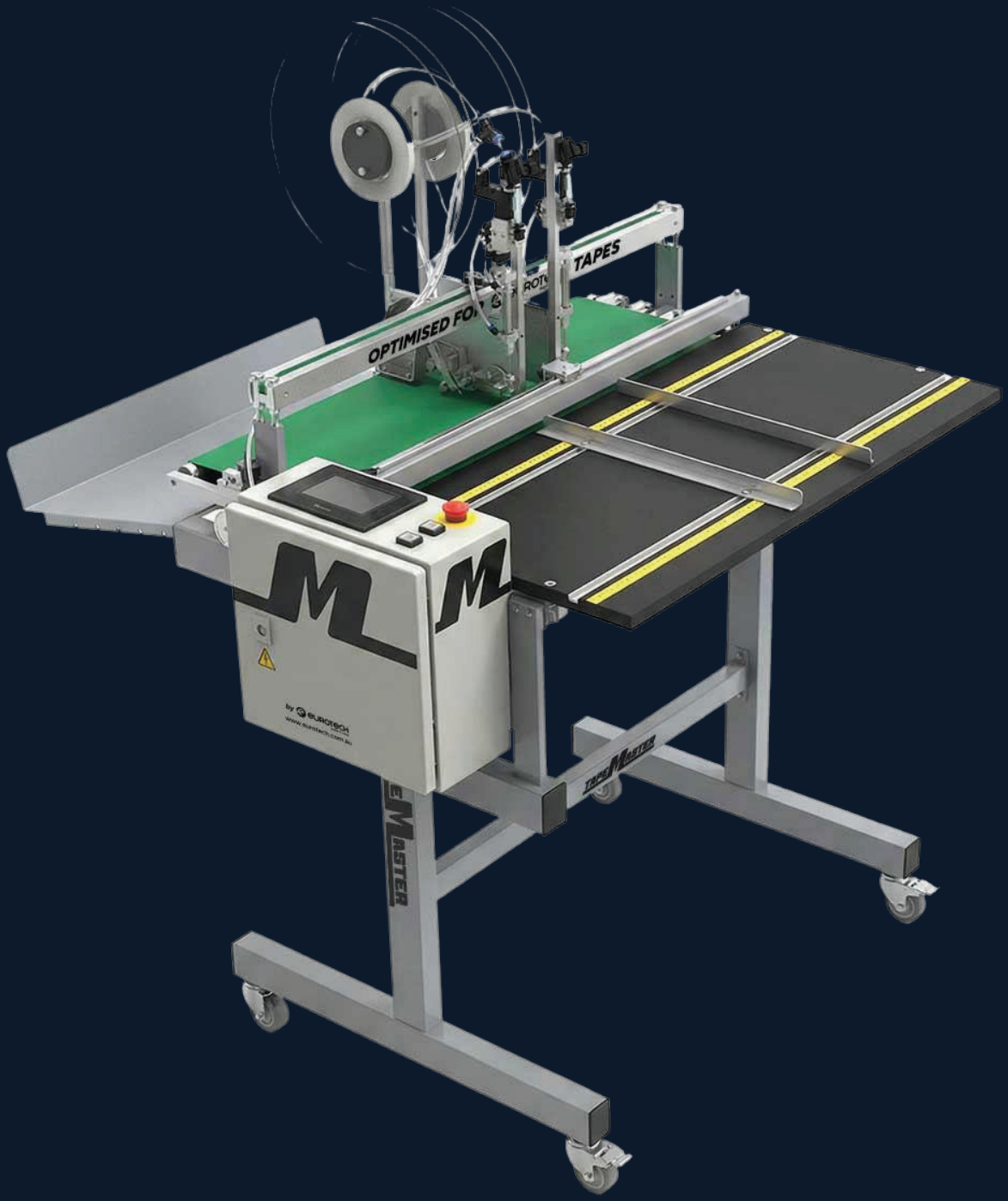
TAPE MASTER

by EUROTECH
make it easy



INSTRUCTIONS MANUAL

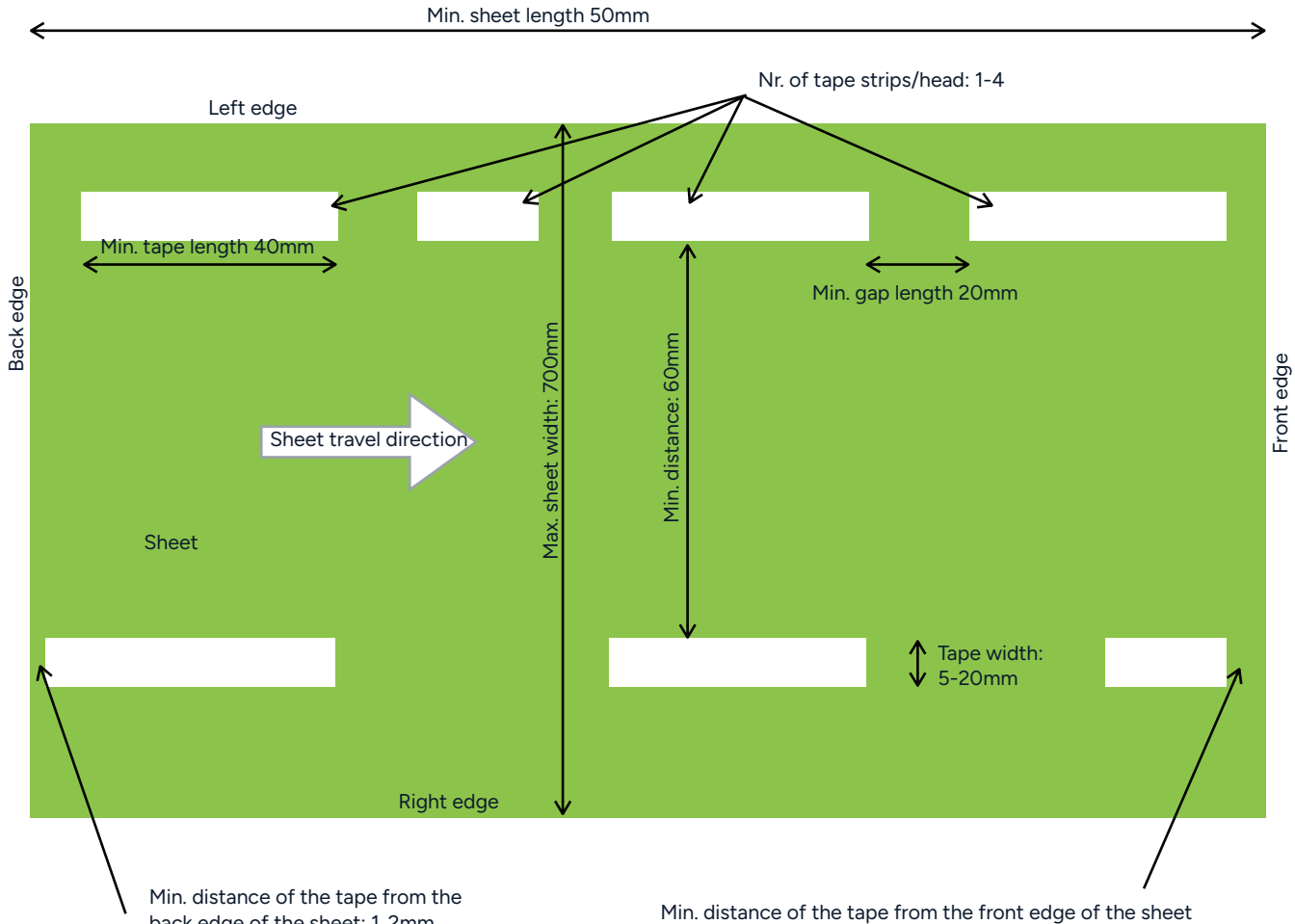
BRIEF DESCRIPTION

With the TapeMaster programmable tape applicator, you can apply double-sided adhesive tape up to 20 mm wide to paper, cardboard, or other similar sheet materials.

TECHNICAL PARAMETERS

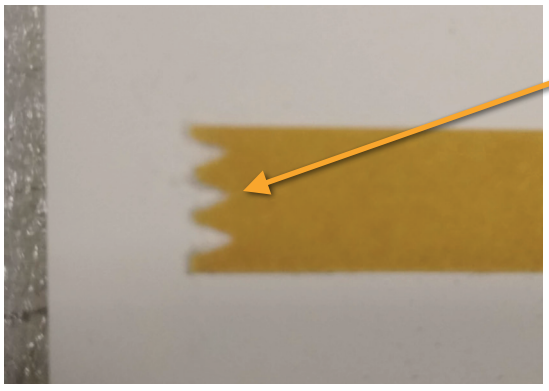
Dimensions without stand:	L=110cm W=100cm H=75cm
Dimensions with stand:	L=110cm W=100cm H=150cm
Weight with stand:	75 kg
Voltage:	230V 50Hz
Power consumption:	180W
Pneumatic pressure:	8 Bar
Sheet forwarding method:	Conveyor belt (700x700mm)
Tape cutting method:	With toothed knives. (So the cutting lines 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
Accuracy of tape application:	+/- 1..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



