



Royal Europa

Modern Building Technologies



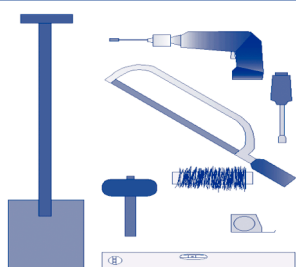
Royal Fencing

Assembly manual



Preparation of land before the fencing assembly

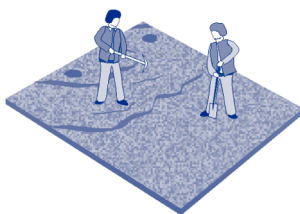
Fig. 1



A kit of tools includes:

- spade
- hand hack-saw (blade)
- mechanical screwdriver
- hand screwdriver
- mason's level with a plumb-line
- level hung on a string
- rubber hammer
- string
- measuring tape

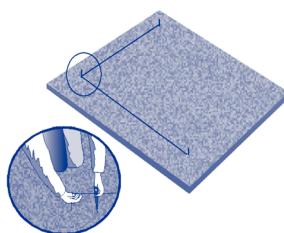
Fig. 2



I. Preparation of land

- remove any obstacles and level the land before assembling the fence
- if necessary, make a foundation
- to facilitate the assembly of the fencing remove bushes and high grass in the line of fence

Fig. 3



II. Staking out

- mark extreme points and places of bending in the fencing line by means of wooden stakes or a piece of chalk when the ground is hard (e.g. concrete) - Fig. 3 If the fencing is to be bent at the angle of 90, stake it out using a structure of the right-angled triangle of sides 60, 80, and 100 cm (on the sides of the fencing line mark sections of 60 cm on the one side and 80 cm on the other side of the bending point; a distance between ends of the measured sections should be 100 cm)

- mark locations of gates and wickets, if possible these points should be spaced so as a distance between them should be a multiple of a fencing module. A sales assistant can help to adopt the dimensions of the fence to real dimensions. (check if dimensions in the field are consistent with dimensions of the fencing) - Fig. 4

Fig. 4

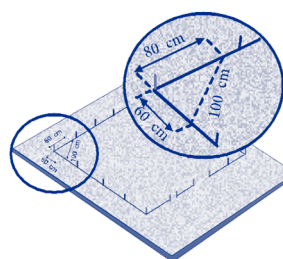
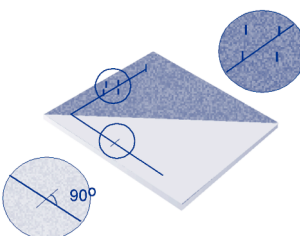
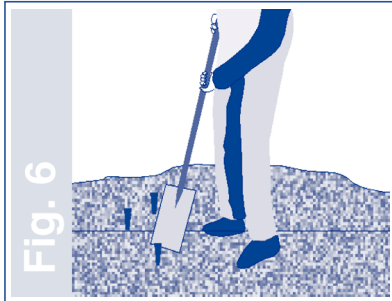


Fig. 5



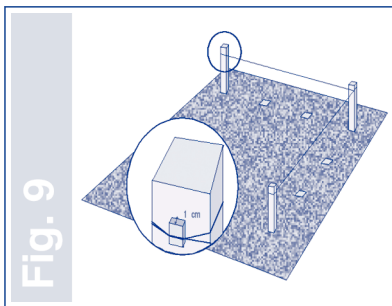
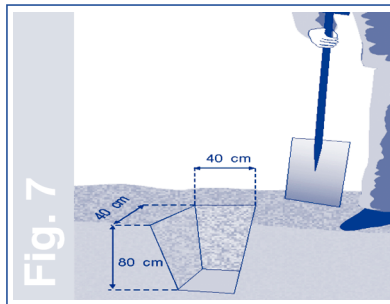
- determine places of assembly of fencing posts by marking the axis of the post perpendicular to the fencing line by means of stakes (or using a piece of chalk); place the stakes in such a way to allow digging a hole - about 0.5 m from the fencing line - Fig. 5



