

ClimaFlow

VentilationJet Slim Instruction Manual

Original instructions

Contents

Installation	3
• Installation requirements	3
• Noise and vibrations	3
• PPE	4.
Disclaimer	5
• Safety precautions	5
• Description of precautionary measures	6
• Operations	7
• Installation	8
• Operating environment	9
• Storage	9
• Maintenance	10
• Lifting the VentilationJet Slim	10
General Description of the VentilationJet Slim	11
• The VentilationJet Slim	11
• How to use the VentilationJet Slim	11
Technical Product Data	12
• Included with delivery	12
• VentilationJet Slim Components	13
• Control cable specifications	14
• Connectors	16
VentilationJet Slim instructions	17
• Placing the VentilationJet Slim	17
• Long closing strips	22
• Short closing strips	22
• Spokes & ClimaFlow Fan suspension	23
• ClimaFlow Fan - Type B	24
• Placing the ClimaFlow Fan cables	25
Additional info	26
• Maintenance protocol	26
• Unblocking an obstructed fanblade	27
• Technical datasheets	28
• Fan efficiency datasheets	29
• Datasheets	30
• Svensson contact information	32

Installation requirements

Always use installation material provided by Beektech Industries B.V. Failure to do so may result in damage, reduced performance or failure. By using the installation materials provided and following the installation manual, the installation will be safe. The total weight of the VentilationJet Slim is 14 kg \pm 2 kg.

Do not add additional components or hang or tie anything on to the VentilationJet Slim. Doing so could cause the to get unbalanced and start vibrating or remove the safety margin for the VentilationJet Slim assembly causing premature failure of the installation.

Always make sure that the indicated torque has been used to tighten the bolts. Bolt torque requirements are provided in the installation manual.

Noise and vibrations

When installing the VentilationJet Slim, always make sure it hangs straight (Gravity is considered the reference, any deviation more than 5° might result in uneven wear and pre-mature failure), failure in doing so might increase the vibrations in the VentilationJet Slim and causing excessive noise. Failure in making sure it hangs straight might also cause prematurely failure and mechanical wear that in turn also can increase the level of unwanted noise.

PPE is required when entering the service area of the VentilationJet Slim

Beektech Industries B.V. Recommends using the following PPE when servicing the VentilationJet Slim:

- **Eye Protection**
Always wear appropriate safety glasses or goggles to shield your eyes from potential hazards.
- **Ear Protection**
Utilize ear protection such as earplugs or earmuffs when servicing the VentilationJet Slim to mitigate exposure to noise.
- **Hand Protection**
Wear suitable gloves to safeguard your hands during servicing tasks. Choose gloves based on the specific requirements of the job.
- **Foot Protection**
Ensure your safety by wearing protective footwear, such as safety shoes or boots with steel toes, to guard against potential foot injuries.
- **Head Protection**
Use a safety helmet to protect your head when working with the VentilationJet Slim, especially in situations where there is a risk of head injury.
- **Fall Protection**
Adhere to fall protection measures as needed, depending on the specific servicing conditions. Ensure the use of appropriate safety equipment to prevent falls.

Safety Precautions

General

To ensure that the VentilationJet Slim is used safely, be sure that you read and understand the following precautions fully and use it only as directed. Make sure you understand those precautions before installing, connecting, operating, maintaining, or inspecting the fan. Follow all the precautions and directions given here.

Beektech Industries B.V. will not be liable for any accidents resulting in death, injury, or property damage due to improper usage of the VentilationJet Slim.

The fan has been designed and manufactured for built-in use in general industrial buildings, warehouses and greenhouses, and must not be used otherwise.

The VentilationJet Slim must be installed at a minimum 4 meters above the ground. The height needs to be ensured for an area with a diameter of 4 meters as shown in figure 1.

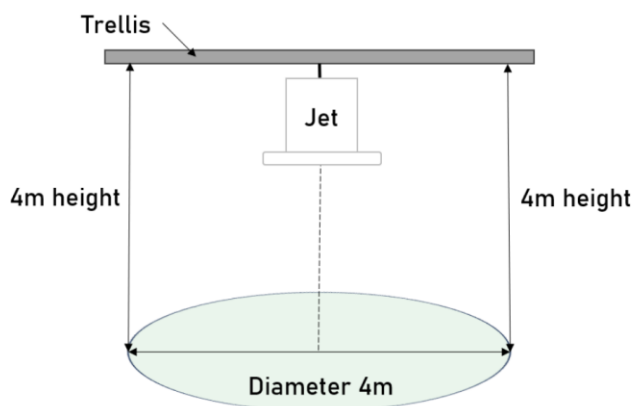


Figure 1 – VentilationJet Slim safety zone

When disposing the fan, treat it as industrial waste. For instructions on proper disposal methods, please contact local government authorities.

Description of precautionary measures

- Ensure that wiring is done correctly. Failure to do so might result in fire, burns, or electrical shock.
- Never use the mentioned equipment in explosive atmospheres, as doing so might result in fires, burns, or bodily injury.
- Do not operate the equipment with live parts exposed. Doing so might result in electric shock and injury.
- Never, while in operation, allow any persons or objects to approach or come into contact with the equipment, as doing so might result in damage or injury.
- Turn off the power and stop using the equipment immediately if you notice any sparks, smoke, odd odors, odd sounds, or anything unusual during operation. Failure to do so might result in fire, bodily injury or electrical shock.
- Turn the VentilationJet Slim off, if a person or animal will enter the safety zone (figure 1) with any part of their body.
- Ear protection should be used if the VentilationJet Slim is operational, and you are within the safety zone (figure 1)
- Never allow the fan to fall, topple over, or be subjected to excessive shocks when moving it. Doing so might result in product failure or performance deterioration. Beektech Industries B.V will not be responsible for any damages caused by those events
- The fan should be handled by technically qualified personnel with sufficient knowledge; the personnel shall be assigned at your own discretion.
- When doing any kind of maintenance work on the VentilationJet Slim or cleaning of the , make sure the power is disconnected and that no potential remains in the .
- The fan should be handled by technically qualified personnel with sufficient knowledge; the personnel shall be assigned at your own discretion.

Operations

- Never use the fan at voltages, temperatures, or any other parameters exceeding those given in the product specifications. Otherwise, it might result in substandard performance, failure, fire, bodily injury, or electrical shock.
- Using a power supply with insufficient capacity might result in faulty fan operation because an inrush current several times larger than the rated current will flow at the moment of fan startup. Be sure to use a power supply with sufficient capacity.
- Never connect or disconnect lead wires, plug cords, or connectors while the power is on. Be sure to connect or disconnect them while holding the frame only after power-off. Otherwise, it might result in fan damage or electrical shock.
- Do not remove the nameplate.
- The fan might be damaged or burned out if foreign objects or external forces hinder normal fan operation.
- Do not use the power supply's PWM to control the speed of the fan. Doing so might result in fan malfunction.
- Turning the power on and off frequently or turning the power back on before the fan comes to a complete stop might result in fan failure or damage.
- The IP ratings apply only to the live electric parts and motor coils of the fan. The protection does not apply to the non-live parts of the fan.
- Do not wash the fan if any IP rated parts of the VentilationJet Slim is open. Doing so might result in failure of the fan.

Installation

- Install and secure the VentilationJet Slim properly with its weight and vibration during operation taken into account. Failure to do so might result in bodily injury or equipment failure due to the VentilationJet Slim falling off.
- Ensure that the VentilationJet Slim is installed in the right orientation. Failure to do so might result in bodily injury or equipment failure.
- For the VentilationJet Slim to perform to its full capacity, secure air vents and take measures to prevent foreign objects from entering the fan. Failure to do so might result in bodily injury or fan failure.
- Do not subject the VentilationJet Slim to excessive shock. Doing so might result in failure or substandard performance of the fan.
- Pulling or pinching lead wires might result in damage and stress to the wire. Also, make connections so that the lead wires do not come into contact with the rotating blades. Failure to do so might result in equipment failure or electrical shock.
- Take proper precautions against static electricity when wiring. Failure to do so might cause failure of the VentilationJet Slim or equipment.
- Make connections correctly in accordance with the information of this Product Specification and the nameplate of the VentilationJet Slim. Failure to do so might result in equipment failure or the malfunction, failure, or performance degradation of the VentilationJet Slim.
- When mounting the fan with screws, ensure that the screw tightening torque is correct. If the tightening torque exceeds the recommended torque, the VentilationJet Slim might be deformed or damaged.

Use screws and bolts that are provided in the delivery. Failure to do so might result in failure or loose VentilationJet Slim, which could lead to performance decrease and the VentilationJet Slim to fall down onto the ground. Beektech industries B.V are not responsible if the wrong bolts and or nuts have been used.

Operating environments

Avoid using or storing the fan in the following environments. Otherwise, it might result in fire or the failure or performance degradation of the fan.

- Environments where flammable or corrosive gas is present
- Environments where water or oil splashes
- Environments where exposed to radioactive rays or direct sunlight
- Environments where a salty sea breeze blows or seawater splashes
- Environments where the fan might be contaminated by such corrosive materials as sulfurous water, sulfurous volcanic ash, organic solvents acidic and alkali chemicals, or nuclear fuel materials
- Environments where subjected to constant vibration, strong shocks, centrifugal force, acceleration, or strong magnetic force
- Environments where electromagnetic noise radiation is present, where the electromagnetic noise overlaps into power voltage
- Environments where subjected to rapid environmental fluctuations (temperature, humidity, pressure, etc.)

Storage

- The fan should be stored in the supplied packaging from Beektech Industries B.V.
- Ensure that the equipment is stored in the following environments where:
 - the temperature is normal and stable
 - the relative humidity is between 20% and 85% with no sudden changes in humidity and no condensation
 - not subjected to direct sunlight
 - not subjected to water, oil, corrosive materials, or other hazardous substances;
 - not subjected to vibration or shock.

Maintenance

- Maintenance and inspections of the fan should be done by technically qualified personnel or someone with sufficient expertise; the personnel shall be assigned at your own discretion. Failure to use qualified personnel might result in fire, burns, bodily injury, or electrical shock.
- Never perform any maintenance or inspections while the fan is in operation. Also note that the blades continue to rotate for some time immediately after operation ceases. Always confirm that all rotating parts have stopped before starting work. Failure to do so might result in bodily injury.
- Never use gasoline, paint thinner, benzene, or any other organic solvents to clean the fan. Also, avoid placing excessive stress on the fan. Otherwise, it might result in product deformation or performance degradation.

