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# PAPERFOX FTD-1

## Tape applicator

### Instructions manual

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Version: 02.Nov.2023

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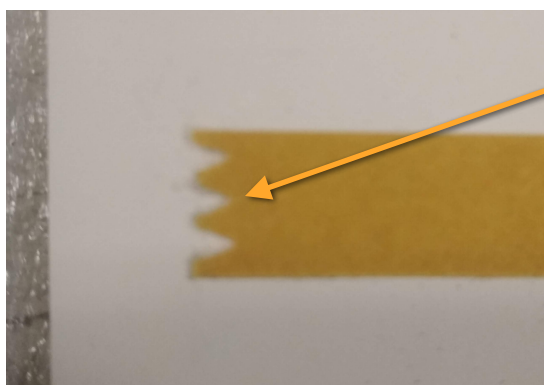
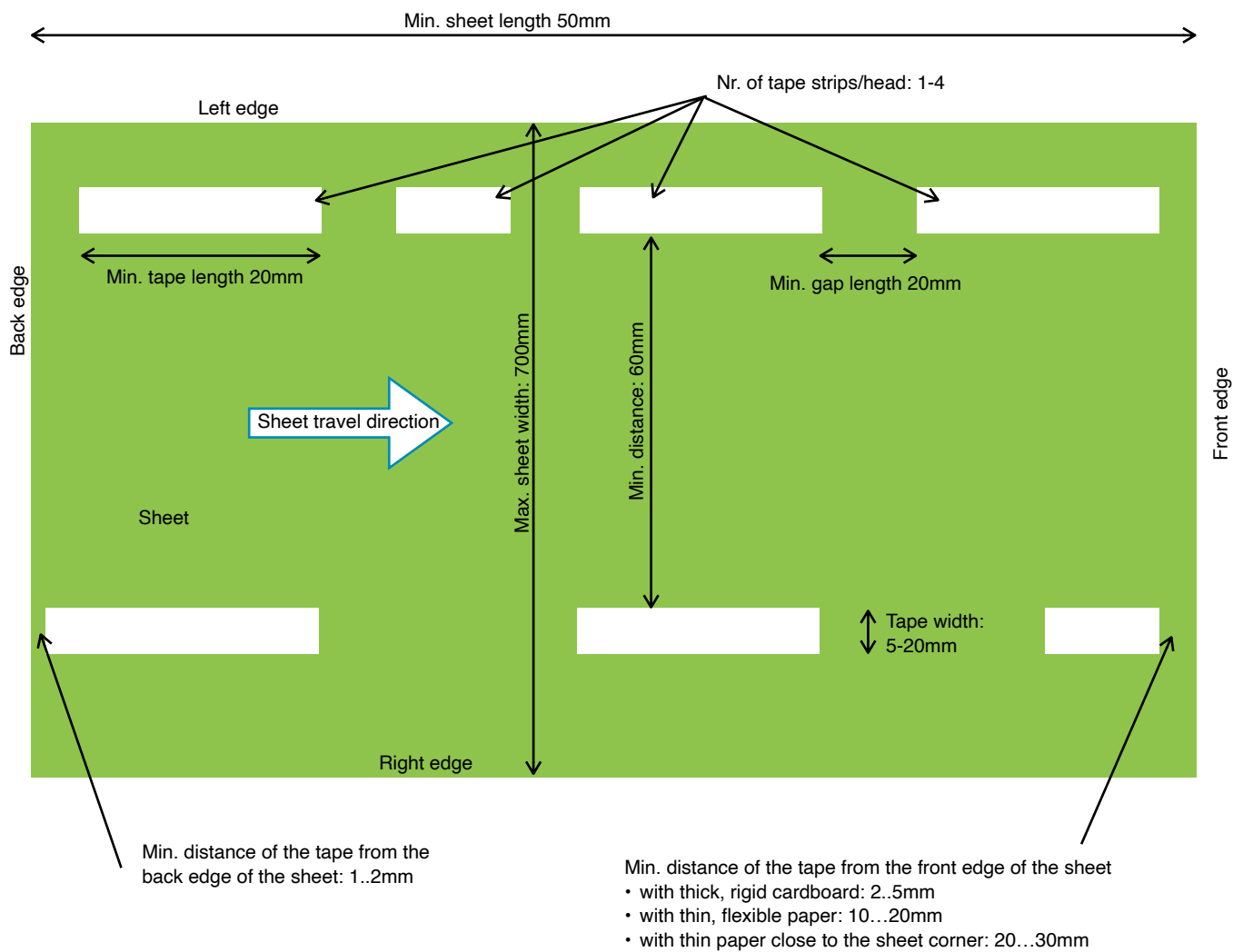
## Brief description

With the Paperfox FTD-1 Programmable tape applicator you can apply up to 20mm wide double sided adhesive tape on paper, cardboard or similar sheet materials. The adhesive tape should be easy to tear. Strong plastic based, reinforced or foam based tapes can't be used reliably. The FTD-1 has two Paperfox TD-1 tape applicator heads (a left and a right one) they can place up to 4-4 tape strips at programmed positions. The taping accuracy is about +/- 2mm (depending on the tape used).

## Technical parameters

Dimensions without stand:	L=110cm W=100cm H=75cm
Dimensions with stand:	L=110cm W=100cm H=150cm
Weight with stand:	75 kg
Voltage:	230V 50Hz
Power consumption:	180W
Pneumatic pressure:	8 Bar
Sheet forwarding method:	Conveyor belt (700x700mm)
Tape cutting method:	With toothed knives. (So the cutting lines are not straight, they are zigzag shaped.)
Speed: (machines with frequency controller)	2, 10, 20, 30 m/min
Speed: (without frequency controller)	20 m/min
Max. sheet width:	700mm
Min. sheet width:	40mm
Min. sheet length:	50mm
Max. sheet thickness:	3mm
Max. tape width:	20mm (50mm with special TD-50 heads)
Max. programmable taping length:	20m (at 20 m/min speed)
Accuracy of tape application:	+/- 2mm (depending on the tape used)
Tape type:	Easy to tear tapes. Strong or foam based tapes can't be processed accurately and reliable.
Nr. of tape heads: (standard configuration)	2pcs (1pc left, 1pc right)

## Taping parameters



The cutting line is not straight, there are toothed.

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## Safety instructions

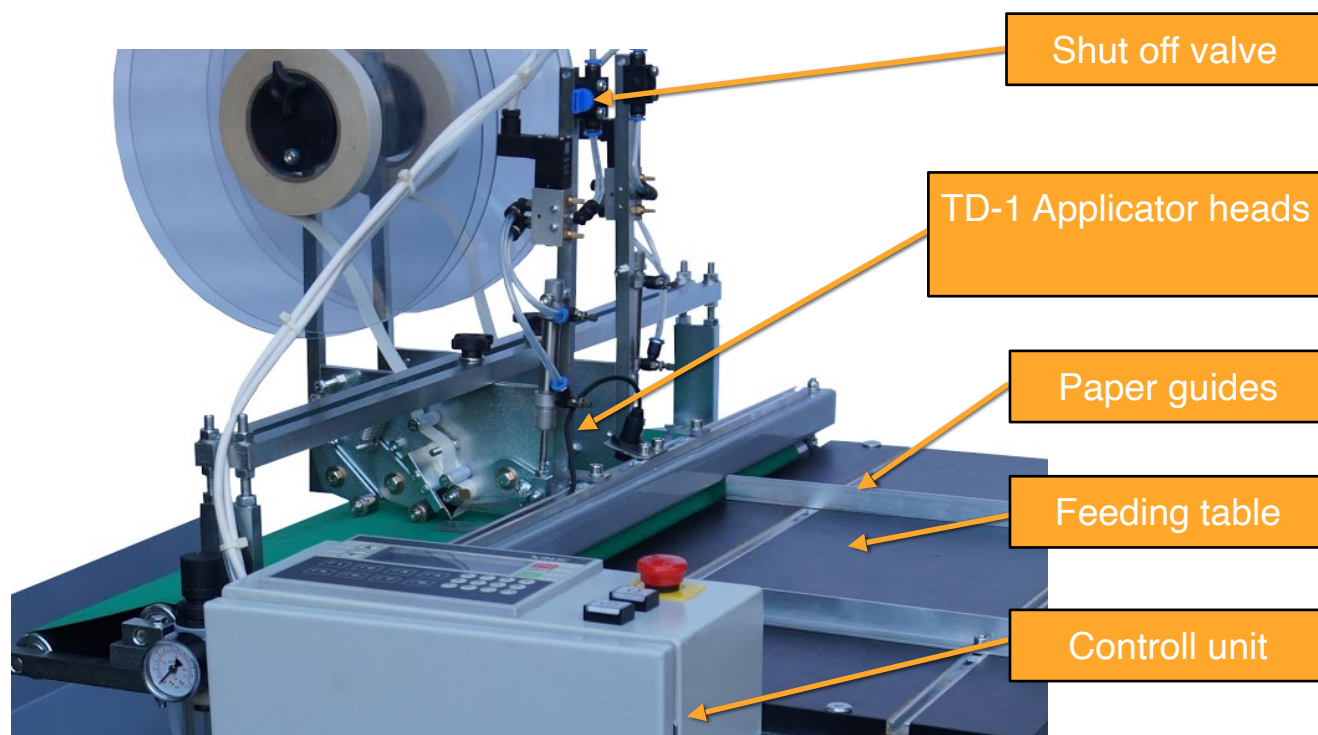
Please read the operating instructions before you use the Paperfox FTD-1 Tape applicator to prevent accidents and ensure the trouble-free operation.

- The Paperfox FTD-1 Tape applicator may not be operated by anyone who does not read or does not fully understand the operating manual.
- The device may not be used in wet or explosive environment.
- Always use a proper lighting.
- To ensure the easy unplugging use a socket in a height 0,6 and 1,9m.
- Use a proper socket with a safety ground.
- Never change the fuse to any other type as the designated value.
- Repairs should be carried out by qualified persons using original parts.
- There are **sharp knives** in the taping heads. Be careful if you change the tape or doing maintenance around the knives.

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## Parts of the Paperfox FTD-1 Tape applicator and their adjustment possibilities

The configuration is subject to change. This parts are supplied in standard configuration.



You can place the sheets on the feeding table and set the paper guides to the proper position. With the shut off valve you can switch on/off the tape application. This valve should be switched off if you insert the adhesive tape into the TD-1 head and should be opened during normal operation.



With the main switch you can switch on/off the device. The light of the display should be on now. If the display doesn't light, then check the safety stop button.

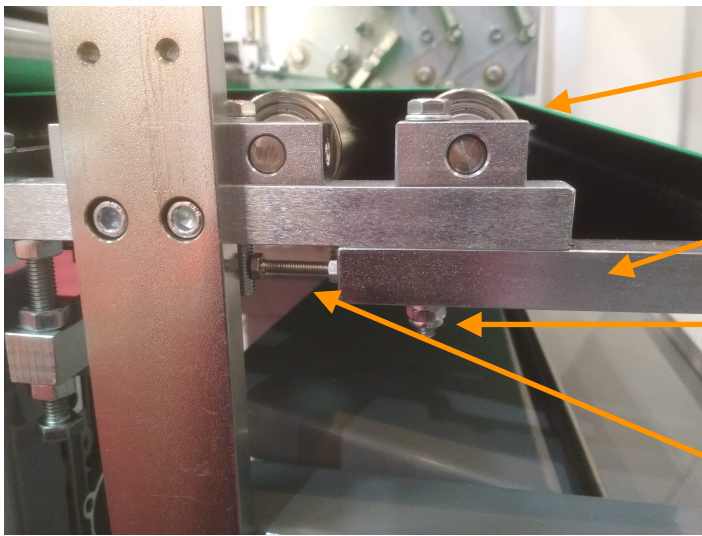
If the safety stop button is pressed down you can't operate the device. It can be set into normal operating position by turning the head of the pushbutton a bit clockwise.

The sheet forwarding motor can be switched on/off with the motor on/off switch.

The operating parameters of the device can be set with the programmable controller as it is described in "The programmable controller (PLC)" section.