III. Assembly of posts

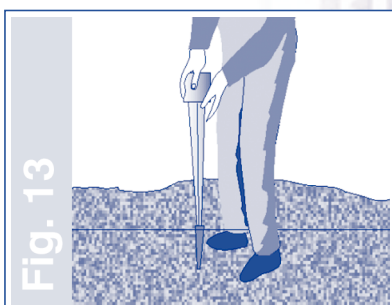
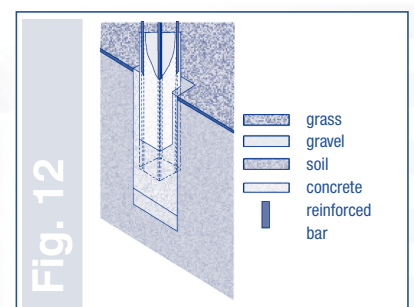
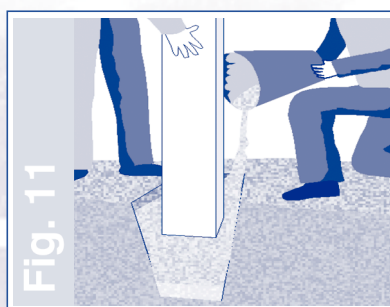
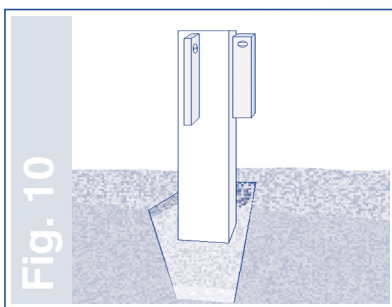
VARIANT 1. Assembly of posts in the ground using concrete

- dig holes of dimensions 40x40 cm and depth of 60-80 cm to assembly posts depending on a kind of the ground and the freezing zone - Fig. 6 and 7. The bottom of the hole should be filled with sand, 5-10 cm thick - Fig. 8



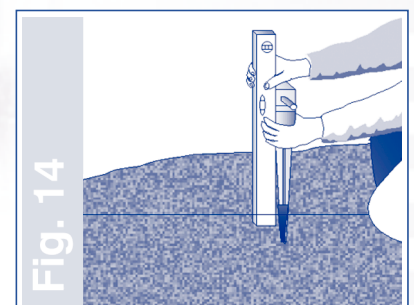
Stabilization of posts:

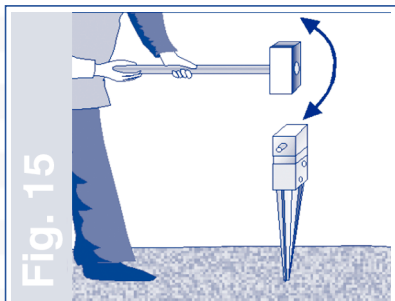
- mounting of posts should be started from the posts on which a gate and a wicket shall be installed
- upon their proper vertical setting and stabilization (as below) a string should be rolled out on the outside part of the fence and spacer washers of 1 cm thick (all washers of the same thickness) should be placed under the string, which shall facilitate setting of other posts in the same line - Fig. 9
- place posts vertically (check by means of a mason's level putting it on two perpendicular walls of a post) - Fig. 10, and then fill the hole and inside of each post with sand or a concrete mixture (when posts are filled with sand, corner and gate posts and every third post should be filled with concrete). Posts may be filled with sand or concrete up to 1/3 of their height (while gate posts should be additionally provided at least with two reinforced bars of diameter 10-12 mm in corners of a post) - Fig. 11, 12



