

This manual is intended to provide buyers with a comprehensive and practical installation guide, please be sure to read through each section of the manual before starting assembly. These contents will help you gain a comprehensive understanding of the device structure and workflow. In addition, we can provide all products related to greenhouse support as well as other types of greenhouses on request. Contact us if necessary.

\*The images in this manual are for reference only. Please refer to the actual product inside the packaging.

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# Illustration of the connecting piece



Hex bolt



Hex nut



Self-tapping screw



Hoop



Lock channel connector



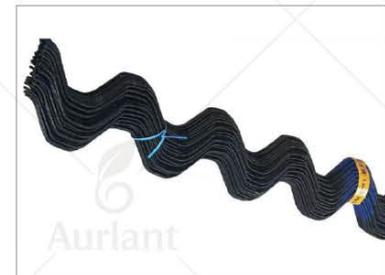
Alt lock channel



T-bolt



Film Clamp



Wiggle wire



Turn buckle



Lock channel

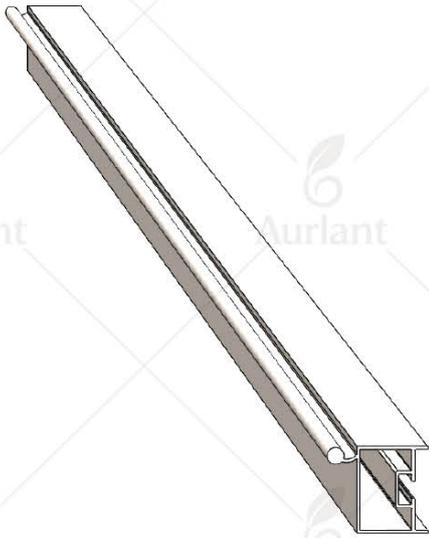


Rack clamp

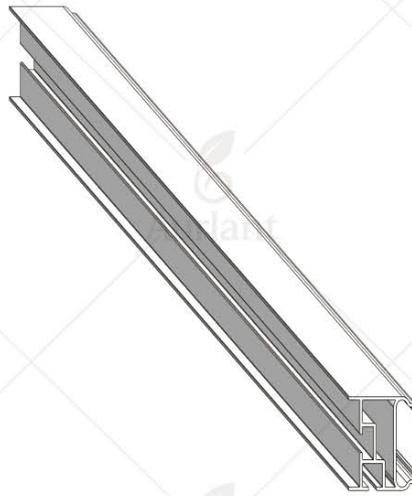


C-clamp

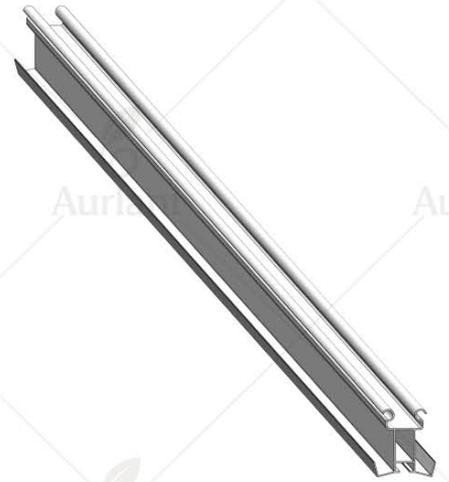
# Illustration of greenhouse structural components



Upper chord



Lower chord



Ridge of the roof vent



Gutter



Main column



End face column



V-shaped rod



Side arch tube



Top arch tube

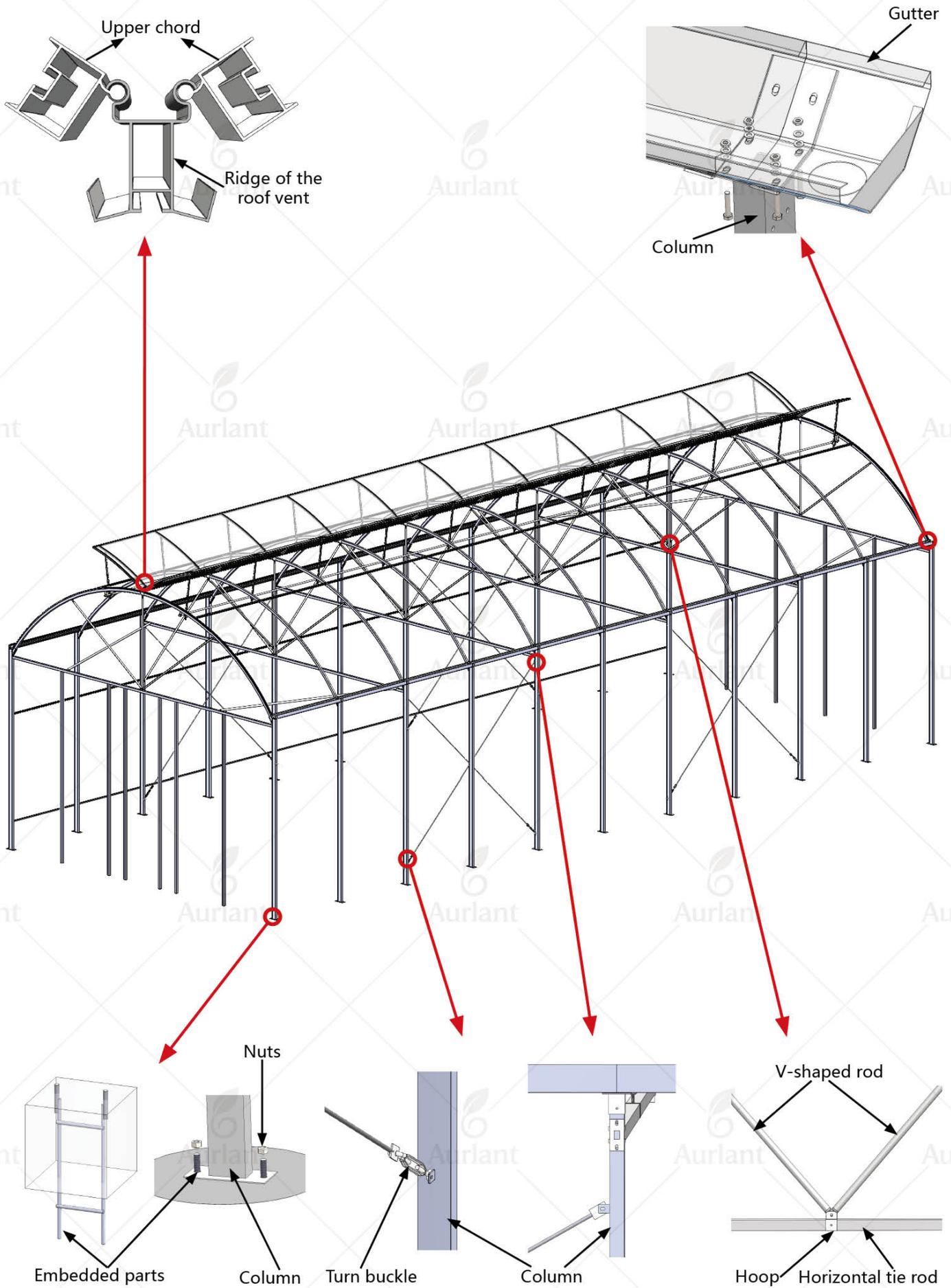


Arch tube of the roof vent



X brace

# Schematic diagram of greenhouse skeleton



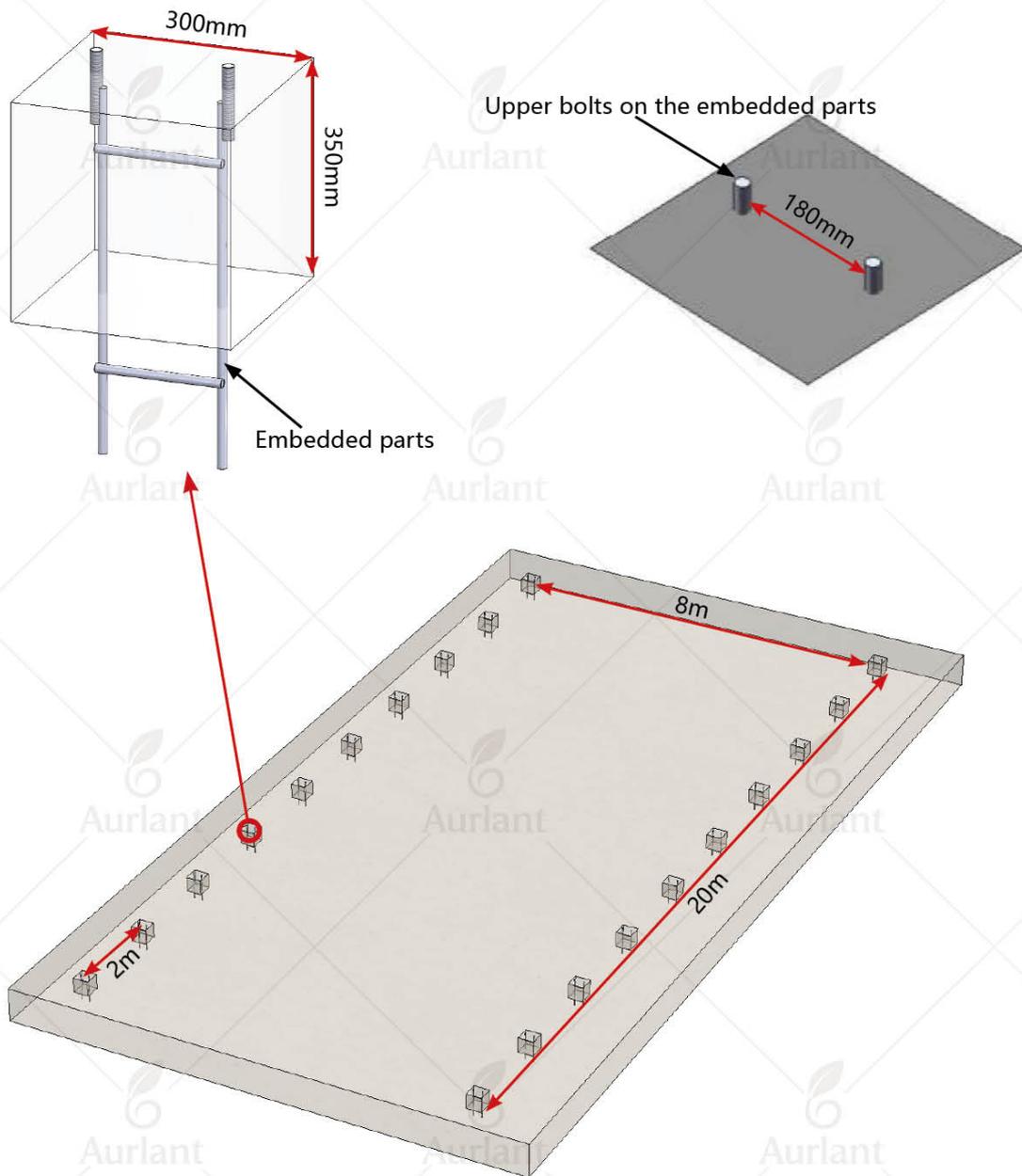
# Greenhouse Installation Procedure

## Step 1: Fixing the embedded parts

Step 1 Required Components:

### *Embedded parts*

1.1 As shown in the diagram, Excavate the foundation for the embedded parts at the construction site according to the greenhouse dimensions (300mm × 350mm foundation), Insert the embedded parts into the formwork and proceed with concrete pouring (ensuring the bolts at the top of the embedded parts protrude above the surface of the concrete foundation).



**Figure 1-1 Installation diagram for embedded parts**

## Step 2: Install the main column

Step 2 Required Components:

*Main column/Nuts*

2.1 Once the concrete surrounding the embedded parts has completely dried, Secure the bolt at the top of the embedded part to the bottom plates of the column using a nut.

**Note:** All eight columns connecting to the X brace feature iron ears on their sides. These columns should be installed in the positions indicated by the circles in the diagram.

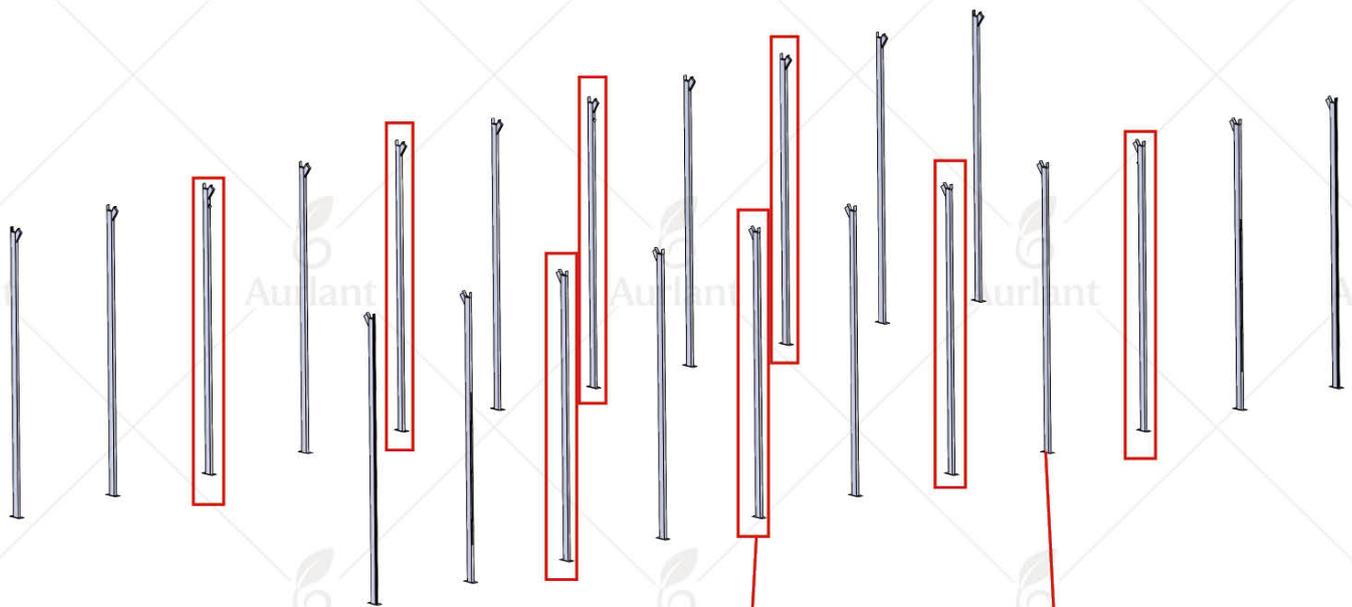
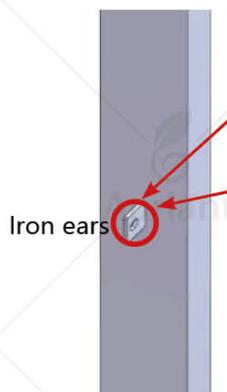
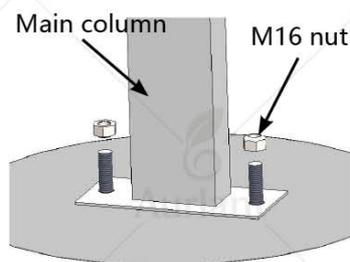


