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Manual
for
Greenhouse TITAN Arch 320

14-02-2021

Dear clients!

After making the decision of buying a greenhouse you received a carefully made item. Its framework is made from special (1mm of thickness and 78mm width) profiles produced from galvanized metal which are extremely strong.
Due to uncomplicated instruction this greenhouse is easy to construct.
Because of additional items, you will be able to accomplish your ideas.
We keep the rights to make variations associated with the improvements of technologies. Some pictures and instructions may be different because of that.
We wish you a lot of joy and success with our greenhouse.

Attention!

Always use protective work measures (safety gloves, clothes) when constructing the framework of the greenhouse and working with polycarbonate cover.
Tools you will need for the construction:

- Hexagon wrench with the diameter of 8 mm or wrench with open end.
- Cross-head screwdriver or screwdriver for battery
- Shovel to dig pits
- Spirit level to measure equability of the ground.
- Rope to measure the diagonal
- Knife to cut polycarbonate sheets

If necessary, follow the instructions from local building area.
In case of strong wind or storm close the windows and doors.
Before starting the construction, you should read all the instruction at least once and understand different sections and profiles. This is a helpful guide for you. Compare the list of parts with the parts in the package. Then sort out the sections and leave them in separate places.
It is highly recommended to screw the screws easily with hands at first – if needed, you will be able to rotate sections. After the construction, you should measure equability of the framework and only then tighten the screws.

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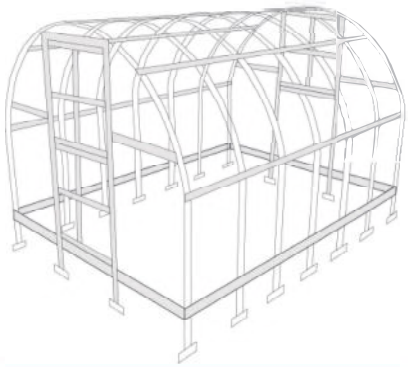

Installation instruction **PARTS LIST**

Greenhouse base pack

* THE NUMBER OF BOXES DEPENDS ON THE PURCHASED M² SIZE GREENHOUSE!

* Greenhouse area		6m²	12m²	18m²	24m²	30m²	36m²
Box 1/4	BASE Profiles packaging	1	1	1	1	1	1
Box 2/4	BASE Packaging of archs	1	1	1	1	1	1
Box 3/4	BASE Accessories packaging	1	1	1	1	1	1
Box 4/4	BASE Polycarbonate packaging	1	1	1	1	1	1
Box 1/4	EXTENSION Profiles packaging	—	—	1	2	3	4
Box 2/4	EXTENSION Packaging of archs	—	—	1	2	3	4
Box 3/4	EXTENSION Accessories packaging	—	—	1	2	3	4
Box 4/4	EXTENSION Polycarbonate packaging	—	—	1	2	3	4
TOTAL PACKAGING		4	4	8	12	16	20

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Table NO.1

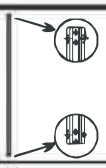
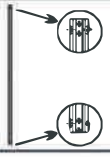
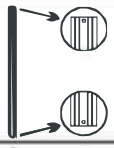
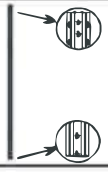
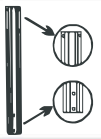
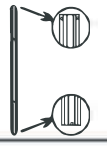
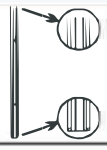
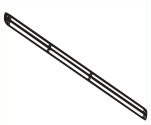
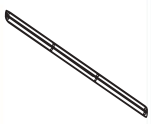
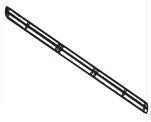
NR.	Name	Length (mm)	Photo	Box 1/4 BASE Profiles packaging		Box 1/4 EXTENSION Profiles packaging
				Greenhouse area		2m EXTENSION
				$6m^2$	$12m^2$	
				2400x110x110 mm 38,3 kg	2400x140x110 mm 49,2 kg	2000x100x60 mm 12,5 kg
				Number in package (pcs.)		
NR. 5	Fastenings of the arches - crossbars	2030		5	10	–
NR. 6	Fastenings of the arches - crossbars for extention	2030		–	–	5
NR. 7	Profile for the fastening	1465		2	4	2
NR. 8	Stilt of the door -window	2050		4	4	–
NR. 8A	Fixing the door-window pillar to the ground	400		4	4	–
NR. 9	Side reinforcements of the front-rear part	900		4	4	–
NR. 10	Transvere stand of doors-windows	985		3	3	–
NR. 11	Sides of the foundation basis	2000		2	4	–
NR. 12	Extension of the side of the foundation basis	1965		–	–	2
NR. 13	Front and back parts of the foundation basis	3000 (or 1500)		2 (4)	2 (4)	–

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Table NO.1

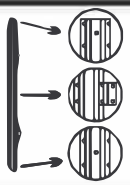
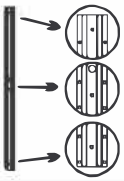
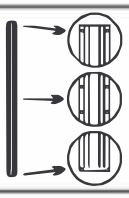
NR.	Name	Length (mm)	Photo	Box 1/4 BASE Profiles packaging		Box 1/4 EXTENSION Profiles packaging
				Greenhouse area		2m EXTENSION
				6m²	12m²	
				2400x110x110 mm 38,3 kg	2400x140x110 mm 49,2 kg	2000x100x60 mm 12,5 kg
				Number in package (pcs.)		
DOOR-WINDOW						
DOOR NR.1	Part of the door with loop	930		3	3	–
DOOR NR.2	Part of the door with handle	930		3	3	–
DOOR NR.3	Bottom/top part of the door (horizontal part)	885		9	9	–
DOOR NR.4	Transverse part of the door (vertical parts)	400		6	6	–

Table NO.2

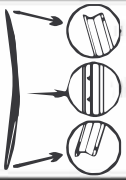
NR.	Name	Length (mm)	Photo	Box 2/4 BASE Packaging of archs		Box 2/4 EXTENSION Packaging of archs
				Greenhouse area		2m EXTENSION
				6m²	12m²	
				1800x340x70 mm 18 kg	1800x340x70 mm 31 kg	1800x340x70 mm 13,8 kg
				Number in package (pcs.)		
NR. 1	Short arch (top)	1820		4	7	3

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Table NO.2

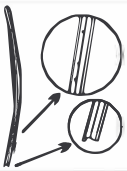
NR.	Name	Length (mm)	Photo	Box 2/4 BASE Packaging of archs		Box 2/4 EXTENSION Packaging of archs
				Greenhouse area		2m EXTENSION
				6m²	12m²	
				1800x340x70 mm 18 kg	1800x340x70 mm 31 kg	1800x340x70 mm 13 kg
				Number in package (pcs.)		
NR. 2	Side arch (left, right, top)	1200		8	14	6
NR. 3	Side lower arch stand (left, right)	1310		8	14	6
NR. 4	Fixture to the ground	200		12	18	6

Table NO.3

NR.	Name	Length (mm)	Photo	Box 3/4 BASE Accessories packaging		Box 3/4 EXTENSION Accessories packaging
				Greenhouse area		2m EXTENSION
				6m²	12m²	
				400x200x160 mm 4,6 kg	400x200x160 mm 5,3 kg	100x130x90 mm 0,7 kg
				Number in package (pcs.)		
NR. 14	Angles of the foundation			4	4	–
NR. 15	Plates for linking the foundation (if the front and rear of the foundation base is 1500x2)			– (+4)	6	2
NR. 16	Srews M5-12 with inlet capping	I-12		279	369	90