Min. distance of the tape from the back edge of the sheet: 1..2mm

Min. distance of the tape from the front edge of the sheet
- with thick, rigid cardboard: 2..5mm
- with thin, flexible paper: 5…10mm
- with thin paper close to the sheet corner: 10…30mm



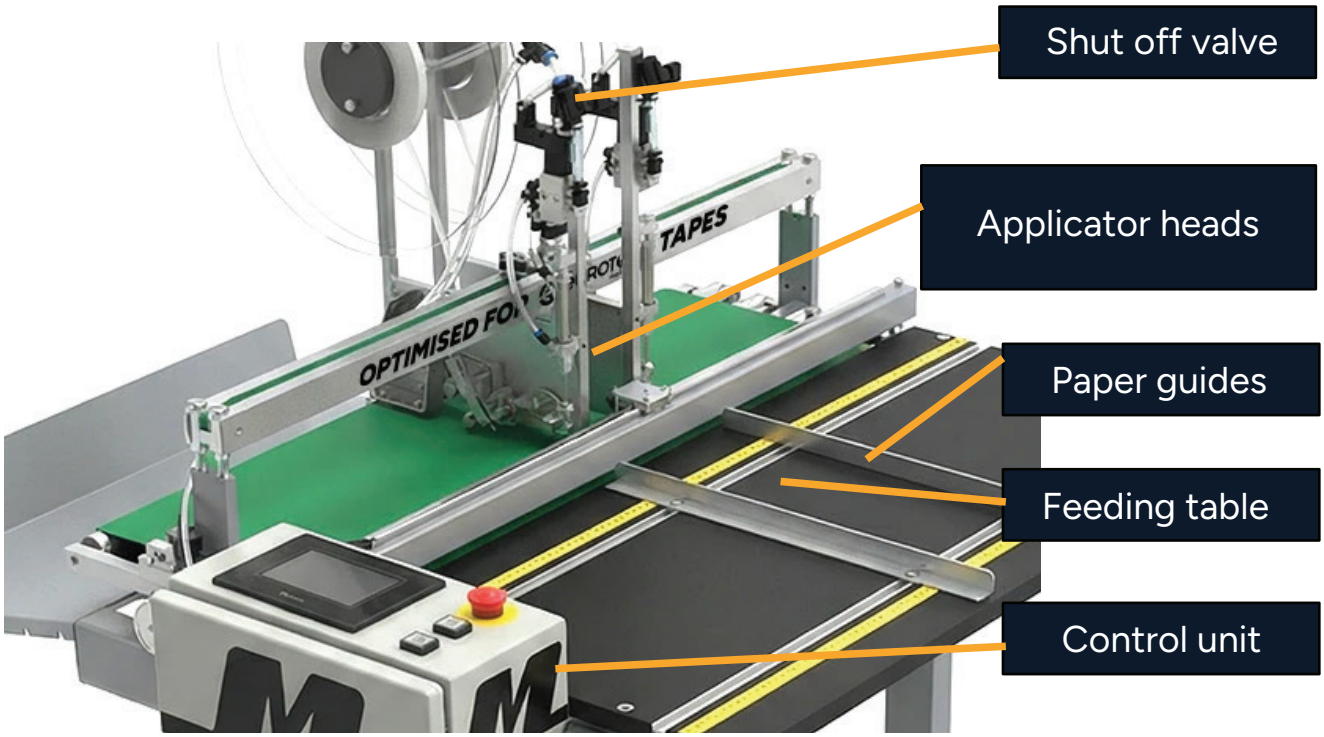
The cutting line will be toothed, not straight

SAFETY INSTRUCTIONS

Please read the operating instructions before using the TapeMaster Tape Applicator to prevent accidents and ensure safe, reliable operation.