Figure 2-1 Main Column Installation Diagram



Connecting the main column to the X brace

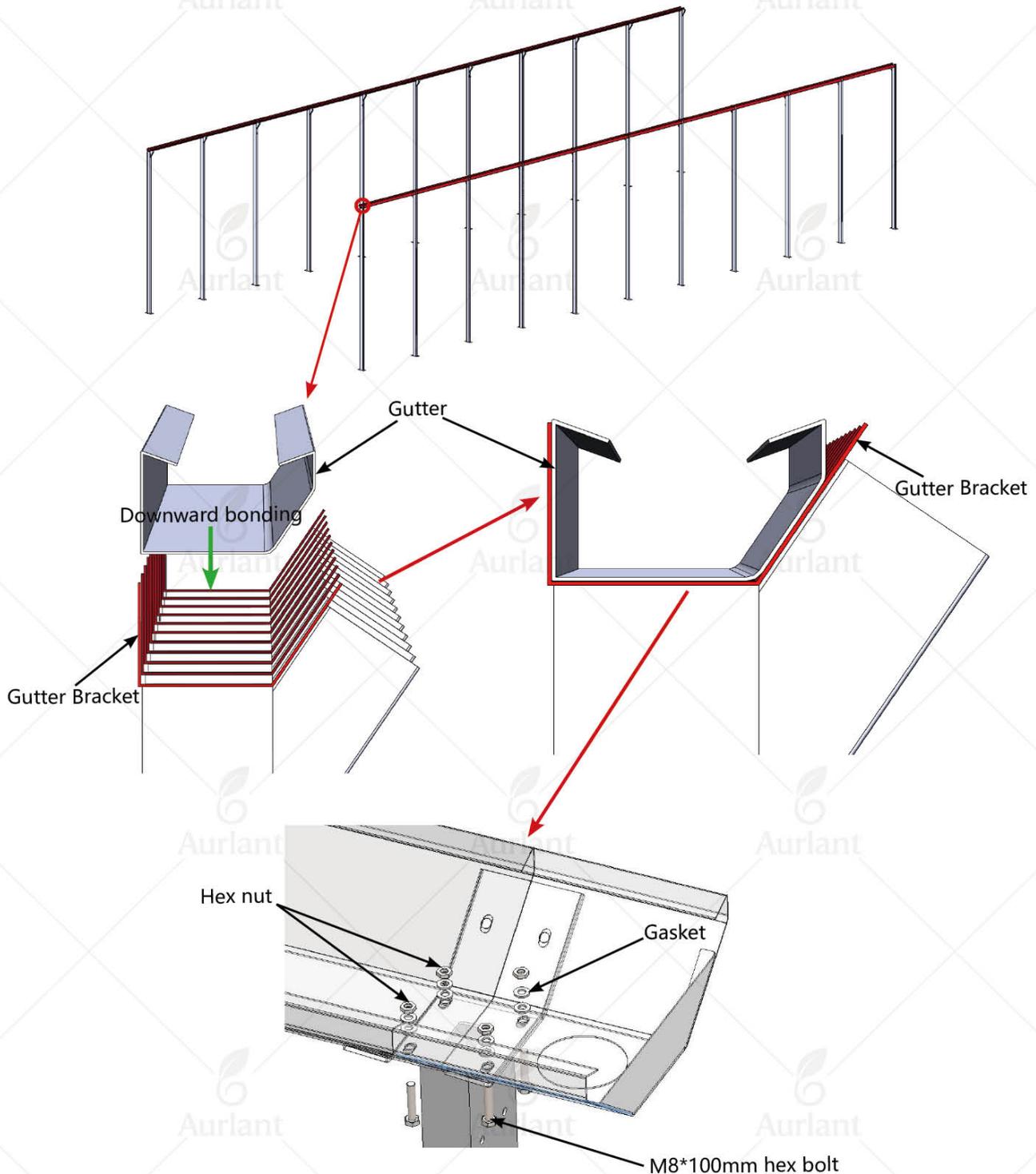
Standard main column

## Step 3: Install the gutter

Step 3 Required Components:

*Gutter/Bolts and nuts/Gasket*

3.1 Place the gutter onto the gutter bracket above the main column, Ensure they fit together snugly, then secure them completely using bolts, nuts and gasket.



**Figure 3-1 Installation diagram for gutters**

## Step 4: Install the horizontal tie rod

Step 4 Required Components:

*Horizontal tie rod/Bolts and nuts/C-clamp*

4.1 Between the columns, using bolts, nuts and C-clamps, Secure the horizontal tie rod to the upright using the iron ears.

**Note:** Horizontal tie rods are spaced at 4-metre intervals.

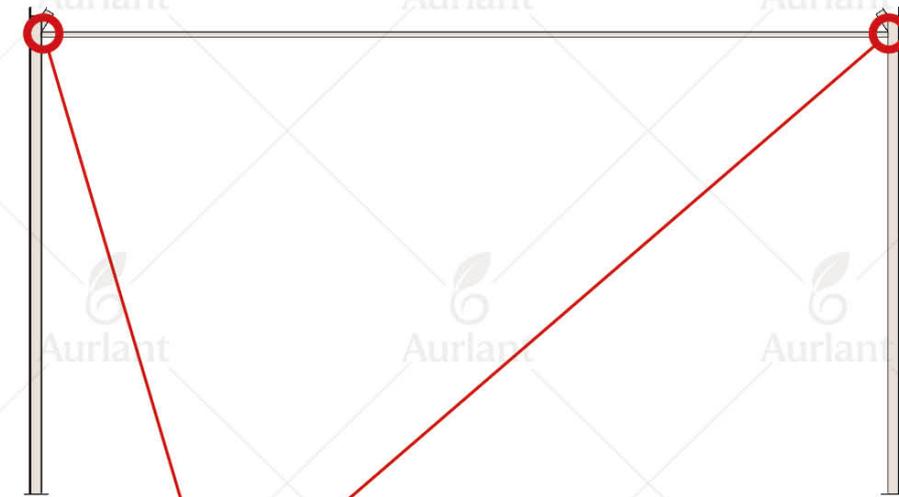


Figure 4-1 Horizontal tie rod installation diagram

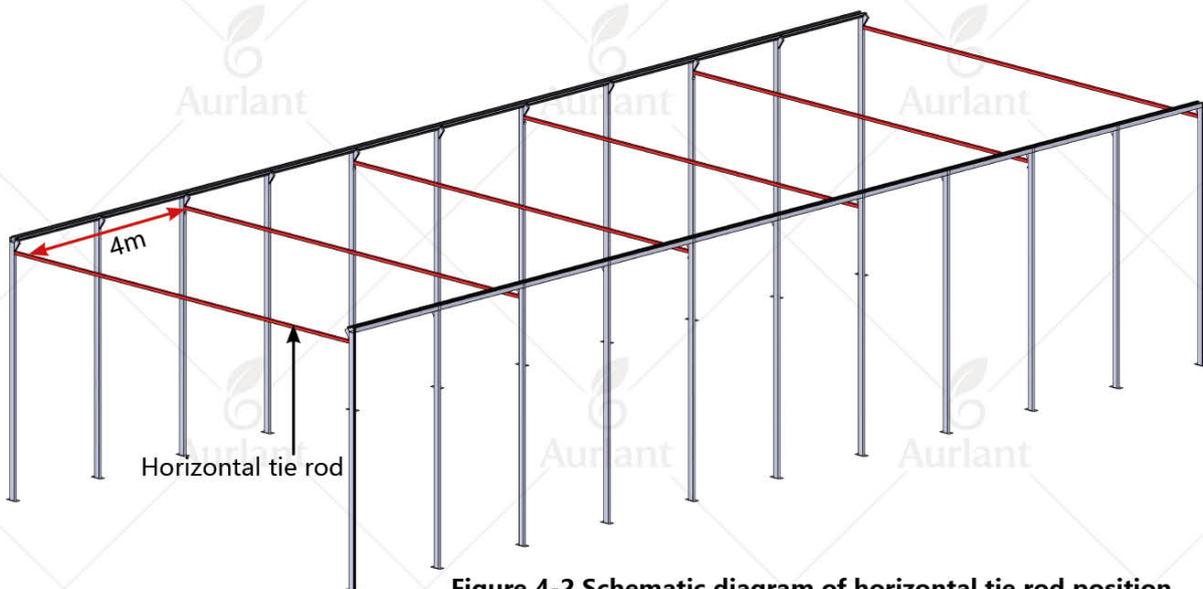
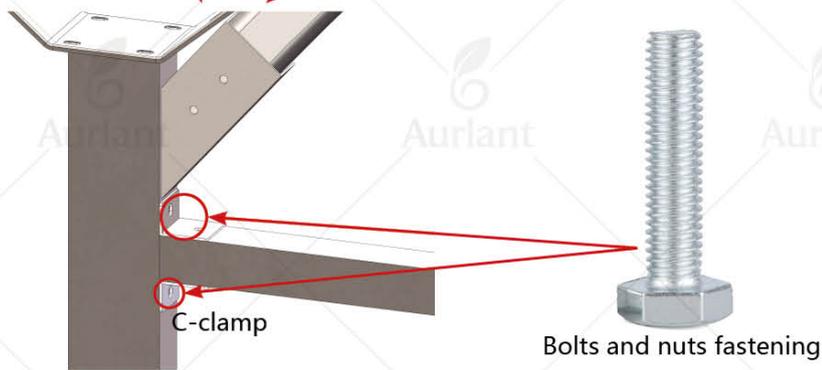


Figure 4-2 Schematic diagram of horizontal tie rod position

## Step 5: Install the X brace

Step 5 Required Components:

*X brace/Turn buckle/Bolts and nuts*

5.1 The lower end of the X brace is secured to the iron ears at the base of the main column via turn buckle and bolts and nuts assembly, The upper end of the X brace is secured by bolts and nuts to the iron ears on the top of the main column. Complete the installation of the four sets of X braces in sequence. After installation, the tension of the X brace may be adjusted by turning the turn buckle.