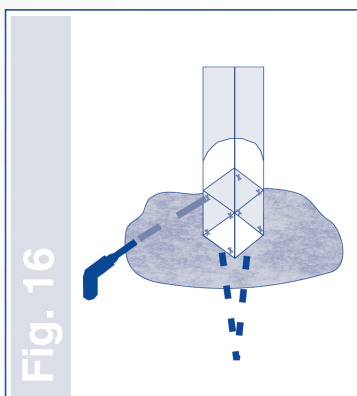
VARIANT 2. Assembly of posts using point-ended sleeve

- follow instructions in sec. I and II
- in a place prepared earlier for assembly purposes, force a point-ended sleeve into the ground by hand - Fig. 13
- thus prepared point-ended sleeve should be set by means of a mason's level - Fig. 14





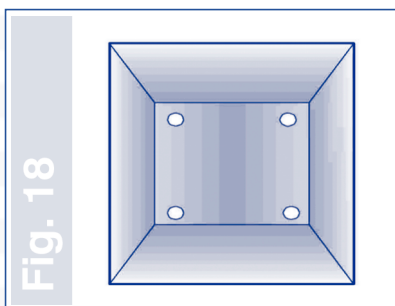
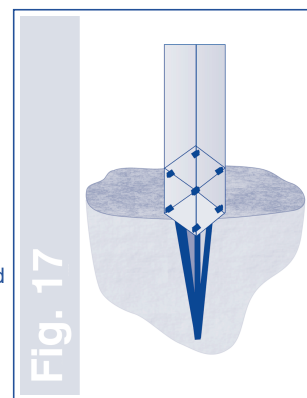
- then force the point-ended sleeve into the ground by means of a hammer and a wooden peg (ask for help another person to prevent losing the verticality) - Fig. 15



- then fix the post on the point-ended sleeve, draw the holes accordingly to the Figure 16 and by means of the drill \varnothing 5,5 mm make holes in the points marked before

- after drilling the holes, fix a post on the sleeve part above the ground watching the space of the holes, and fix the post to the sleeve by means of sheet screws

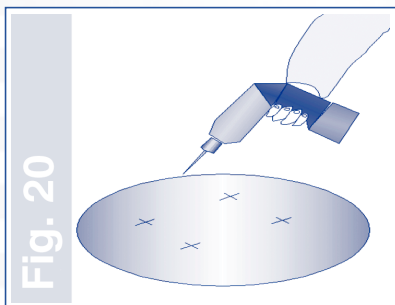
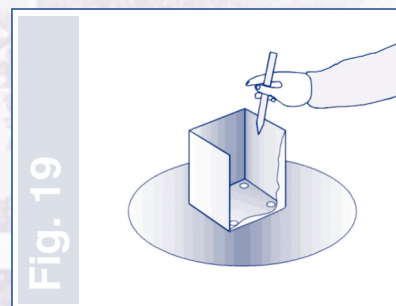
- fig. 17 shows a section of a proper assembly of a post and a point-ended sleeve



VARIANT 3. Assembly of posts using an anchor for fixing in concrete

- follow instructions in sec. I and II. Figure 18 shows a general view of the anchor

- in a place prepared for assembly purposes, place an anchor and mark in the ground places to drill holes - Fig. 19



- in marked places drill holes by means of an impact drill to fix rawlplugs (recommended are the rawlplugs with the dimensions 10 x 120 mm) - Fig. 20

Insert rawlplugs in prepared holes

- place an anchor and fix it to the ground by screws - Fig. 21

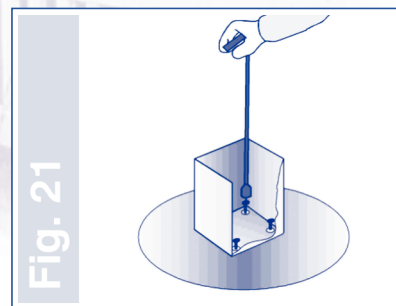
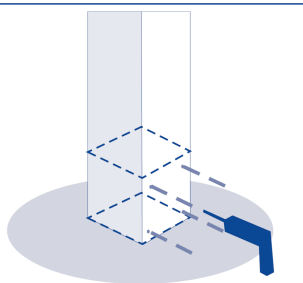


