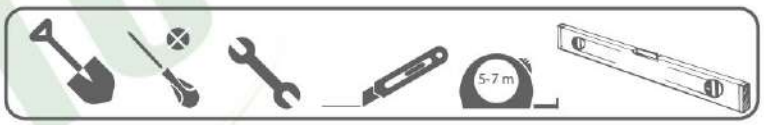


Greenhouse Comfort MINI

ASSEMBLY MANUAL

The greenhouse “Comfort Mini” is 2.1 meters wide and made from galvanized profile pipe. The arc elements of the greenhouse carry the most of the load and have a cross-section of 40x20 mm. Greenhouse is designed to be covered with cellular polycarbonate sheets. The greenhouse will create perfect conditions for growing vegetables, seedlings, flowers, and berries in your garden or on your plot of land. Greenhouse height – 2.3 m, width – 2.1 m. For more convenient transportation, the end-walls and arcs of the greenhouse can be disassembled.
To ensure ventilation each end-wall of the greenhouse is equipped with doors and vents. Polycarbonate cover can be left on the greenhouse for the winter.

Unit No.	Part name	Number per greenhouse,pcs.	
		Greenhouse 3 m	Extension 1 m
1.	Set of end-wall elements, doors and vents includes: 5 cross-beams, each 2 meters long (without connecting endings) and 5 cross-beams, each 1 meter long (with connecting ends)	1	-
2.	2 end-wall arc set	1	-
3.	2 arc set	1	-
4.	1 arc set	-	1

Unit No.	Part name	Number per greenhouse,pcs.	
		Greenhouse 3 m	Extension 1 m
5.	5 cross-beam set, each cross-beam 1 meter long (with connecting ends)	-	1
6.	2 diagonals set	1	-
7.	Latches (for doors and vents)	4	-
8.	Gate bolts (for doors and vents)	2	-
9.	Hinges (for doors and vents)	8	-
10.	Hook (to fix the vent and doors in an open position)	1	-
11.	Bolt M6x65 (or M6x70) mm with a washer and a nut (to connect the arcs and beams)	16	5
12.	Bolt M6x80 (or M6x85) mm with a washer and a nut (to connect the arcs, beams, and diagonals)	4	-
13.	Bolt M6x50 (or M6x55) mm with a washer and a nut (for arc assembly)	8	4
14.	Screw 5.5x19 (or 5,5x25) mm (for attaching polycarbonate)	114	12
15.	Screw 4.2x16 mm (to interconnect the end-wall elements, and to attach latches, hinges, hooks, anchors to the greenhouse frame)	112	4
16.	Anchors (for anchoring the greenhouse in soil)	6	2
17.	Cellular polycarbonate (not included in the set), m2	31,5	6,3

REQUIREMENTS FOR CONDITIONS OF USE

1. Read the manual before using the greenhouse. Incorrect assembly can damage the frame.

2. Depending on the location of the greenhouse, the buyer must evaluate the possible snow load and, if necessary, install additional greenhouse frame supports or remove the snow from the frame. The greenhouse is designed for the snow load of 100 kg/m² and wind speed of lees than 20 m/s.

3. Do not install the greenhouse in direct vicinity (less than 2 m) of buildings, structures and fences.

4. It is advised to install the greenhouse on a concrete foundation. This condition must be observed if the greenhouse is installed in windy location.

5. Do not subject the greenhouse frame to mechanical forces.

6. Do not try to personally change the structure of the greenhouse.

7. To avoid reduction of light permeability of the cellular polycarbonate, it is recommended to clean the surface with cotton fabric, water and cleaning products,

- Greenhouse has a wide windage area. Do not leave an assembled greenhouse without anchoring.
- When installing the greenhouse in windy areas, you must anchor the frame to the ground with additional materials (fittings, etc.).
- Do not install the greenhouse in direct vicinity (less than 3m) to buildings, fences and constructions.
- The area, where the greenhouse will be installed, must be flat, without any significant changes of the surface level.

