

AVORA DOORS

MasterPatio-VS

Vertical Slider

MasterPatio Vertical Slider

SCOPE

Unique opening type

- Vertical movement that creates a safe barrier/balustrade

Ready for high-rise application

- High performing solution creating new opportunities

Motorized

- Extending our Smart Building offer with several safety options

Compatible with the Master product family

- Using market-proven components from MasterPatiosliding system

In line with insulation & sustainability requirements

- Recycled polyamide in thermal break

This innovative solution is focusing on automation and performance. It was presented as a concept at BAU Munich 2023 and the developed version at BAU Munich 2025.



MasterPatio Vertical Slider

PERFORMANCE

Thermal Performance

Achieves thermal performance as low as $U_w \geq 0.80 \text{ W/m}^2\text{K}$

AWW (Air, Wind, Water) Performance

XQ AWW 2600 ×2500h (4/E750/B5)

XQ AWW 3700 ×2500h (4/E750/C3)

QXQ AWW 3700 ×3700h –Report Pending

Acoustic Performance

XQ Acoustic (43 dB)

Motor runtime sound: 63 dB

Durability

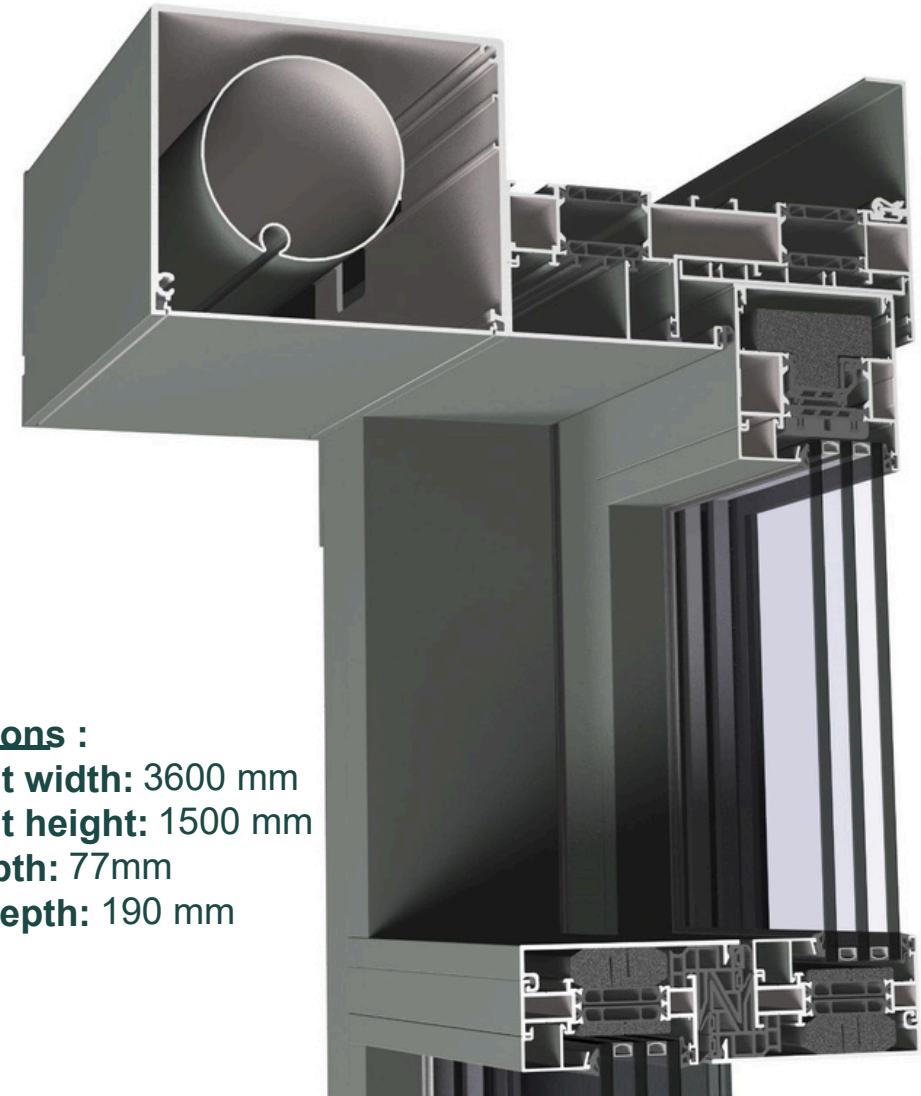
XQ Cyclic: Report Pending (10K) –Test ongoing (20K)

Other Performances

Max weight of moving vent: $\leq 200 \text{ kg}$

Impact resistance: I4 (Drop height 700mm) –EN 13049

EMC testing: Compliant with Machine Directive MD 2006/42/EC



Dimensions :

Max vent width: 3600 mm

Max vent height: 1500 mm

Vent depth: 77mm

Frame depth: 190 mm

MasterPatio Vertical Slider

CONFIGURATIONS

XQ & QXQ

With fixed vent or MasterLine 8 bottom-hung opening vent (access for cleaning)

With Functional or Slim vent

–87mm 406.0240/406.0340 & 25mm glazing beads

–77mm 406.0440 & 14mm glazing beads

With Standard or Slim Chicane

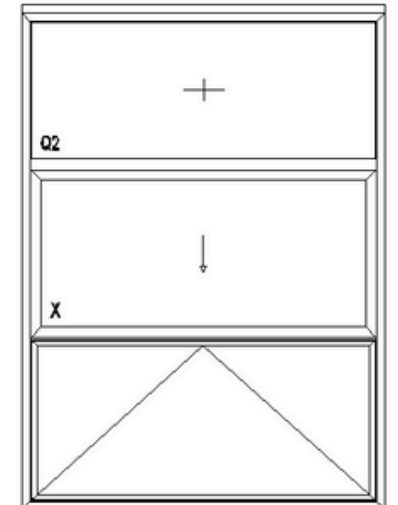
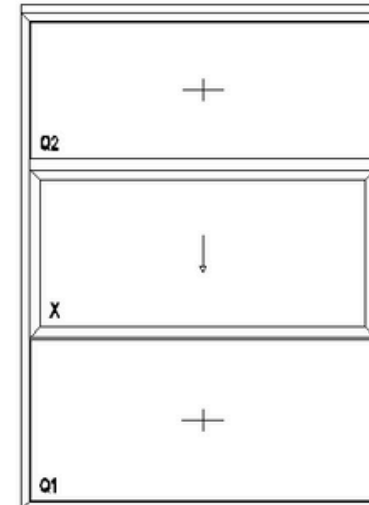
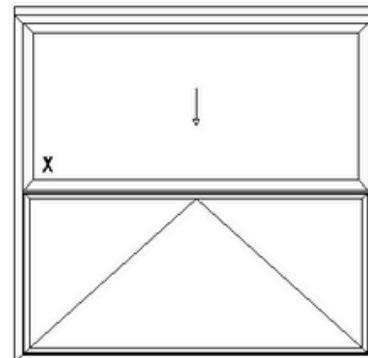
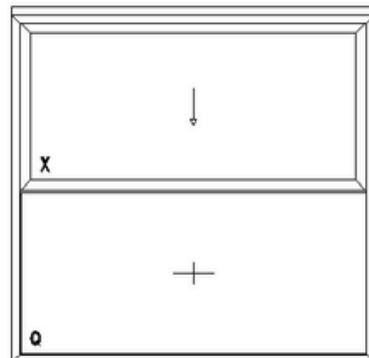
–87mm 406.0335 & 25mm glazing beads –

50mm 406.0330 & 14mm glazing beads

With Standard or HI Insulation Variant

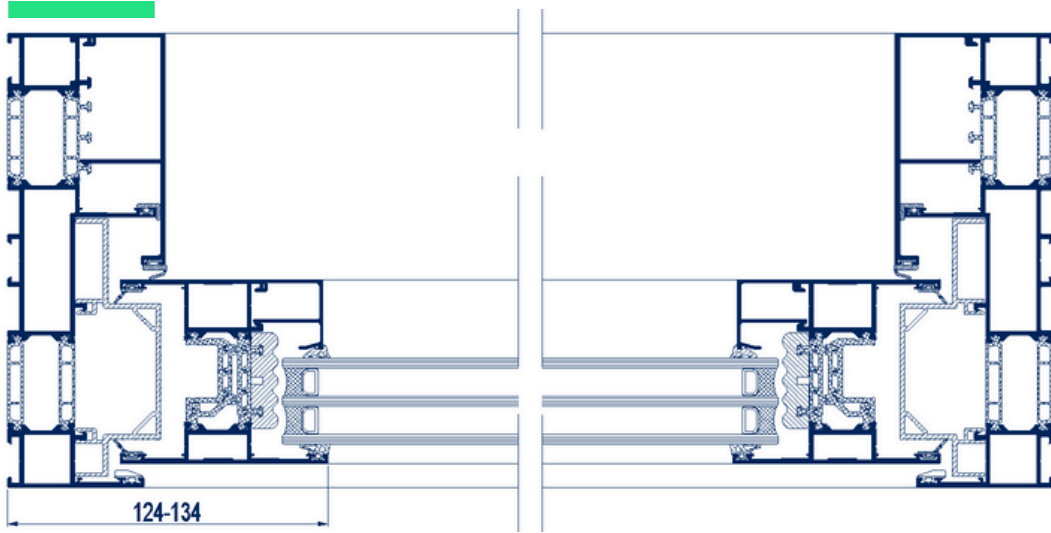
Assembly method

– 45° frame connection



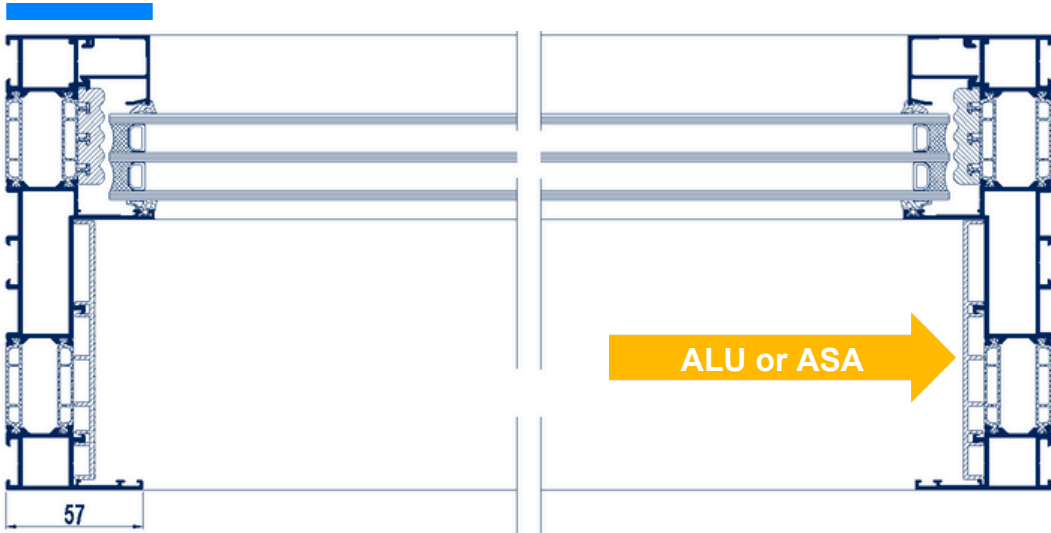
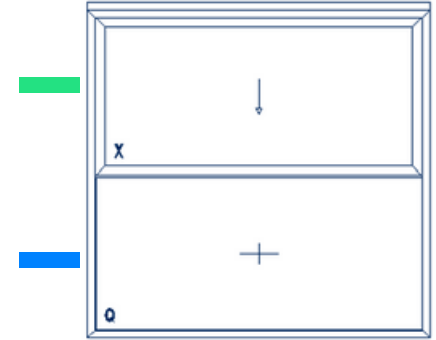
MasterPatio Vertical Slider

SECTIONS



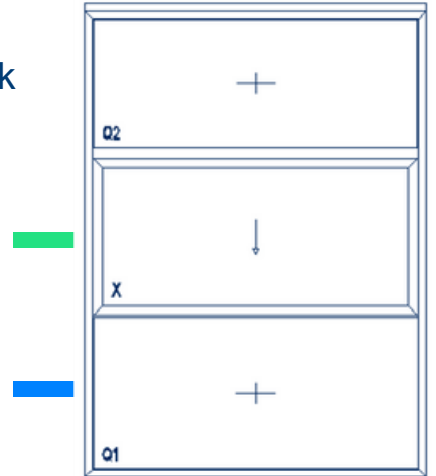
Sightlines

- 124mm with Slim Vent
- 134mm with Functional Vent
- 57mm fixed vent



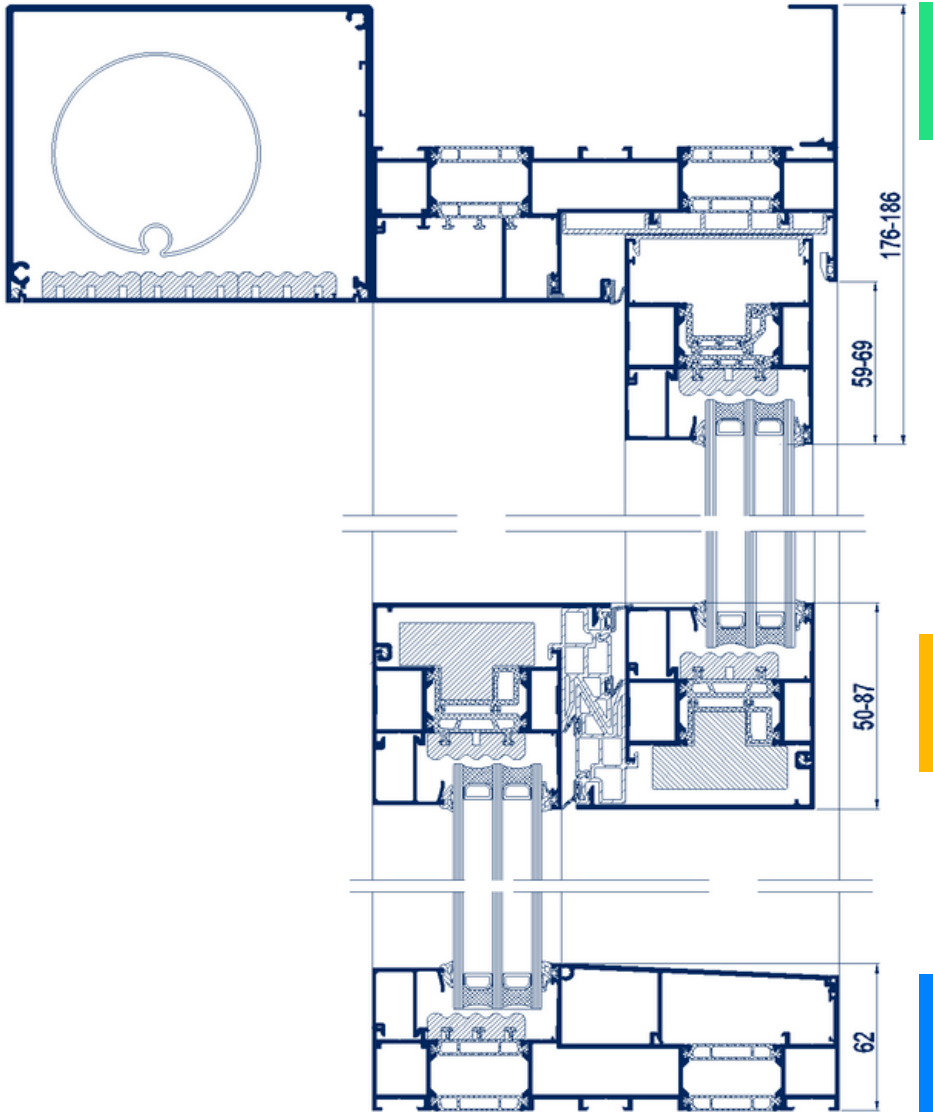
Cover profile

- Available in aluminium or composite in black



MasterPatio Vertical Slider

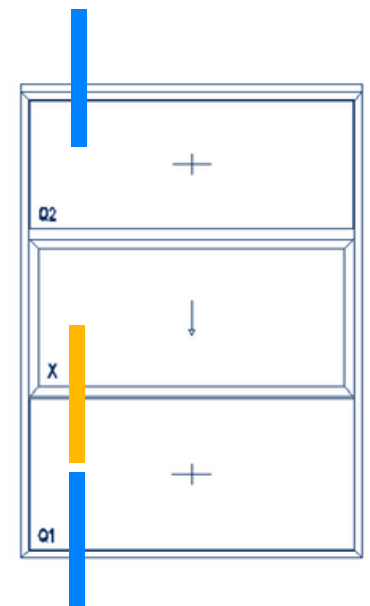
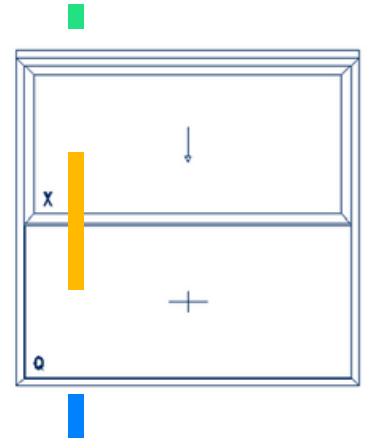
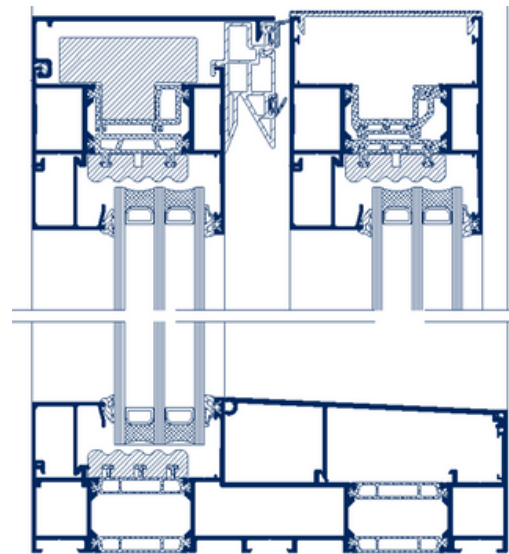
SECTIONS