Fig. 22



- fix a post on the anchor part above the ground and drill the holes by means of a borer \varnothing 5,5 mm and fix the post to the anchor by means of self-piercing screws

Fig. 23

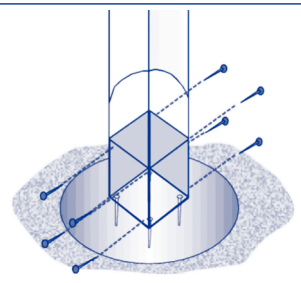
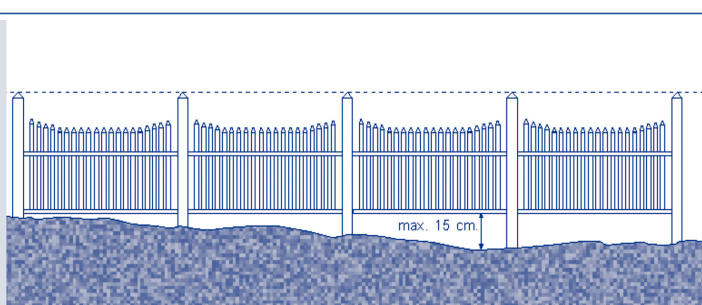


Fig. 24



IV. Measurement of post heights in a case of sloped land

NOTE: In case of doubts, please direct your questions to a sales assistant who shall advise you the best solution of any problem

1. Even slope

- when a difference of levels is slight (up to 15 cm), the fencing may be arranged in the same level or only one offset may be provided in the mid of the fence length (an offset is a half of the size of the level differences - A) - Fig. 24 and 25

Fig. 25

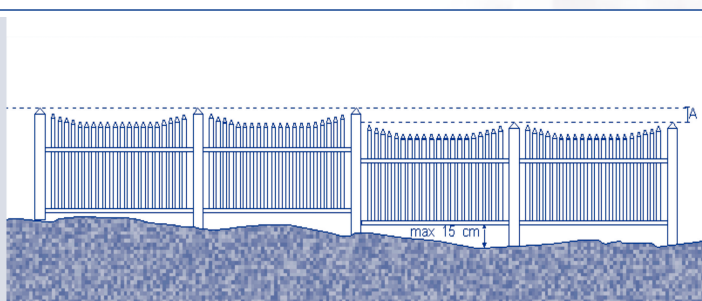
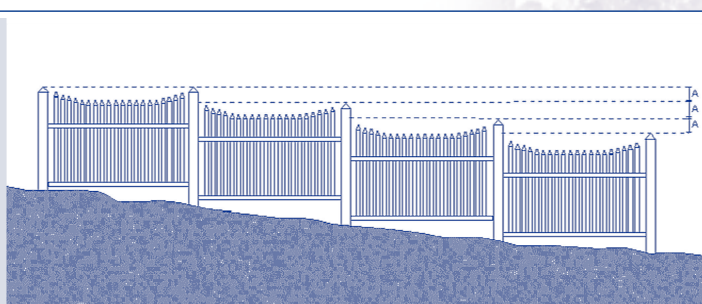


Fig. 26



- when a difference of levels is more than 15 cm, offsets should be provided evenly in each post; however if such offsets are smaller than 4 cm, it is recommended to provide an offset every several posts (so as its size is within 3 and 15 cm) - Fig. 26 and 27

