MADELUX

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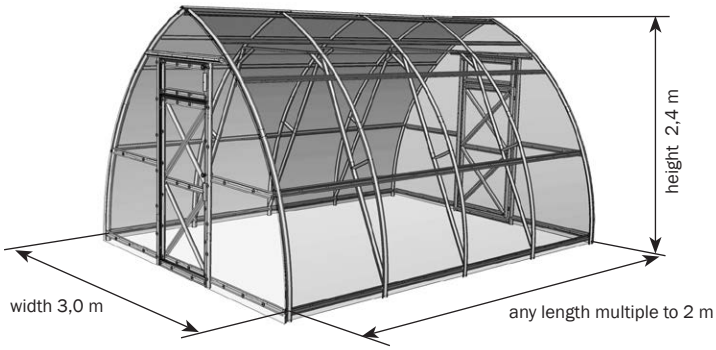
PREMIUM

cellular polycarbonate greenhouse



Perform installation and operation of the greenhouse in strict accordance with the manual and operating rules stated in the technical certificate. Please keep this technical certificate for further reference.

DESCRIPTION

DACHNAYA-STRELKA-3 greenhouse is designed for creation of microclimate favorable for growing garden crops on cottage and household plots. Area of covered soil depends on length of the greenhouse (table 1). Height of installed frame is 2.4 m, width is 3.0 m. The greenhouse may have various length depending on desire of buyer. Required length of greenhouse is provided by purchase of additional Vstavka packages adding 2 m to the base length (Table 2).

Table 1	**Parameters of greenhouse**	
Length (m)	Covered area (m2)	Polycarbonate sheets 2100 x 6000, pcs.
2	**6**	**2**
4	**12**	**3**
6	**18**	**4**
8	**24**	**5**

Frame of greenhouse is made of galvanized steel and assembled using screws and nuts. Greenhouse is fixed on the ground by digging special frame endings or on foundation using mounting angles. The complete set includes all that is needed for fastening of coverage. Greenhouse may be completed with coverage on buyer's request. It has two door openings and two small windows in opposite ends. The greenhouse may be completed with side small windows on buyer's request.

Table 2	**Package completing**									
green-house length	Package number									
	№ 1	№ 2	№ 3	№ 4	№ 5	№ 6	Vstavka insert			
							№1	№2	№3	№4
2 m	+	+	+	+	+	+				
4 m	+	+	+	+	+	+	+	+	+	+
6 m	+	+	+	+	+	+	++	++	++	++
8 m	+	+	+	+	+	+	+++	+++	+++	+++

Table 3	**Package contents**	
contents	dimensions, mm	weight, no more kg
Frame (2 m base length)		
1 package – balks, straight elements and manual	105x980x65	19,0
2 package – arc and end elements	170x1500x65	18,5
3 package – straight end elements, arc reinforcing elements	100x1290x65	20,0
4 package – ridge profile	40x1100x750	1,2
5 package – sealing profile	350x300	1,0
6 package – fixtures and component parts	85x270x200	4,5
7* package – side small window		5
Vstavka insert (2 m frame extension)		
1 package - balks	80x980x65	12,5
2 package – arcs elements and straight elements	135x1480x65	14,7
3 package – ridge profile	40x1100x750	1,2
4 package – fixtures and component parts	85x200x200	1,2

* - additional packages supplied on buyer's request

Table 4	Dachnaya-Strelka-3 detailed parts list	
marking	**name**	**quantity (pcs)**
	1st package (balks and straight elements)	
2	balk	20
14	door diagonal	4
15	door diagonal cover plate	4
19	small window horizontal element	4
20	small window vertical element	4
	hooks	4
	2nd package (arc elements)	
4н	bottom arc	6
4в	top arc	6
8	top door opening stand	4
12	door vertical element	4
	3rd package (end straight elements and arc reinforcing elements)	
1	stand	10
3	support	10
5	top end strainer	2
6	bottom end strainer	2
6к	bottom end strainer	4
7	bottom door opening stand	4
9	horizontal strainer	1
10	side brace	4
11	brace strut liner	2
13	horizontal door element	6
16	end cover plate	2
17	door cover plate for rotator	4
18	stiffening boom	2
21	middle strainer	4
	left tubular reinforcing element	2
	right tubular reinforcing element	2
	4th package (ridge profile)	
	ridge profile	2
	5th package (sealing profile)	
	hinge profile (m)	3,6
	door profile (m)	10
	end profile (m)	12
	6th package(fixtures and component parts)	
	angle	28
	ridge cover plate	3
	arm	12
	screw M4x10	2
	screw M5x10	374
	screw M5x14	22
	screw M5x35	120
	screw M5x50	18
	tap screw	8
	nut M4	2
	nut M5	534
	washer	136
	top wire bandage	3
	bottom wire bandage	6
	hinges	8
	semifinished rotator (with two elastic headers)	4
	bending tube	1
	adhesive tape	1
	handle	8
	pin	4

Table 5	Vstavka insert detailed parts list	
	1st package	
2	balk	20
	2nd package	
3	support	4
1	stand	4
4н	bottom arc	4
4в	top arc	4
9	horizontal strainer	2
10	side brace	8
11	brace strut liner	4
18	stiffening boom	4
	3rd package	
	ridge profile	2
	4th package	
	angle	8
	ridge cover plate	2
	bottom wire bandage	4
	top wire bandage	2
	screw M5x10	150
	screw M5x14	4
	screw M5x35	16
	screw M5x50	4
	nut	174
	washer	16

Table 6	Small window detailed parts list – 7th package	
	Name	**Quantity**
	1st package	
ϕ1	long bar	2
ϕ2	short bar	2
ϕ3	long diagonal	1
ϕ4	short diagonal	1
	wire stop	1
	wire extender	1
	2nd package	
	arm	1
	polycarbonate	0,95x0,43
	sealer	0,95 m
	heave-off hinge	2
	screw M5x10	25
	screw M5x35	8
	washer 32x5	8
	nut M5	37
	clamp	2

Operating rules

1. Before use of greenhouse, assemble and install it in accordance with the manual.

2. In winter, coverage of greenhouse should not be removed provided that snow load is limited. Should greenhouse be unattended all winter period, buyer should either remove the coverage or estimate possible snow load. Ultimate load for the frame having complete package with installed drawbars and side braces appears under 360 kg snow cover per 1 m2 of horizontal ground surface corresponding to 1.8 m fresh snow layer or 0.9 m packed snow layer. Recommended 4 mm depth of polycarbonate is enough for Russian midland. In case of regions with snow cover exceeding 0.6 m, thicker polycarbonate should be used for coverage of greenhouse top in accordance with local conditions.

When installing the greenhouse by third parties, buyer should supervise compliance of installation with the manual.

Do not install greenhouse close to buildings and trees from which snow or ice can fall down. Minimal 2 m distance is recommended.

Maximum wind pressure for this greenhouse is 25m/sec

Cleaning and washing of polycarbonate sheets

1. Rinse sheet with warm water.
2. To remove dirt, wash it with mild soap solution or domestic detergent using a soft cloth or sponge.
3. To remove water, rinse the sheet with cold water and wipe with a soft cloth.

Never use abrasives or high-alkali detergents for cleaning polycarbonate sheets. Dry wiping damages protective layer of the coverage and shortens its service life. Never rub surface of polycarbonate sheets with a brush, metalized fabric or other abrasive materials.

