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## Plotter FlexiPen 120/165/180

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# *User guide*

**ver 3.0**

**⚠ WARNING!**

**Before use the plotter read carefully this user guide!!!**

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## Chapter 1:

### General specifications

#### 1.1 Technical parameters:

| Technical data                   | FlexiPen 120<br>Plotter             | FlexiPen 165<br>Plotter             | FlexiPen 180<br>Plotter             |
|----------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Voltage                          | 220 v , 50 Hz                       | 220 v , 50 Hz                       | 220 v , 50 Hz                       |
| Power supply                     | 120 w                               | 150 w                               | 180 w                               |
| Overall dimensions ( L x l x H ) | 1650 x 700 x 1200 mm                | 2100 x 700 x 1200 mm                | 2250 x 700 x 1200 mm                |
| Max. plotting speed              | 100 ÷ 600 mm/s                      | 100 ÷ 1200 mm/s                     | 100 ÷ 1200 mm/s                     |
| Maxim deviation between lines    | 0,1 mm                              | 0,1 mm                              | 0,1 mm                              |
| Active plotting width            | 1200 mm                             | 1600 mm                             | 1800 mm                             |
| Maxim paper roll diameter        | 200 mm                              | 200 mm                              | 200 mm                              |
| Internal diameter for paper roll | 76 mm                               | 76 mm                               | 76 mm                               |
| Pen pressure                     | 0 ÷ 500 g                           | 0 ÷ 500 g                           | 0 ÷ 500 g                           |
| Buffer                           | 1 ÷ 4 MB*<br>Compression<br>Storage | 1 ÷ 4 MB*<br>Compression<br>Storage | 1 ÷ 4 MB*<br>Compression<br>Storage |
| CPU                              | dual CPU, parallel processing       | dual CPU, parallel processing       | dual CPU, parallel processing       |
| Mechanical resolution            | 0,025 mm/step                       | 0,025 mm/step                       | 0,025 mm/step                       |
| Language format                  | HPGL ( PLT ) compatible             | HPGL ( PLT ) compatible             | HPGL ( PLT ) compatible             |
| Interface type                   | RS-232 (serial interface)           | RS-232 (serial interface)           | RS-232 (serial interface)           |
| Origin coordinate                | Adjusted as needed                  | Adjusted as needed                  | Adjusted as needed                  |

\* Relative to the model

#### 1.2 Technical specifications:

- Computer:
  - Minim: CPU P2-350Mhz, 64 MB RAM, 10 G HD, CD ROM drive;
  - Recommended: CPU P4-1,7Ghz, 256 MB RAM, 40 G HD, CD ROM drive.
- Operating System:

Windows 2003, Windows XP.

- Work environment moisture:  
Temperature: 10 ÷ 30°C

**⚠ Values out of range may cause low performances for the plotter;**

Humidity: 35 ÷ 75%;

Avoid vibration, strong electromagnetic interference, and place the plotter in a space without dust.

Install the plotter to a plane surface which is stable and larger than the plotter; if the plotter is unstable, the plotting performance would be influenced.

### 1.3 **⚠ Other recommendations:**

- Use for the plotter voltage charging an UPS of at least 500w;
- Serial cable must have a length of maximum 4 meters;
- The paper rolled on the recovering paper reel spindle must not have more than 50 m length;
- The plotter must be connected directly to the computer's serial port. If the port is password protected (antivirus program) the cable must be plugged into another serial port (without password protection).
- Antivirus programs are not recommended to be installed on the computer, because it might cause the plotter to malfunction.
- Other damages that can be caused by the antivirus programs regarding the plotter:
  - o it may cause incorrect transfer data from the computer
  - o the marker can be drawn discontinue, with horizontally and vertically gaps,
  - o the pieces from the drawn marker might be drawn resized

In case you will need, for some reasons, to install an Antivirus, you will have to uncheck the option for the background scan of the computer activity.

- The CTS ("clear to send") of the computer's serial port must be functional.
- If the computer does not have a serial port an USB to serial port adapter must be used; the adapter must work with RTS (ready to send) and CTS.

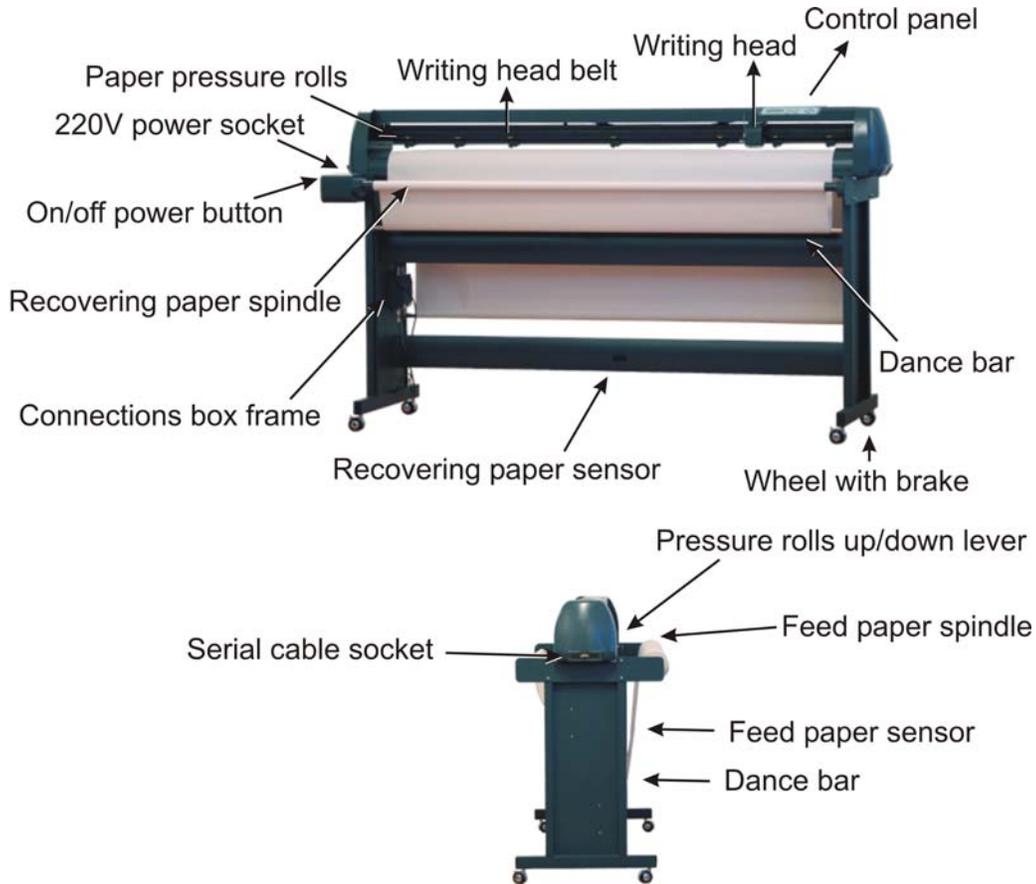
### 1.4 **Steps to be taken for the plotter's first installation:**

- Identify all components and then find how to join together all parts (see Chapter 2)
- Familiarize with the control panel, the keys and the meaning of all light indicators (see Chapter 3)
- Familiarize with the plotter power charging (see Chapter 4)
- Learn how to arrange the paper roll (see Chapter 5)
- Identify the printing head and learn how to mount the refill ( see Chapter 6);
- Learn how to use and how to install the software (see Chapter 7);
- Learn how to maintain the plotter (see Chapter 8);
- Familiarize with the most frequent troubleshooting, and learn how to fix them (see Chapter 9)

## Chapter 2:

### ***Plotter description and installation***

#### **2.1 Plotter components:**

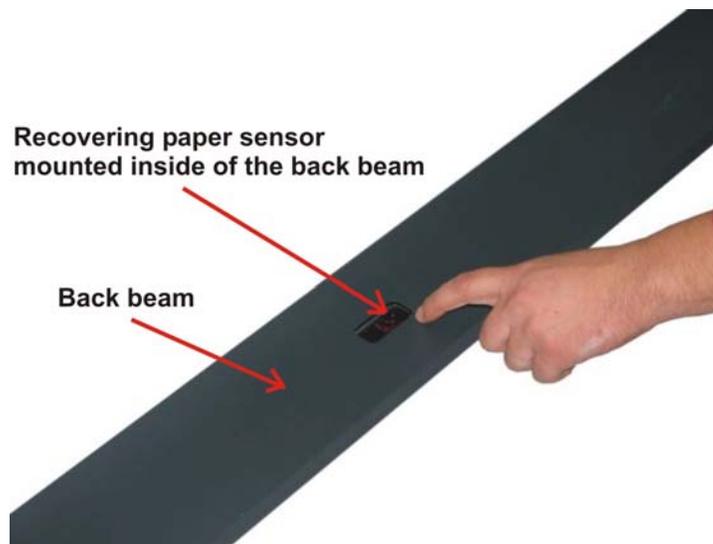
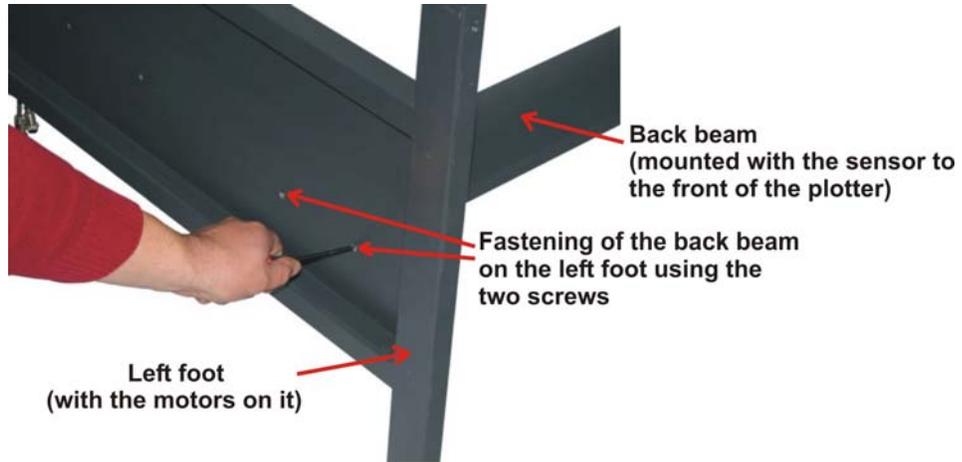


#### **2.2 Installation:**

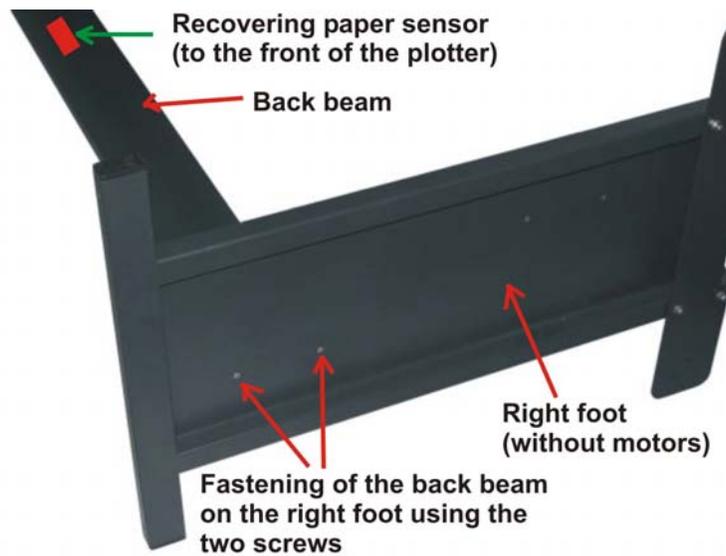
The FlexiPen 120/165/180 plotter is delivered in two packages; one contains the main frame of the machine (plotter body), the front and back beams, the feed paper spindle, the recovering paper spindle, the dance bars; the second package contents the plotter feet, the connections box frame, the plotter's wheels, the power cable and the serial cable;

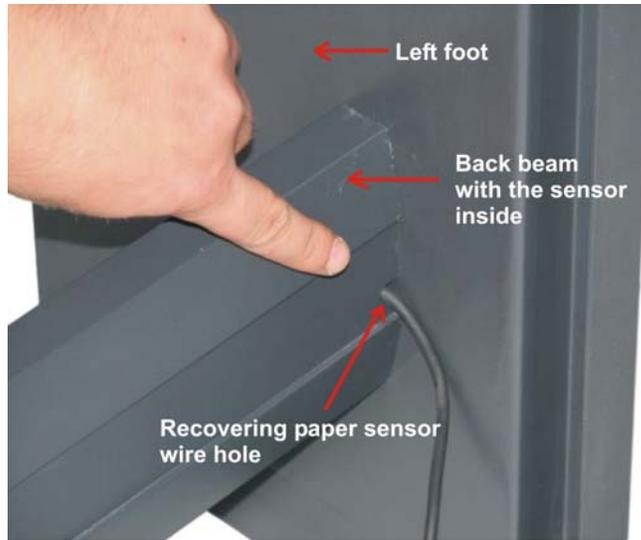
To assembly the plotter you must follow the following steps:

- Open the package and check all components;
- Fasten the front and back beam between the plotter feet, using screws. Install according to the serial number of parts:
- Fastening of the back beam on the plotter stand left foot:

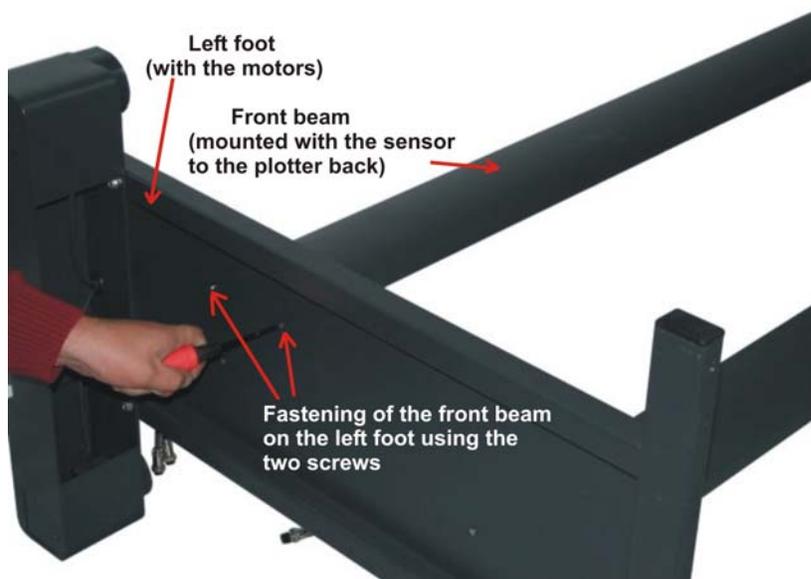


- Fastening of the back beam on the plotter stand right foot:

