Tunnel-Type Chimney Film Greenhouse Installation Manual

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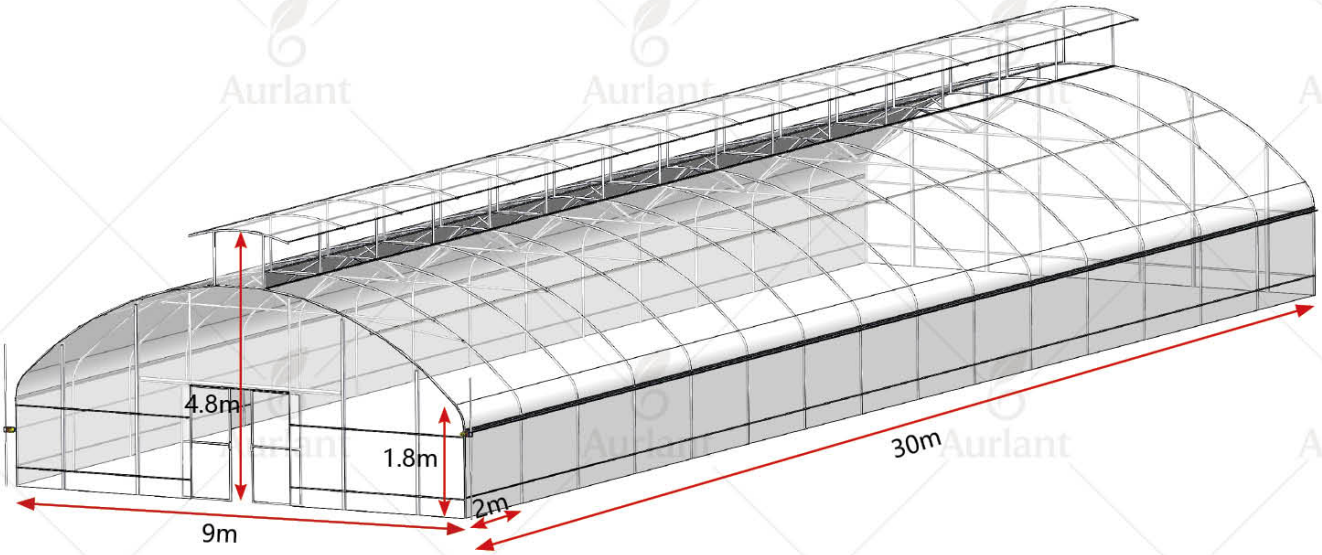

This manual is designed to provide the purchaser with a comprehensive and practical guide to installation. Please be sure to read through each section of the manual before beginning assembly This content will help you fully understand the equipment structure and work process.

Greenhouse installation involves detailed dimensions of accessories, please refer to the accessories list table. In addition, we can also provide all related products of greenhouse and other types of greenhouses as required. If you need, please feel free to contact us.

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

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Accessories List

Part Name	Specification
Hex nut	To be determined
Hex bolt	M6*20mm
Cross recessed pan head tapping screw C type	M6*20mm
Longitudinal V-shaped rod	Pipe diameter as per customer requirement
Hoop	Pipe diameter as per customer requirement
Double U-shaped clamp	To be determined
Lock channel	4m
Alt Lock channel	To be determined
V-shaped rod	Pipe diameter as per customer requirement
Top arch tube	Pipe diameter as per customer requirement
Side arch tube	Pipe diameter as per customer requirement
Column arch rod	Pipe diameter as per customer requirement
Horizontal tie rod	Pipe diameter as per customer requirement
Lock channel connector	/
End face column	Pipe diameter as per customer requirement
Embedded parts	Ø42mm
Wiggle wire	2m
Greenhouse film	As per the quantity required for the greenhouse
Film roll up unit	As per customer requirement
Film clamp	Ø42
Greenhouse sliding door	1*2m

Connection Part Diagram

Hex nut

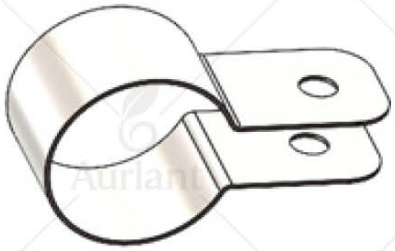
Hex bolt

Self-tapping screws

Wiggle wire

Film clamp

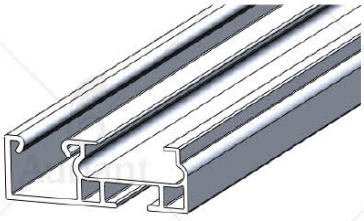
Lock channel connector



Hoop

Double U-shaped clamp

Lock channel



Alt lock channel

Diagram Of Greenhouse Structural Components

V-shaper rod

Top arch tube

Side arch tube

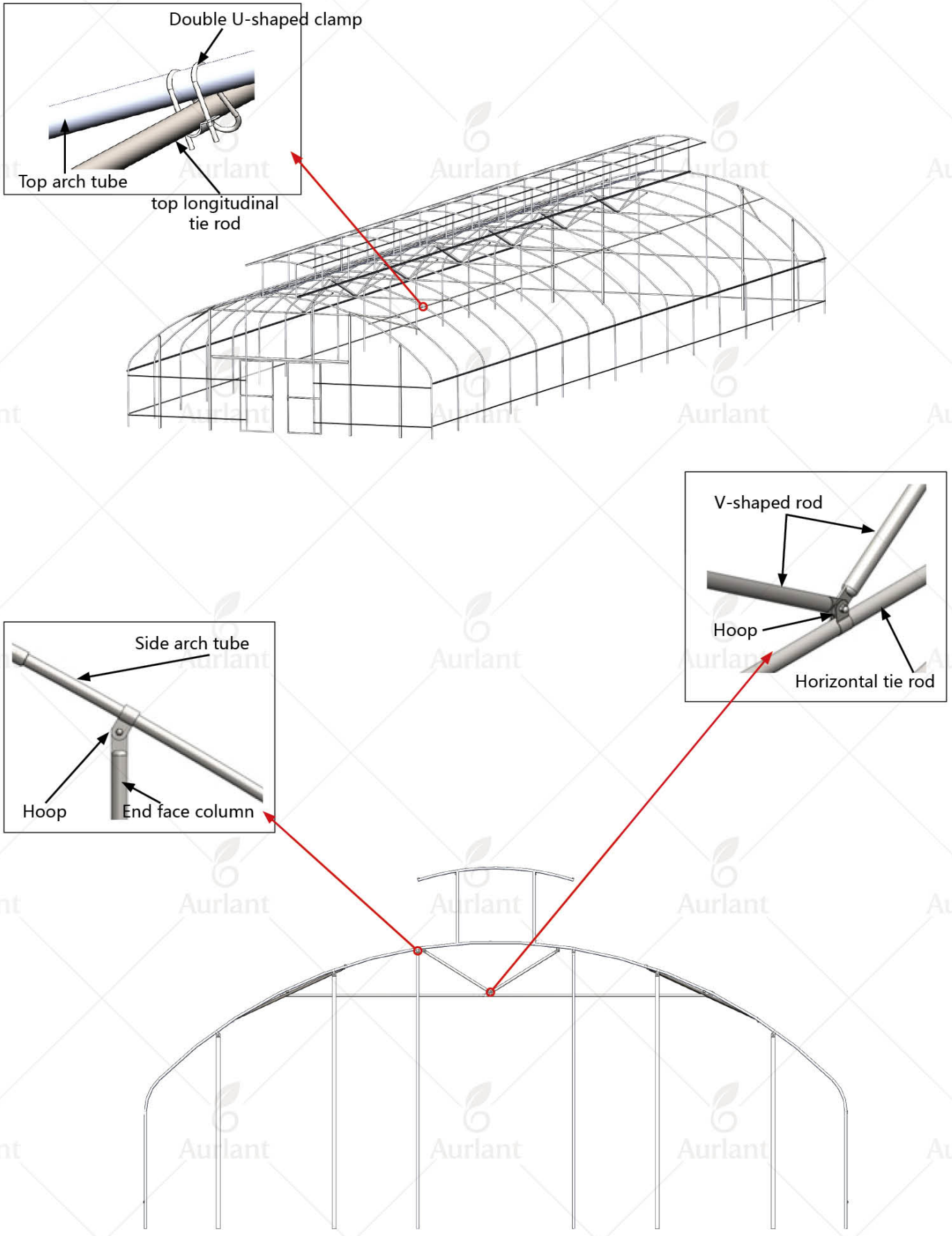
Column arch tube

End face column

End face column

End face column

Greenhouse Framework Schematic



Step 1: Install Embedded Parts

Components required for Step 1:

Embedded parts

Step 1.1
Ensure that your site location is as level and flat as possible. Maintaining a level site from start to finish is crucial, with a height difference not exceeding a few inches. If encountering rocks or very hard soil, it is recommended to consider renting a power drill or excavating continuous trenches, and backfilling with leveled soil.

The figure below shows the layout of the embedded parts. The circles indicate the ground insertion positions for each embedded part, with a spacing of 2 meters, totaling 16 sets of 32 pieces.

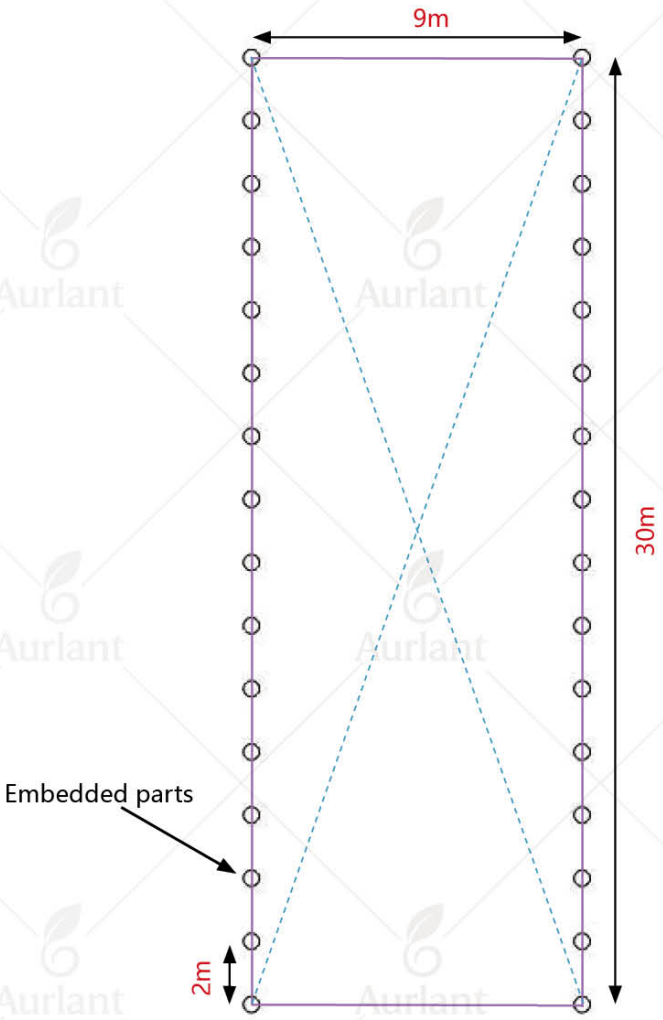


Figure 1-1: Layout Diagram of Embedded Parts

1.2 Positioning the embedded parts. Refer to your inventory list to determine the quantity of embedded parts required.
Installation procedure (as per Figures 1-2). If your greenhouse is constructed on ground level, embed the parts directly into the soil to a depth of approximately 50cm, preparing for subsequent arch tube installation. (Alternatively, concrete may be poured on the ground surface, with the parts secured using expansion bolts.)