Fig. 27

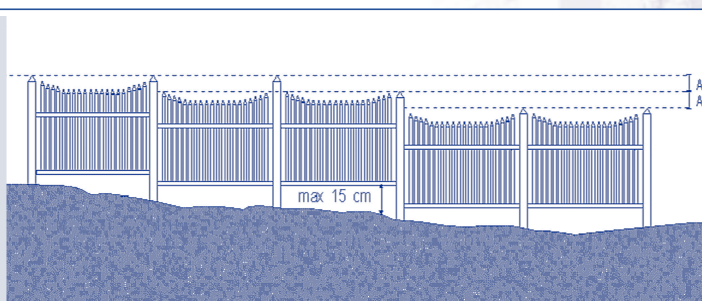
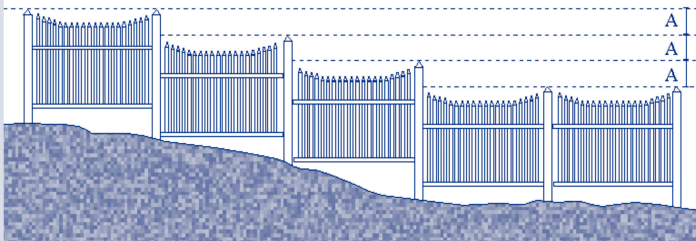




Fig. 28



2. Uneven slope

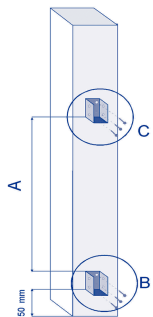
- before commencement of making the fencing level, if possible, level the land to make any slopes smoother
- offsets of the upper level of posts should be arranged in such a way that a segment of fencing fixed on a higher post near the ground does not extend above the upper edge of a lower post (in case of high offsets longer posts should be ordered) - Fig. 28

3. Locally uneven land

- to facilitate the assembly of fencing, it is recommended to level locally uneven land

ASSEMBLY OF THE FENCING

Fig. 29



V. Simple fencing, scalloped, with arch over, trapezium-like, pergola, balustrade-like fencing

NOTE: The interval of the posts should be enlarged by 6 mm, that means by the thickness of fasteners

1. Assembly of holders of a fencing section

- assembling of holders of a fencing section should be started from a post placed higher (in case of a sloped land)
- a lower holder (B) should be fixed in the height ensuring a minimum clearance between a fencing section and the ground
- a holder should be fixed by sheet screws (3,9 x 19 mm) to the post upon its location measurement
- repeat the same operation with regard to an upper holder (C) in a distance (A) complying with dimensions used in the assembly of a section - Fig. 29
- insert a fencing section in holders of one post, check its verticality, mark places to install holders in the other post and check if a section does not extend above the other post edge
- place the section aside and fix holders to the other post
- insert the section in holders, check the section level and fix it by screws - Fig. 30
- a section can be fixed at the angle to the wall of a post by means of metal angles; in such a case a distance between posts should be reduced, and cross-pieces of a section should be cut at a suitable angle - Fig. 31

Fig. 30

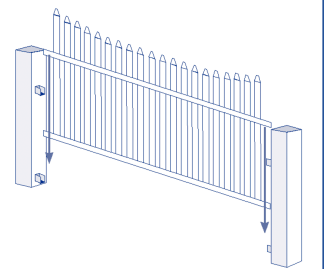


Fig. 31

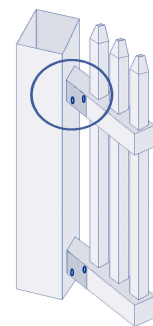
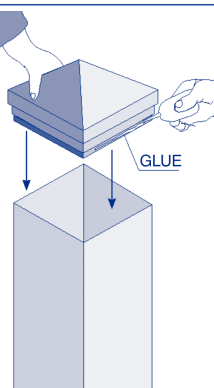


Fig. 32



2. Finishing

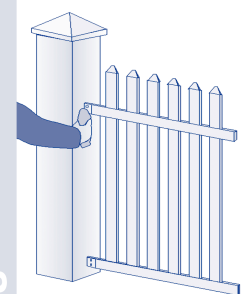
- last operation is fixing of post caps; apply some glue in the cap (in the perimeter of the cap inside) then insert it on the required level - in case of slight unevenness of top edges of the posts, the level of a post may be adjusted by the caps inserted respectively - Fig. 32

For fixing the post caps it is recommended to use the colourless glue Cosmofen Plus.