## Adjusting the tension of the conveyor belt



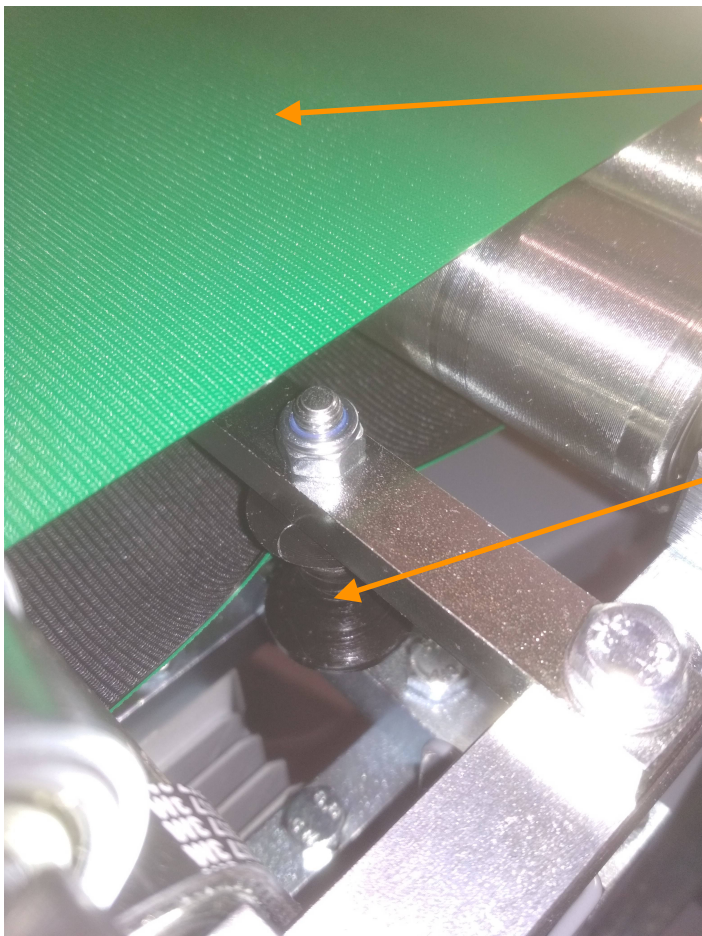
Conveyor belt

Adjustable roll holder

Fixing nut (M6)

Adjusting screw (M4)

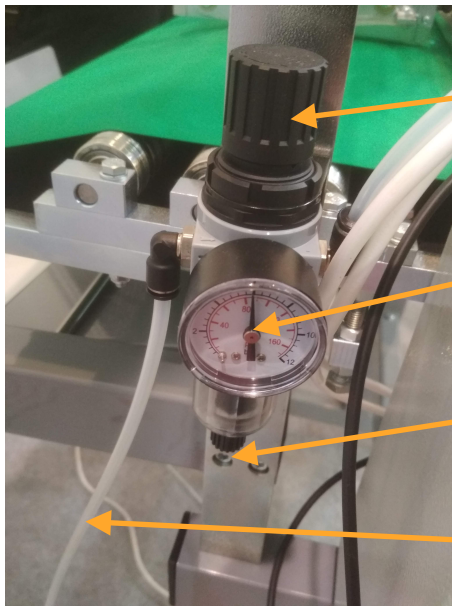
After loosening the M6 fixing nut you can adjust the tension of the conveyor belt with the adjusting screw. After adjustment fix the adjusting screw with its M4 nut. Do the same process at the other side. Try to adjust the belt tension so that the belt should run between the left and right belt guiding roller symmetrically.



Conveyor belt

Conveyor belt guiding roller.  
There is a similar roller at the other side.  
The belt should run between the two guiding rollers symmetrically without pushing them too hard.

## The pneumatic filter and regulator



Pressure regulator knob

Manometer

Water drain valve

Pneumatic tube

The pneumatic filter removes the small particles and the harmful oil/water condensate from the compressed air flow. You can adjust the pressure with turning the pressure regulator knob. If you can't turn it, then pull it up. After adjusting you can prevent it from the unwanted adjustment by pushing it down.

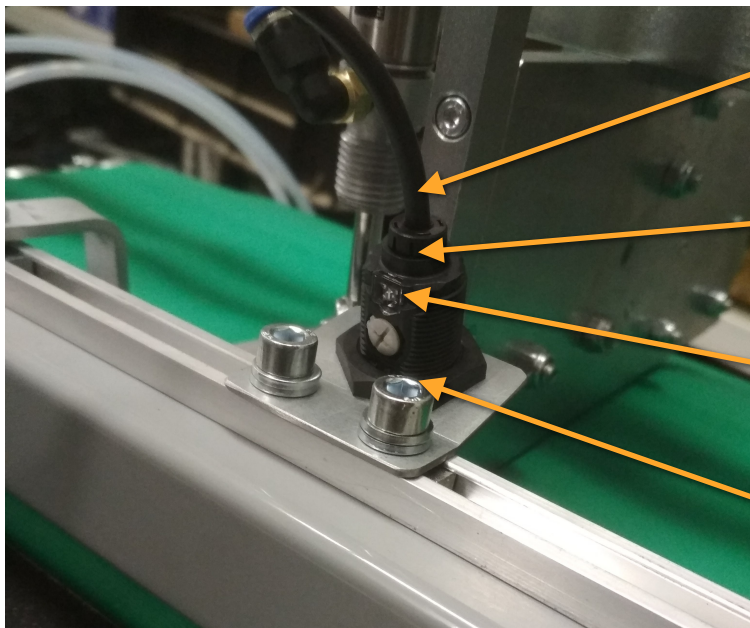
There is a water drain valve at the bottom of the pneumatic filter and regulator. If the FTD-1 is not pressure, then you can release the condensed water from the transparent water tank with this screw.

There is a pneumatic connector at the end of the pneumatic tube for connecting the device to the compressor.





## Fotosensor



Omron E3F1-DN11-2M  
fotosensor

LED

Sensitivity adjusting

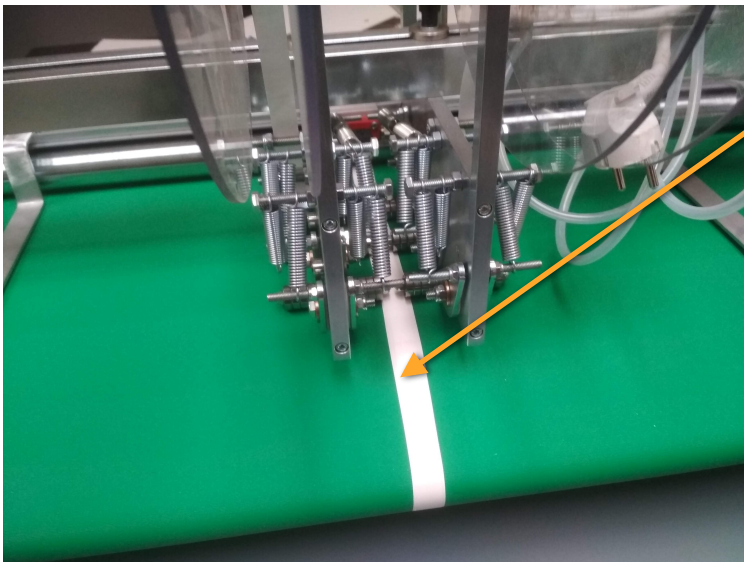
Fixing screws

The standard FTD-1 is available with an Omron E3F1-DN11-2M photosensor.

The sensitivity of this can be adjusted with a screw driver. The state of the photosensor indicated with LEDs.

This sensor indicates only the lighter sheets than the background. The standard photosensor uses red light. In red light the green conveyor belt seems to be black. So the photosensor can't different a dark sheet from the background.

If you want to process dark sheets, then you can stick a white insulator tape strip on the conveyor belt under the photosensor and use the "Invert photosensor" function on the controller.



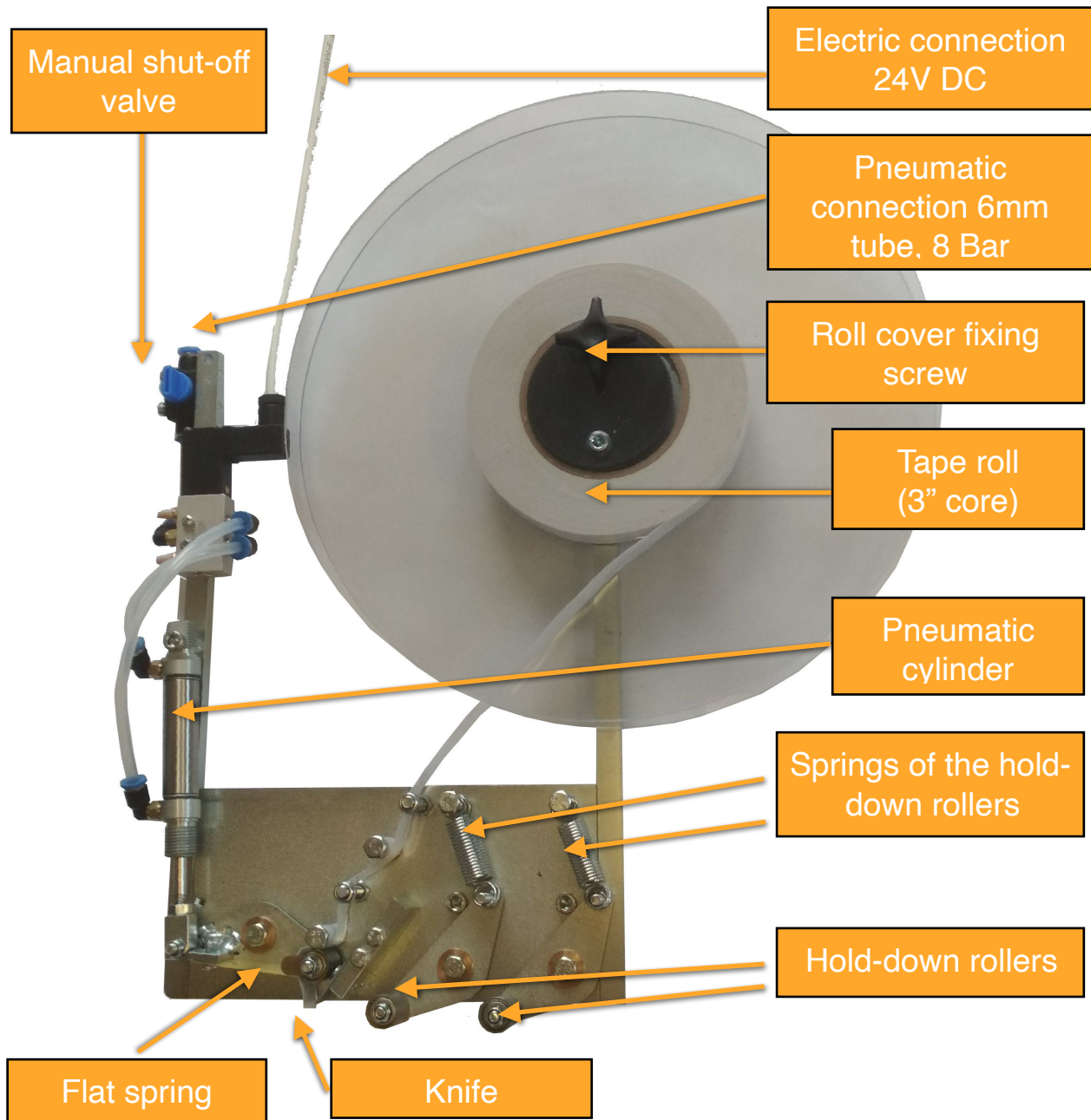
White insulator tape

(There are also extra paper hold-down roller on this photo)

The usage of the white insulator tape can be useful at other photosensors as well, if they can't different the sheets from the background because they has similar colour.

## TD-1 Taping heads

The Paperfox FTD-1 in standard configuration equipped with two TD-1 taping heads. The right head is a mirrored image of the left head.