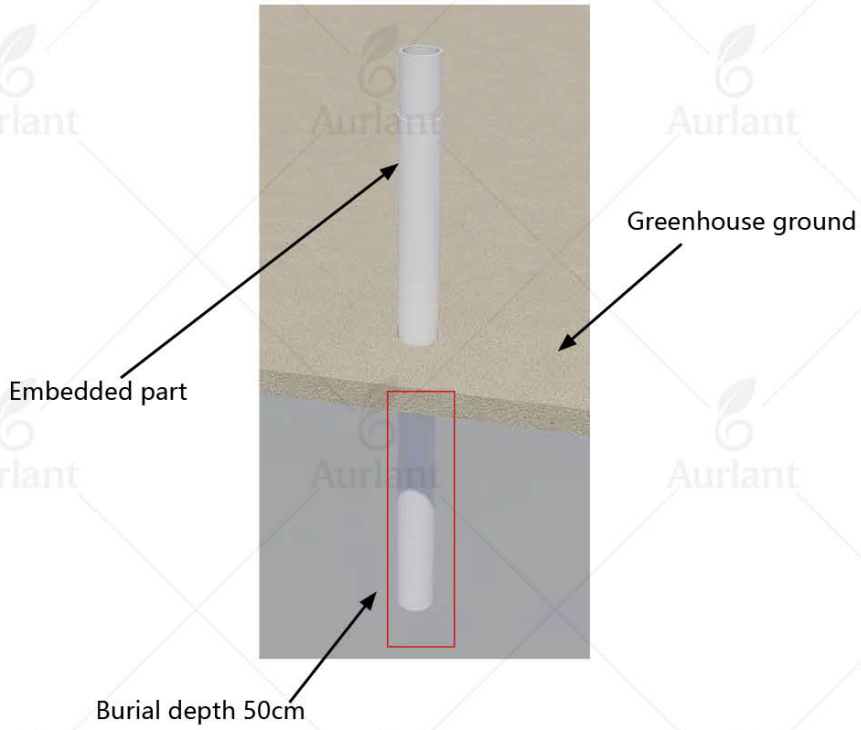


Figure 1-2: Installation Diagram of Embedded Parts

If your greenhouse is to be built on a concrete ground, please refer to Figure 1-3 below to understand how to fix the embedded parts on the concrete.

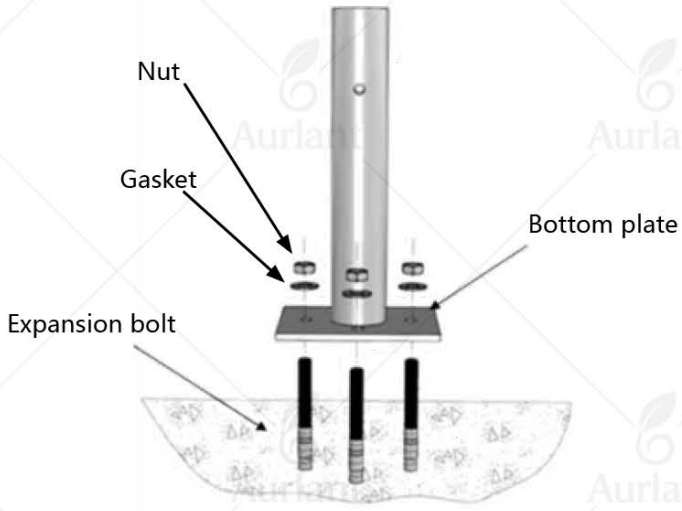


Figure 1-3: Installation Diagram of Fasteners

1.3 Setting-out and measurement: The embedded parts are spaced at 2-meter intervals. Secure the embedded parts sequentially through four benchmark points. Field operations can be carried out by driving piles or erecting rods. Use ropes and a ruler to ensure that all erected rods are aligned on the same horizontal line, so as to guarantee that the greenhouse forms a square structure.

Step 2: Install Arch Tubes

Components required for Step 2:

Arch tubes/self-tapping screw

2.1 Connect all arch tubes, secure them with self-tapping screws, then insert the secured arch tubes into the pre-installed embedded parts. (Self-tapping screws must be driven into the circled positions.)

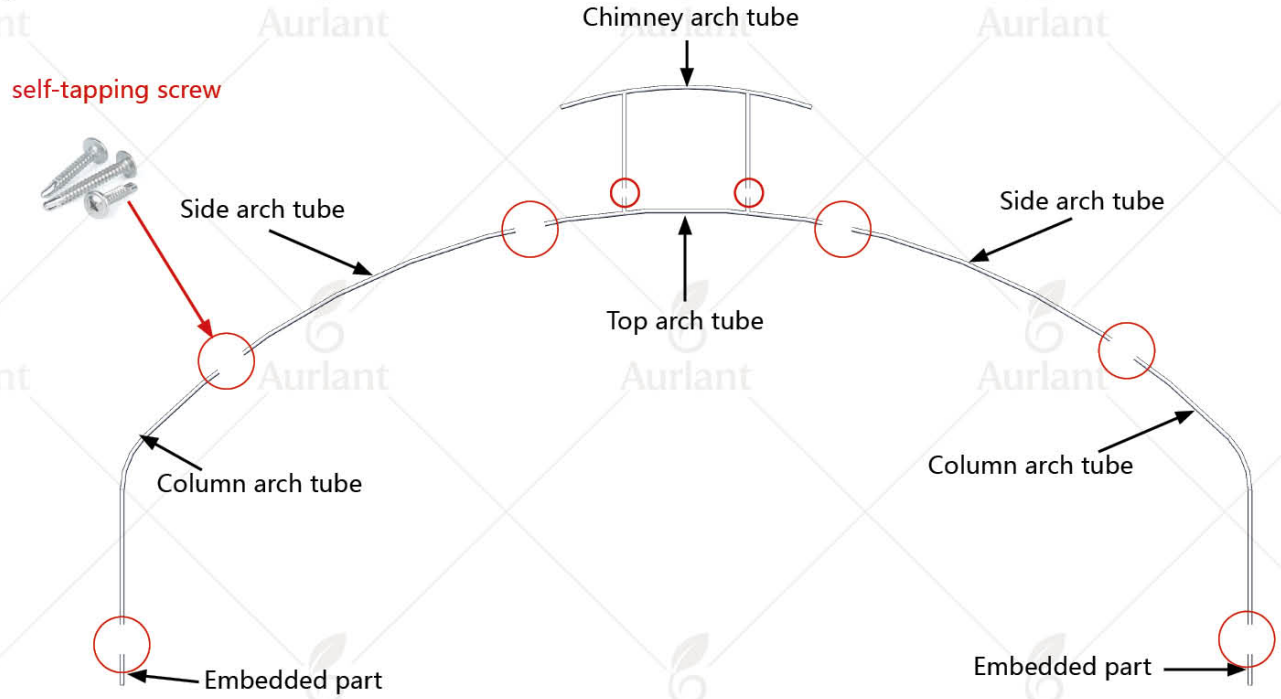


Figure 2-1: Assembly Diagram of Arch Tubes

2.2 Unlike conventional tunnel greenhouses, we shall weld two short tubes onto the top arch tube, as illustrated in Figure 2-2, to facilitate the insertion and connection of the two tapered ends of the chimney arch tube. (This connection method enhances the stability of the chimney top.)

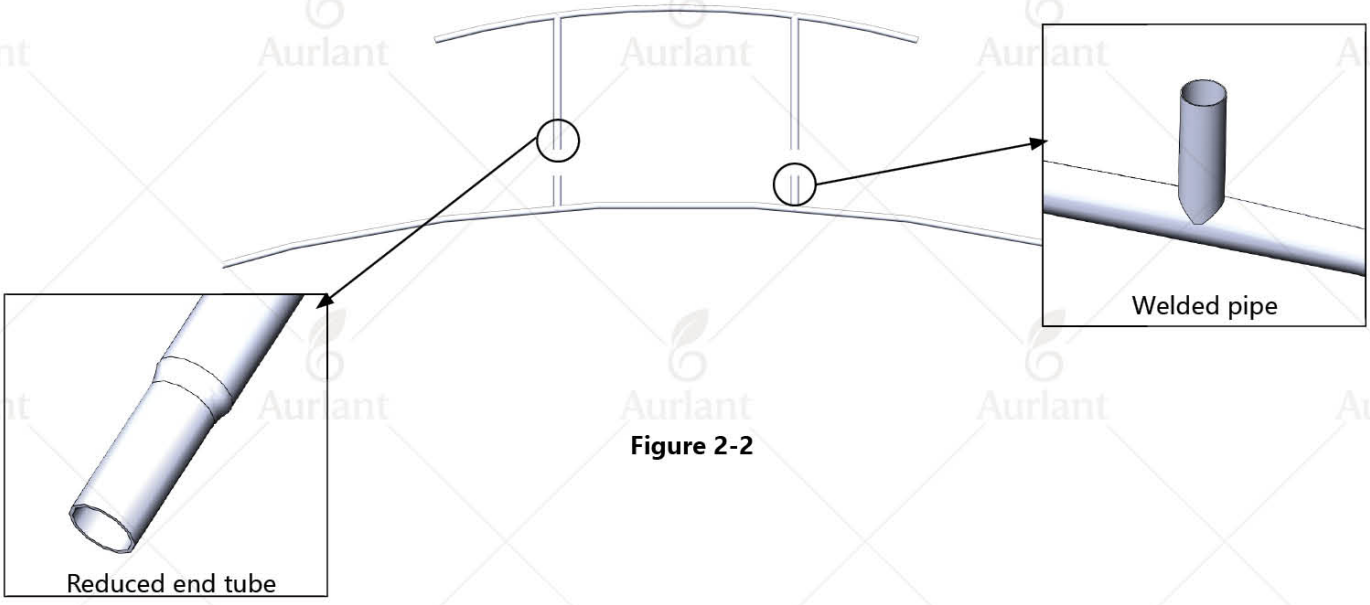


Figure 2-2

Step 3: Install Horizontal tie rod and V-shaped rod

Components required for Step 3:

Horizontal tie rods / V-shaped rod / hoops / bolts and nuts

3.1 Install the horizontal tie rod and V-shaped rod on the fixed arch tubes, with one set installed every four meters.

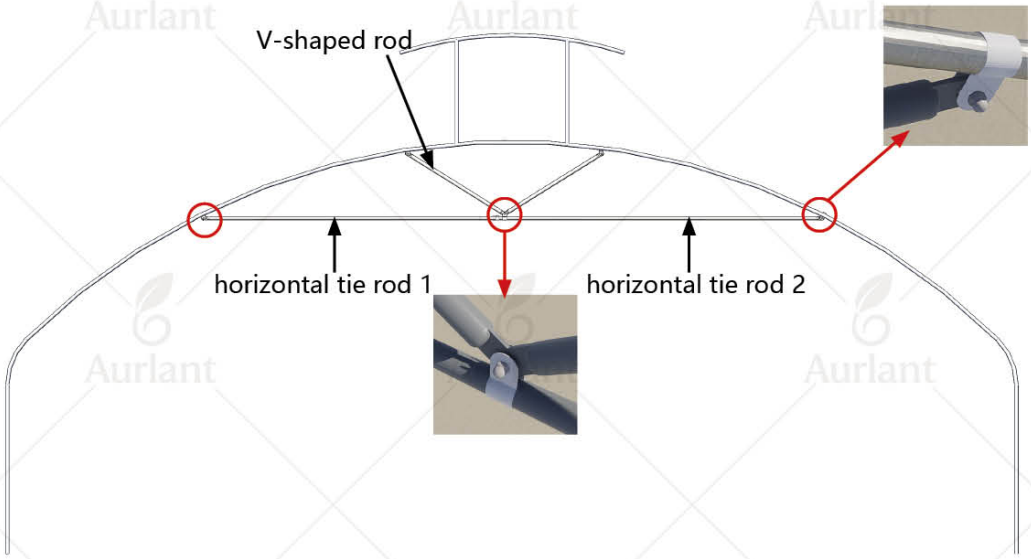


Figure 3-1

3.2 Use bolts and nuts in combination with clamps to fix the horizontal tie rod and V-shaped rod onto the installed arch tubes. Refer to the diagram below.

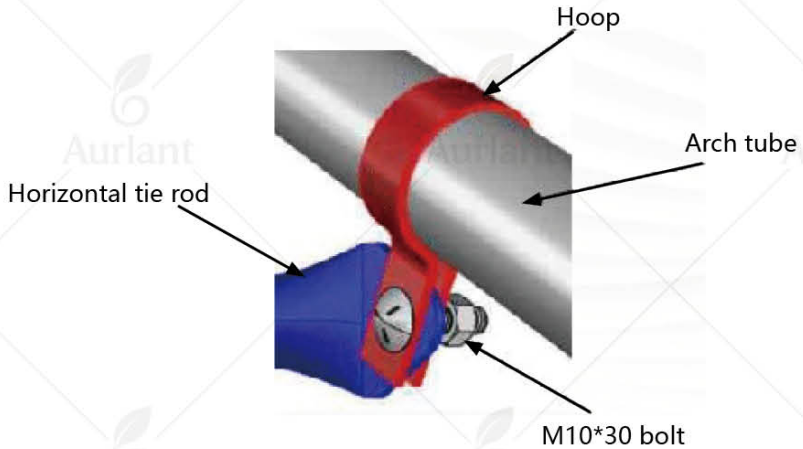


Figure 3-2

Figure 3-4 is a schematic diagram showing the completed installation of the horizontal tie rods.