Sightlines

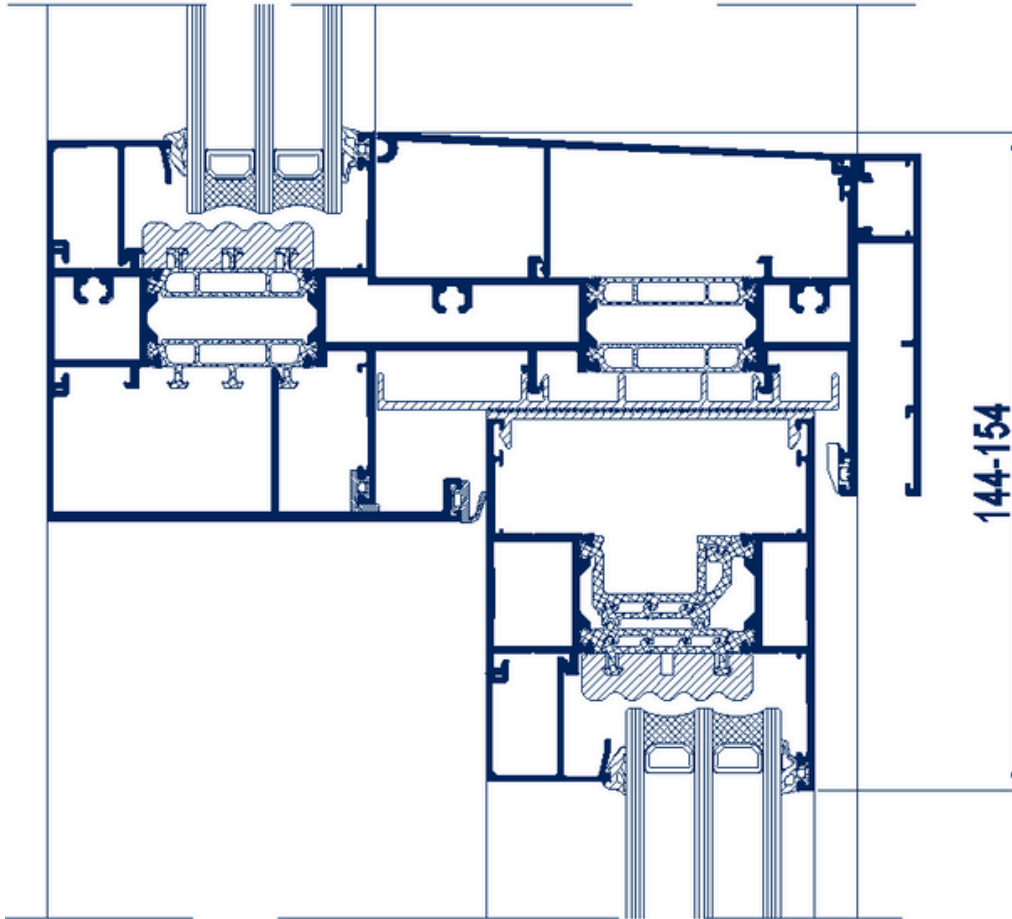
- 50mm with Slim Chicane
- 87mm with Standard Chicane

Flush in open position



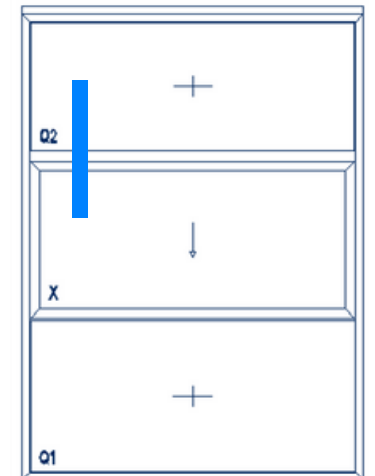
MasterPatio Vertical Slider

SECTIONS



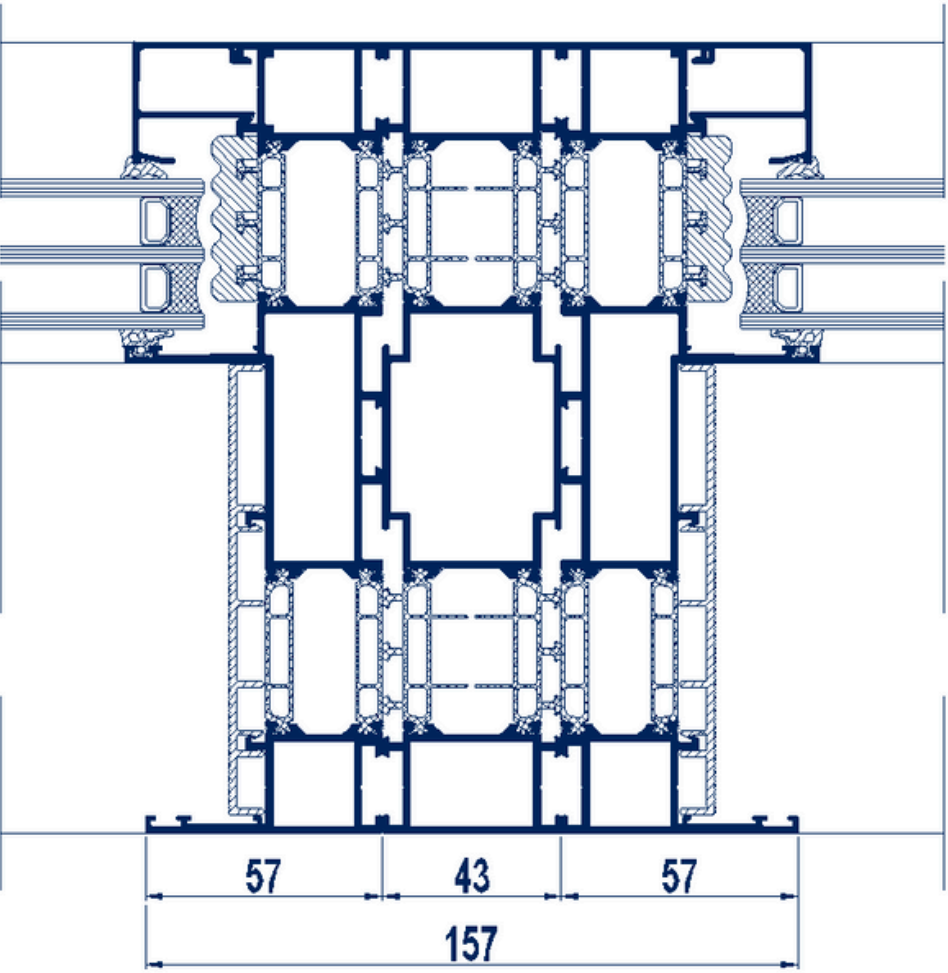
QXQ

- Drainage cover profile
- Internal and/or external reinforcement profiles

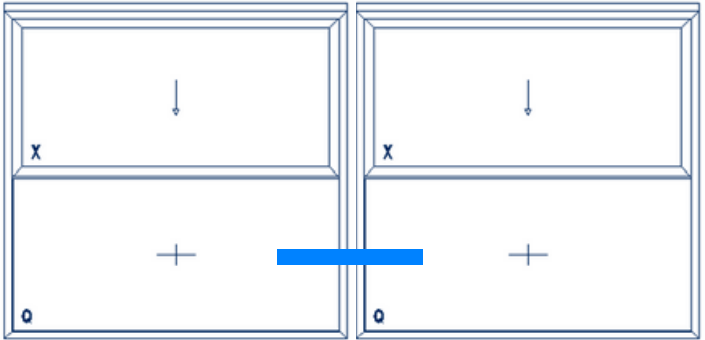


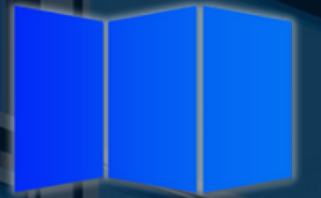
MasterPatio Vertical Slider

SECTIONS



Coupling profile





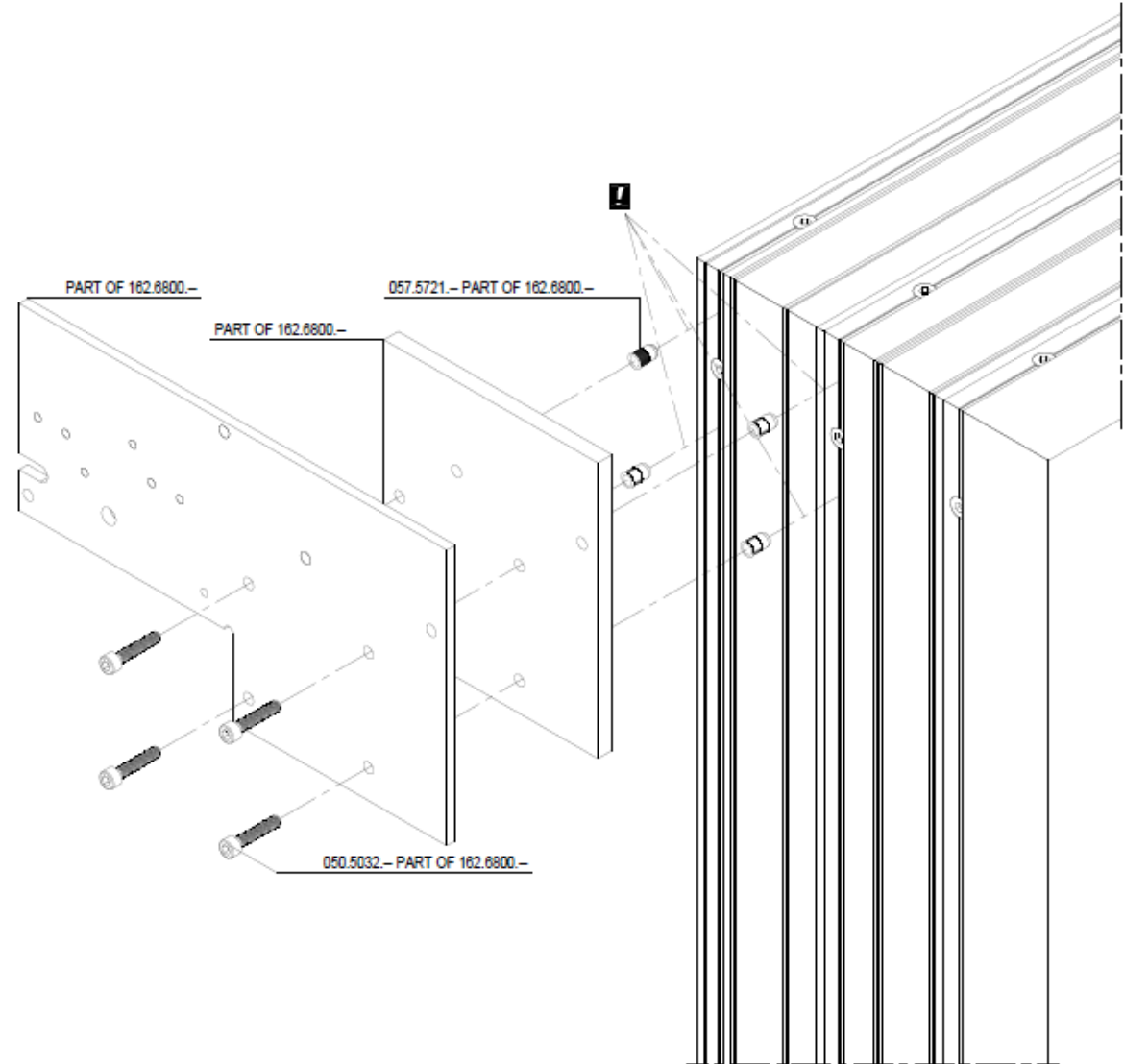
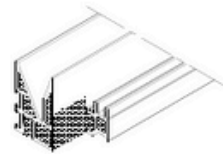
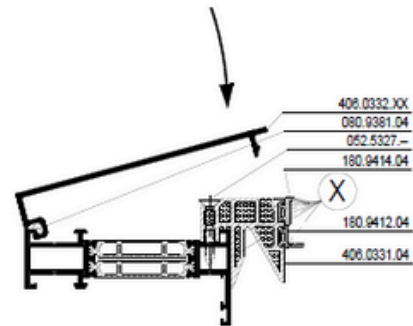
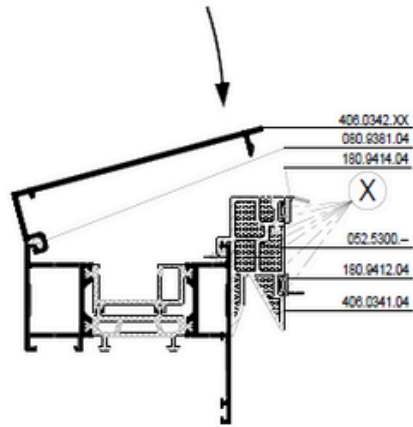
AVORA DOORS

MasterPatio VS

ASSEMBLY frame + vent

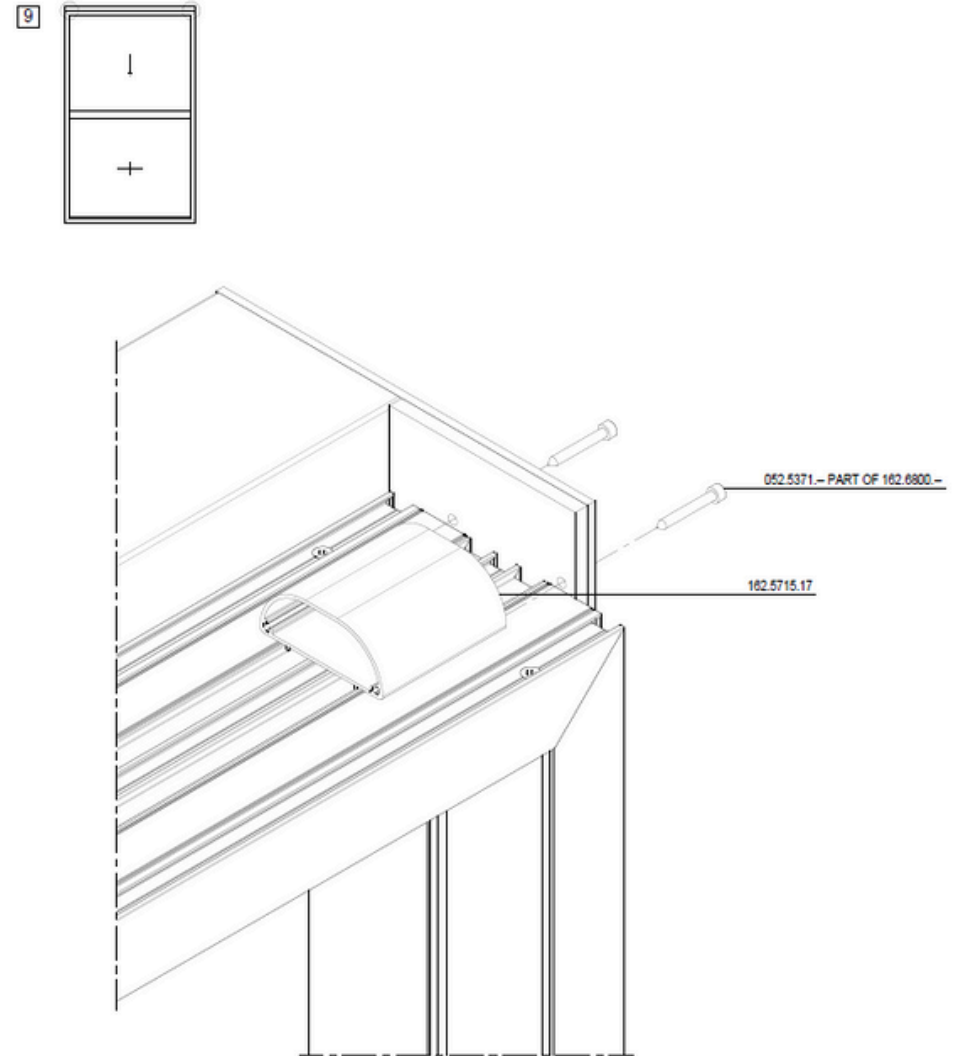
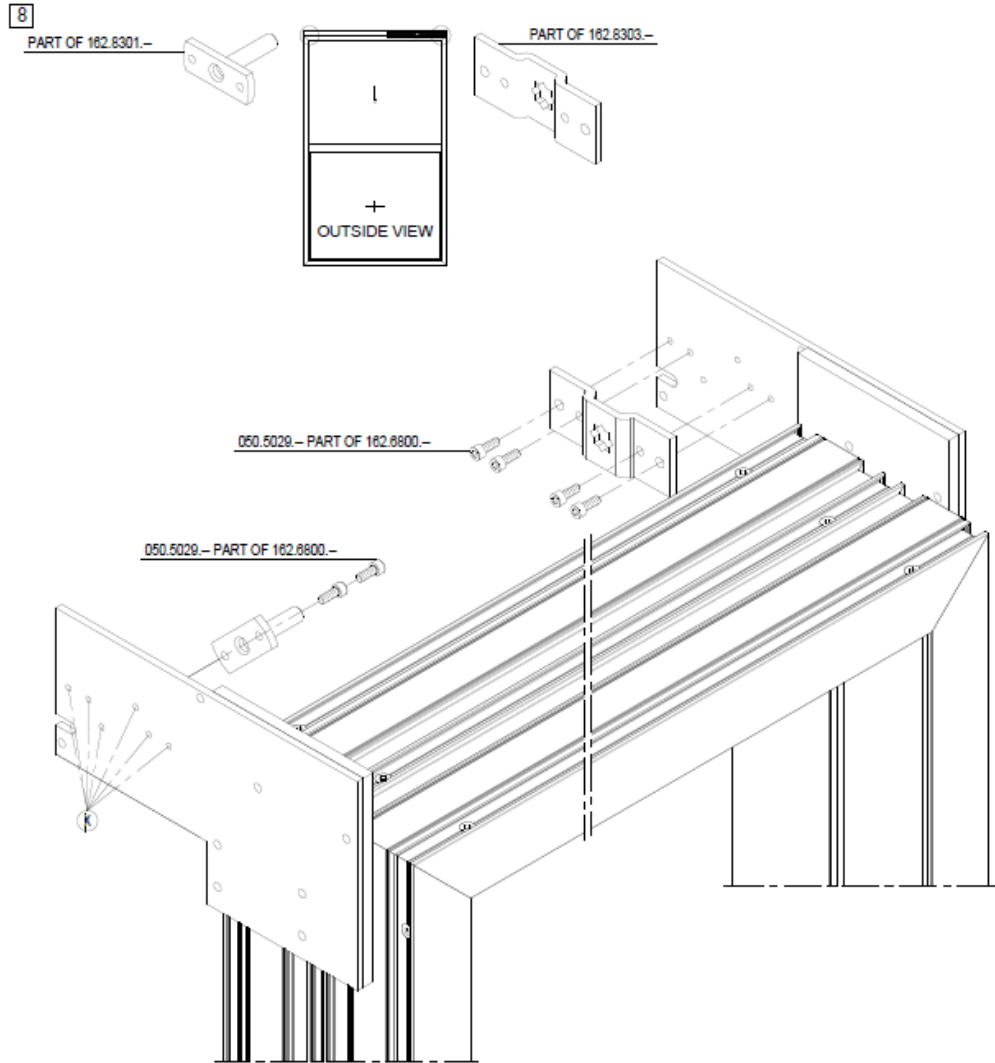
MasterPatio Vertical Slider