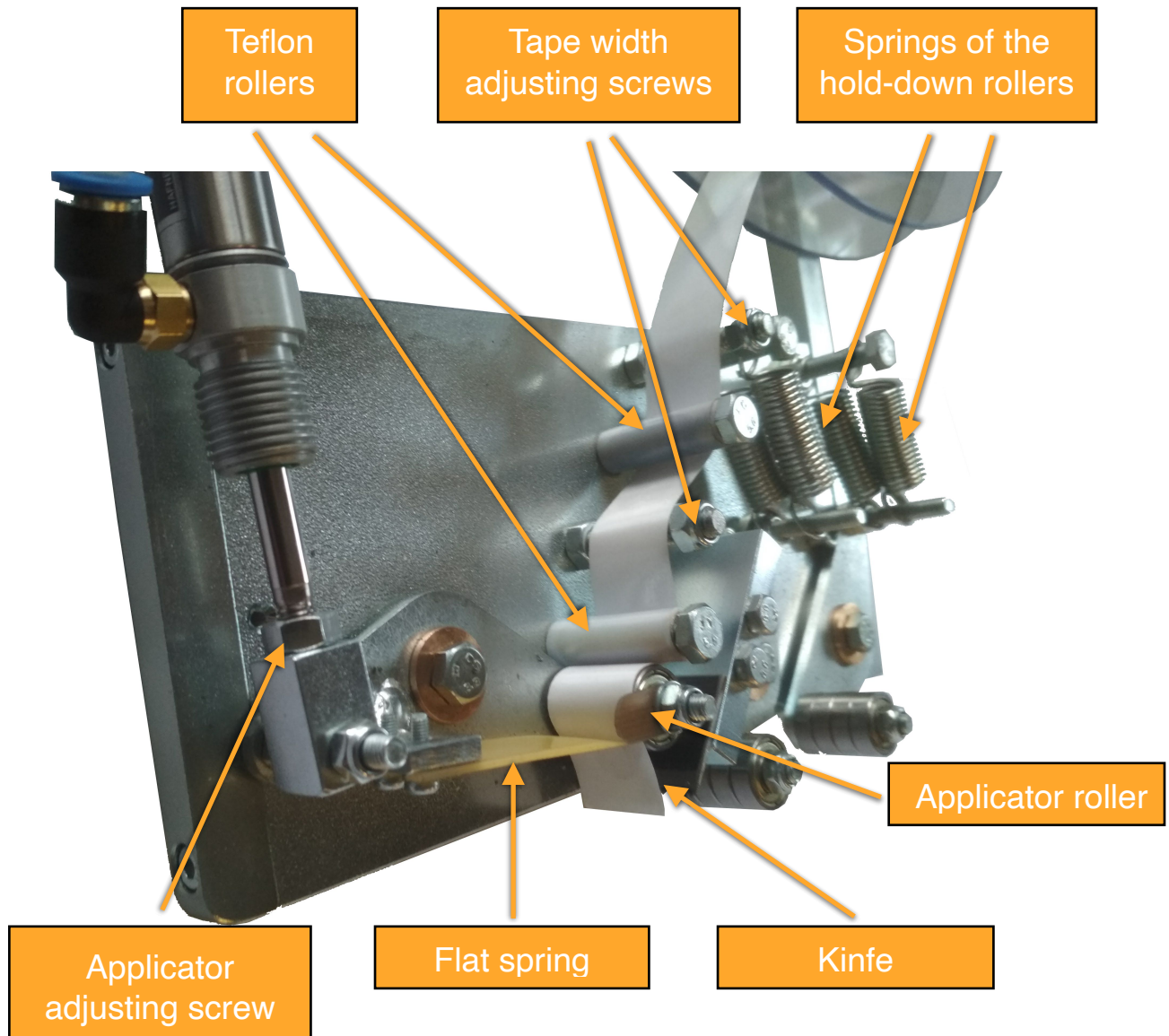
The compressed air required for operation can be connected with a 6mm outer diameter plastic tube.

The electrical control is carried out with 24V DC. When the voltage is applied, the TD-1 starts to apply the tape, when switched off then the applicator roller is lifted, the knife cuts the adhesive tape.

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## Inserting the self adhesive tape into the TD-1 applicator head

The TD-1 applicator head uses 3"(76mm) inner core size and max. 30cm outer diameter rolls. The maximum tape width is 20mm. It is recommended to use easy to tear adhesive tapes, because with strong adhesive tapes made of plastic film, operation may be unstable. The adhesive tape should be placed into the head as shown. The adhesive side of the tape should roll on teflon rolls, which will not stick to it. When changing the roll, it is advisable to close the manual shut-off valve.



### Adjusting the TD-1 head to the tape width

Adjust the tape width adjusting screws to the width of the adhesive tape, otherwise the position of the tape in side direction may be uncertain.

### Adjusting the pressure of the hold down rollers

The sheet with the tape is forwarded by the hold down rollers. For thinner, easily to tear tapes, the use of 1-1 springs is sufficient, the more rigid tapes require 2-2 springs.

When repositioning the TD-1 tape applicator head, we suggest to hook off all springs because in this way it is easier to move the heads.

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### Adjusting the theapplicator adjusting screws

With the applicator adjusting screw, you can adjust the upper position of the applicator roller so that it would be pressed against the teflon roller. In this way the teflon roller and the applicator roller holds firmly the tape ensuring that the knife should cut the tape in the desired place. If the tape is easy to tear, you can set this screw so that it wouldn't touch the teflon roller so the lifetime of the teflon roller will be longer.

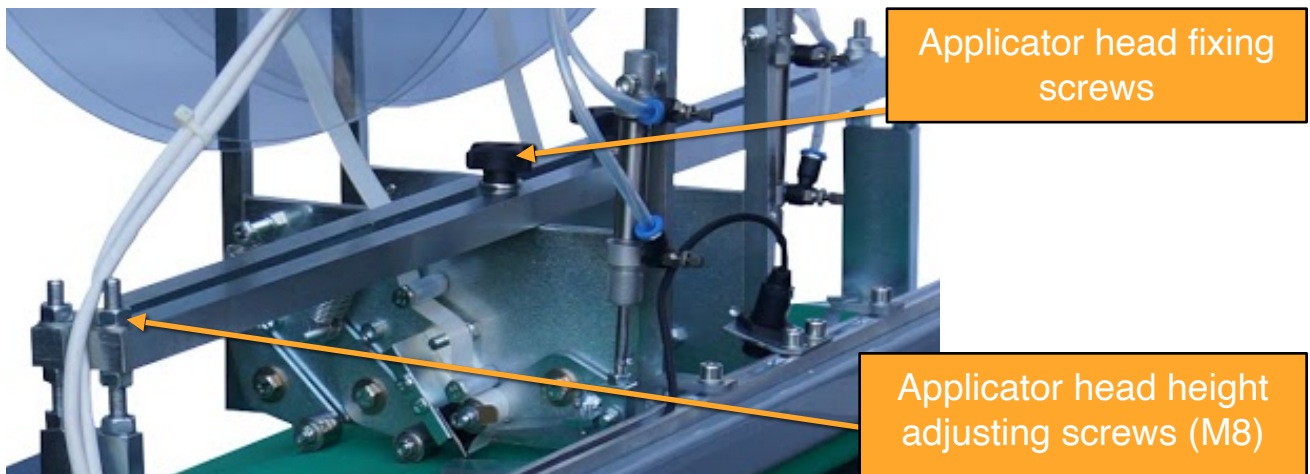
### Setting the position of the tape applicator heads

The longitudinal position of the tape application can be set through program but the side position should be set manually.

Hook out all springs of the paper hold on rollers. Loose the applicator head fixing screws and slide the applicator head to the desired position.

Fix the applicator head fixing screws. Hook back as many springs as you need.

You can adjust the height of the tape applicator heads with the M8 adjusting screws. This can be useful if you want to process thick products.

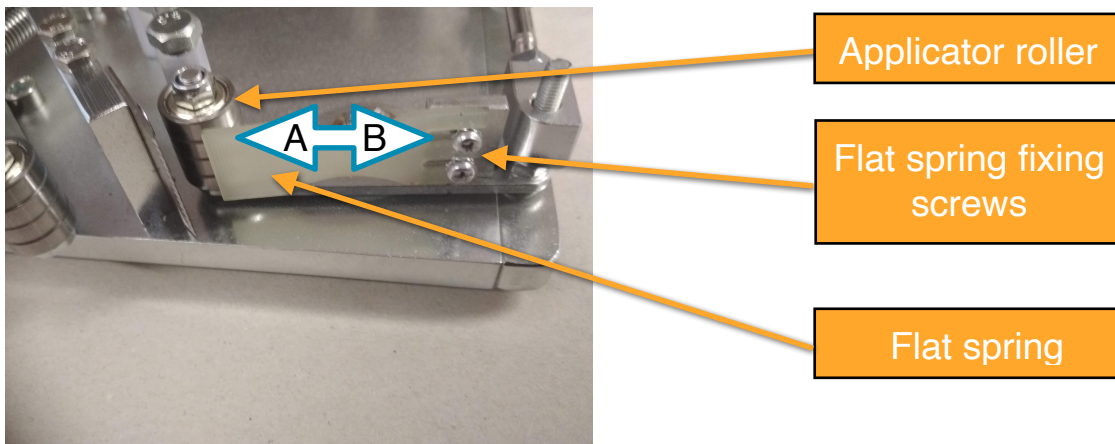




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## Flat spring

A flat plastic spring holds the tape against the applicator roller.



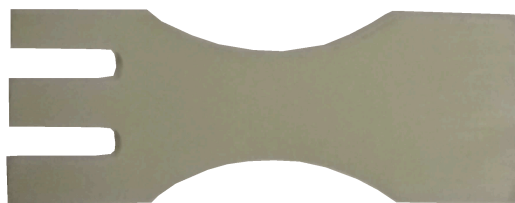
After loosening the flat spring fixing screws you can adjust the flat spring. It should hold the tape strong enough that the tape wouldn't sleep back from the applicator roller. If the pressure is not enough then the tape can be pulled back and the next tape application will be unsuccessful. If the pressure is too much then the flat spring can collect the glue from the tape or even can jam.

If you move the flat spring closer to the knife (direction "A" ) then

- the cutting position at the end of tape laying will be more stable and accurate.
- the knife can cut stronger adhesive tapes.
- the start of tape laying can be unreliable.

If you move the flat spring further away the knife (direction "B" ) then

- the cutting position at the end of the tape laying may differ from sheet to sheet.
- the knife can't cut stronger adhesive tapes.
- the start of tape laying can be more reliable.



Paperfox TDFS-1 Flat spring

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## Teflon roller

Adhesive tape does not stick to Teflon coated rollers, but unfortunately the rollers are parts subject to wear. Several types of Teflon-coated rollers are available.



Paperfox TDSR-1 standard Teflon roller



Paperfox TDER-1 Extruded Teflon roller

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## Adjustable speed and direction

The FTD-1 is equipped with a frequency controller. In this way you can adjust 2, 10, 20 and 30 m/min speed.

Frequency  
controller



The slowest speed (2 m/min) is for testing and adjustment purpose, but if you select this speed then you can increase it with a potentiometer on the frequency controller.

You can change the running direction of the conveyor belt on the controller with the “Motor reverse direction” checkbox. This function can be useful at removing paper jam or when sticking white insulator tape under the photosensor if the sheet has such colour which otherwise can’t be indicated by the photosensor.

If you change the speed, the operational parameters are changing automatically according the selected speed.