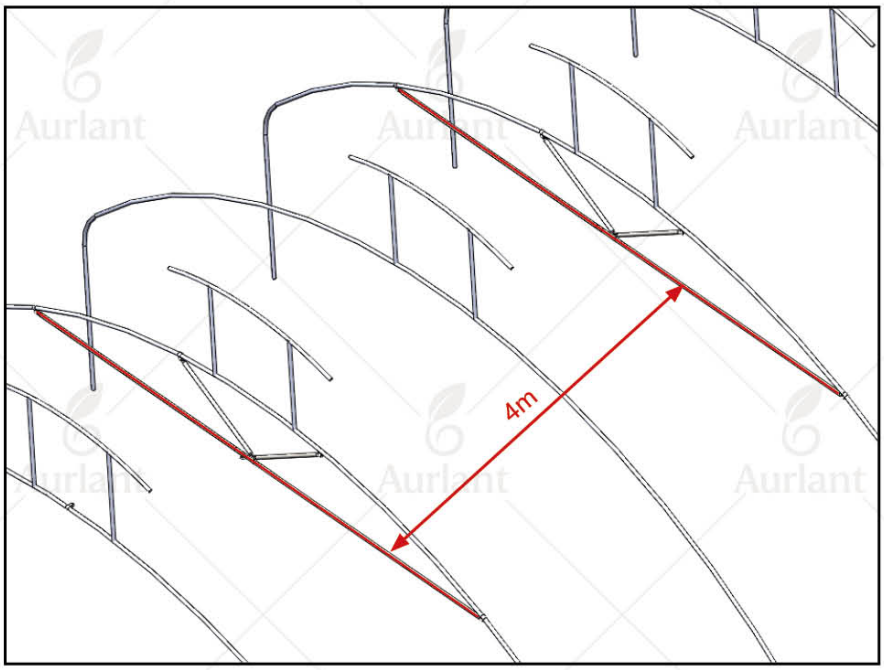


Figure 3-3

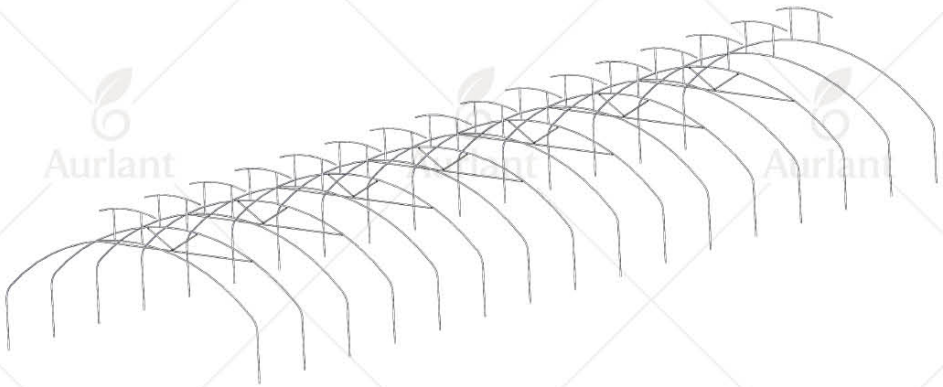


Figure 3-4

Step 4: Install Top Longitudinal Tie Rods

Components required for Step 4:

Top longitudinal tie rods / clamps/ double U-shaped clamp

4.1 Combine 15 2-meter top longitudinal tie rod tubes together, and fix them on the arch tubes using double U-shaped clamps and clamps, completing the fixation of one set of top longitudinal tie rods. A total of 2 sets are needed, as shown in the figure below.

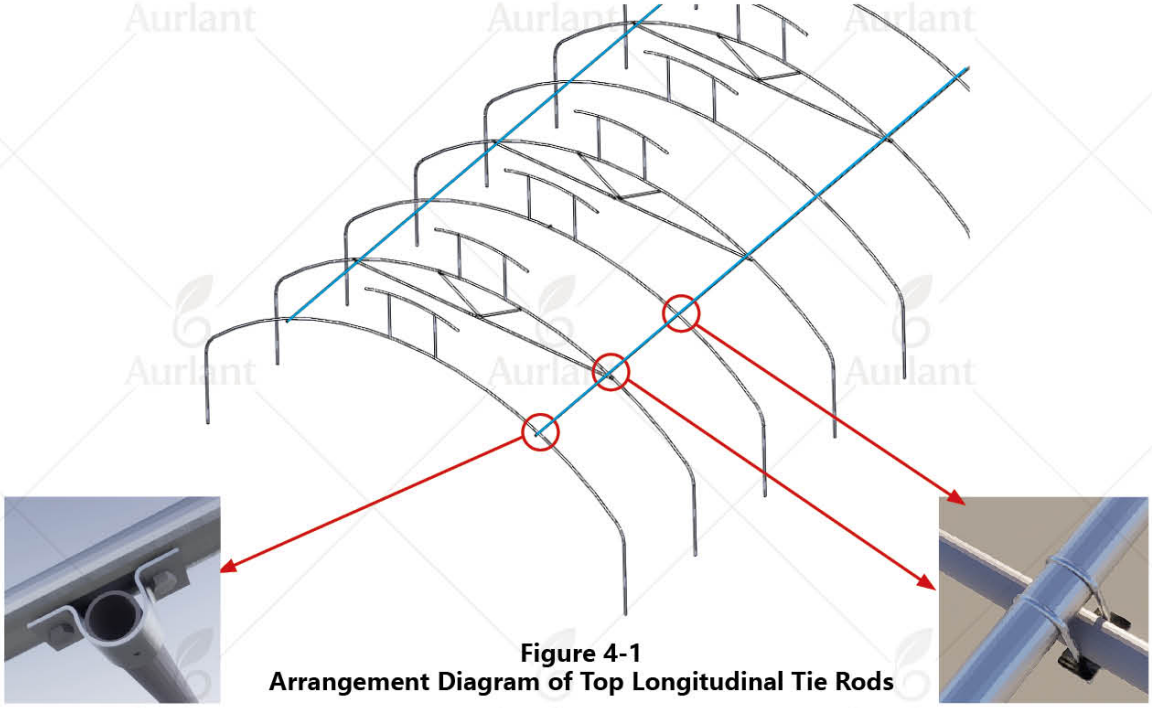


Figure 4-1
Arrangement Diagram of Top Longitudinal Tie Rods

4.2 At the intersections of the top longitudinal tie rods and the arch tubes, use double U-shaped clamp for connection and fixation, as shown in Figure 4-2.
Note: At the intersections of the top longitudinal tie rods with the first and last sets of arch tubes, use clamps for connection and fixation, as shown in Figure 4-3.

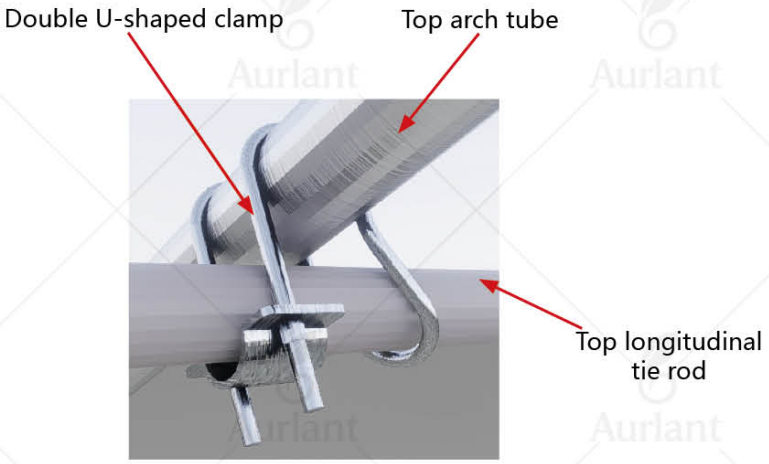


Figure 4-3
Connection Point Using double U-shaped clamp

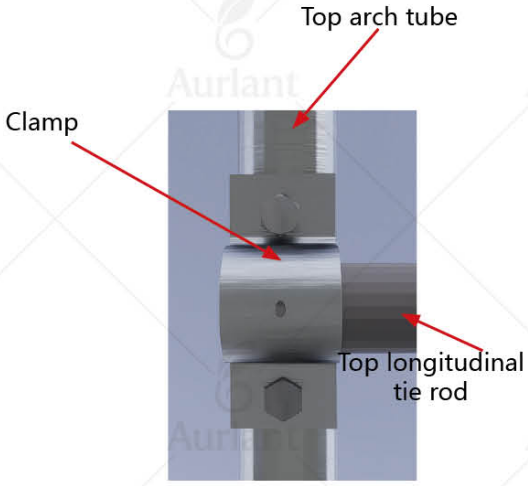


Figure 4-3
Connection Point Using Clamps

Step 5: Install Diagonal Brace

Components required for Step 5:

Diagonal brace / hoops / bolts and nuts

5.1 Install diagonal brace on the top of the greenhouse. Install 2 diagonal brace each at both ends. Use hoops in combination with bolts and nuts to fix the diagonal brace onto the arch tubes.
(In windy weather at the greenhouse end face, the windward end face is significantly affected. Therefore, the end face's wind resistance capability is enhanced through the use of diagonal brace.)

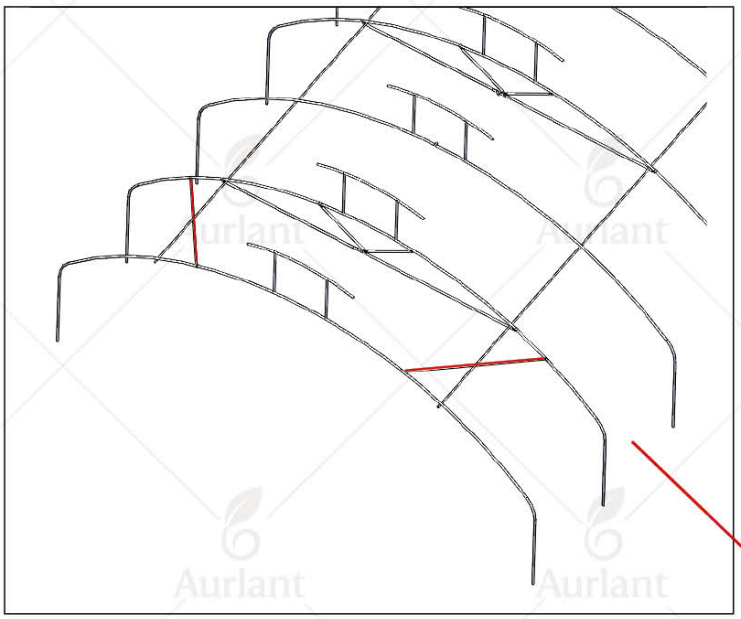
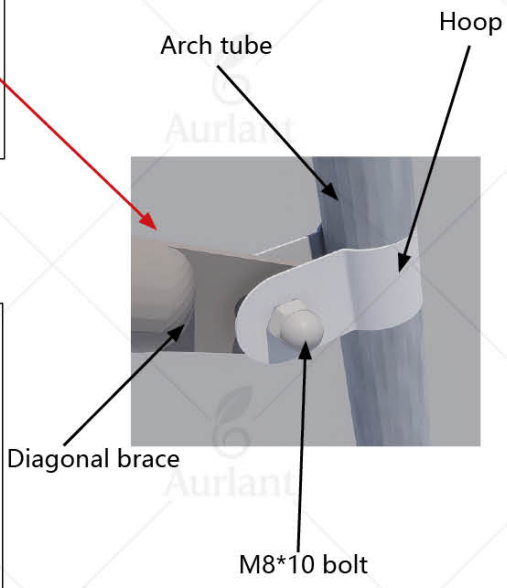


Figure 5-1
Position Diagram of Front Diagonal brace



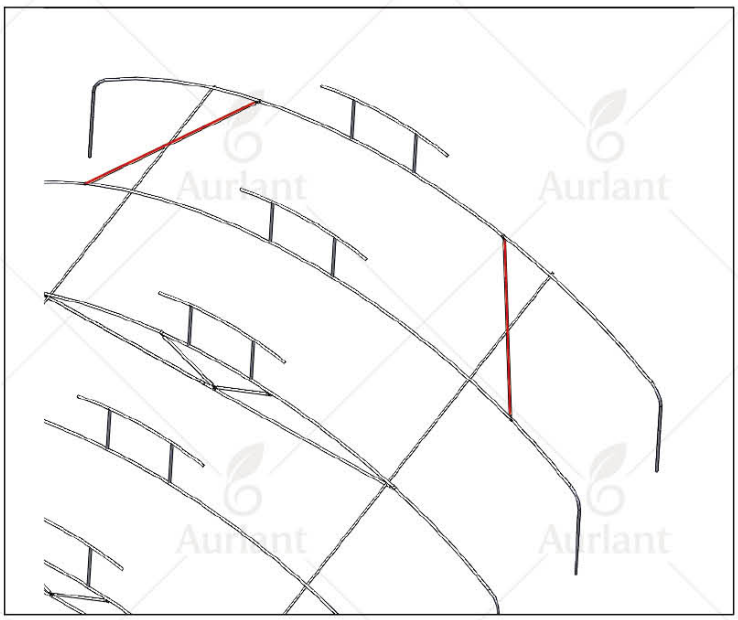


Figure 5-2
Position Diagram of End Diagonal brace

Step 6: Install End Face Columns

Components required for Step 6:

End face columns / hoops / bolts and nuts/self-tapping screw

6.1 Install 6 columns on the end face of the greenhouse, and connect and fix them to the arch tubes using hoops and bolts and nuts.
Additionally, considering transportation issues, the end face columns are divided into upper and lower parts using a "large-small head" connection method, secure with self-tapping screws during installation， as shown in the figure below.