ASSEMBLY FRAME



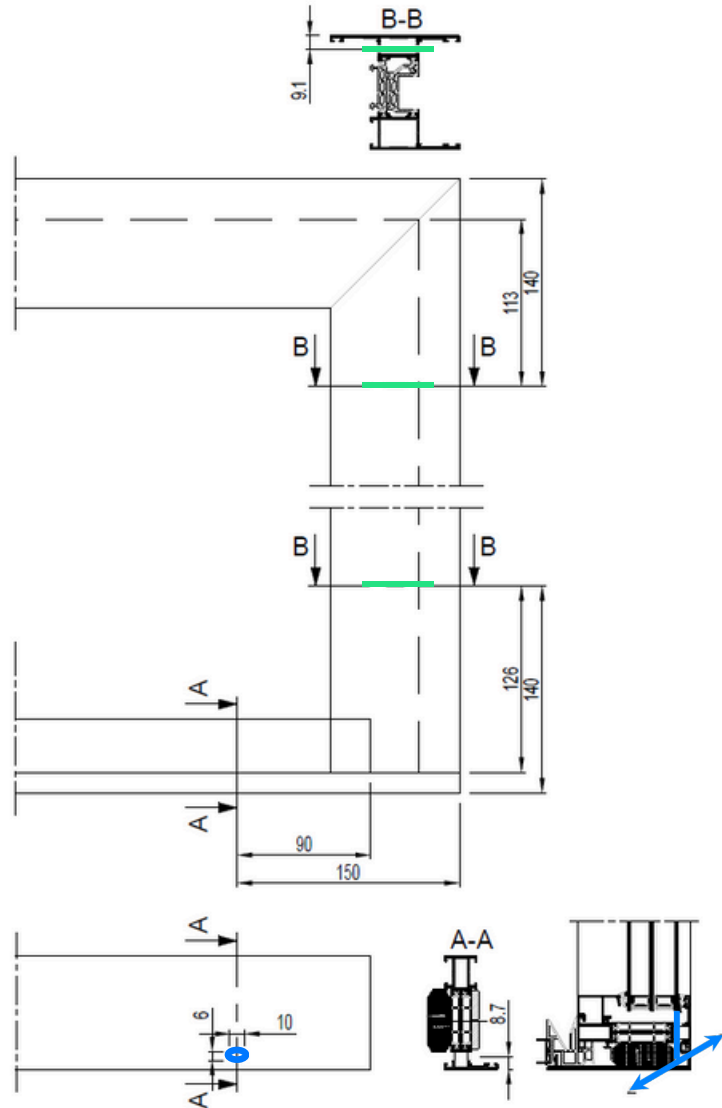
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ASSEMBLY FRAME

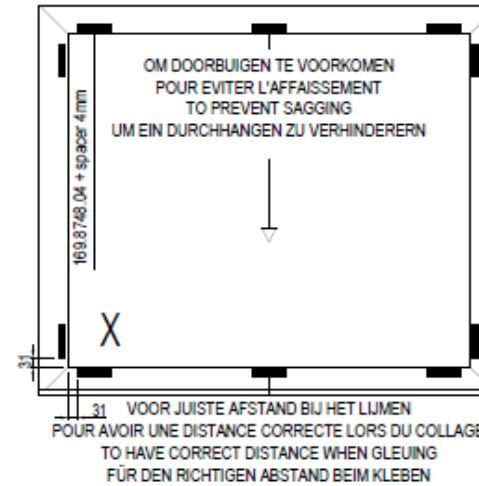


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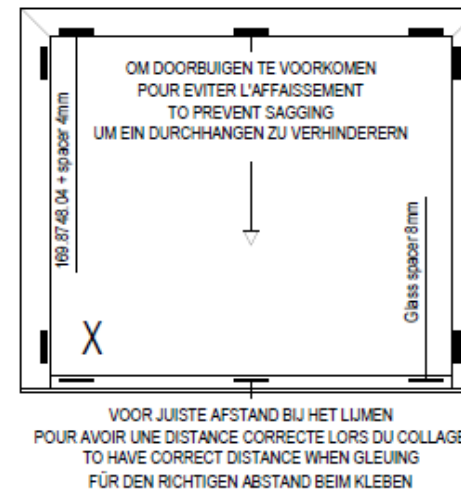
ASSEMBLY VENT



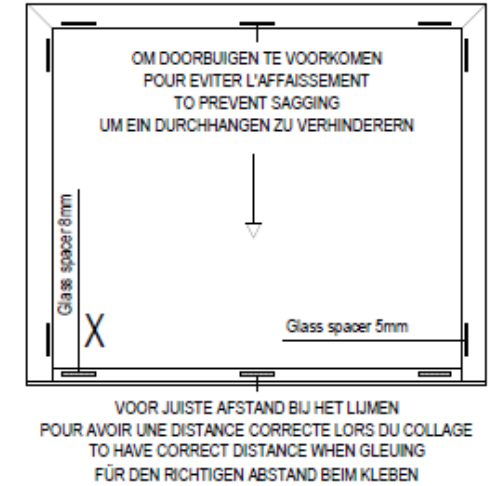
Standard chicane



Slim chicane



Slim vent





AVORA DOORS

MasterPatio VS

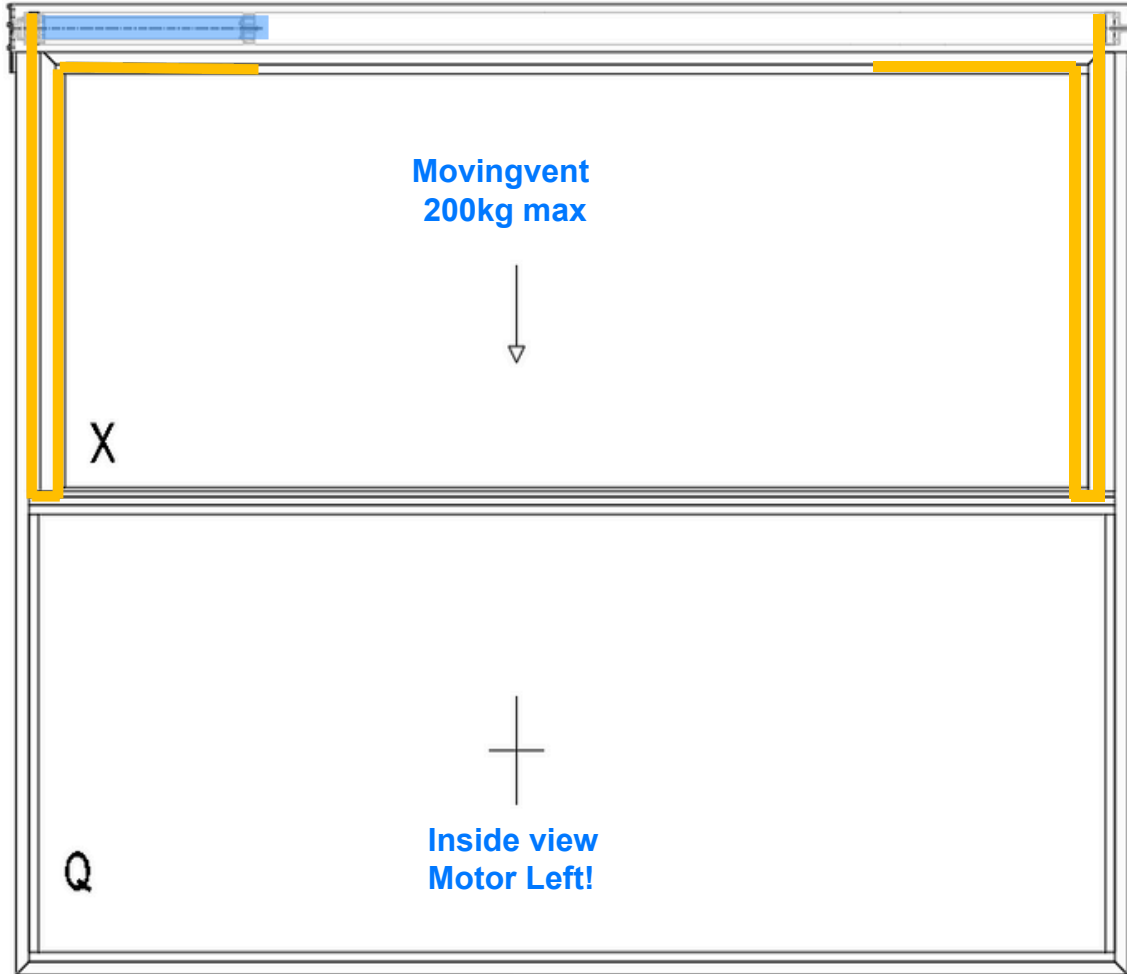
MOUNTING Belt



AVORA DOORS

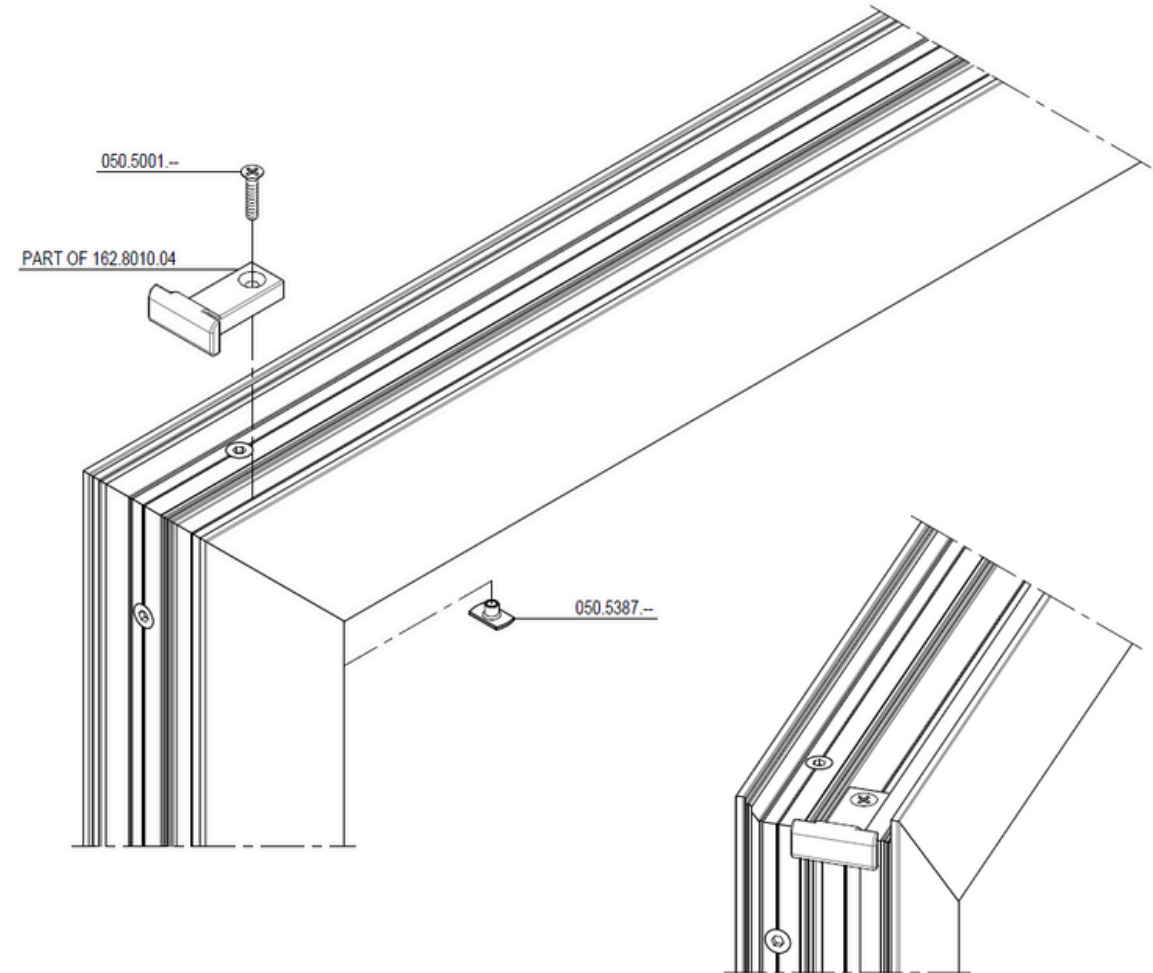
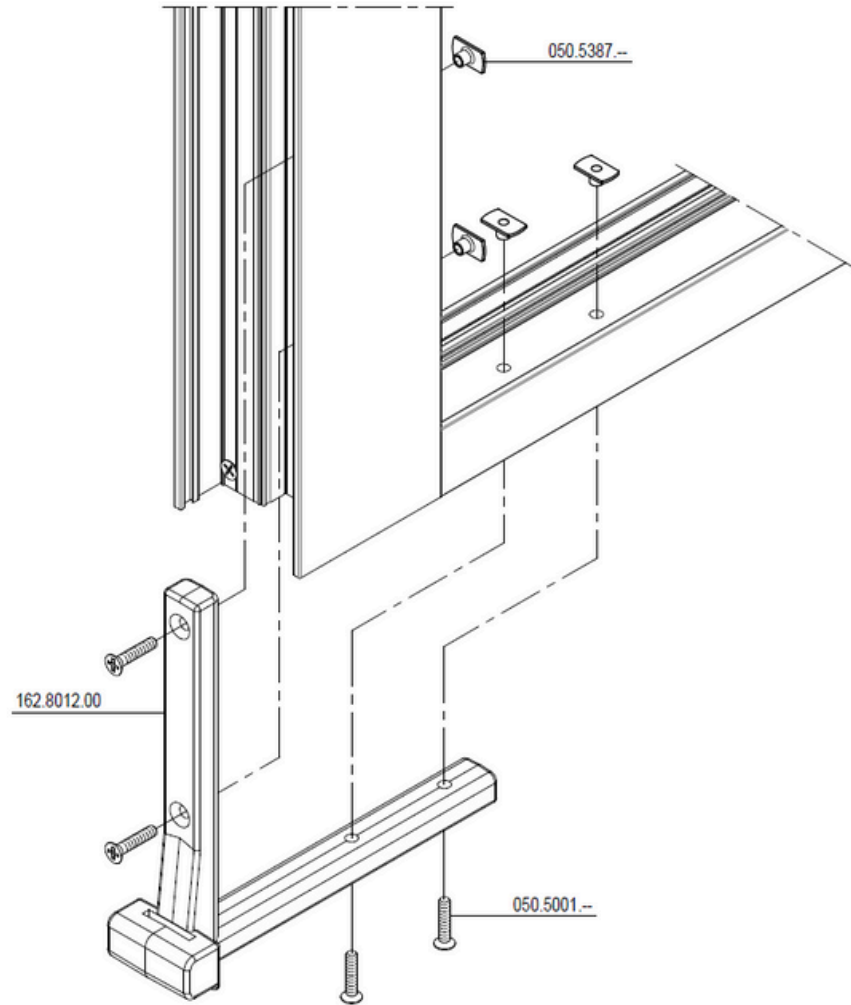
MasterPatio Vertical Slider