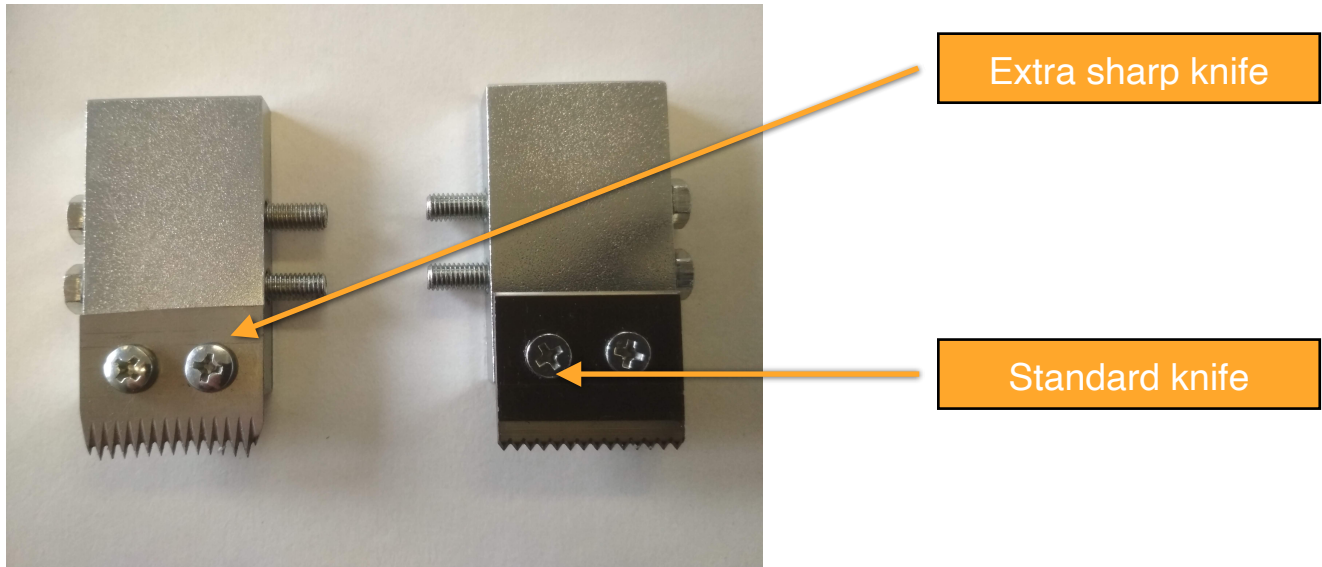
The FTD-1 without frequency controller has a fixed, 20 m/min speed, but the software is the same. In this case you should always use the speed “3”, because at his speed the selected parameters are the same as at the standard 20 m/min speed.

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## Extra accessories, special solutions

The parts listed in this chapter are made to order and are not part of the standard equipment.

### Sharper knives



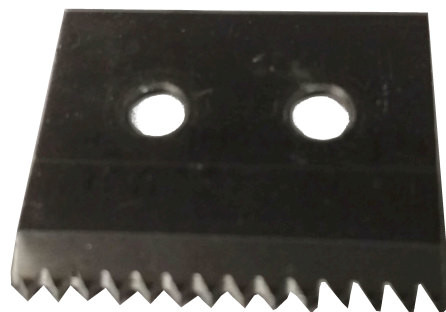
The standard knife cuts the easy to tear tapes well and does not leave much tooth marks on the tape when cutting it. The life time of this knife is long and the price is low.

The extra sharp knife cuts the stronger tapes better, but leaves more tooth marks and it is **very sharp and dangerous**.

With the extra sharp knife, the position of the end of the tape laying is more accurate, because the sharp knife slides less on the surface of the adhesive tape before cutting it.



Paperfox TDEK-1 extra sharp knife



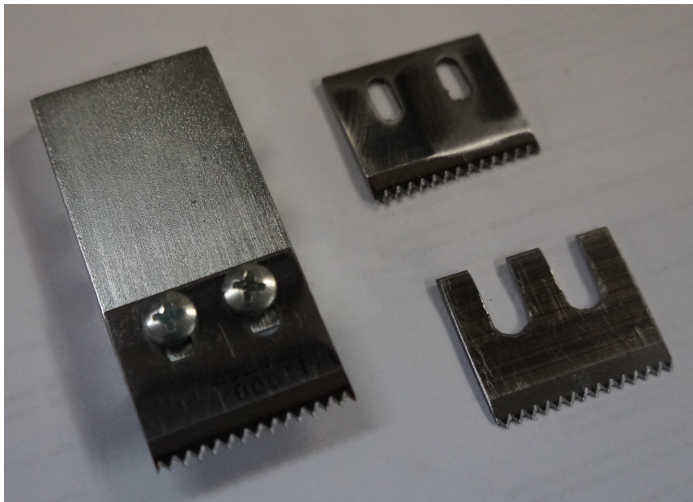
Paperfox TDSK-1 standard knife



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## Adjustable knives

On individual request, the knives can be equipped with a longitudinal hole, so that their vertical position can be adjusted.



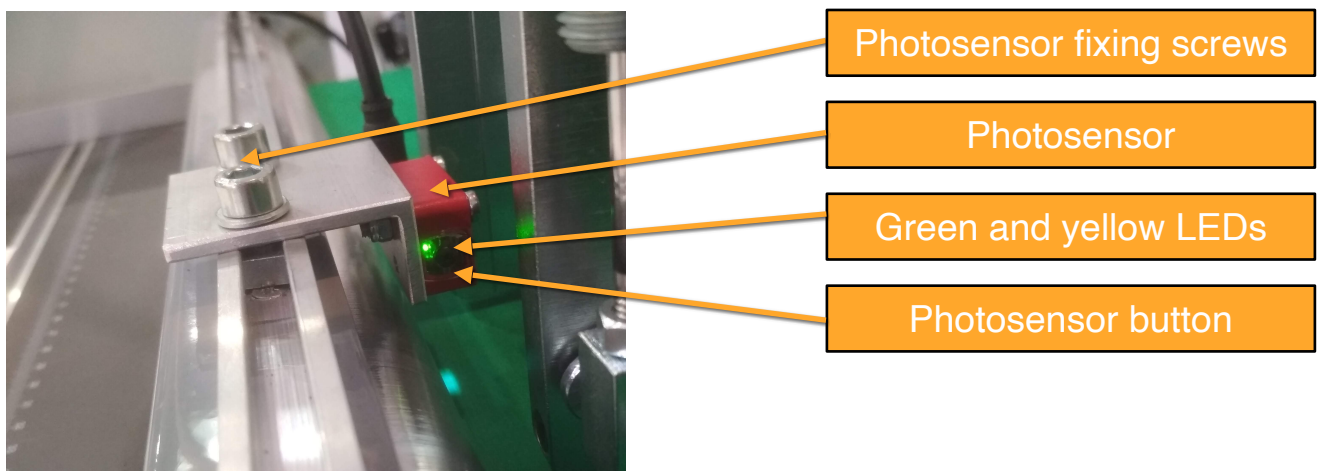
If you set the knife edge lower (closer to the conveyor belt) then

- At the end position of the tape laying will be more precise
- The device can cut stronger adhesive tape
- The knife can damage the sheets to be taped
- The knife can damage the conveyor belt

**Attention! Do not place the knife too close to the conveyor belt, as this may seriously damage it.**

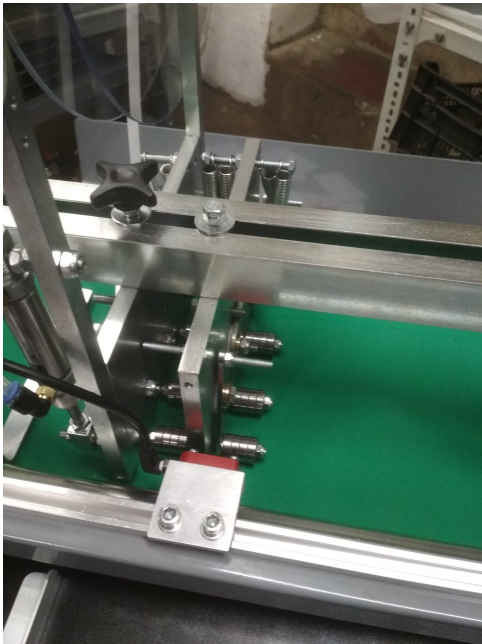
## Other photosensor

The FTD-1 can be equipped with others photosensor to increase the accuracy or for processing sheets witch the standard photosensor can't detect.



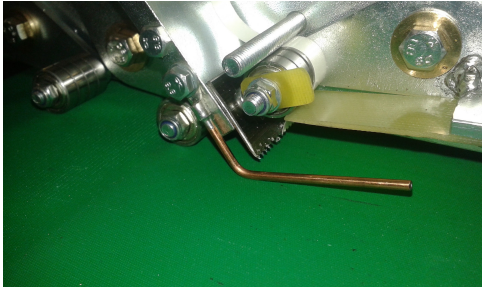
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## Extra hold-down rollers



With cardboard usually the FTD-1 works well, but there are difficult materials which may need extra, special hold-down rollers. They can be used if the standard rollers can't hold the sheet enough or if the normal rollers living a track on the sensitive surface. You may need special hold-down rollers if you want to process thick or sensitive sheets, extra small, folded or not rectangular paper products.

## Extra paper guides

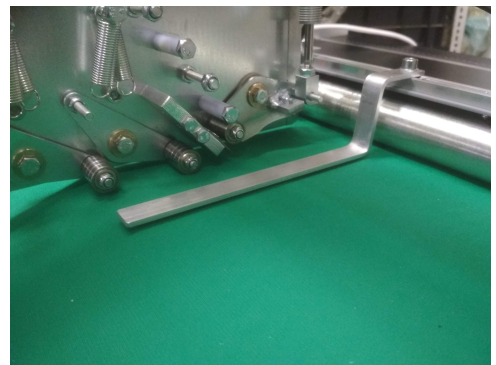


With this small paper guide you can use wavy paper without creating unwanted "dog ears".

This is a paper guide to prevent bigger sheets from curling.



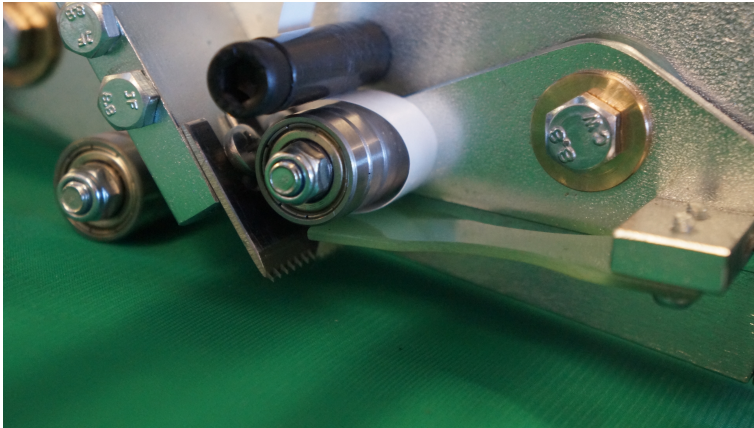
If you want to begin the tape application close to the corner of the sheet you can try to replace the first hold-down roller with this guide plate to prevent the creation of unwanted "dog ears". Sometimes when the tape sticks and wraps around the first hold down roller this guide also can help. With this guide the minimal length of the tape maybe longer as normally.



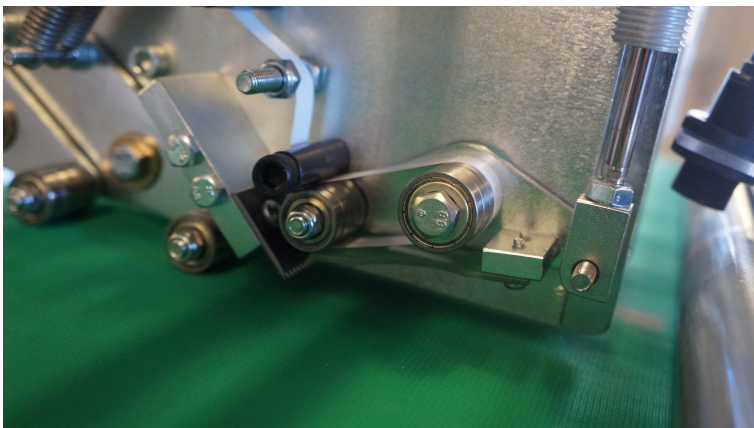
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## Special roller to keep the adhesive tape tight

When the applicator roller rises to cut the tape, then the adhesive tape may be loose. This can cause cutting inaccuracies.



To reduce this effect you can use special rollers. Although this only slightly improves accuracy, it is sometimes worth a try as it can be done with commercially available parts. You just have to replace the fixing screw of the assembly with a longer M6x50mm hex head screw and 4 pcs. 626ZZ bearing as shown in the picture.