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Table NO.3

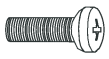
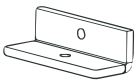
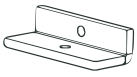
NR.	Name	Length (mm)	Photo	Box 3/4 BASE Accessories packaging		Box 3/4 EXTENSION Accessories packaging
				Greenhouse area		2m EXTENSION
				6m²	12m²	
				400x200x160 mm 4,6 kg	400x200x160 mm 5,3 kg	100x130x90 mm 0,7 kg
				Number in package (pcs.)		
NR. 17	Srews M5-40	I-40		100	126	26
NR. 18	Srews M5-16 for polycarbonate fixation to plates and angles	I-16		19	19	—
NR. 19	Nut M5			398	514	116
NR. 20	Interim transparent			124	154	24
NR. 21	Handle			3	3	—
NR. 22	Fixation angles of polycarbonate and stands (big angle)			4	4	—
NR. 23	Fixation angles of polycarbonate and stands (small angle)			18	18	—
NR. 24	Plates for attaching polycarbonate			5	5	—
NR. 25	Protective sealing tape of plates for doors	m		5	5	—
NR. 26	Plastic door opening handle			2	2	—

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Table NO.3

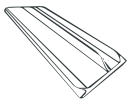
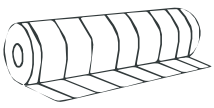
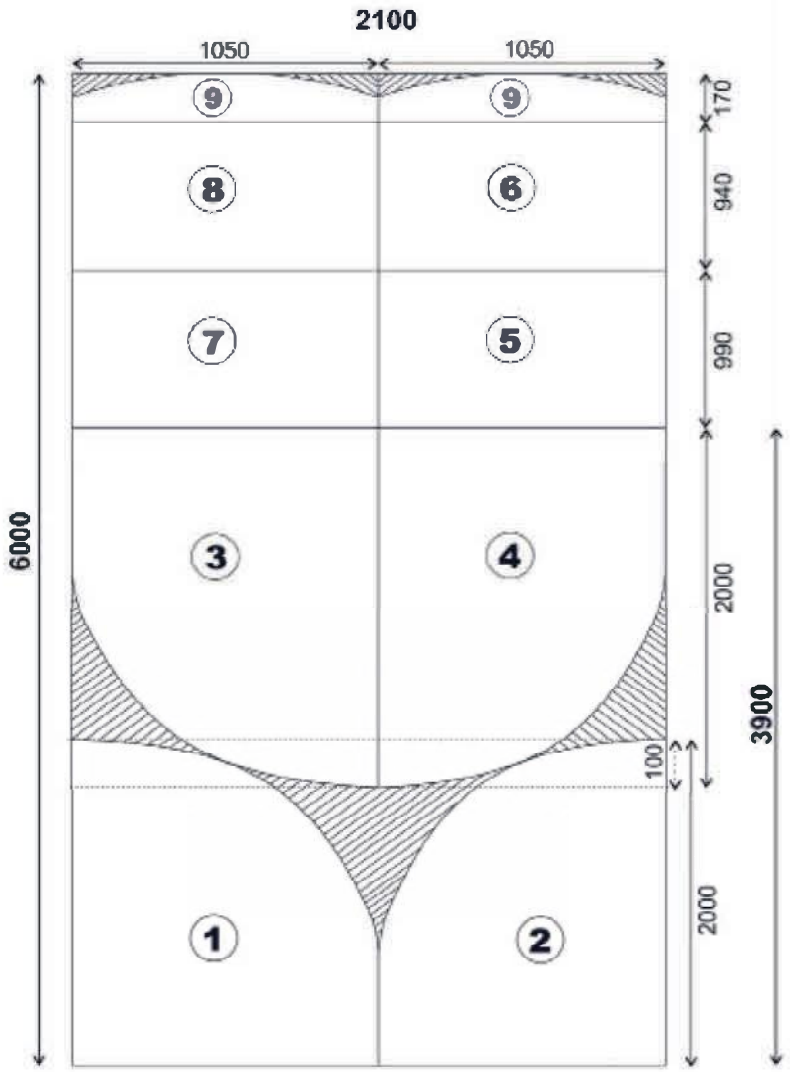
NR.	Name	Length (mm)	Photo	Box 3/4 BASE Accessories packaging		Box 3/4 EXTENSION Accessories packaging
				Greenhouse area		2m EXTENSION
				$6m^2$	$12m^2$	
				400x200x160 mm 4,6 kg	400x200x160 mm 5,3 kg	100x130x90 mm 0,7 kg
				Number in package (pcs.)		
NR. 27	Eyebolt			2	2	–
NR. 28	Sealing rubber	m		12	12	–

Table NO.4

Name	Length (mm)	Photo	Box 4/4 BASE Polycarbonate packaging		Box 4/4 EXTENSION Polycarbonate packaging
			Greenhouse area		2m EXTENSION
			$6m^2$	$12m^2$	
			2100x700x700 mm 16,38 kg	2100x700x700 mm 24,57 kg	2100x600x600 mm 8,19 kg
			Number in package (pcs.)		
Polycarbonate	2100 x 6000 mm		2	3	1

Scheme for cutting polycarbonate

Correctly separate sides of the polycarbonate. Attach the side with UV protection to the outside. UV protection layer is covered with the tape with note signs, while other side (attaching to the inside) is covered with the clear sheet. YOU MUST USE GLOVES WHILE CUTTING! It is recommended to cut sheet with electric disc saw, saw or sharp knife.



-1-; -2-; -3-; -4-; Side parts

-5- The top part of the door

-6- Bottom part of the door

-7- Window

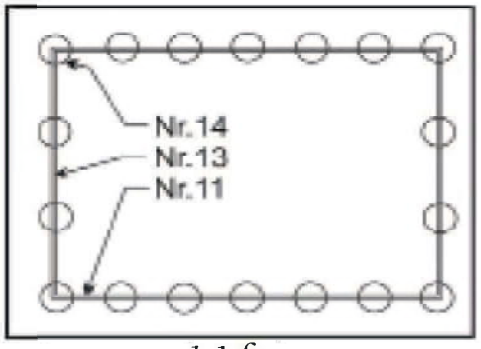
-8- Bottom of the window

-9- Upper polycarbonate of the window of the door

ATTENTION! If you received 2,10x6,00 m sheets and additionally 1,05x2,00 m, you shouldn't cut big sheets like it is shown in the scheme.
Big 2,10x6,00 m sheets are used for roof , 1,05x2,00 m sheets are used for ends, door and window. Follow the measurements shown in the table "Dimensions of polycarbonate"

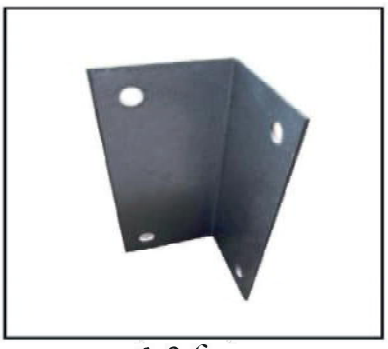
Installation instruction:

1. For the construction of the foundation basis you should use: Front and back parts of the foundation basis (13), sides of the foundation basis (11). You should connect all 4 parts and make a rectangle. To make a rectangle use: angles of the foundation (14), screw the parts together with screws M5-12 (16), internal screws M5 (19) (1.1 - 1.4 fig.).