6.2 Use hoops to connect and fix the flanged part of the columns to the arch tubes. The specific details are shown in the figure.

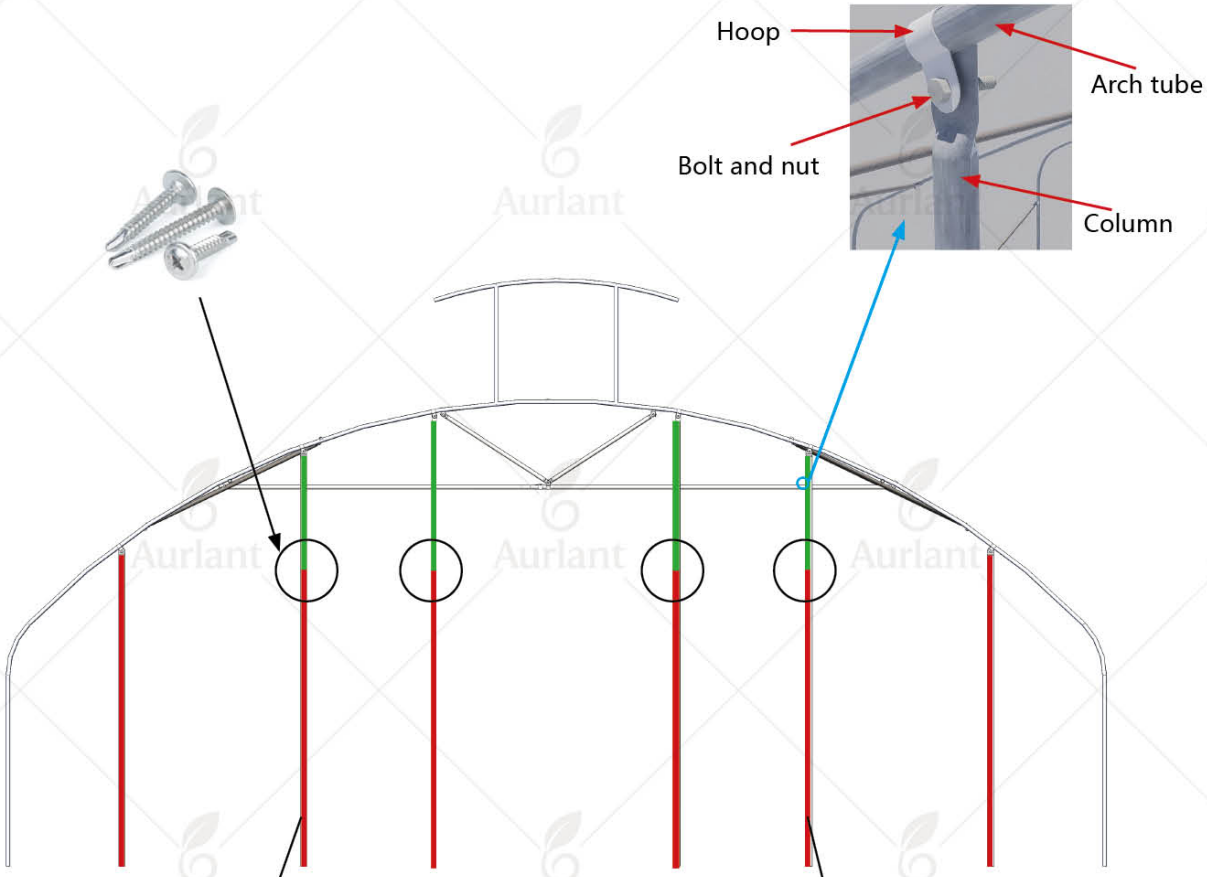
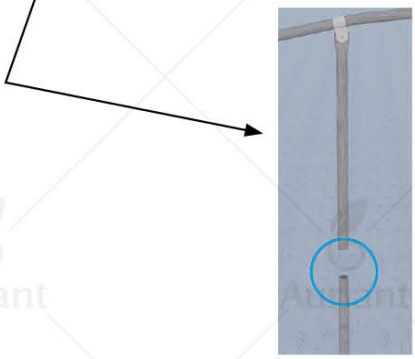


Figure 6-1
Position Diagram of End Face Columns



"large-small head" connection

Step 7: Install Longitudinal V-shaped rod

Components required for Step 7:

Longitudinal V-shaped rod / hoops / bolts and nuts

7.1 As shown in the figure, install Longitudinal V-shaped rod at the top of the greenhouse to enhance the structural stability of the greenhouse.

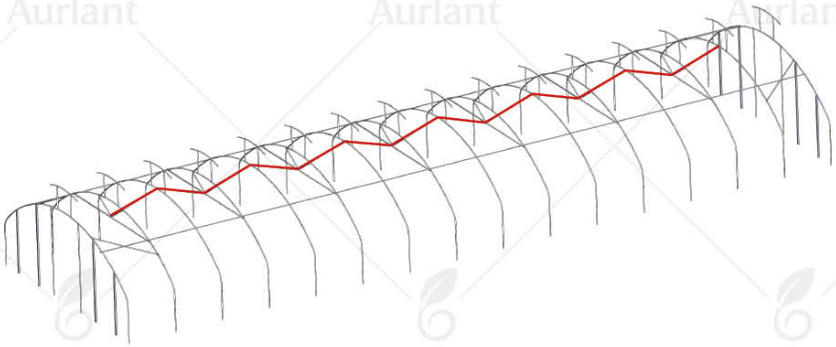


Figure 7-1
Installation Effect Diagram of Longitudinal V-shaped Rod

7.2 Install hoops at the positions shown in the figure on the arch tube and horizontal tie rods, and use bolts and nuts to fix the longitudinal V-shaped rod with the hoops.

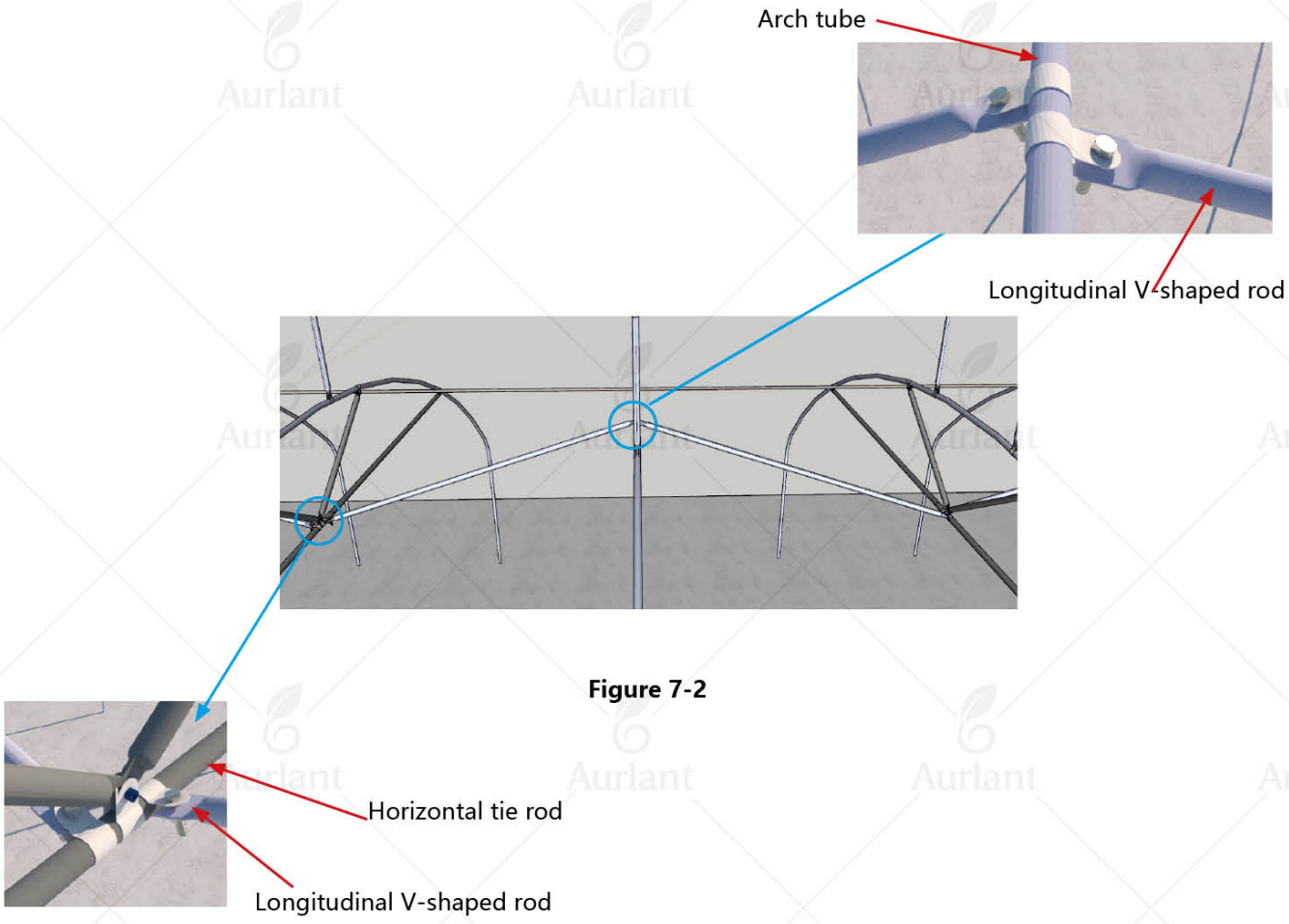


Figure 7-2

Step 8: Install Sliding Doors

Components required for Step 8:

Door roller/door track/door beam/self-tapping screw/bolts and nuts/film/Lock channel

8.1 As shown in the figure, install the sliding door at the end face of the greenhouse.

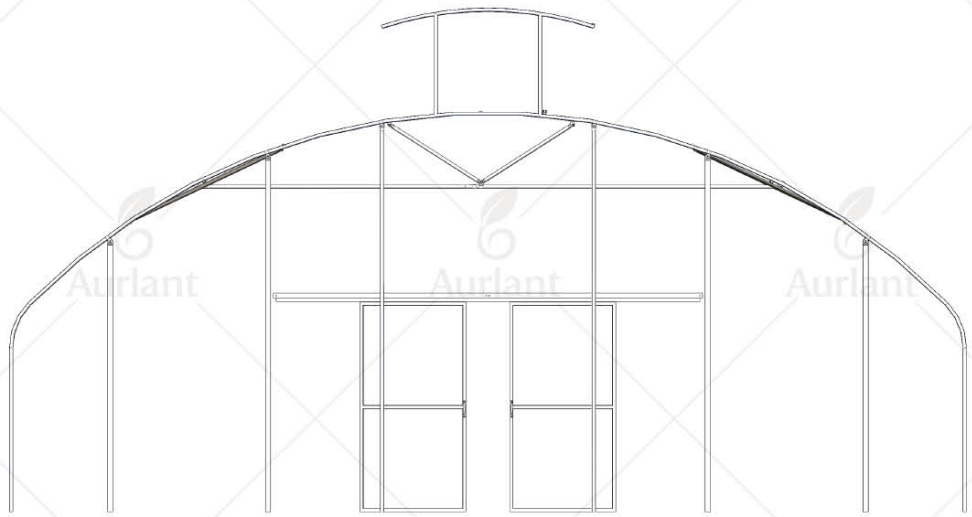


Figure 8-1
Schematic diagram of sliding door installation

8.2 First, drill two holes with a diameter of 8.5mm at the top of the door. Install the door roller using M8×60 bolts and nuts. Secure the lock channel to the door frame using M6×20 self-tapping screws.. Then cover with a 1.2m×2.2m film. Finally, install the door handle using M6×20 self-tapping screws.