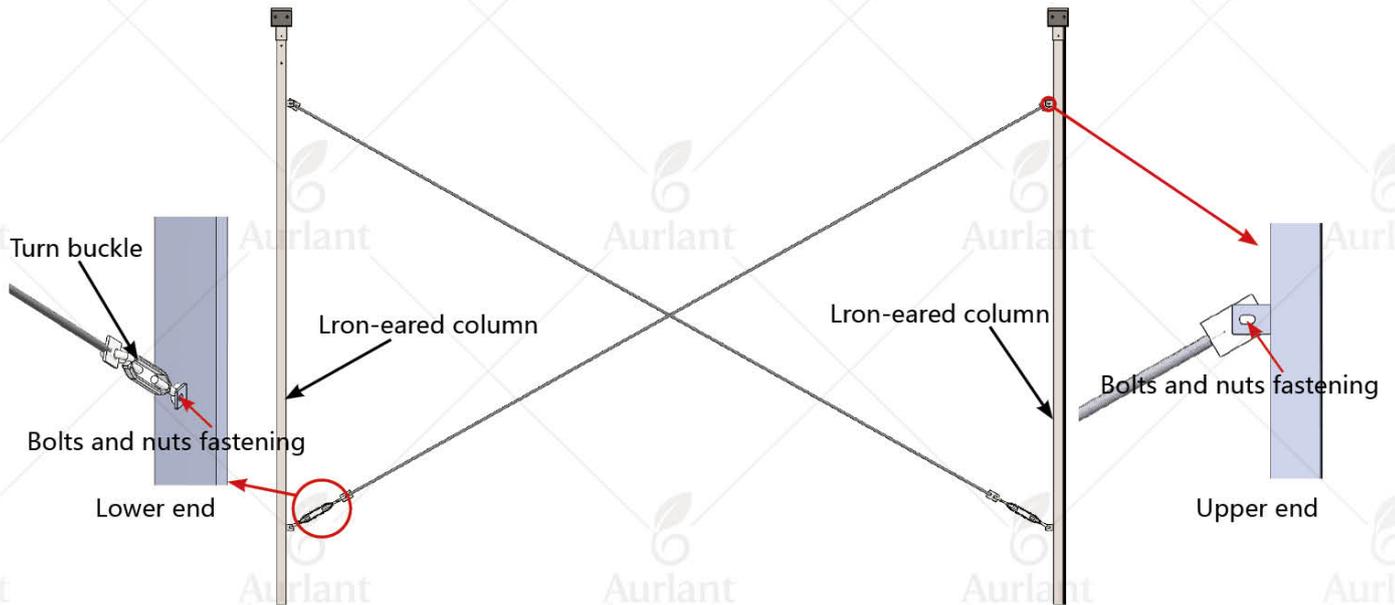


Figure 5-1 X brace installation diagram

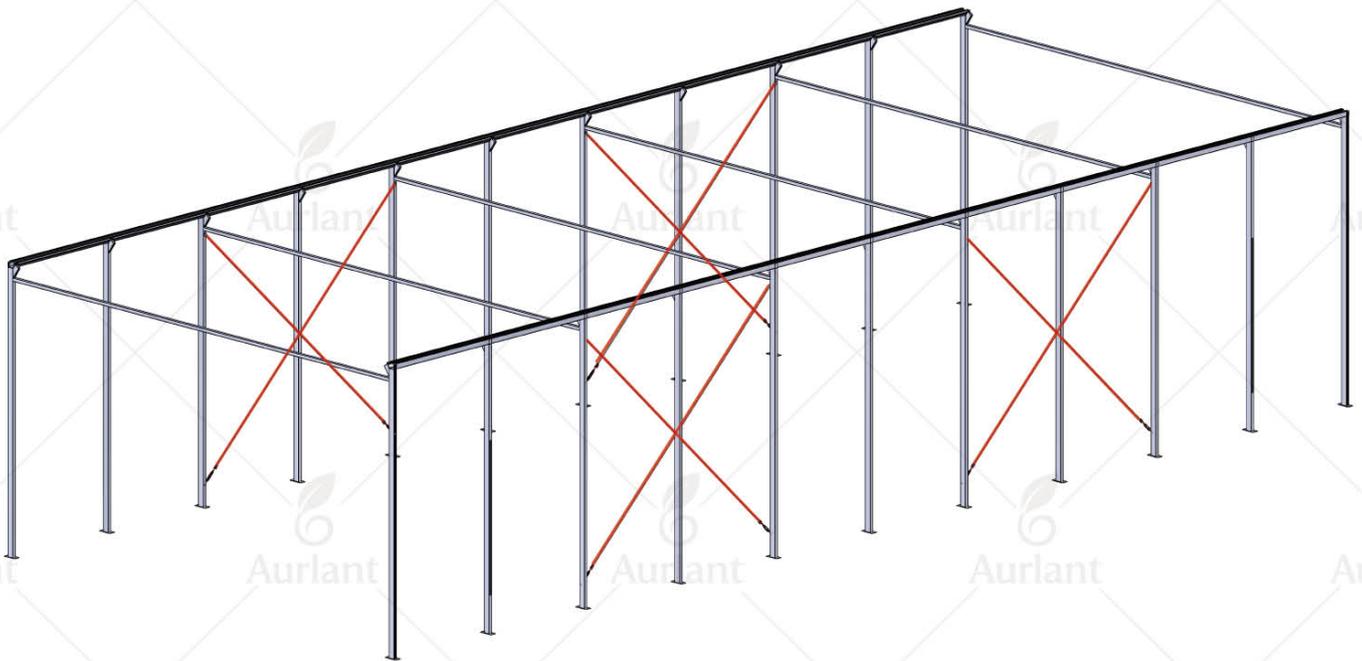


Figure 5-2 Schematic diagram of X brace installation position

# Step 6: Install the arch tube

Step 6 Required Components:

*Side arch tube/Top arch tube/Bolts and nuts*

6.1 First insert the side arch tube into the side arch tube casing at the top of the column, secure it using bolts and nuts; Then insert the other end of the side arch tube into the top arch tube. Connect all the arch tubes in sequence.

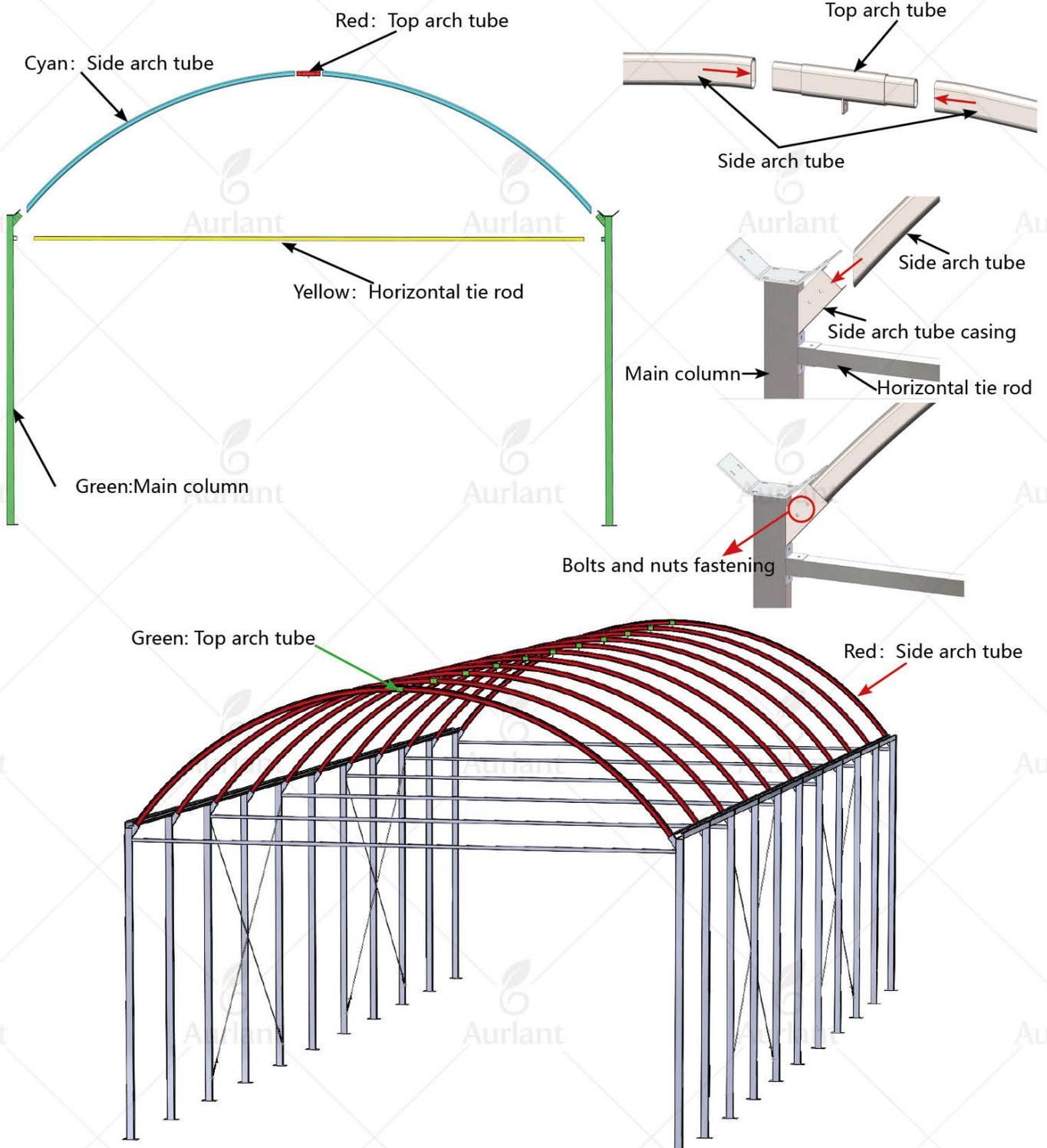


Figure 6-1 Installation diagram for arch tubes

# Step 7: Install the suspension rod and V-shaped rod

Step 7 Required Components:

*Suspension rod/V-shaped rod/Bolts and nuts/Hoop*

7.1 First, secure the upper end of the suspension rod to the top arch rod using bolts and nuts. Secondly, secure the lower end of the suspension rod to the horizontal tie rod using clamps, bolts and nuts, attaching it to the transverse V-shaped rod. Finally, secure longitudinal V-shaped rod to the top arch tube and suspension rods using clamps, bolts and nuts. The suspension rods shall be spaced at 4-metre intervals.

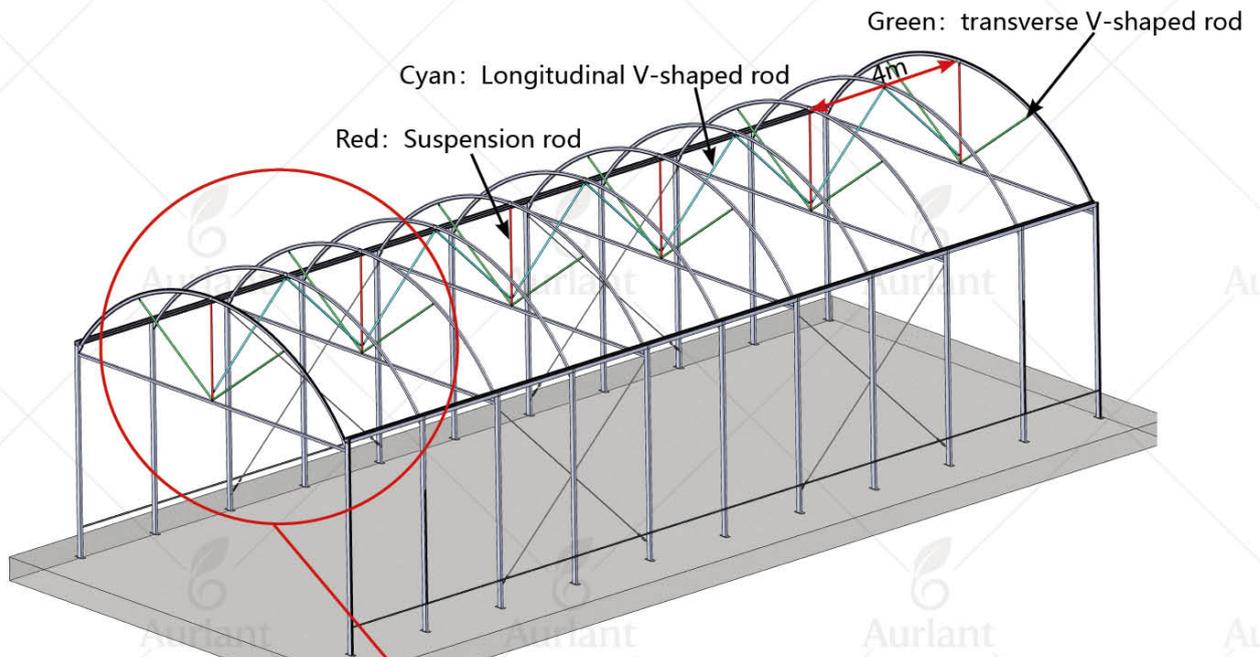


Figure 7-1 Installation diagram for suspension rod and V-shaped rod

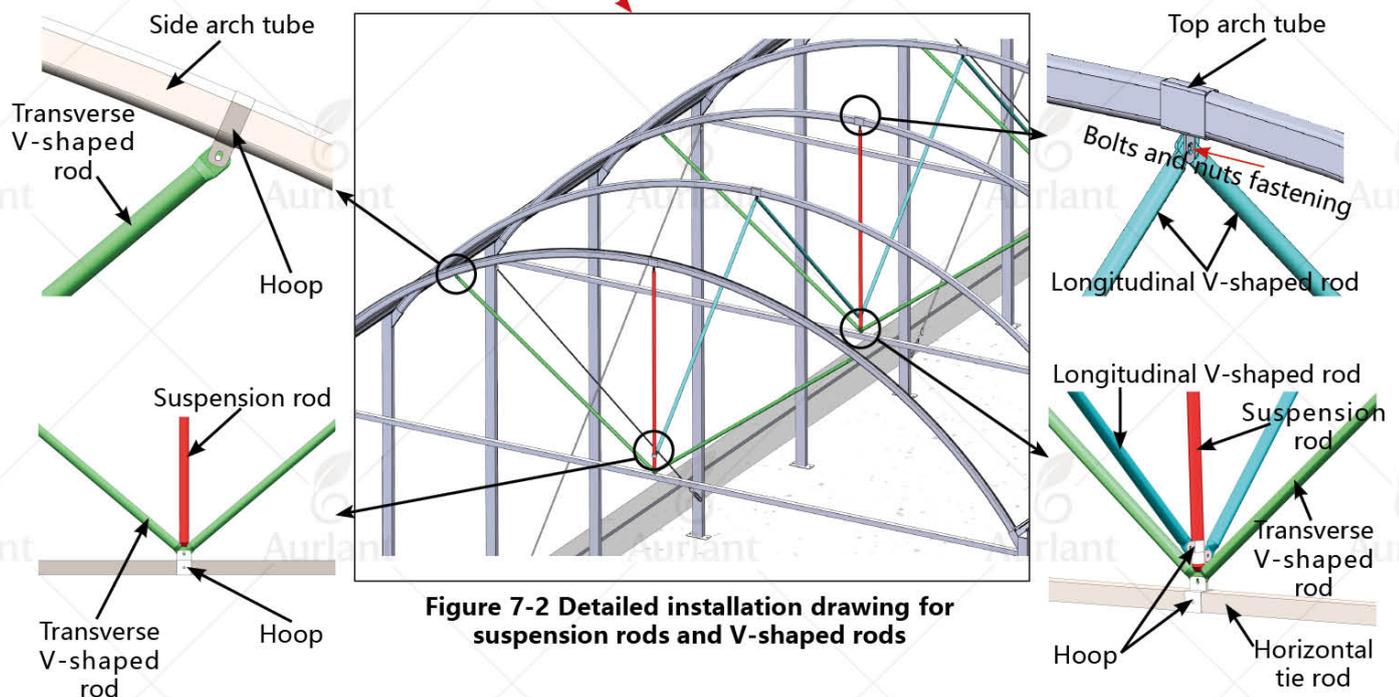


Figure 7-2 Detailed installation drawing for suspension rods and V-shaped rods

## Step 8: Install the diagonal brace

Step 8 Required Components:

*Diagonal brace/Bolts and nuts*

8.1 As shown in the figure below, determine the position of the diagonal brace between the first and second horizontal tie rods on the front and rear faces respectively; Then, based on the position of the reserved holes at both ends of the diagonal brace. Secure the diagonal brace to the horizontal tie rods using M8 x 80mm bolts and nuts. A total of four diagonal braces are required.