1.1 fig

1.2 fig

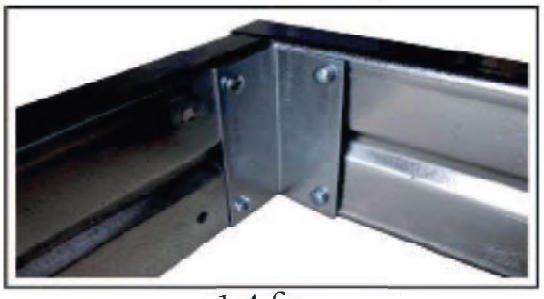


1.3 fig

For bigger than 12m² greenhouse, in order to increase the length of the basis Plates for linking the foundation (15) are used. They are screwed from both sides with screws M5-12 (16), internal screws M5 (19) (2.1 fig.).

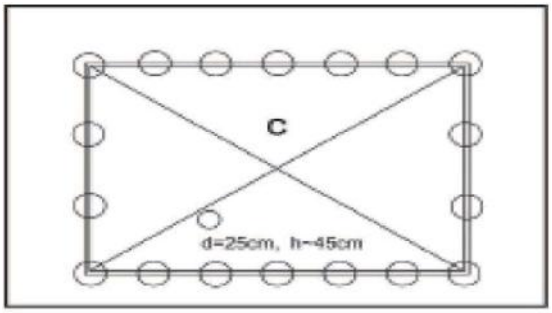
If the length of the greenhouse is 6m - foundation basis is connected: 2m (11) + 1.965m extension of the foundation basis (12) + 2m (11) (2.1 fig).

If the length of the greenhouse is 8m - foundation basis is connected: 2m (11) + 1.965m extension of the foundation basis (12) + 1.965m (12) + 2m (11)(2.1 fig).



1.4 fig

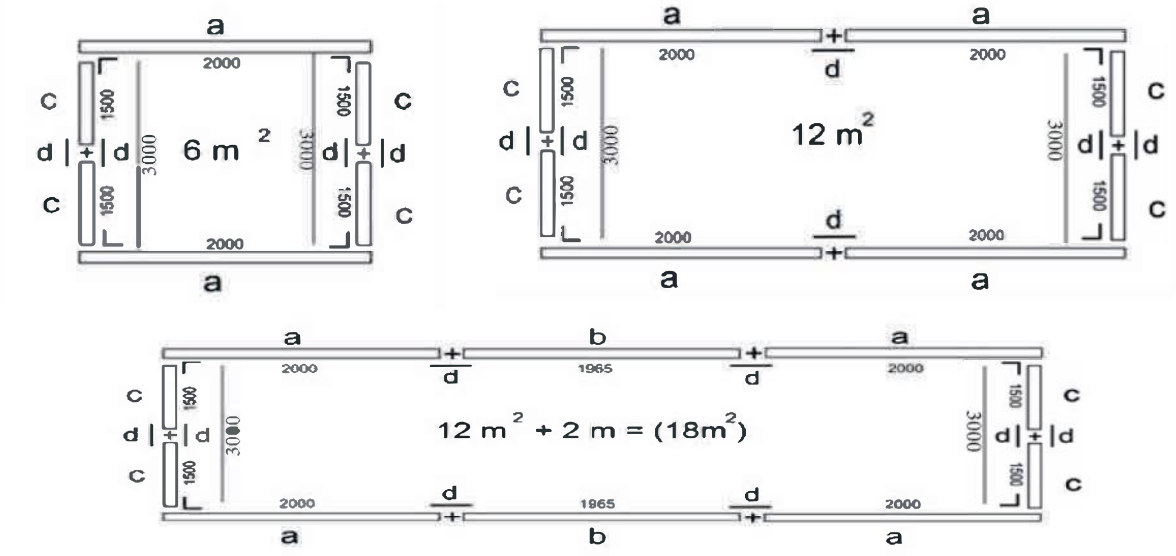
2. Measure the diagonal of the foundation basis. Lengths of the diagonals must be equal. If they are equal – tighten the screws of the foundation basis (1.5 fig.).



1.5 fig

3. Dig pits (25cm diameter, 40cm depth) for digging in Side – bottom stilt of the arch (NO. 3). Dig them along the perimeter of the foundation basis, near the fastening points marked on the foundation basis (2 fig.).

2 fig



3.1 fig

NOTE: If the sides of the foundation basis was received not 4 meters long, please look installiation instruction at this page.

	Name	Length, mm			
			6 m²	12 m²	extension 2 m.
a	Sides of the foundation basis (11)	2000 mm	2	4	-
b	Extension of the side of the foundation basis (12)	1965 mm	-	-	2
c	Gront and back parts of the foundation basis (13)	3000 / 1500 mm	2 / 4	2 / 4	-
d	Plates for linking the foundation (15)		0 / 4	2 / 6	2

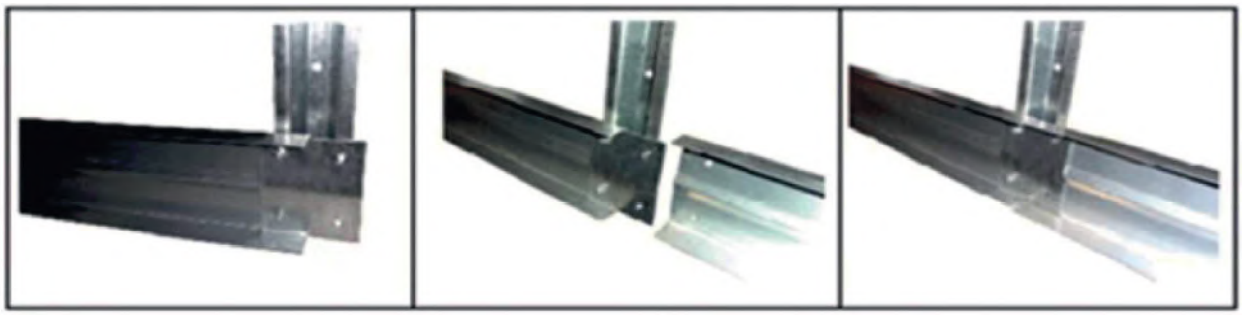
If greenhouse is bigger than 6m2, for the extension of the foundation basis need to use plates for linking the foundation. Need to put in one side and fix with screws M5-12 and M5 nuts (2.1 fig).