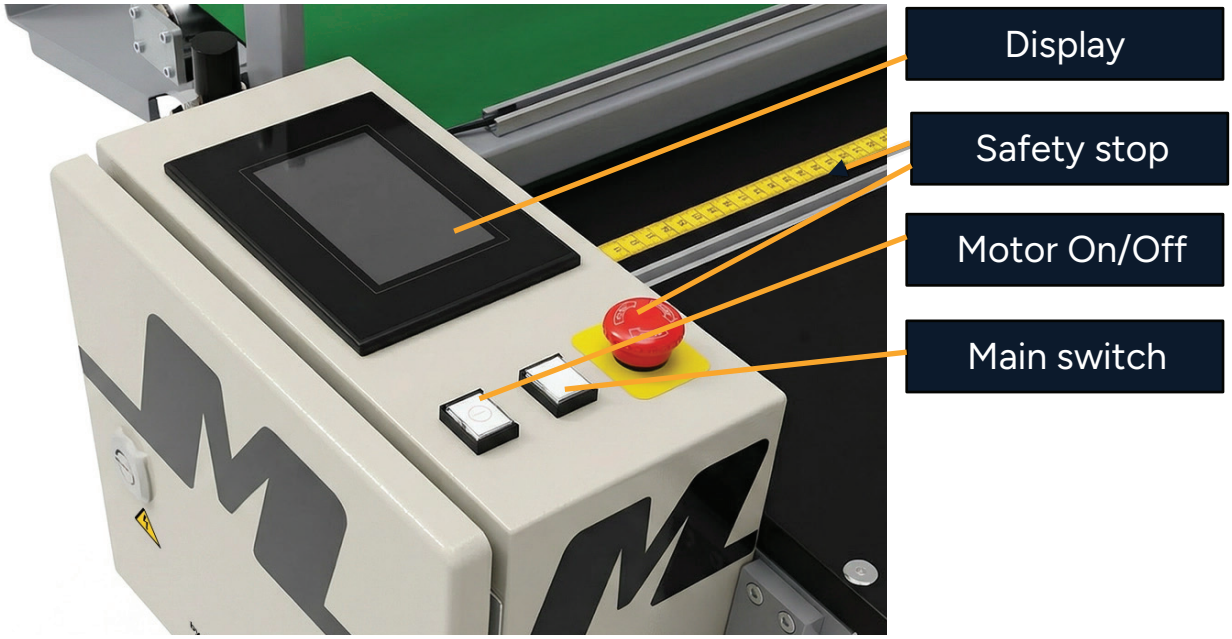
1. The TapeMaster Tape Applicator must not be operated by anyone who has not read or fully understood the operating manual.
2. Do not use the device in wet or explosive environments.
3. Ensure the area is properly lit.
4. For easy unplugging, use a power socket positioned between 0.6 m and 1.9 m in height.
5. Use a suitable socket with proper grounding.
6. Do not replace the fuse with any type other than the specified rating.
7. Repairs must be carried out by qualified personnel using original parts.
8. The taping heads contain sharp knives. Take care when changing the tape or performing any maintenance around the blades.

PARTS



You can place the sheets on the feeding table and adjust the paper guides to the correct position. The shut-off valve allows you to switch the tape application on or off.

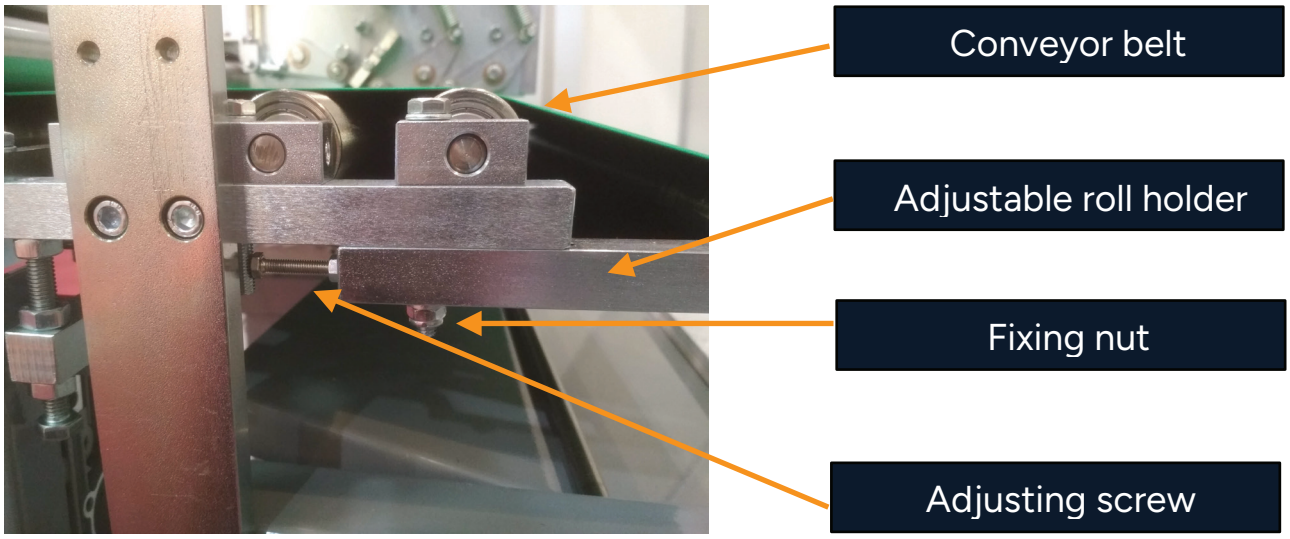
This valve should be turned off when inserting adhesive tape into the TapeMaster head, and must remain open during normal operation.