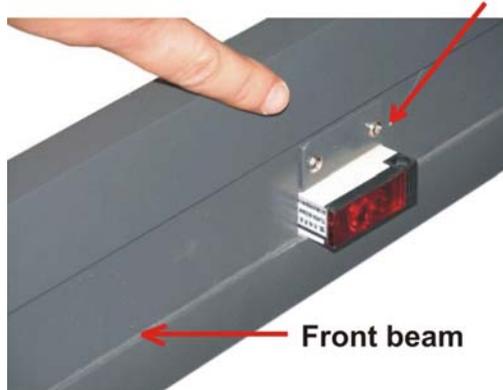




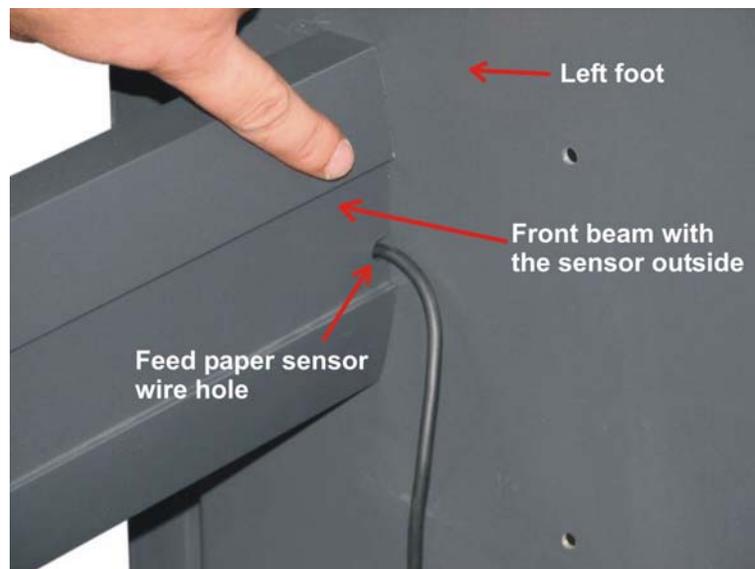
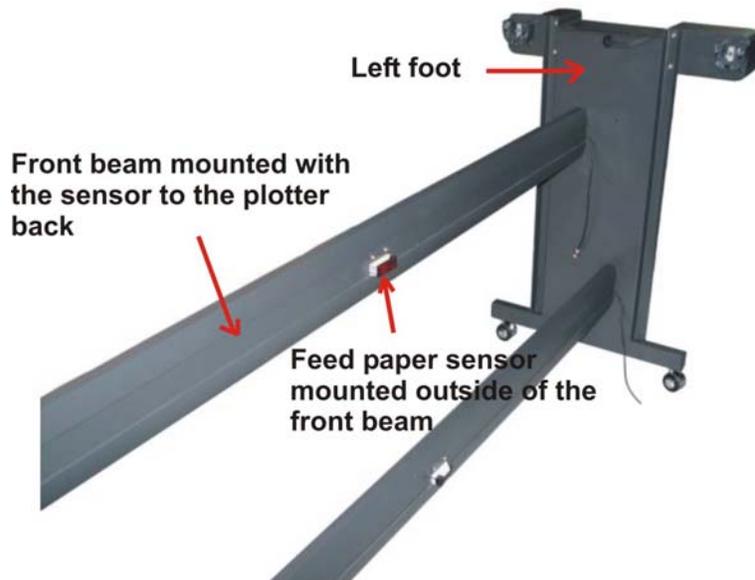
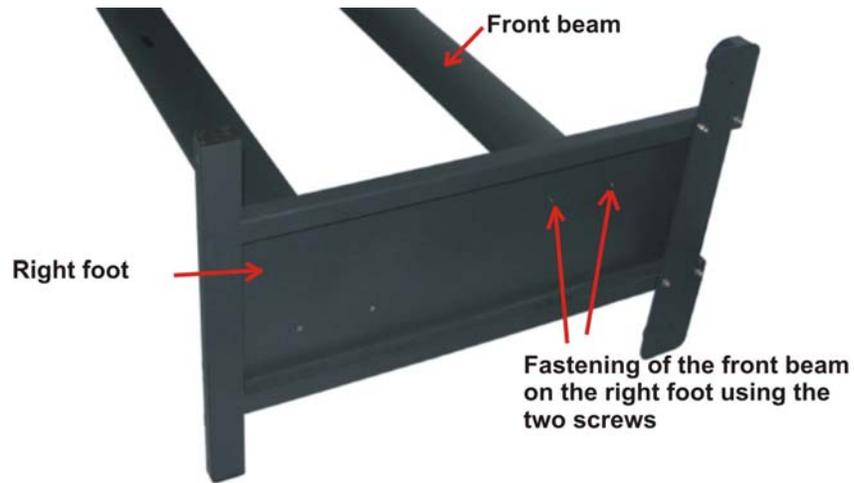
- Fastening of the front beam on the plotter stand left foot:



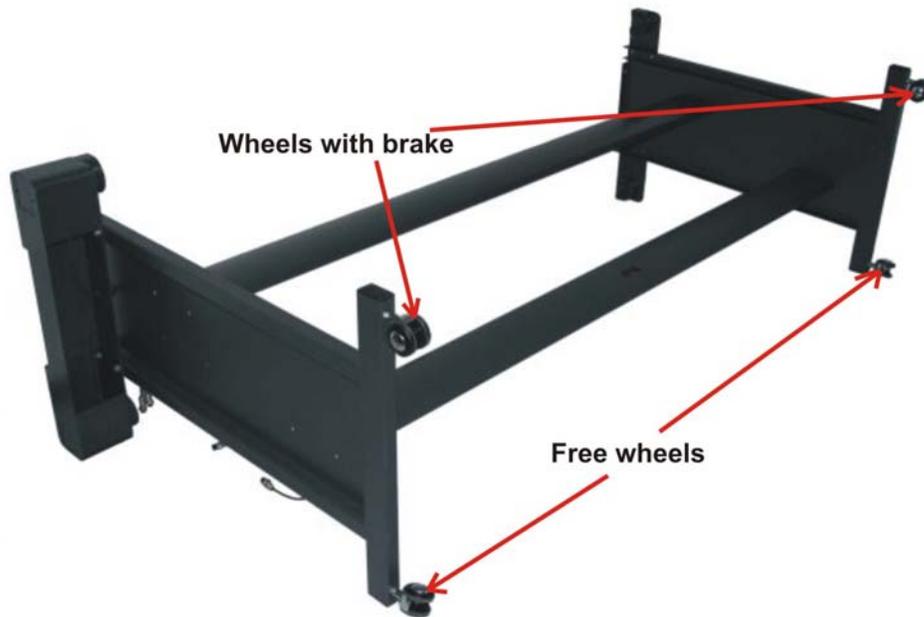
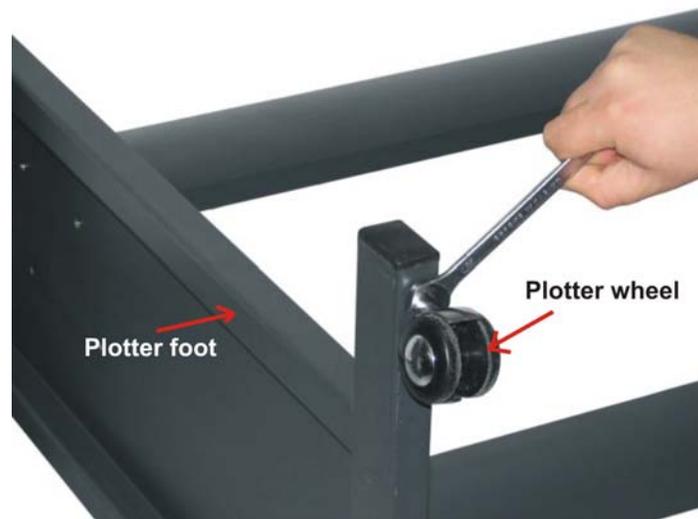
**Feed paper sensor mounted outside of the front beam**



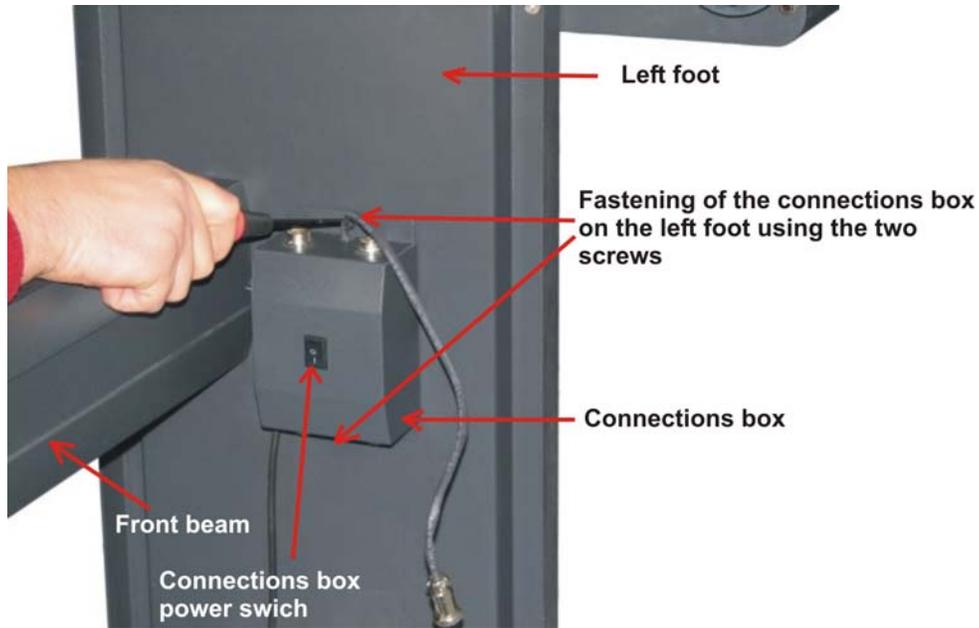
- Fastening of the front beam on the plotter stand right foot:



- Mount the plotter wheels, the wheels with brake in front and the free ones in the back:

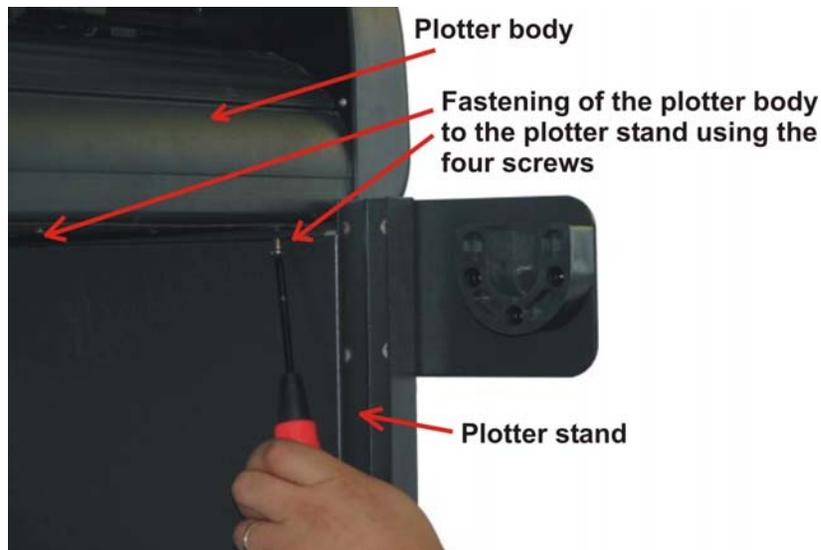


- The connections box frame will be placed on the left foot using screws:

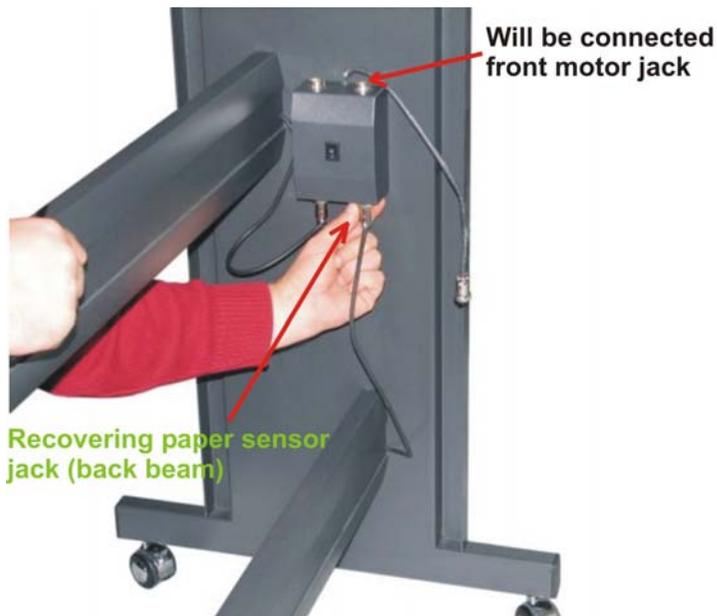
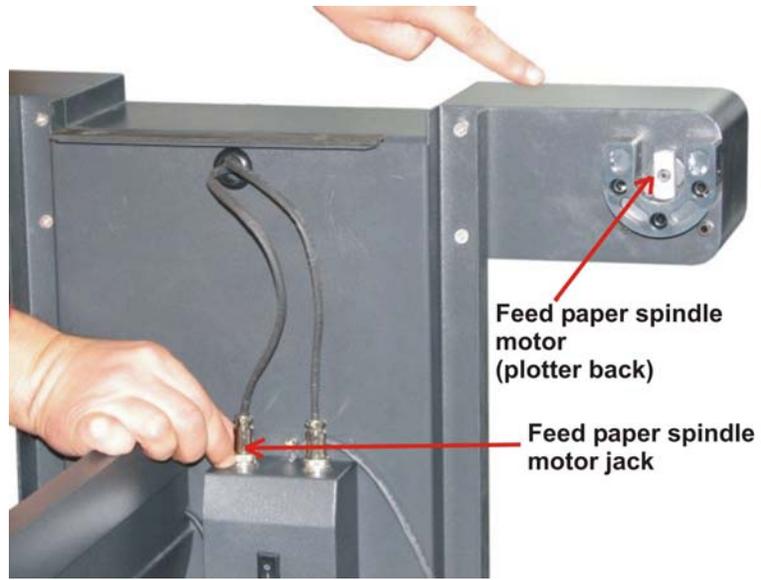
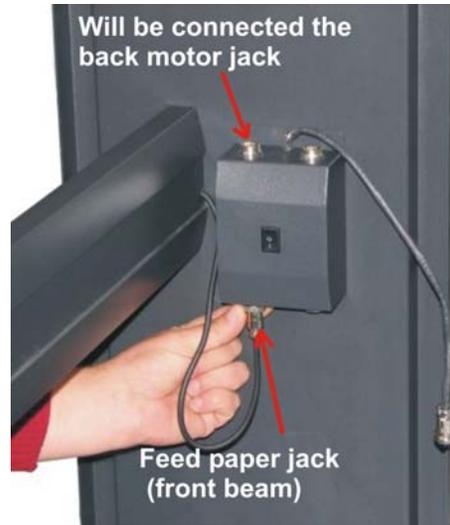


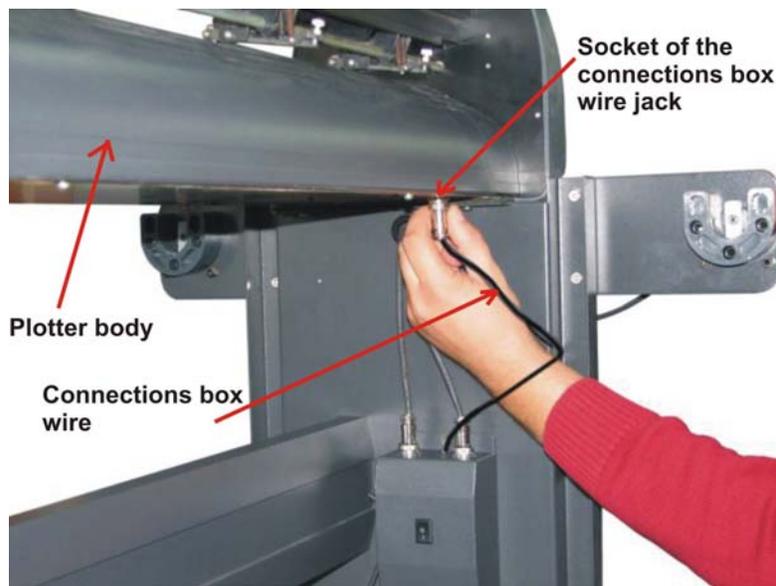
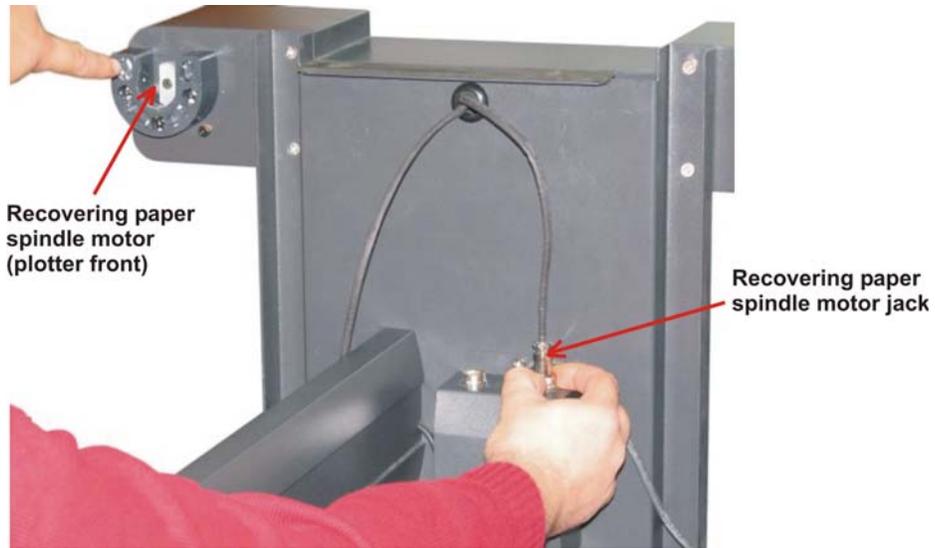
In this moment the plotter stand is completely assembled.

- Place the main frame(plotter body) of the machine on the up side of the plotter stand and fix it with screws:



- Plug the feed paper jack from the front beam and the feed paper motor jack on the connections box frame , plug the recovering paper jack from the back beam and the recovering paper motor jack on the connections box frame and then plug the connection box wire jack to the socket from the plotter main frame(plotter body). The label from the plug jack must match to the label from the socket jack:

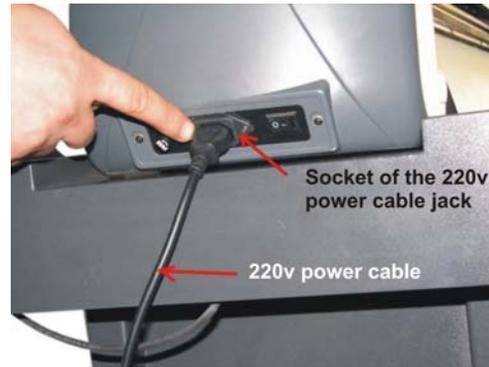
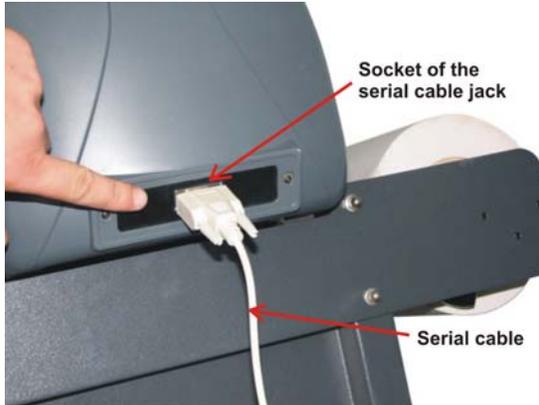




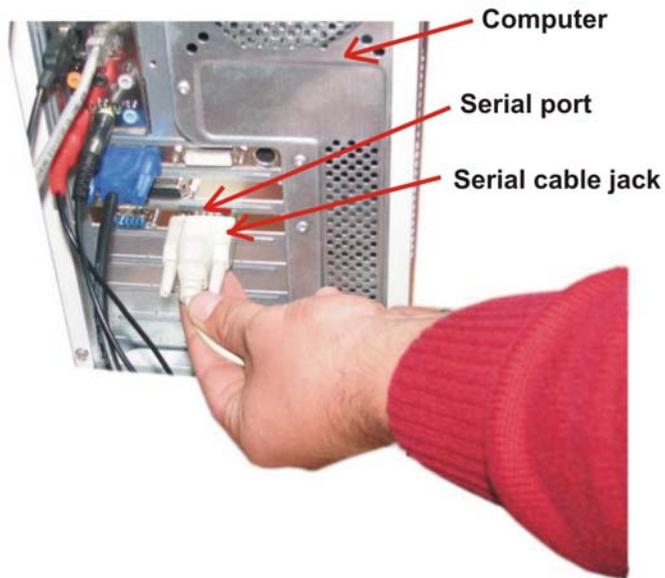
In this moment the plotter is assembled.



- Plug the serial cable jack in the plotter serial socket and fix it using screws; plug the power cable jack in the plotter power socket :



- The other serial cable jack will be plugged in the computer port and it will be fixed with screws:



## Chapter 3:

### ***Plotter charging***

- The power cable must be plugged in a socket which has reliable ground conductor.
- The power voltage must not vary more than 5%;
- To prevent voltage variations use a UPS source of minimum 500w.
- Be sure that the On/Off button is in the off position before you plug in the charging cable.
- Turn on the plotter. The display will be illuminated and the writing head will go in the park position on the right side of the plotter. After about 5 seconds on the plotter display will be displayed the **OFF Line** plotter state and the X and Y writing head coordinates.

 ***If you turn off the plotter from the on/off power button, before you turn it on again you will have to wait minimum 10 seconds.***

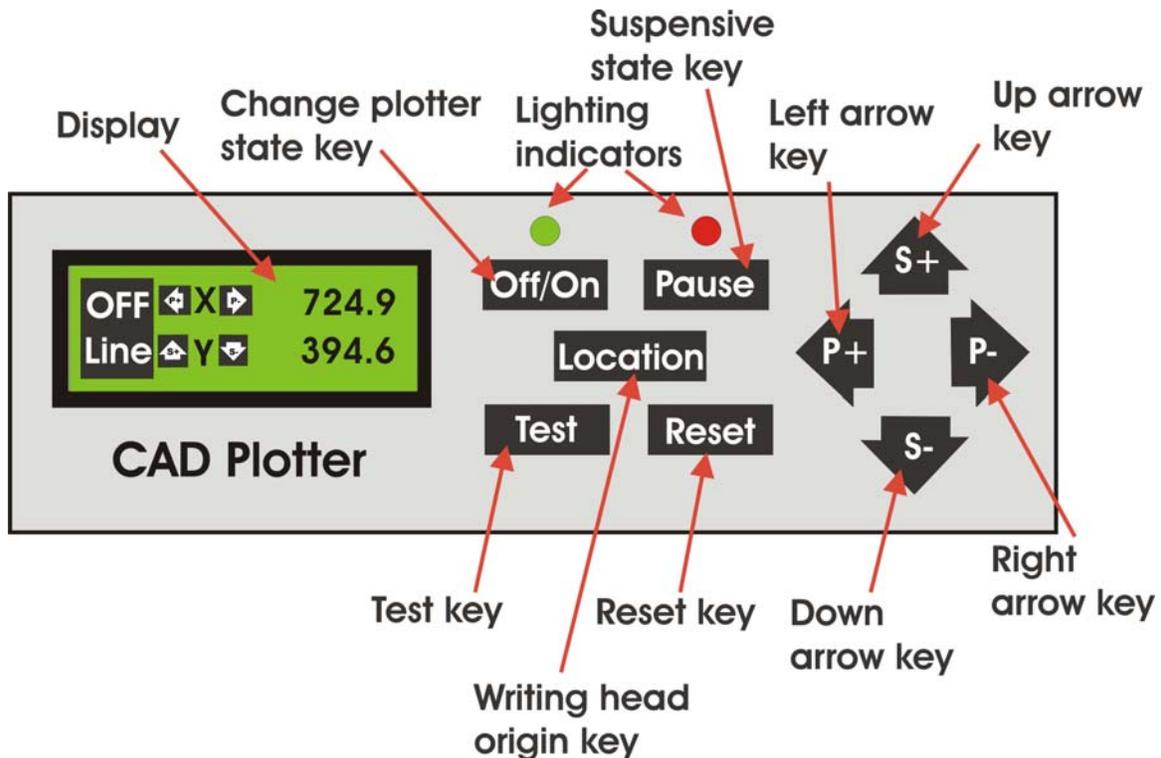
***Power variations might cause important plotter damages.***

***We recommend connecting the plotter and the computer in the same socket.***

***As long as the plotter is plugged in, do not connect the serial cable to the computer. First unplug the plotter and then connect the serial cable to the computer, and after that you may turn the plotter back on.***

## Chapter 4:

### Control panel



The control panel of the plotter is composed by display, keys and lighting indicators.

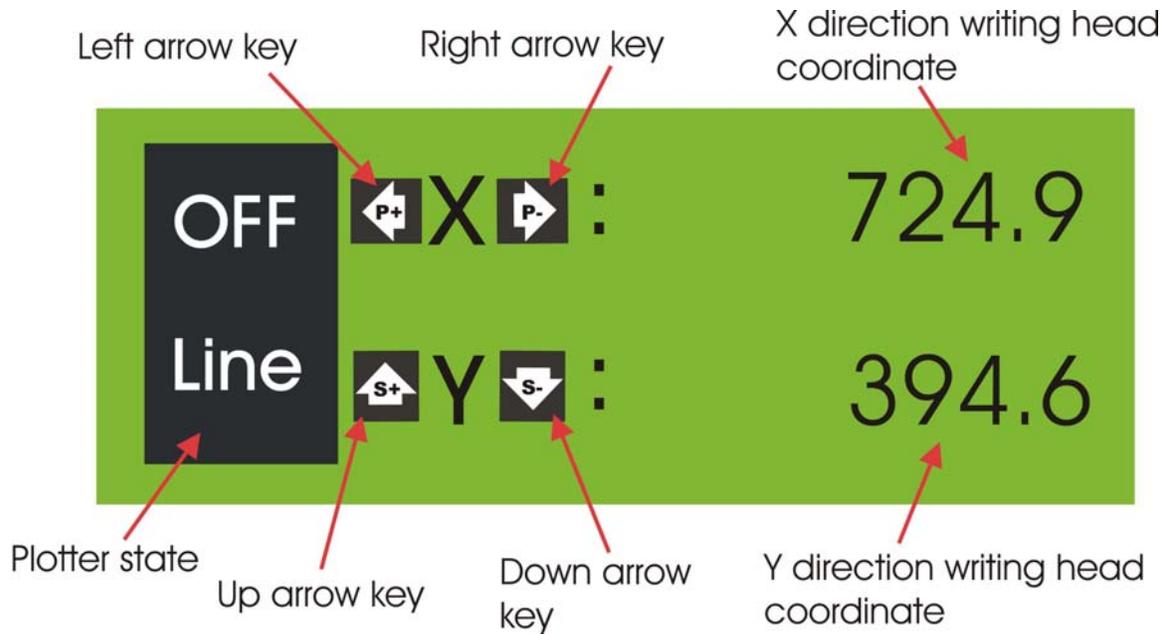
#### • Display:

The plotter display shows the current state of the plotter and some information's regarding the working parameters of the plotter.