*If greenhouse 4 m – foundation basis need to connect: 2000mm (a) + 2000 mm (a)

*If greenhouse 6 m – foundation basis need to connect: 2000mm (a) + 1965mm (b) + 2000mm (a)

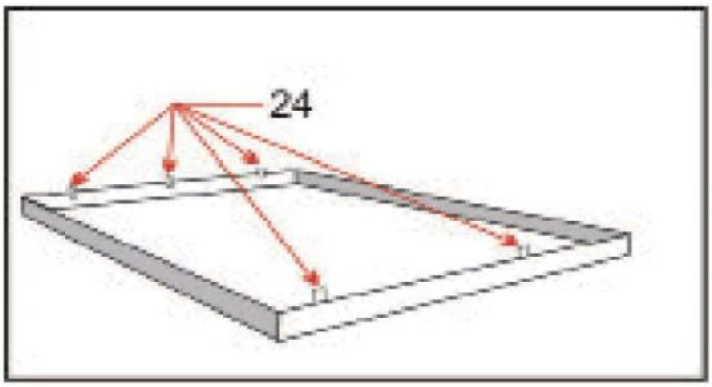
*If greenhouse 8 m – foundation basis need to connect: 2000mm (a) + 1965mm (b) + 1965mm (b) + 2000mm (a)

If you received the front and rear parts of the foundation 4 pcs. After 1500 mm, they are installed as follows: 1500 mm (c) + 1500 mm (c), use plates for linking the foundation from both sides and fix with screws M5-12 and M5 nuts.

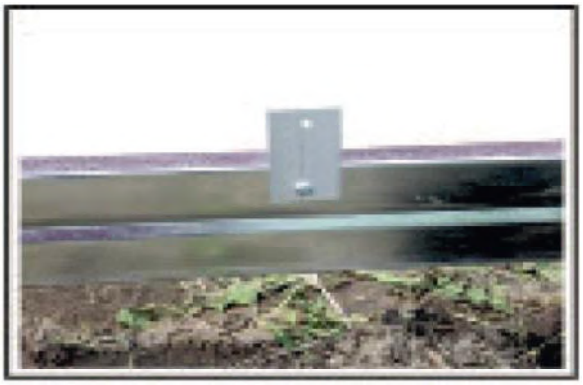


3.2 fig

4. To the top of front and back parts of the foundation basis (13) fasten the Plates for attaching polycarbonate (24) with M5-12 screws (16) and internal screws M5 (19) (4.1 - 4.2 fig.).

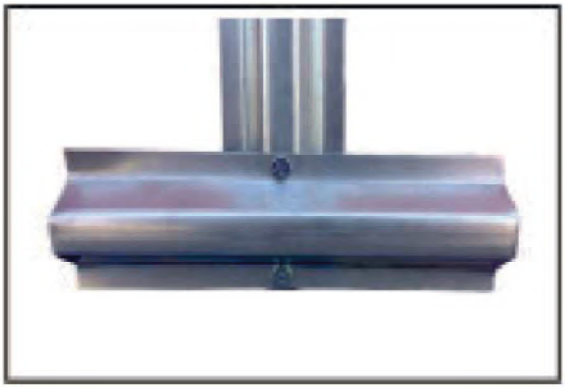


4.1 fig



4.2 fig

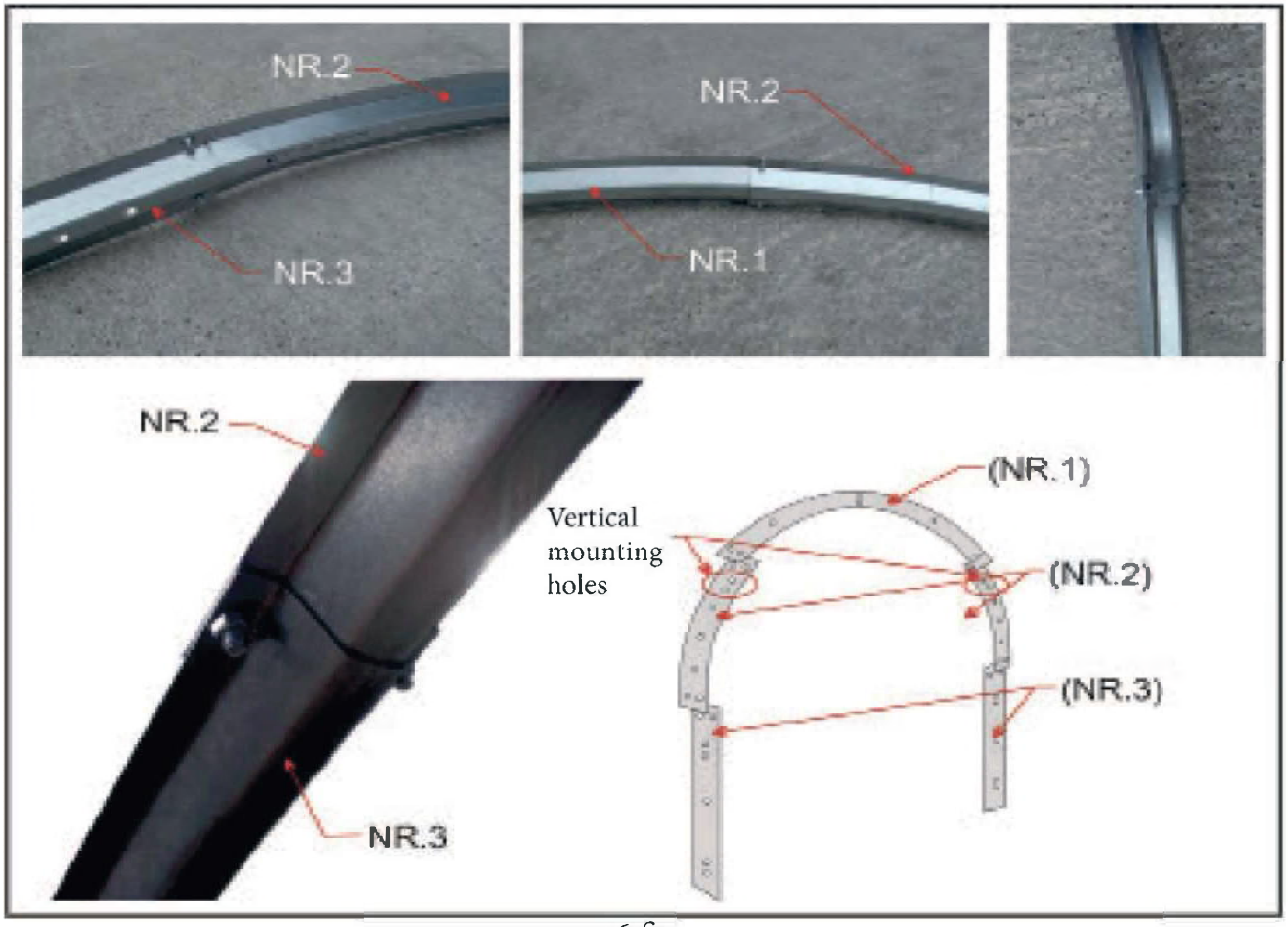
5. Preparing the stilt for digging in. To the bottom of Side – bottom stilt of the arch (NO. 3), screw Pillars to the ground (NO. 4) with the screws M5-12(16) and internal screws M5 (19) (5 fig.).