4. ORDER OF ASSEMBLY

Step 1.

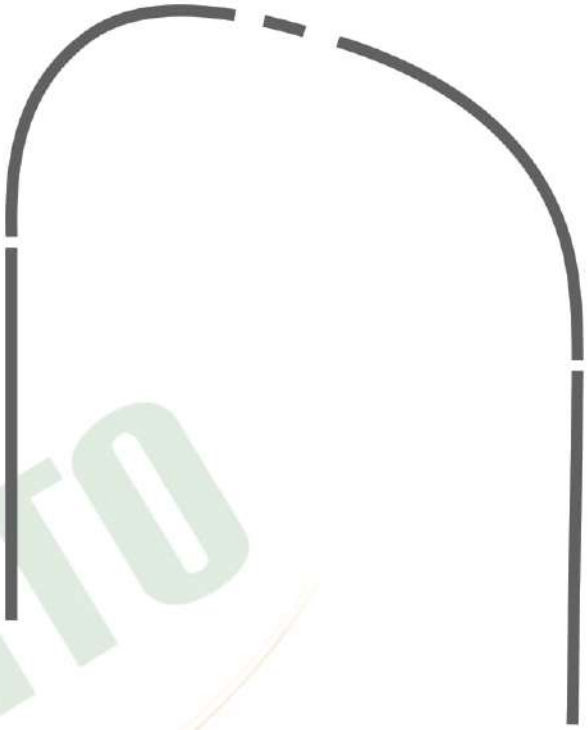
End-wall assembly

Following tools are required for assembly: no. 10 wrench, screwdriver or screw gun with an appropriate head, and a construction knife for cutting polycarbonate. To avoid cuts and traumas we recommend using gloves during assembly.

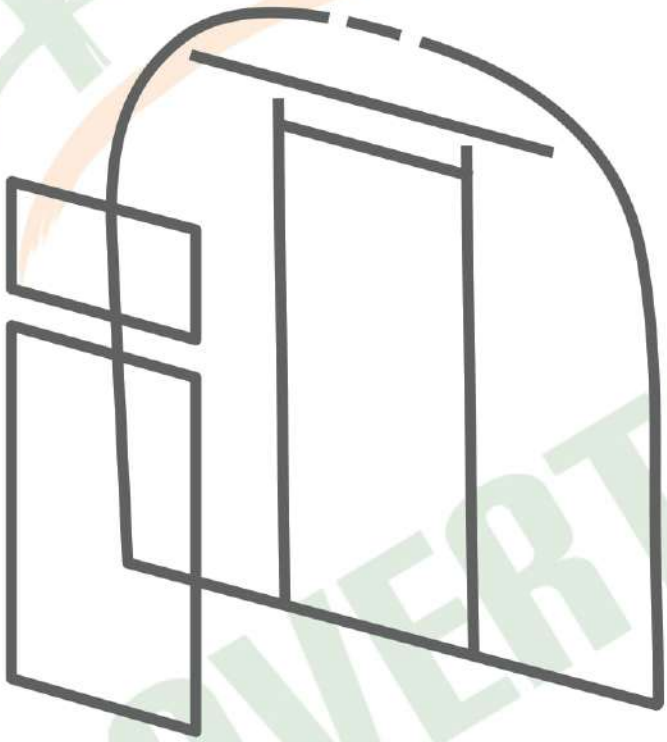
The first step is to assemble the two end-wall arcs of the frame (see picture 1.1).
The end-wall assembly is done through connecting a smaller cross-section pipe with a larger cross-section pipe through corresponding openings in the appropriate parts of the greenhouse frame. The same principle is applied to the whole end-wall.

After connection, the arcs are fastened by use of bolts M6x50 (or M6x55) mm reinforced with M6 washers and M6 nuts. Other connections are fastened by use of the screws 4.2x16 mm (see picture 1.2), as well as roofing screws with a rubber washer for polycarbonate fastening.