- upon completion of assembly of the fencing, remove any impurities off the surface of elements by means of a soft wetted rag with detergent; in case of dirt hard to remove (e.g. oil, grease, paint) the surface should be cleaned with dissolvent - Fig. 33

To make the above activity it is recommended to use the dissolvent Cosmofen 20.

Fig. 33

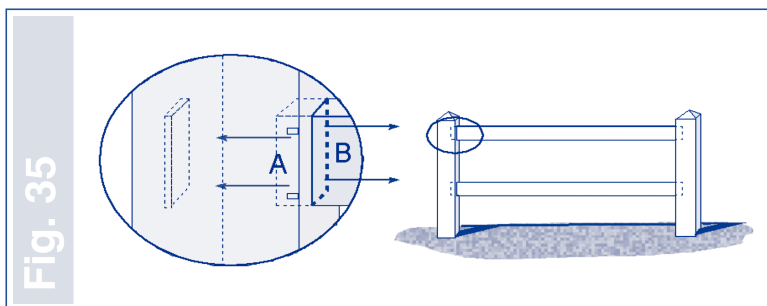
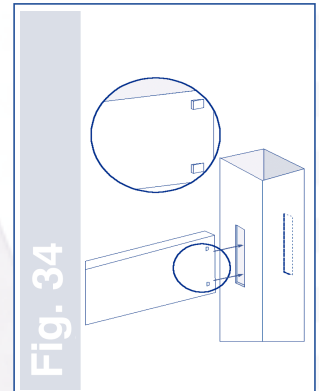


VI. Farmer's fence

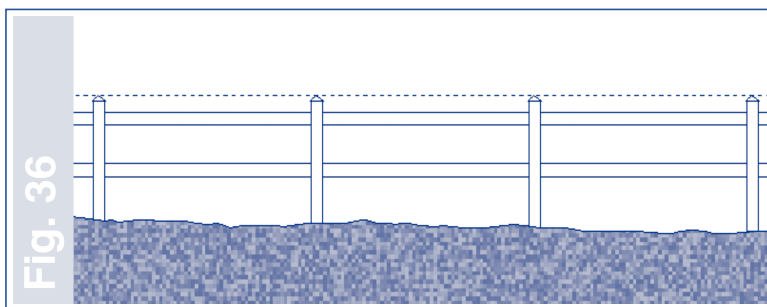
NOTE: The interval between the posts should be diminished by 8 cm (2 x 4 cm), that means by a length of the crosspiece which is fixed inside the post. The example: the posts in farmer's fence should be moved away by 2,92 cm.

1. Fixing of a fencing section

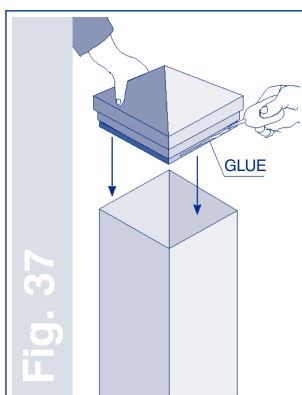
- fixing of a fencing section should be started with a corner post
- put a crosspiece in the upper milled hole in accordance with direction shown in Fig. 34 until you hear locking of snap fasteners
- follow the same operations with regard to the lower crosspiece



- next put the other end of a crosspiece in a corresponding hole in the other post, according to Fig. 35, first moving the element in the direction shown as "B" in Fig. 35 and then in the "A" direction until you hear locking of snap fasteners fixed on the section. Do the same with the lower element of the section



- Fig. 36. View on ready fencing sections



2. Finishing

- last operation is fixing of post caps; apply some glue in the cap (in the perimeter of the cap inside) then insert it on the required level - in case of slight unevenness of top edges of the posts, the level of a post may be adjusted by the caps inserted respectively - Fig. 37