MOUNTING BELT



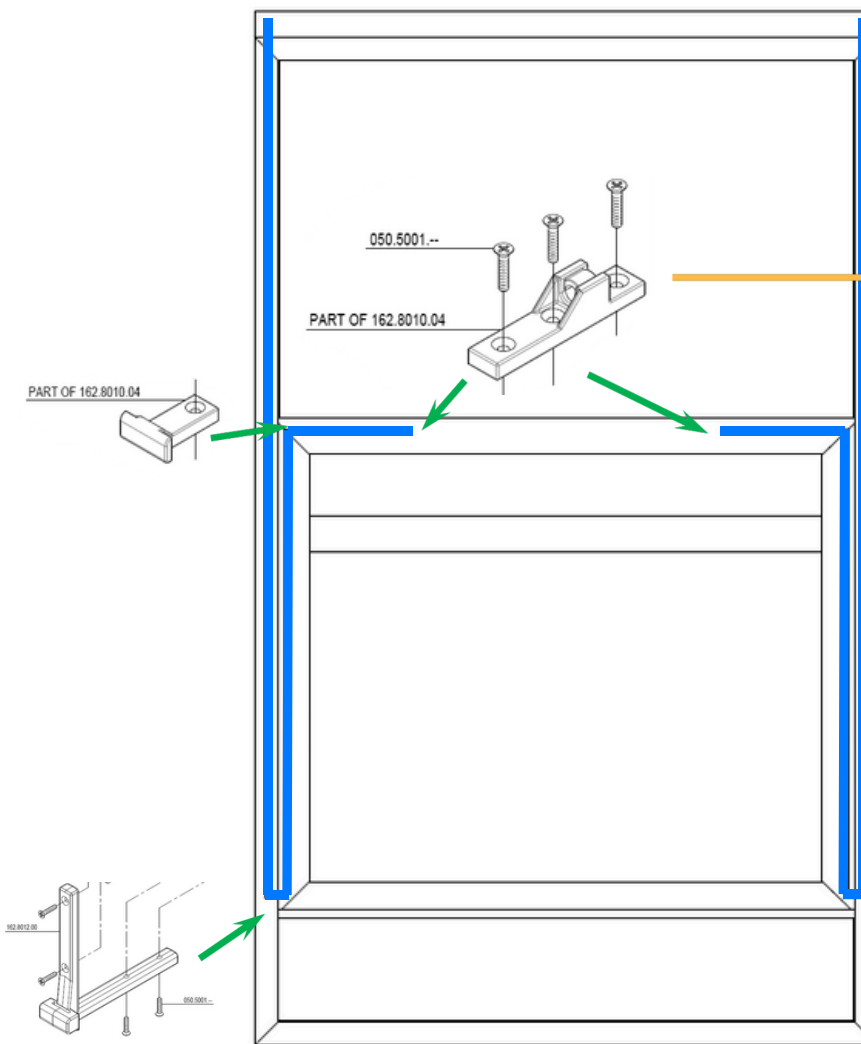
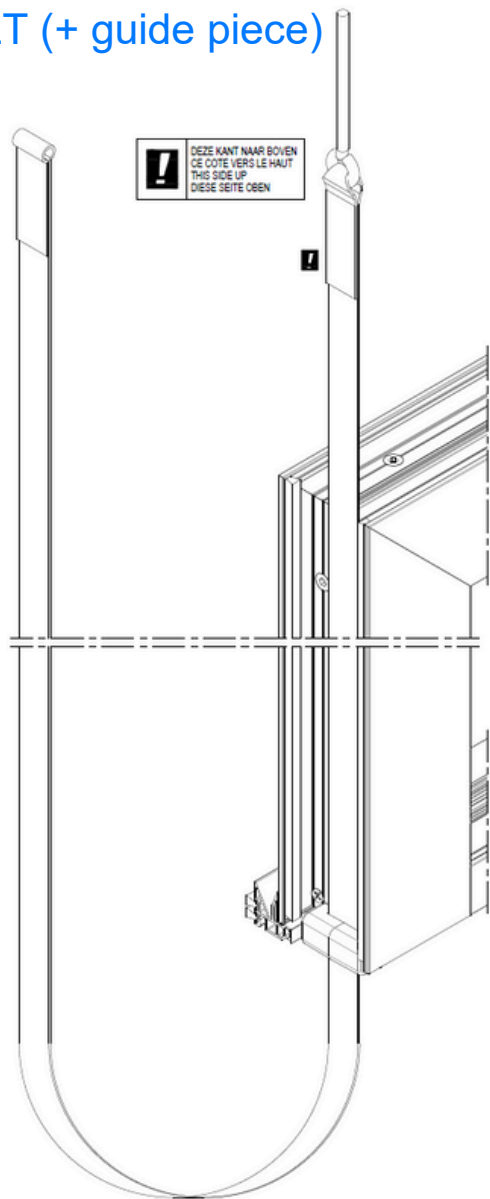
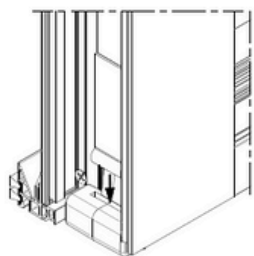
MasterPatio Vertical Slider

MOUNTING BELT (+ guide piece)



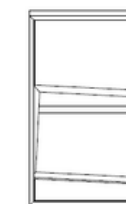
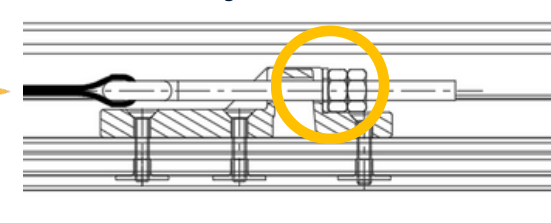
MasterPatio Vertical Slider

MOUNTING BELT (+ guide piece)




! POSITIE TE BEPALEN MET RIEM IN OPEN POSITIE
 LA POSITION PEUT ETRE DETERMINEE AVEC LA COURROIE EN POSITION OUVERTE
 POSITION TO BE DEFINED WITH BELT IN OPEN POSITION
 POSITION KANN MIT RIEMEN BESTIMMT WERDEN IN GEÖFFNETER POSITION

Adjustment nuts



MasterPatio Vertical Slider

MOUNTING BELT

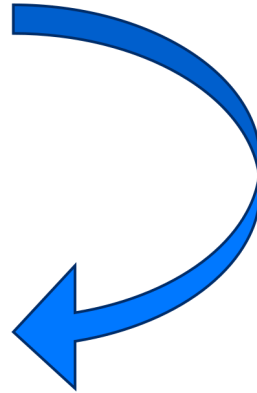
Belt HX/BX<0.9		2
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Belt QX

HX [mm]	
900-999	162.8304.-- (3800 mm)
1000-1099	162.8304.-- (3800 mm)
1100-1199	162.8305.-- (4500 mm)
1200-1299	162.8305.-- (4500 mm)
1300-1349	162.8305.-- (4500 mm)
1350-1399	162.8306.-- (5400mm)
1400-1500	162.8306.-- (5400mm)

Belt QXQ

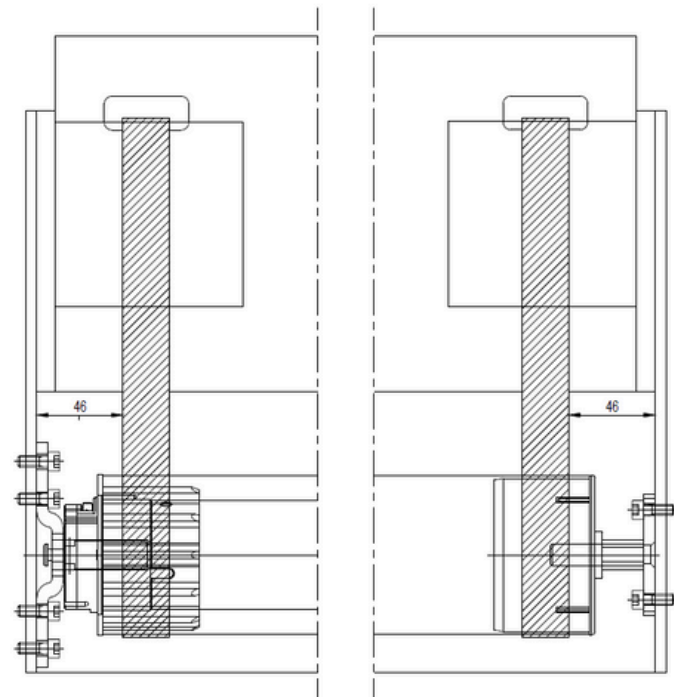
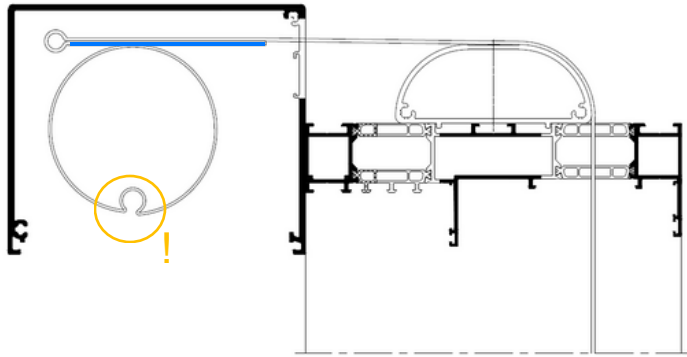
HX [mm]	HQ2 [500-749mm]	HQ2 [750-899mm]	HQ2 [900-1049]	HQ2 [1050-1300]
900-999	162.8305.-- (4500 mm)	162.8305.-- (4500 mm)	162.8305.-- (4500 mm)	162.8306.-- (5400mm)
1000-1099	162.8305.-- (4500 mm)	162.8306.-- (5400mm)	162.8306.-- (5400mm)	162.8306.-- (5400mm)
1100-1199	162.8306.-- (5400mm)	162.8306.-- (5400mm)	162.8306.-- (5400mm)	162.8306.-- (5400mm)
1200-1299	162.8306.-- (5400mm)	162.8306.-- (5400mm)	162.8306.-- (5400mm)	162.8307.-- (6200mm)
1300-1349	162.8306.-- (5400mm)	162.8306.-- (5400mm)	162.8307.-- (6200mm)	162.8307.-- (6200mm)
1350-1399	162.8306.-- (5400mm)	162.8307.-- (6200mm)	162.8307.-- (6200mm)	162.8307.-- (6200mm)
1400-1500	162.8307.-- (6200mm)	162.8307.-- (6200mm)	162.8307.-- (6200mm)	162.8307.-- (6200mm)



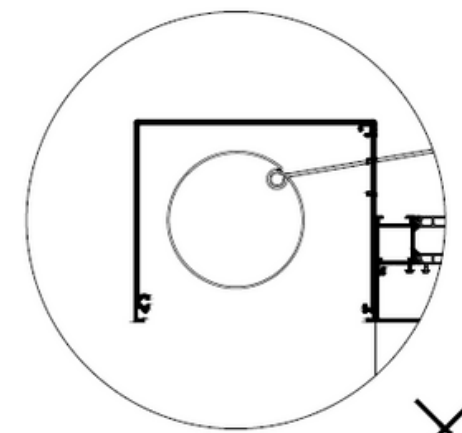
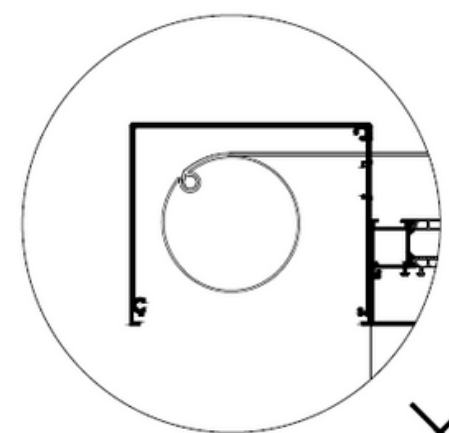
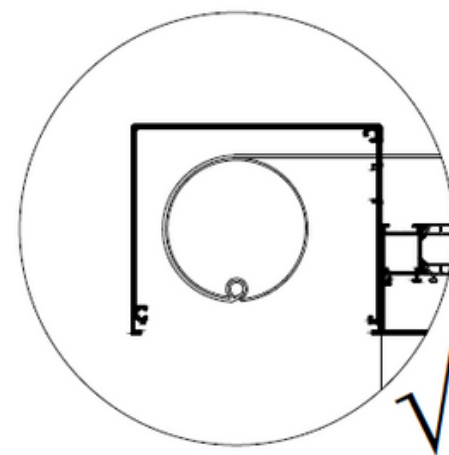
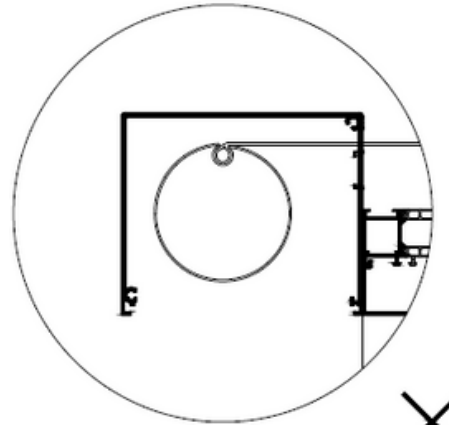
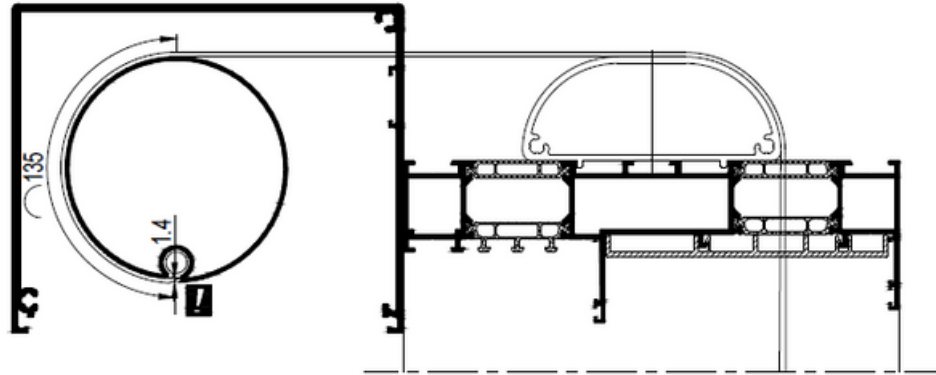
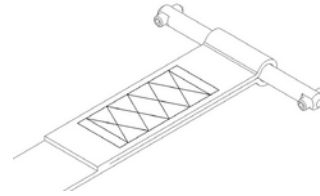
- 4 different belt lengths
- Open position = minimum half-winding of the belt on the tube
- Maximum: 8 windings of the belt = 2500 mm (OD 113 mm)
- Leveling the vent under the cover cap (top side)
- Belt HX/BX<0.9
=> Deviating= project requestforcustombelt size
- Testreport on everyproductionbatch