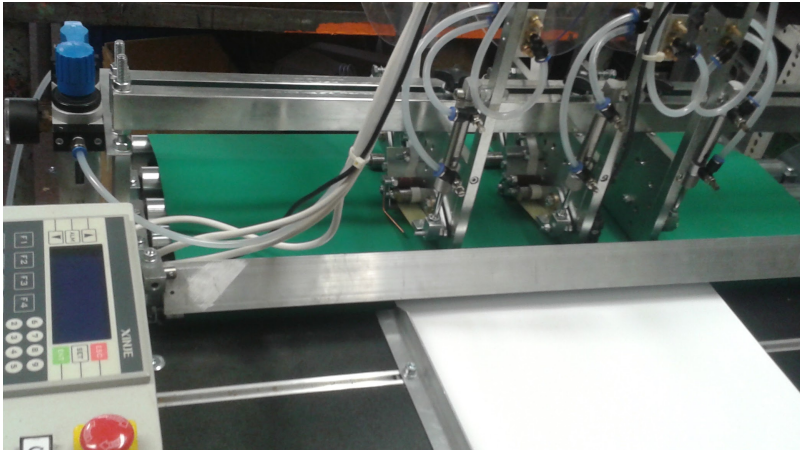




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## Additional TD-1 heads

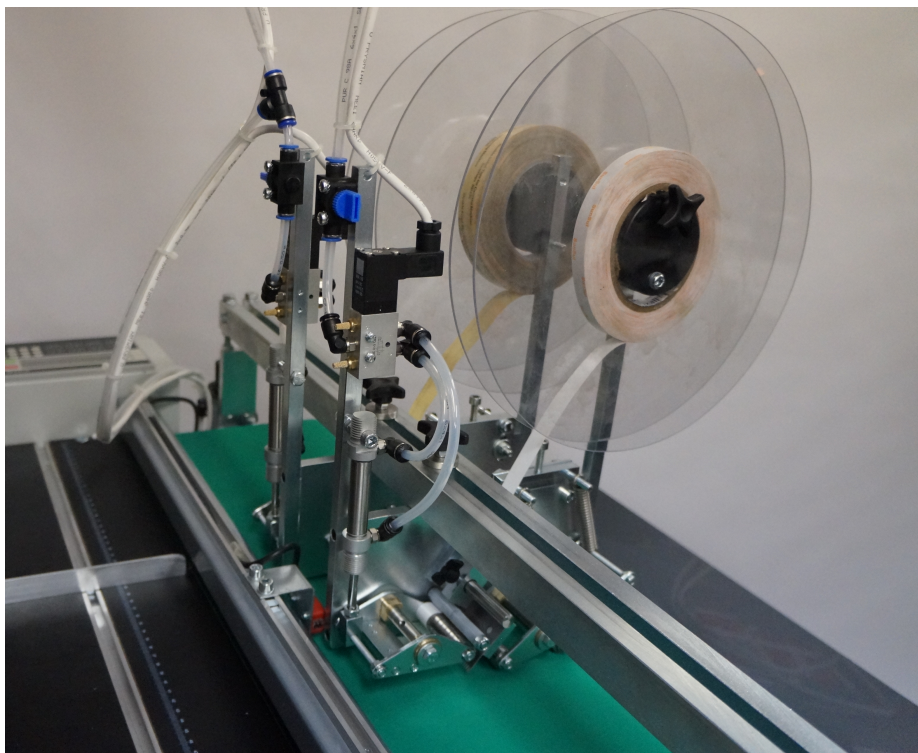
The FTD-1 is designed to work with two TD-1 heads, a left and a right one. You can mount more than two heads on the FTD-1 with some limits.



- The FTD-1 can control only two groups of heads, so the additional heads can work only simultaneously with the first two heads.
- The insertion of tapes and the adjustment of the heads needs some space, so the heads can't be too closed, and the adjustment can be uncomfortable.

## TD-50 Taping head

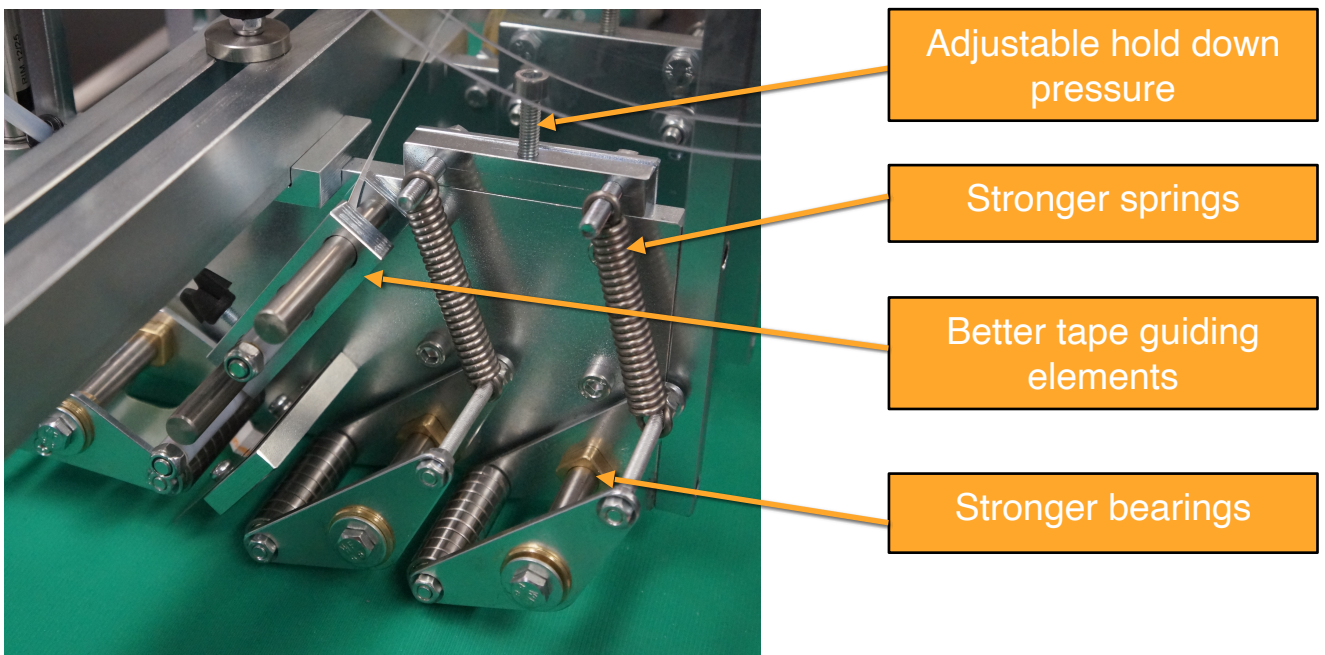
The TD-50 taping head is a new development of us. It is similar to TD-1 with the following differences.



The TD-50 has 50mm wide taping rollers so you can apply self adhesive tapes up to 50mm width with this device. If you insert the tape into the TD-50, press down the flat spring with a crew driver as it is on the picture.



There are more additional improvements in this device:



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## The programmable controller (PLC)

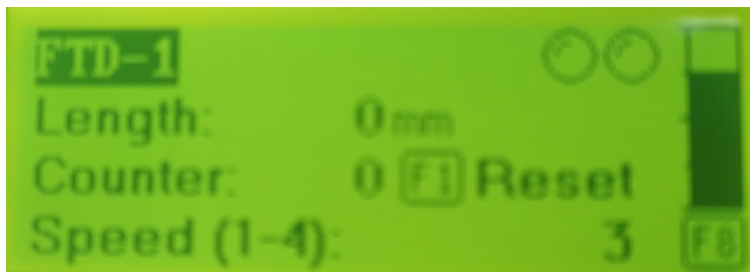
You can set the position of the tape application and other parameters with the PLC. There are several screens with different function on the display.

You can change the active screens with the “up” and “down” arrow buttons on the left side the PLC. The operating instructions and the datas can be set on the function and numeric buttons. After pressing the “SET” button you can write a numeric value into the highlighted data field on the display and you can confirm this data and go to the next data field by pressing the “ENT” button. If you don’t want to go trough all data field you can exit from the setting mode by pressing down the “ESC” button.

### Main screen

After switching on the device the main screen appears on the display.

The displayed value after the label “Length:” is the length of the sheet which passed through the device.



The displayed value after the label “Counter:” is the number of sheets passed through the device since it was reseted. You can reset this counter with the “F1” function key.

You can change the speed of the device by pressing the “F8” function key. The actual speed is indicated by a bar indicator at the right side.

Y can change the speed not only in this screen, but at any screen by pressing the “F8” key. If this bar indicator appears in any screen it always indicates the actual speed. The selectable speeds are 2, 10, 20, 30 m/min.

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## Head-A, Head-B screens



There are 8 numeric field on this display. The first field is the starting position of the first tape strip, the second is the end position of the first tape strip. The third is the starting position of the second tape strip, ... So you can program up to four tape strips in a sheet.

Do not write "0" as a starting position because this value means that this position is inactive. To start at the beginning of the sheet write "1" to the first start position.

Press the "SET" key to enter into the first field, press "ENTER" to accept the data and write the following field. If you don't have to write into all fields, the you can exit with "ESC".

The Head-B screen is very similar.

## Copy/Reset screen



You can copy the setting of the head-1 to head-2 by pressing the "F3" and the head-2 to head-1 by "F4". You can reset all values to "0" with the buttons "F5" or "F6".

With „F7" you can invert the sign of the photosensor. This function can be useful with photosensors which can't indicate dark objects well. You can put a white insulator band on the conveyor belt and if you invert the photosensor signal it can indicate the dark objects.

With „F1" you can reverse the conveyor direction. This function can be useful if you want to remove paper jam.



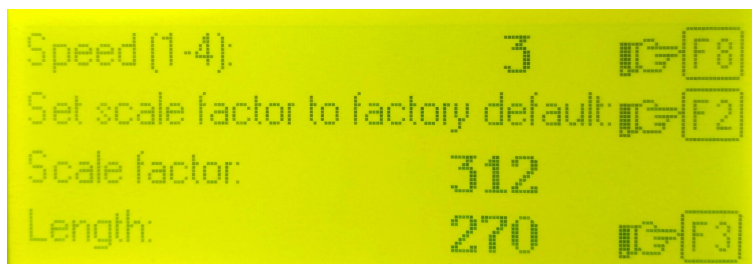
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## Load/Save screen



You can save the actual settings or load the saved settings. Press the “SET” key and set the Nr. of store location (0-9). Press the “F1” key to load the saved settings or “F2” to save the actual setting to the selected store location.

## Scale factor screen



You can change the speed by pressing the “F8” key.

The data field “Scale factor” indicates the actual value of the scale factor. Actually it is the speed of the conveyor belt in mm/sec.

The data field “Length” is the calculated length of the sheet last passed through the device.

After pressing the “Set” key you can enter the new scale factor but there is an easier way for setting the proper value of the scale factor: Enter the real length of the last sheet and press “F3”. The device calculates and sets the optimal value of the scale factor.

You can set the scale factor to the default value by pressing the “F2” key.



## Delays screen

In this screen you can set the speed of the machine and the operational parameters in each speed. If you press the “F8” key then the actual speed changes and the parameter set of the actual speed appears in the data fields. You can set them by pressing the “F4” key to the default value or you can edit them after pressing the “Set” key. The default parameters are not so accurate as the accurately adjusted parameters, but they are a good starting point for the fine adjustment. The parameters of the left and right heads can be edited independently.

The parameters of each speed stored separately and the actual parameters are automatically activated automatically if you change the speed.

(Actually the speed nr. 1. is adjustable with the potentiometer on the frequency controller and the minimal setting is 2m/min. You can change the speed, but in this case the parameters won't change according the adjusted speed.)



Set delays to factory default: 			
	Head /	Start /	Stop / End
A	150	151	140
B	135	155	140

With the „**Start**“ delay you can compensate the distance of the photosensor and the tape applicator head. This value used to calculate the starting positions of tape laying. To adjust this parameter use „1“ as first tape starting position and adjust this value to start the tape laying 1 mm from the sheet edge.