The plotter can be in one of the following states:

After the power switch of the plotter is to on position, the plotter display is lighting and the plotter goes automatically in **OFF LINE** state.

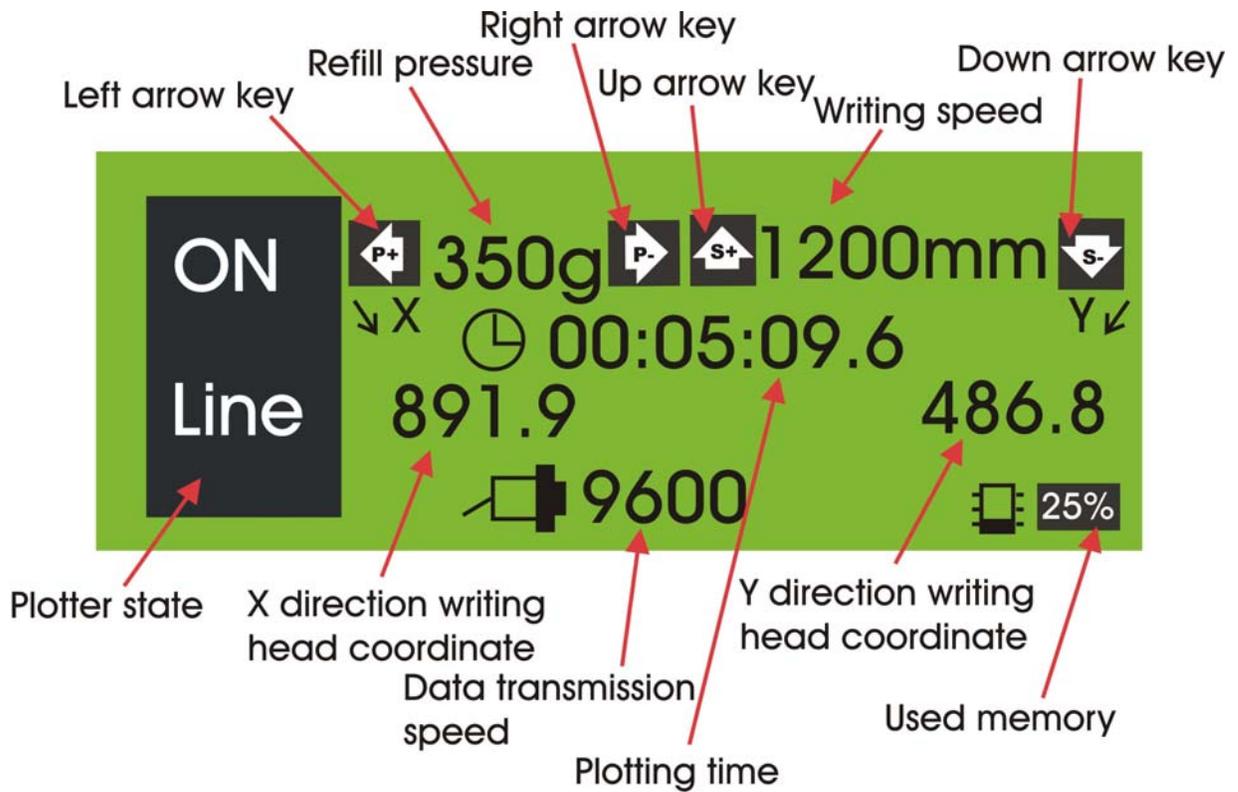
**OFF LINE:** in this state you can make manual commands to the plotter: you can move the writing head on the left/right side or you can move the paper in front or back. On the display are showed the printing head coordinates in the X and Y directions. By pressing the left/right arrow key, the writing head can be moved to the left/right direction and by pressing the up/down arrow key, the paper can be moved back or in front of the plotter.



If the **Off/On** key from the plotter control panel is pressed the plotter go in the **ON LINE** state.

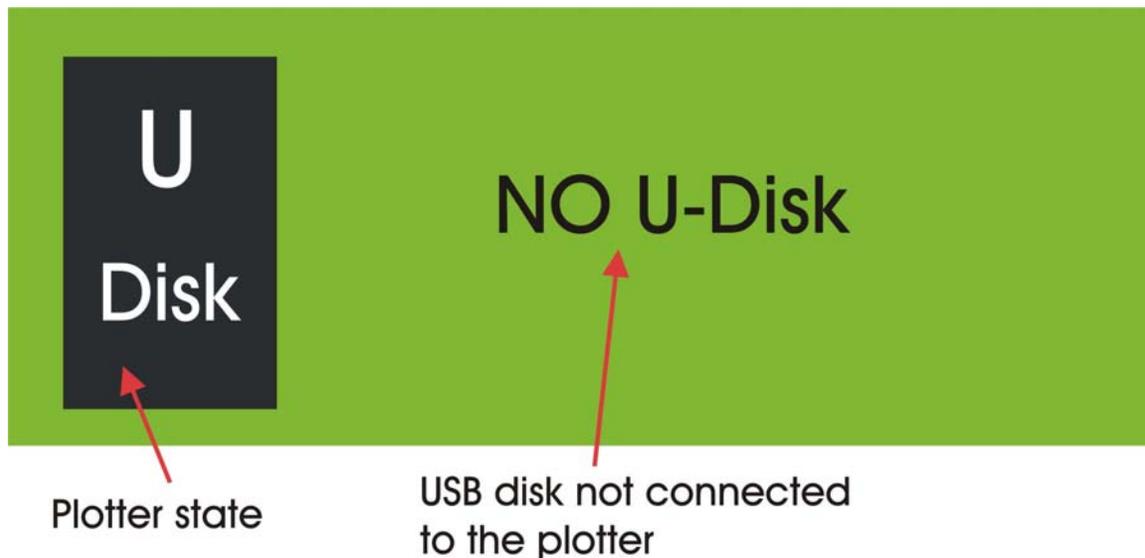
**ON LINE:** in this state the plotter is ready for automatically working (is ready to receive data from the computer or the USB disk) and the plotting speed and the pen pressure can be modified. On the display are showed the pen pressure, the printing speed, the X and Y writing head coordinates, plotting time chronometer, data transmission speed and the plotter internal memory that is used.

By pressing the left/right arrow key the pen pressure can be decrease/increase and by pressing the down/up arrow key the plotting speed can be decrease/increase.

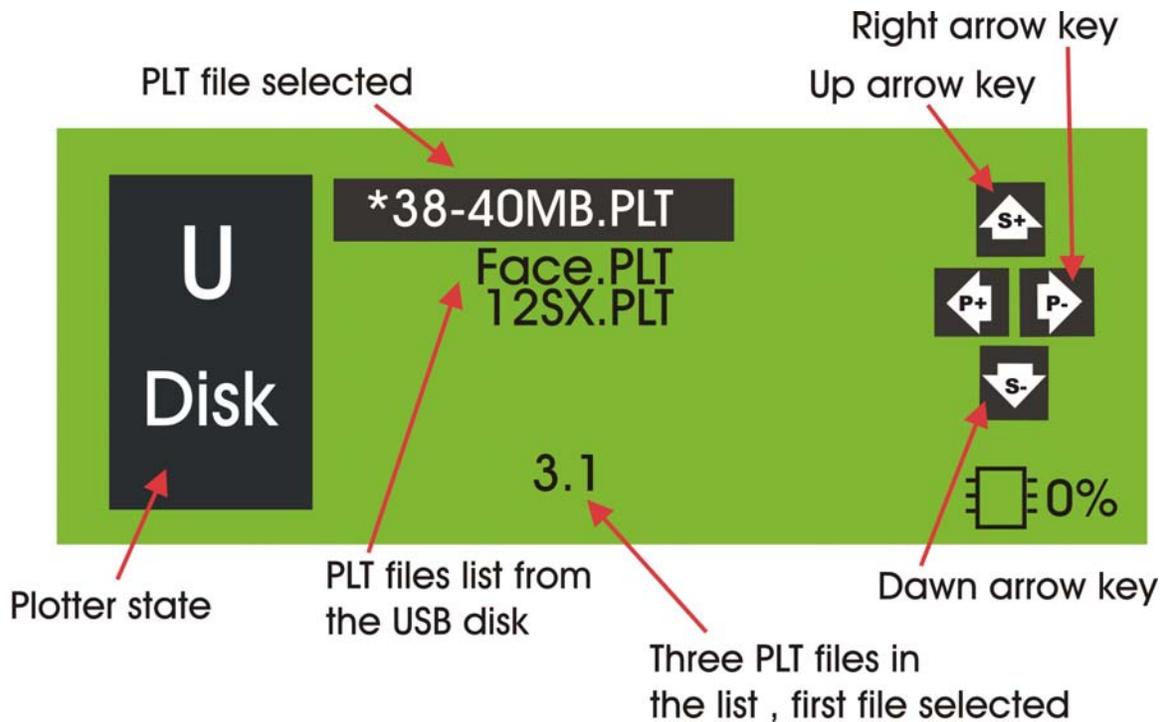


In this state the plotter is ready to receive data from the computer.  
If the **Off/On** key from the control panel is pressed the plotter go in the **U-DISK** state.

**U-DISK:** in this state the plotter is connected to the USB disk and takes the files to be plotted from the USB disk. If the USB disk is not connected to the plotter, on the plotter display will be showed the message “No U-Disk”.



If the USB disk is connected to the computer then on the display will be showed the PLT files list that was found on the USB disk, like in the next picture:



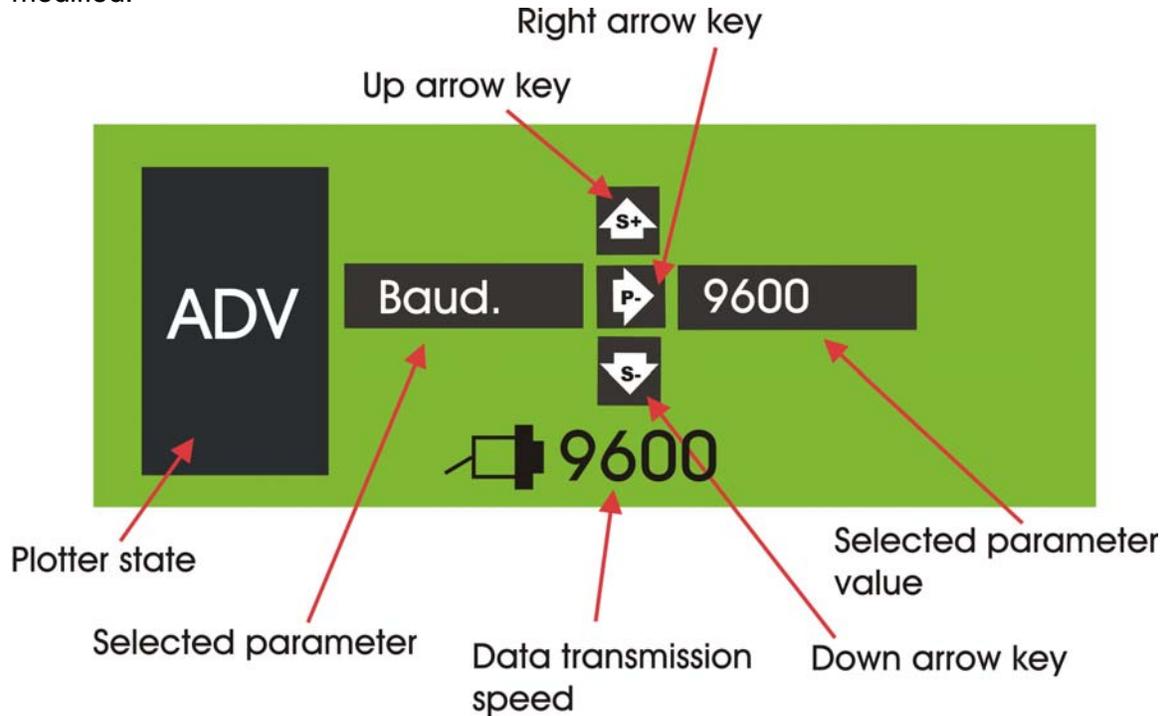
By pressing the up/down arrow key you can select the PLT file that you want from the PLT files list from the USB disk. The PLT file which will be with black background is the PLT file selected and this file will be sent to the plotter. By pressing the left/right arrow key the transmission of the PLT file that was selected will be activated and the file is sent to the plotter internal memory (the file is sent to the plotting process).