5 fig

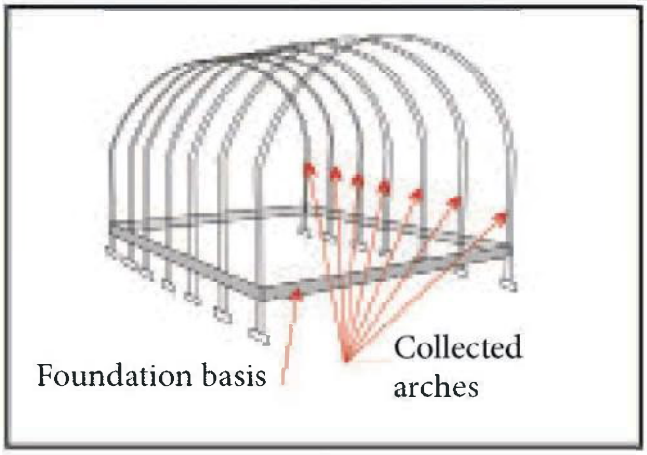
6. Construction of arches. The most comfortable way is to collect all arches on the ground. To Side – bottom stilt of the arch (NO. 3) connect side arches (NO. 2) from the both sides. Connect short arch (NO. 1) on top, in the middle to the side arches. Use screws (16) and internal screws (19) (6 fig.).

REMARK: Every upper part covers the part that is underneath. End of the part NO. 2 which has 2 vertical connecting holes (for fastenings of the arches – crossbars (NO.5)) is connected to the part NO. 1



6 fig

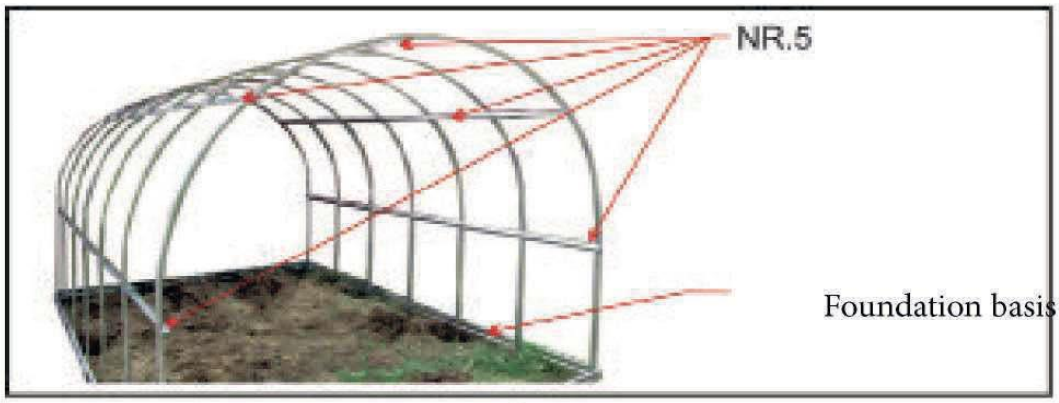
7. To already constructed foundation basis screw arches with screws M5-12 (16) and internal screws (19) (7.1 - 7.2 fig.).



7.1 fig

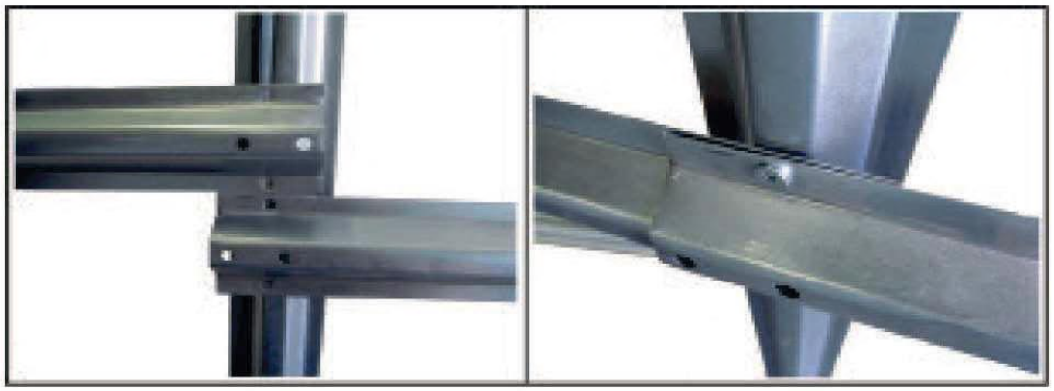
7.2 fig

8. To already constructed and screwed to the foundation arches, you should attach five fastenings of the archs – crossbars (NO. 5) with screws M5-12 (16) and internal screws (19) (8.1 fig.).



8.1 fig

For bigger than 6m² arch greenhouse TITAN Arch 320, additional crossbars are used to strengthen arches (8.2 fig.).



8.2 fig

9. To the front and back arches you should screw fastening angles of the stilt and polycarbonate. On the each side you should use 9 pcs small angles (23) and 2 pcs big angles (22).

Positions of angles measuring from the foundation from left to right (Measured with upright angle) (9.1 - 9.3 fig.):

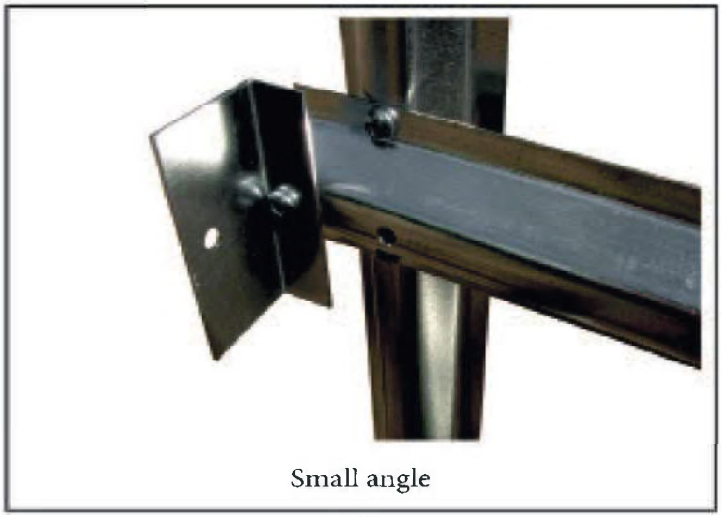
1) 5 cm big angle (22). Narrow part to the front
2) 83 cm small angle (23). Wide part to the front
3) 109 cm small angle (23). Wide part to the front
4) 170 cm small angle (23). Wide part to the front
5) 196 cm small angle (23). Wide part to the front
6) 202 cm small angle (23). Wide part to the front
7) 196 cm small angle (23). Wide part to the front
8) 170 cm small angle (23). Wide part to the front
9) 109 cm small angle (23). Wide part to the front
10) 83 cm small angle (23). Wide part to the front
11) 5 cm big angle (22). Narrow part to the front

10. Stilt of the door – window (No. 8) should be attached to foundation basis and collected arches with the screws M5-12 (16) and internal screws (19). With the front of the foundation basis (13) it is attached directly with the screws M5-12 (16) and internal screws (19). Arch on top (No. 1) is attached with Angles of attaching polycarbonate and stilt (23) (10.1 - 10.2 fig).