To prevent corrosion (darkening) of frame, do not use fungicidal and antibacterial sulphur cartridges for disinfecting the greenhouse.

Warranty

Warranty

1. Manufacturer is responsible for full completing frame elements of greenhouse.
2. Manufacturer is responsible for assemblability of the greenhouse in accordance with the manual.
3. Manufacturer is responsible for durability of the greenhouse under specified values of weather impact.
4. Warranty period – 12 months from date of purchase.

Warranty conditions

The warranty does not cover cases of:

1. Installation of greenhouse with violation of manual's requirements.
2. Violation of operating rules.
3. Unintended use of greenhouse.
4. Greenhouse deformation over ground subduction.
5. Floods, hurricanes, other natural disasters.

Dachnaya Strelka-3 greenhouse installation manual

Introduction

1. General view of frame is represented in Fig. 1. Mount details in such a way to make side shelves facing coverage. Assemble the frame from numbered elements.

2. Legend:
→- arrow indicates installation direction according to manuals' schemes

Some elements have free holes resulted from elements' uniformity.

3. Connect elements using profiles, screws and nuts. In this case, no matter what element is on top.
Be careful not to damage elements, because they don't have enough rigidity before final assembling.

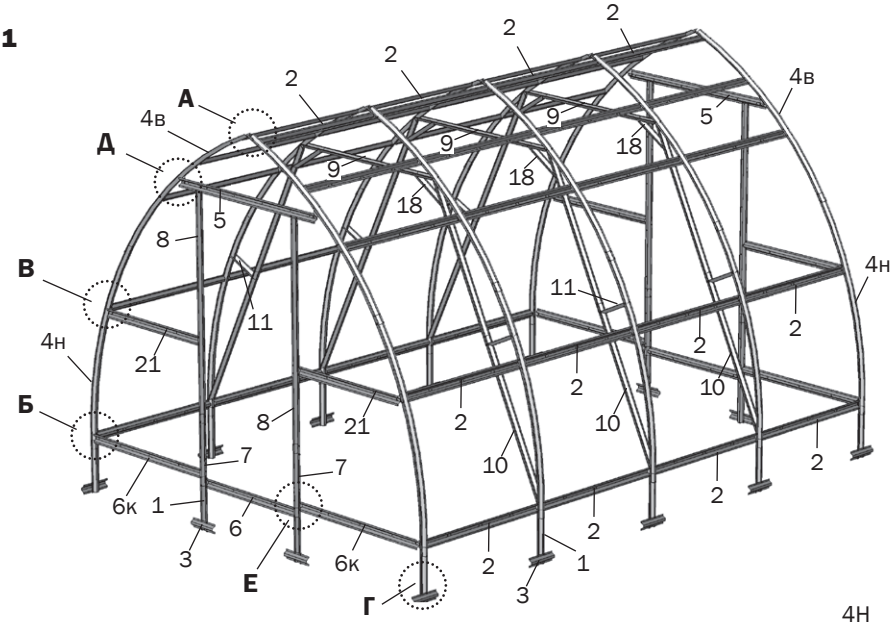
4. Use supports (for example, chairs) on temporary stages of installation for uniform lifting of frame assembled. To coincide holes in complicated joints use a nail of 5 mm diameter or a drift pin with tapered end.

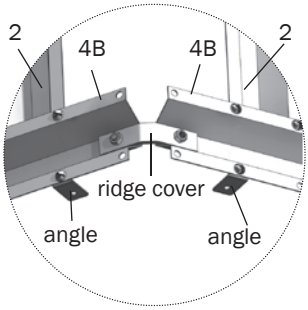
When assembling the frame, connect elements using all available holes. Simplified connection with one or two screws is a violation of installation rules and a ground for warranty waiver.

Be careful! Elements have sharp angles. Guard against cutting. Work in safety gloves.

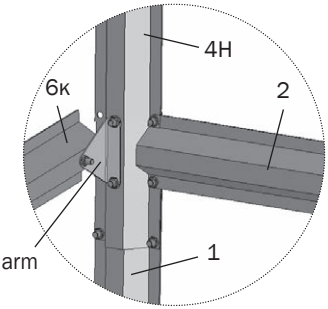
General view of DACHNAYA-STRELKA greenhouse frame

Fig. 1

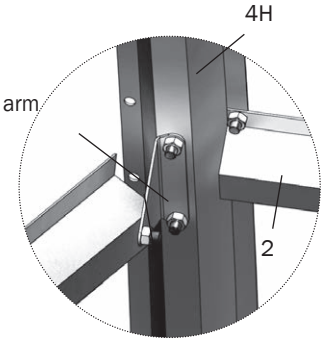




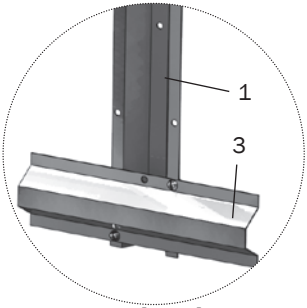
А (outside view)



Б (inside view)



В (inside view)



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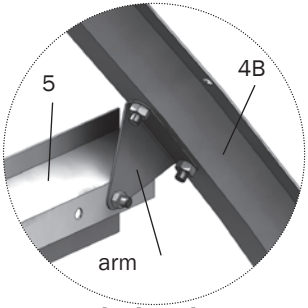
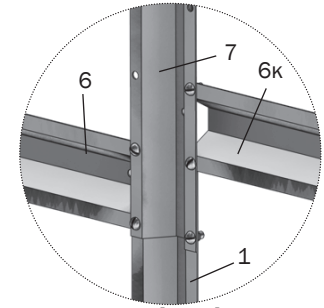


Д (inside view)



Е (outside view)

General view of DACHNAYA-STRELKA-3 greenhouse frame

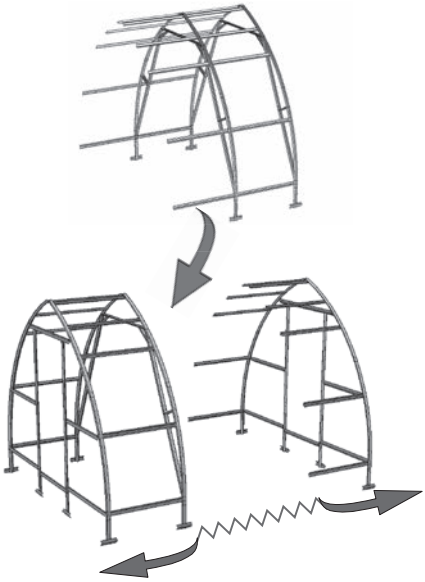


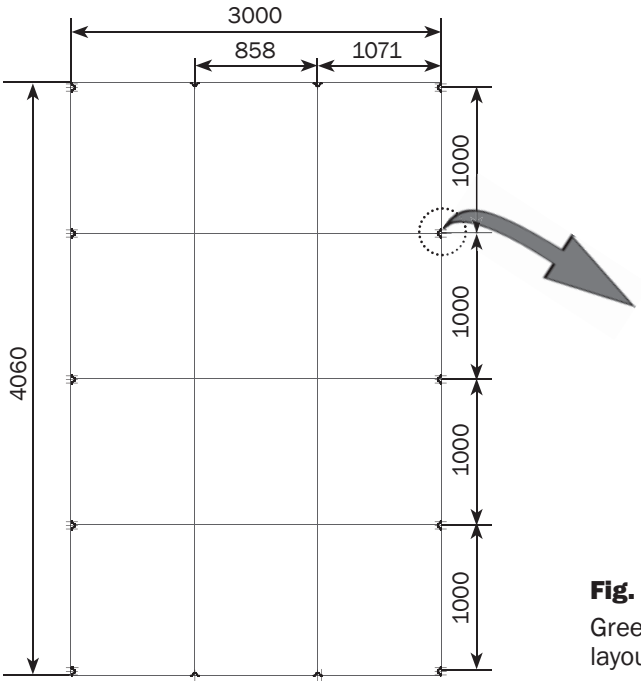
Fig. 2

General view of Vstavka insert for Dachnaya Strelka-3 greenhouse.