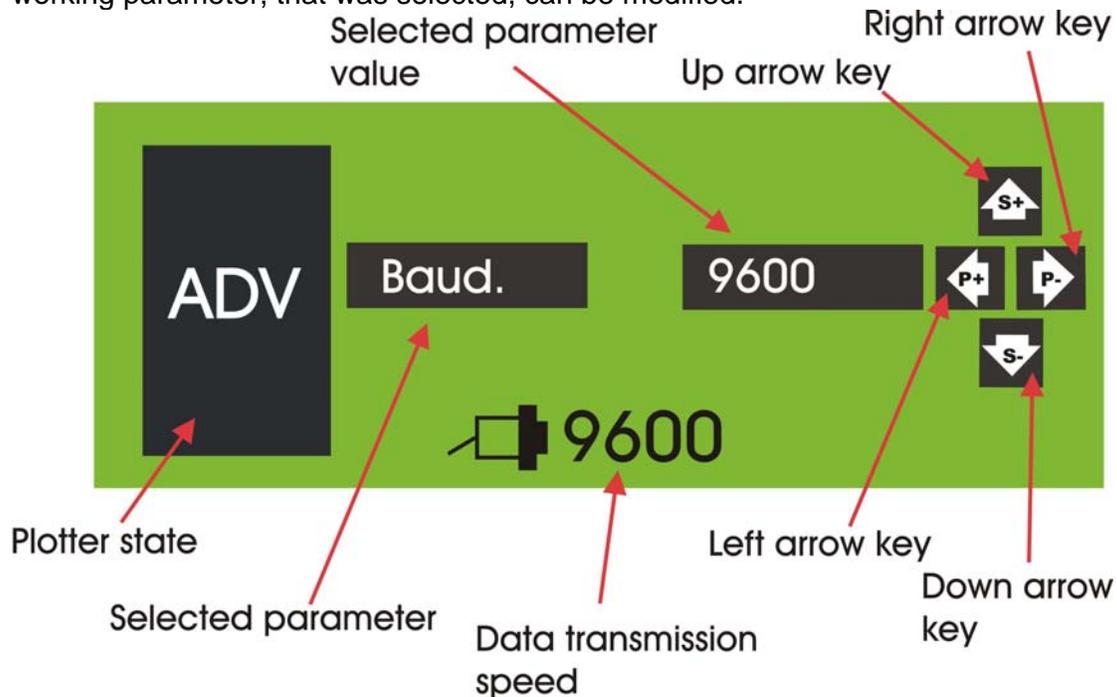
On the display will appear the PLT file data progress transmission bar and after this bar reach the value of 100% the plotter start to plot the file. ***If the PLT file data progress transmission bar don't reach the 100% value, this mean that the PLT file selected is too big and can not be plotted from the USB disk. In this situation the PLT file can be plotted only from the computer.***

By pressing the **Off/On** button from the plotter control panel the plotter go in **ADV** state.

**ADV:** is the plotter state where the plotter internal working parameters can be modified.



On the display is showed one plotter internal working parameter and his value. By pressing the up/down arrow key the user can select next plotter internal working parameter and by pressing the right arrow key is activated the state where the internal working parameter, that was selected, can be modified.



Here by pressing the up/down arrow key, the value of the selected parameter can be modified and by pressing the right arrow key, the value of the selected parameter that was choused is saved. After that by pressing the left arrow key the user go back in the state where the user can select the plotter internal working parameters.

**Warning:** Wrong changing of the plotter internal working parameters can make the plotter to not working properly and from that reason it is recommended to not change them.

The default values of the plotter internal working parameters are:

**Baud:9600;**  
**S-Count:Xon/Xoff,RTS/CTS;**  
**Pen D:60ms;**  
**Pen U:30ms;**  
**Code:G-HPGL;**  
**TestW:40;**  
**TestM:Unior;**  
**Test C:1;**  
**Mode:Normal;**  
**Xmil:+1.00000;**  
**Ymil:+1.00000;**  
**XY:No;**  
**Paper:500;**  
**Curve:Mid.**

#### • Keys:

The **Off/On** key: by pressing this key the plotter can switch between the states: **ON LINE,U-DISK,ADV** and **OFF LINE**.

The **Pause** key: in the plotting process, if the suspensive state is needed press “**Pause**” key, the plotting will stop immediately and will resume after press the key again.

**⚠ Do not move manually the writing head when the plotter is in the suspensive state.**

The **Location** key: is dedicated to set up the plotting process start point (plotting process origin). By pressing this key the writing head coordinates becomes automatically  $X = 0$  and  $Y = 0$ .

The **Test** key: by pressing this key the plotter will automatically plot an internal drawing. Using this key the user can verify that the plotter working properly ( the paper is moving properly front/back and the refill is writing properly).

The **Reset** key: is dedicated to erase all the data that was transmitted from the computer and stored in the plotter internal memory. By pressing this key the data’s from the plotter internal memory are erased, the plotting process is canceled and the writing head is sent to the parking place from the right side of the plotter.

**⚠ After you reset the plotter you must send one more time the files to be plotted.**

The **Right arrow “P-“** key : have the following functions:

In **OFF LINE** state: move to the right side the writing head;

In **ON LINE** state: increase the pen pressure (the increasing pen pressure value is showed on the display);

In **U-DISK** state: validate the selected PLT file from the list;

In **ADV** state: make the passing in the state where the user can modified the value of the selected parameter and then, to the next pressing validate the choused values of the plotter internal working parameter that was selected.

The **Left arrow “P+”** key: have the following functions:

- In OFF LINE state: move to the left side the writing head;
- In ON LINE state: decrease the pen pressure (the decreasing pen pressure value is showed on the display);
- In U-Disk state: validate the selected PLT file from the list;
- In ADV state: switch back to the state where the user can select the plotter internal working parameters.

The **Up arrow “S+”** key: have the following functions:

- In OFF LINE state: moves back the paper;
- In ON LINE state: increases the plotting speed;
- In U-Disk state: select another PLT file from the list;
- In ADV state: select a new plotter internal working parameter and to the next pressing modified the value of the internal parameter that was selected.

The **Down arrow “S-“** key: have the following functions:

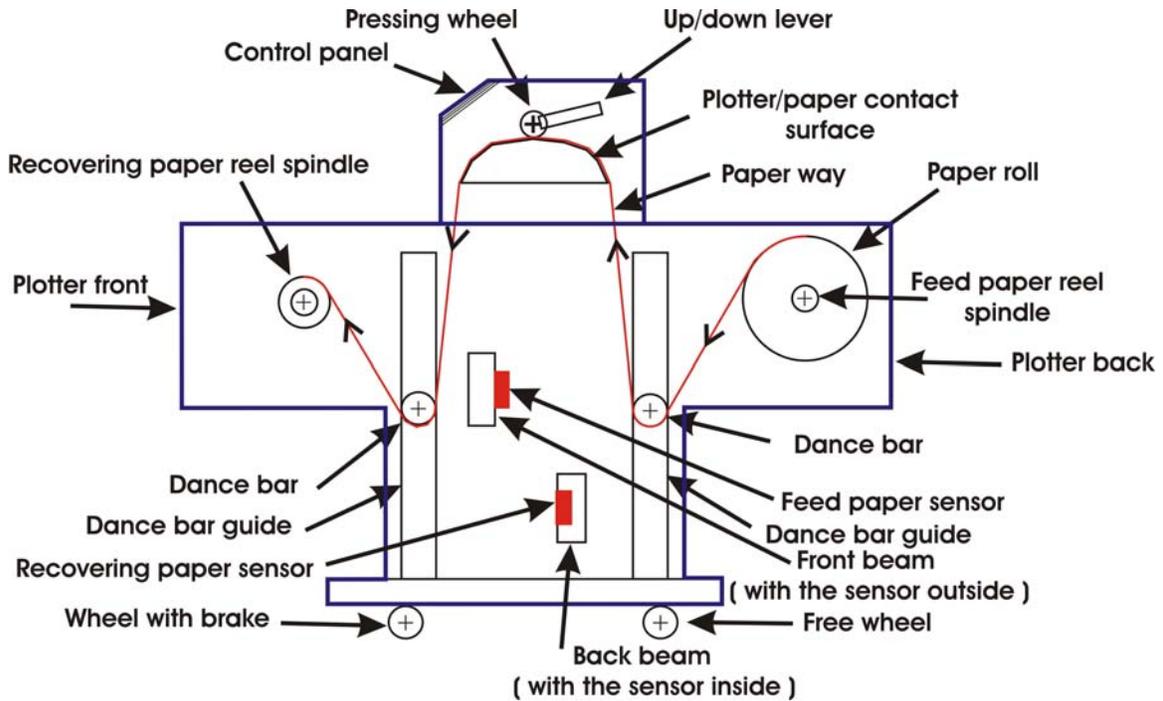
- In OFF LINE state: moves the paper in front;
- In ON LINE state: decrease the plotting speed;
- In U-DISK state: select another PLT file from the list;
- In ADV state: select a new plotter internal working parameter and to the next pressing modified the value of the internal parameter that was selected.

#### • **Lighting indicators:**

- Lighting Display: signals the fact that the plotter is plugged in.
- Flashing light on the up side of the Off/On button: indicates the plotter state.
  - Green light means that the plotter is in the OFF LINE state;
  - Red light means that the plotter is in the ON LINE or U-DISK state;
  - Orange light means that the plotter is in ADV state.
- Flashing light from the up side of the Pause button: signs the fact that the plotter is in the suspensive state.

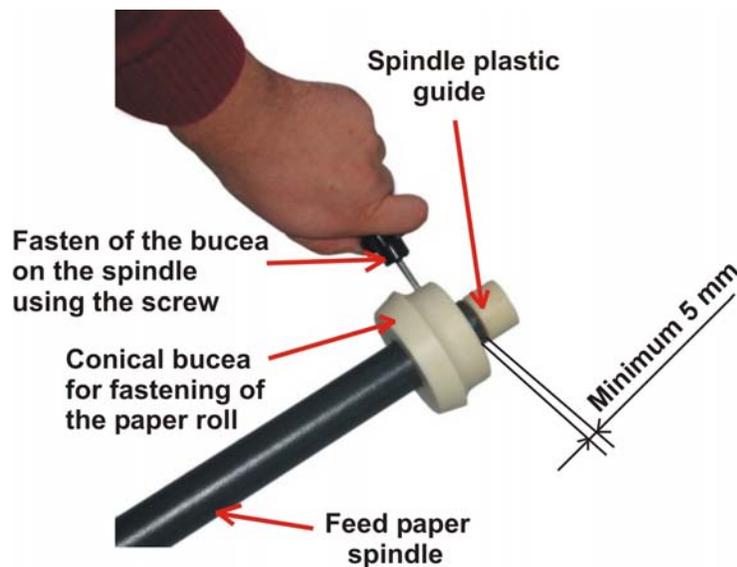
## Chapter 5:

### How to mount the paper

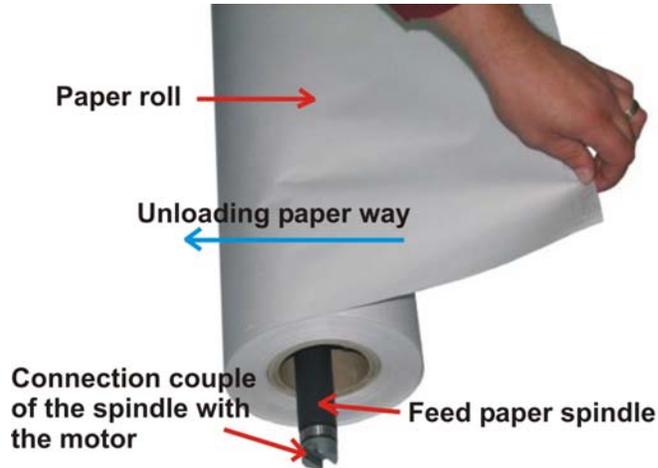


#### 5.1 How to arrange the paper roll on the feed paper reel spindle:

- First stop the charging voltage;
- Fasten one conical bucea on the top of the feed paper spindle with plastic guide:

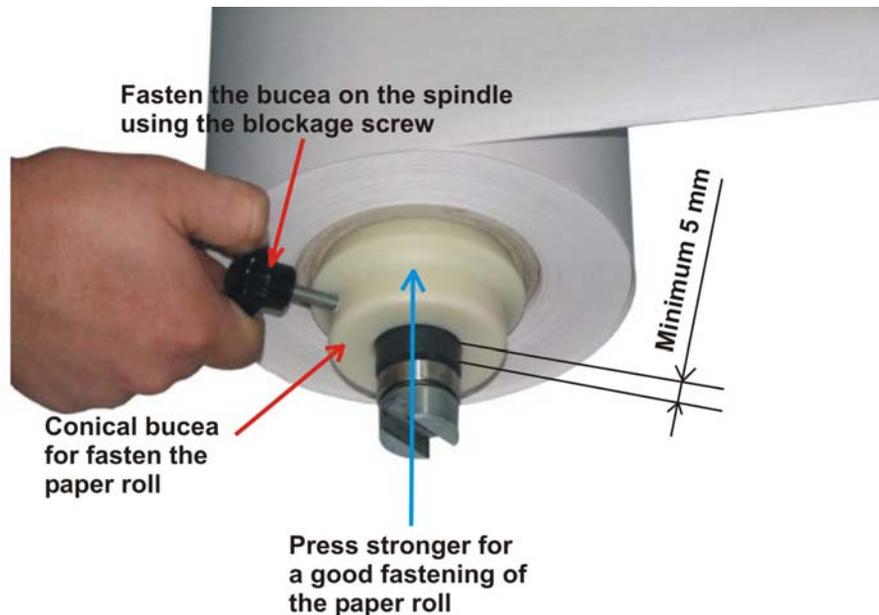


- Insert the feed paper spindle in the paper roll;

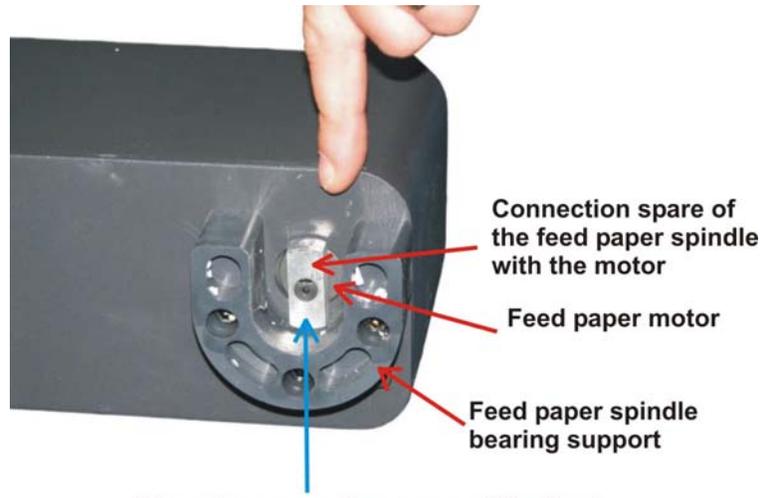


**⚠ To be sure that the paper roll is well placed look in section from motor side and make sure that the paper unfolds counter clock wise.**

- Fasten the other conical bucea using the blockage screw and make sure that there is no axial clearance. Before start fixing the conical buceas make sure that you have the same distance on both sides between the end of the spindle and the end of the conical bucea.