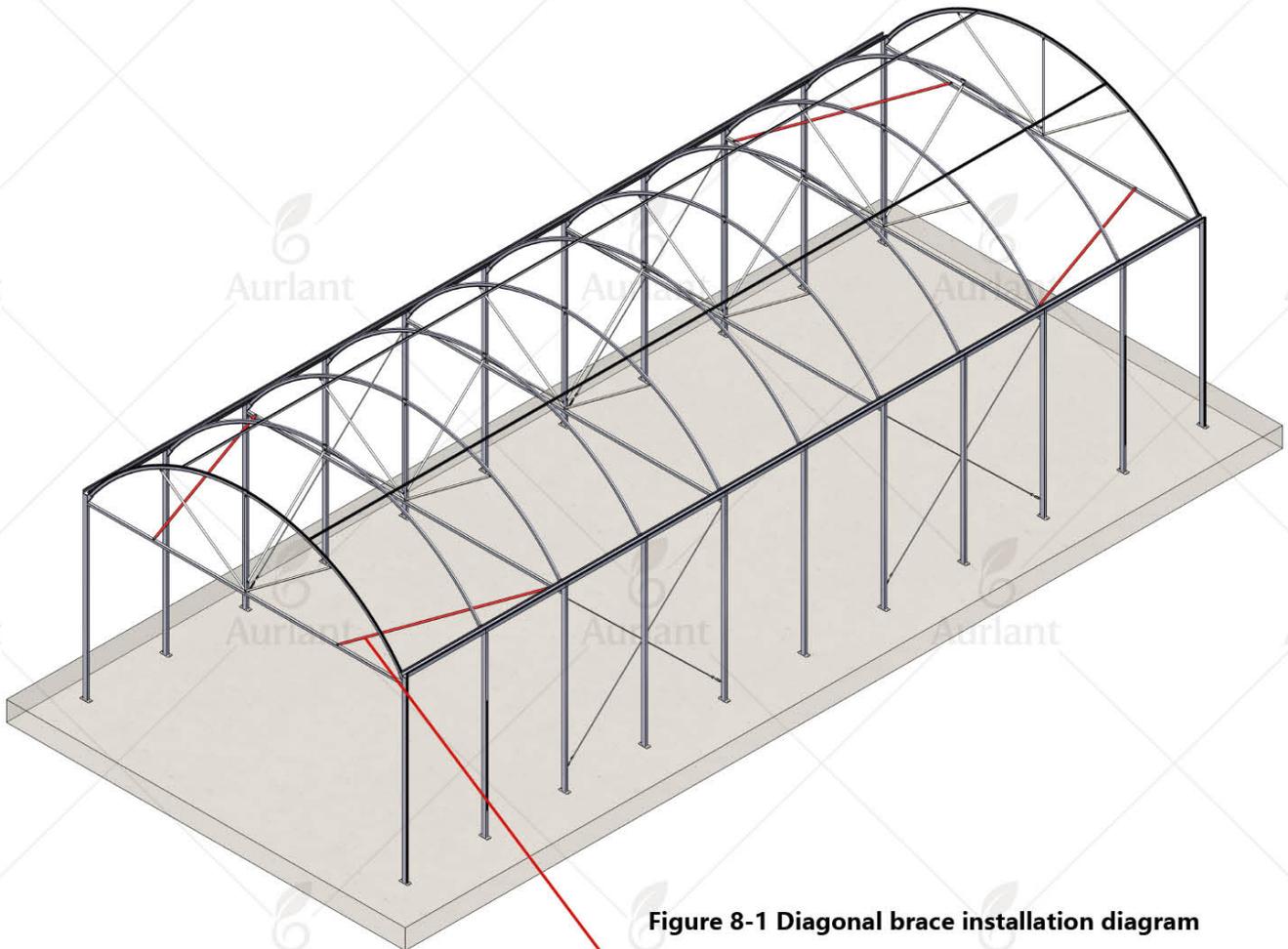
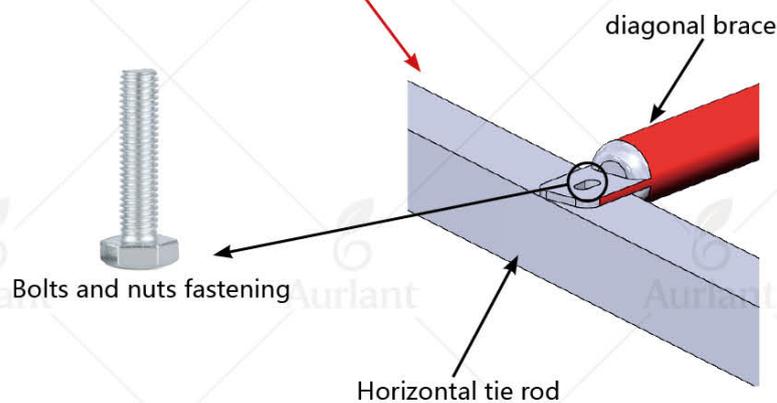


Figure 8-1 Diagonal brace installation diagram



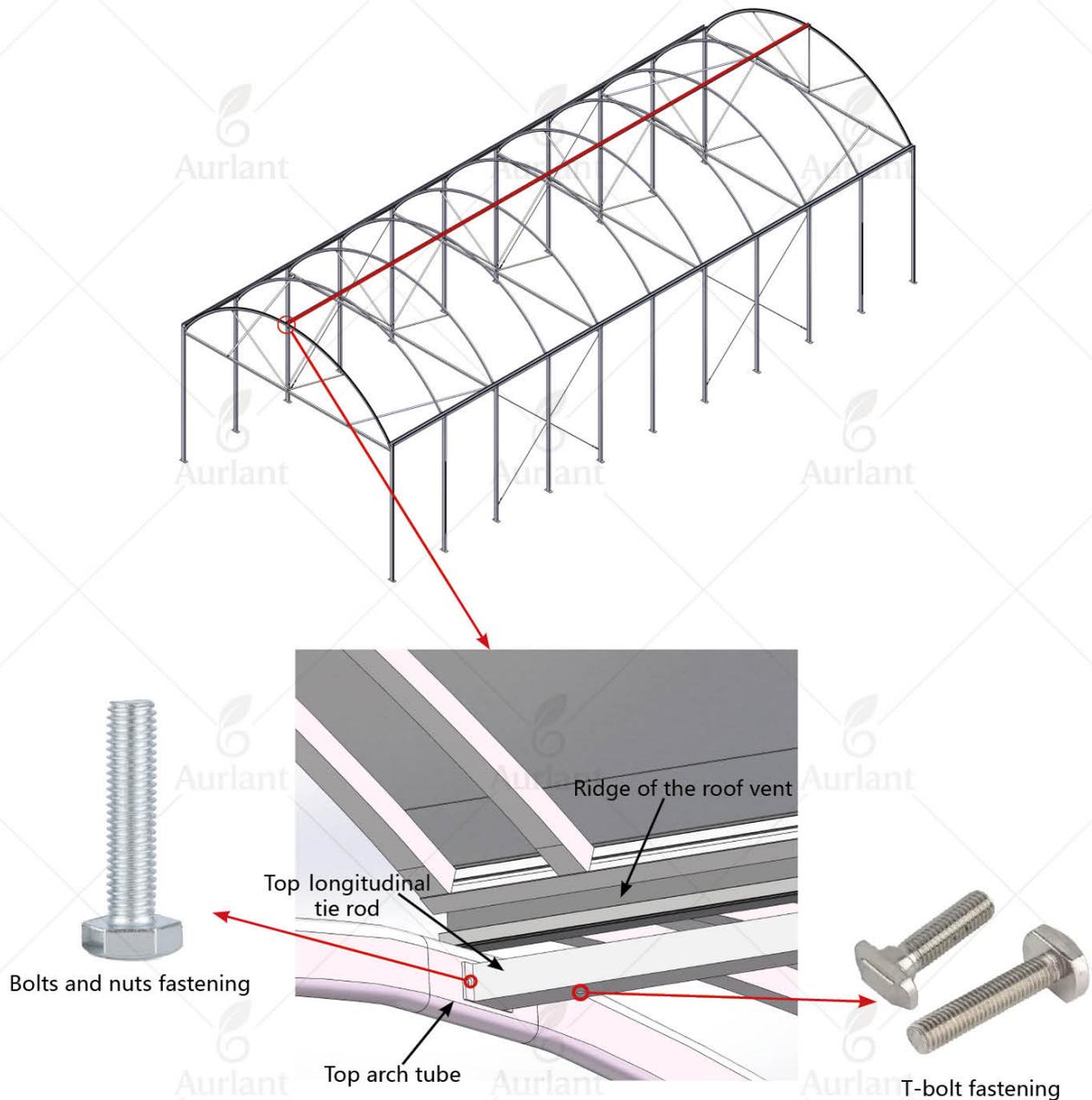
## Step9: Install the top longitudinal tie rod and the ridge of the roof vent

Step 9 Required Components:

*Ridge of the roof vent/Top longitudinal tie rod/T-bolt/Bolts and nuts*

9.1 Secure the top longitudinal tie rod between the top arch tube using bolts and nuts, then place the ridge of the roof vent horizontally above the top longitudinal tie rod, and connect them using T-bolts; Secure the top longitudinal tie rod to the ridge of the roof vent using bolts and nuts through the iron ears at the top longitudinal tie rod's end.

**Note: Top longitudinal tie rods, two metres each.**



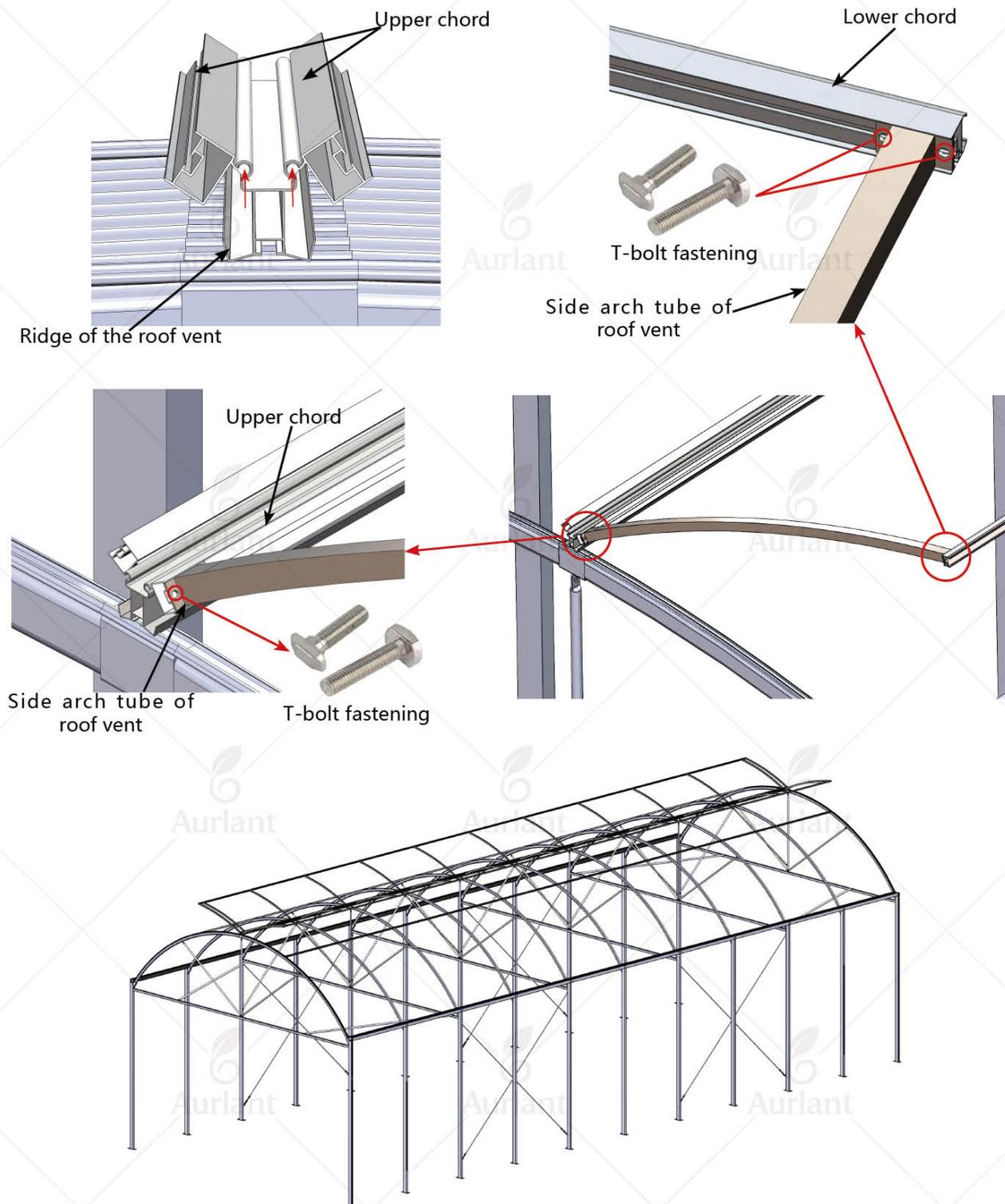
**Figure 9-1 Schematic diagram of top longitudinal tie rod and the ridge of the roof vent**

## Step 10: Install the roof vent frame

Step 10 Required Components:

*Upper chord/Lower chord/Self-tapping screw/T-bolt*

10.1 Insert the joint of the ridge aluminium profile on the upper chord of the roof vent into the fixed position. Next, use T-bolts to secure both ends of the window arch tube through the iron ears to the upper and lower chords of the roof vent respectively, and complete the installation of all frames in sequence.