Each insert extends greenhouse length by 2 m.

Fig. 3

Dachnaya Strelka-3 extended by any number of inserts



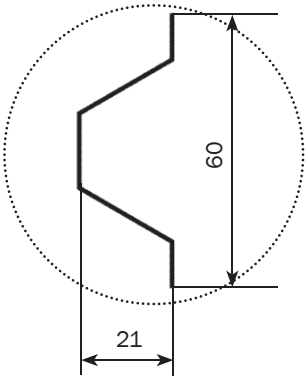


Fig. 4

Greenhouse foundation support layout plan.

Installation sequence

1. Perform the installation close to location of the greenhouse.

2. Install greenhouse in accordance with photographs of installation stages and units represented in **Fig. 5...12**. The figures show installation of greenhouse of 4 m length. Required length is reached using attachment of appropriate number of Vstavka insert packages. Use M5x10 screws for connection of elements.

3. Dig pits on the site selected for greenhouse installation at a depth of shovel blade according to **Fig. 4**. Install frame into the pits. Check equality of frame diagonals using a cord. Total draft of greenhouse into the ground should be so that bottom elements 6 of door opening touch the ground. Check equality of the diagonals using a cord again and correct position of the frame angles.

4. Level the frame using filling or deepening of pits to make longitudinal elements straight, horizontal and parallel to each other and to make arcs even at side view. If arc planes require leveling, loosen connections of balks with arcs, complete leveling on the ground and tight screws again. Fill frame supports with soil after fastening bottom wire bandages on element 3 (**Fig. 10**).

Assembling stages

Assemble arcs 4в in pairs using ridge cover plate and strainer 9. Connect end elements 5 to arcs 4в using arm.

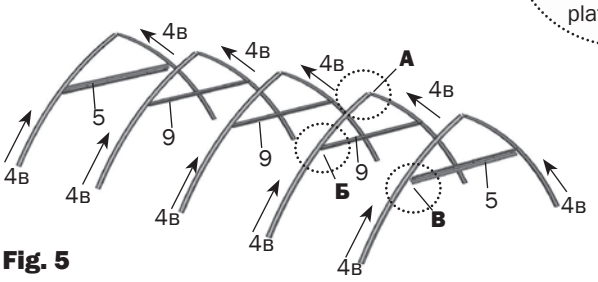
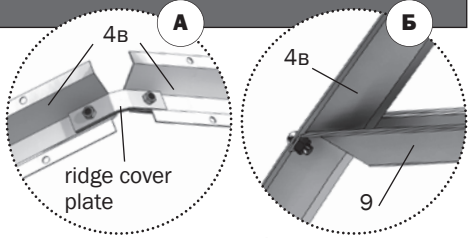
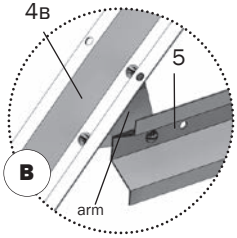


Fig. 5





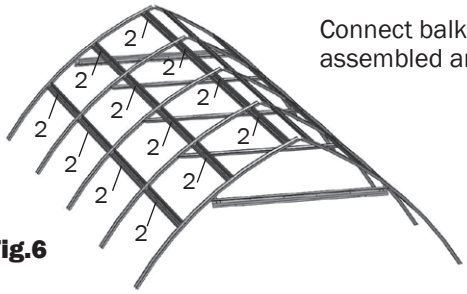
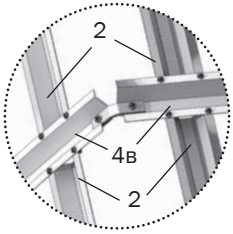


Fig.6

Connect balks **2** to assembled arcs.



Assembling stages

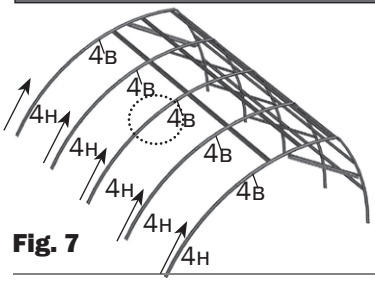
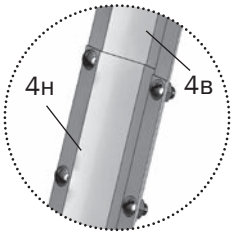


Fig. 7



Connect arcs **4н** to arcs **4в** from one side of greenhouse.

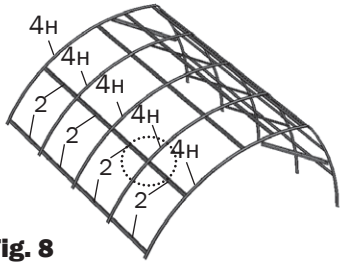
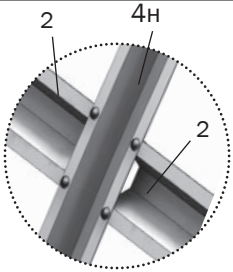


Fig. 8



Connect balks **2** to arcs **4н**

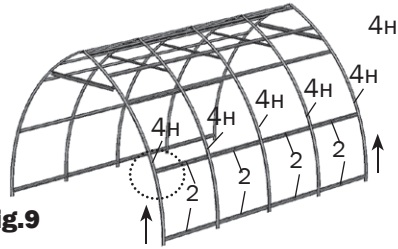
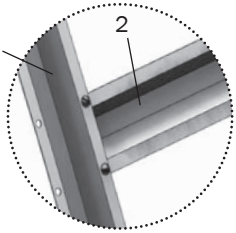


Fig.9



Connect arcs **4н** and balks **2** from the other side of greenhouse in the same way.

When installing the greenhouse through digging (without foundation), connect elements **1** and **3** to the frame. Fasten bottom wire bandage in free hole of element **3**. Install end elements **6, 6к, 7, 8, 21**.