Lifting the VentilationJet Slim

We highly advise using the following materials to lift the VentilationJet Slim:

- 2x Petzl anneau sling 40cm
- 1x Super static 11mm (3x needed height)
- 3x Petzl OK Black – Triact lock
- 1x Petzl MGO 110
- 1x Petzl Micro Traxion
- 1x Petzl Mobile

Scan the QR-code for a step-by-step instruction video to lift the VentilationJet Slim.



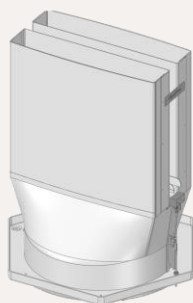
General description VentilationJet Slim

The VentilationJet Slim is a fan positioned between the screen and attached to the truss. This setup enables the suction of additional (forced) outdoor air and its injection into the greenhouse. The use of more screen walls can limit crops and light radiation. It also results in significant energy savings and a more uniform climate. Sufficient reasons to employ more screens. With the VentilationJet Slim, you can efficiently dehumidify the greenhouse using colder outdoor air (lower absolute humidity) while keeping the screen closed. Depending on the need and climate conditions, the VentilationJet Slim's speed can be adjusted. With the VentilationJet Slim, you can dehumidify with a closed screen, thus preventing moisture buildup around and among the crops.

How to use the VentilationJet Slim: the VentilationJet Slim offers a way to manage the airflow in a space. By Varying the 0-10Vdc voltage signal, the speed of the fan can be adjusted to create the optimal amount of displaced air.

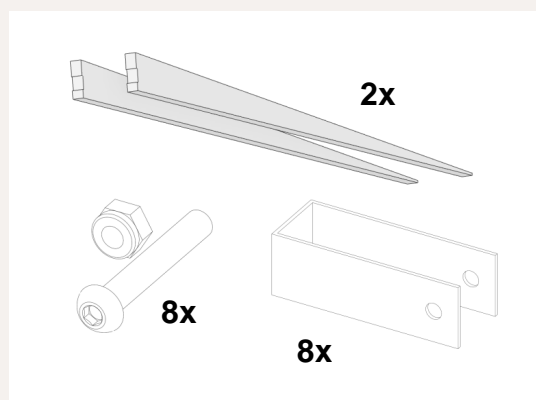
Included with delivery

The VentilationJet Slim consists of the following items:



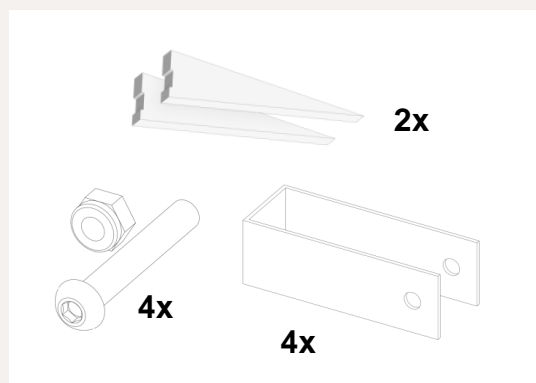
VentilationJet Slim

Dehumidifier that is installed between the screen installation



*Long Closing Strips

The long closing strips are attached to the VentilationJet Slim to close the gaps between the screen profile and VentilationJet Slim.

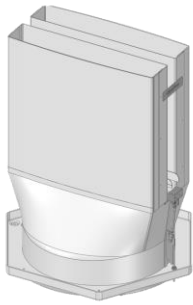


*Short Closing Strips

The long closing strips are attached to the VentilationJet Slim to close the gaps between the screen package and VentilationJet Slim.

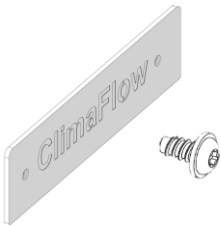
* Quantity and bracket size delivered differs, depending on the screen installation and project agreements

VentilationJet Slim components



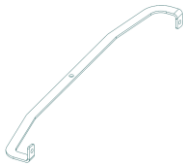
The VentilationJet Slim

The VentilationJet Slim is placed in between the screen installation to take in cold outside air inside the cultivation room.



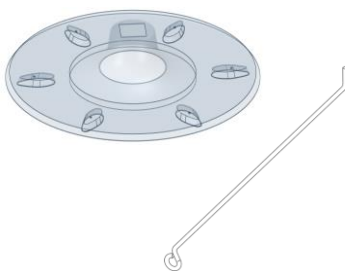
2x Truss clamps + screws

When the VentilationJet Slim is placed on the truss, it's secured by 2 truss clamps and the plastic parker screws.



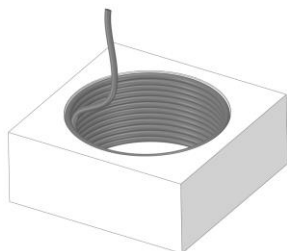
1x Bracket for ClimaFlow Fan suspension

This bracket is placed on the VentilationJet Slim in order to place the ClimaFlow fan



1x Air diffusion plate + 6x spokes

The air division plate is attached to the VentilationJet Slim with the spokes, to distribute the air in the greenhouse



Water drain tube

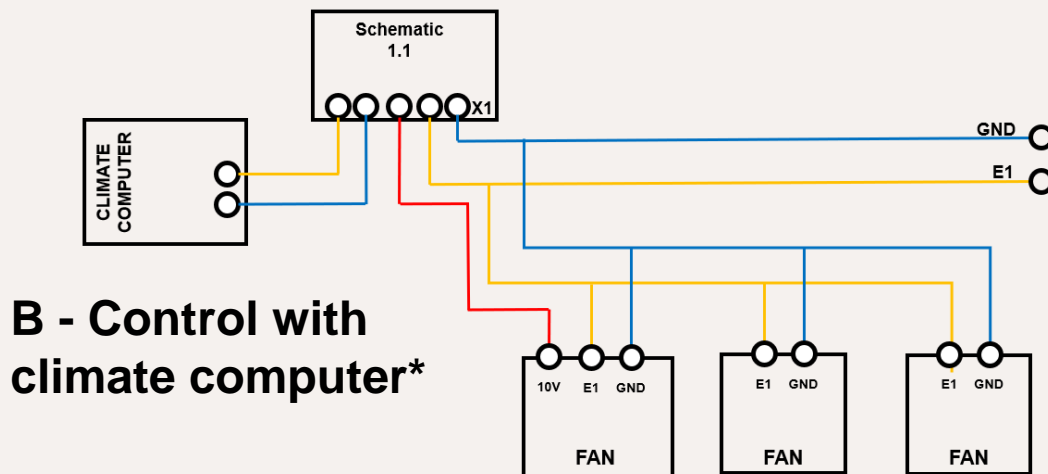
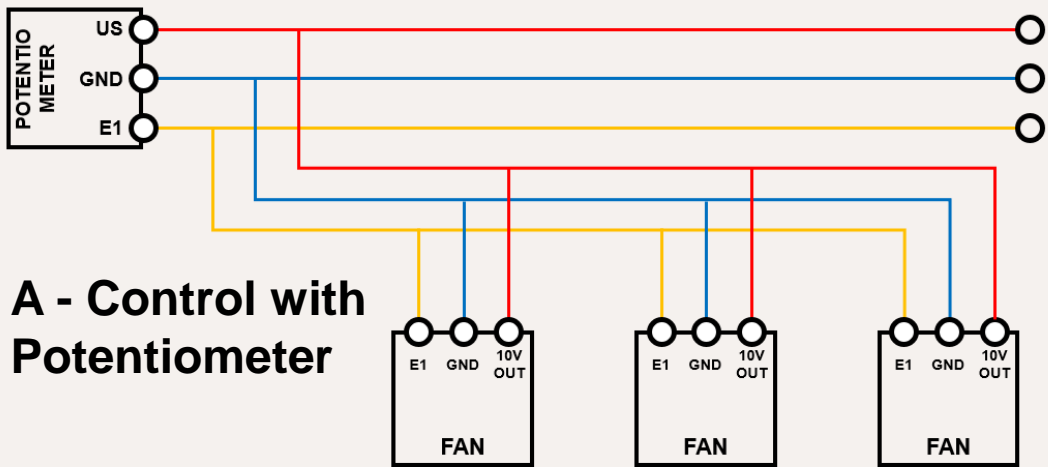
Attached to the VentilationJet Slim to drain excess water that condenses on the VentilationJet Slim

Control cable

The VentilationJet Slim can be controlled with a 0-10v analog signal via the attached control cable. See diagrams A and B for instructions to control RPM via climate computer or a potentiometer.

The VentilationJet Slim

RED = 10V OUT
 BLUE = GND
 YELLOW = 0-10V INPUT
 WHITE = TACHO



*For schematic 1.1, see page 25

Control cable

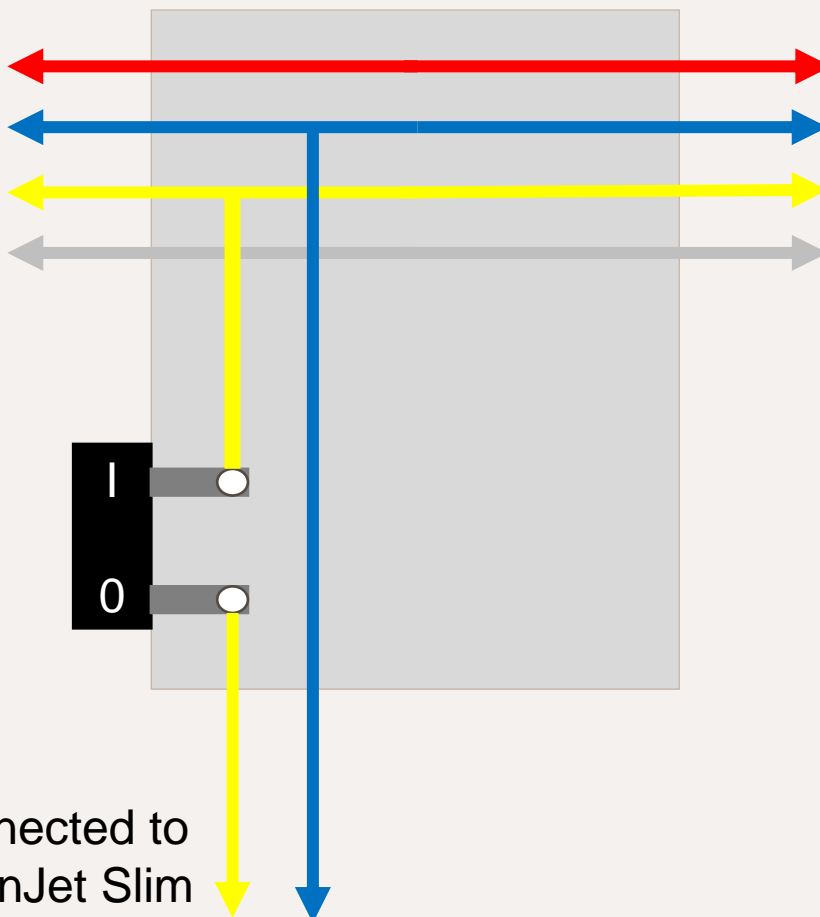
Make sure the yellow 0-10V wire is connected as showed in the diagram bellow inside the junction box of the ClimaFlow Fan