Afterwards assemble the door jambs with doors.
Place the door jamb (welded structure) on a flat surface. Place the door (1370x895 mm) and vent (895x430 mm) inside the door jamb. To ensure easy and free opening of the doors and vents, it is recommended to place 5 mm thick inserts between the elements (the inserts can be made of wood, paper, or cardboard).



Picture 1.1 – Greenhouse end-wall assembly



Picture 1.2 – Greenhouse end-wall assembly schematic (inside view)

Insert the supports in the lower part of the end-wall (Г-shaped welded elements). Welded smaller size pipes are extended by 100 mm from the edge of the lower part of the door jamb. Attach the supports (shorter side) on these extensions and fix them with 4.2 x 16 mm.

Insert straight parts (80 mm) of the arcs into the long ends of the supports, one on each side, and turn the long ends (~ 150 mm) towards each other.

Arcs are connected and reinforced by insertion of M6x50 (or M6x55) mm bolts with washers and nuts in one of the two drilled openings. A washer and a nut must be installed from the inside of the greenhouse (under the arc).

The 20x20 mm pipe with openings for arc attachment at both ends must be inserted into the openings in the upper part of the door jamb.

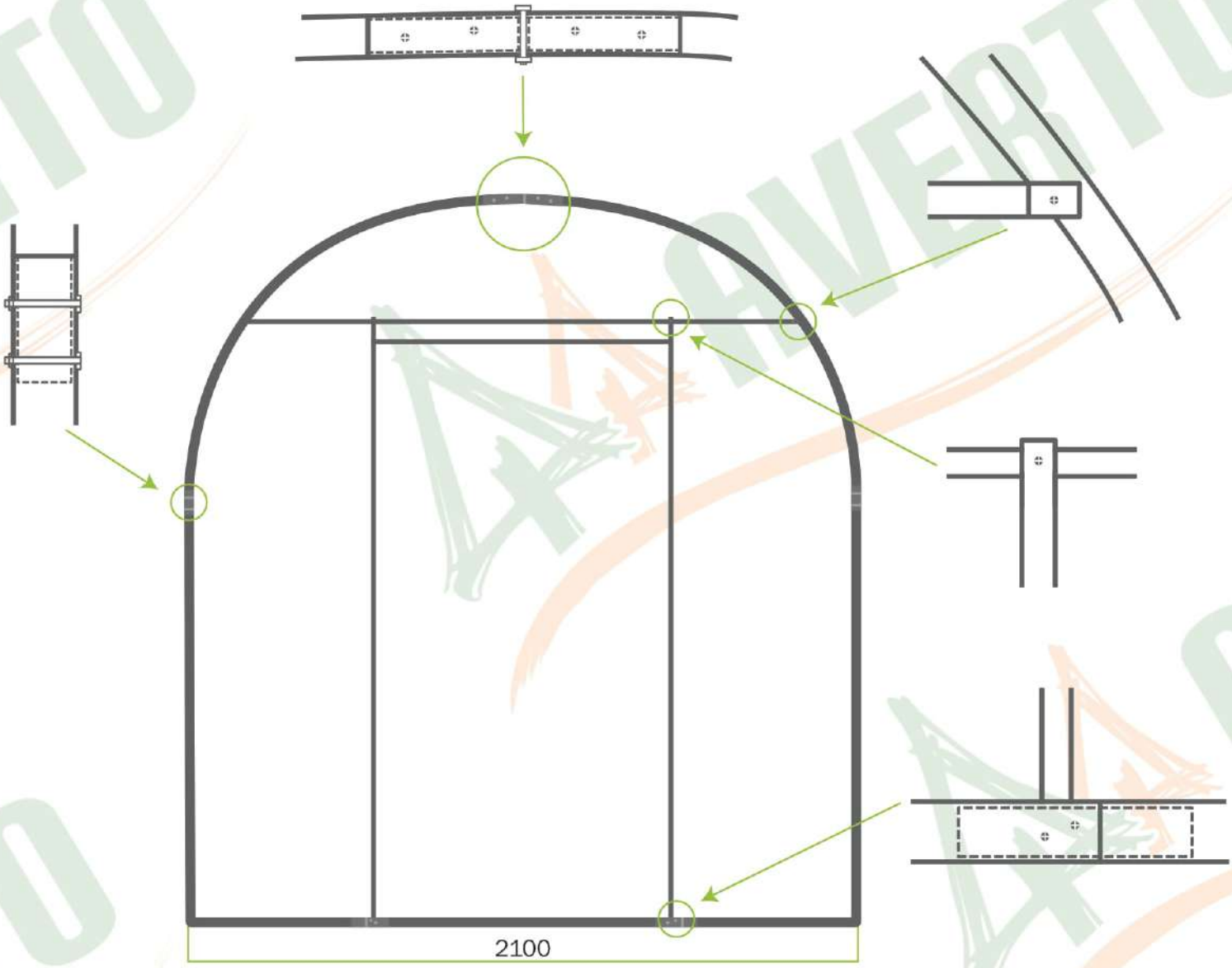
In the top-most point, both ends of the arc must be inserted into the fastening elements (square, 200 mm long pipe). The arc ends must be inserted as deep as possible and have an approximately equal distance.