You can calculate the accurate “Start” value in the following way:

- measure the difference between the actual taping position and the programmed position.
- divide it with the “Scale” value and multiply it by 1000 to calculate the “Start” value correction.
- add the “Start” value correction it the actual “Start” value if you want to move the taping position farther from the beginning of the sheet or subtract it if you want to move it closer.

$$[\text{“Start” value correction}] = [\text{distance difference}] / [\text{Scale}] \times 100$$

You can calculate the accurate “Stop” an “End” values in a similar way.

The „**Stop**“ is similar to “Start” but a bit different because of mechanical differences. This value used to calculate the stop positions of tape laying. You can adjust this value by measuring the tape ends and adjusting this delay according that.

The „**End**“ similar to “Taping start delay” but a bit different because of mechanical differences. This value used to calculate the time when the end of the sheet arrives to the applicator head. At this point the head stops the tape laying even if the programmed length is not achieved. If you want to place tape on a long sheet until the end of the sheet you can write higher end position as the real length of the sheet and the tape laying stops at the end of the sheet. In this case this value should be accurate.

Otherwise you can write just a bigger value as the „Stop” value and the device works well.

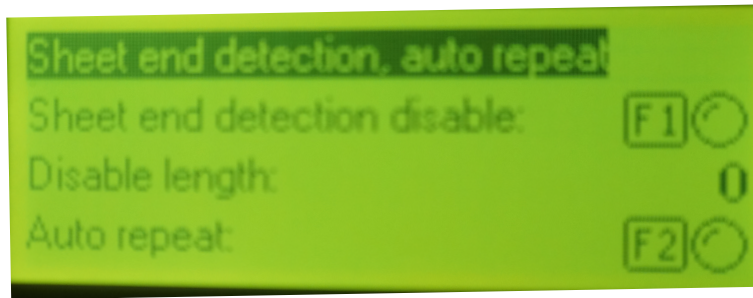
If the processed paper have a punched whole or if the printed paper has similar colour as the conveyor belt, that can confuse the photosensor the tape application can be terminated before time because the device thinks that the paper has ran out from the device. In this case you can increase the „End” delay to ensure the stabile work.

You can write the parameters by pressing the „Set” button, entering the values and confirming them with „Enter”.

The parameters are different in each speed and stored separately.

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## Sheet end detection screen

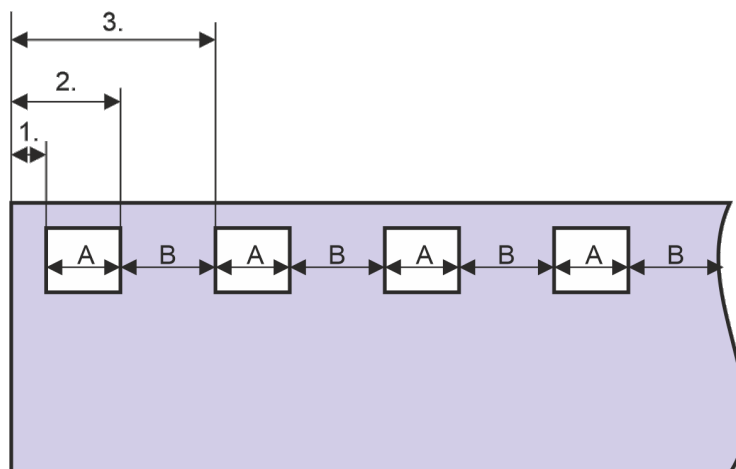


If there is a hole in the sheet under the photosensor the device may handle the sheet as if it would be two sheets after each other. The tape laying ends at the hole and after the hole the device starts a new taping cycle. Not only a hole in the sheet can cause such problem, but the printed elements of the sheet as well.

To eliminate this problem you can deactivate the sheet end detection. Deactivate the sheet end detection by pressing the “F1” key. Edit the “Disable length” value. It should be a bit more than the actual length of the sheet. During the “Disable length” distance, the device lay the tape in the programmed way even if the photosensor detects sheet end.

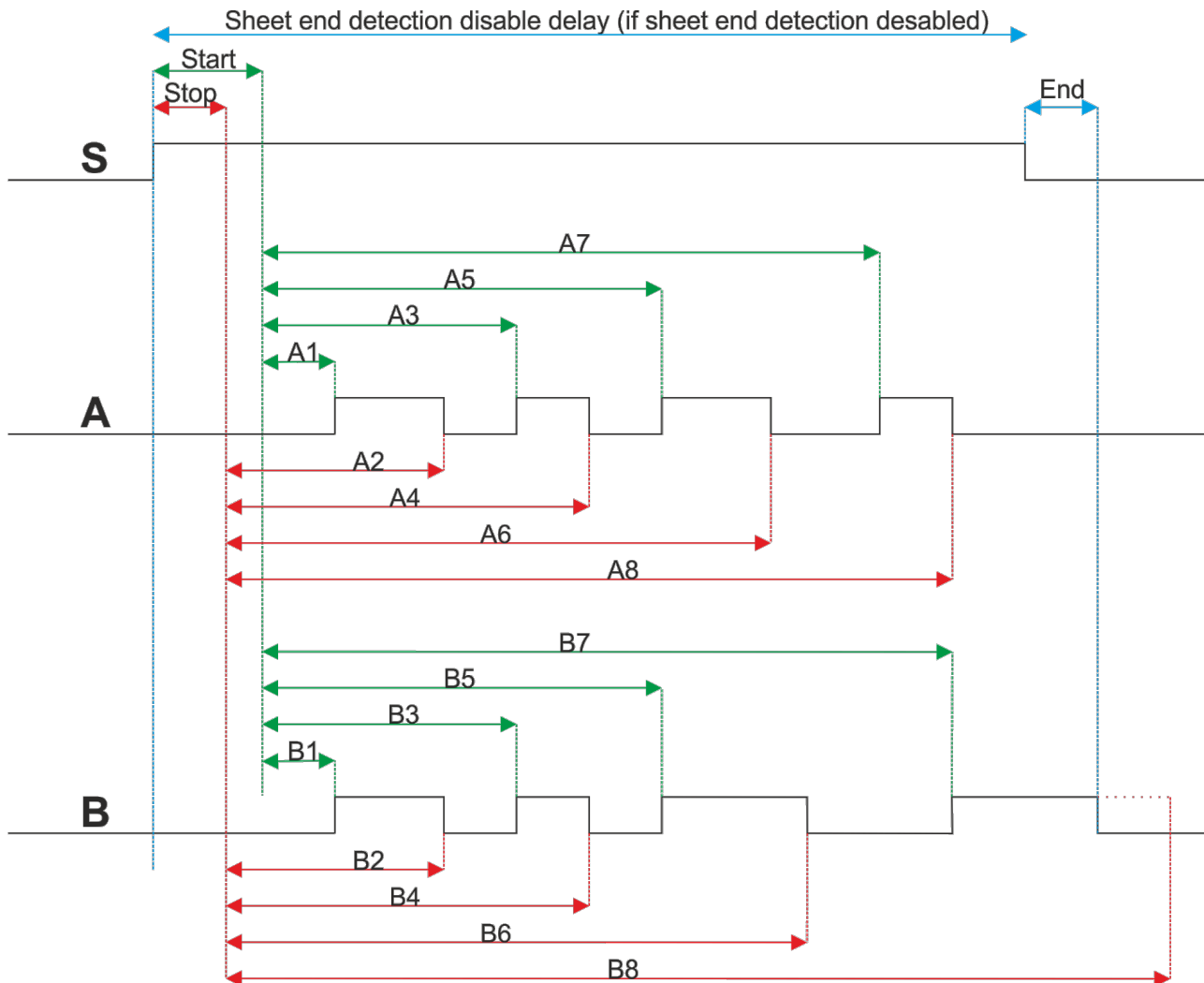
With pressing the “F2” key you can activate the “Auto repeat” function. This function is used when you want to stick a series of tape strips on a very long sheet or continuous roll material. The FTD-1 places tapes strips in the same lengths and distances. If this function is active, you should write only in the first 3 fields of the “Head A” and “Head B” screens. The other values should be “0”.

- The first value (1.) is the distance of the first start position of tape application.
- The second value (2.) is the end position of the first strip.
- The third value (3.) is the start position of the second strip.
- The device applies self adhesive tape in “A” length with “B” gap continuously.



## Setting the parameters

In the drawing above you can see the function of the parameters.

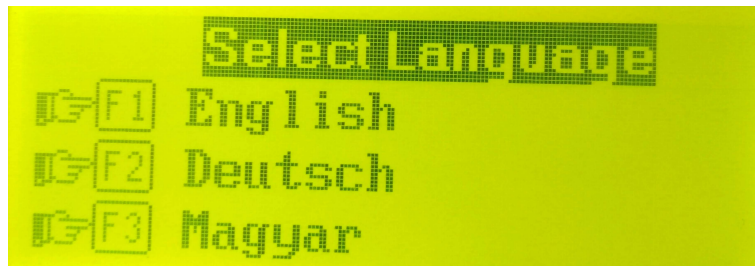


- S: Sign of the photosensor
- A: Driving signal of head "A"
- B: Driving signal of head "B"

The sheet arrives under the photosensor, after the "Start" delay arrives to the taping rollers. (The photosensor is not in the same position as the taping rollers.) The device adds this "Start" delay to the taping start position delays. The taping stop points are calculated with the "Stop" delay. It can be slightly different because of mechanical differences. (The knife slides a bit on the surface of the tape before cutting it.) The "End" sheet end delay is used to calculate the time difference when the sheet runs out from the photosensor until the sheet runs out from the taping head. When the sheet has ran out from the taping head the taping process stops even if the programmed position is still not achieved. (B8 position on the picture.) You can postpone this stop function at the sheet end with activating the "Sheet end detection disable" function. In this case the device continues the tape application even if the photosensor can't detect the sheet until the value of the "Disable length" parameter.

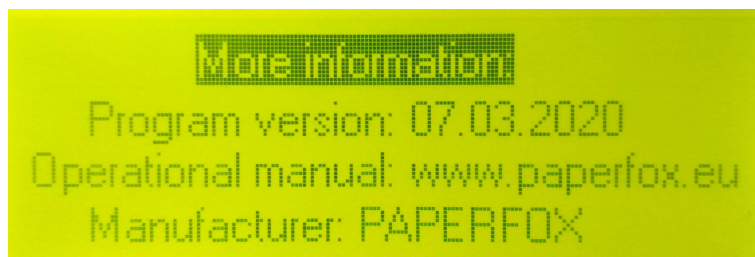
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## Language screen



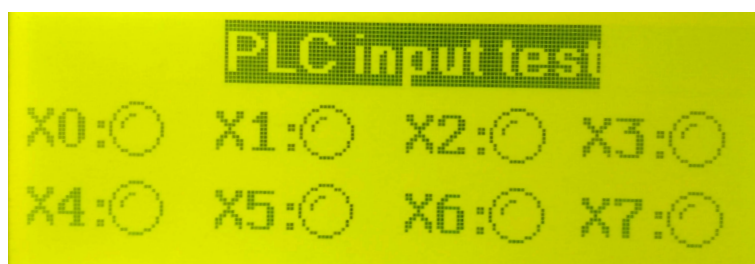
You can select the desired language for operating the device by pressing the F1, F2 or F3 buttons.

## Information screen



There are some useful information about the device at the “More information” screen.

## PLC Input test screen



You can check the inputs of the PLC for diagnostic purpose. The X0 input is the photosensor, the X1 is the motor switch the other inputs are not used.

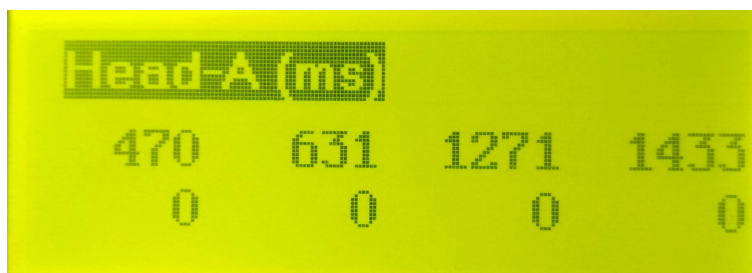
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## PLC Output test screen



You can set the outputs of the PLC for diagnostic purpose. Y0 and Y1 outputs are driving the pneumatic valves at the head-a and head-b. Y2 drives the lamp at the motor switch. Y4 switches the motor. The other outputs are not used.