The VentilationJet Slim

RED = 10V OUT
BLUE = GND
YELLOW = 0-10V INPUT
WHITE = TACHO

The ClimaFlow Fan

RED = 10V OUT
BLUE = GND
YELLOW = 0-10V INPUT
WHITE = TACHO



Wire connected to VentilationJet Slim

Power cables

The VentilationJet Slim comes standard with one of the following power cable connections:



Wieland RST20i3 black

Manufacturer component no:

96.032.4053.1

(Also compatible with grey counterpart)



Wieland RST20i3 green

Manufacturer component no:

96.032.4055.7

(**Not** compatible with grey/black counterpart)



CEE 7/7 Connector

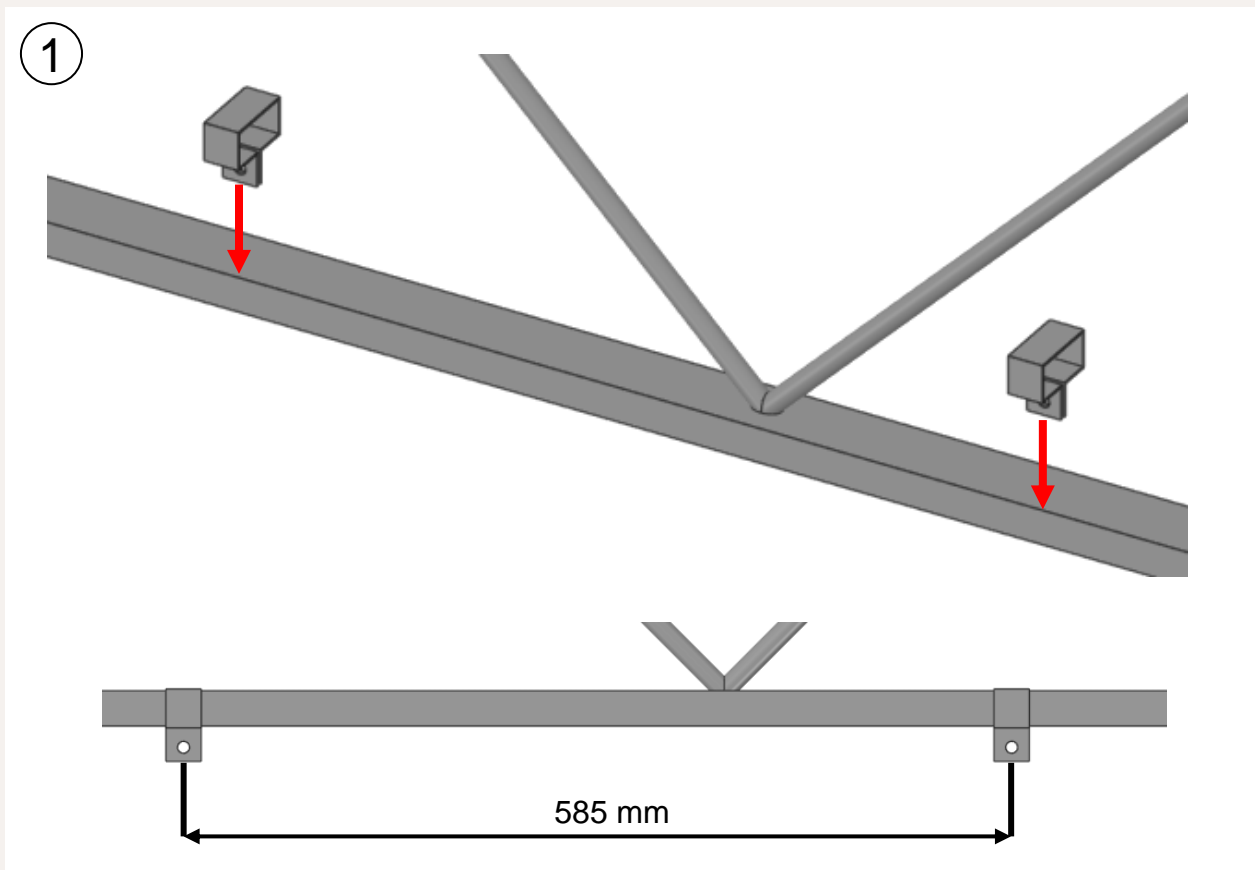


Maintenance switch

Placing the VentilationJet Slim

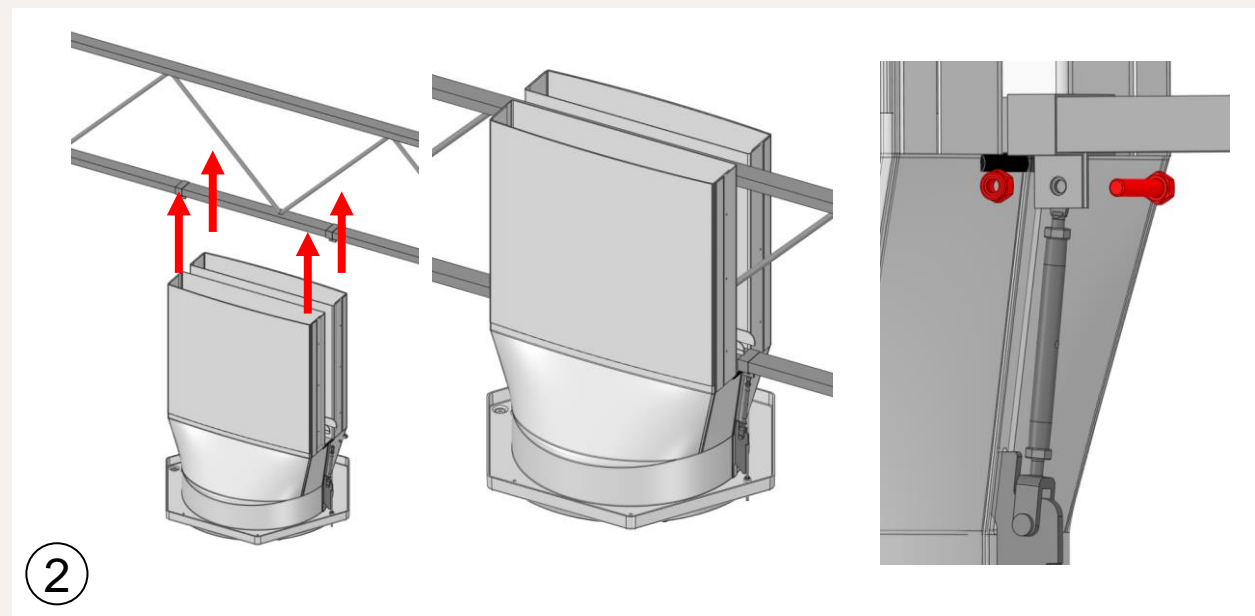
**Follow the following steps backwards to disassemble the VentilationJet Slim*

Place the two trellis bracket onto the bottom truss.



Attach the VentilationJet slim to the trellis brackets

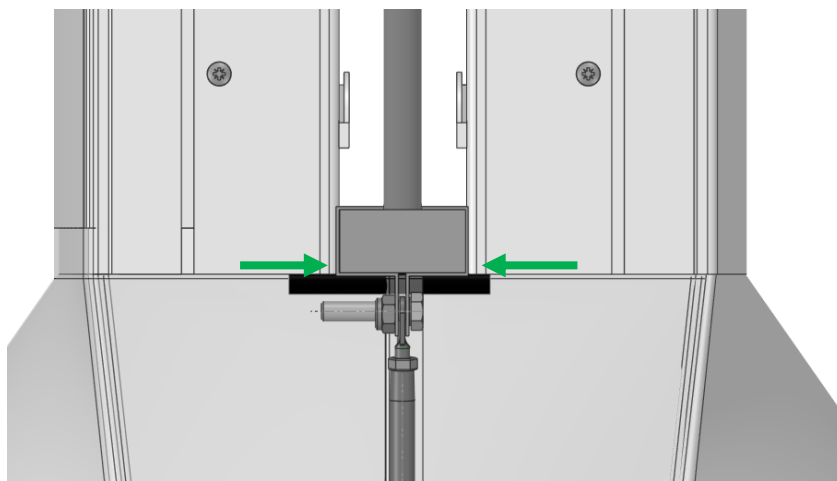
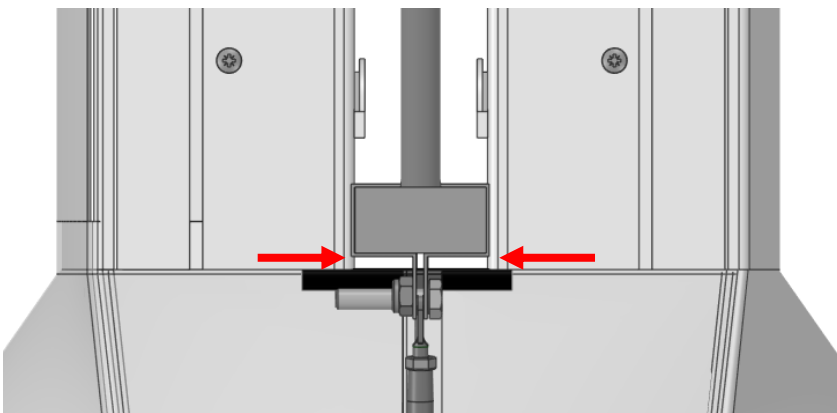
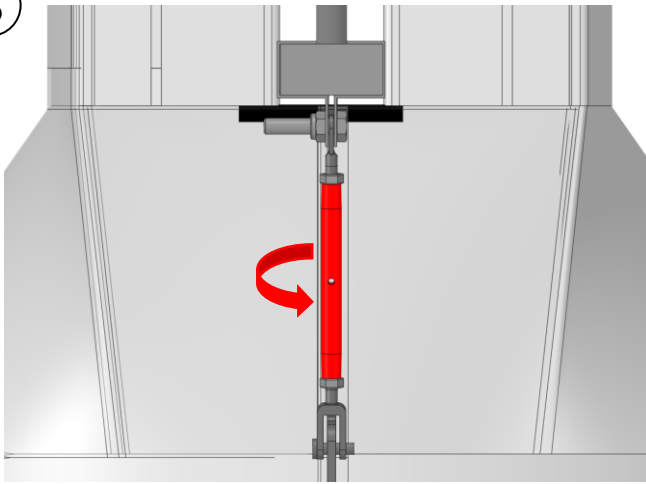
Position the VentilationJet slim in between the two trellis brackets and secure the Ventilationjet Slim to the trellis using the provided bolts.