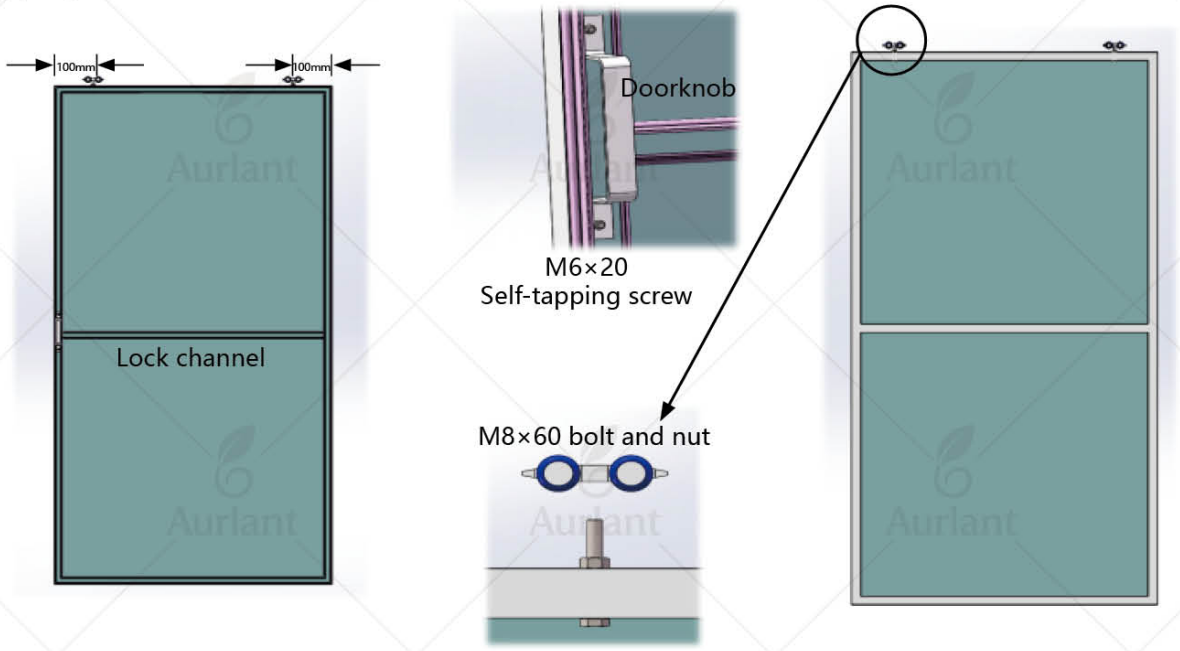


Figure 8-2

8.3 Install the door track and door beam on the end-face upright column, and fix them with M8×80 bolts and nuts. Then hang the door on the door track, and the door can be freely opened and closed.

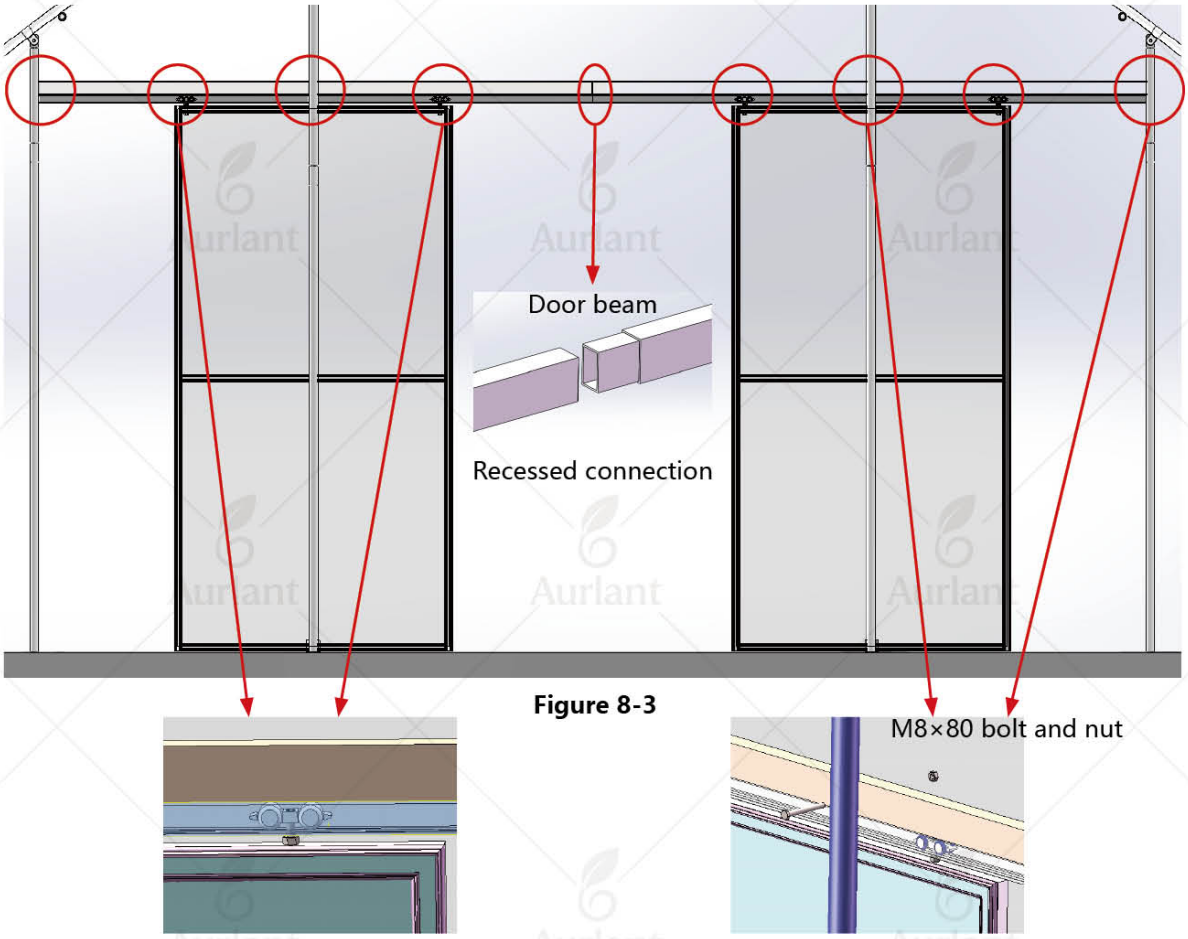


Figure 8-3

8.4 Install the door bottom baffle on the end-face upright column and fix it with M6×20 self-tapping screws to prevent the door from shaking.

Figure 8-4

Step 9: Install End Face Lock Channels

Components required for Step 9:

Lock channels/self-tapping screw

9.1 As shown in the figure, install lock channels on the end face of the greenhouse to secure the film. Following the positions indicated in the figure below, fix the lock channels to the end-face columns and arch tubes using self-tapping screws. Connect them in the middle using lock channel connector. (The circled positions are where self-tapping screws need to be applied.)

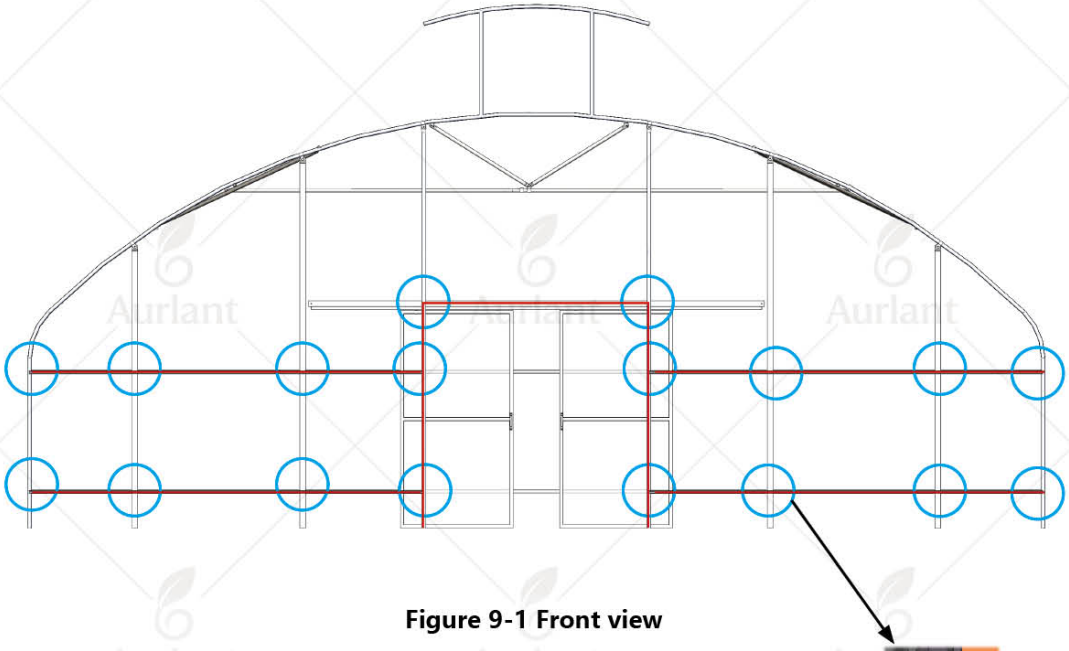


Figure 9-1 Front view

M6×20 Self-tapping screw

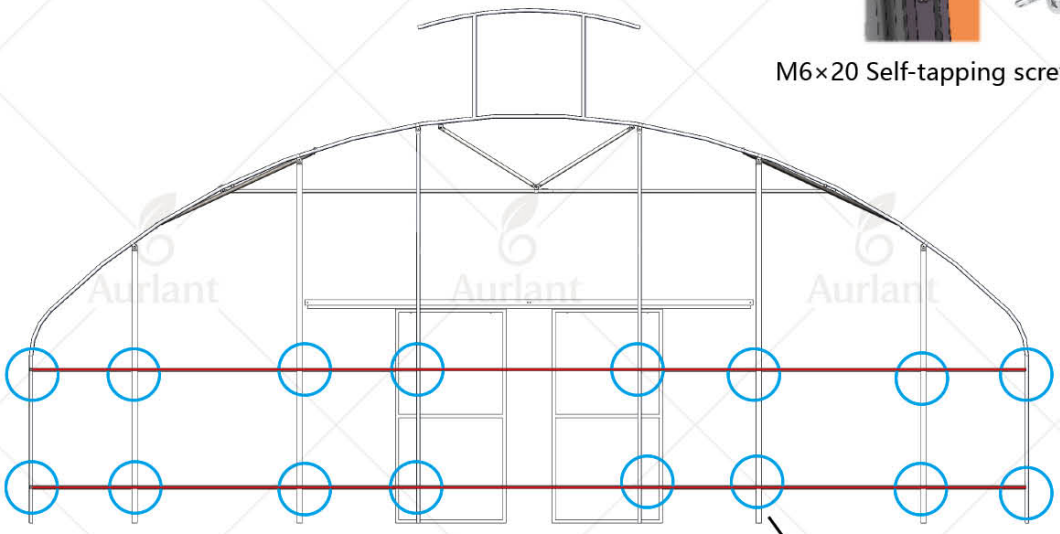


Figure 9-2 End view

Lock channels are connected using lock channel connector

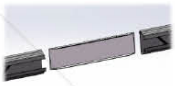
M6×20 Self-tapping screw

Step 10: Install Curved Lock Channels

Components required for Step 10:

Lock channel/self-tapping screw

10.1 Fix the curved lock channels onto the upper part of the arch tubes in the shape of the arch tubes using M6×20 self-tapping screws. (Installation is only required on the first and last set of arch tubes.)