## Head-A (ms) screen



For diagnostic purposes you can study the timing values. The following Head-B (ms) screen is similar to this screen.

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## About the tapes

### Self adhesive tapes

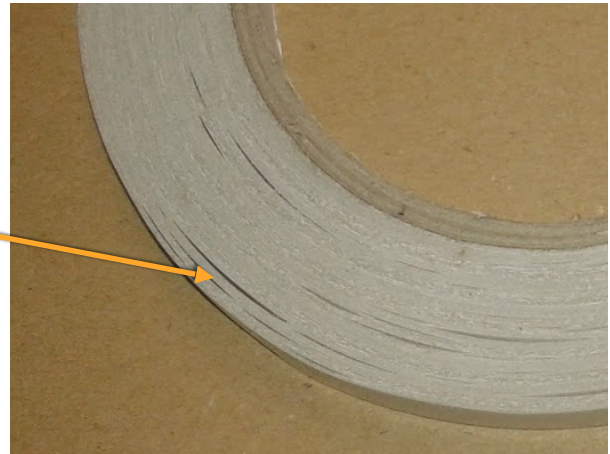
The Paperfox TD-1 and TD-50 tape application heads were designed for usage with easy to tear tapes with the following properties:

- The carrier material on which an adhesive is applied should be fabric or paper. Usage of strong plastic foil or foam based tapes are not suggested. You can use this kind of tapes but the optimal result is not granted. We suggest to use “vlies” (non-woven natural or synthetic fabric) tapes.
- The liner is a one or booth side siliconised material on which the adhesive not adheres tightly. Usage of tapes with strong plastic foil liner are not suggested. You can use this kind of tapes but the optimal result is not granted. We suggest to use tapes with siliconised paper liner.
- The adhesive can be acrylic, rubber-solvent, butyl rubber... etc. You can use all kind of adhesives, but maybe some kind of adhesive works better than the others.

### Tape storage

Storage can cause changes to the tape's adhesive properties. The self adhesive tapes are losing their quality during storage even by the best storage circumstances. Store the tapes in a cool, dry place and do not open the package of the tapes before usage. Do not keep a lot of tapes on stock, order them direct from the manufacturer if it is possible.

Gaps between the threads of the tape roll



If there are gaps between the threads of the tape roll then the adhesive dries out at the gaps and the tape don't sticks well at this points. That can cause inaccuracy or even tape jam.

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## Problems and solutions, tips and tricks

### There is no light on the controller

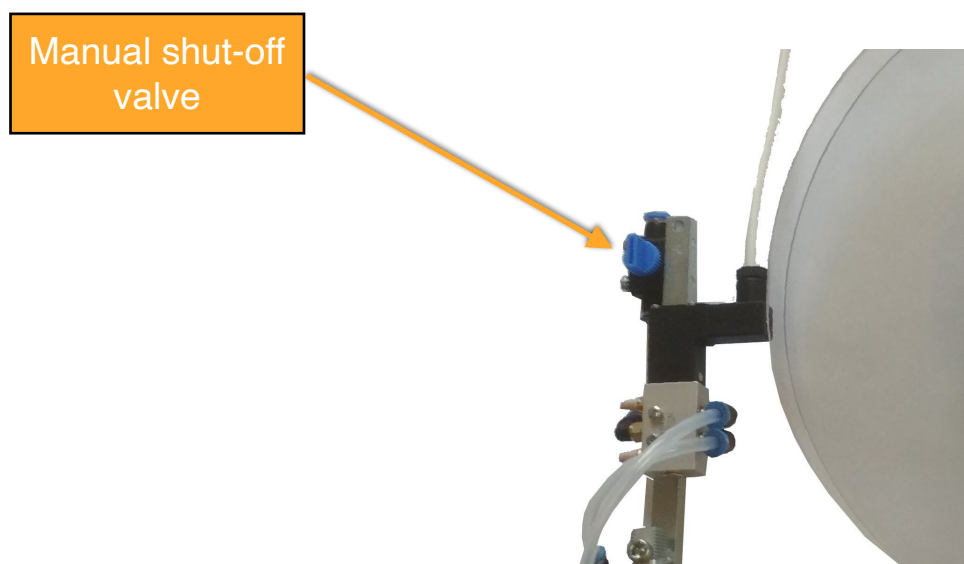
There is no light on the controller and on the main switch after switching on the TFD-1.

- Check the safety stop button and reset it with turning its head clockwise.
- Check the cable and the plug if it is connected.
- Check the fuses.

### The tape applicator heads don't move at all.

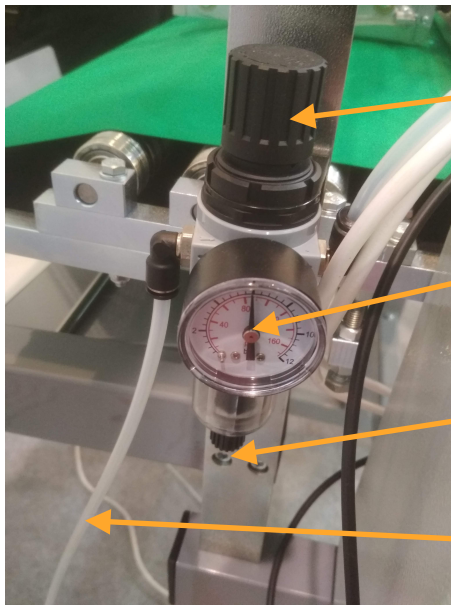
The tape applicator heads don't move at all. The indicator light of the photosensor changes if you insert a sheet of paper under the photosensor.

- Check the manual shut off valve if it is opened.





- Check the pneumatic pressure on the manometer. If it doesn't show any pressure, then check if it is connected to a compressor and if the compressor is under pressure.



Pressure regulator knob

Manometer

Water drain valve

Pneumatic tube

- Check the pressure adjusting knob if the right pressure is adjusted. If you can't turn the knob, then pull it up.
- Check the position settings on the PLC. If all of them are zero, then no tape application happened.

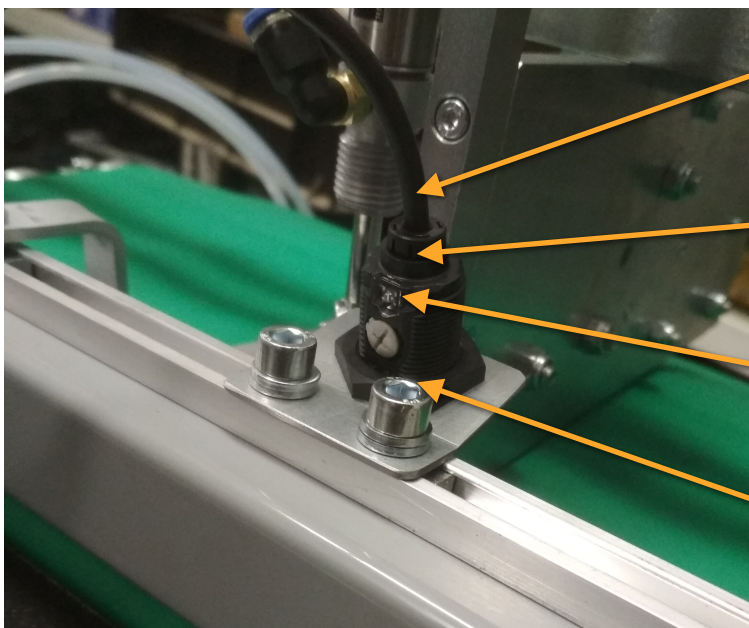




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## The light of the photosensor don't changes

The light of the photosensor don't changes if you insert a sheet of paper under the photosensor.



Omron E3F1-DP11-2M  
photosensor

LED

Sensitivity adjusting  
screw

Fixing screws

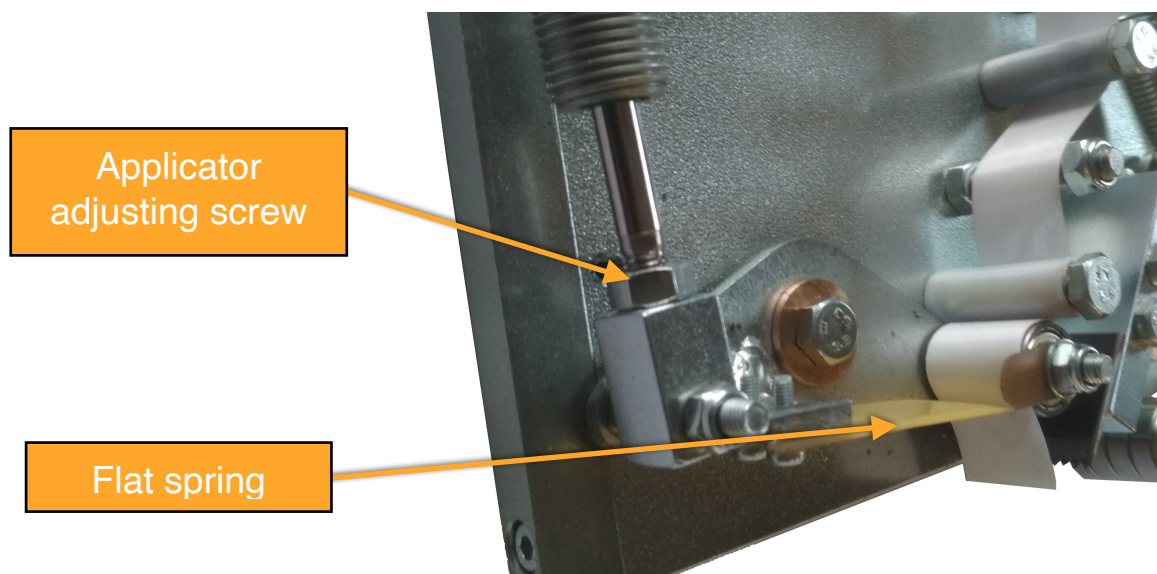
- Check the LED of the photosensor. Is there any change if you insert a sheet of paper under the photosensor?
- Is the photosensor in a right position, the paper goes under it?
- Adjust the sensitivity of the photosensor with the sensitivity adjusting screw as it is described in the part "Photosensor".
- If the sheet has similar colour as the conveyor belt maybe that the photosensor can't sense the difference. The same problem may happen with transparent materials. You can try to adjust the distance of the photosensor and the conveyor belt. If you can't set it, then you can stick a white insulating band on the conveyor belt as it is described in the part "Photosensor".
- If you apply tape on a printed sheet you can move the photosensor so that the printed elements not disturb the photosensor. You can try to turn the sheet in the opposite direction.
- You can use a special photosensor which can detect the sheet.
- If you are not sure if the photosensor detects, you can check the "X0" on the PLC Input test screen. The X0 input is the signal of the photosensor.

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### The tape don't sticks on the sheet.

The tape applicator head moves, but the tape don't sticks on the sheet.

- Check the quality of the tape. Self adhesive tape loses its quality after long storage. Try to stick the tape manually on the sheet and check it adheres at all.
- Check if the tape inserted to the taping head as it is described in the user manual of the TD-1 taping head.
- Check is the tape roll can turn easily in its holder. The tape roll can stick to the holder. Check if you can pull the tape from the roll easily.
- Check the flat spring on the TD-1 head if it is not loose and it can hold the tape and prevent it from sliding back. If it is too loose, then the tape can slide back from the applicator roller and in this way it can't stick on the paper. If it is too hard or contaminated then the tape can't be pulled easily.
- Check the applicator adjusting screw. Maybe that the applicator rollers don't touch the sheet. The applicator roller in its lower position should touch the sheet.