Placing the VentilationJet Slim

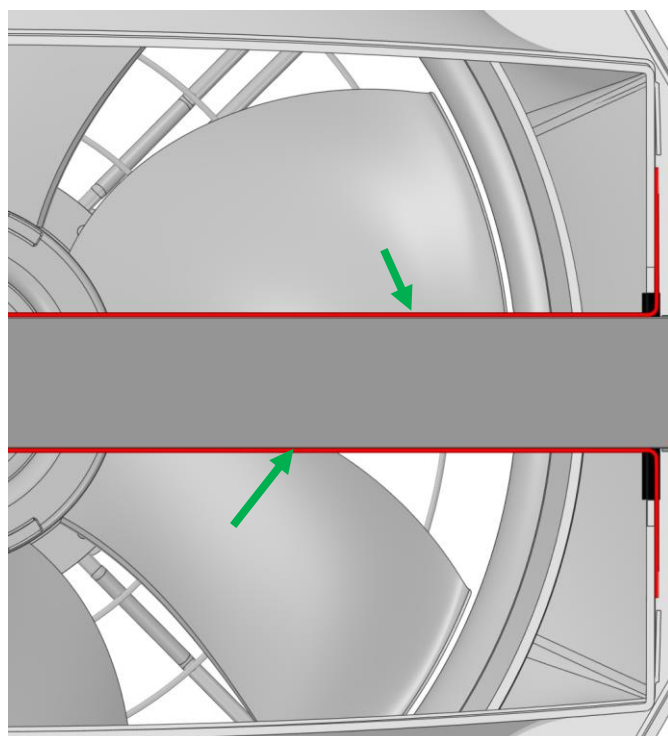
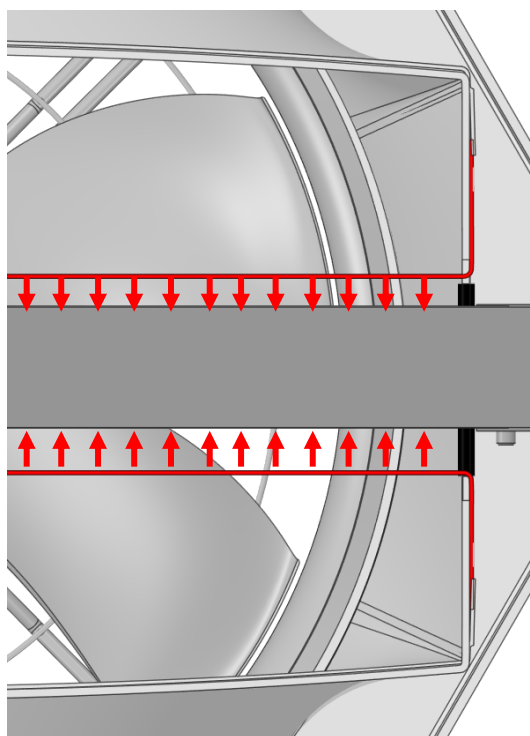
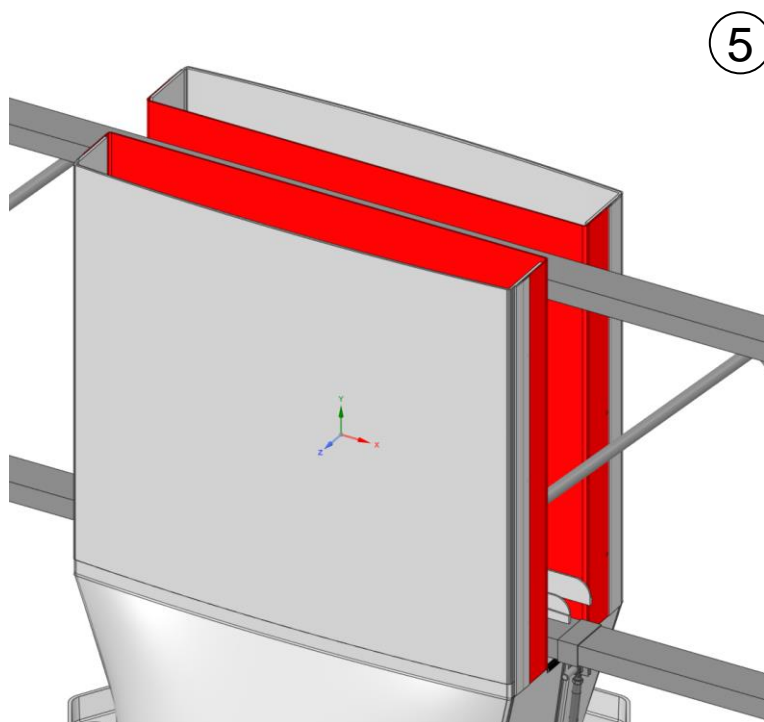
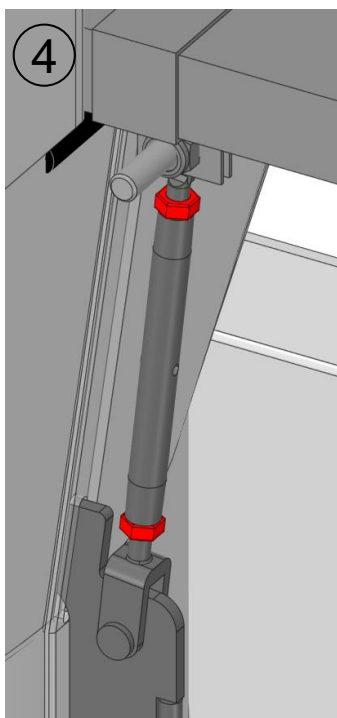
Rotate the tensioner (In red), until the VentilationJet Slim is tightly seated against the trellis.

3



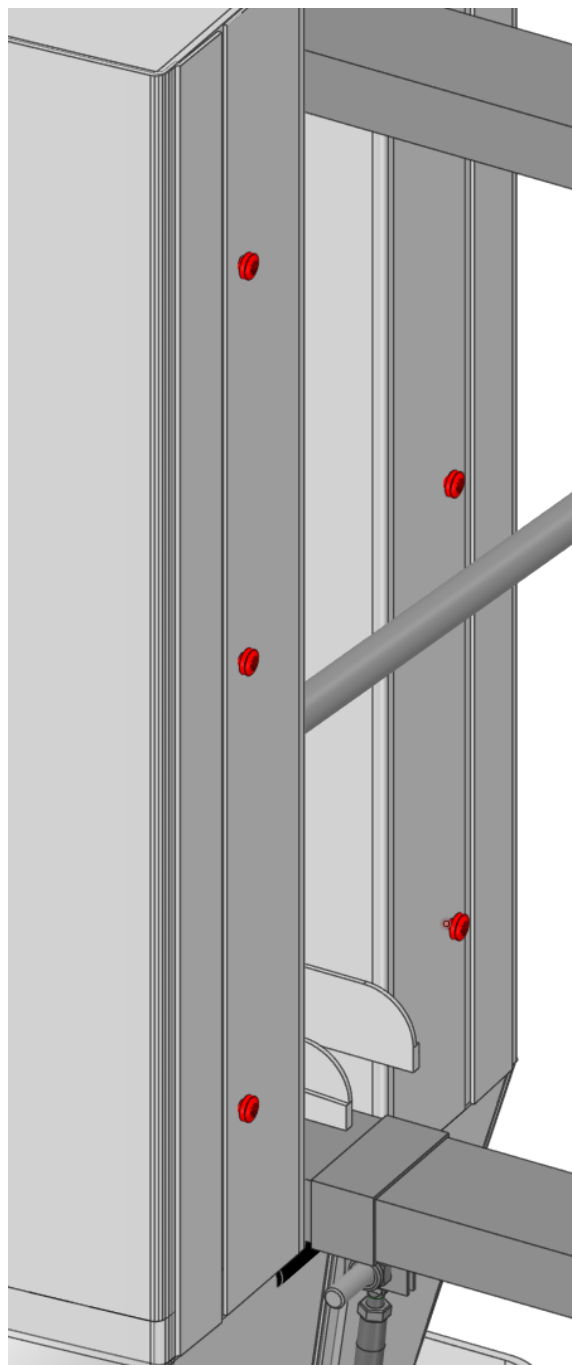
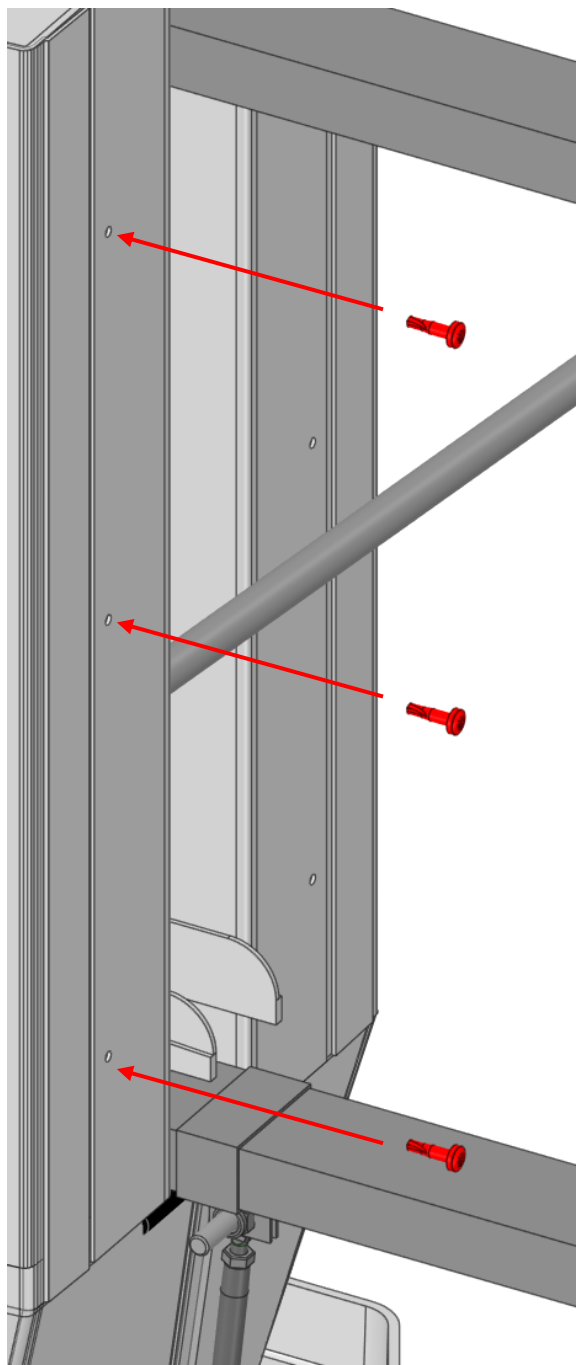
Placing the VentilationJet Slim

Secure the M6 nuts to secure the tensioner in place. Place the housing of the Ventilationjet Slim against the trellis.