Lock channel connector

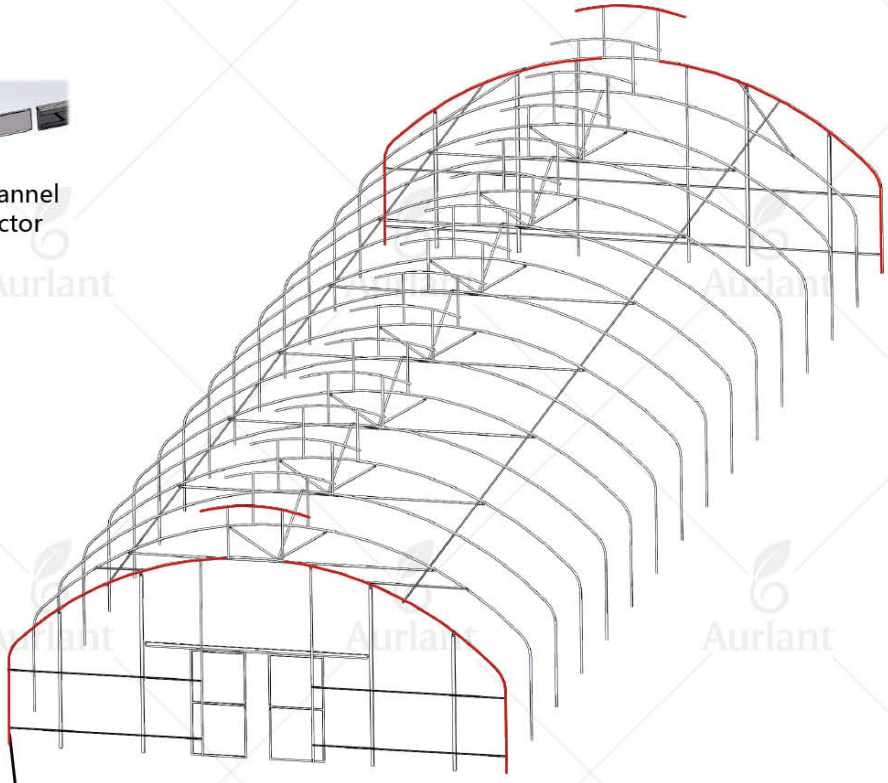


Figure10-1

M6×20 Self-tapping screw

Step 11: Install Side Lock Channels

Components required for Step 11:

Lock channel/Alt lock channel/self-tapping screws

11.1 Fix the lock channels to each set of arch tubes using M6×20 self-tapping screws at the positions shown in the figure, and lock channels are connected using lock channel connectors. (The red line and blue line represent the positions of the lock channels.)

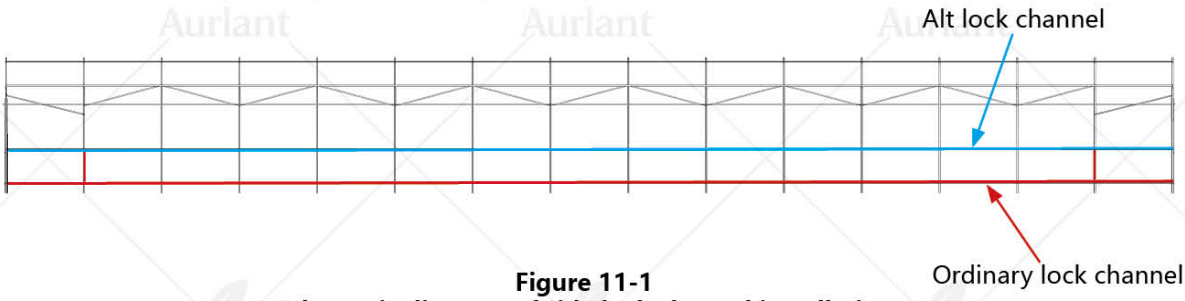
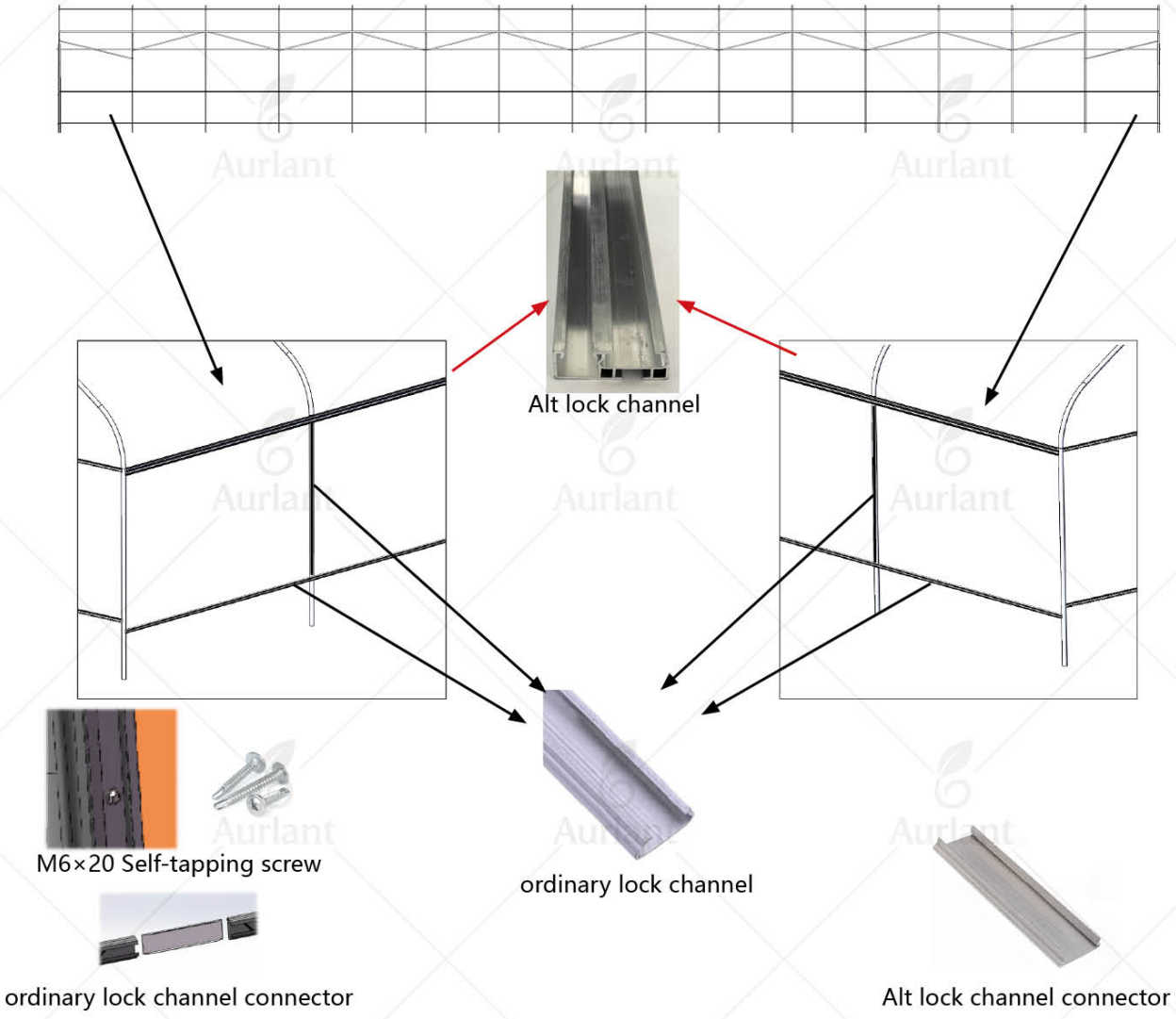


Figure 11-1
Schematic diagram of side lock channel installation

11.2 When installing side lock channels, two types of lock channels are needed: ordinary lock channels and Alt lock channels. Alt lock channels can not only be used to fix the film but also enhance the stability of the greenhouse structure.



Step 12: Install Top Lock Channels

Components required for Step 12:

Lock channel/Alt lock channel/self-tapping screws

12.1 Fix the lock channels to each set of arch pipes using M6×20 self-tapping screws at the positions shown in the figure, and connect the lock channels with lock channel connectors. The installation of top lock channels also requires two types of lock channels, following the same procedure as Step 11.

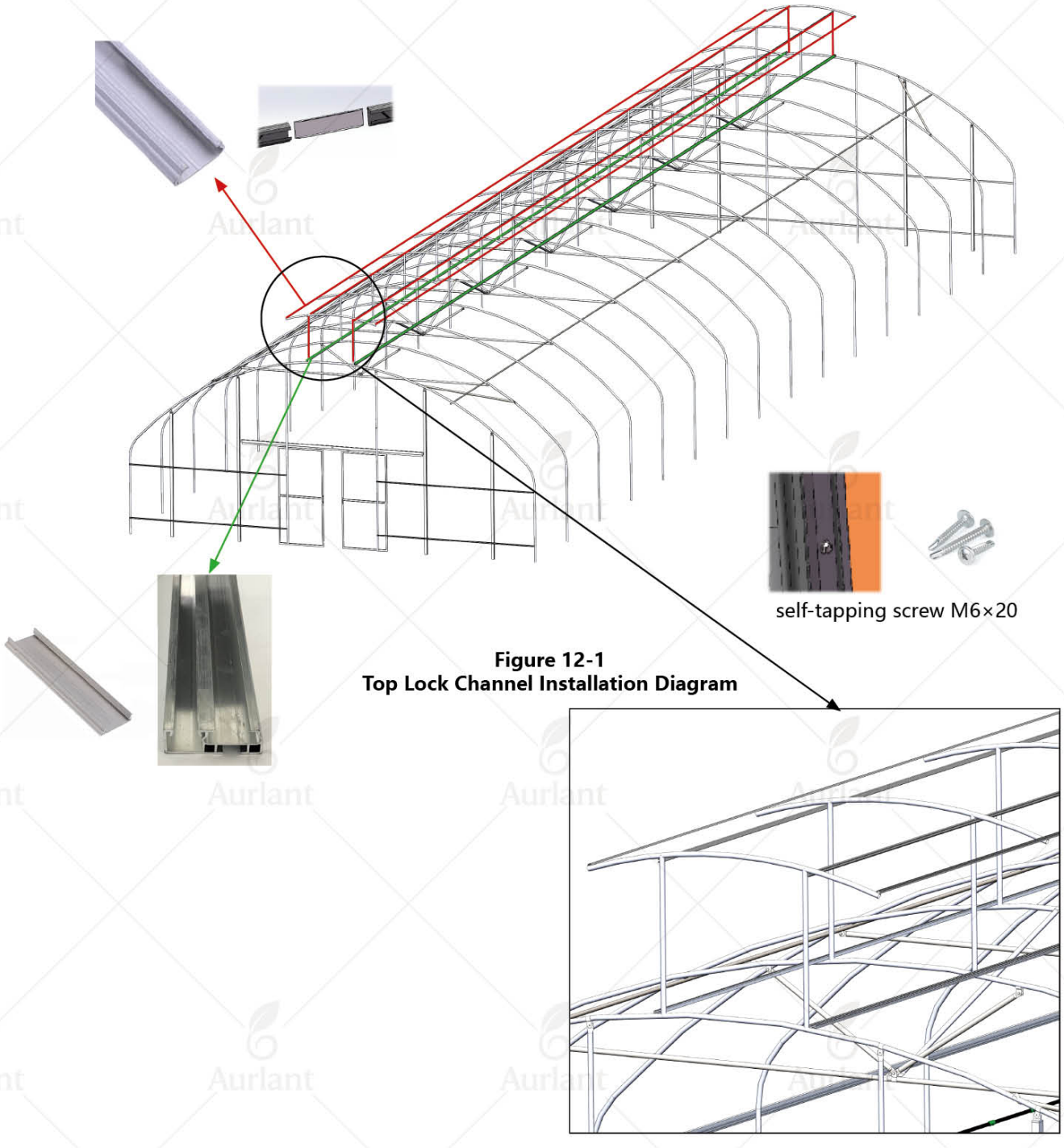


Figure 12-1
Top Lock Channel Installation Diagram

Step 13: Install End Face Films

Components required for Step 13:

Film / Wiggle wire

13.1 Fix the cut film into the lock channels using wiggle wire.

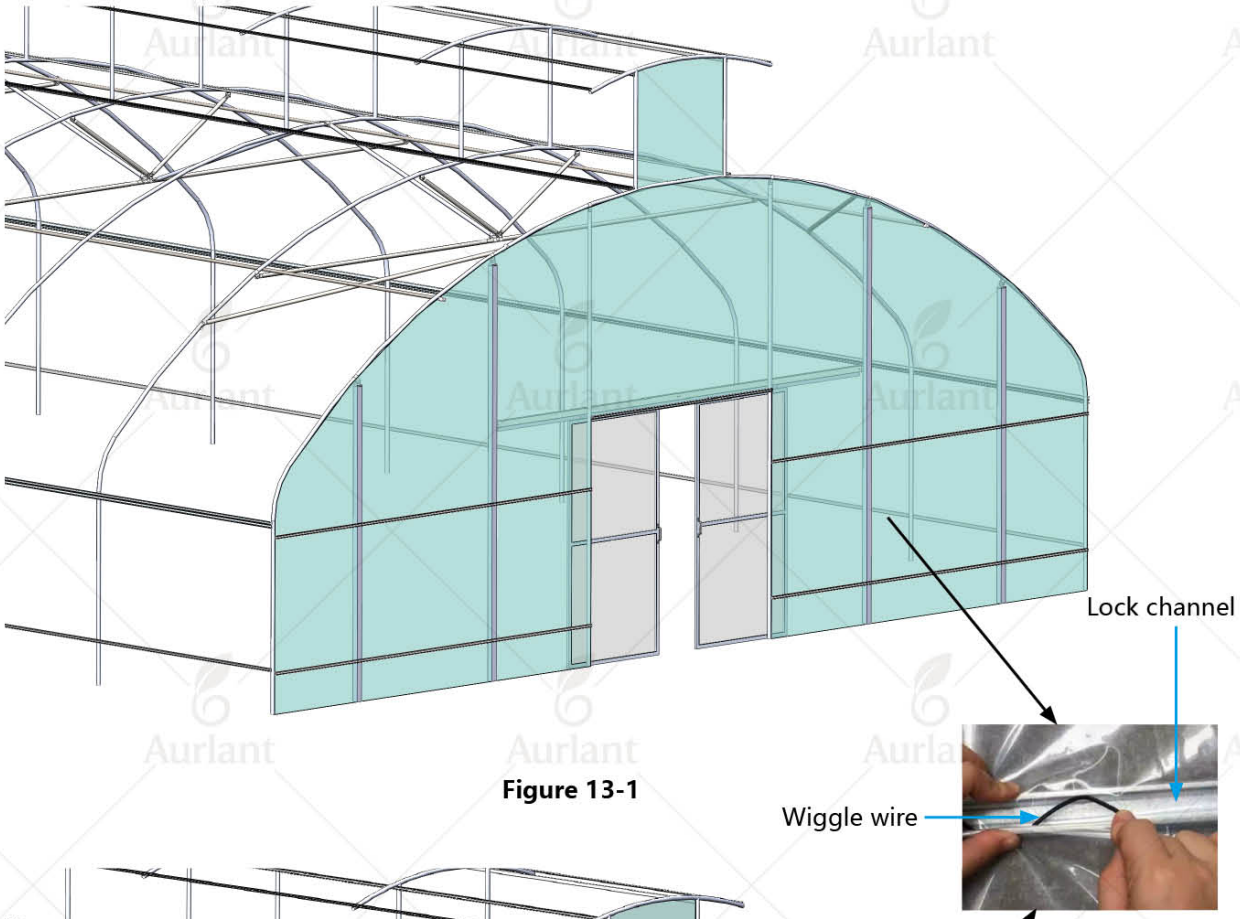


Figure 13-1

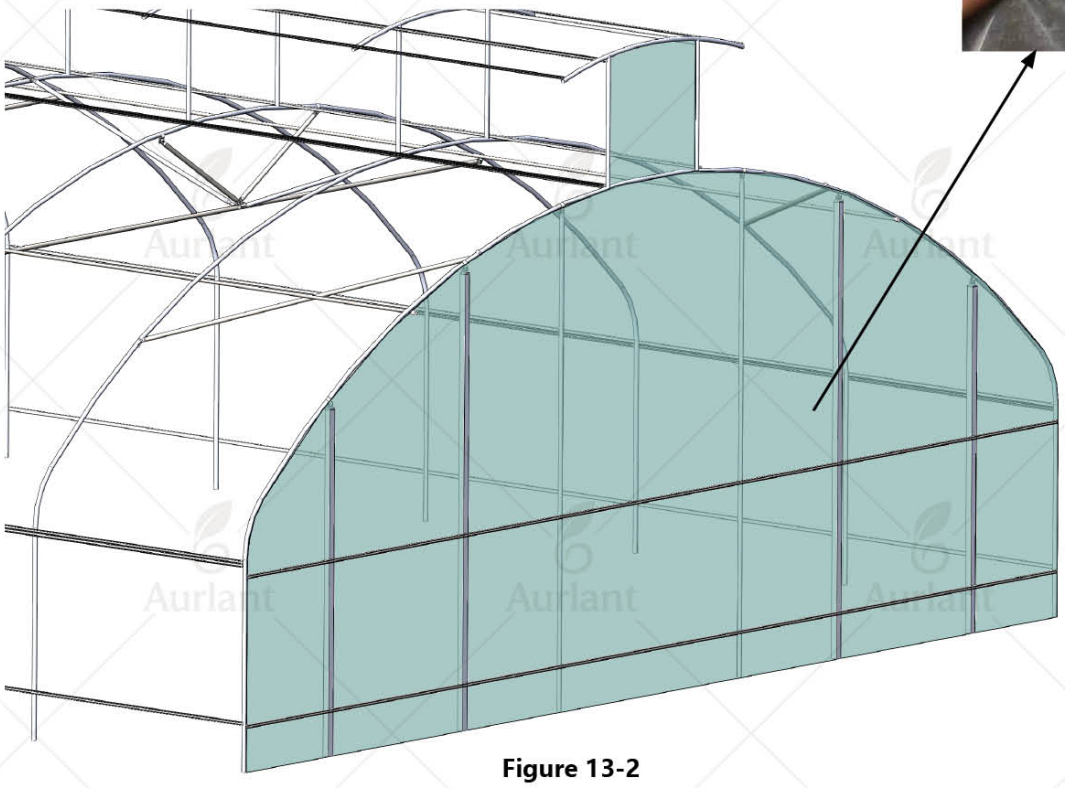


Figure 13-2

Step 14: Install Top Films And Insect Proof Net

Components required for Step 14:

Film / insect proof net/Wiggle wire/ Expansion fixed fixture / Film Clamp

14.1 Fix the cut film and insect proof net into the lock channels using wiggle wire.

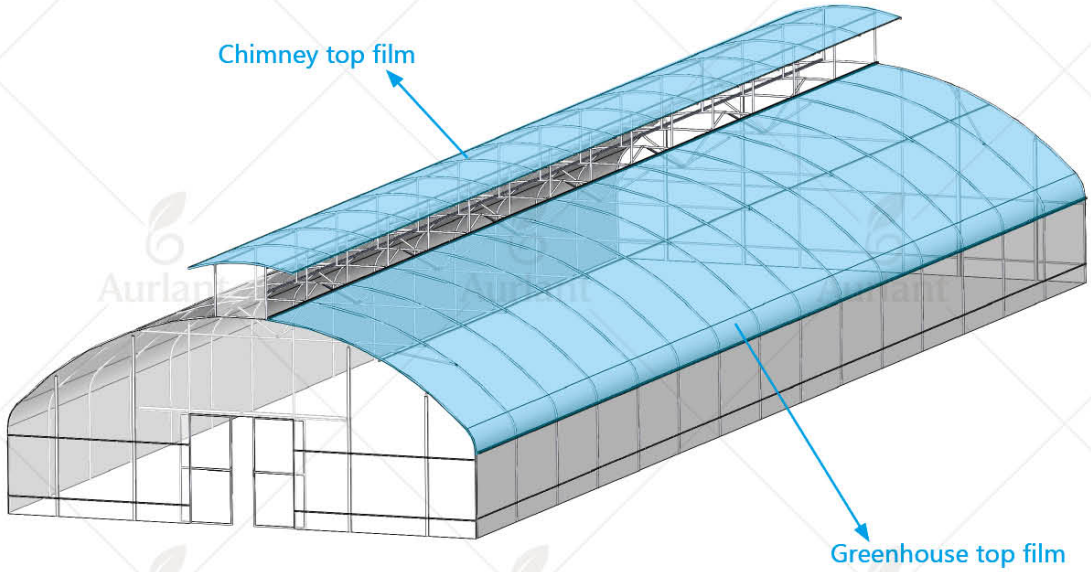


Figure 14-1
Schematic diagram of top film installation

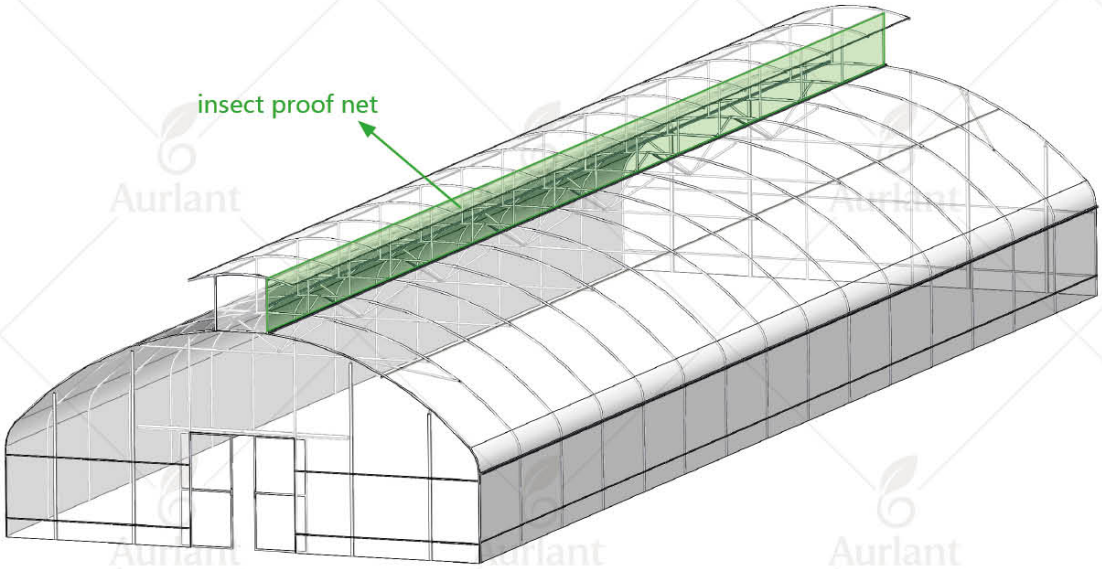
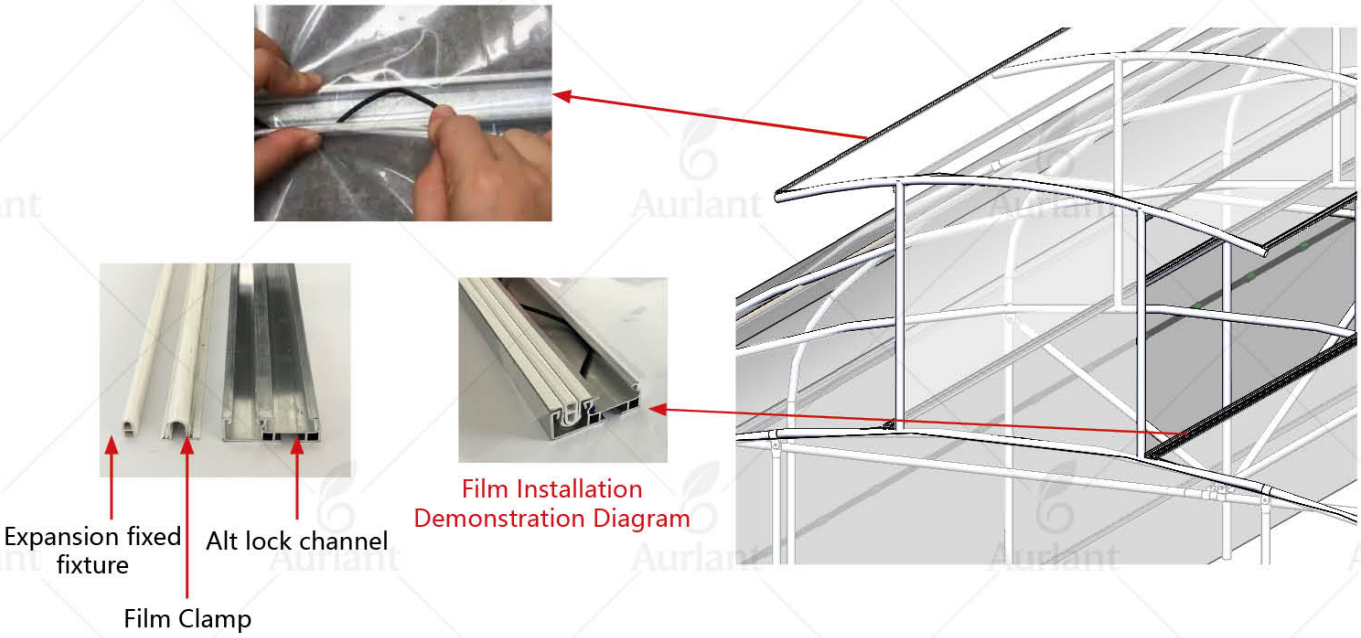


Figure 14-2
Schematic diagram of top insect proof net installation

14.2 Insert the film into the lock channel and secure it with wiggle wire; when installing the insect proof net, first press it down with film clamps, then secure the entire fastening assembly with expansion fixed fixture to enhance structural stability.