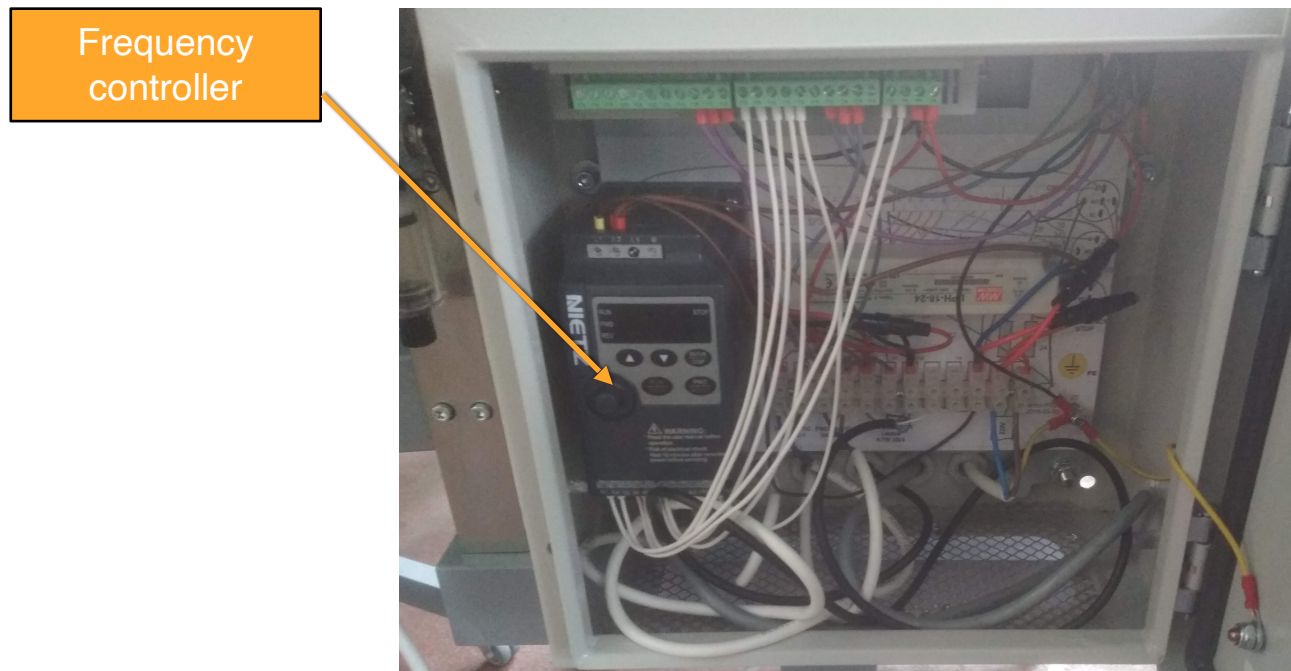


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## The device not in the desired position applies the tape

The device applies tape, but not in the least in the desired position, or stops the application before the desired length. There is not only an inaccuracy, but an unpredictable tape laying.

- Check the “Invert photosensor” in the Copy/Reset screen. Usually this parameter should be off.
- Check the “Speed” in the “Parameters” screen. If your FTD-1 has no adjustable speed the set it to “3”. (Earlier devices didn’t had frequency controller and adjustable speed. If you unsure you can check if you have frequency controller as in the photo below.) If you have changed the parameters, you can restore the factory setting by pressing “F4”.



- Check the sheet under the photosensor. If there is a hole or a printed part with similar colour to the conveyor belt, maybe that the device “thinks” that it is the end of the sheet. If you can’t adjust the position of the photosensor to avoid this region, you can disable the sheet end detection as it is described at the chapter “Sheet end detection screen”.
- (Earlier models don’t have “Sheet end detection screen”. In this case try to increase the “End” parameter on the “Parameters” screen so that the device should continue the tape application until the real end of the sheet.)

## All taping positions are inaccurate and change.

Check the tension of the conveyor belt. Measure the sheet length first pass through a sheet of paper without tape application, (close the manual closing valves) then measure the sheet length with tape application. If there is much difference in the measured length, then maybe the belt is loose. Fasten it with the adjusting screws.

Check the pneumatic pressure and adjust it to 6...8 bar

Maybe that a tape roll can't roll free in the holder, the friction of the rolls determines the taping position.

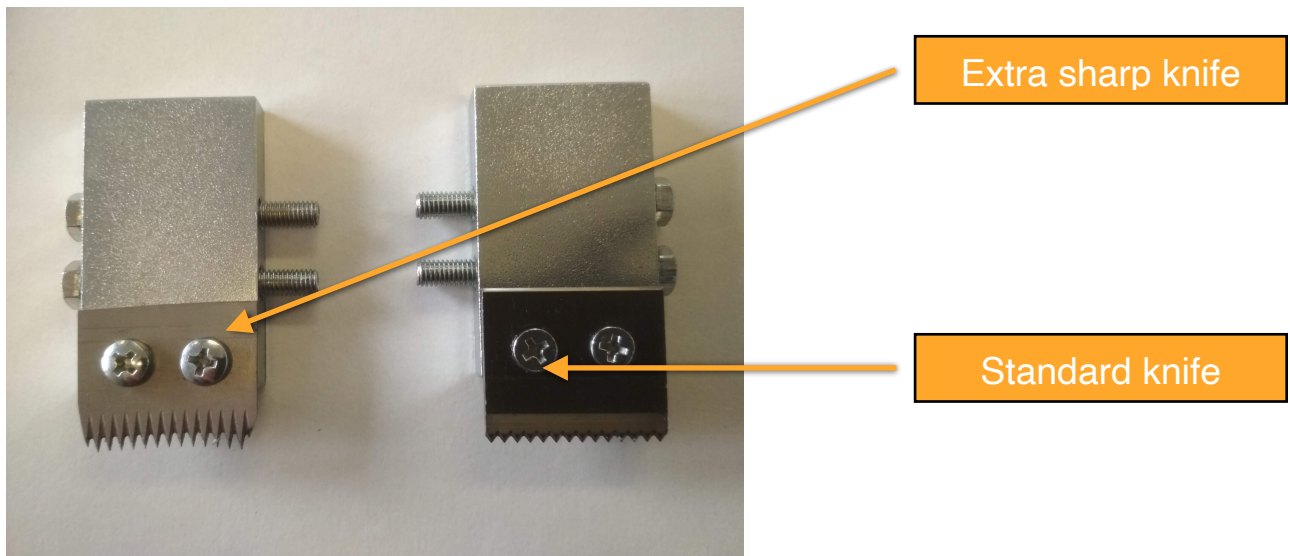
Using old tapes or there is contamination on the surface of the sheet.

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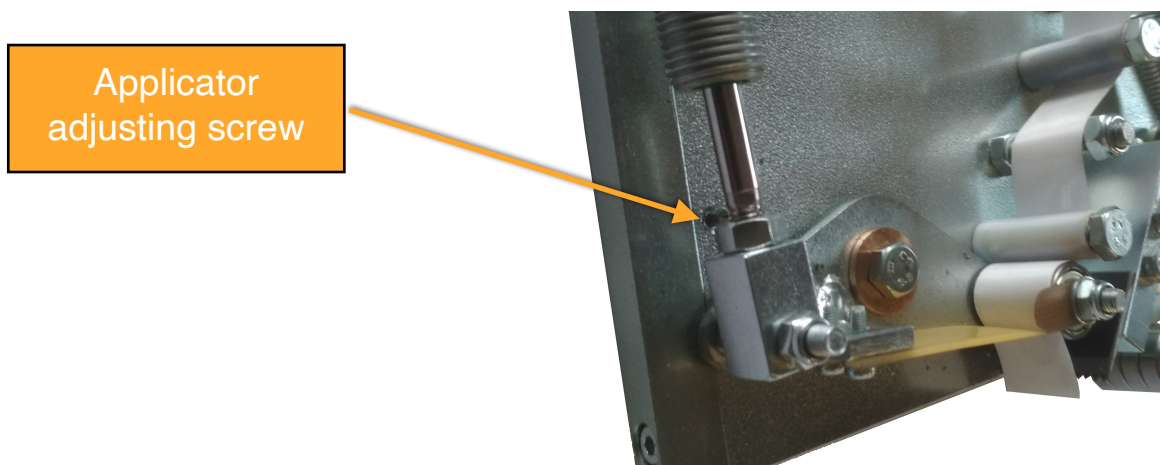
## The end position of taping is changing

The end position of taping is changing, alternating or the device can't cut the tape at all.

- If you use strong or foam based tapes, then the knife can't cut it well, it slides on the surface of the tape before cutting it. It can cause inaccuracy or even jam. Check the surface of the tape on the sheet around the position where the machine should cut the tape. If you can see a long trace of the edge of the knife it means that the knife can't cut the tape.
- Use a sharper knife. The knife is not sharp enough to cut the tape at once or the tape is too hard to be cut easily. The edge of the knife slides on the surface of the tape before cutting into the tape. You can see the trace of the knife on the surface of the tape. This trace shouldn't be more than a few millimetres.



- Maybe that the adjustment of the "applicator adjusting screw" is not optimal. After the tape application the applicator roller moves up, presses the tape to the teflon rollers. It holds the tape, so the tape can't move easily. The increased force helps to cut the tape with the knife. If the knife is not sharp or the tape is hard, then the accurate cutting needs more force. With the adjustment of the "applicator adjusting screw" you can reduce or increase this force at a certain limit. If the applicator roller pushes the tape hard to the teflon roller but the knife still doesn't cut well, then you should use a sharper knife or a softer tape.



- 
- Maybe that a tape roll can't roll free in the holder, the friction of the rolls determines the taping position.
  - Maybe that the tape width adjusting screws are adjusted too narrow and the tape can't run easily.

### **The device tears-off the paper**



At the end of the tape application, the device tears-off the paper or the knife cuts in the paper.

- Reduce the operating pressure. In this way the taping rollers are moving slower which can reduce the tear-off effect.
- If you have throttle valves on the TD-1 heads: Normally all pneumatic throttle valves should be open, because they have no much function in FTD-1. If you close the lower throttle valve, then the FTD-1 lifts up of the tape before cutting slower. So you can reduce the tear-off effect, but be careful, because this may cause inaccuracy.
- Use a less sharp knife to prevent cutting in the paper.
- You can try to change (increase or decrease) the speed of the device to reduce this effect.

### **The hold-down rollers leave trace on the sheets**

- If the sheet is soft and thick, the hold-down rollers may leave trail on it. Reduce the pressing force of the rollers with unhooking a spring, using only one spring on a roller. If the paper guiding is not stable, then use two springs to hold stronger the sheets.
- Wrap a few threads of insulating tape around the hold down rollers to reduce this effect.
- Order special plastic coated hold down rollers.

### **The taping in side direction is not stable**

The taping position in side direction is not stable or the tape is not parallel with the edge of the paper.



- 
- Check the adjustment of the tape width adjusting screws. This screws guiding the tape to the proper position.
  - If you use only one tape applicator head then do not remove the other head from the paper. Two applicator head can provide more stabile and straight movement as one.

### The tape wraps around the first hold down roller



This problem is often caused by the sticky layer of the self-adhesive tape being sticky and protruding from under the silicone cover paper after cutting. The protruding parts stick to the rollers. Try not to use such tape. Replacing the knife may also help.

Another possible reason is that the adhesive tape does not stick to the sheet, the first hold down roller folds it back, and the “dog ear” adheres to the roller. In this case, lifting or removing the first pinch roller can help.



Additional help may be to install a tape guide in place of the first hold down roller. The tape guide will turn the curled adhesive tape back to the surface of the sheet. The first picture shows a custom-made tape guide, the second a homemade solution made of plastic film. These solutions can temporarily solve the problem, but in the long run, it is definitely recommended to use right quality adhesive tape.





## Declaration of conformity

We the manufacturer

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[www.paperfox.eu](http://www.paperfox.eu)  
+36 30 948-2491

Declare that the product

Kind of product: Tape applicator  
Type of product: Paperfox FTD-1

Is in compliance with the essential requirements and other relevant provisions of the following directives:

EMC Directive	2004/108/EC
Low voltage directive	2014/35/EU

The product is compatible with the following standards:

EN 60204-1 Safety of machinery. Electrical equipment of machines  
EN 1088 Interlocking devices associated with guards  
MSZ EN ISO 12100:2011 Safety of machinery

Nagytarcsa, 21.12.2018.

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