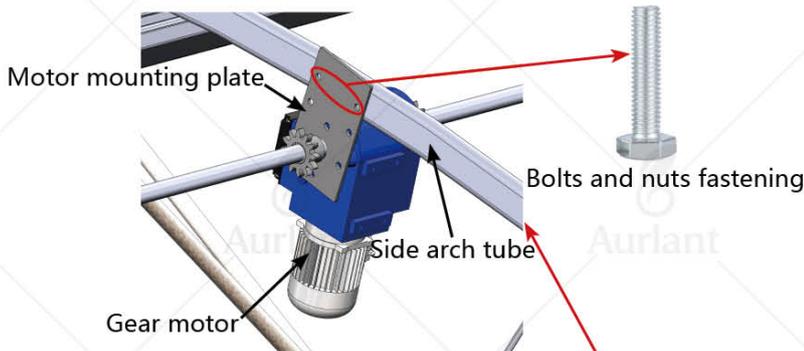
**Figure 10-1 Installation diagram for the roof vent frame**

# Step 11: Install the roof vent drive

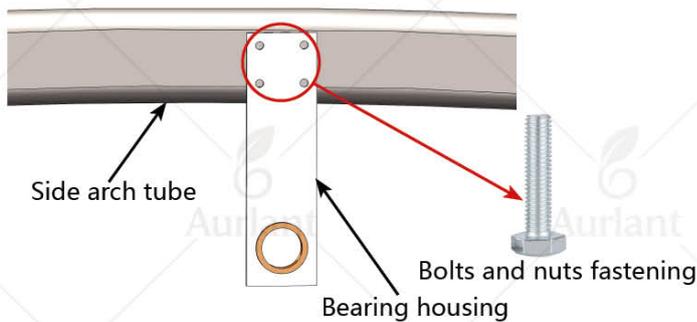
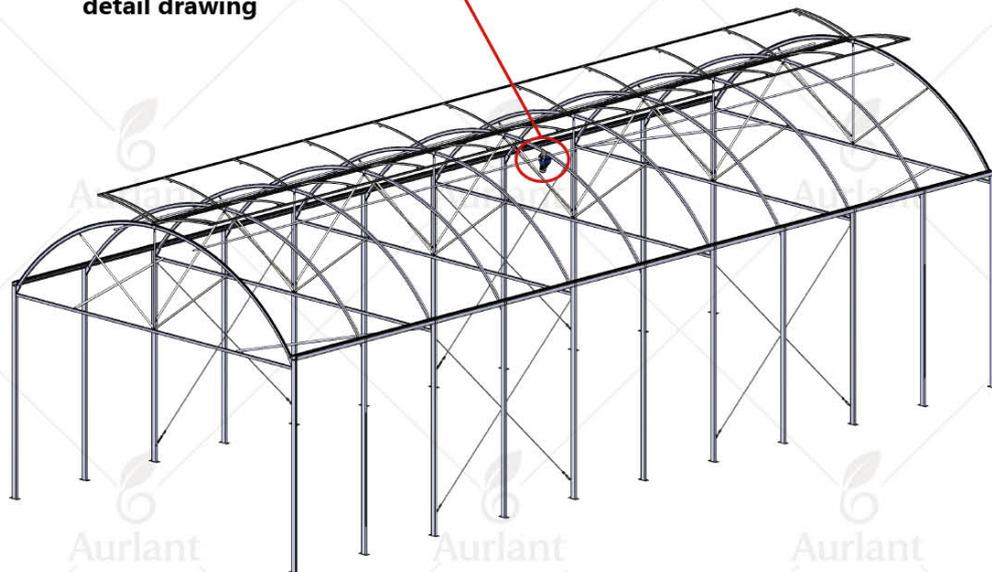
Step 11 Required Components:

*Roof vent drive shaft/Pinion/Rack/Bearing housing/Self-tapping screw/Gear motor/  
Bolts and nuts*

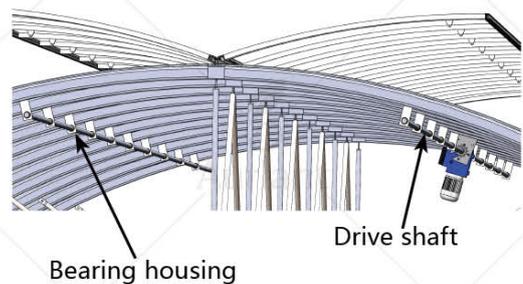
11.1 First secure the gear motor to the motor mounting plate using bolts and nuts. Then select a position in the middle of the greenhouse and secure the motor mounting plate to the side arch tube using bolts and nuts; The bearing housing is then secured to the side arch tube using bolts and nuts through the iron ears, and pass the drive shaft through the bearing housing and the climbing pinion.



**Figure 11-1 Gear motor installation detail drawing**

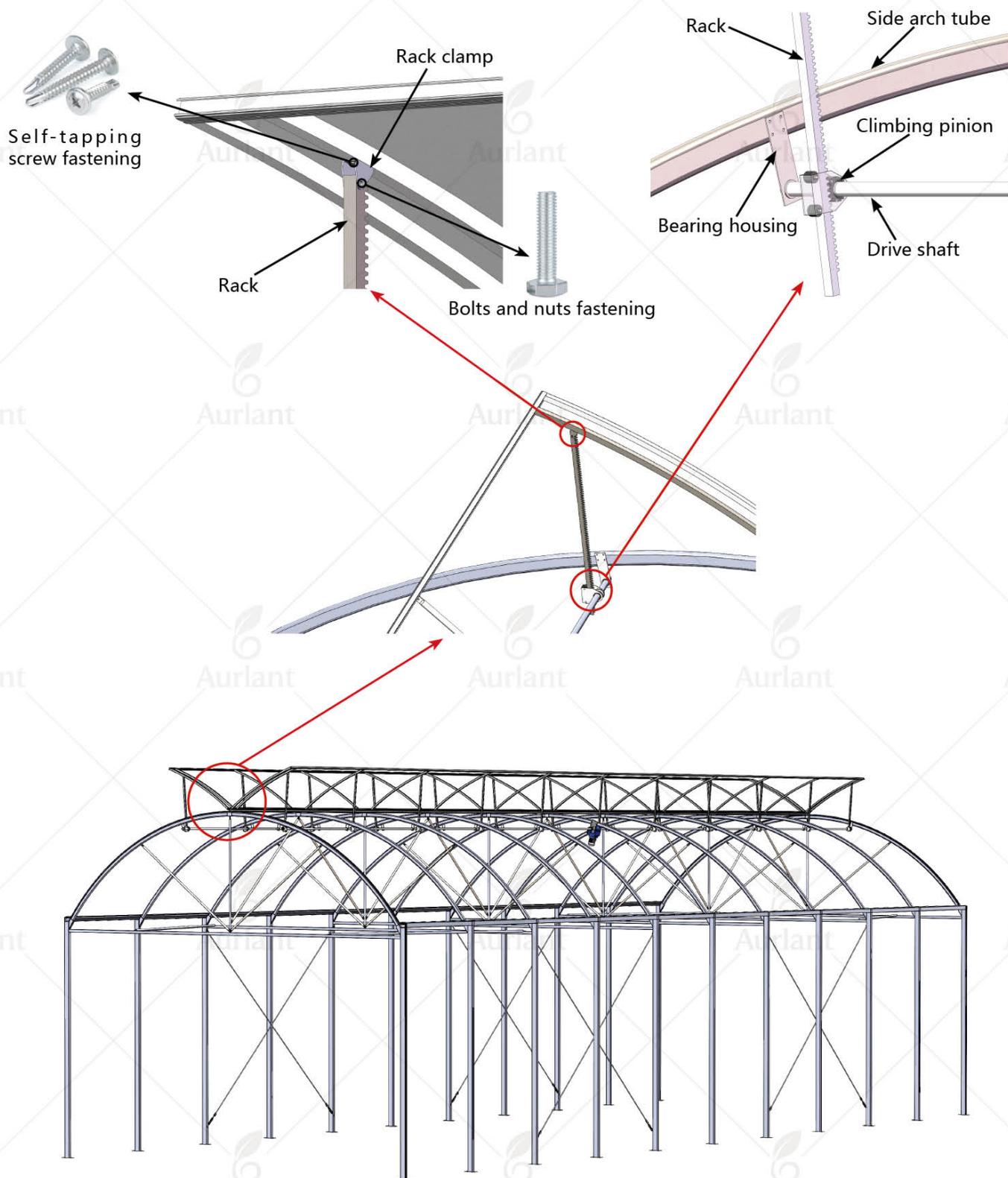


**Figure 11-2 Bearing Housing Installation Detail Drawing**



**Figure 11-3 Drive shaft Installation Diagram**

11.2 Pass the roof vent rack through the climbing pinion to interlock. Then secure the end of the roof vent rack to the roof vent side arch tube using self-tapping screws, bolts and nuts, and rack clamp.



## Step 12: Install the end-face column

Step 12 Required Components:

*End face column/C-clamp/Bolts and nuts*

12.1 Using C-clamps and bolts and nuts, secure the end columns to the horizontal tie rods at the positions indicated in the diagram, for a total of eight columns.

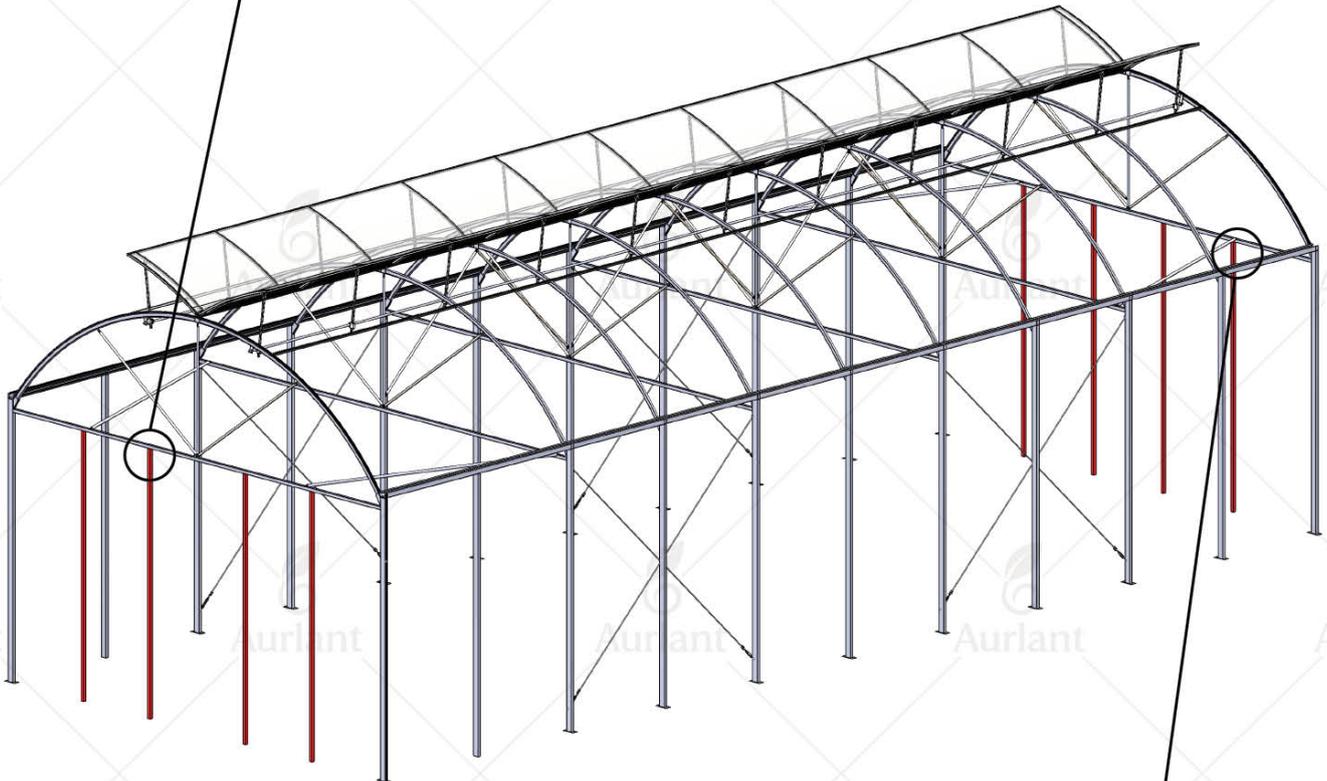


Figure 12-1 Schematic diagram of end-face column positioning



## Step 13: Install the door

Step 13 Required Components:

*Gate pulley/door track/door beam/door handle/Self-tapping screw/bolts and nuts/film/Wiggle wire and lock channel*

13.1 Use a 30\*50 square tube as the beam of the door on the end face of the greenhouse and make 50 face out. According to the size of the door, open two holes with a diameter of 8mm in advance where the beam meets the end face column, and then use M8\*90 bolts and nuts to fix the door beam and the end face column; use Self-tapping screw to fix the door beam and the door track.

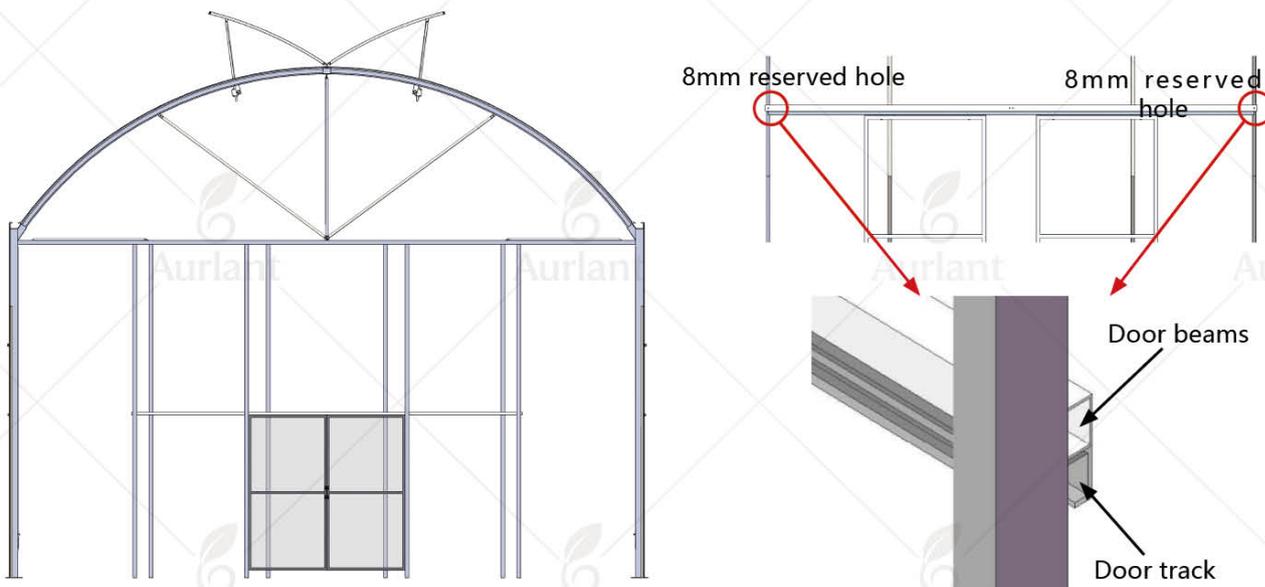


Figure 13-1 Schematic diagram of door beam and track installation

13.2 Drill two reserved holes with a diameter of 8mm above the door frame, and fix the door pulley with the door frame through M8\*60 bolts and nuts; secondly, the door film lock channel is fixed with self-tapping nails around the door frame, and the door is covered with film with wiggle wire; Finally, the Self-tapping screw are used to fix the door handle in the appropriate position of the door frame.