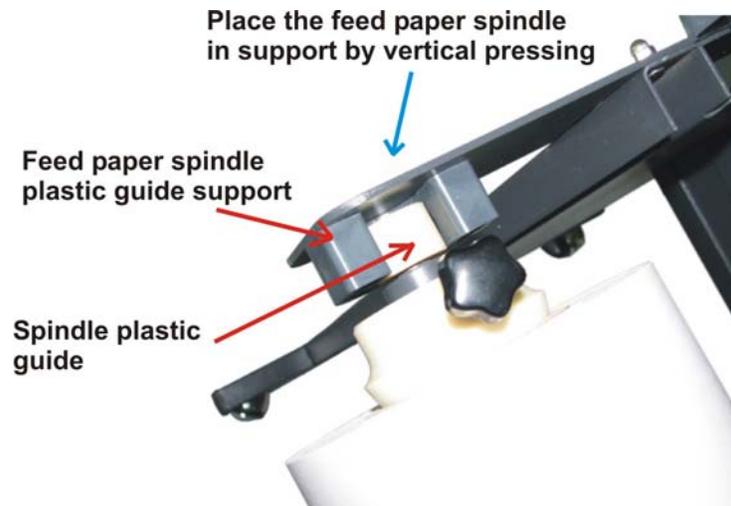
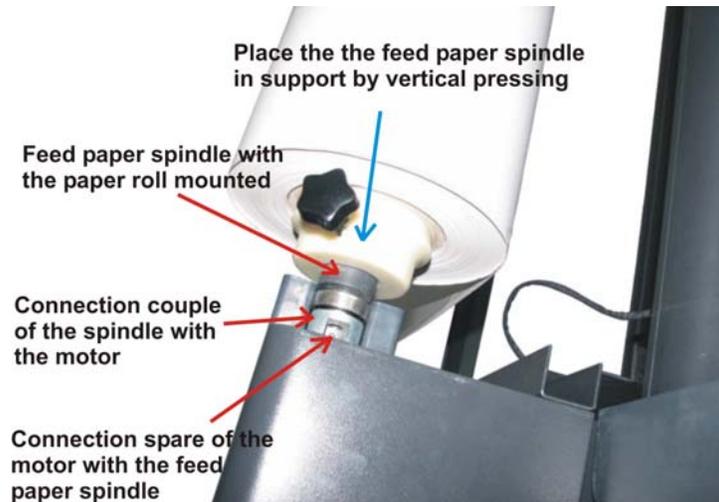


- Place the connection spare of the feed paper motor in vertical position:



Place the connection spare of the feed paper spindle with the motor in vertical position by rotation

- Mount the paper roll with the feed paper spindle inside, on the back side plotter supports, first on the motor side and then on the opposite side.

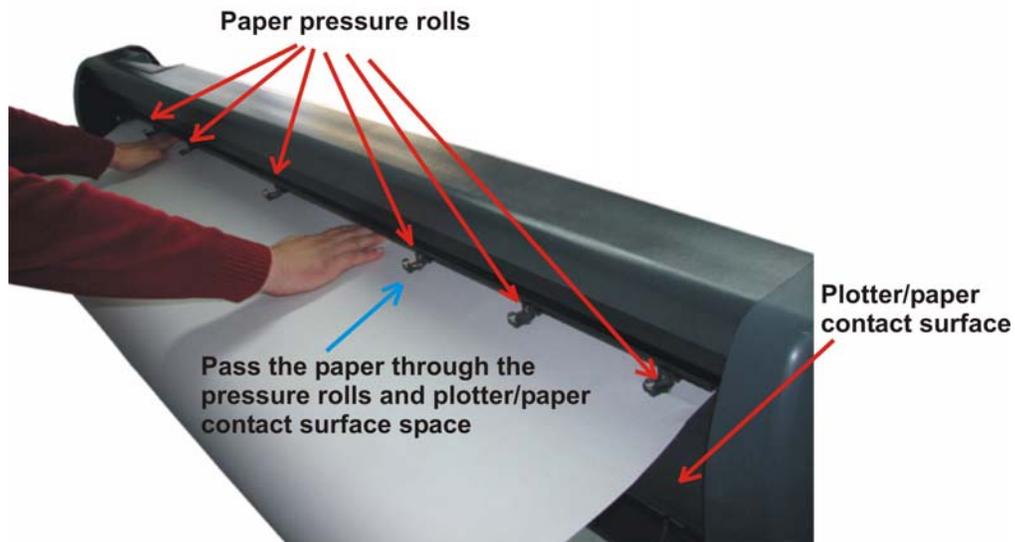


## 5.2 How to fix the paper on the recovering paper reel spindle:

- Lift up the pressure rolls by pressing the up/down lever from the right back side of the plotter.



- Pass the paper between the pressure rolls and the contact surface and mount the recovering paper spindle in the same way like the feed paper spindle.





Mount the recovering paper spindle in the front supports in the same way like the feed paper spindle

- Bring down the pressure rolls by lifting up the up/down lever and bring the paper to the recovering paper spindle level;



Bring down the paper pressure rolls by lifting up the lever

Bring the paper with the pressure rolls down and take care that the paper to be drawn uniformly to all the width



- Stick the paper on both sides of the recovering paper reel spindle using self adhesive paper tape. Stick laterally the self adhesive paper tape to remove easily the plotted paper from the recovering paper spindle;



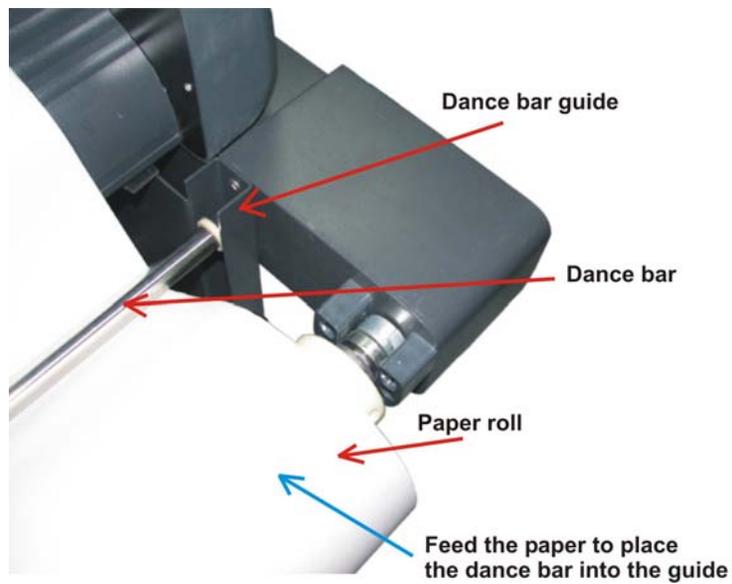
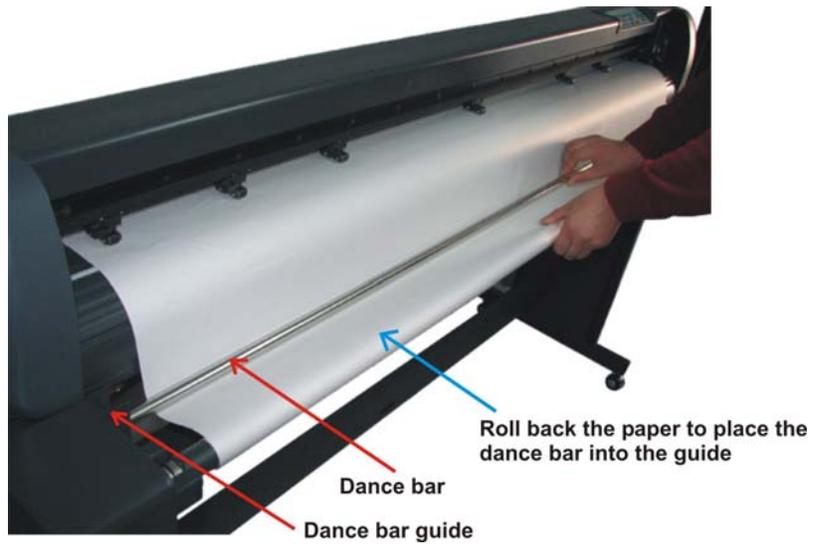
- Roll on the first coil on the recovering paper spindle, and make sure that the paper is not wrinkled and is evenly stretched;



- Keep paper at the middle of the recovering paper spindle with the right hand and with the left hand keep tight the paper roll from the feed paper spindle; roll on 3-4 coils on the recovering paper spindle, and make sure that the paper is not wrinkled and is evenly stretched;



- Mount the dance bars in the guiding places to keep the paper tight;



- Switch on the on/off button from the connections box frame;
- Switch on the power from the on/off plotter button;
- The feed paper spindle will automatically feed the paper till the paper is in front of the feed paper sensor;
- At this moment the paper is fully loaded.

**⚠ Do not use wet paper, unsmooth paper, or which has unstraight ends.  
Use only smooth paper, of 40 ÷ 100g/m<sup>2</sup> and the weight cannot be more than  
30Kg.**

## Chapter 6:

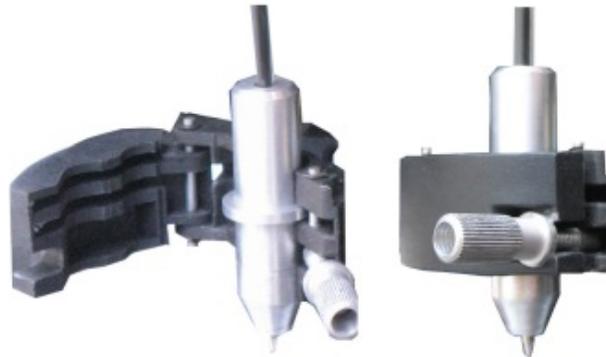
### *Writing head*

The writing head is a mobile set which contents a refill device.

#### *6.1 Refill writing device:*

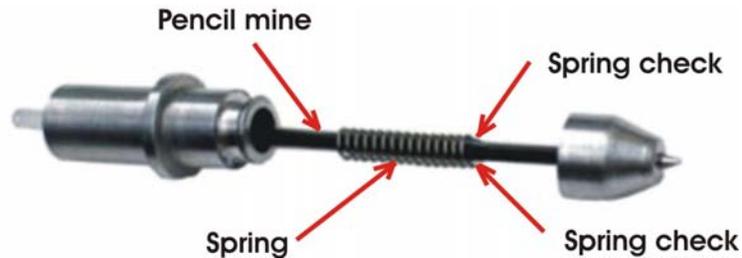


The refill writing device contents an ensemble which carries a refill. It will be fixed in the writing head by a mechanical hand.



To mount the device you will have to loosen the blockage screw till you can open the mechanical hand. Insert the writing device into the suitable place and then close the mechanical hand and lock it with the blockage screw. (See the picture).

## 6.2 How to enter the refill inside the device:



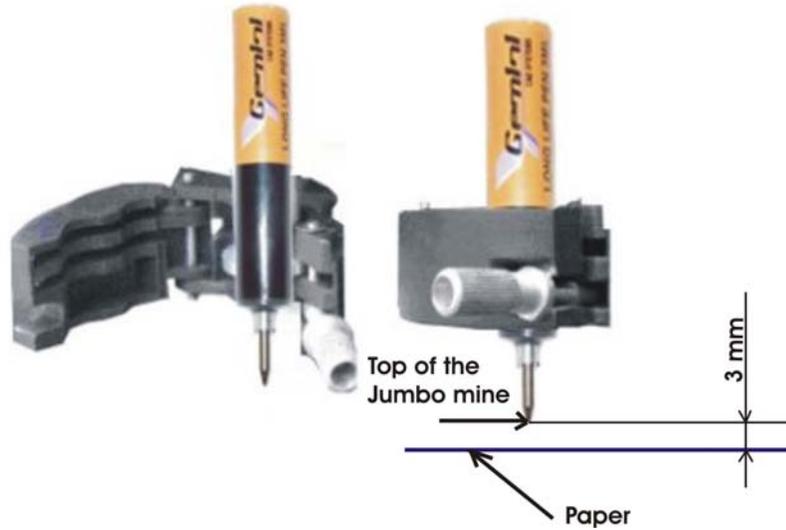
To enter the refill you will have to unscrew the device as you can see in the above picture.

## 6.3 How to enter the 3 ml “JUMBO” refill inside the writing head:

For the writing head you can also use a special 3 ml refill, which may be placed directly in the mechanical hand without the writing device. The advantage of using this kind of refill is the fact that you can plot with one “JUMBO” refill about 500ml. Another advantage would be the fact that you don’t have to supervise the plotter all the time, which must be done when you use a common refill and you know that it depletes very quickly.



This type of refill is very easy to use. Mount the refill according to the picture below; ensure that between the refill top and the paper remains about 3 mm. Then adjust the pen pressure to about 300÷350g. Test the refill writing possibilities using the “**Test**” key; the test must be applied on all paper width. If the writing test is not successful readjust the pen pressure or rearrange the refill position.



**⚠** *If you try to change the refill during plotting you may affect the plotting quality because you may change the position of the writing head by accident. We recommend you to change the refill in the **OFF LINE** state.*

After the paper is arranged and the pencil refill is mounted in the writing head, press the **Test** button and check if the writing is ok and the paper is moving in front and back. If the quality of the plotted test is ok, place the writing head in the choused start position, press **Location** button and the writing head coordinates become  $X = 0$  and  $Y = 0$ . Press the **Off/On** key and the plotter will pass automatically in **ON LINE** state.

In this moment the plotter is ready to receive data from the computer.

## Chapter 7:

### *Installing and use the software*

#### **7.1 Installing the Gemini PLT Spooler plotting program:**

 Close all Windows applications before starting the installation!