9.1 fig

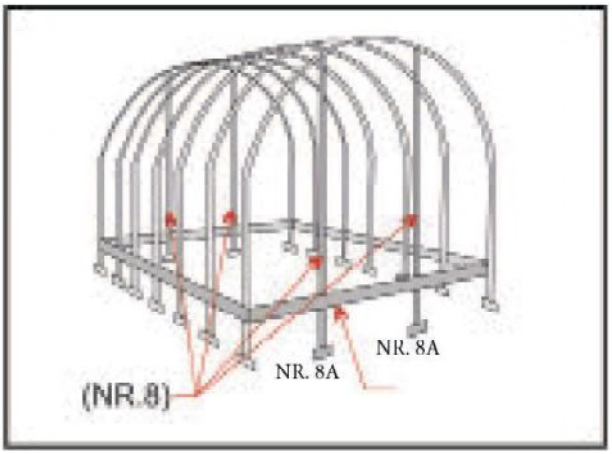
Big angle

9.2 fig

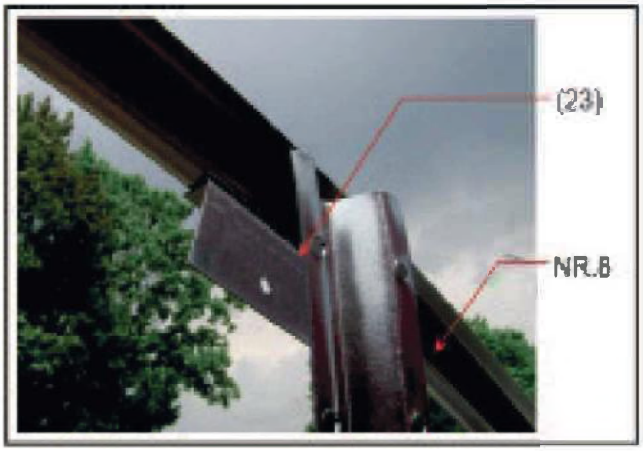


Small angle

9.3 fig

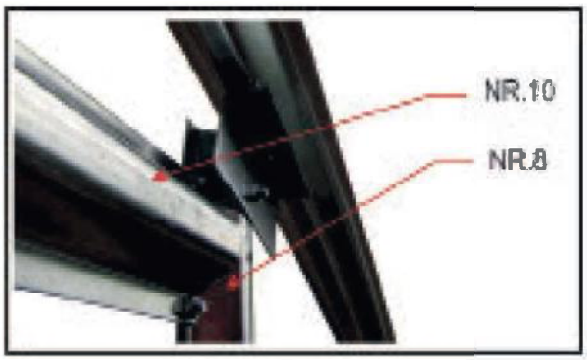


10.1fig

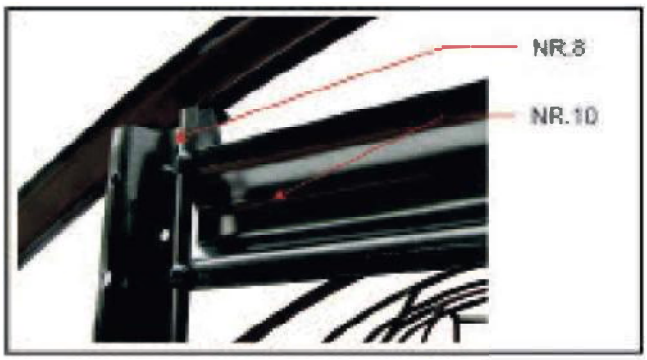


10.2 fig

11. By the part (NO.8), screw Transversal stilt of the door – window 985mm (No. 10) to Stilt of the door – window. Use screws M5-12 (16) and internal screws M5 (19)(11.1 - 11.2 fig.).

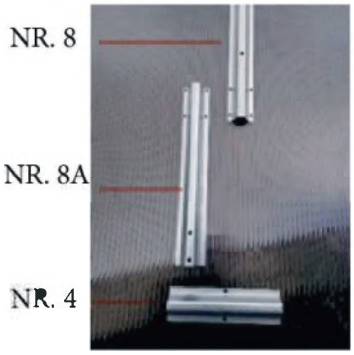


11.1 fig

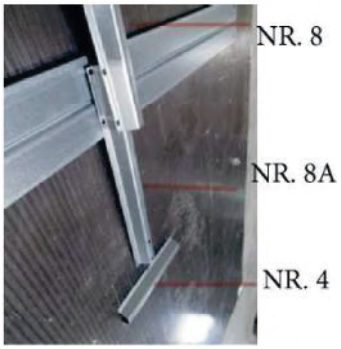


11.2 fig

11.1 Stilt of the door-window consists of and is connected by three parts no. 8 (2050 mm) + Nr. 8A (400 mm) + Nr. 4 (200mm) (figure 11.3). Attach part no. 4 to part no. 8A with bolts M5-12 (16) and nuts M5 (19). The assembled part is then assembled together with part no. 8 Fasten to the front and rear of the base with bolts M5-12 (16) and nuts M5 (19) (fig. 11.4).



11.3 рис

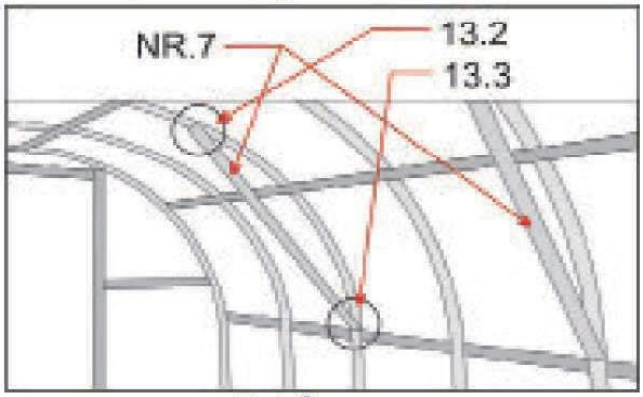


11.4 рис

12. By the part (NO.8) and angles of attaching polycarbonate and stilt (Small angle) (23), screw directly Side fastenings of the front – back part 900mm (No. 9) to Stilt of the door – window(No. 8) and Angles of attaching polycarbonate and stilt (Small angle) (23). Use screws M5-12 (16) and internal screws M5 (19) (12 fig.)

12 fig

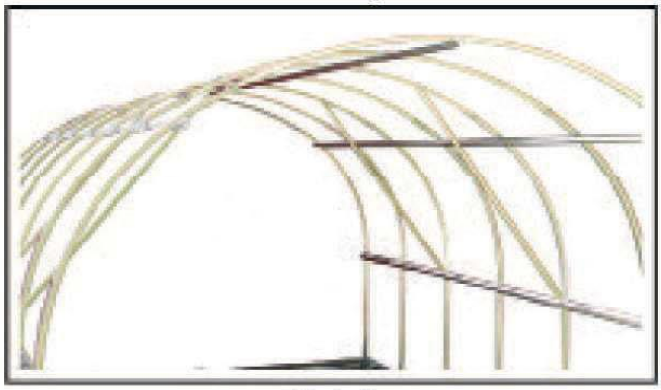
13. Firstly, screw profiles for fastening 1465mm (No. 7) with screws M5-12 (16) and internal screws M5 (19)to the side arch in height of 1,96m from the foundation basis. Another part of the profile should be placed on fastening of the arch – crossbar (No. 5) and screwed with screws M5-12 (16) and internal screws M5 (19) (13.1-13.4 fig).
NOTE: It is recommended to screw with one M5-40 screw through all three parts: side stilt, fastening of the arch – crossbar, profile for fastening.