Step 15: Install Side Films And Insect Proof Net

Components required for Step 15:

Film/insect proof net/Wiggle wire/expansion fixed fixture/film clamp

15.1 Fix the cut film and insect proof net into the lock channel using wiggle wire (the installation method is the same as the previous step).
Note: Install the insect proof net first, followed by the ventilation film.

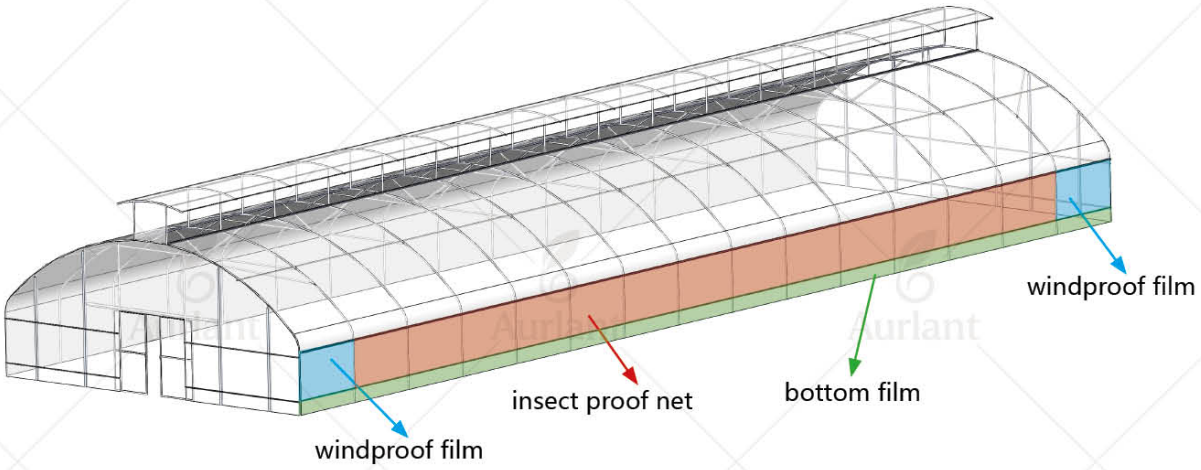


Figure 15-1
Schematic diagram of side film installation

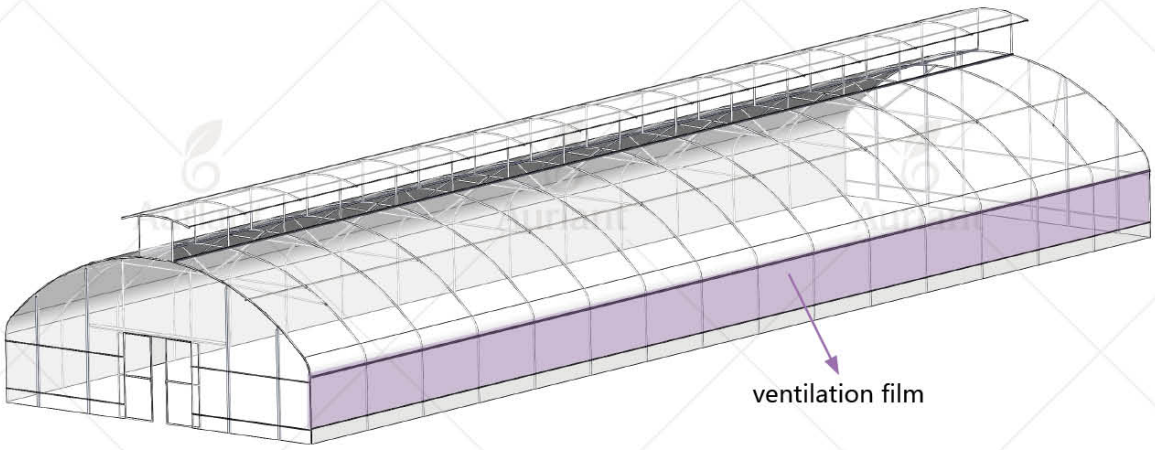


Figure 15-2
Schematic diagram of ventilation film installation

Step 16: Install Film Roll Up Unit

Components required for Step 16:

Film roll up unit/film rolling rod/climbing rod/film clamp

16.1 Install the film roll up unit at the position shown in the figure.

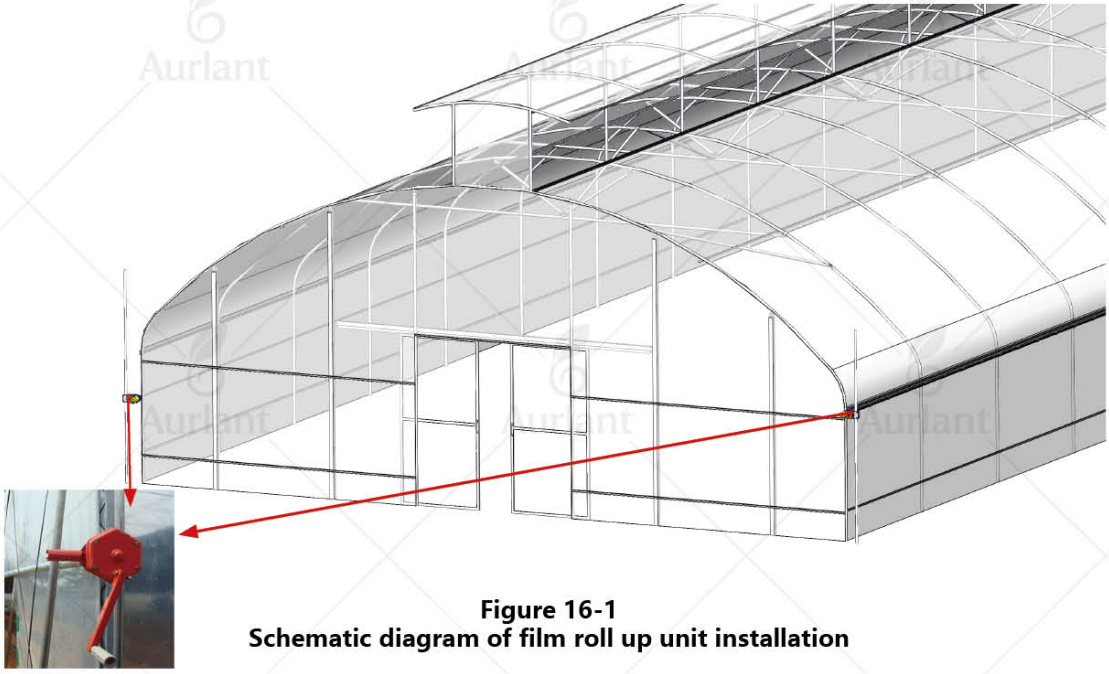


Figure 16-1
Schematic diagram of film roll up unit installation

16.2 As shown in the figure below, install climbing rods on both sides of the greenhouse, along with film rolling rods and film roll up unit. Use film clamp to secure the film to be rolled onto the film rolling rod.

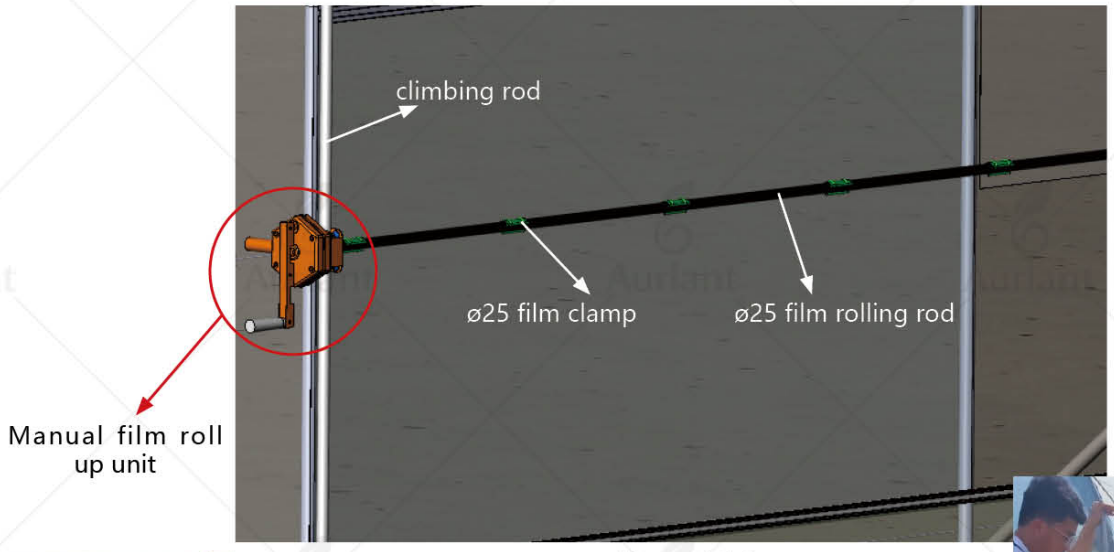


Figure 16-2
Introduction diagram of the film roll up unit

ø25 film rolling rod

Self-tapping screw M6×20

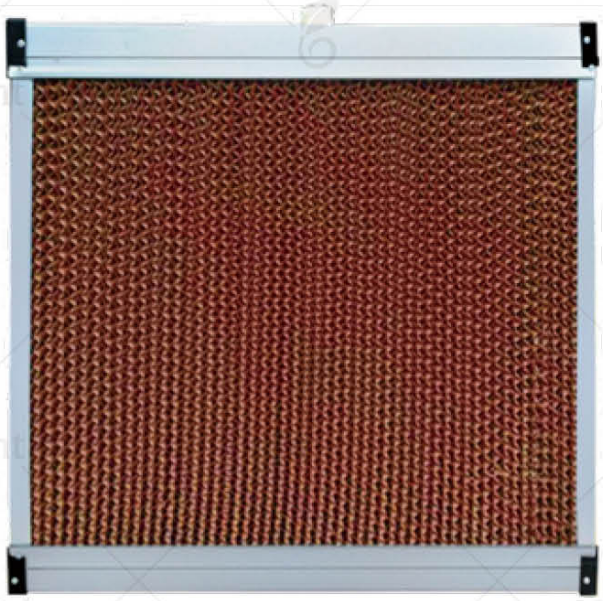
film rolling rods are secured using self-tapping screws.

Usage method:
Rotate the handle to roll up the film.

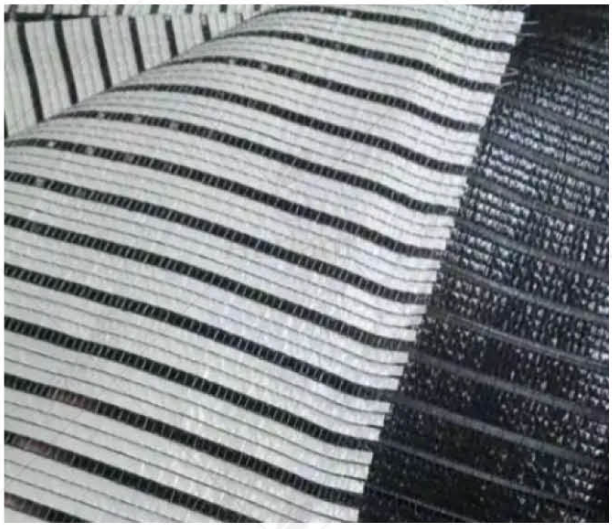
Other Optional Equipment

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

Negative Pressure Ventilator



Cooling pads



Shading net

Seedbed