MasterPatio Vertical Slider

MOUNTING BELT



 VEILIGHEIDSRISICO
RISQUE DE SECURITE
SAFETY RISK
SICHERHEITSRISIKO





AVORA DOORS

MasterPatio VS

ASSEMBLY Motor & Cabling

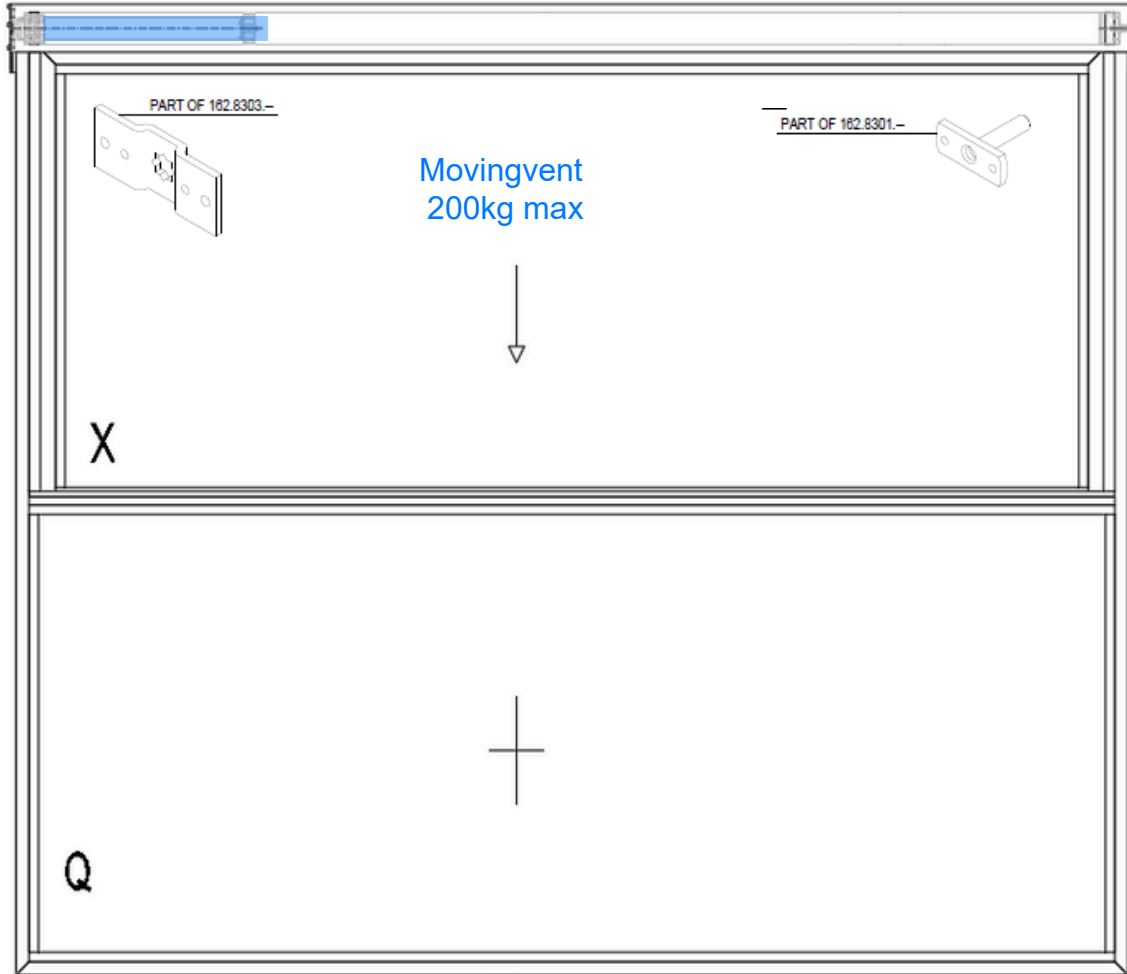


AVORA DOORS

MasterPatio Vertical Slider

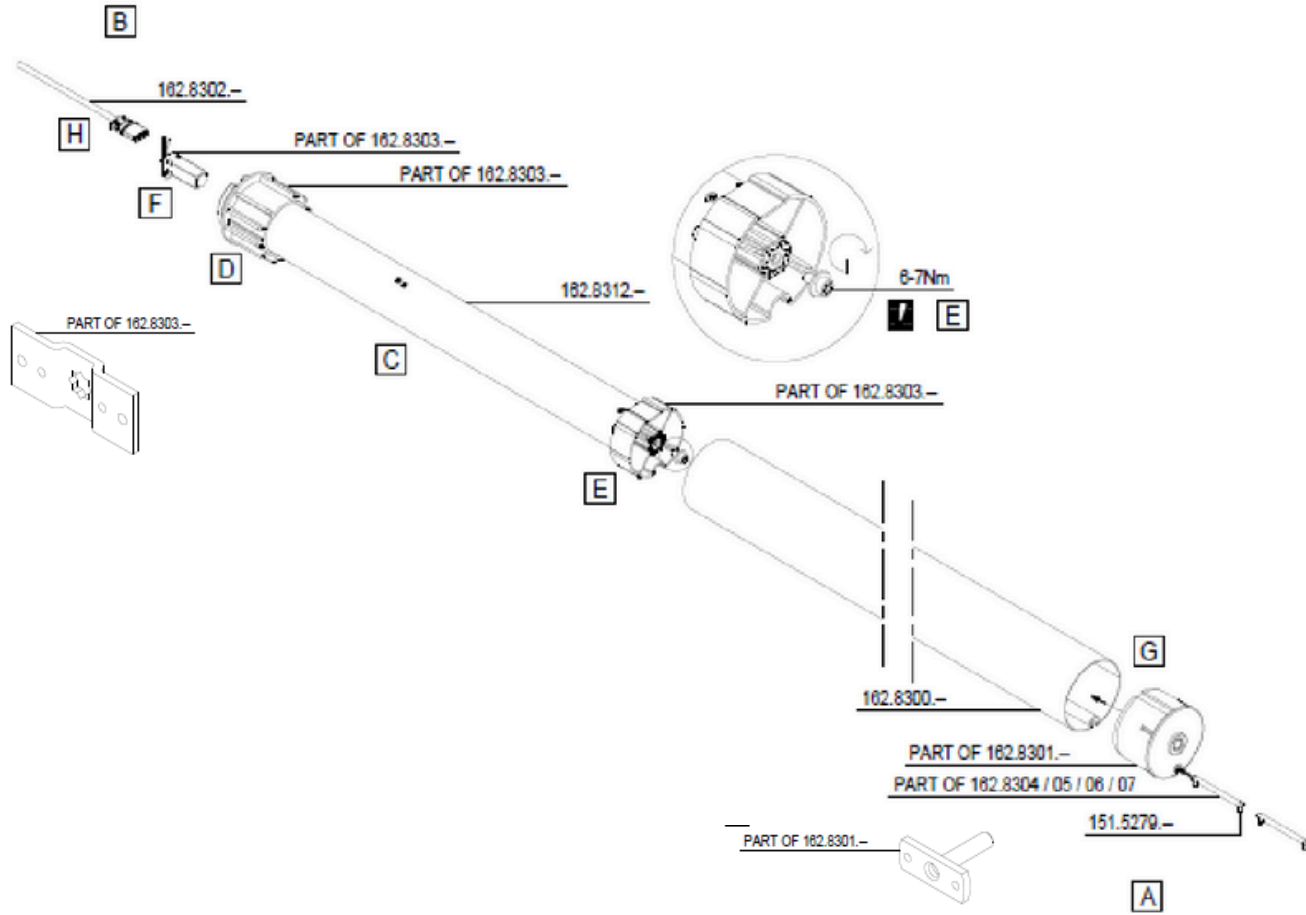
MOTOR ASSEMBLY

Inside view
Motor Left!



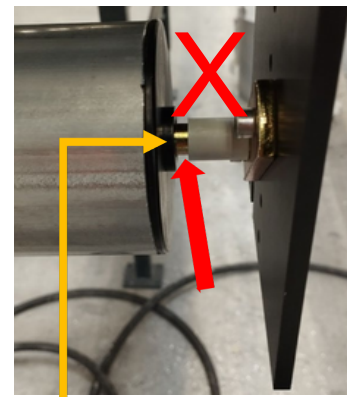
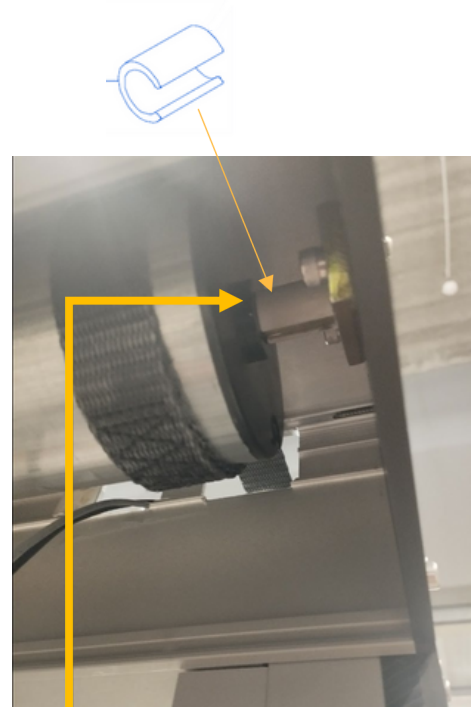
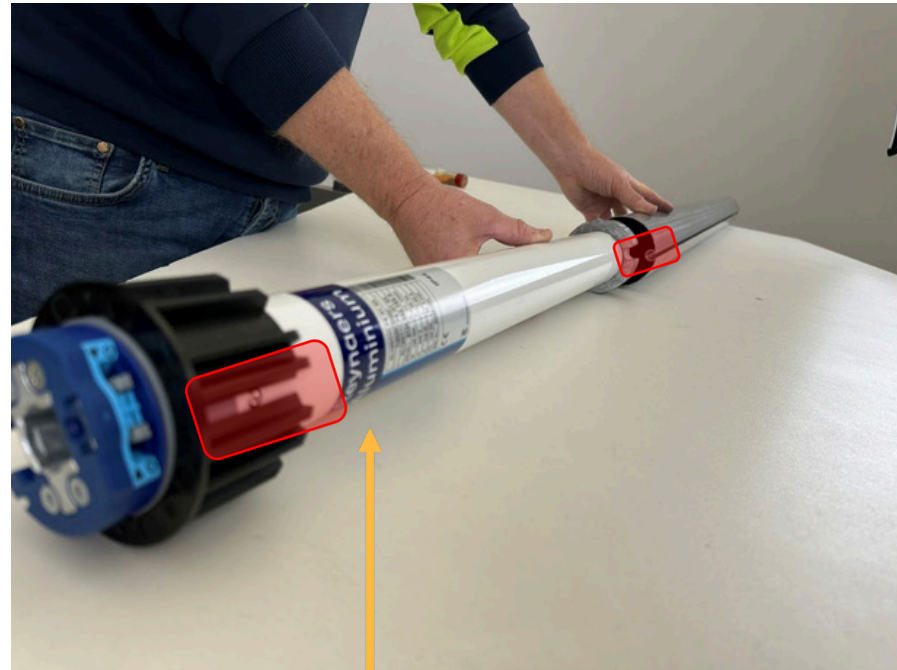
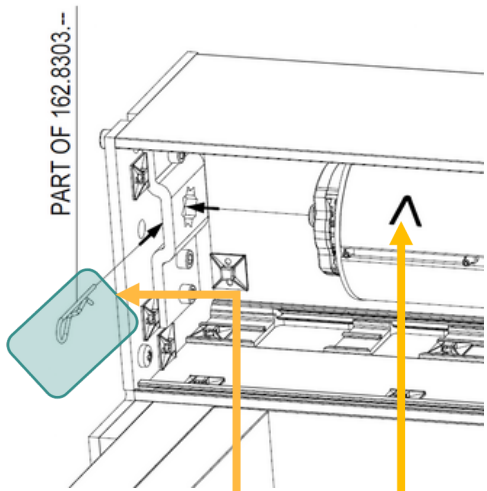
MasterPatio Vertical Slider

ASSEMBLY MOTOR



MasterPatio Vertical Slider

ASSEMBLY MOTOR



- Everything must be aligned with the slotted groove
- Safety clips tube mounted
- Correct tube orientation(Λ)
- Safety clips motor mounted
- No tolleranceson tube

MasterPatio Vertical Slider

ASSEMBLY MOTOR => TUBE MOTOR SPECIFICATIONS

162.8312.-- TUBE MOTOR 120Nm 230VAC 50Hz

Technical data and specified values	
Torque	120 Nm
Speed (idling)	11 U/min
Speed (load)	8 U/min
Opening time	+/- 20sec per 1200mm
Duty cycle	1/30 1 min run time is 30min cool down
Max amount of rotations	64 rotations
Max hold force in closed position	240 Nm
Rated voltage	230 V
Mains frequency	50 Hz
Power consump.	435 W
Rated current	1,9 A
Operating mode	S2 4 min
Life expectancy	10,000 cycles
IP degree of protection	IP 44
Noise Level	≤70dB(A)
Insulation material class	180 (H)
Integrated thermal protection	ja
Permissible ambient temperature	-10 ... 40°C
Max. humidity	70%
Limit switching accuracy	+/- 5°
Brake	2-shear
Cable type	plug-in
Static load max	200 kg
Test certificates	CE

CE tested only applies for EU

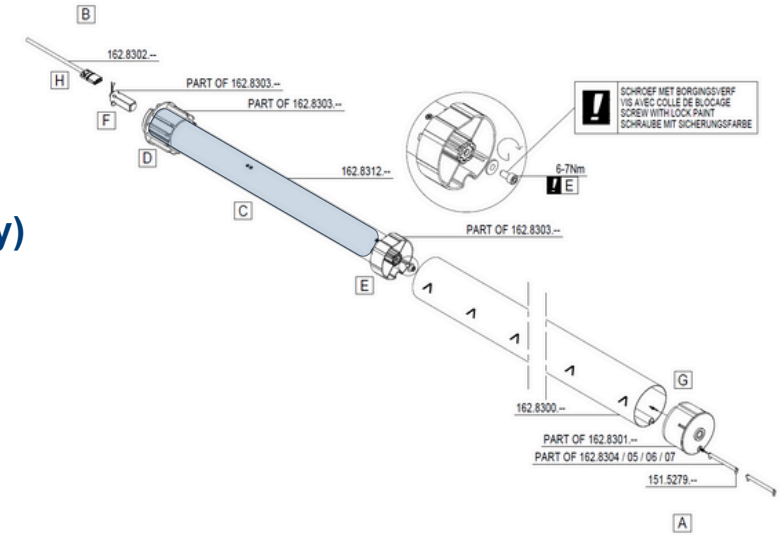
Max 200Kg

Speed open cycle: +/-20 sec

10K cycles= ±7 years(4 cycles/day)

Not for mains frequency 60HZ

Not for rated voltage 110VAC

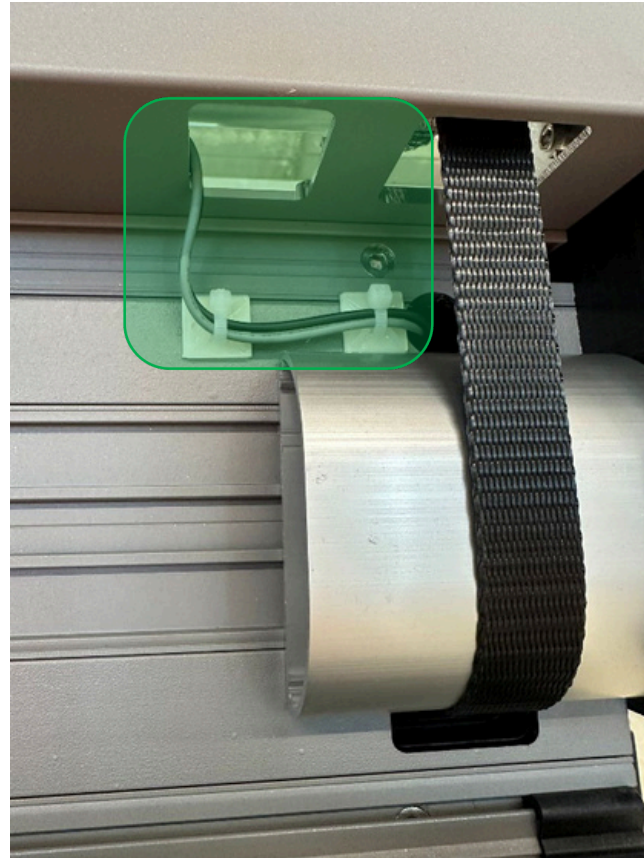


KC안전인증마크
 국가품질인증마크(KC)를 획득한
 인체에 무해한 안전한 제품입니다.
 This product has Safety Certificate
 for Industrial Products,
 Korea Certificate(KC)








MasterPatio Vertical Slider

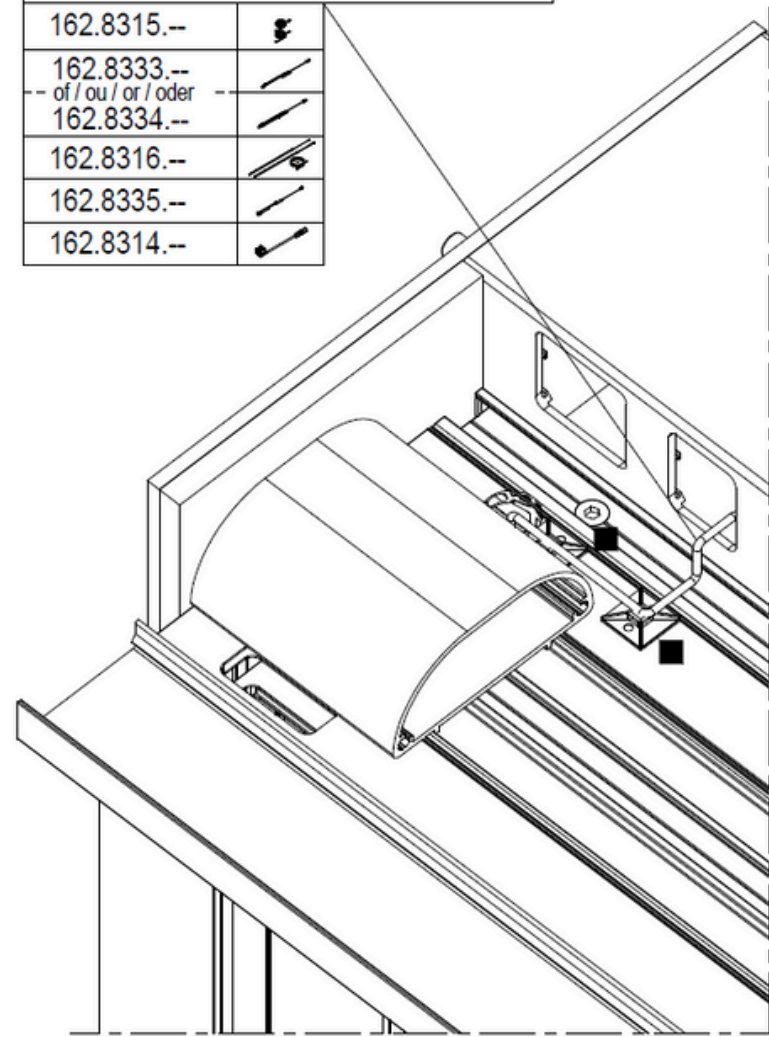
ASSEMBLYMOTOR =>CABLEMANAGEMENT

- There should be no loose cables lying around in the motor housing
- Make sure everything is securely attached and that the extra cable is neatly tucked away under 162.8316.00



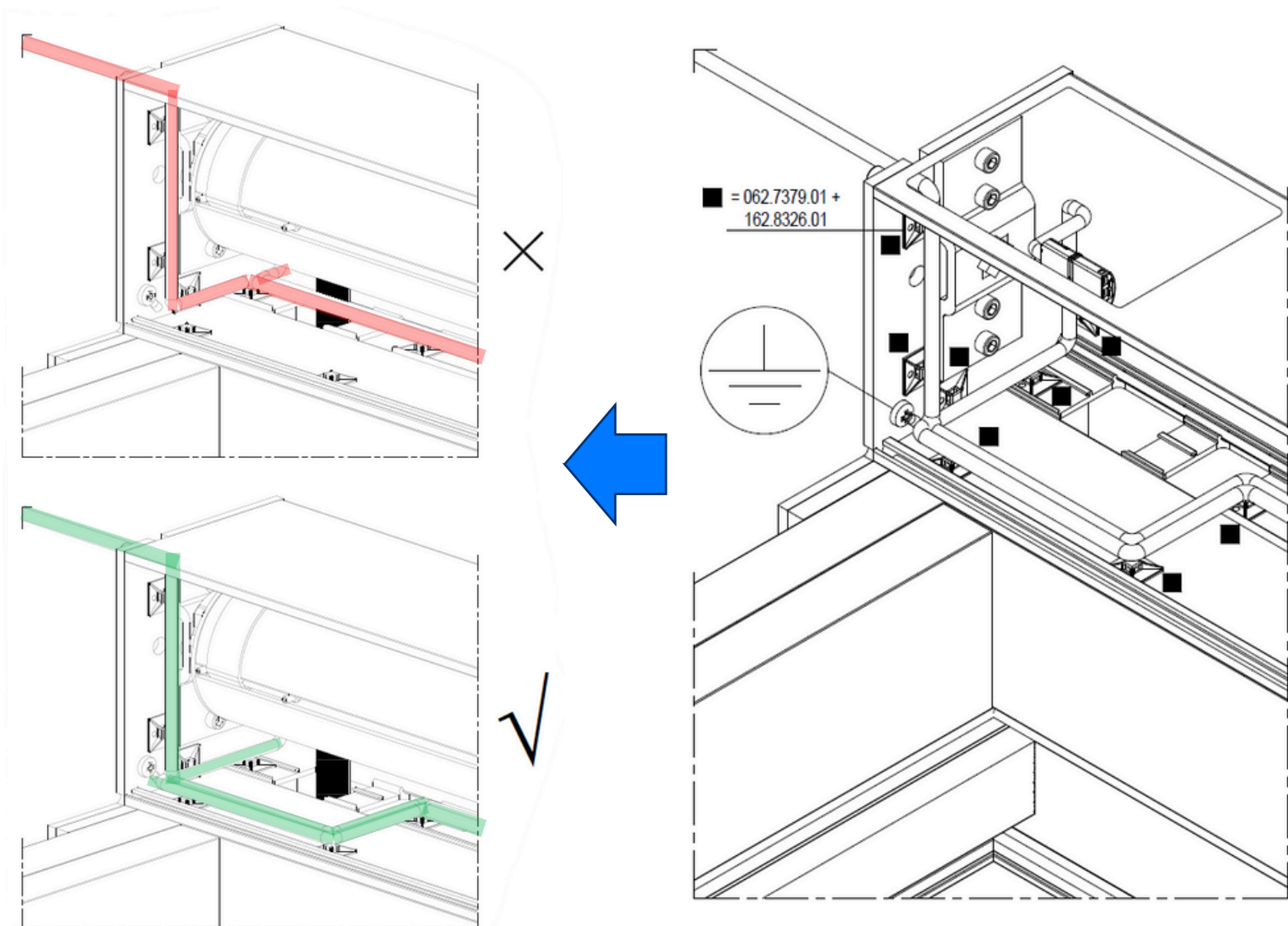
KABELMANAGEMENT VOOR DRUKKNOP EN VEILIGHEID
 GESTION DES CABLES POUR LE BOUTON-POUSOIR ET LA SECURITE
 CABLE MANAGEMENT FOR PUSH BUTTON AND SAFETY
 KABELMANAGEMENT FUR DRUCKKNOPF UND SICHERHEIT