Use measuring tape to check the dimensions: the lower part of the end-wall must be approximately 2100 mm wide, and 2320 mm high in the top-most point. Also, check the diagonals in the square part of the end-wall. If the dimensions significantly differ, the assembly was made incorrectly.

All connections are reinforced by use of 4.2x16 m screws (one screw per connection). The extended ends in the upper part of the door jamb can be bent against 20x20 mm pipe, which will add extra stability to the structure (see picture 1.3).

Note: All end-wall connection elements are shown in picture 1.3.

Attention! During the assembly, the screws 4.2x16 mm must be inserted on the side that will be the internal side of the greenhouse after the assembly is completed. Polycarbonate is attached from the external side of the greenhouse by use of roofing screws, rubber gaskets and nuts. Due to this, during the end-wall assembly make sure that all fastening elements are inserted on the same side of the end-wall.



Picture 1.3 – Greenhouse end-wall part interconnection schematic (inside view)

Step 2. Polycarbonate installation on end-walls

Attention! Read general polycarbonate installation provisions prior to installation of the polycarbonate.

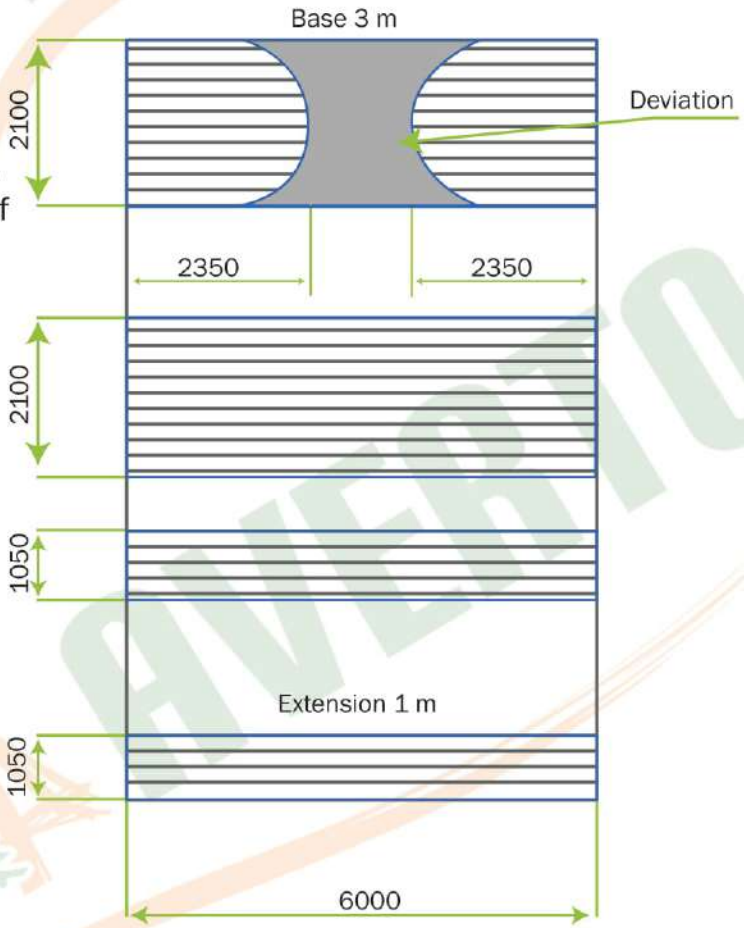
General rules for mounting cellular polycarbonate sheets