Placing the VentilationJet Slim

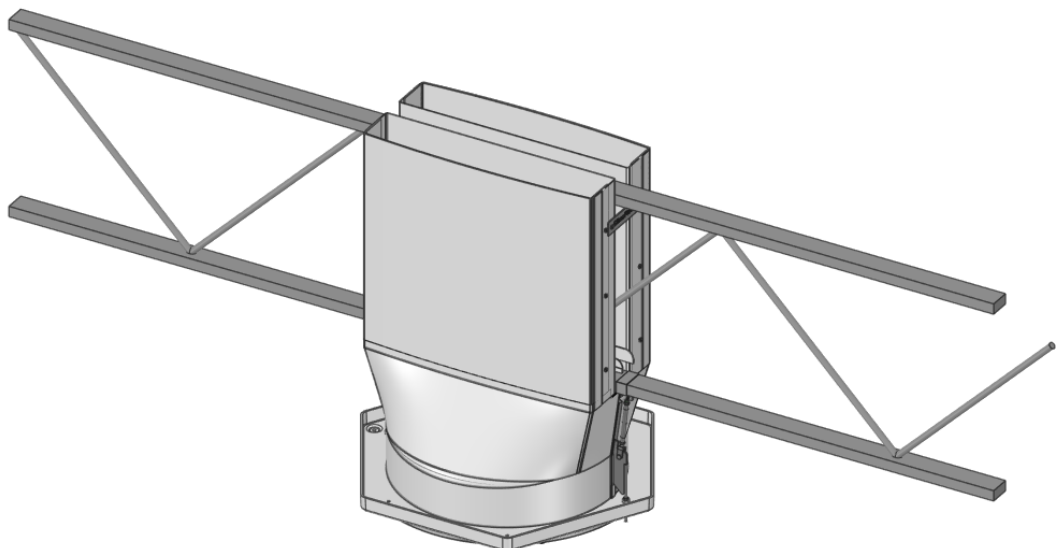
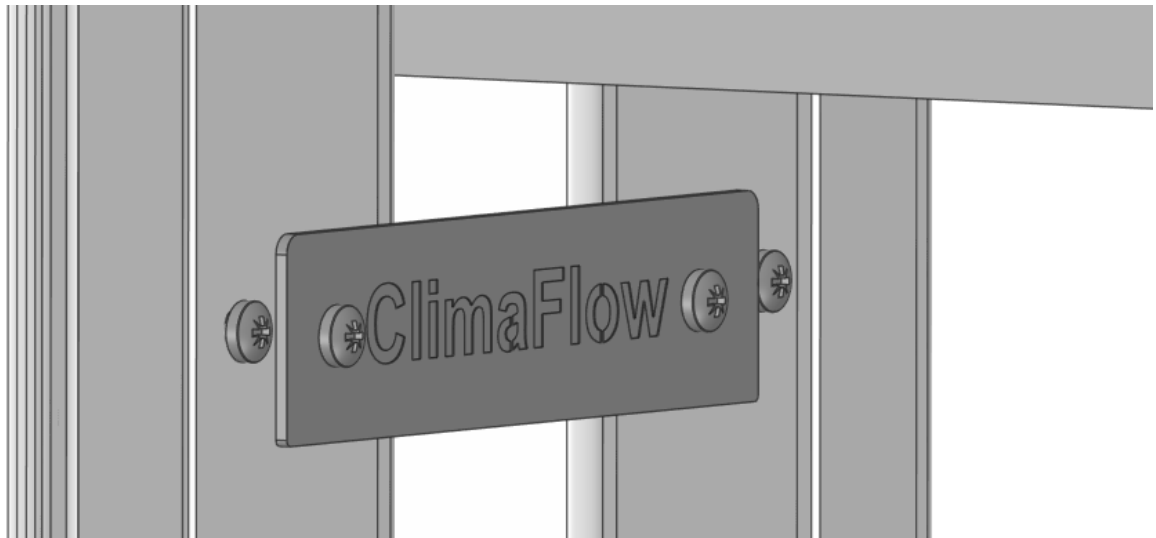
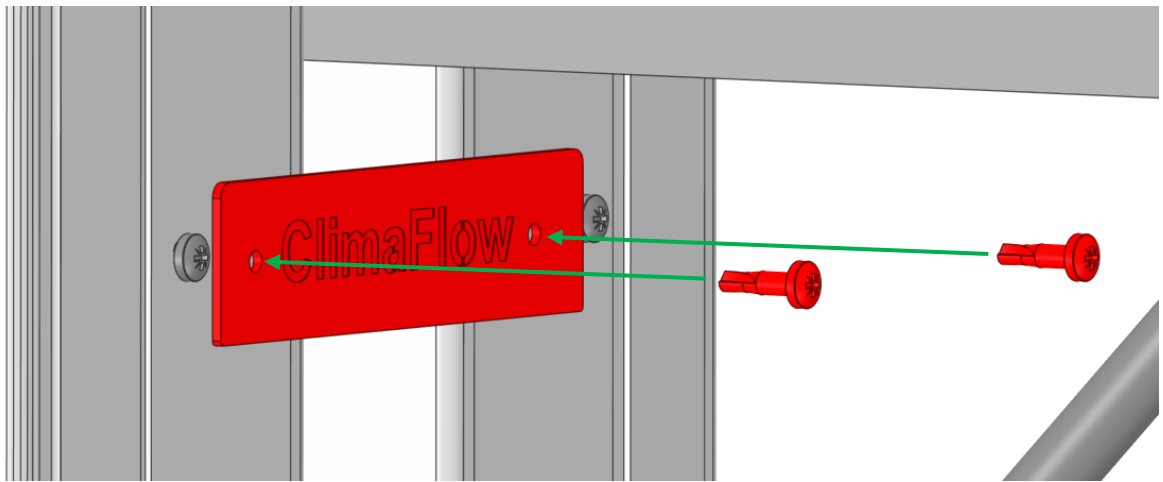
Secure the housing of the Ventilationjet Slim using the provided self drilling screws. (repeat in all 4 corners of the Jet)



6

Placing the VentilationJet Slim

Mount the truss clamp 25mm below the top truss



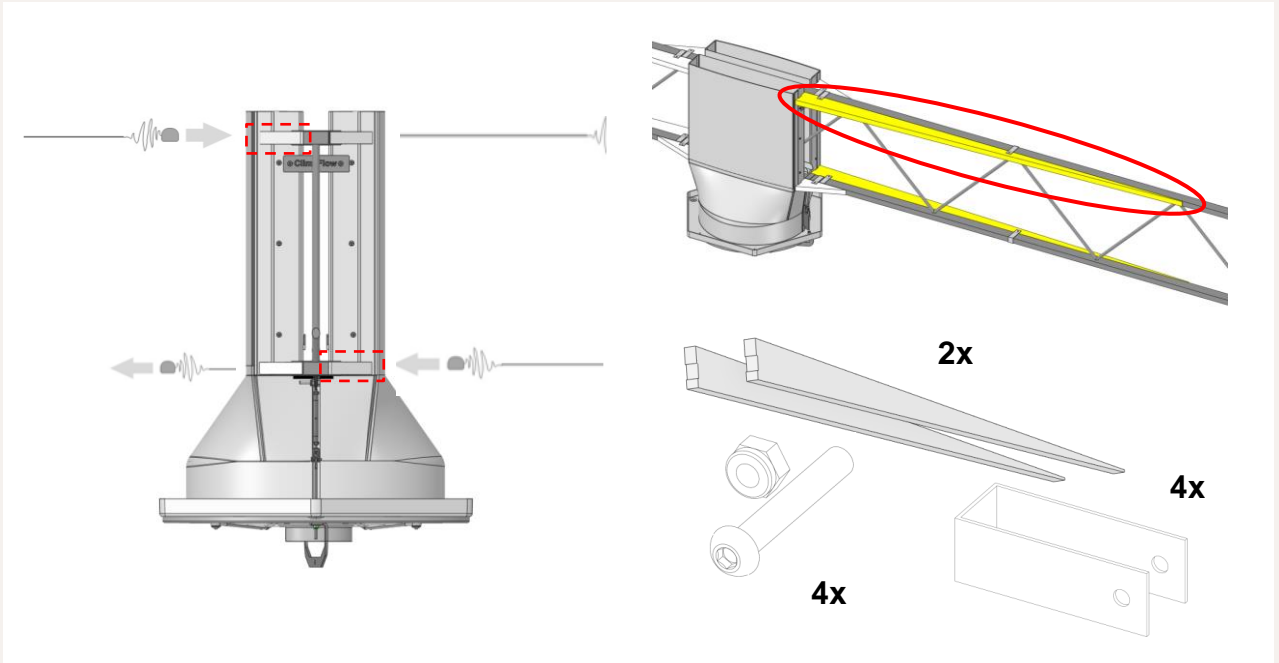
7

Closing strips*

The following closing strips can be delivered optionally.