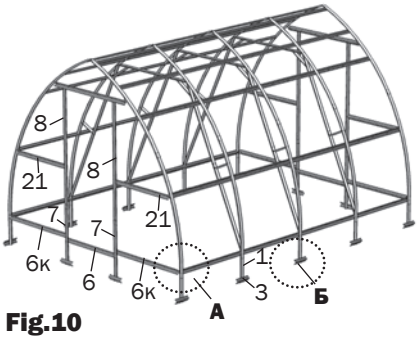
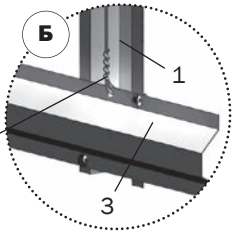
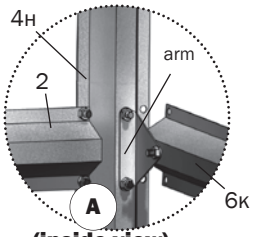
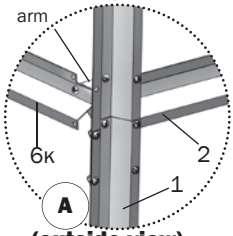


Fig.10





(inside view)



(outside view)

Assembling stages

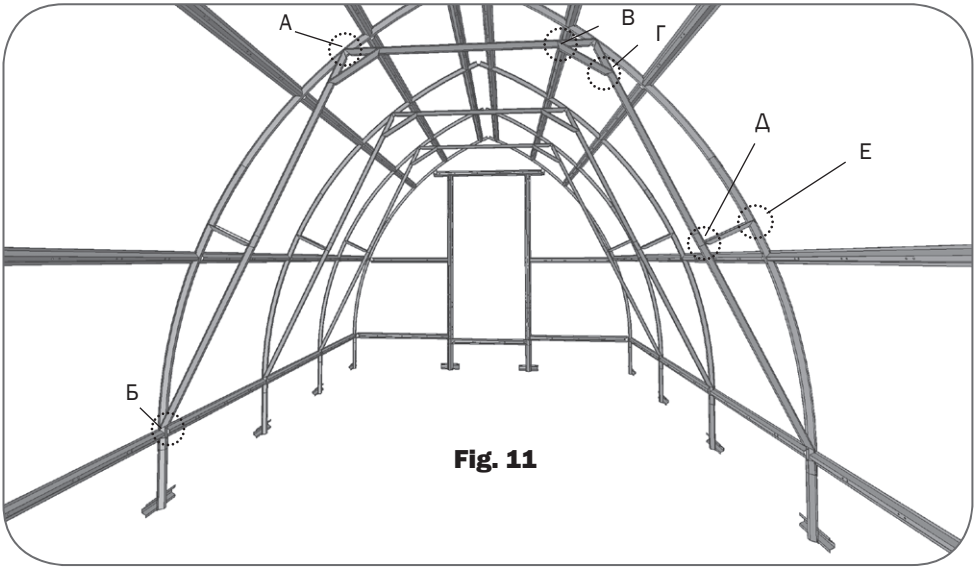
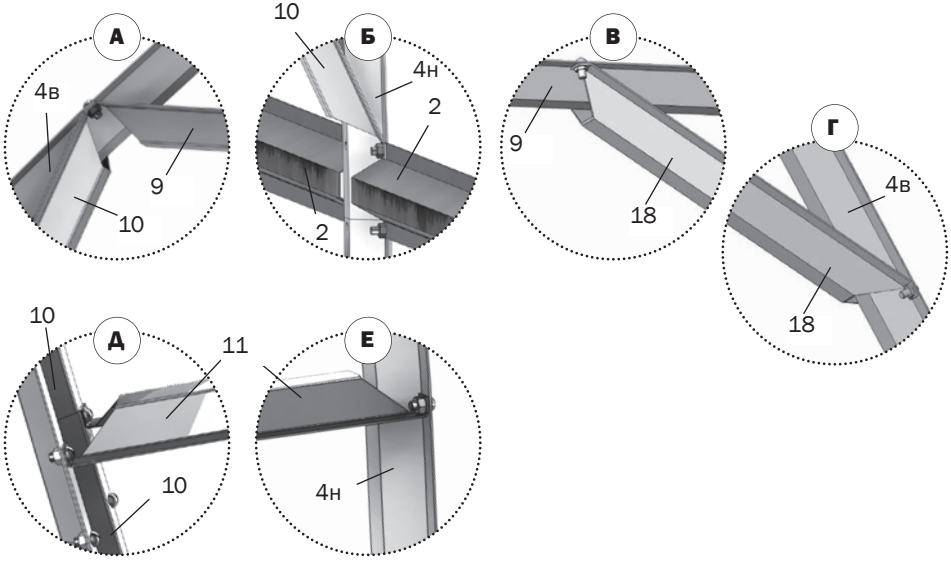


Fig. 11



Install side braces **10** on each arc inside of greenhouse frame. Assemble side brace assembled from two elements **10**. Mount side brace liner **11** on the joint of elements **10** and connect it to arc **4н**.

Assembled door and end small window

Assemble door and end small window from elements **12**, **13**, **14**, **15** **(Fig.12)**

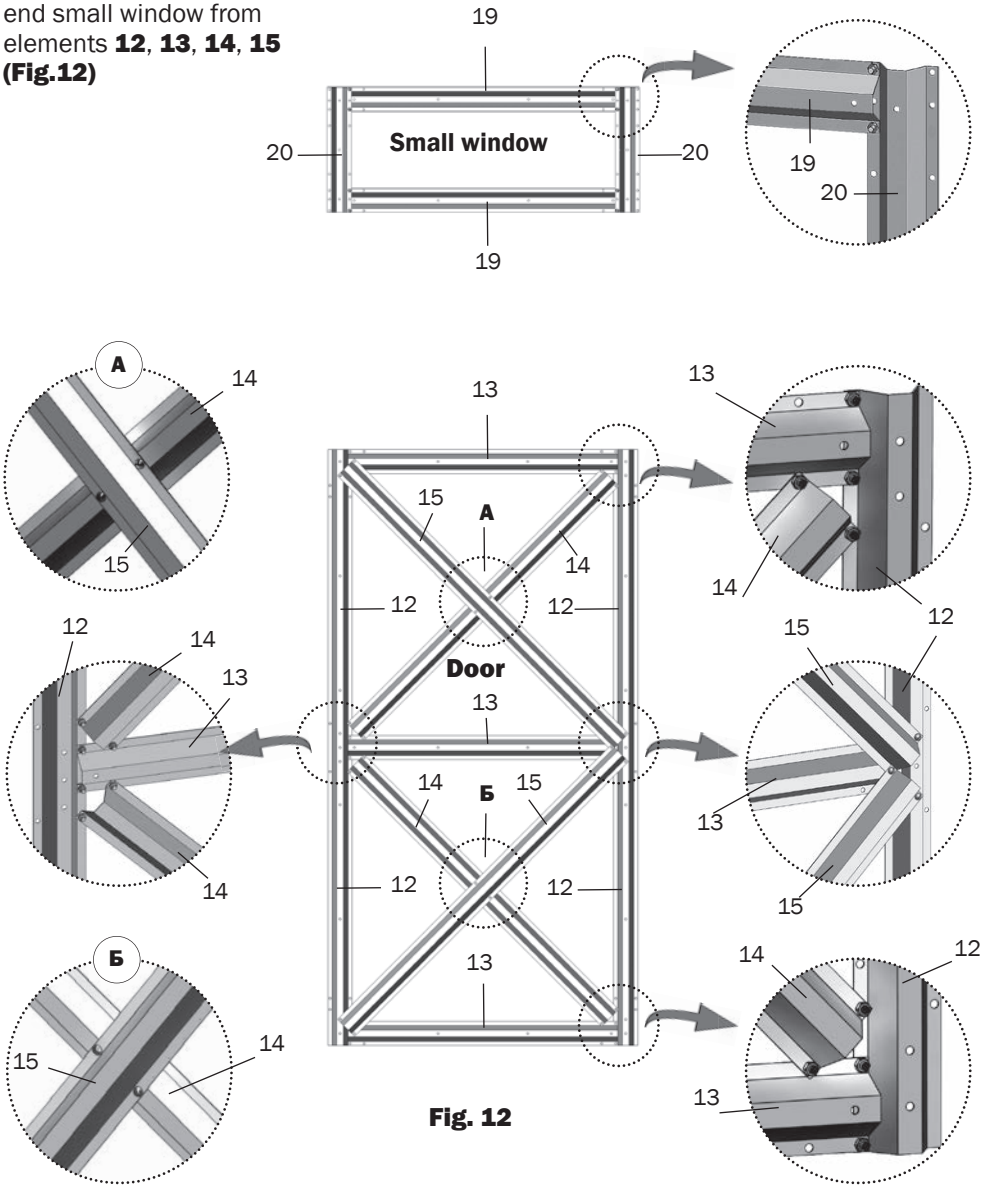


Fig. 12

Cutting and fastening of coverage

CUT POLYCARBONATE SHEET STRICTLY IN ACCORDANCE WITH Fig. 13(а) or 13(б) и Fig. 14
2100 x 600 mm cellular polycarbonate sheet

Be careful!
In windy weather, load polycarbonate sheet edges with burdens.