Mounting the sheets of cellular polycarbonate to the frame is carried out using roofing self-tapping screws with a rubberized washer. The places of attachment of the cellular polycarbonate sheets with self-tapping screws are marked with a core on the details of the frame. In the polycarbonate, given the thermal expansion, the holes should be made 2 mm larger than the diameter of the self-tapping screw. Do not overtighten the screws during installation, leaving a small gap for "free play".

Cellular polycarbonate having a protective layer against ultraviolet radiation is installed strictly with the protective layer outward (towards thesun).

In this regard, be sure to specify at the time of purchase which side of the sheet the protective layer is, or follow the appropriate markings on the polycarbonate sheets or the markings on its packaging.

Sheets of cellular polycarbonate are cut with a special construction knife or a jigsaw with a jab saw with small teeth.



Picture 2.1 – 7x2,1 m and 6x2.1 m polycarbonate sheet cutting schematic to cover the greenhouse end-walls

After the installation of the cellular polycarbonate sheets is completed, it is necessary to immediately remove the protective film from the surface of the sheet (if any).

Both greenhouse end-walls will require 6x2.1 m polycarbonate sheet (see picture 2.1).

Attention! At every stage of the cutting pay attention to the dimensions of the remaining polycarbonate to ensure that you have enough of the material!

For convenience, the polycarbonate must be installed on the end-wells before the full assembly of the greenhouse. Cutting and installation of the polycarbonate must be done on a level horizontal surface.