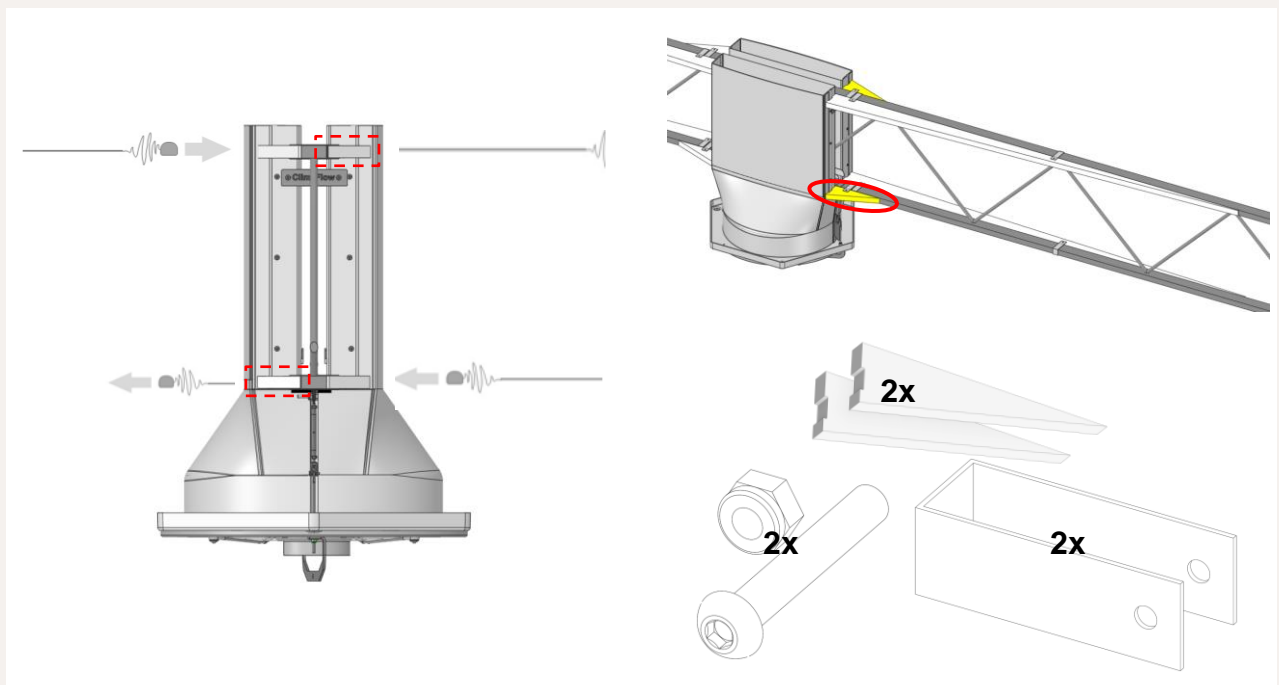
Long closing strips

Placed where the screen profile closes towards the VentilationJet Slim.
Per VentilationJet Slim are four strips, 8 brackets, and 8 M6x40 bolts and nuts



Short closing strips

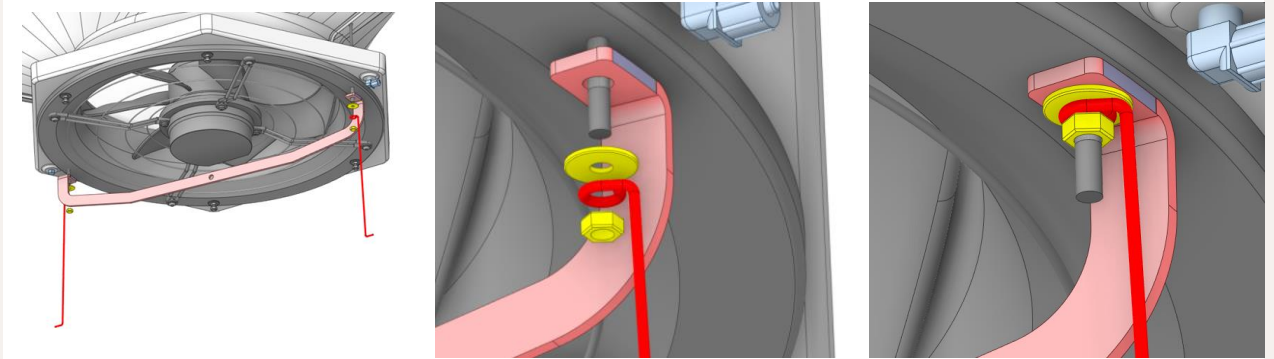
Placed where the screen package closes around VentilationJet Slim
Per VentilationJet Slim are four strips, 4 brackets, and 4 M6x40 bolts and nuts



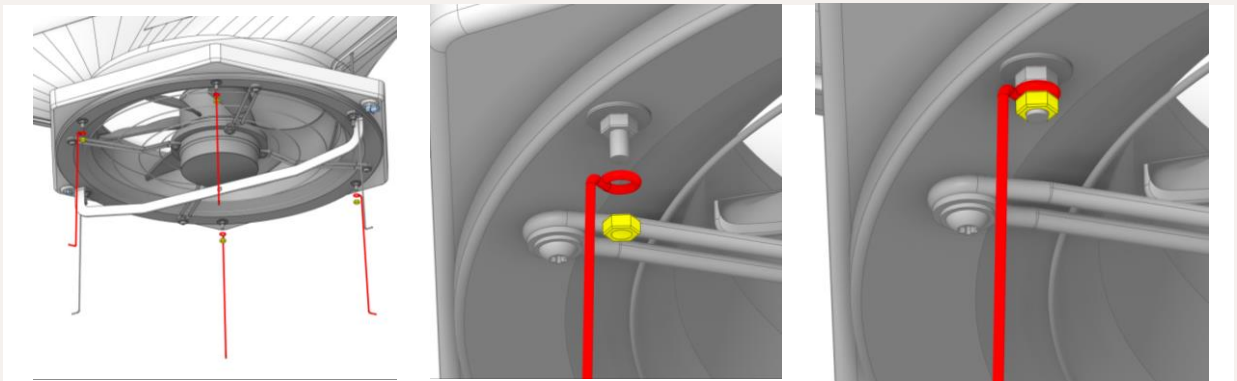
* Quantity and bracket size delivered differs, depending on the screen installation and project agreements

Spokes & Climaflow suspension

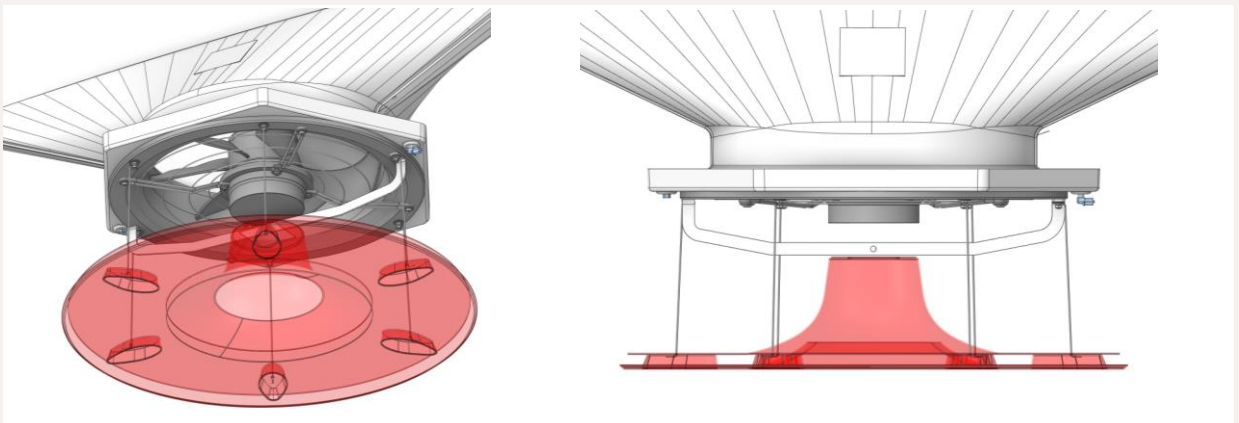
Attach the ClimaFlow bracket followed by the two spokes.



Next, attach the other four spokes with the already attached locknut.

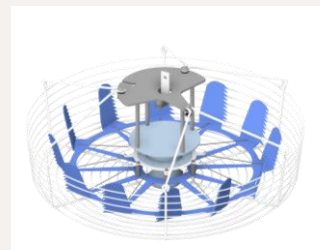


Place the transparent air plate on the spokes.

