, "Squizz" sound from the hinges when moving the door. This is not due to a product defect, but it is advisable to use a little lubricant that does not affect the plastic or metal. Vaseline or equivalent (acid-free lubricant) must be used. In case of improper lubricant, discoloration of surfaces may occur.

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