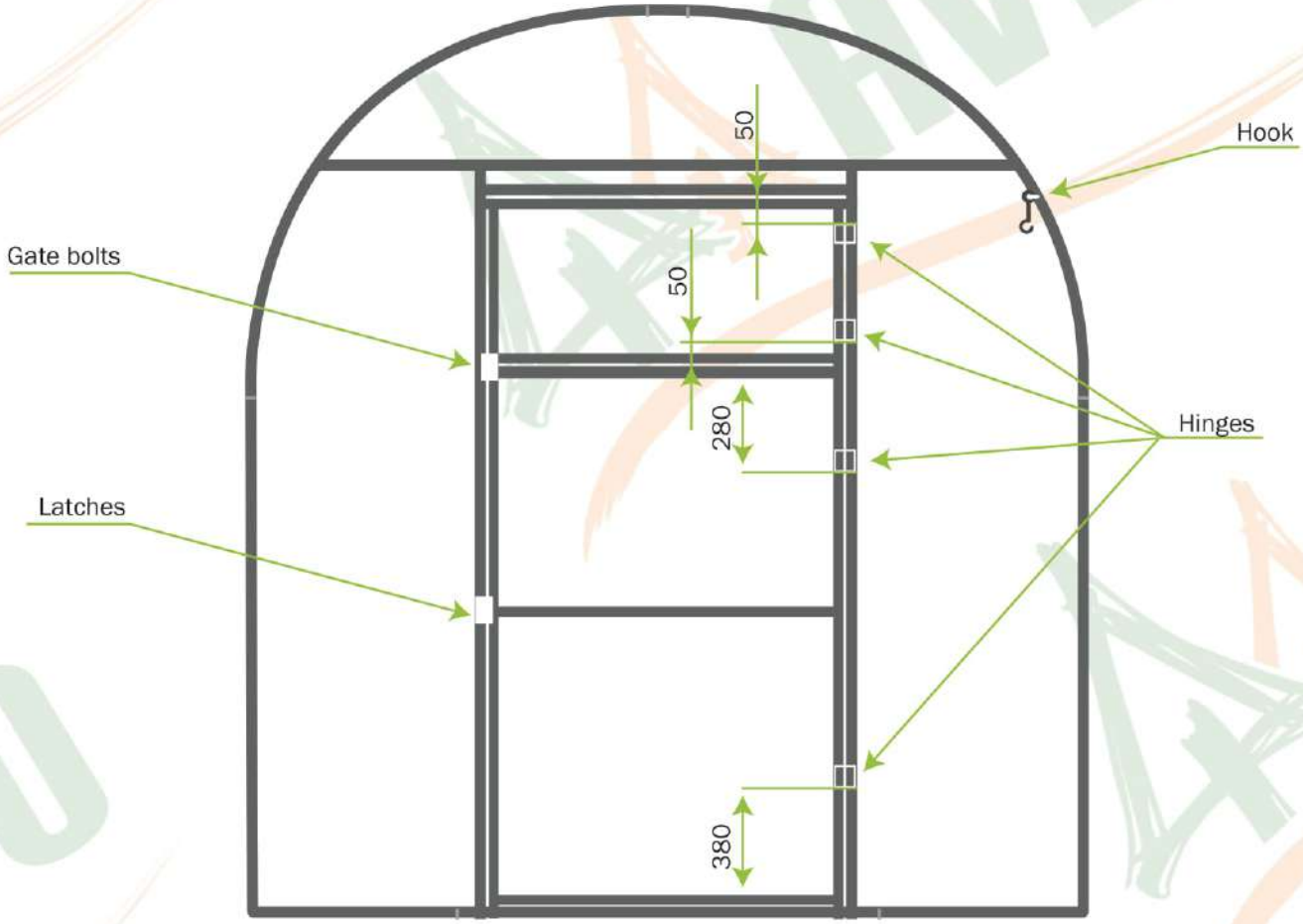
Place the 2100x2320 mm polycarbonate sheet on the end-wall, level it along the sides and lower part of the end-wall, and fasten it with screws and rubber washers along the end-wall perimeter.

Install the hinges on the door and vent through polycarbonate and fasten the with pressure washers (see picture 2.2a).

Afterwards, in a similar fashion, use screws with washers to install fastenings, gate bolts and hooks (see picture 2.2). Fastenings and gate bolts allow to fix the doors and vents in a closed position. The hook allows to fix the doors and vents in an open position. All fastening and bracket elements must be installed on the external side of the polycarbonate (see picture 2.3).

a) hinges b) latches c) gate bolts d) hooks

Picture 2.2 – fastening of hinges, latches, gate bolts and hooks



Picture 2.3 – placement of latches, gate bolts, hinges and hooks on the end-wall

After installation of the fastenings, fix the polycarbonate along the door, vent, and door jamb perimeter by use of screws and rubber washers in a way that ensures sufficient stability of the cover.

Use a knife or an electric cutter to carefully cut the polycarbonate along the perimeter, and then cut-out the door and vent.

Attention! Slots along the doorway, as well as between the door and the window, are made only after attaching polycarbonate to the ends and hardware on it. It is strictly forbidden to fasten and cut polycarbonate along the contour on each door and ventilating window separately from the end - in such cases, with subsequent fastening of the door and ventilating window, cracks are formed in the end that exclude the greenhouse effect in the greenhouse.