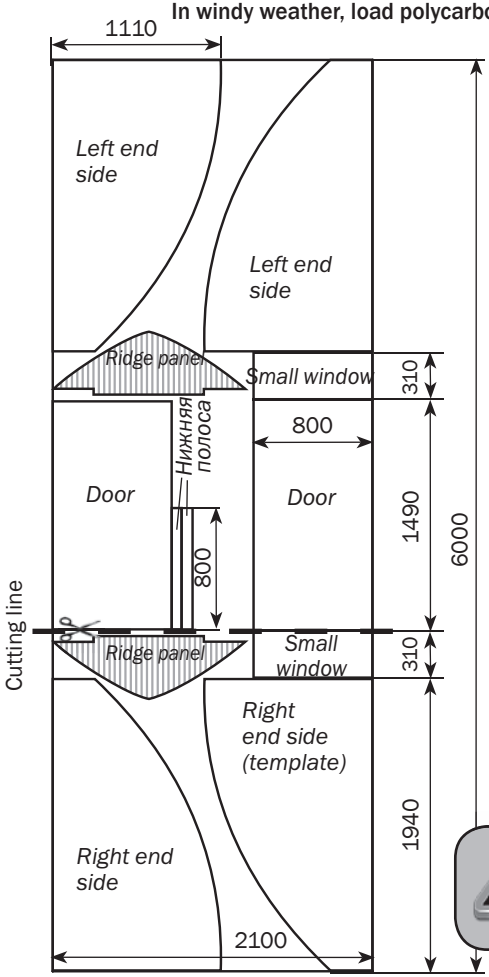


Fig. 13a
Vertical position of cellular on ridge panel

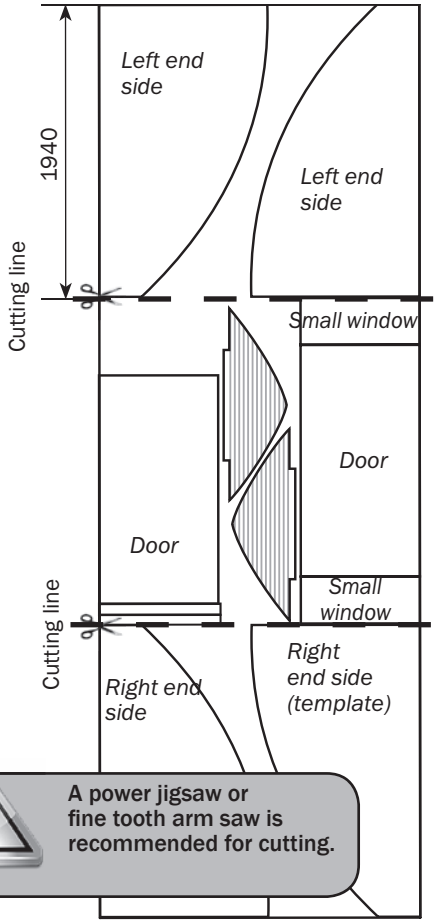


Fig. 13б
Horizontal position of cellular on ridge panel

A power jigsaw or fine tooth arm saw is recommended for cutting.

1. Cut a sheet for end coverage. To do this, cut a piece from polycarbonate sheet (see cutting lines on **Fig. 13a** or **13б**). To make a stencil of coverage, put the cut piece to assembled end of greenhouse and, without removal of protective film from polycarbonate, deposit stencil marking on the coverage sheet by elements **4н** and **4в** with allowance (**Fig. 14**). When marking a sheet, align its edge strictly with edges of

elements **7** and **8,** and top edge at 30 mm above bottom edge of element **5**. Cut a stencil. Mark the rest of sheet using the stencil in accordance with cutting scheme (**Fig. 13а** or **13б**).

Mount cellular polycarbonate strictly facing sun with a side having protective layer (by all means, clarify it under purchase or before mounting). Protective layer usually is on the side with inscriptions on transport film. On the other side of sheet film is clear. After marking the sheet but before its cutting make marks on protective side of each piece of sheet: after removal of transport film sheet sides have no visual differences. Transport film is removed from both sides immediately before fastening coverage on the frame.

Attention! Coverage sheet side edge is aligned by elements 7, 8, and top edge on 30 mm above bottom edge of element 5. Mark by elements 4н and 4в with allowance.

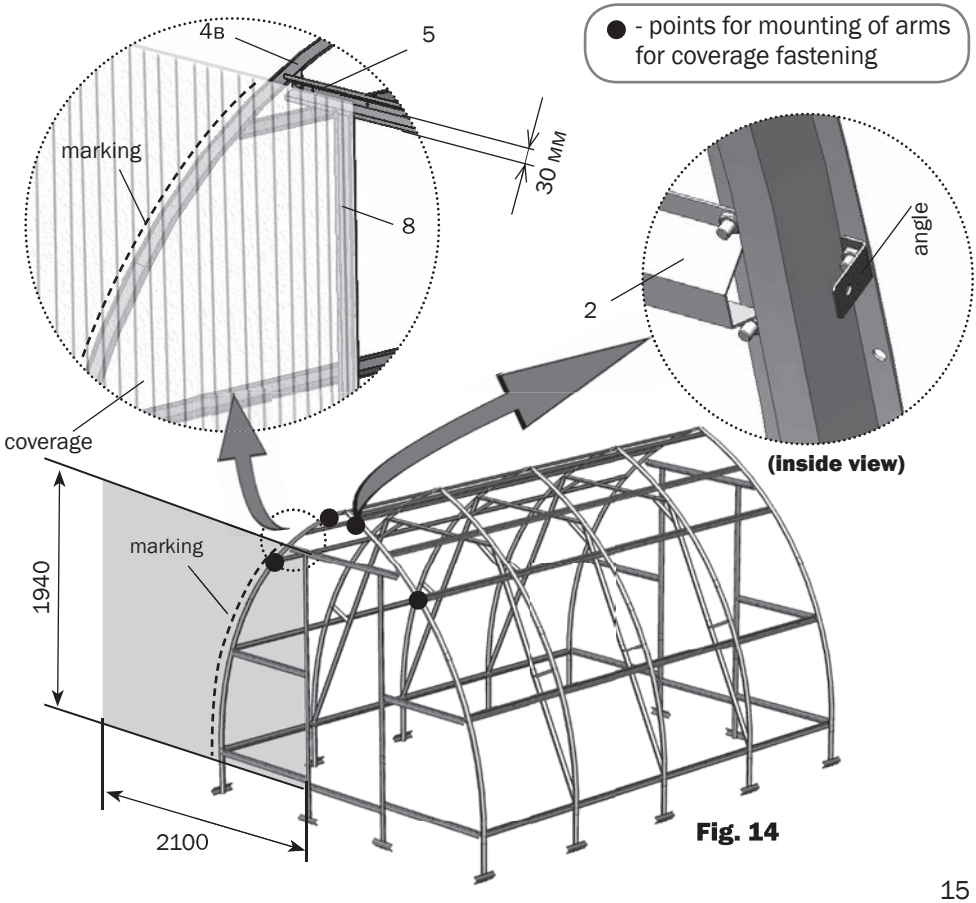
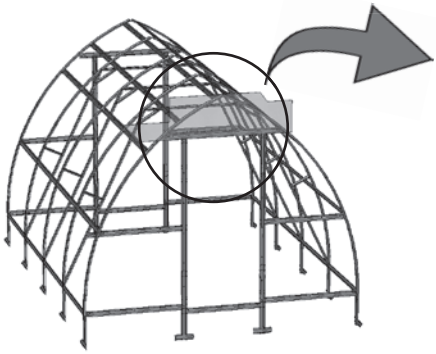