13.1 fig


13.2 fig

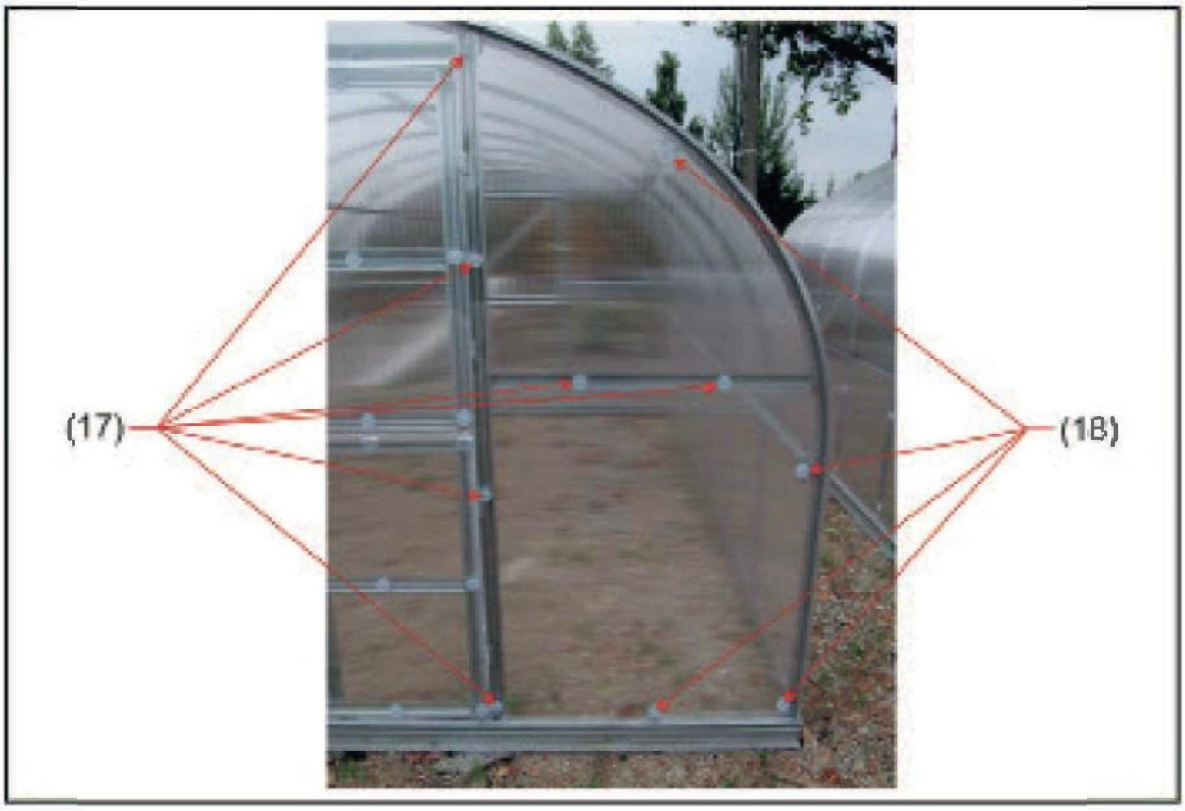

13.3 fig


13.4 fig

1 fastening profile is designed to strengthen one 2m length segment on the both sides. I.E. Greenhouse's length is 2m – 2pcs of fastening profiles (one on each sides); Greenhouse's length is 4m – 4pcs of fastening profiles (two on both sides) and etc.

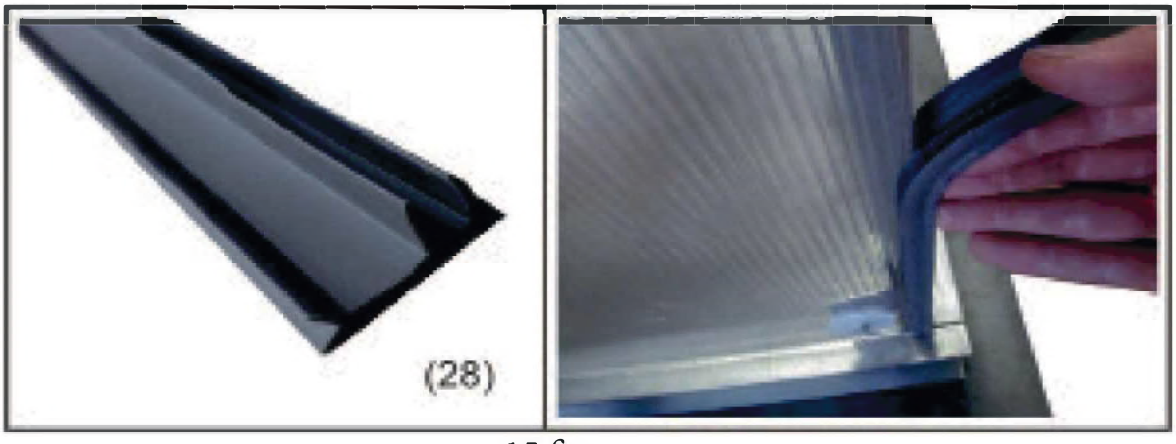
14. After collecting the framework of the greenhouse, cut the polycarbonate based on the given measurements and attach it to the framework. Attach sheets of polycarbonate (Scheme for cutting polycarbonate – 1; 2; 3; 4) – attach side parts to polycarbonate and angles of attaching polycarbonate and stilt (22, 23) and plates for attaching polycarbonate (24)with screws M5-16 (18) and internal screws M5 (19) and gasket slides (20). Also, attach it to stilt of the door - window and crossbar (No. 8 No. 10) and side fastenings of the front – back part (No. 9) with screws M5-40 (17) and internal screws M5 (19) and gasket slides (20) (14 fig.).

Correctly separate sides of the polycarbonate. Attach the side with UV protection to the outside. UV protection layer is covered with the tape with note signs, while other side (attaching to the inside) is covered with the clear sheet. YOU MUST USE GLOVES WHILE CUTTING!
it is recommended to cut sheet with electric disc saw, saw or sharp knife.



14 fig

15. If sides of the polycarbonate are over the framework of arches, cut them along the carcass. Place gum to seal gap between the wall and the roof (28) on the top of the sheets and only then place upper part of the polycarbonate (-10- 2100x6000mm) (15 fig).

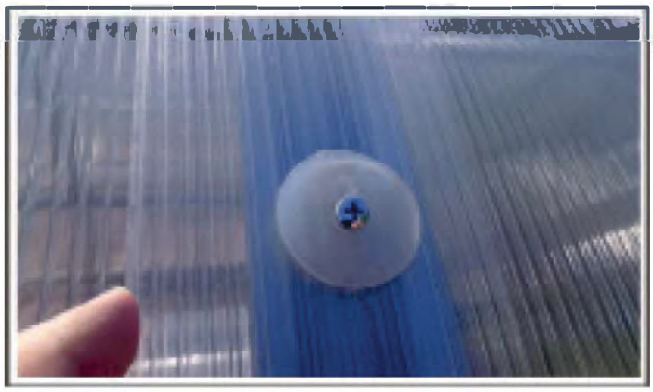


15 fig

16. Top parts (10) should be placed from the bottom to the top along the one side. Polycarbonate is attached with screws M5-12 (16) and internal screws M5 (19) and gasket slides (20). On one band of the arch are are 5 (five) attachment points. Attach ONLY on those points. Another side must be attached from the top to the bottom. If the sheet of polycarbonate is too long, cut it along the foundation basis (11). The front and back polycarbonate sheets should be flush with the edges of the foundation (16 fig.).