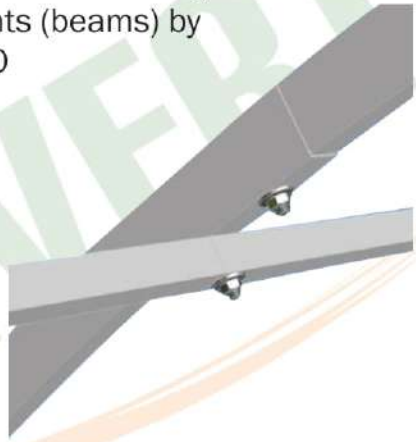
Step 3. Frame assembly

Polycarbonate must be already installed on the end-walls before the frame assembly. End-walls and intermittent arcs are interconnected by the 5 rows of fastening elements (beams) by use of bolts, washers and nuts installed at the drilled openings. No. 10 wrench is required for the assembly.

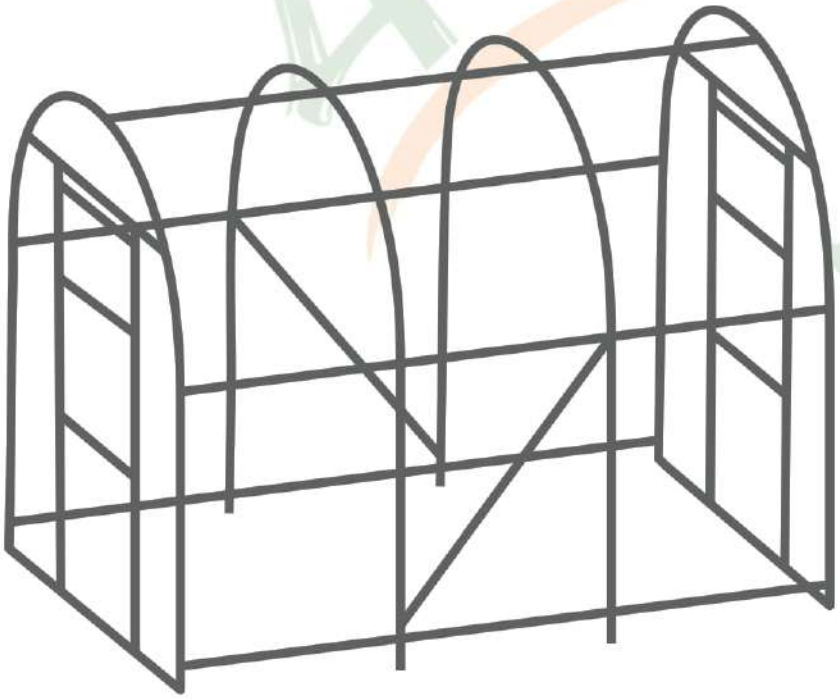
Cross-beams must be installed under the beams, inside the greenhouse, and the nut must be screwed on from the inside of the greenhouse (see picture 3.1).

Connection of the cross-beams is ensured by interconnecting the straight beams with the beams with connections on ends. The assembled greenhouse will look as shown in the picture 3.2.

Note: The greenhouse is shown without polycarbonate cover.