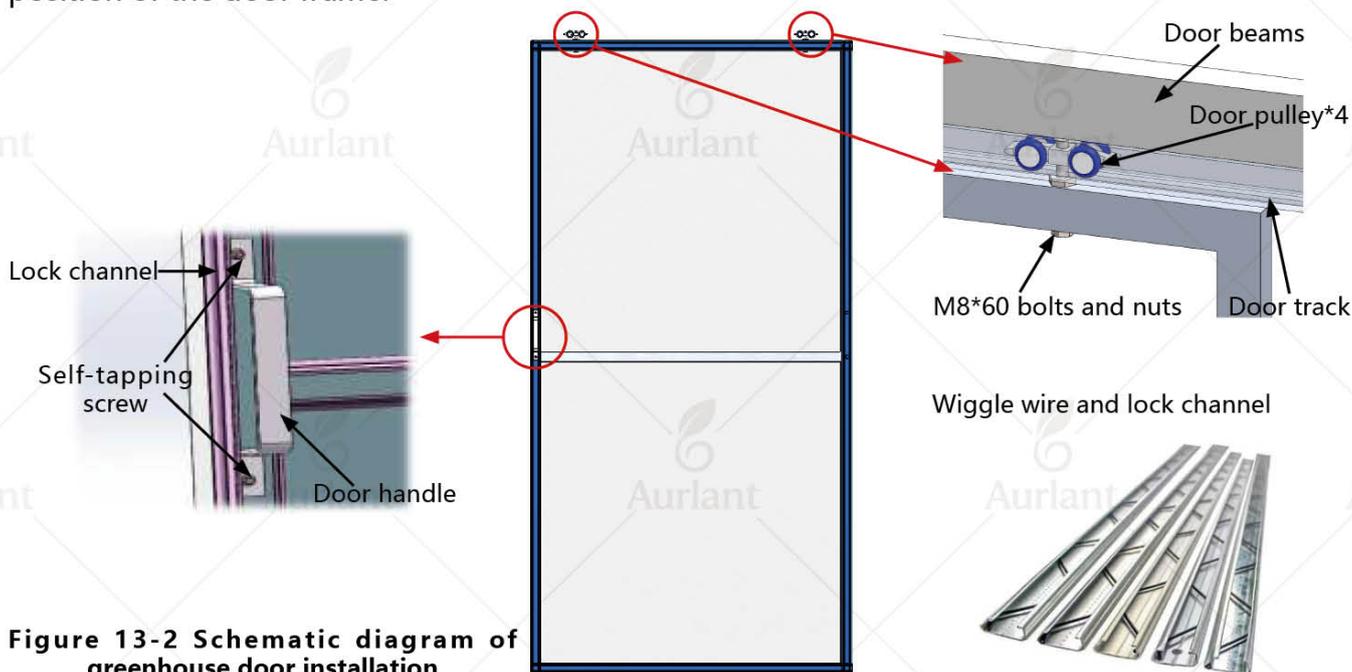


Figure 13-2 Schematic diagram of greenhouse door installation

13.3 Connect the assembled door frame with the track through the door pulley, and hang the door in the door track to open and close it freely.

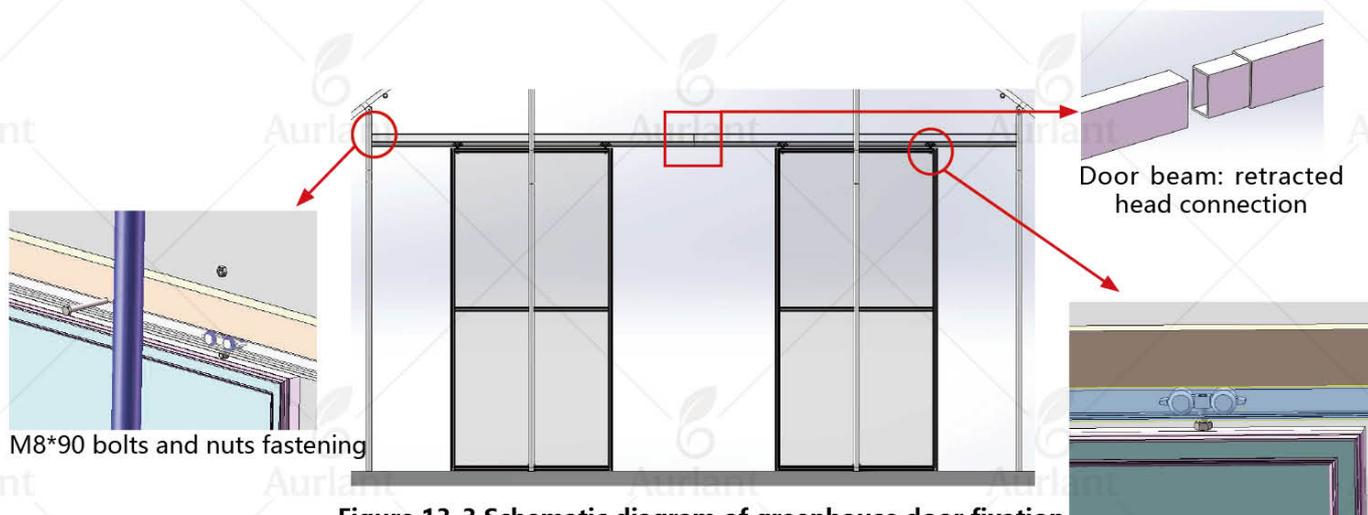


Figure 13-3 Schematic diagram of greenhouse door fixation

13.4 In order to avoid shaking when the door opens and closes, the door stopper is fixed between the end face column and the door frame by Self-tapping screw.



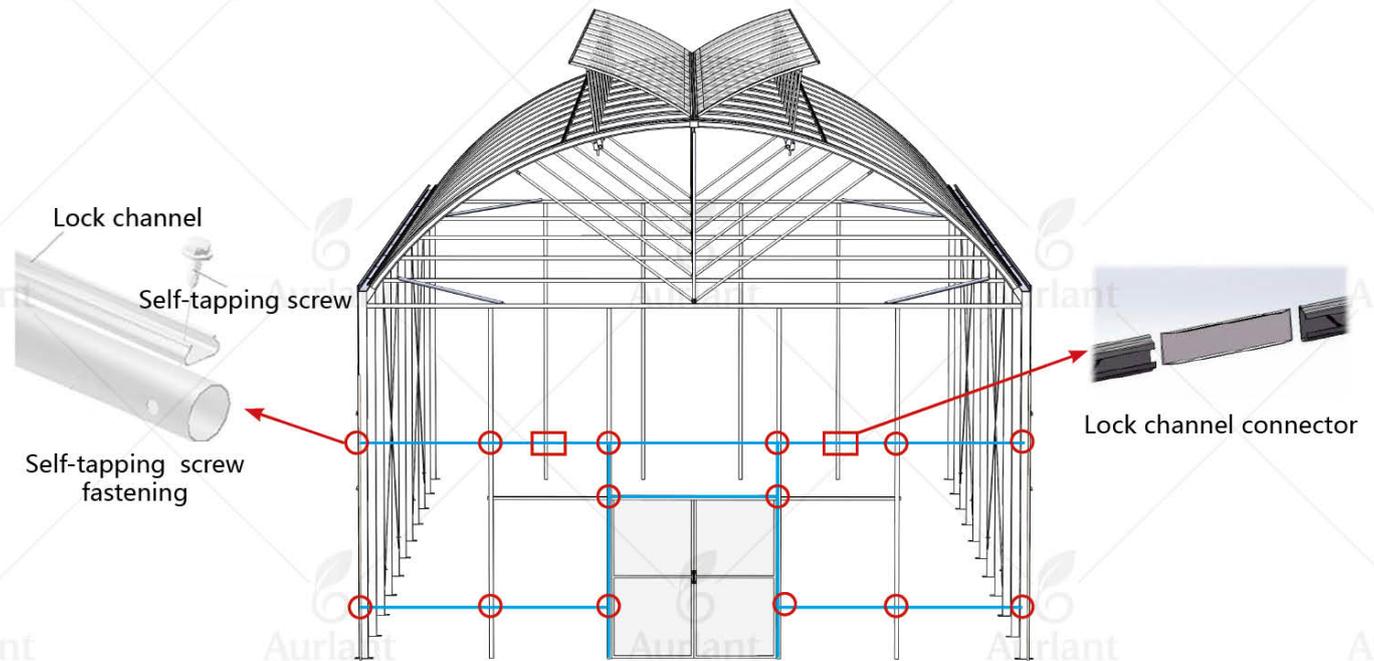
Figure 13-4 Schematic diagram of greenhouse door flap installation

# Step 14: Install the lock channel

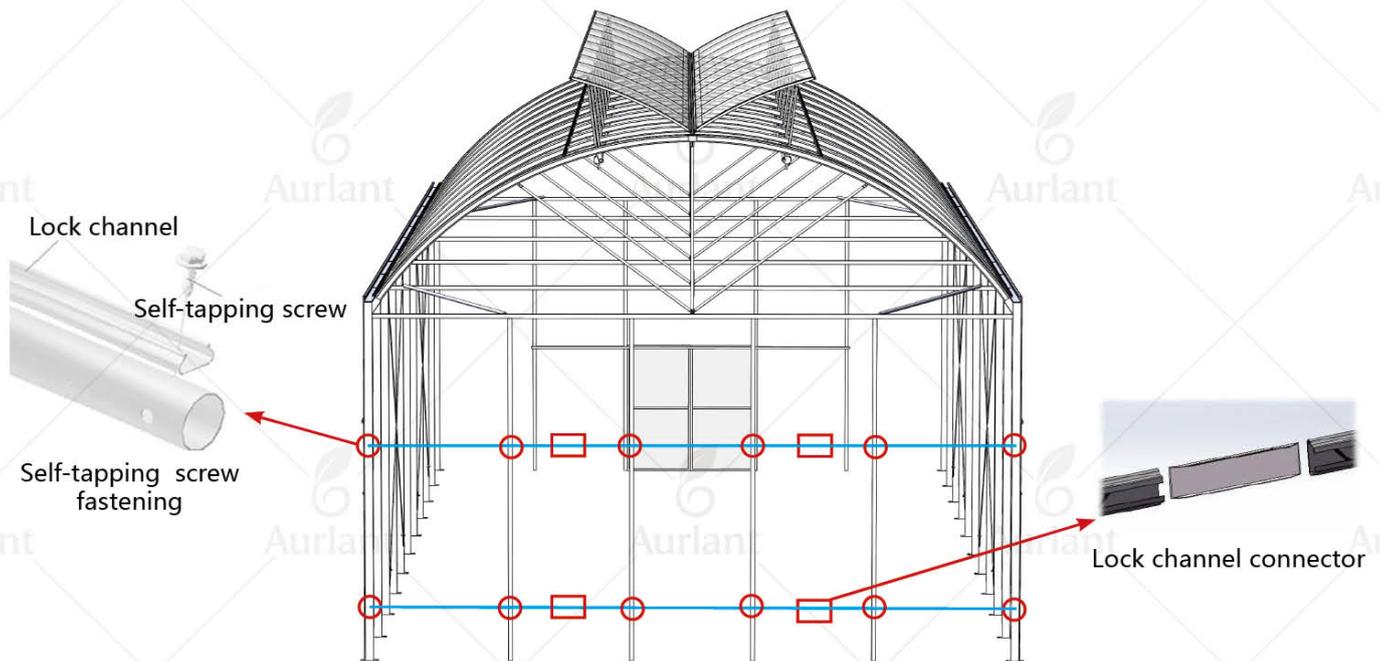
Step 14 Required Components:

*Lock channel/Alt lock channel/Self-tapping screw/Lock channel connector*

14.1 At the positions indicated in the diagram, secure the lock channel to the end face column at the front and rear ends of the greenhouse using self-tapping screws and lock channel connector respectively. Lock channel that are intermediate or insufficient in length may be connected using lock channel connector.