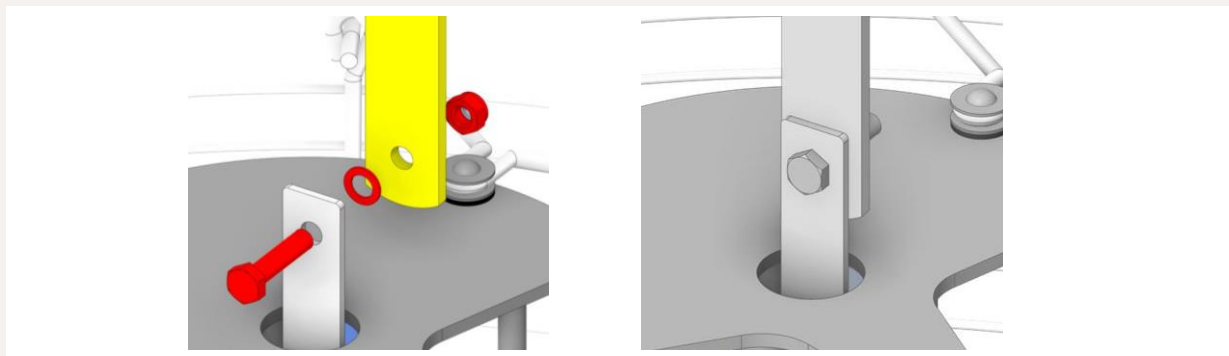


Placing Climaflow Fan type B

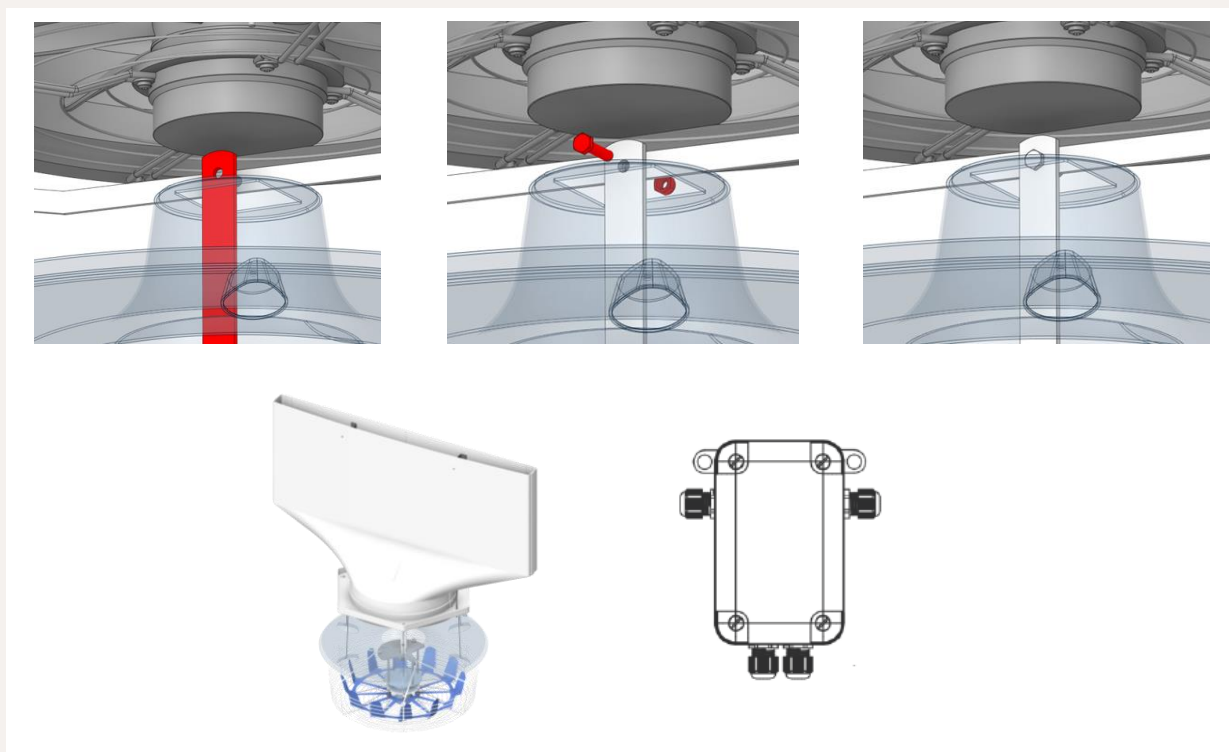
The Type B ClimaFlow fan needs to be installed underneath the VentilationJet Slim. Fasteners are included in the box. All type B fans are marked by a sticker on every box.



Attach the extension strip with the M8 fasteners.



Attach the ClimaFlow Fan Type B to the VentilationJet Slim by the Extension strip.

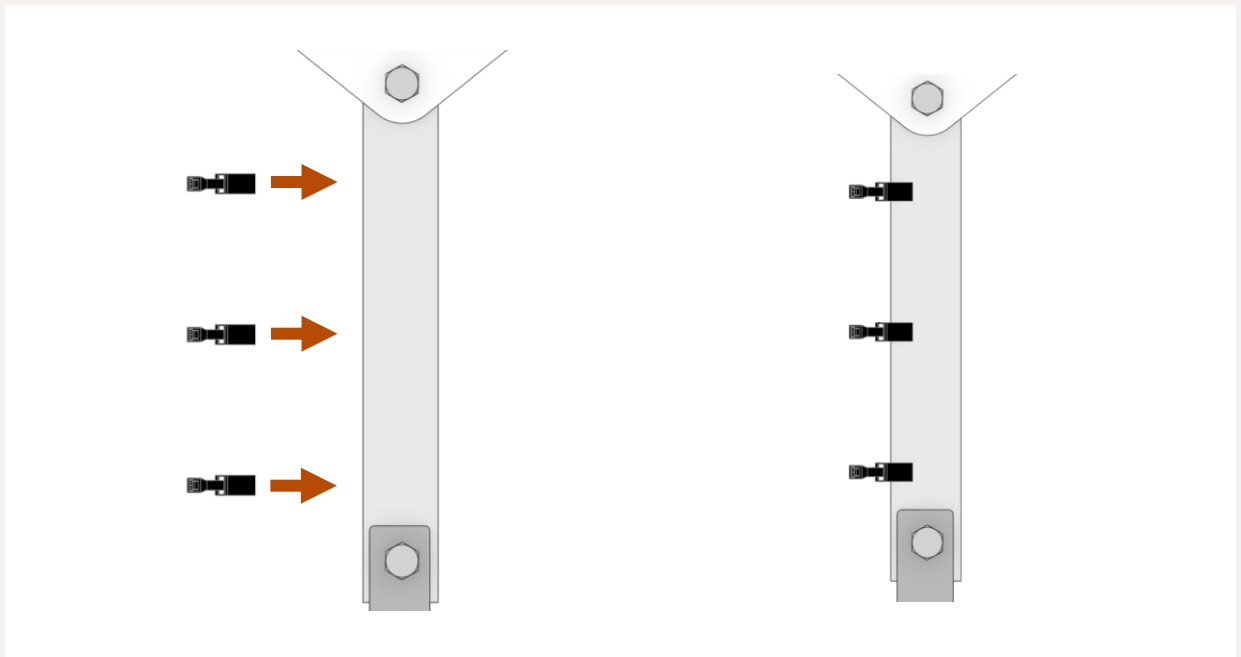


The ClimaFlow Fan control cable can be inserted in the VentilationJet Slim junction box

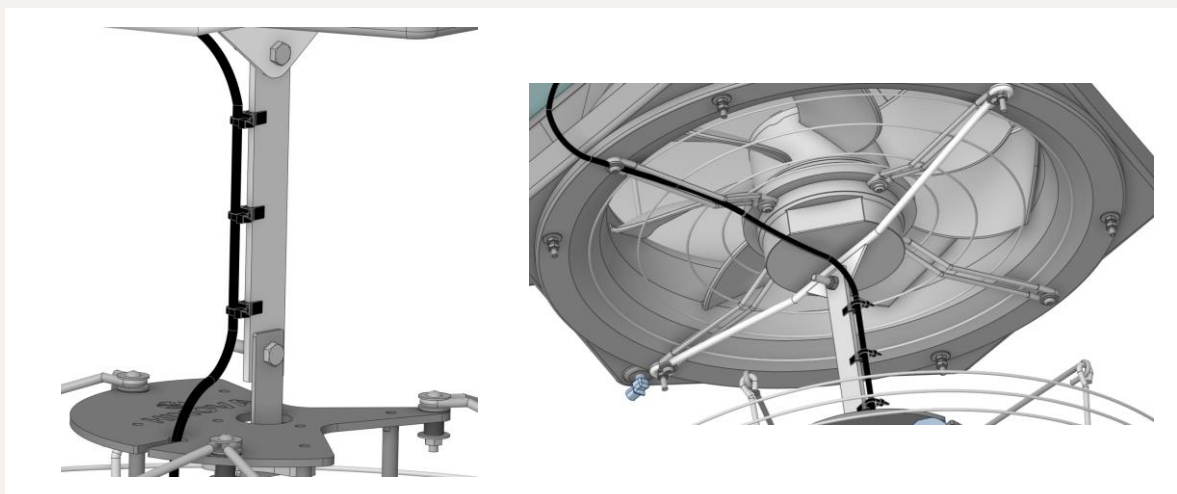
Placing the ClimaFlow Fan cables

The Type B ClimaFlow fan needs to be installed underneath the VentilationJet Slim. To ensure a safe installation of the VentilationJet Slim. Place the cables as followed.

Attach the cable holders to the extension strip.



Attach the ClimaFlow Fan Cable to the cable holders with the provided zip ties. Attach the cable on the bottom of the VentilationJet Slim motor as shown bellow



**Make sure the cable isn't in contact with any metal parts.*

Maintenance protocol

- Under no circumstances use a pressure washer or VentilationJet Slim water for cleaning.
- To prevent unwanted moisture, it is advisable to tighten any cable glands before cleaning.
- Check if the cables at the gland make a slight bend downward before going up towards the cable tray. This ensures that no condensation drops run towards the glands.
- The entire ventilator can be cleaned with a damp cloth.
- After the cleaning process, the motor should run at 80-100% of the maximum RPM for 30 minutes to allow any possibly infiltrated water to evaporate.
- Check, in the case of a VentilationJet Slim, if the edge of the casing is clean, and that the water drainage hose is still running smoothly.
- During longer periods of inactivity in a humid atmosphere, it is recommended to operate the fans for at least 2 hours monthly to allow any infiltrated moisture to evaporate.
- Finally, check whether the white basket is correctly attached to the designated hooks.

Unblocking an obstructed fan blade

To unblock a VentilationJet Slim, always consult the manual to determine the required Personal Protective Equipment (PPE) before working on the VentilationJet Slim.

- **Check PPE**
Consult the manual to identify the necessary Personal Protective Equipment and wear it before starting.
- **Turn off the VentilationJet Slim**
Stop the VentilationJet Slim by setting the control signal to 0 V and turning off the switch on the fan's junction box.
- **Disconnect the plug**
Unplug the power plug of the fan to ensure electrical safety.
- **Remove the obstruction**
Identify and remove the object blocking the fan.
- **Reconnect the plug**
Plug the fan back into the outlet, ensuring a secure and correct connection.
- **Restore control power**
Set the control power back to the desired voltage and turn the switch on the junction box back on.
- **Press the Start button**
To start the recently stopped ClimaFlow Fan locate the start button and press it to restore normal fan operation.

By following these steps, you can unblock the VentilationJet Slim and ensure it functions properly again.

Datasheet VentilationJet Slim (VJ-W3G)

The VentilationJet Slim is designed for mixing air from above the screens into the greenhouse. This document includes the fan specifications.