Picture 3.1 – View of beam and cross-beam placement after connection



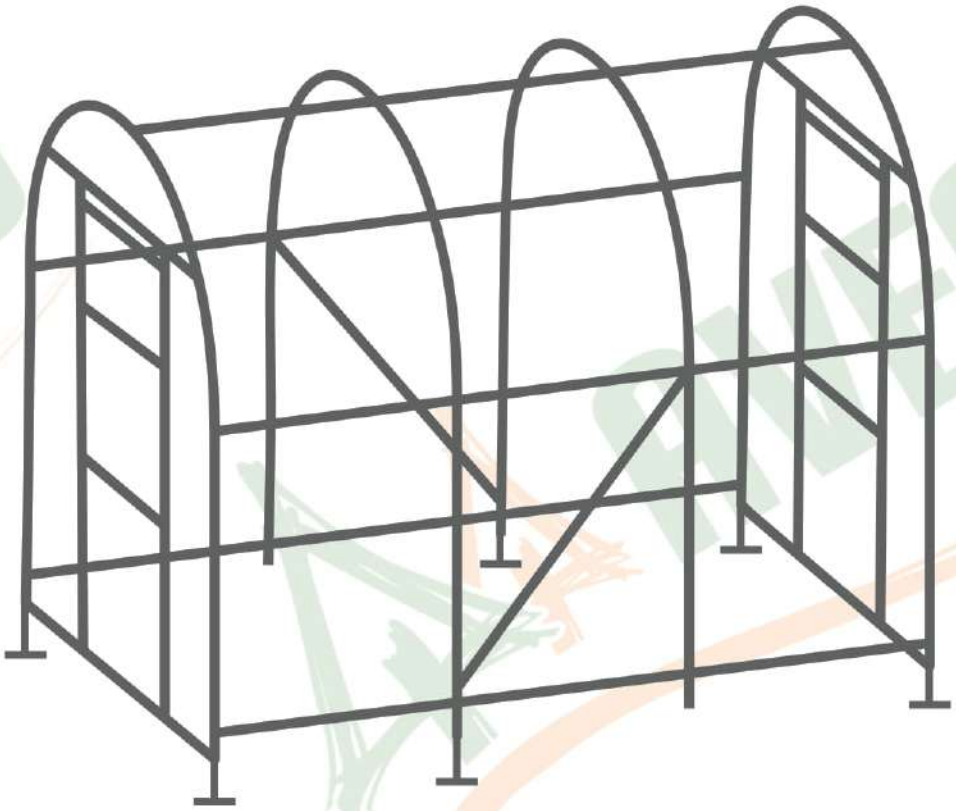
Picture 3.2 – Greenhouse frame

Step 4. Installing the greenhouse

Before starting work, carefully level the area on which the greenhouse will stand. Insert the ground grousers into the arches (through one arc for a step of 1 m, through two arcs for a step of 0.67 m) and ends on both sides (Figure 4.1).

Attention! Be sure to fix the grousers in the arc with a self-tapping screw with a press washer.

Make pans in the ground under the grousers to fully immerse them. Install the assembled greenhouse so that the lower rows of the crossbeams are level with the ground, and the legs and the edge of the polycarbonate go into the ground. Then fill the grouser pans with earth and tamp. To install the greenhouse, you can also use a wooden frame or concrete foundation.



Picture 4.1 – Anchor installation

Attention! The greenhouse is exposed to the wind. Do not leave the assembled greenhouse unmounted to the ground.

Step 5. Installation of polycarbonate on top of the frame

Installation of the polycarbonate on the greenhouse must be done after the greenhouse frame assembly is completed and anchored to the ground. Use 2.10 and 1.05 wide sheets to cover greenhouse from the top. At first, install the side sheets followed by middle sheets.

The sheets must be placed in a way that ensures that any bends occur only along the channel lines. The sheets must be placed in a way that they extend for 5 cm outside. The polycarbonate sheets must be installed on each other.
The sheets must be levelled and attached by screws starting from the lower side then along the arcs, by using the pre-drilled holes.

LV: Siltumnīcas, garāžas un auto nojumes, noliktavas un nojumes,
dārza instrumenti, mēbeles dārzam un pasākumiem,teltis un virszemes baseini.

LT: Šiltnamiai, kilnojamieji garažai, garažai palapinės, tentinis sandelis,
palapines paviljonai, sodo įrankiai, sulankstomų baldų baldai, palapinės, baseinas.

EE: Kasvuhooned, teisaldatavad garaažid, telk varjualused, peotelgid & paviljonid,
aiandustööriistad, õllemööbel, aiamööbe, telgid, basseinid.

RU: Теплицы и парники, портативный гараж, тентовые сараи, беседки, шатры и павильоны,
садовые инструменты, мебели для сада и события, палатки, наземные бассейны.

ENG: Greenhouses, portable garage and storage sheds, party tents and shelters,
garden tools, furniture, tents and accessories, swimming pools.

DE: Gewächshäuser, foliengarage, zelthallen, pavillions, gartenwerkzeugen,
möbel - klappmöbel, campingzelt & zubehör, schwimmbecken.