- upon completion of assembly of the fencing, remove any impurities off the surface of elements by means of a soft wetted rag with detergent; in case of dirt hard to remove (e.g. oil, grease, paint) the surface should be cleaned with dissolvent - Fig. 38. To make the above activity it's recommended to use the dissolvent Cosmofen 20

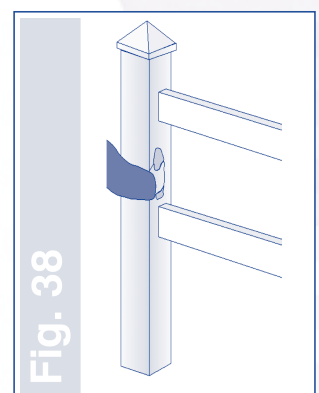
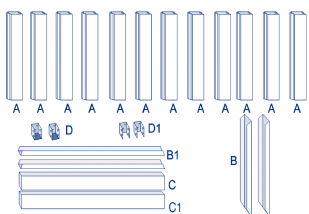




Fig. 39

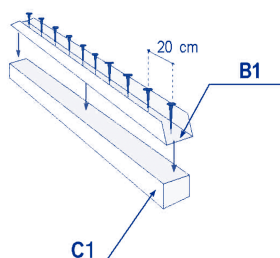


VII. Hoarding fencing

1. Each cardboard box contains (Fig. 39)

- 12 panels (A)
- 1 fixing cross-pieces (C)
- 1 fixing cross-pieces (C1) with the reinforcement
- 4 channel sections (B, B1)
- 4 connectors (D, D1)
- assembly screws

Fig. 40



2. Lower fixing cross-piece

- screw channel section B1 to the fixing cross-piece (C1) using assembly screws in a distance of every 20 cm - Fig. 40

NOTE: Take care that channel section B1 extends outside the edge of a fixing strip C by a distance W equalling the thickness of the wall of connector D - Fig. 41

Fig. 41

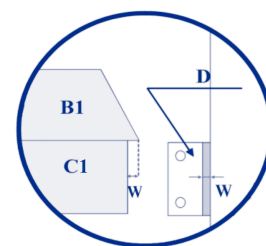
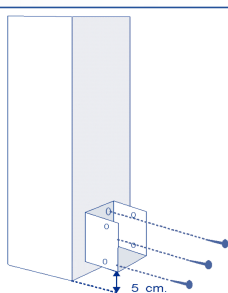


Fig. 42



3. Assembly of the lower cross-piece with a post

- in compliance with the post symmetry axis and in a distance of 5 cm of the ground, fix the lower connector of the section (D) with the post. Perform the same activities in a case of another post keeping suitable distances and the level - Fig. 42
- then, put a previously prepared lower cross-section in connectors (D) - Fig. 43

Fig. 43

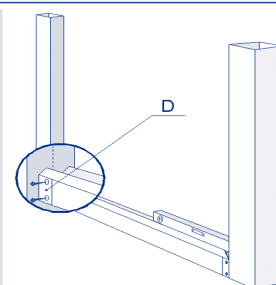
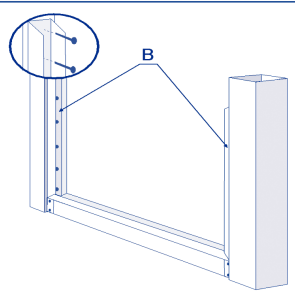


Fig. 44



4. Assembly of channel sections to posts

- keeping the symmetry axis and perpendicular to a previously fixed cross-piece, screw a channel section (B) to the post by means of 6 assembly screws. The recommended distance between the screws is 20 cm - Fig. 44
- channel section is assembled in the same way on another post

5. Assembly of panels in a ready framework

- put previously prepared panels in the framework fixed on the posts - Fig. 45

Fig. 45