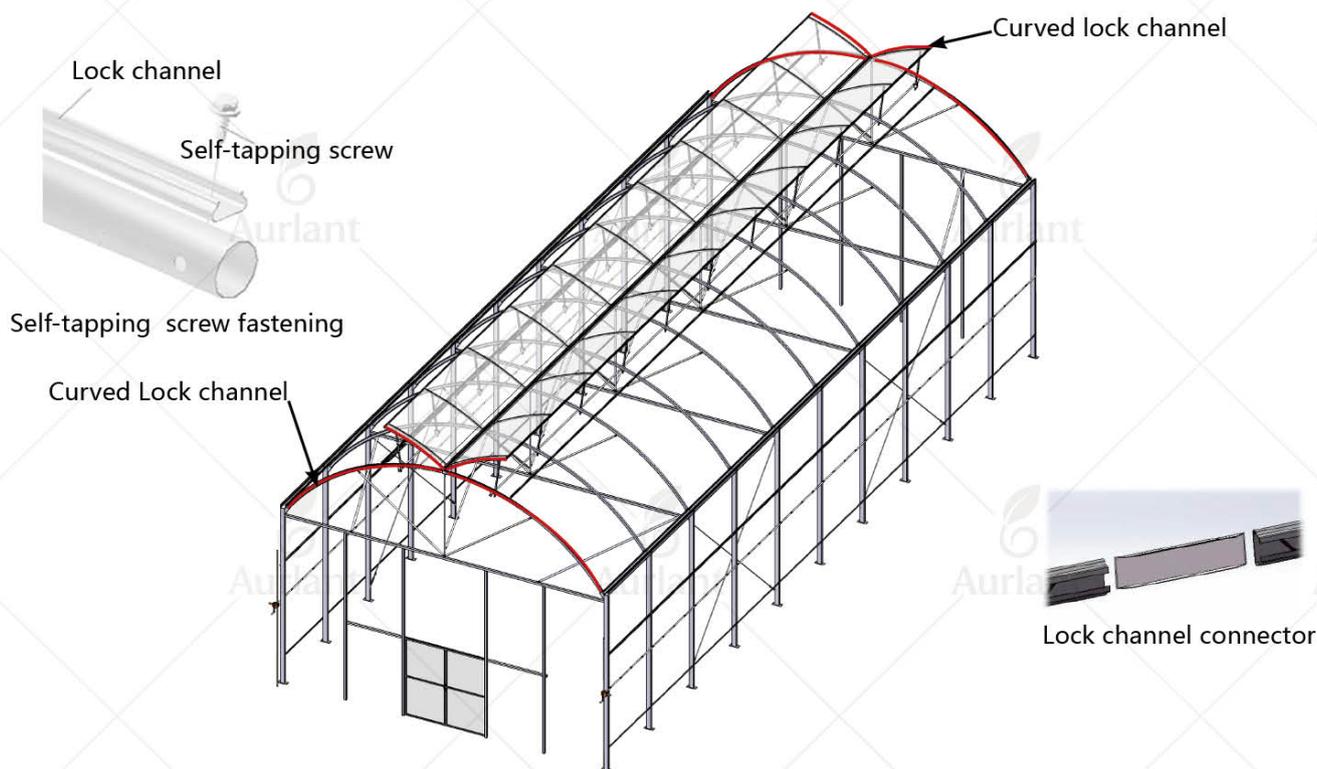


**Figure 14-1 Front lock channel installation diagram**



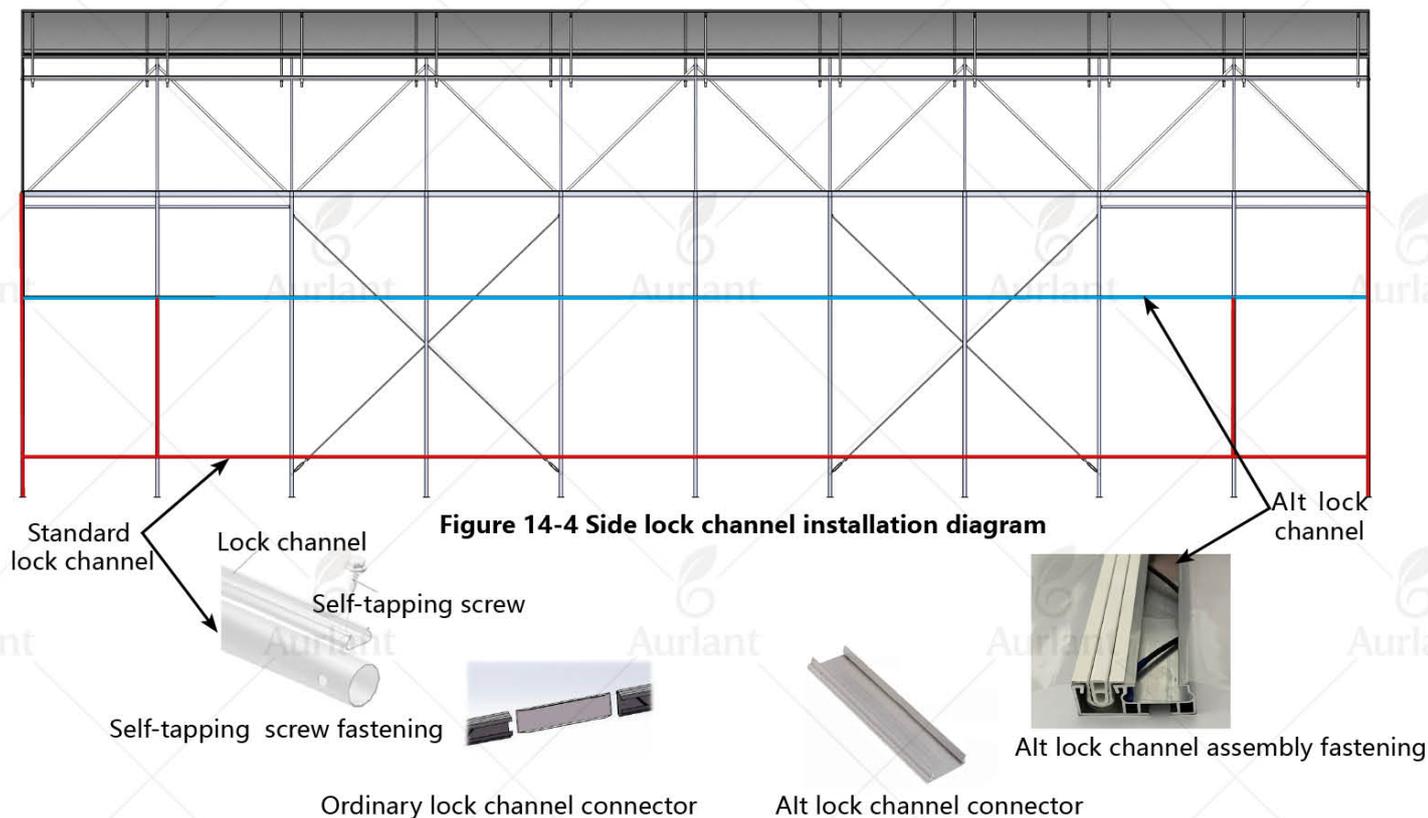
**Figure 14-2 Rear lock channel installation diagram**

14.2 Secure the curved lock channel to the upper surface of the side arch tube using self-tapping screws along the tube's longitudinal axis (the curved lock channel are only positioned on the front and rear end faces of the side arch tube).



**Figure 14-3 Installation diagram for curved lock channel**

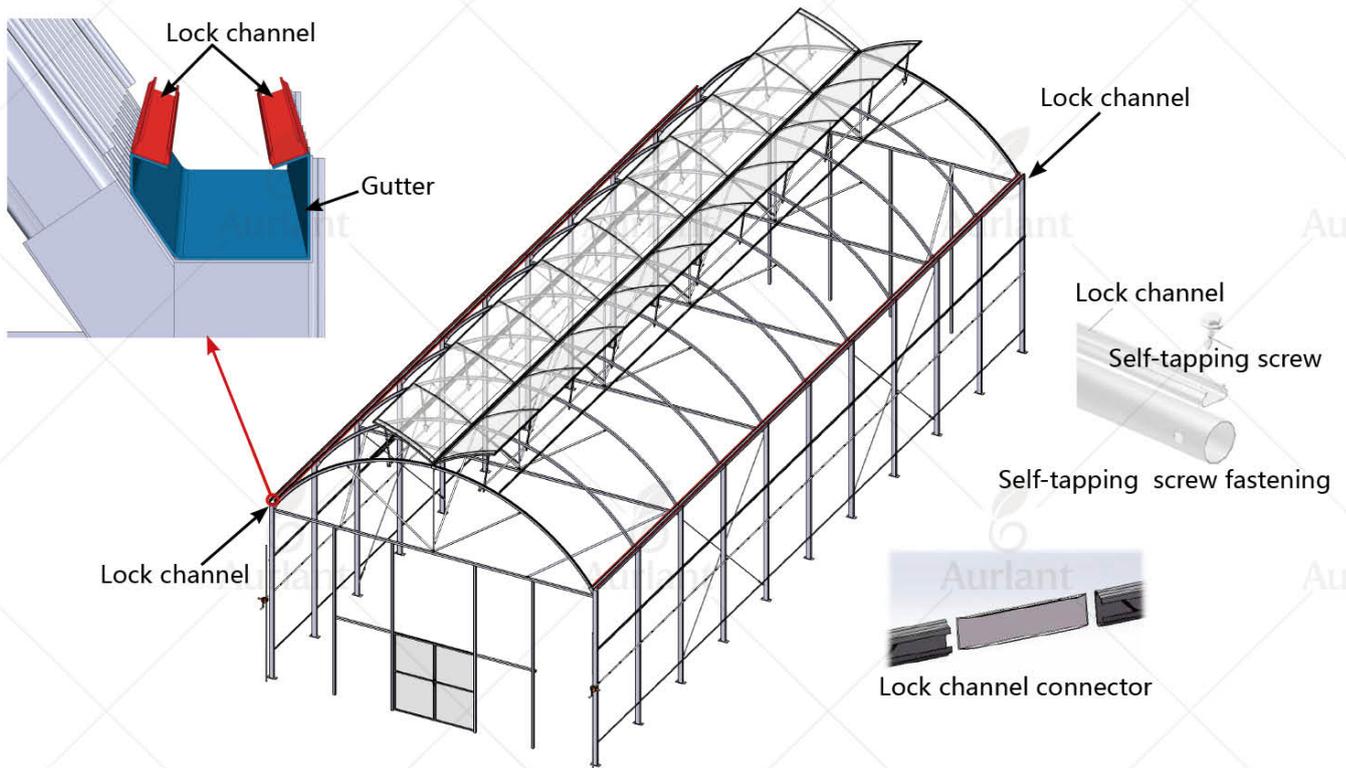
14.3 Side lock channel installation requires standard lock channel and Alt lock channel (special Alt lock channel connectors must be used between Alt lock channels).



**Figure 14-4 Side lock channel installation diagram**

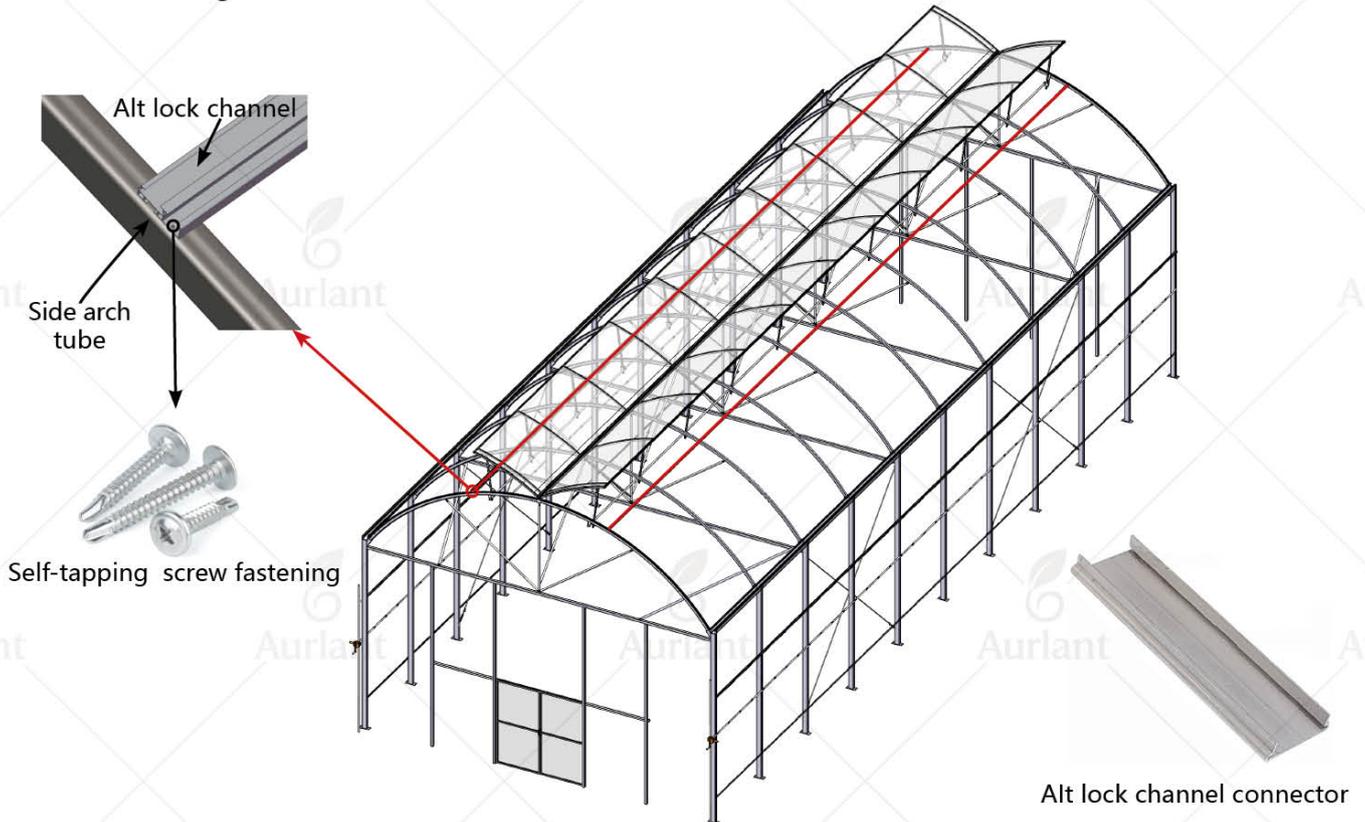
14.4 Install the lock channel along the gutter bends using the same method.

**Note: Lock channel must be fitted at both bends on each gutter, totalling four lock channel.**



**Figure 14-5 Installation diagram for gutter's lock channel**

14.5 Determine the installation position of the top Alt lock channel based on the location of the lower chord when the roof vent is closed. Secure the Alt lock channel to the side arch tube using self-tapping screws. Lock channel that are intermediate or insufficient in length may be connected using lock channel connector.



# Step 15: Install the film and Insect proof net

Step 15 Required Components:

*Film/Insect proof net*

15.1 Secure the trimmed film in the aforementioned lock channel using wiggle wire.

Note: For ease of installation, it is recommended that the film be applied from top to bottom. Where insect proof nets need to be installed, insect proof nets must be installed first and then ventilation film must be installed. The Windproof film and insect proof net is located on the inside of the ventilation film.