162.8315.--	
162.8333.--	
-- of / ou / or / oder --	
162.8334.--	
162.8316.--	
162.8335.--	
162.8314.--	



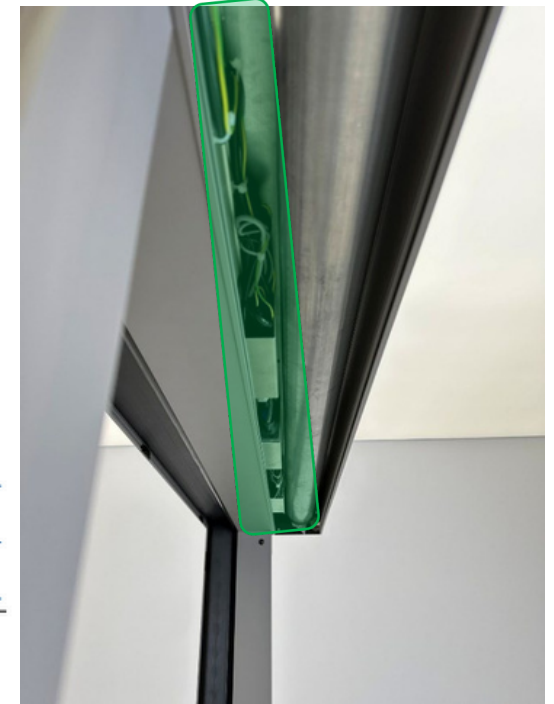
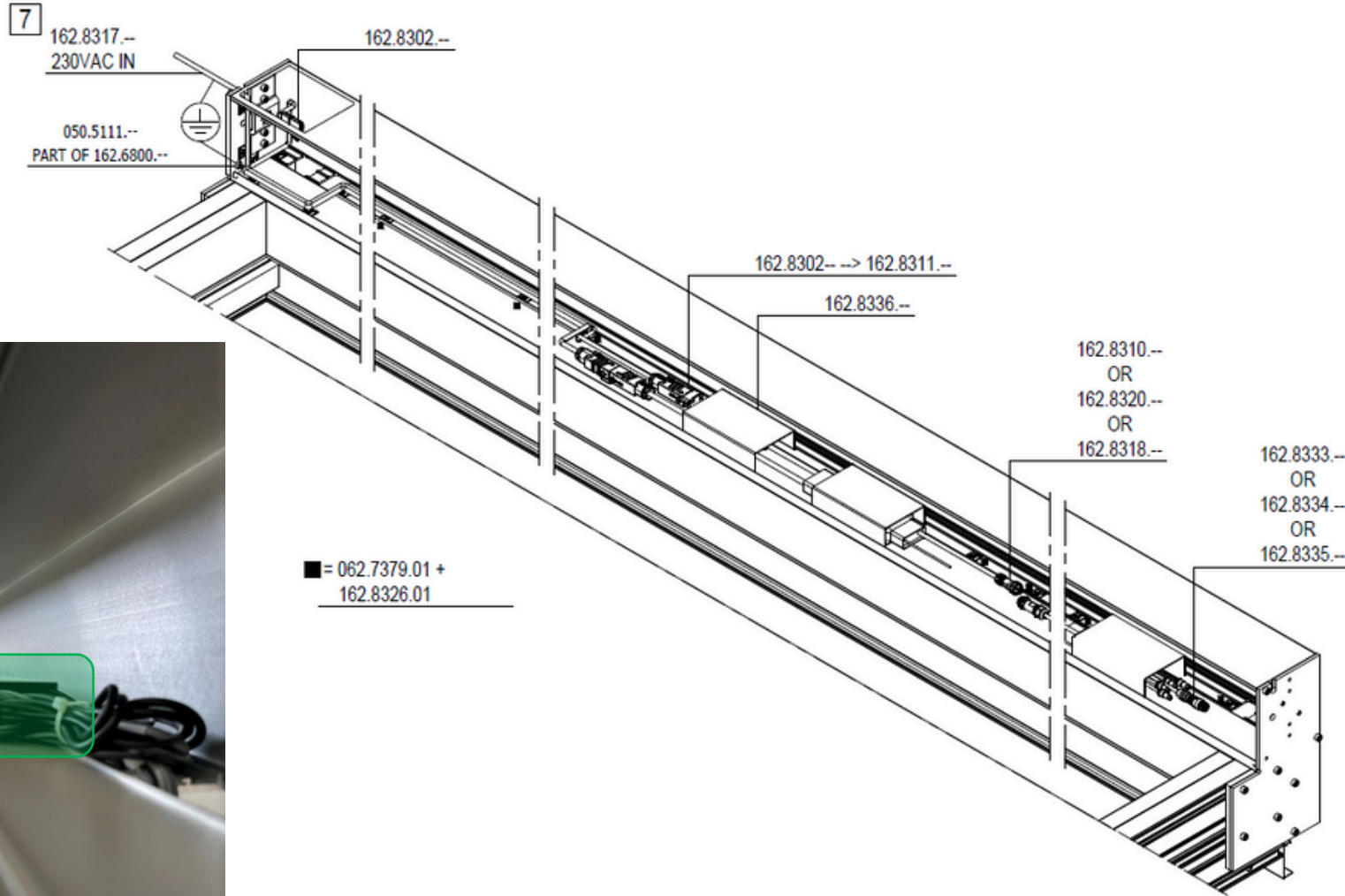
MasterPatio Vertical Slider

ASSEMBLY MOTOR => CABLE MANAGEMENT



MasterPatio Vertical Slider

ASSEMBLYMOTOR => CABLEMANAGEMENT





AVORA DOORS

MasterPatio VS

MOTORISATION SCENARIO'S

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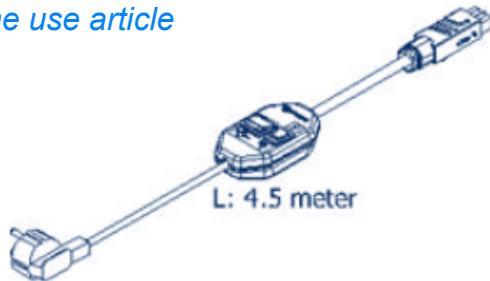
MOTORISATION SCENARIO'S

Choice 1 BASIC SET
Noexternalsafety



Standard set motorisation

1 time use article



Learning in motor endpoints on tube motor

+

Choice 3.1
+1 set Infra-Red Eyes
Bottom



or

Choice 3.2
+2 sets Infra-Red Eyes
Top + Bottom



or

Choice 3.3
+Lightcurtain
HX > 1212 STANDARD CHICANE
HX > 1175 SLIM CHICANE



Choice 2 Control unit needed for:
Safety, Ventilation position, remote buttons
Projects with a Building management system



1 time use article



Learning in safety scenario on control unit

MasterPatio Vertical Slider

MOTORISATIONSCENARIO'S-CHOICE1 : Basic Set Motor

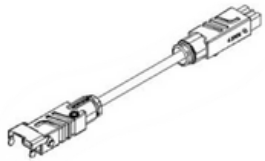
Motor position defines:

Cable exit to mains electricity

insideview motor position **LEFT (Default)**

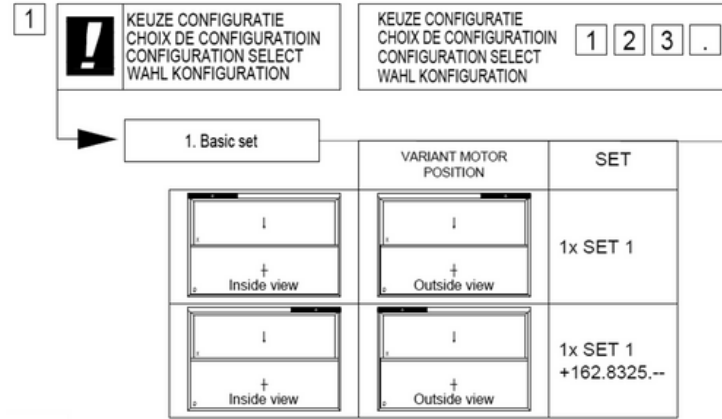
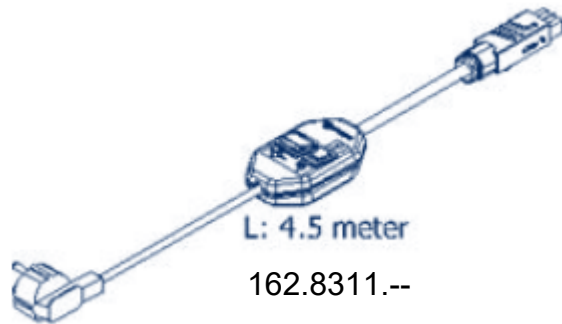
insideview motor position **RIGHT = Alternative**

Additional cable needed 162.8325.--for:



- inverse motor rotation
- Correct safety direction with controller 162.8310.--
- Adapted calibration procedure with 162.8311.--

One time use article for setting end point in tube motor 162.8312.--

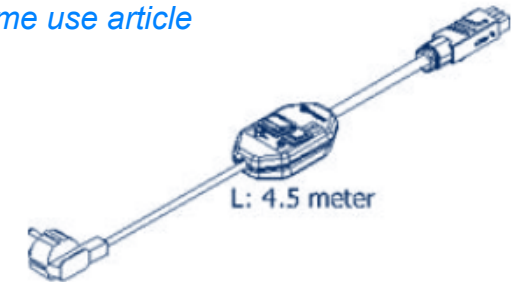


Choice1 BASICSET
No external safety



Standard set motorisation

1 time use article

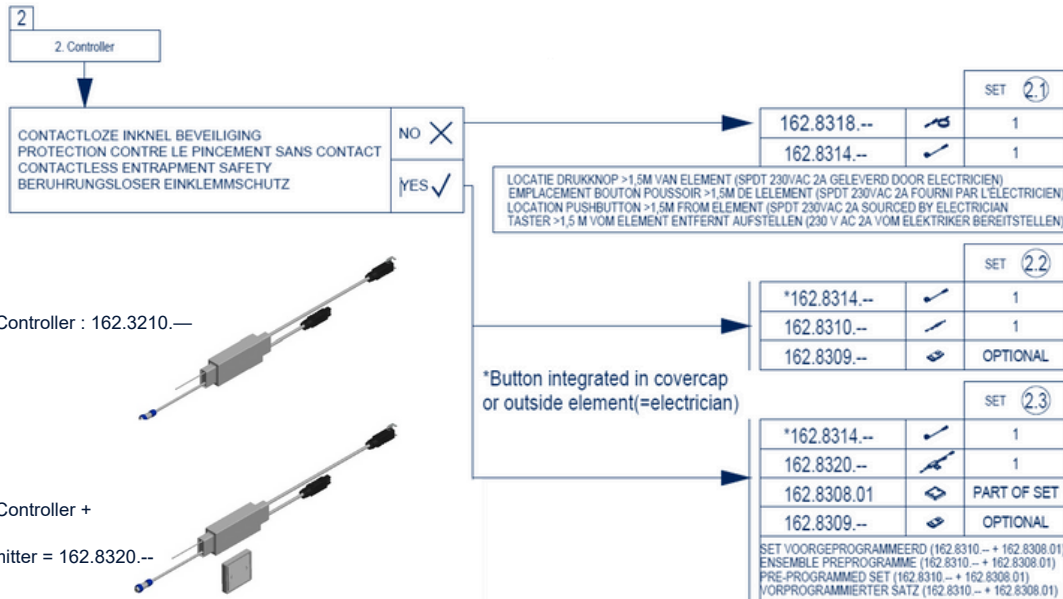


Learning in motor endpoints on tube motor

MasterPatio Vertical Slider

MOTORISATIONSCENARIO'S-CHOICE2 : Safety YES/NO

- Button mode
 - HTR or byPulse(NO SAFETY selected)
 - RF buttons (834MHZ)
 - 162.8308.01 (prelinked in set 162.8320.--) -Wall mount
 - 162.8309.--Handheld
- Ventilation position
- Motor run time
- Onetime use article for setting modes inside controller



Choice 3.1
+1set Infra-Red Eyes
Bottom



Choice 3.2
+2 sets Infra-Red Eyes
Top + Bottom



Choice 3.3
+Lightcurtain
HX > 1212 STANDARD CHICANE
HX > 1175 SLIM CHICANE



or or

Choice 2 Control unit needed for:
Safety, Ventilation position, remote buttons
Projects with a Building management system



1 time use article



Learning in safety scenario on control unit

MasterPatio Vertical Slider

MOTORISATIONSCENARIO'S-CHOICE2 : Safety scenario Buttons

	CONTACTLESS ENTRAPMENT SAFETY	
	NO	YES 162.8310.--/ 162.8320.--
Location button	> 1.5M from element, In line of sight Vent not 100% flush 50mm clearance	Integrated in covercap in combination with a Safety scenario
Behavior button	Hold To Run only!! (HTR)	By Pulse or Hold To Run (HTR)
Article wired button	Final Button sourced by electrician Button 162.8314.--only as temporally button !!	162.8314.--or alternative button sourced by electrician
Article wireless button 50meter range	Not available	162.8308.01 Wallmount button prelinked in set 162.8320.-- 162.8309.--Handheld button
Specs button	Non-Latching (ON)-OFF-(ON) SPDT 230VAC 2A	Non-Latching (ON)-OFF-(ON) SPDT -Potential free
Cabel loom	162.8318.--	Depending on safety scenario 3.1 = 162.8333.--(1 set IR eye protects open direction) 3.2 = 162.8334.--(2 set IR eyes protects open + close direction) 3.3 = 162.8335.--(Light Curtain protects open + close direction)
Ventilation Position	Not Available	Wired: Open pulse only from closed position pulse < 1.5 sec Wireless: open pulse < 1.5 sec (only when idle 60sec)



Sourced by electrician



162.8314.--



162.8308.01



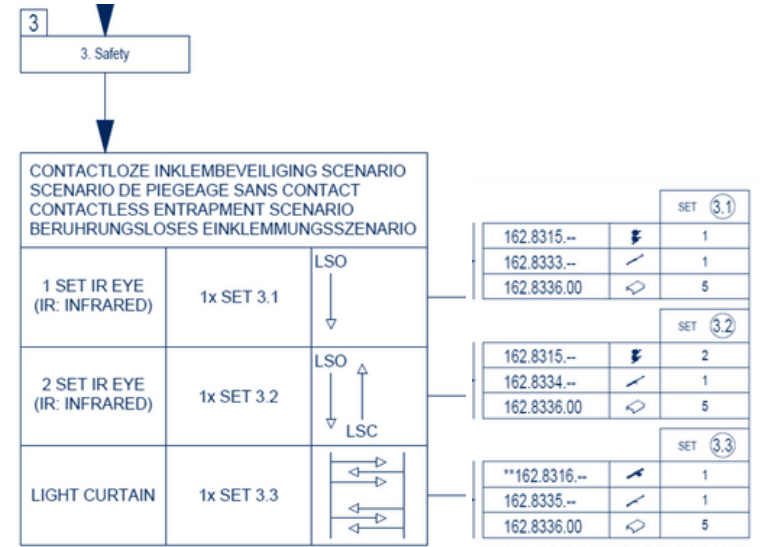
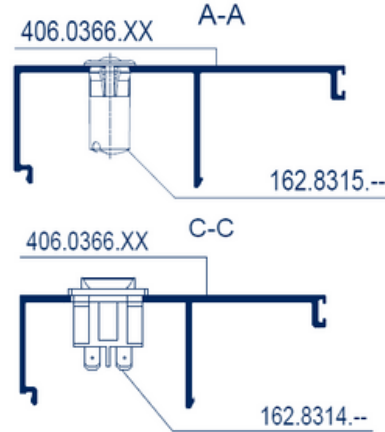
162.8309.--

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MOTORISATIONSCENARIO'S-CHOICE3 : Safety scenario