16 fig

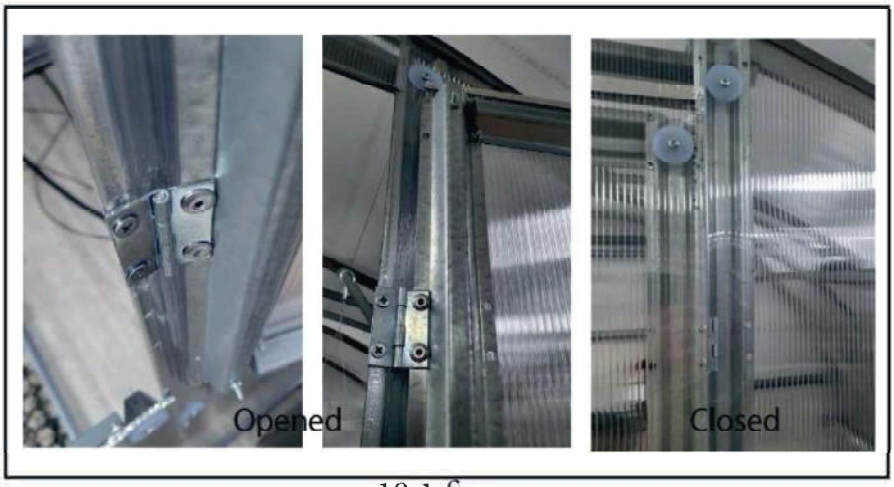
17. Another sheet of polycarbonate (10) should be placed on top of the fitted sheet. Screw it only on attachment points same like in the step 16. Polycarbonate sheets should be equal to the side of foundation basis both in front and back. The front and back polycarbonate sheets should be flush with the edges of the foundation (17 fig.).



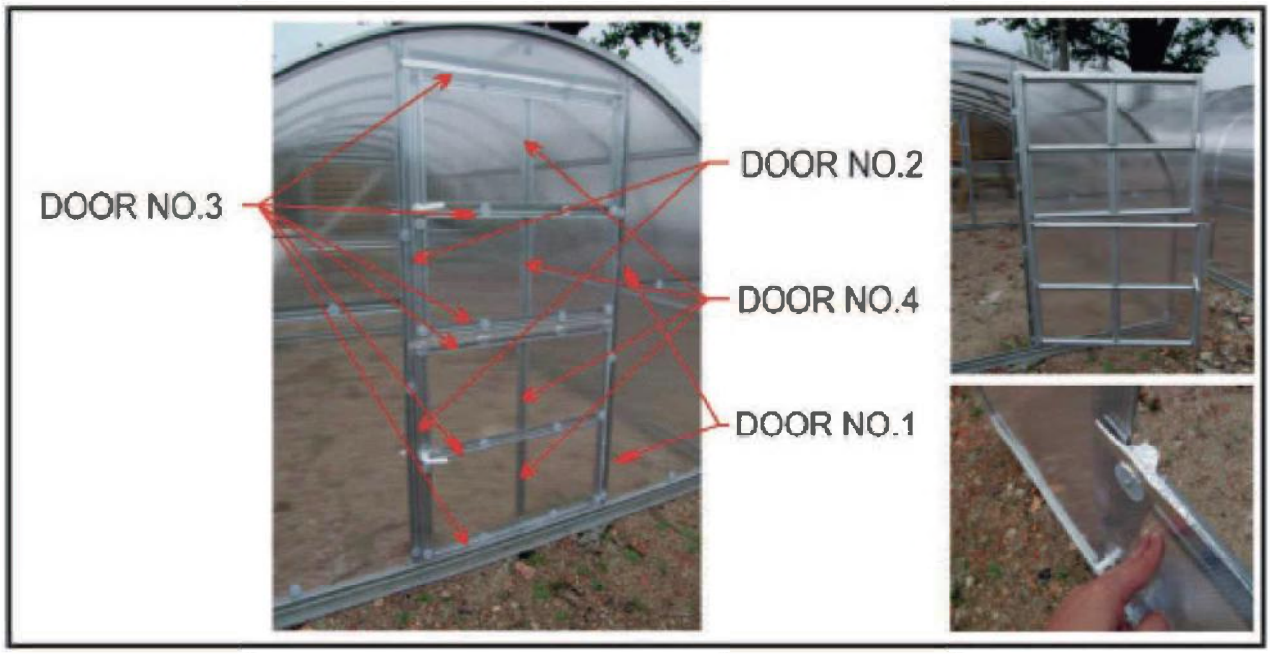
17 fig

18. Construction on door-window. All parts packed in door equipment should be joined to square. (DOOR No. 1; DOOR No. 2; DOOR No. 3) with screws M5-12 (16) and internal screws M5 (19). Screw Transverse part of the door to the constructed framework. Part of the door with hinges must be screwed to Stilt of the door - window with screws M5-12 (16) and internal screws M5 (19) (18.2 fig.).

NOTE: Door must be attached to the stilt of the door while being opened and with the extended hinge to the hole, through polycarbonate (18.1 fig.).



18.1 fig



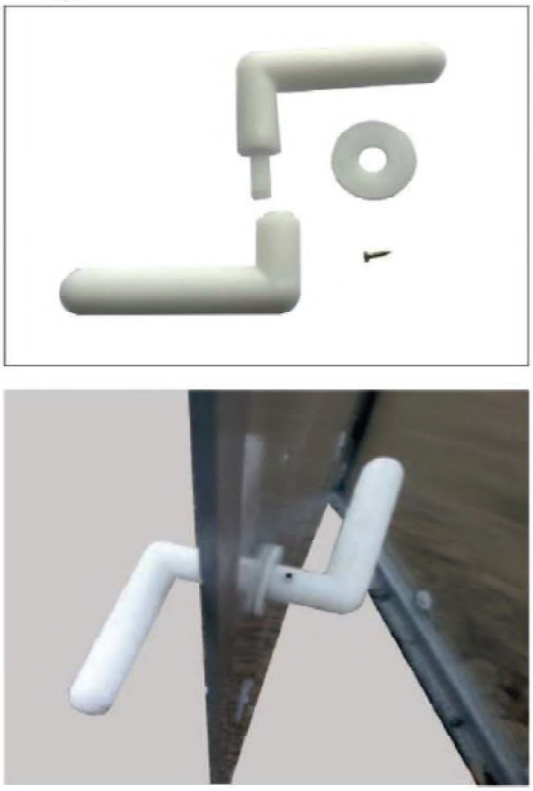
18.2 fig

19. Based on the given scheme, cut the polycarbonate (5;6;7;8;9)

Polycarbonate parts of the door window must be fitted only when the door hinges are attached to the framework of the greenhouse.

Polycarbonate sheets of door – window are attached with screws M5-12 (16) and internal screws M5 (19) and gasket slides (20) to the door frame.

Polycarbonate ends of the door-window must be sealed with protective band for sealing plates (25). Join handles (21) to its place (19 fig.). Make a hole in polycarbinate sheet with sharp knife. Cut X shaped holes opposite the metal holes. Make a hole from the outside of the cover.



19 fig

20. Screw the screw with loop (27) on its place on the same level as the door handle. Make a loop from the given plastic door opening handle (26) (20 fig.).

20 fig

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