To install the program you must follow the next steps:

- Insert the installation CD-ROM for the Gemini PLT Spooler into the CD-ROM drive of your computer;
- The installing kit folder will be opened and you will have to click on the "setup.exe";
- Follow the displayed instructions;
- After the installation is completed, click [Restart] to restart the computer.

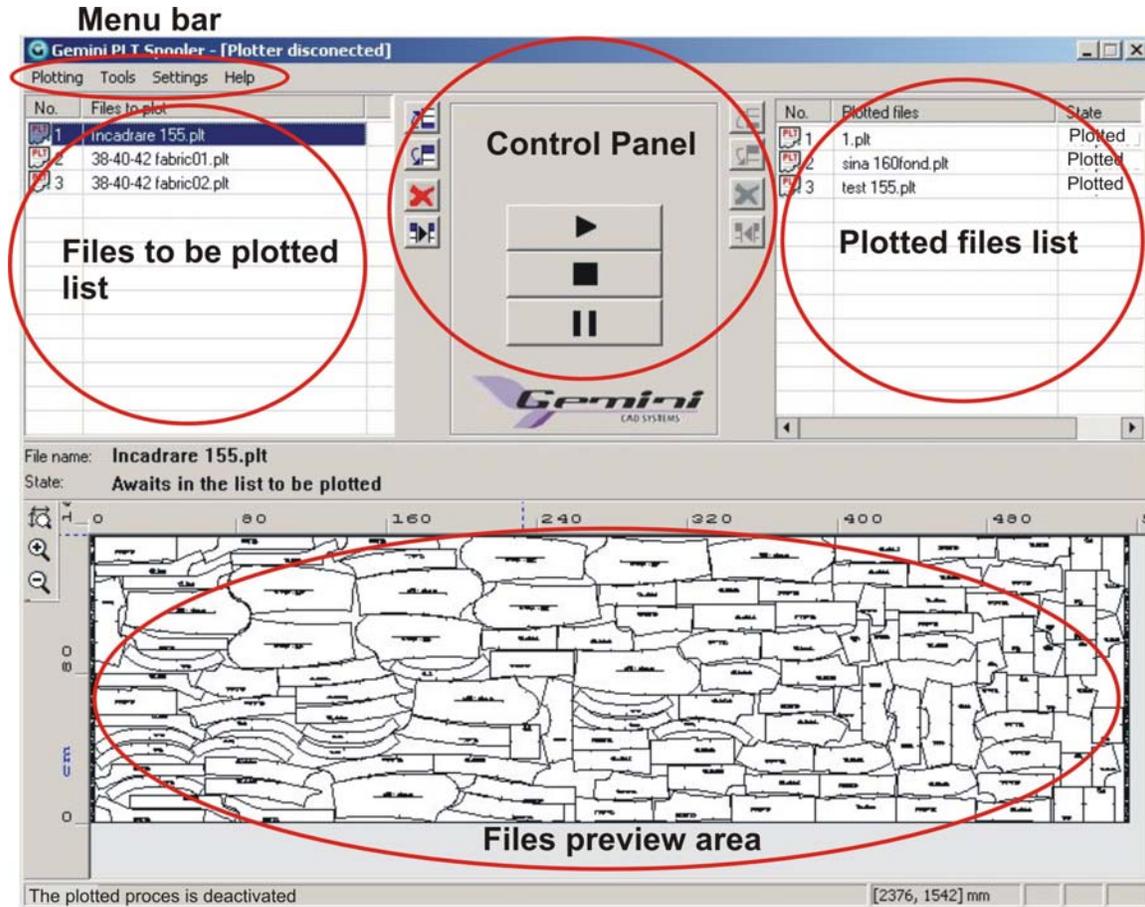
#### **7.2 Using the Gemini PLT Spooler program**

##### **7.2.1 General presentation:**

- The Gemini PLT Spooler program allows you to plot HPGL (PLT) or CUT (RS274D) files;
- It works in spooler mode: receives the files in a dedicated folder, delivers them to the plotter and moves them in another folder after plotting.
- When you start the computer the Gemini PLT Spooler program is already launched and you can see his icon down on the right of the screen (in system tray). To access the program you will have to double click on the program icon. To close the program you will have to make right-click on icon in System tray and when the menu appears click on "Exit". The "X" symbol only hides the program.

## 7.2.2 The program main window:

When you turn on the computer the Gemini PLT Spooler program icon is placed in the system tray. If you access it you get in the program's main window. The program main window is structured in the following way:



The **Menu bar** is on the top of the screen and it contents the next menus:

- **Plotting,**
- **Tools, Setting**
- **Help.**

The **Plotting** menu: when you access this menu, a new option window appears. This window contains the followings functions: Add a new file to plot, Print on the printer, Export in another format, Disconnect data transmission, Close program...

The **Tools** menu: when you access this menu, a new tool bar will be displayed in the preview area which contains the horizontal and the vertical ruler, and the zoom tools.

The **Settings** menu: when you access this menu the „General settings – PLT Spooler program” window will be open. In this window you must enter the path for saving the files to be plotted or already plotted, the time interval between two automatic saves if there are new files in the plotting files folder, plotter type, scaling, options for deleting plotted files, options for optimizing text, drawing options, application language.

The **Help** menu: provides information on the program version installed.

- On the left side, top half, you'll find the **Files to be plotted list**.
- On the right side, top half, you'll find the **Plotted files list**.
- In the middle, top half, there's the **Control Panel**, containing command keys for the transmission data to the plotter; transfer buttons for passing files from Active folder (files to be plotted list) to Inactive folder (plotted files list) or reverse; changing position buttons for selected file in the belonged list ;delete buttons for completely delete a file from the list.

If the **Play** button  is pressed, the color of the button become green and the first file from **Files to be plotted list** will be sanded to the plotter.

If the **Pause** button  is pressed, the color of the button become green and the transmission data to the plotter is stopped as long as you need. If you click again on this button the transmission data to the plotter is restarted.

If the **Stop** button  is pressed, the color of the button become green, the transmission data to the plotter is canceled and the file will be automatically transferred to **Plotted files list**.

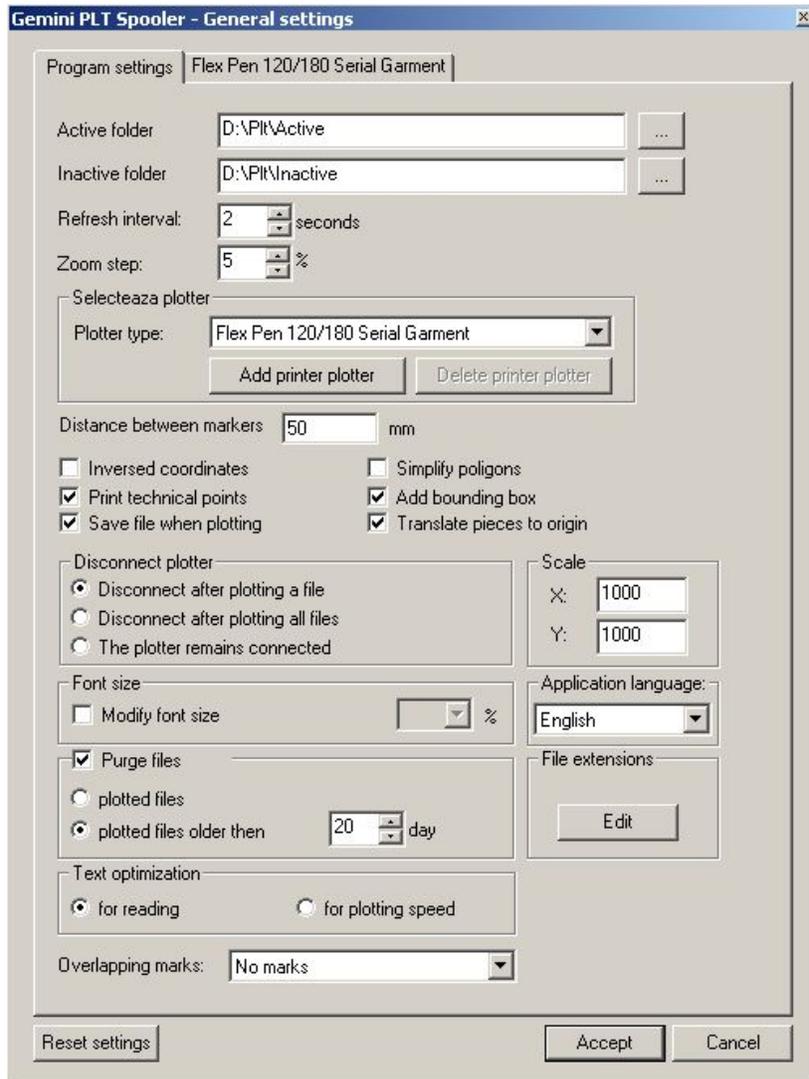
In the middle down half, there is the **Files preview area** where you can see the selected file and some file information's.

## 7.2.3 Configuring (setting) the program

### • Program general settings

By accessing the **Settings** menu from the program main window a new window called **Gemini PLT Spooler- General Settings** will be open.

The window contains the **Program settings** menu and depending of the plotter type the **Flex Pen 120 USB**, **Flex Pen 120/180 Serial Garment** or **TM7 /TM8 Plotter** menu.



In **Program Settings** menu you have the following options:

- You can enter the Active and Inactive folders path
- You can set the time for checking active folders
- You can set the zoom in/zoom out step
- You can select plotter type
- Gap between markers

- You have scaling settings
- You have the **Purge automatically plotted files** option
- Text optimization settings
- Drawing options
- You can set how to plot files: one by one till the end of the list
- Application language

On the bottom side you have 4 buttons:

**Edit:** sets the file type;

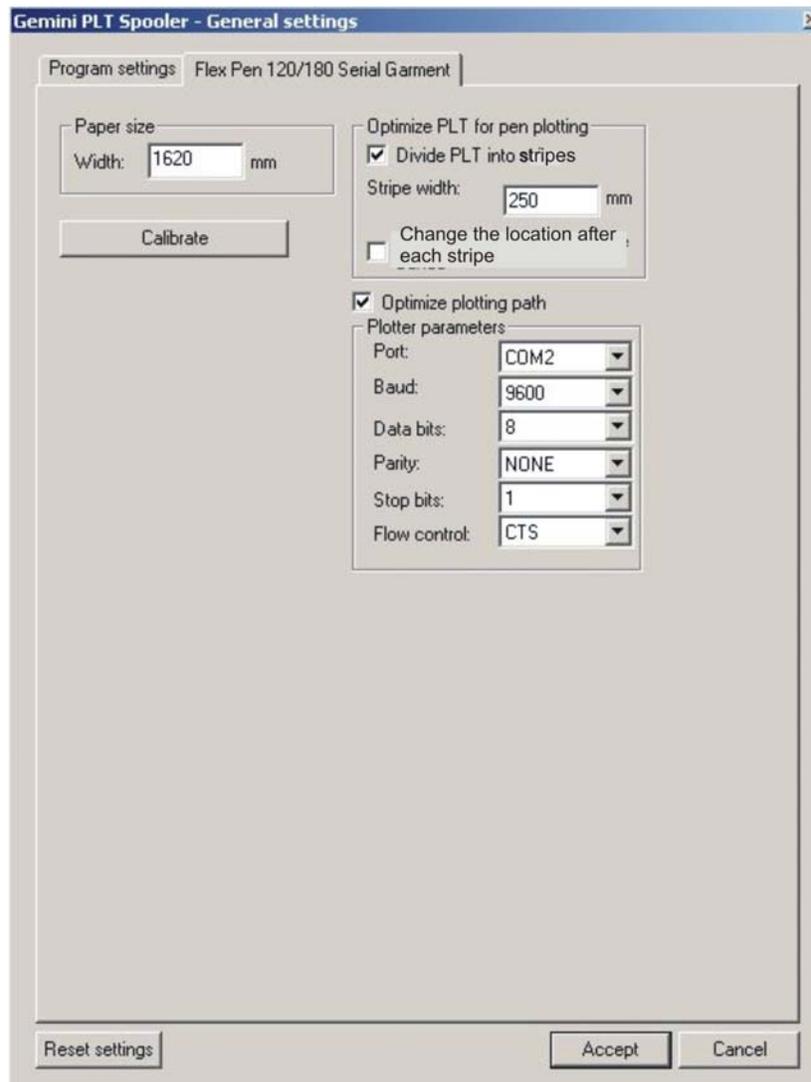
**Default settings:** click on it to load the default settings

**Accept:** click on it to save the settings

**Cancel:** quit

- **Plotter configuration:**

In the window **Gemini PLT Spooler - General settings** for the FlexiPen 120/165 plotter will be displayed the **Flex Pen 120/180 Serial Garment** menu. By accessing this menu you can configure the plotter.



In this menu you can set the width of the plotting paper, options for the optimization of the plotting (to divide PLT into stripes, stripe width), pen range optimization.

**Stripe optimization:** if the setting „Optimize PLT for pen plotting” is checked the plotter will draw stripes at the sated width in the field „Stripe width”. In this way you can avoid some inconveniences such as: excessively rolling the paper back and forth, or paper wrinkling. If you don’t check this option, the plotter will roll paper back and forth for all marker length; you will have to make sure and roll out enough paper for the length of the drawing.

**The recommended optimization stripe length is 250 mm.**

**Optimize plotting path:** if checked, the pen path is optimized to use the shortest path without empty courses.

**Plotter parameters:** this is where you enter the serial port (number of the COM) where the plotter is connected to the computer and communication parameters of the plotter with the computer.