Specifications

Description

Line Voltage	1~ 200-277V 50/60Hz P1 500W 2,2A
Rated values	EC 1500rpm 60°C IP55.
Motor	cRUus UL Recognized Component
Power connection out	Incl. power cable 2M
Electrical connection	Integrated Controller
Adjustable control	A variable speed drive is integrated within the fan. It's controlled by a 0-10Vdc signal.
Motor protection	Integrated active temperature management
Min. operating Temperature (°C)	-25

VentilationJet Slim

Bearing quality	Ball bearing with long-time lubrication
Color of rotor	Black
Material rotor	Steel
Color of blade	Black
Material of inlet	ABS/PMMA
Protection class	I (If the ground is connected by the costumer)

Weight	12 KG / 26.4 lb.
Harmonics	The VentilationJet Slim does include a Harmonic filter.
Sound	The VentilationJet Slim creates 72 Decibels at 150 Pa static pressure at 1500 RPM

Power consumption:



Fan efficiency

VentilationJet Slim: (VJ-45EU)

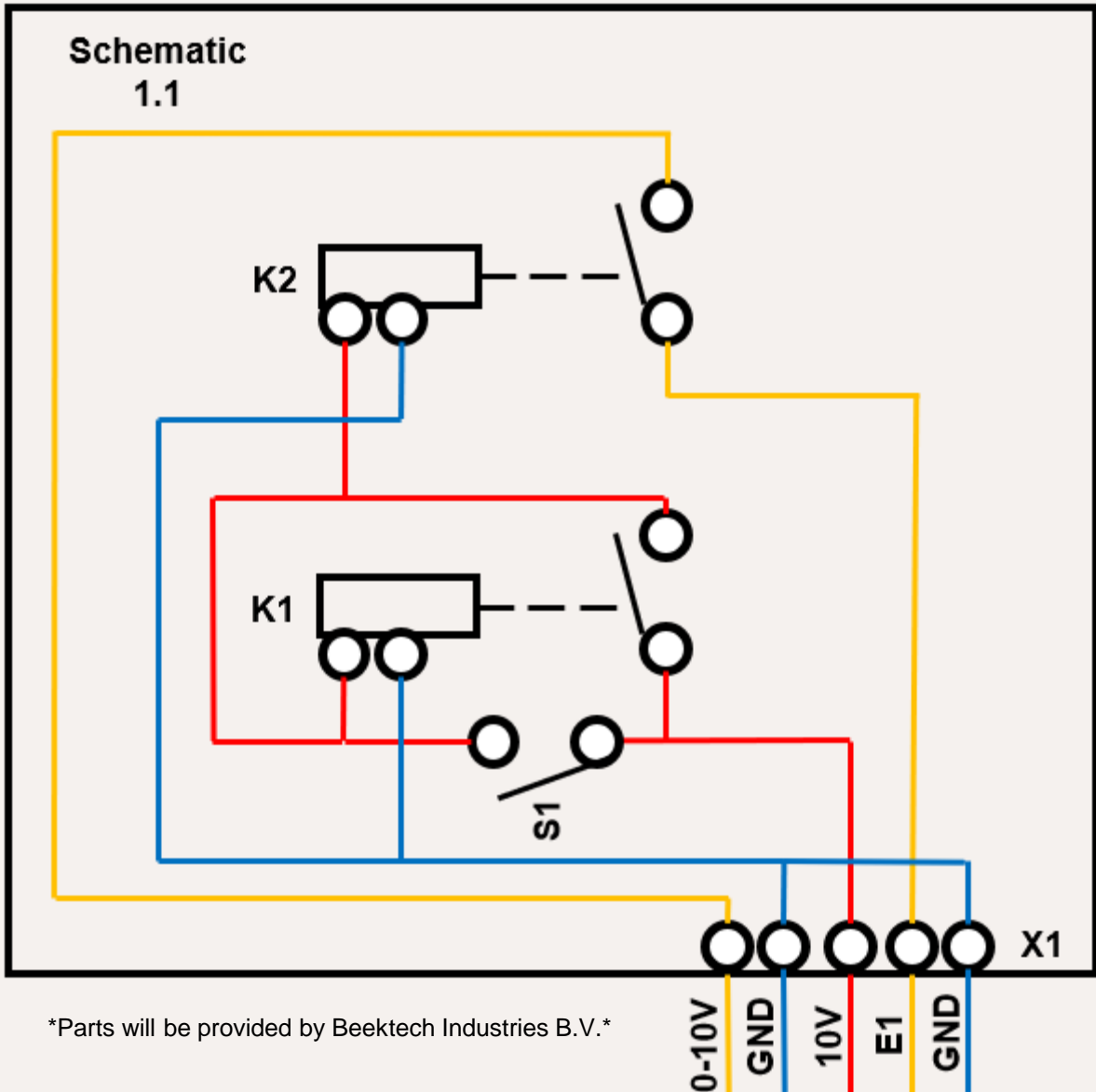
3.3 Gegevens conform Ecodesign-verordening EU 327/2011

	Gemeten	Specs 2015
01 Totaalrendement η_{es} / %	38,4	31,9
02 Installatiecategorie	A	
03 Efficiëntie categorie	Statisch	
04 Efficiëntieklasse N	46,5	40
05 Toerentalregeling	Ja	
06 Productiejaar	Het productiejaar is te vinden op het typeplaatje op het product.	
07 Fabrikant	ebm-papst Mulfingen GmbH & Co. KG Amtsgericht Stuttgart · HRA 590344 D-74673 Mulfingen	
08 Type	W3G450-CL03-H5	
09 Vermogensafname P_{ed} / kW	0,51	
09 Volumestroom q_v / m³/h	3690	
09 Drukverhoging totaal p_{fs} / Pa	176	
10 Toerental n / min⁻¹	1455	
11 Specifieke verhouding*	1,00	
12 Verwerking	Gegevens over recycling en afvalverwijdering zijn te vinden in de gebruiksaanwijzing.	
13 Onderhoud	Gegevens over inbouw, gebruik en onderhoud zijn te vinden in de gebruiksaanwijzing.	
14 Extra componenten	Voorzover de componenten die worden gebruikt om de energie-efficiëntie te bepalen, niet uit de meetcategorie blijken, staan ze vermeld in de CE-verklaring.	

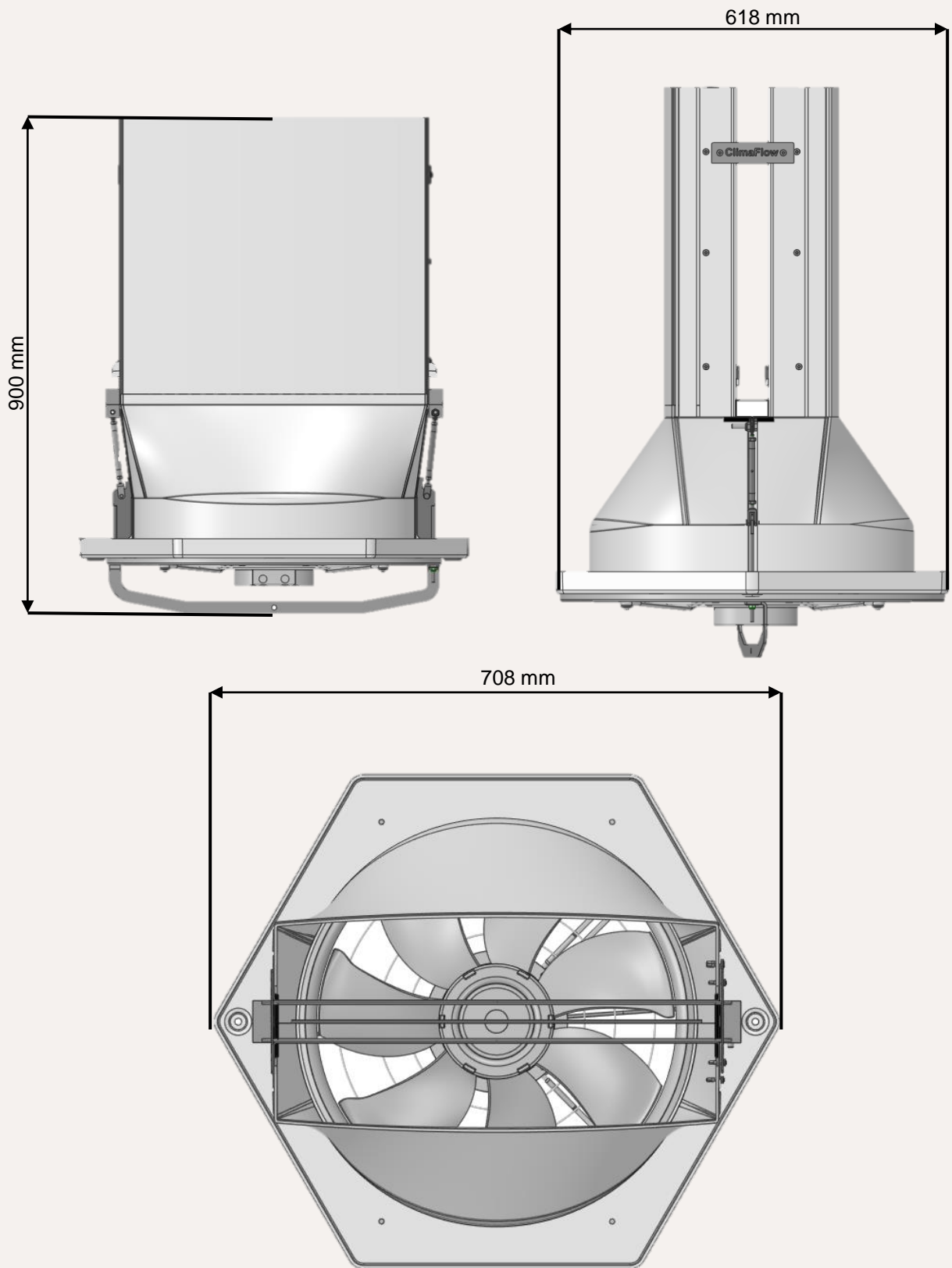
* Specifieke verhouding = $1 + p_{fs} / 100\ 000\ Pa$

Gegevensregistratie in optimaal rendement. De aangegeven efficiëntiewaarden voor het verkrijgen van de conformiteit met de Verordening inzake ecologisch ontwerp EU 327/2011 zijn bereikt met gedefinieerde luchtgeleidingscomponenten (bijv. instroomringen). De afmetingen zijn bij ebm-papst op te vragen. Als bij de inbouw andere luchtgeleidingsgeometrieën worden gebruikt, verliest de ebm-papst beoordeling haar geldigheid/moet de conformiteit opnieuw worden bevestigd. Het product valt niet onder het toepassingsgebied van de Verordening (EU) 2019/1781 op grond van de in artikel 2, lid 2a) genoemde uitzondering (volledig in een product geïntegreerde motoren).

Electrical connection diagrams (Climate computer)



General Dimensions



**X differs per VentilationJet Slimas it depends on the truss size of the greenhouse construction.*

Now it's time to grow with the flow.
ClimaFlow

**For questions, please contact your
nearest Svensson office**

**United States/Canada
Ludvig Svensson Inc.
+1 704 357 0457
info.us@ludvigsvensson.com**

**Netherlands
Ludvig Svensson BV
+31 181 39 26 66
info.nl@ludvigsvensson.com
Stefan Rietdijk**

The ClimaFlow Fans and VentilationJet Slims are
manufactured by Beektech Industries B.V. – a Svensson
company
Marconistraat 22-24, 2665 JE Bleiswijk, Netherlands