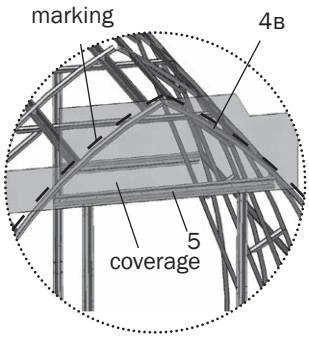
Fig. 14

Cutting and fastening of coverage

2. Cut ridge coverage pieces located above the door at the place of installation from remaining pieces. Mark coverage by elements 4в with allowance aligning bottom edge of the sheet with bottom edge of element **5** (**Fig. 15**).

Fig. 15





3. Mount side pieces of coverage in accordance with Fig.16. Holding a piece of coverage, fasten it with screws and washers by elements 6к, 7, 8б 21 and by angles using tap screws with washers. Holes for screws are drilled by boring bit of 5 mm diameter from inside of greenhouse through holes in frame elements. Mount top pieces of coverage fastening them on angles with washers and tap screws. Cut overlapping with side pieces.

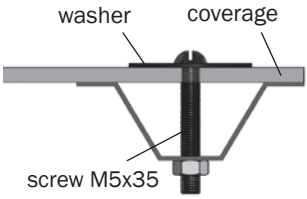


Fig.16

4. Even coverage pieces by arcs **4н** and **4в** using a knife and mount sealing profile in accordance with **Fig. 17.**

5. Fasten pieces of coverage on door with washers (**Fig.18,19**), making runoff by one side (**Fig.23**), closing cellular beforehand (with adhesive tape). Mount sealing profiles along the door contour in accordance with Figures **19,21,22**.

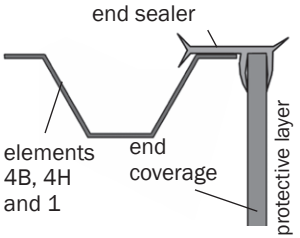


Fig.17

Avoid excessive tightening of fastening screws to prevent crumbling of polycarbonate and destruction of cellular.

Cutting and fastening of coverage

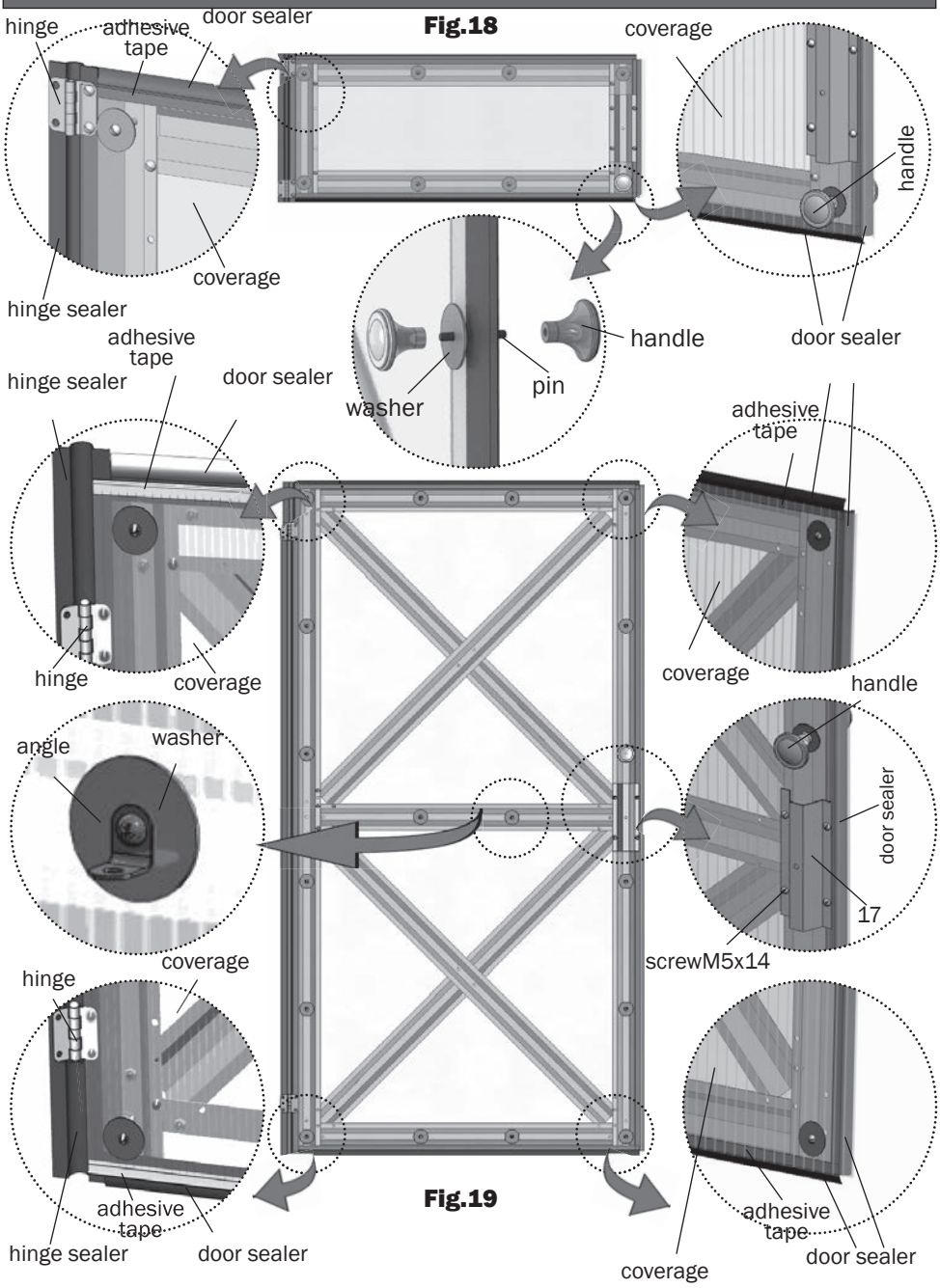


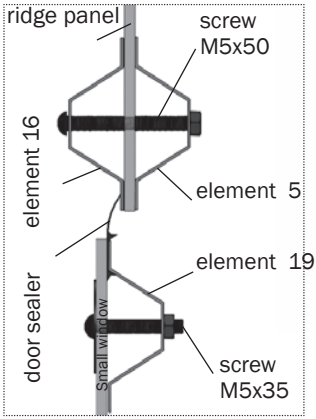
Fig.18

Fig.19

Cutting and fastening of coverage

6. Mount end cover plate **16** on end coverage and fasten it on element **5** through coverage (**Fig. 20** and **24**). Joint of end coverage pieces is under element **16**.