In the bottom there are 3 buttons:

**Default settings:** click on it to load the default settings;

**Accept:** click on it to save the settings;

**Cancel:** quit;

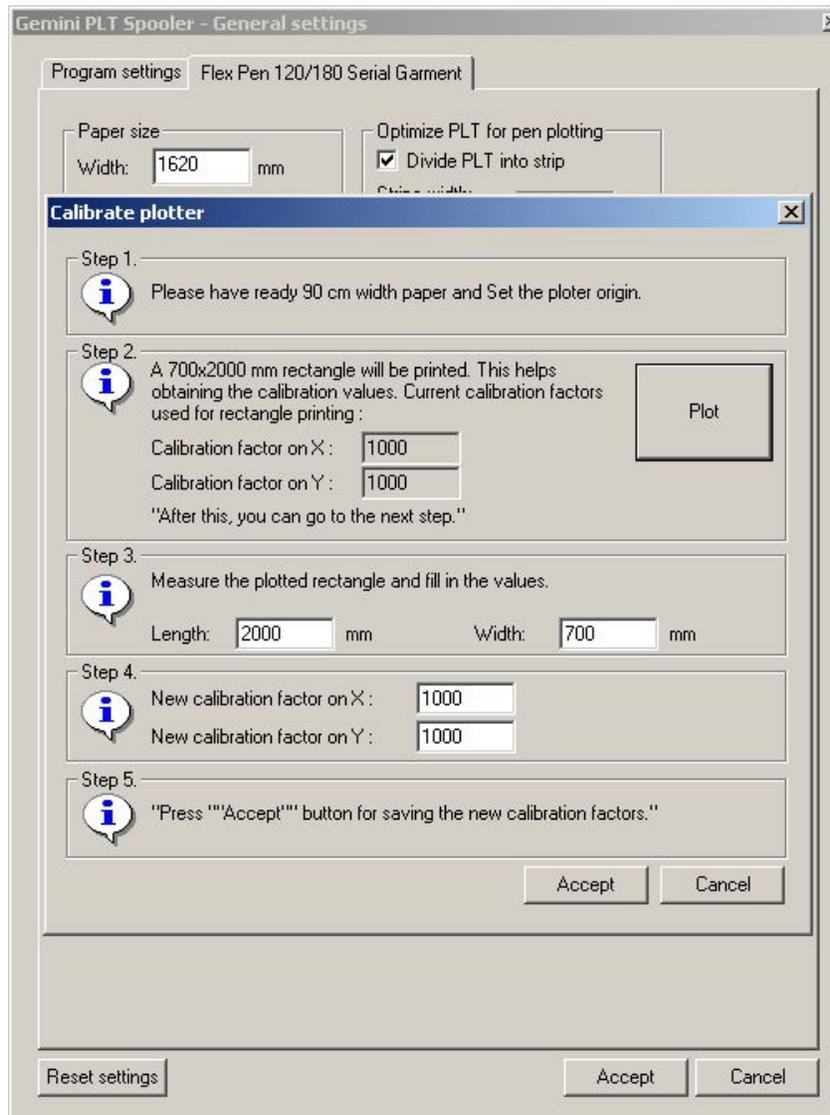
**Calibrate:** plotter calibrating button.

## 7.2.4 Plotter calibrate

In **Flex Pen 120/180 Serial Garments** menu from **General settings** window, there is a **Calibrate** button used to calibrate the plotter. You have to calibrate the plotter in the next cases:

- the first time you plot
- after you mount the plotter
- each time when you observe differences between plotted files and projected files.

If you click on this button a new window called „Calibrate plotter” will be open:



Follow the specified steps from the „Calibrate plotter” window, in the indicated order.

Insert the plotted paper size (in mm) in the „Length” and „Width” boxes.

For an exact measurement it is recommended to detach the paper from the plotter and measure it on a flat surface.

After entering the measured data, plot the file once again and re-check the accuracy of the plotting. If the newly measured dimensions are correct, the plotter is calibrated and it is ready to plot.

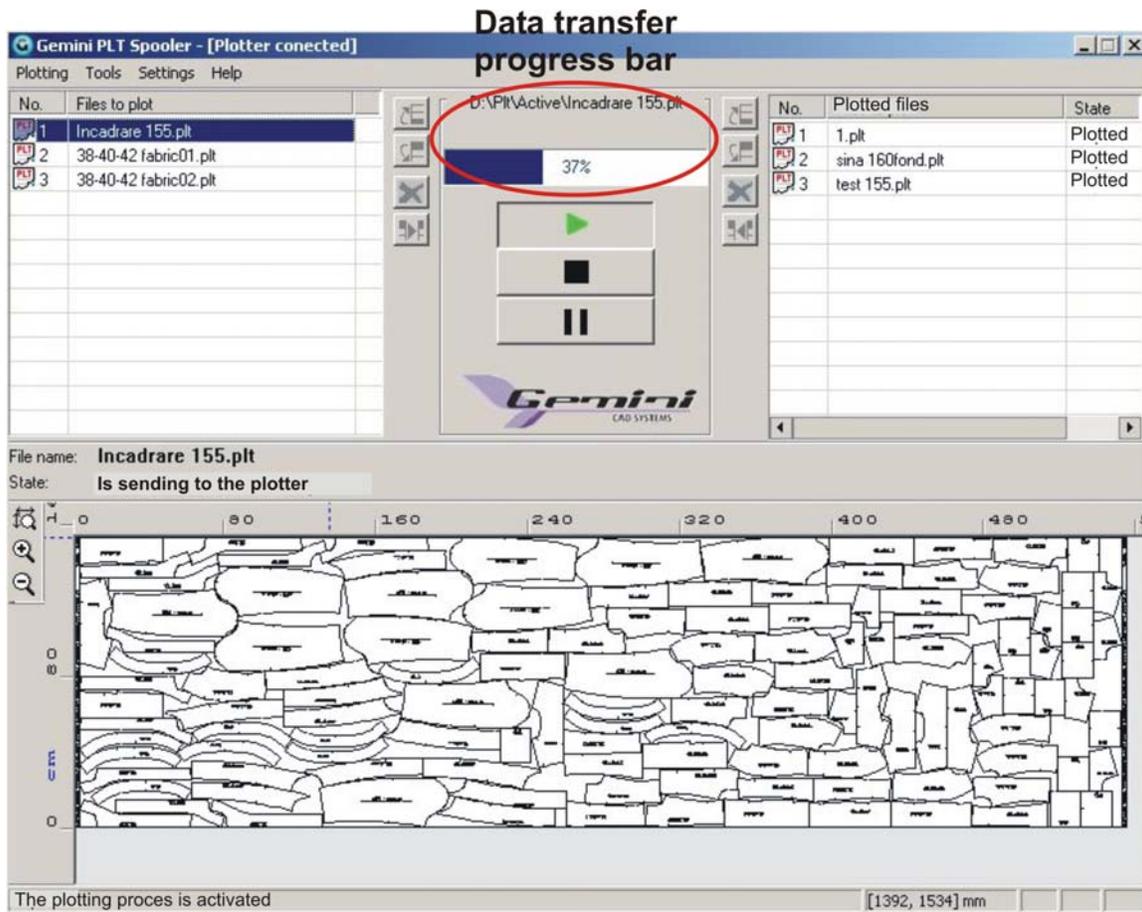
## 7.2.5 Plotting

In order to start plotting you must follow the following steps:

- Connect the serial cable to the computer and to the plotter.

**⚠ Make sure that the power is off in both computer and plotter when connecting the serial cable. Otherwise the plotter and the computer might be seriously damaged.**

- Turn on the power to the plotter from the power switch. In this moment the writing head is moving to the parking place from the right side of the plotter and the plotter go automatically in **OF LINE** state. Move the writing head to the paper in the desired position (plotting process origin), using the left/right arrow keys.
- Test the refill using **Test** button, in different positions on the paper width. If the refill doesn't write properly change the pen pressure and the up/down position (only for „Jumbo” refill).
- Choose the plotting origin and press **Location** key. In this moment the writing head coordinates become  $X = 0$  and  $Y = 0$ . Press **Off/On** key and the plotter will automatically pass into the **ON LINE** state and is ready to receive data from the computer;
- Open the main window of the **Gemini PLT Spooler** program by double clicking on its icon placed in system tray;
- Select the file that you want to plot and make it first in the “files to be plotted” list;
- Click on the **Play** button. The plotter starts to plot, the **Play** button remains activated and his color become green. Above this button will be displayed the data transfer progress bar.



**⚠ It is recommended to don't use other applications while the computer transfers data's to the plotter (while the progress bar is still active). Otherwise the computer may loose data's or freeze the plotter.**

- The progress bar disappears after transfer data's ends, the **Play** button become inactive and his color is black.
- The plotter plots until the end of the file.

**⚠** The speed of the transfer data is greater than the speed of the plotting process. This is why the plotter still plots after the progress bar disappears.

## Chapter 8:



## **Maintenance**

### **8.1 Lubricating**

Clean and lubricate the contact surface between paper and plotter with a soft piece of fabric oil softened. Do this on each 2 weeks or as many times it is necessary.

Lubricate the bearings, the feed paper spindle connection couple and recovering paper spindle connection couple using fine oils on each 2 weeks or as many times it is necessary.

### **8.2 Cleaning**

Clean with alcohol the pressure rolls, because during the plotting process impurities from refill and from paper are deposited on these elements. Do this on each 2 weeks or as many times it is necessary. You must keep clean the plotter!

### **8.3 Recalibrate**

The plotter must be calibrating once a month, or as many times it is necessary (when the plotted files dimensions are different from the projected dimensions).

### **8.4 Check the plotting quality**

Each plotted file must be checked (by measuring) before it is used in production. If the measured dimensions of the plotted file are the same with the projected file the marker can be used in production.

## Chapter 9:

### Troubleshooting

#### 9.1 Common troubleshooting:

| <b>Problem</b>  | <b>Cause</b>  | <b>The possible solution</b>   |
|---|---|--|
| The control panel display is no lighting.   | The plotter is not connected to the power line.   | <ol style="list-style-type: none"> <li>1. Check if the charging cable is connected to the plotter and if the plotter is plugged in.</li> <li>2. Check if the off/on button is in the ON position.</li> <li>3. Check the fuse and replace it if is interrupted.</li> </ol>  |
| The message:” Welcome to use CAD Plotter” is not displayed when you turn on the power to the plotter. | If you turn on the plotter after you just turned off.   | Turn off the plotter and then turn it on after at least 10 seconds.  |
| The file was sent to plot but the plotter doesn’t respond.  | <ol style="list-style-type: none"> <li>1. The plotter is not turned on.</li> <li>2. Error on plotter communication.</li> <li>3. The serial interface is not well entered in the program.</li> <li>4. The plotter origin wasn’t set.</li> <li>5. The plotter is not in the “Connect” state.</li> </ol> | <ol style="list-style-type: none"> <li>1. Check if the plotter is working in the right parameters.</li> <li>2. Check if the serial cable is connected on both: computer and plotter.</li> <li>3. Check if the serial port is the right one.</li> <li>4. Set the origin and press on “Location” key.</li> <li>5. Put the plotter on the Connect state.</li> </ol> |
| A file plotting is stopped.   | The plotter is in the pause mode.   | Check if the flashing caution lights “Pause” is bright and step out from “Pause” mode.   |
| The plotting files cannot be plotted.   | <ol style="list-style-type: none"> <li>1. The serial port is secured.</li> <li>2. Settings regarding the serial port are wrong.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Unsecured the port (uninstall the Antivirus program).</li> <li>2. Set well the settings regarding the serial port.</li> </ol>  |

|   |  |  |
|---|--|--|
| The pen stops or goes in the right side, and the plotter makes a strange noise even if the file wasn't totally plotted. | You have an Antivirus installed on your computer which makes the plotter act improperly.               | Uninstall the Antivirus program.                   |
| During the plotting the pen goes in the left side of the plotter and it makes a strange noise.                          | There are some invalid data sets in the program (ex: the marker width is bigger than the paper width). | Set the marker width according to the paper width. |

Please carefully check the above malfunctions and solutions, if it still could not be solved, please contact our Service Department.

## **9.2 Soft troubleshooting:**

| <b><i>Problem</i></b>                   | <b><i>Cause</i></b>                    | <b><i>The possible solution</i></b>    |
|---|--|--|
| You cannot start the plotting program   | Troubles during the program installing | Reinstall the program                  |
| The plotting program can not be operate | The plotting program is blocked        | Close the program and restart it again |

Please carefully check the above malfunctions and solutions, if it still could not be solved, please contact our Service Department.



### 9.3 Plotting quality troubleshooting:

| <b>Problem</b>   | <b>Cause</b>   | <b>The possible solution</b>   |
|--|--|--|
| The pen is moving but it doesn't mark the paper.                                   | <ol style="list-style-type: none"><li>1. The refill is dry or empty.</li><li>2. The pressing pressure is too small.</li></ol>  | <ol style="list-style-type: none"><li>1. Change the refill.</li><li>2. Increase the pressing pressure pen.</li></ol>   |
| The draw is interrupted.   | <ol style="list-style-type: none"><li>1. The refill doesn't work properly (it writes interrupted).</li><li>2. The white plastic band is damaged.</li></ol>   | <ol style="list-style-type: none"><li>1. Change the refill.</li><li>2. Change the plastic band</li></ol>   |
| Horizontally gap appears between bands.  | <ol style="list-style-type: none"><li>1. Uneven paper.</li><li>2. The paper is not well arranged.</li><li>3. The plotter is inclined.</li></ol>  | <ol style="list-style-type: none"><li>1. Replace the paper.</li><li>2. Rearrange the paper following the instructions.</li><li>3. Check the plotter flatness.</li></ol>  |
| The plotter does not feed the paper.   | <ol style="list-style-type: none"><li>1. The paper roll is over.</li><li>2. The paper sensor is seeing "something".</li><li>3. The conical bucea of the feed bar makes contact with the support.</li></ol> | <ol style="list-style-type: none"><li>1. Replace the paper roll.</li><li>2. Remove the objects from plotter area.</li><li>3. Fix properly the conical bucea to do not make contact with the support.</li></ol> |
| The plotter crumples the paper.  | The contact surface between the paper and the plotter is dirty.  | Clean and lubricate the contact surface.   |
| The paper is not properly dragged (there are overlapping in the plotted file)      | The pressure rolls are dirty.  | Clean the pressure rolls.  |
| There are gaps on horizontally and vertically, pieces from the marker are resized. | You have an Antivirus program installed on your computer which damages the transition between plotter and computer.  | Uninstall the Antivirus program.   |

Please carefully check the above malfunctions and solutions, if it still could not be solved, please contact our Service Department.