162.8315.--Infra-red Eye

□ Bottom/Top

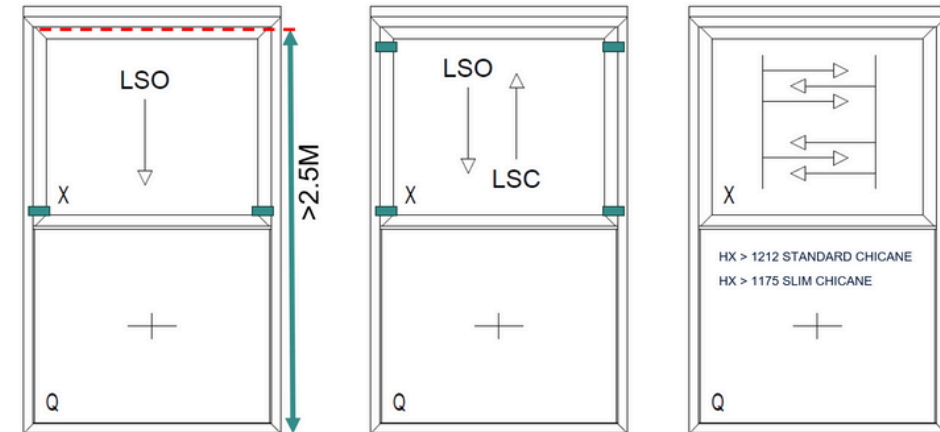
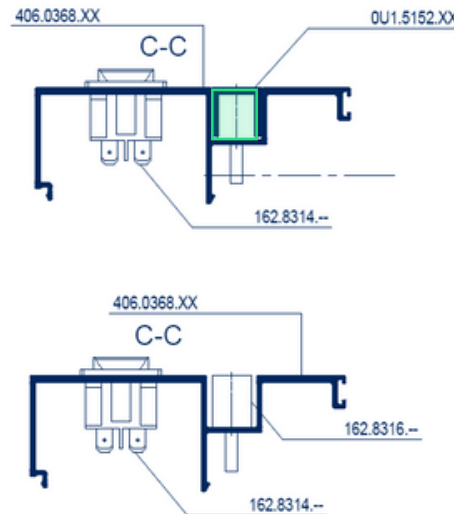
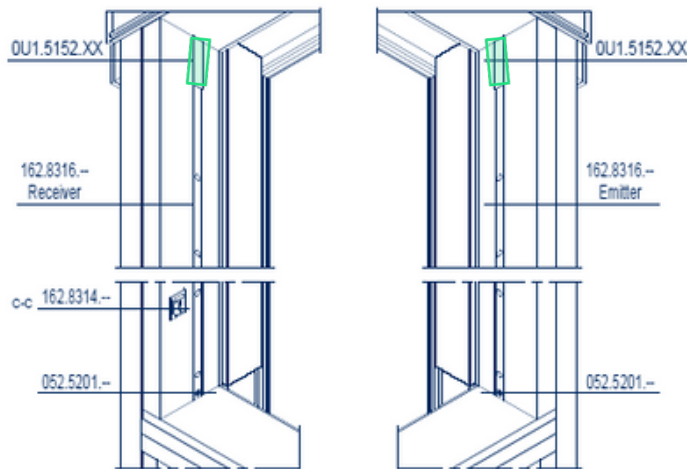


** HX > 1212 STANDARD CHICANE
** HX > 1175 SLIM CHICANE

162.8316.--Light curtain


□ HX > 1212 STANDARD CHICANE

HX > 1175 SLIM CHICANE



MasterPatio Vertical Slider

MOTORISATION SAFETY IN USE

	Vertical Slider <i>IEC60335-2-103</i> <i>(House hold appl.)</i> 		
Type actuation/user	Door	Window <200 mm	Window >200 mm
Button HTR (Publ. with key)	HTR In line of site of door	HTR In line of site of door	
Button pulse	PSPE Alt. ESPE	Slow speed < 15mm/s	PSPE (Current margin OR Mayser) Alt. ESPE
Remote or automated control	ESPE		ESPE
Weak users (large portion of users are elderly, kids, disabled person...)	Full ESPE		



* Only for reachable windows / no safeguarding for windows above 2,5 m

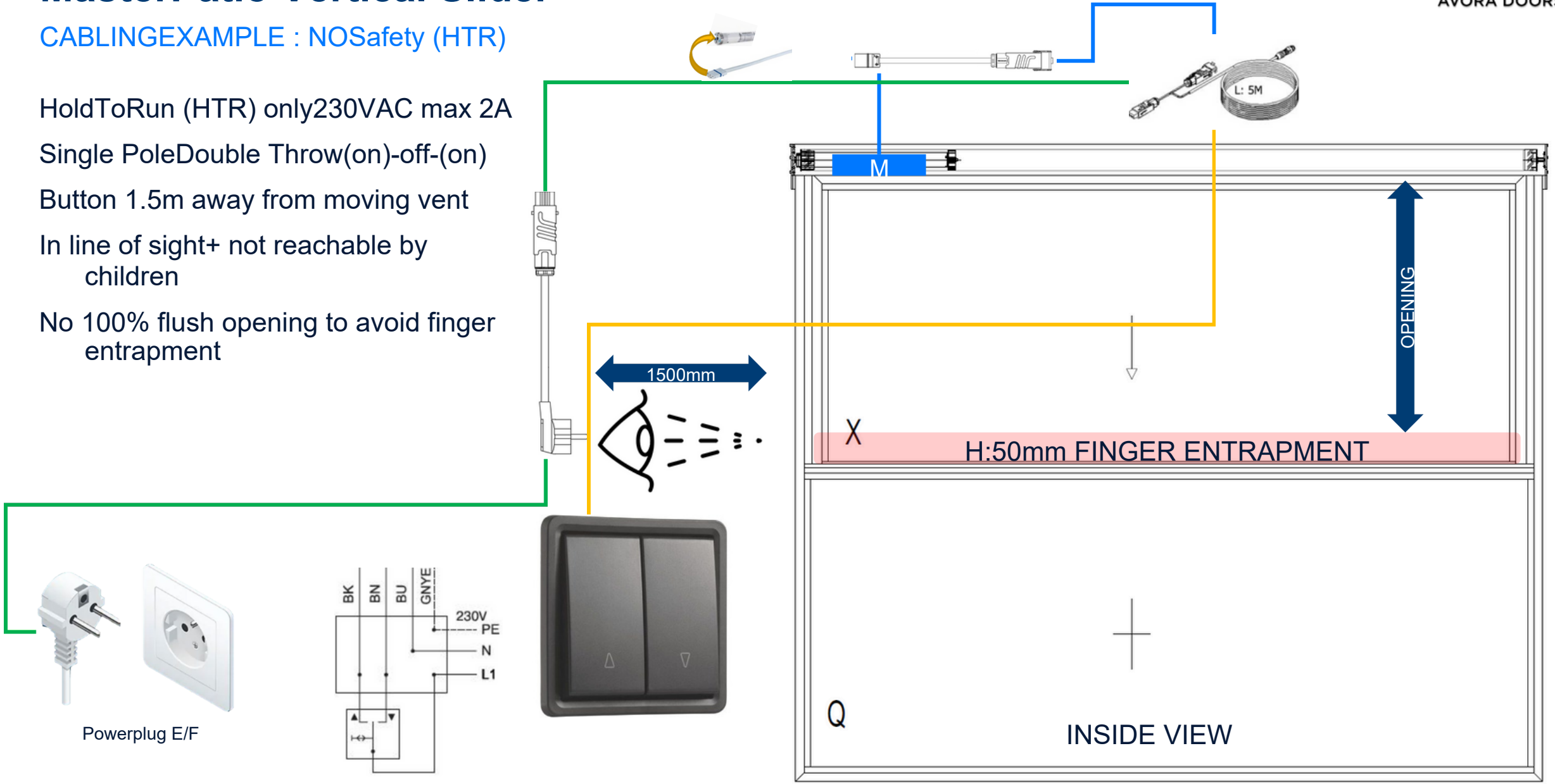
ESPE: Electro Sensitive Protective Equipment => light curtain, radar, ...

PSPE: Pressure Sensitive Protective Equipment => pressure gasket, current protection, safety mats, ...

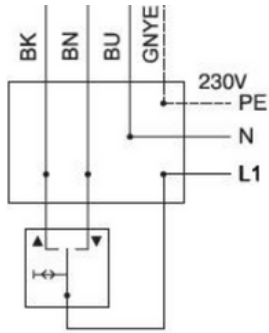
MasterPatio Vertical Slider

CABLINGEXAMPLE : NOSafety (HTR)

- HoldToRun (HTR) only 230VAC max 2A
- Single Pole Double Throw (on)-off-(on)
- Button 1.5m away from moving vent
- In line of sight + not reachable by children
- No 100% flush opening to avoid finger entrapment



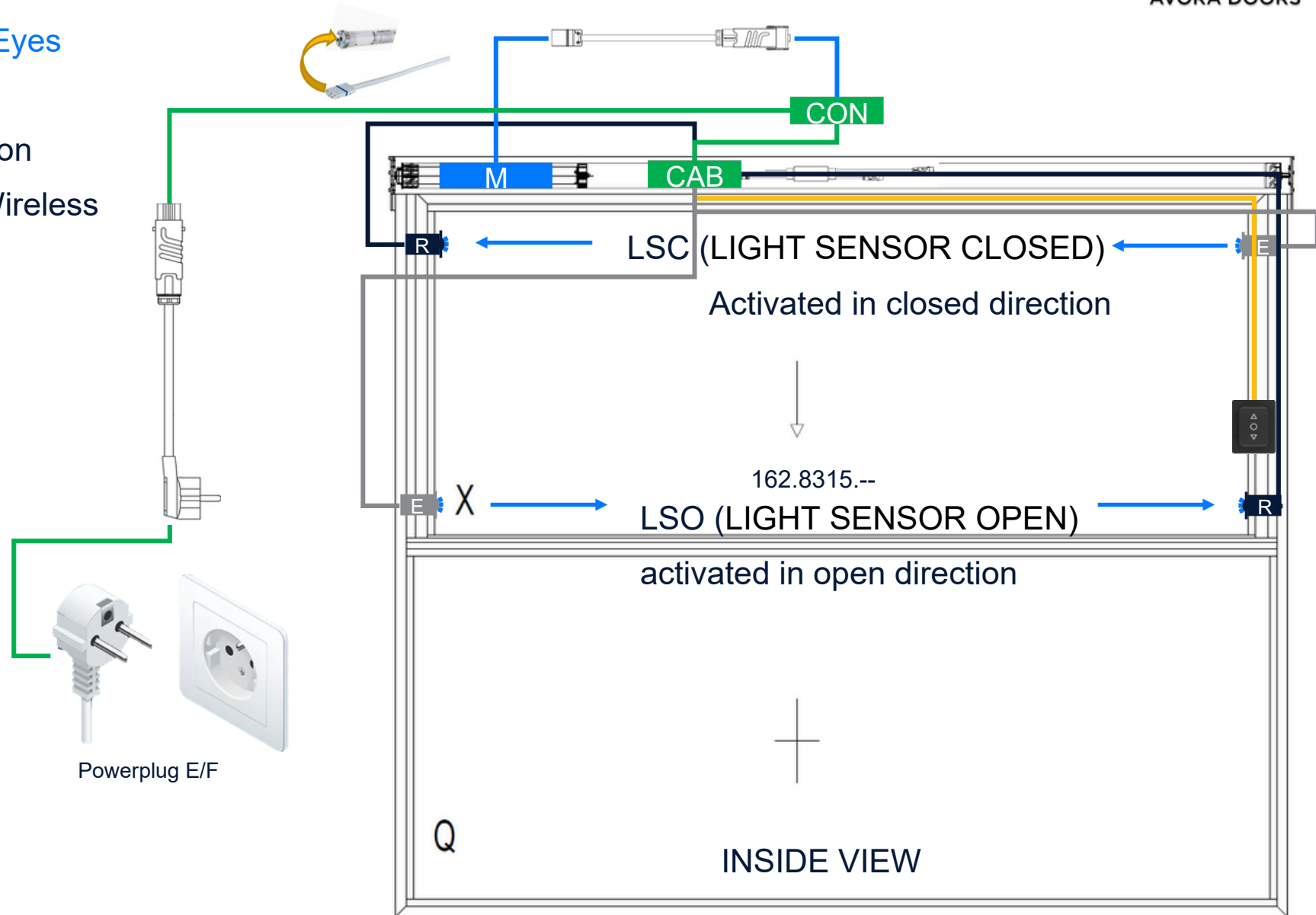
Powerplug E/F



MasterPatio Vertical Slider

CABLINGEXAMPLE : 1setor2setsIREyes

Safety active in closed or open direction
 Button cover cap integrated and/or Wireless



Optional
Handheld remote
162.8309.--



Optional
Wireless wallmount button
Part of 162.8320.--

Powerplug E/F

MasterPatio Vertical Slider

CABLINGEXAMPLE : LightCurtain



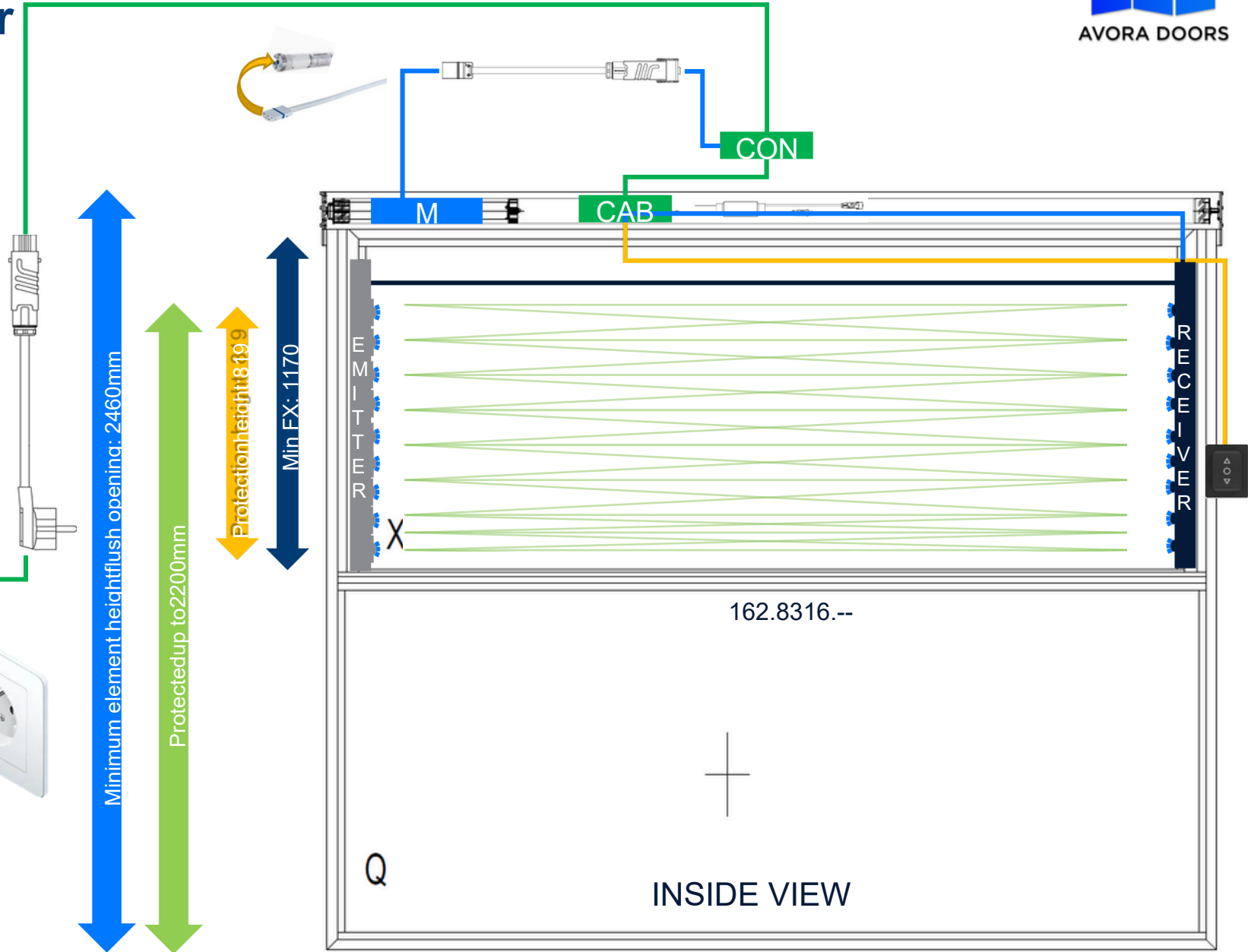
Optional
Handheld remote
162.8309.--



Optional
Wireless wallmount button
Part of 162.8320.--



Powerplug E/F



162.8316.--

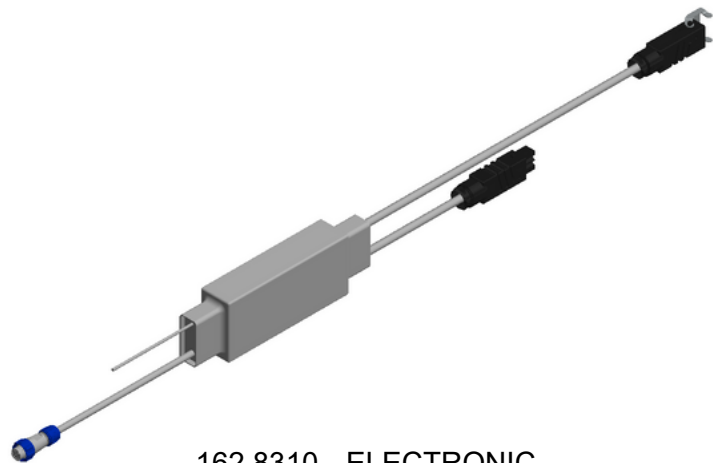
INSIDE VIEW

MasterPatio Vertical Slider

PROJECT APPROACH

Project Approach

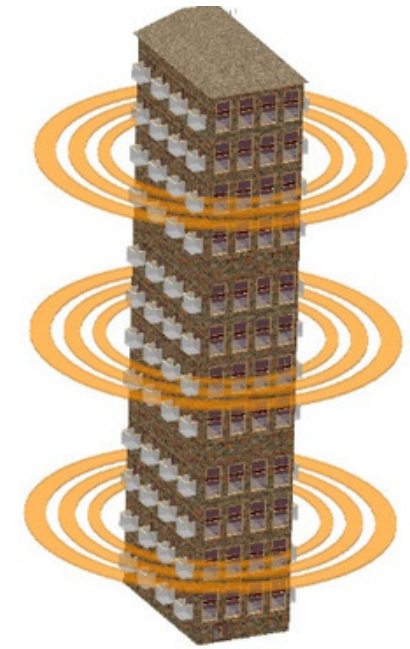
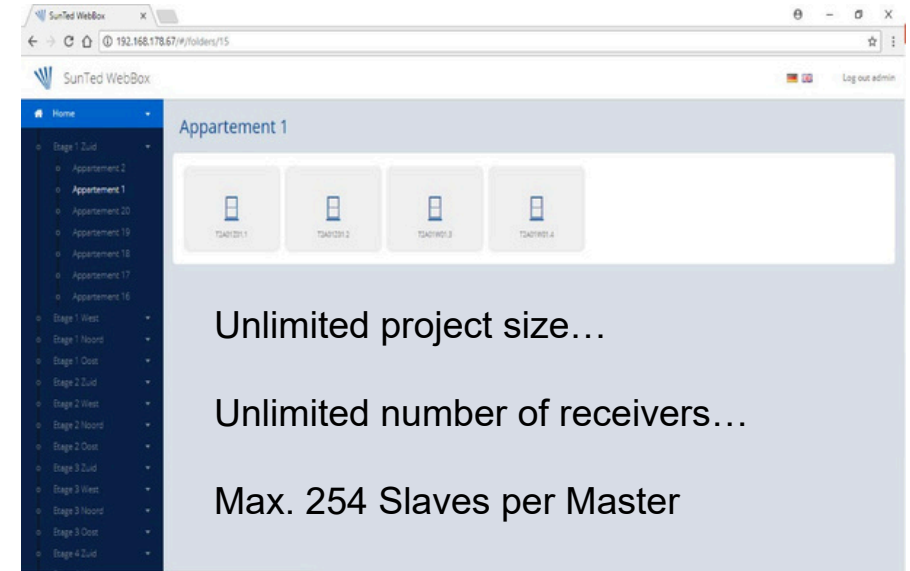
- Controller can be linked to a master module.
- Full control of the building is possible via the building management system.
- Connects to: sun, wind, or rain sensors.
- Mode of operation: individual, one floor, one side, full building, etc.