Fig.20



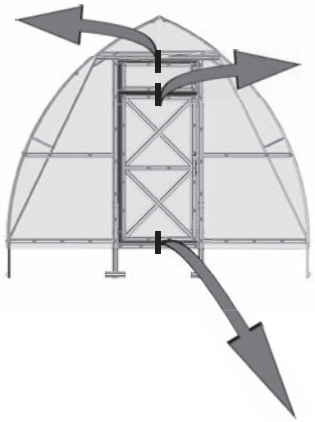
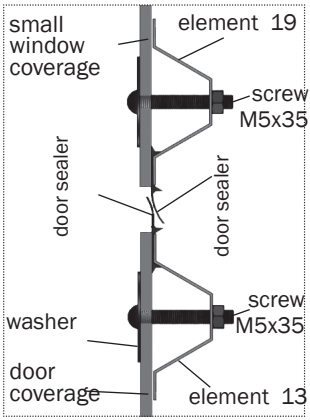


Fig.21



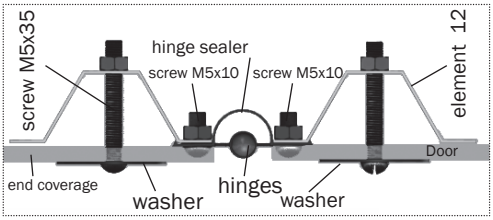


Fig.22

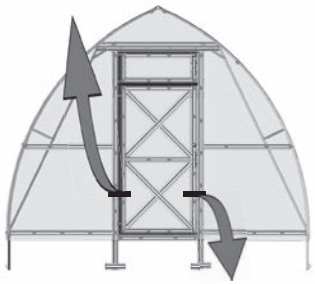
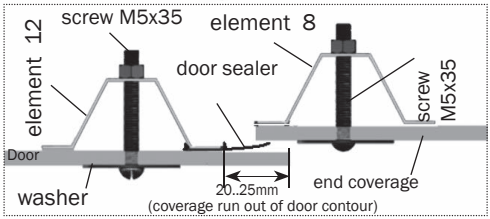
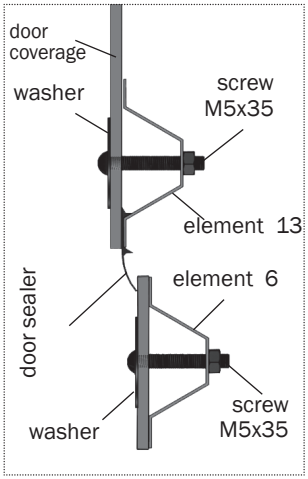


Fig.23





7. . Install assembled doors and small windows on ends mounting sealer in accordance with **Fig. 22**. When mounting small windows, prevent its further slackening. When tightening the screws, lift the opposite end of small window to remove screw gaps in the holes.

Cutting and fastening of coverage

8. Install end washers and hooks in accordance with **Fig.24**.

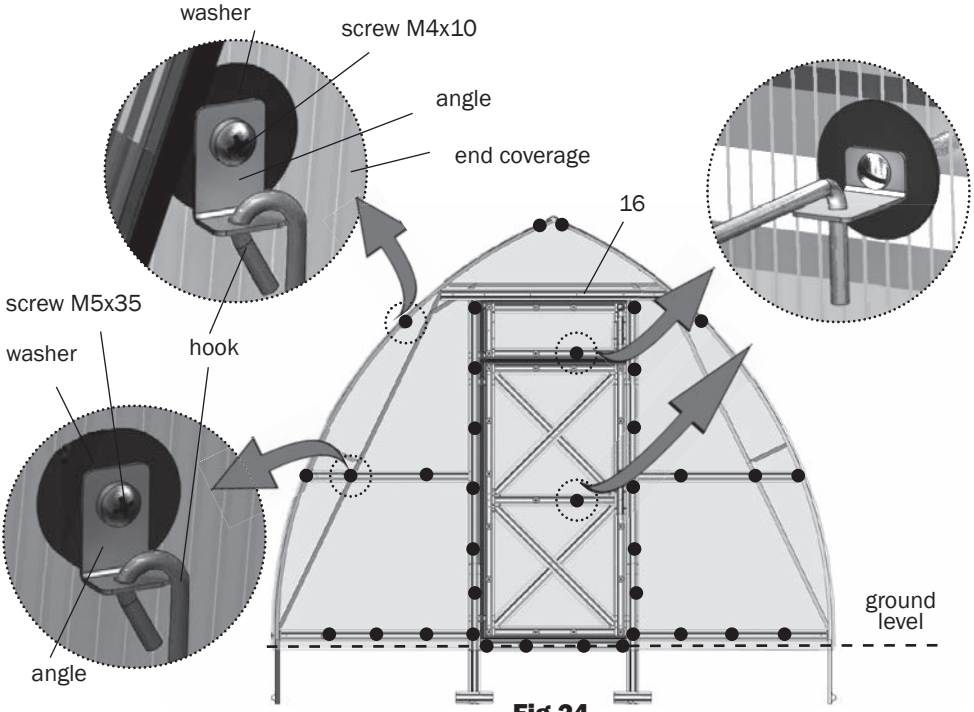


Fig.24

Install tubular reinforcing elements of door opening in accordance with **Fig. 25**

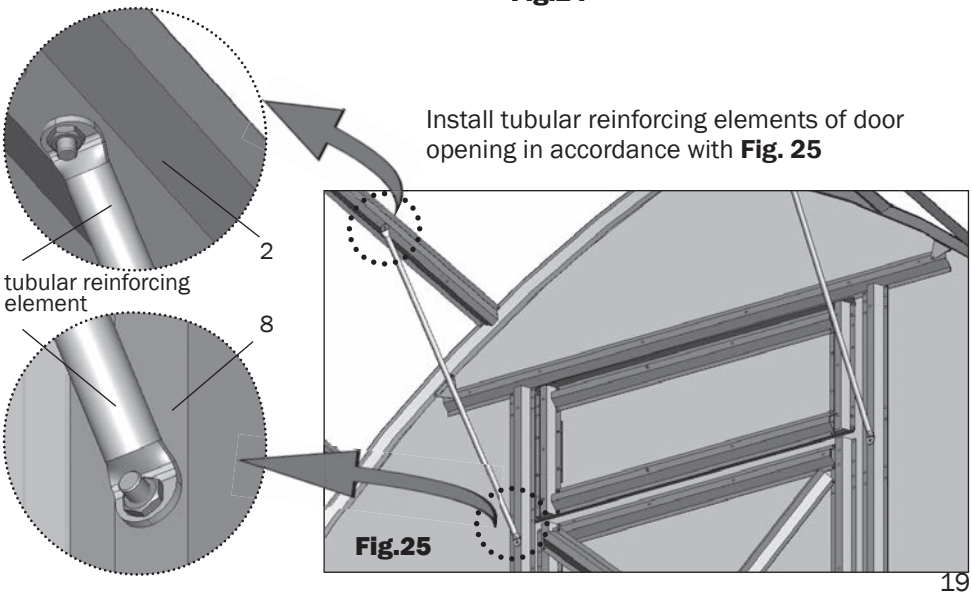


Fig.25

Cutting and fastening of coverage

9. 9. For top coverage, cut 6x2.1 m sheets in halves per 3x2.1 m pieces keeping right angle of cutting line to sheet side edge. Then put halves together by cutting line with aligning the side edges and positioning protective layer outside. Eliminate mismatch of edges after cutting halves and putting them together by cutting of outstanding edge.
If edges' outstanding (cutting error) exceeds 5 mm, level both edges by ruler to provide right angle of cutting edge to side edges. Remove protective film from polycarbonate without violation of relative position of sheet halves. Cover polycarbonate cellular with adhesive tape and then join the halves with adhesive tape by cutting edges. (**Fig. 26)**.