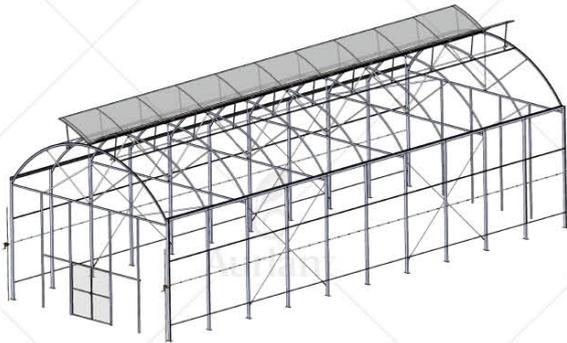


Figure 15-1 Installation diagram for roof vent Film

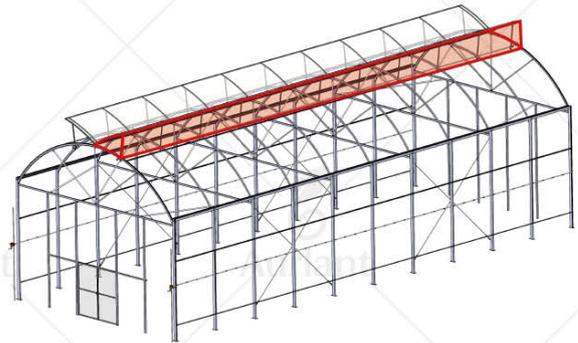


Figure 15-2 Installation diagram for roof vent Insect proof net



Figure 15-3 Installation diagram for top film

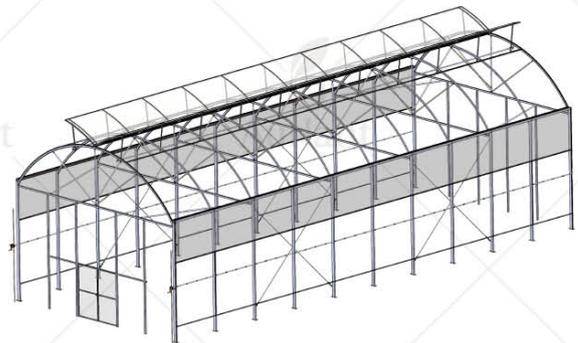


Figure 15-4 Installation diagram for side film

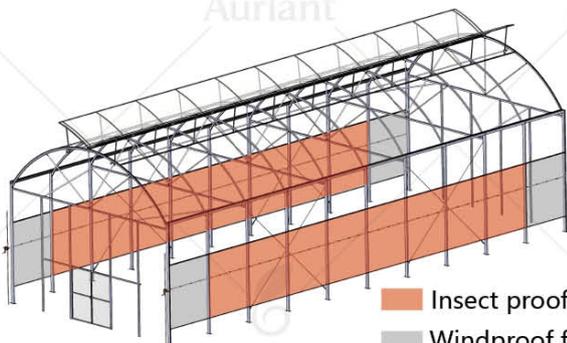
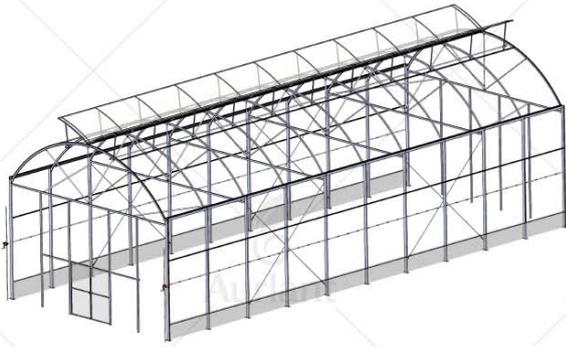


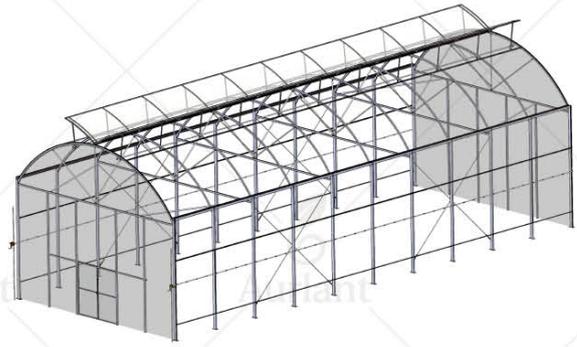
Figure 15-5 Installation diagram for side film



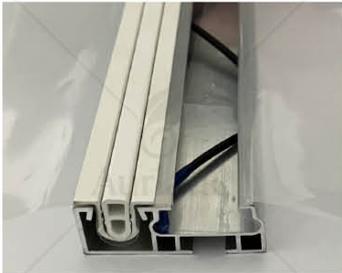
Figure 15-6 Installation diagram for side film



**Figure 15-7 Installation diagram for bottom film**



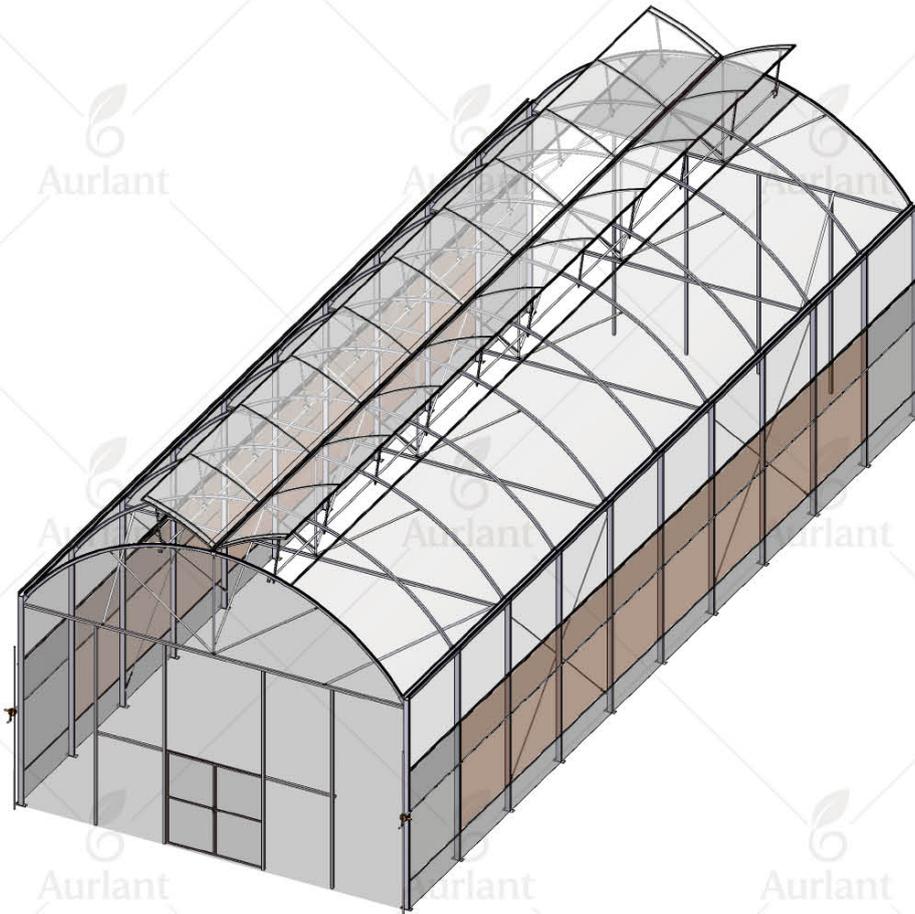
**Figure 15-8 Installation diagram for End-face Film**



**Alt lock channel fastening**



**Wiggle wire fastening**



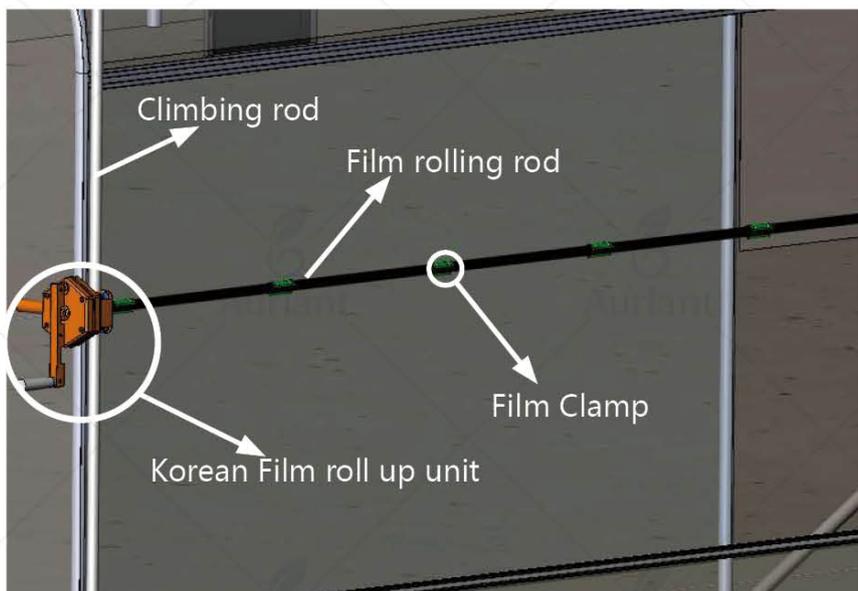
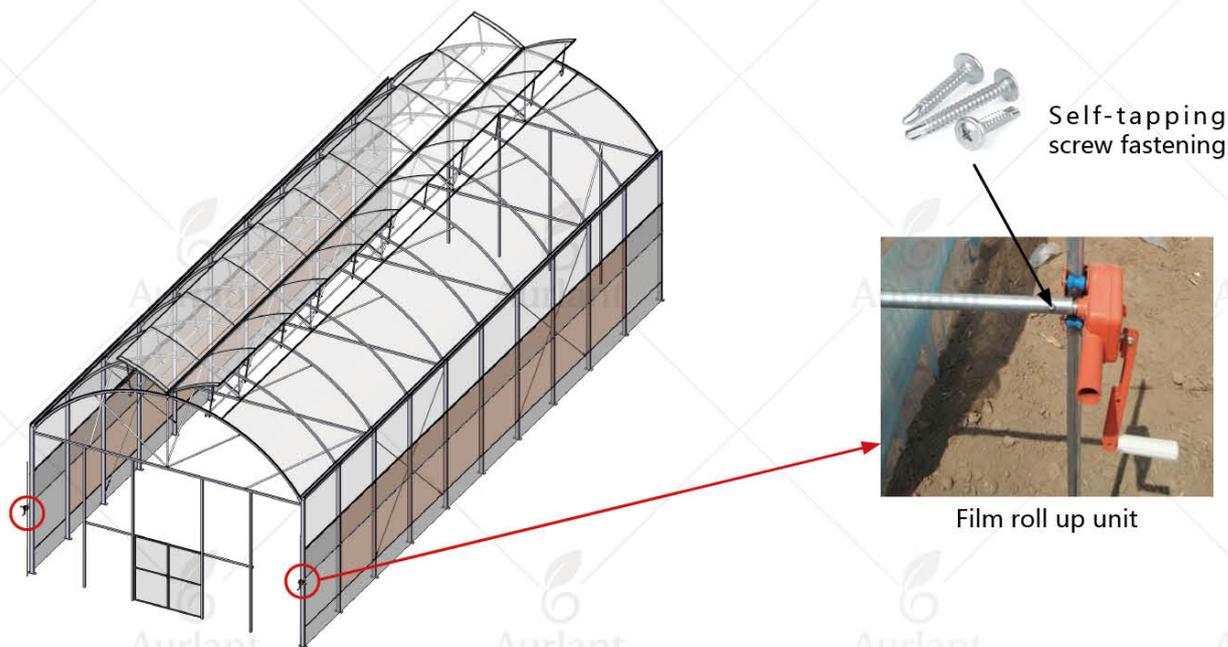
**Figure 15-9 Greenhouse film installation diagram**

# Step 16: Install the film roll up unit

Step 16 Required Components:

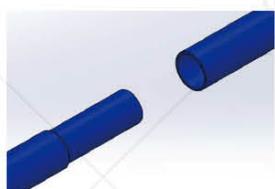
*Film roll up unit/Film rolling rod/Climbing rod/Film Clamp*

16.1 Place the climbing rod of the film roll up unit on the side that needs ventilation and fix it at a deep depth. Connect the film rolling rod and the film roll up unit through self-tapping screw, and let the climbing rod pass through the pulley of the film roll up unit. Try to keep the film roll up unit and the film rolling rod in a horizontal state, and turn the handle of the film roll up unit to complete the film reel, Greenhouse assembly is completed.



Turn the handle to complete the film rolling

Figure 16-1 Installation diagram for film roll up unit



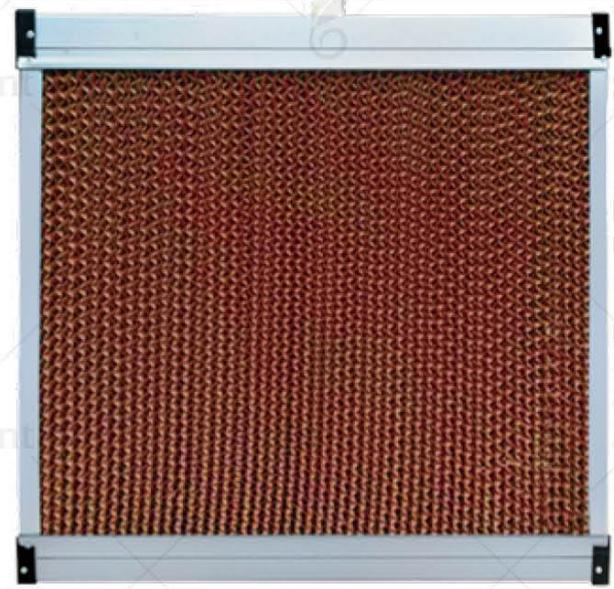
Roll film rod docking

## Optional equipment

In addition to the basic greenhouse installations mentioned above, we also offer a range of other greenhouse products.



Negative Pressure Ventilator



Cooling pads



Shade net



Seedbed