162.8310.--ELECTRONIC
CONTROLLER EVS



AVORA DOORS



MasterPatio Vertical Slider

KEY CONSIDERATIONS

Not just a system:

Amotorized sliding solution requiring **certification** for fabrication & installation

Fabricator Responsibility:

Liabile for installation; **risk analysis** required before calculations.
Clear communication on **responsibilities** before selling.

Regulatory Compliance motorisation:

- **CE tested** forEU & UK– **Main focus markets.**
- Motorisationcomponents **not applicable** formarkets with 110V (US, Canada) or 60Hz (e.g., Korea).
- **Not FCC, UL, or KC tested** –limits applicability outside CE regions.

Service:

Requires ongoing support; fabricators/installers must **provide service** post-installation (24/7) (In some cases, **safety stock** requirements apply.)

Product Lifecycle:

10,000cyclesmotor(~7 years at 4 cycles/day)



MasterPatio Vertical Slider

MACHINE DIRECTIVE : Checklist

Belt alignment Vent

- Equal distance fixation mounting
- 2 nuts in place & vent levelled
- Quality label readable pointing upwards
- Belt centered on guiding piece
- CE Label filled in under covercap



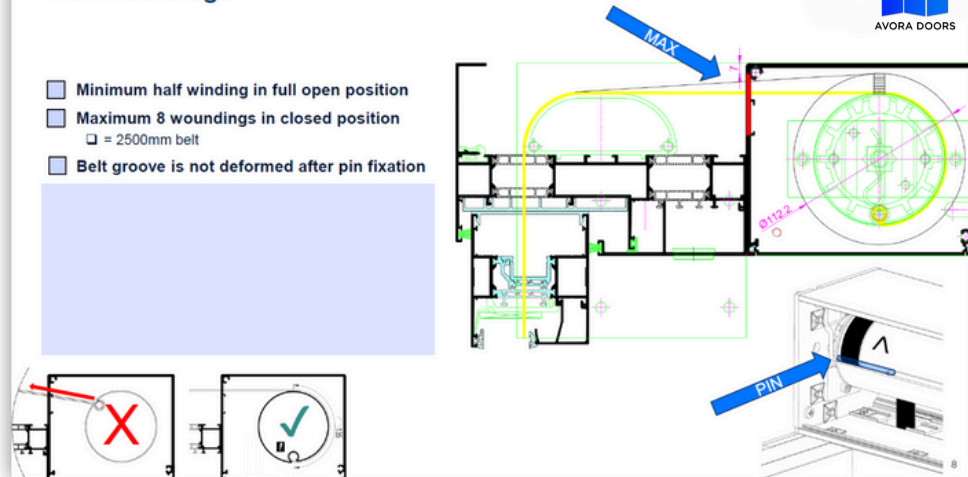
Cabling

- Protective earth is connected
- Cables don't touch tube by using cable trays + cable looms
- Motor cable must not be too long (max 150mm)
- Cables are not damaged and deliver with an electric plug



Belt windings

- Minimum half winding in full open position
- Maximum 8 windings in closed position
 - = 2500mm belt
- Belt groove is not deformed after pin fixation





AVORA DOORS

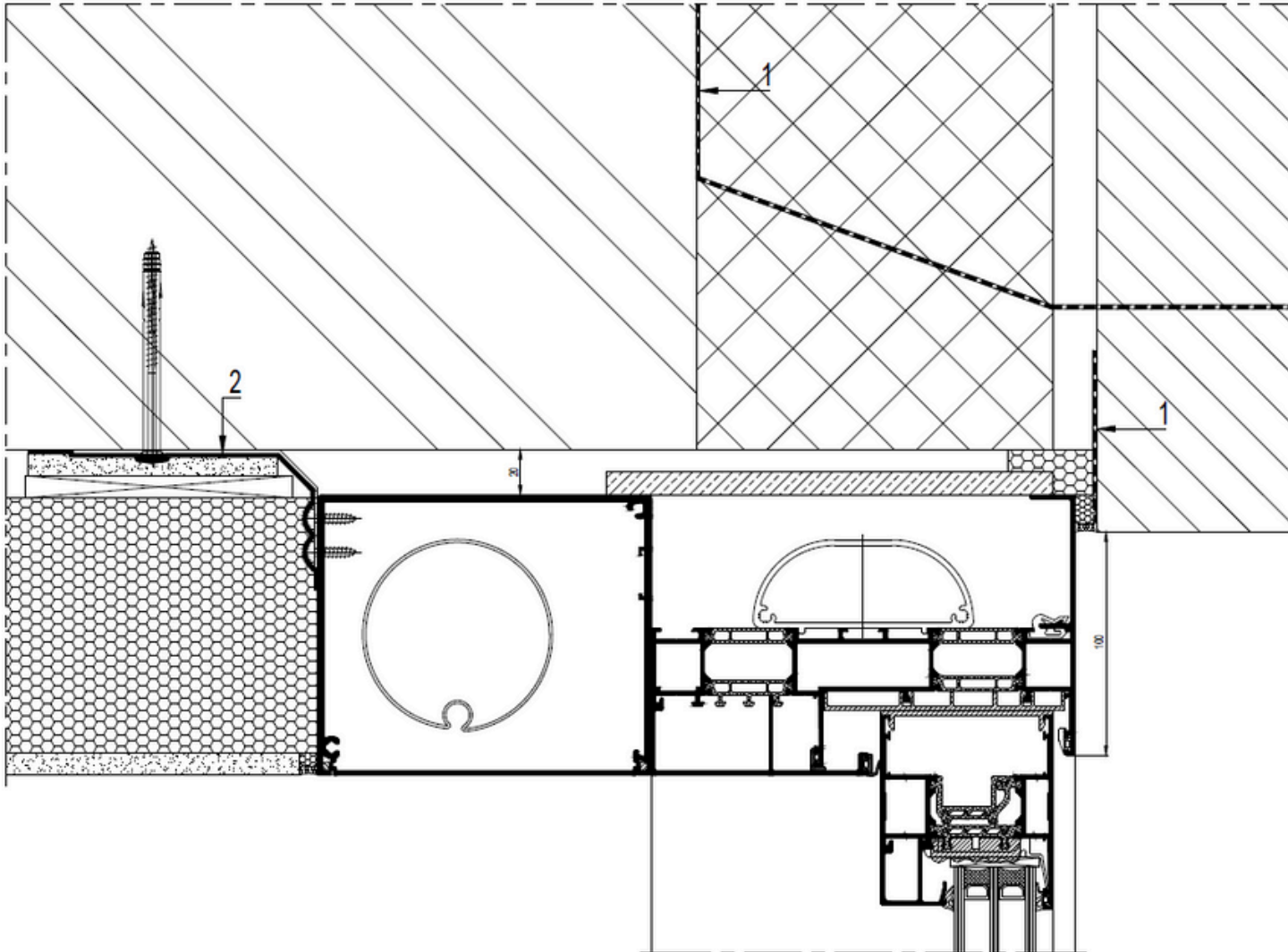
MasterPatio VS

BUILDING CONNECTIONS

MasterPatio Vertical Slider

BUILDING CONNECTIONS

Option 1

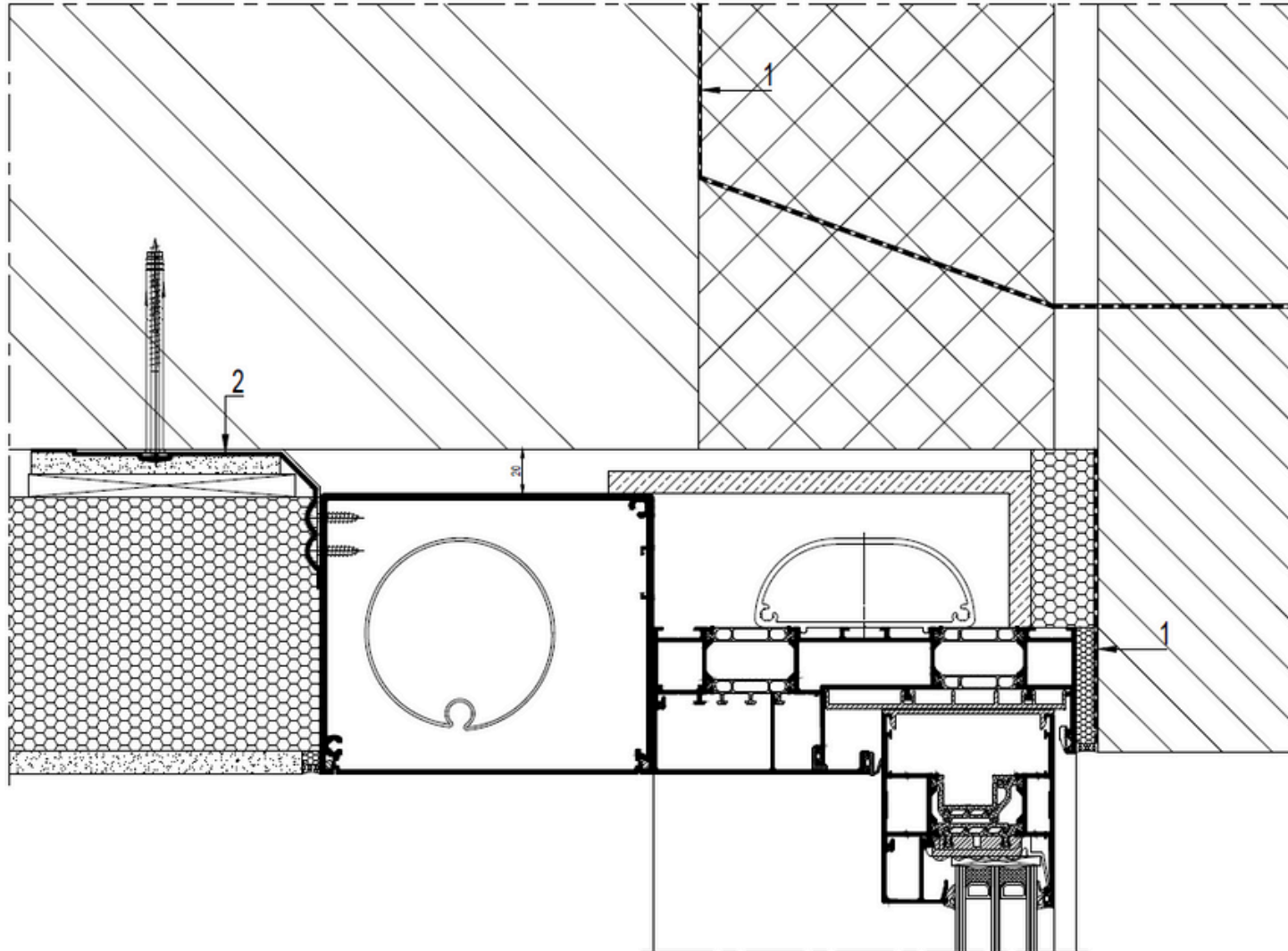


1. Waterproof foil
2. Airproof foil (optional)

MasterPatio Vertical Slider

BUILDING CONNECTIONS

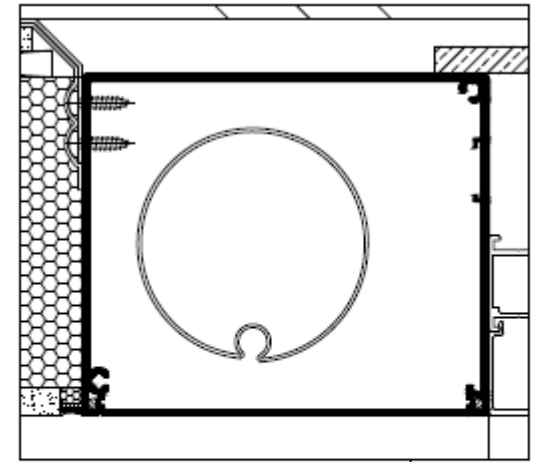
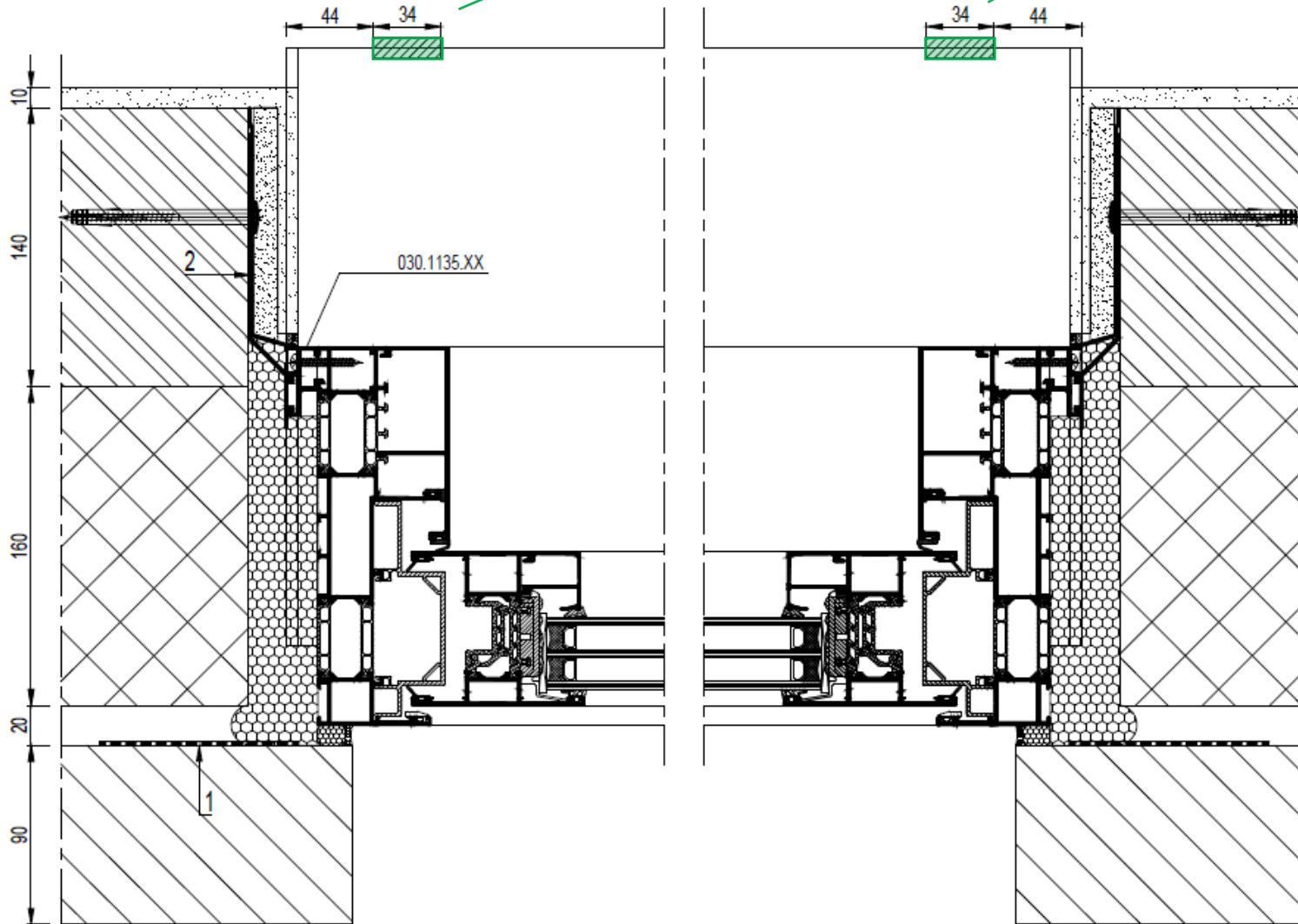
Option 2



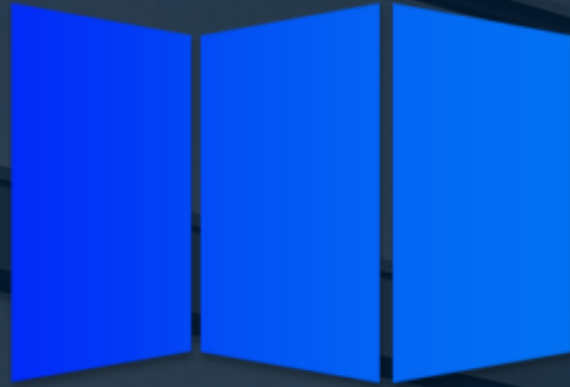
1. Waterproof foil
2. Airproof foil (optional)

MasterPatio Vertical Slider

BUILDING CONNECTIONS



! GEEN SCHROEVEN, CONFLICT MET RIEM
PAS DE VIS, CONFLIT AVEC LE COURROIE
NO SCREWS, CONFLICT WITH BELT
KEINE SCHRAUBEN, KONFLIKT MIT RIEMEN



AVORA DOORS



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