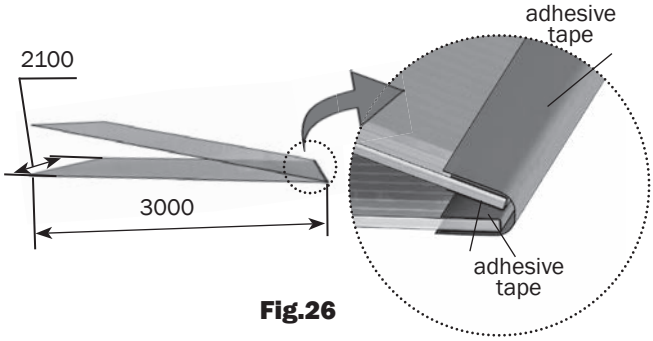


Fig.26

10. Align elements of ridge profile lengthwise mounting screw threaded ends outside **(Fig. 27)**.
Put polycarbonate sheet halves connected by adhesive

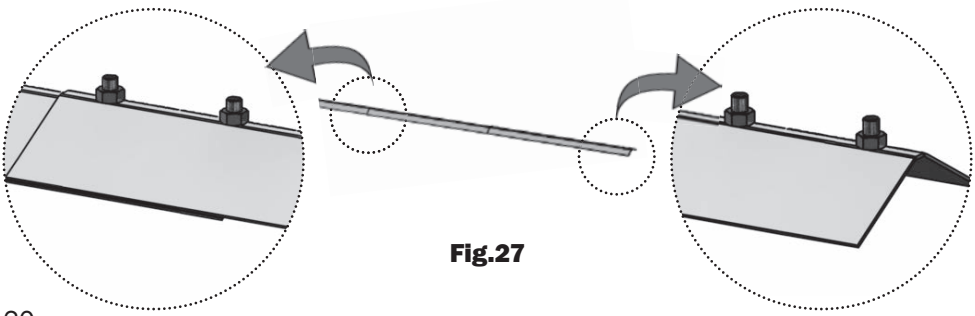


Fig.27

Cutting and fastening of coverage

tape on frame from the end and mount them with equal overlapping the arc edge. If side edges of polycarbonate are essentially nonparallel to the frame arc edges, it means that the frame is not leveled before screw tightening and this operation should be repeated. Prepare next sheets of polycarbonate in a similar way and mount them with overlapping previous sheet. Slide assembled ridge profile from end side for all length of greenhouse over polycarbonate sheets. Mount top wire bandage (6 m) over frame arc starting from middle of each sheet and tighten with bottom bandage using angles and screws M5x50 **(Fig. 28).**

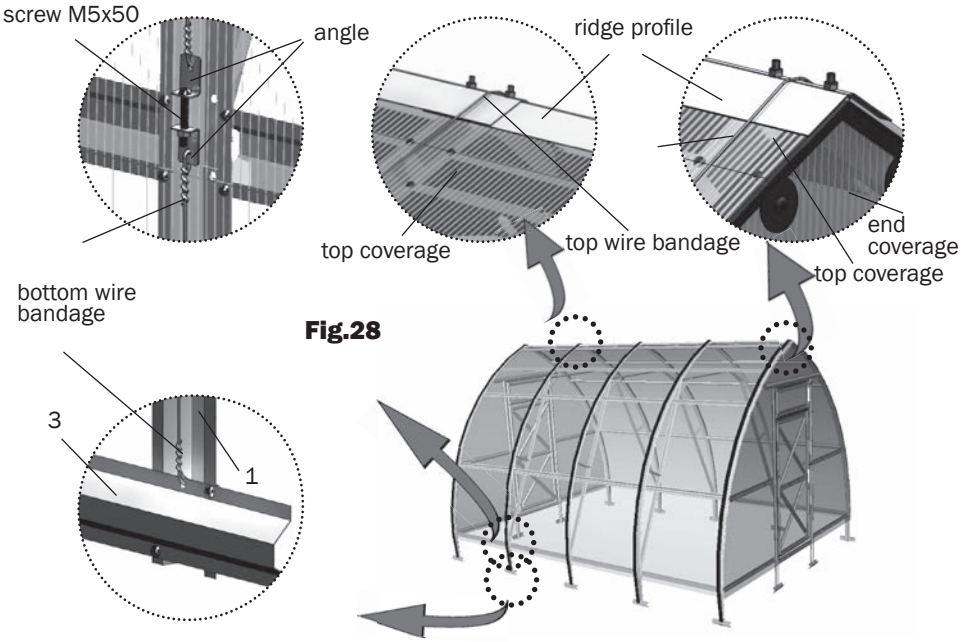
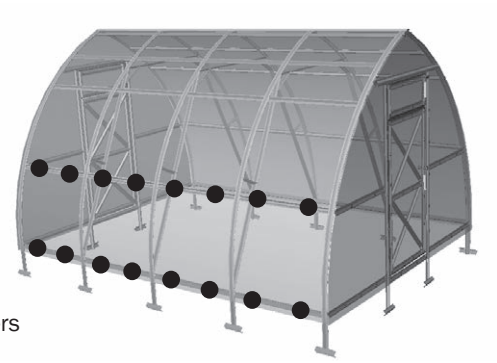


Fig.28

Cutting and fastening of coverage

11. Fasten coverage over all bottom elements **2** in accordance with **Fig.29**



● - washers

Fig.29

12. . Insert wire rotator for door closing in free holes (against the stop) through elements **12** and **17** by straight end from inside (**Fig. 30**). In this position, use the tube to bend linear part by hand into opposite direction (**Fig. 31**). Mount elastic headers on the rotator (**Fig. 32**). Such a construction provides elastic tightening of the door in closed position both from inside and outside of the greenhouse.

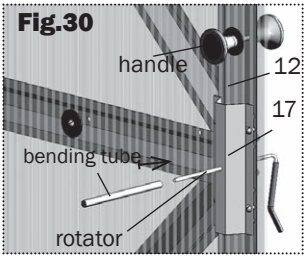


Fig.30

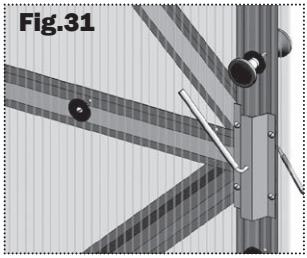


Fig.31

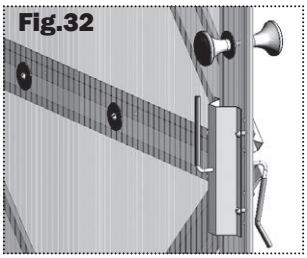


Fig.32

13. Wire rotator for small window locking is mounted like a door rotator.