You can place the sheets on the feeding table and adjust the paper guides to the correct position. The shut-off valve allows you to switch the tape application on or off.

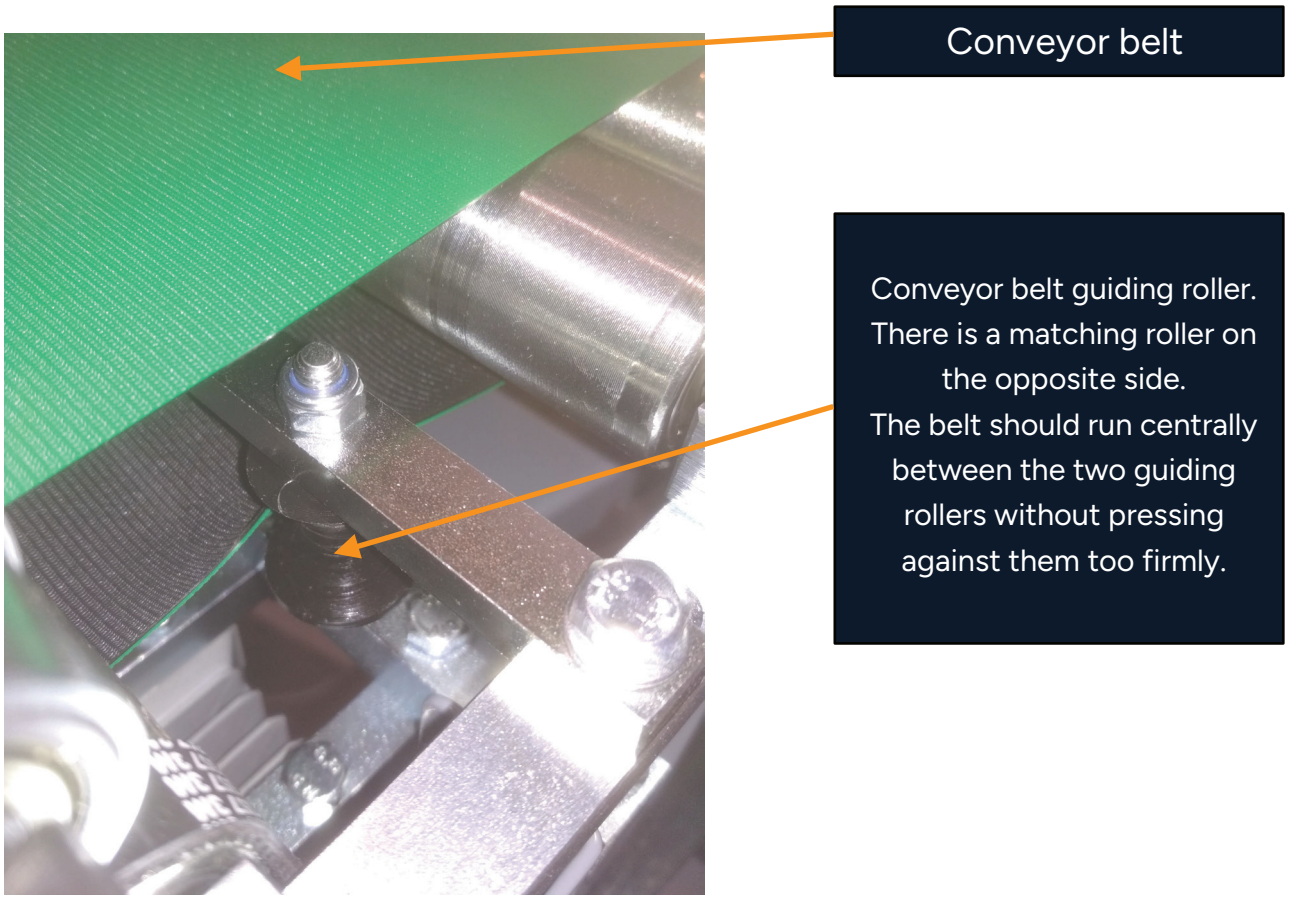
This valve should be turned off when inserting adhesive tape into the TapeMaster head, and must remain open during normal operation.

ADJUSTING THE TENSION OF THE CONVEYOR BELT

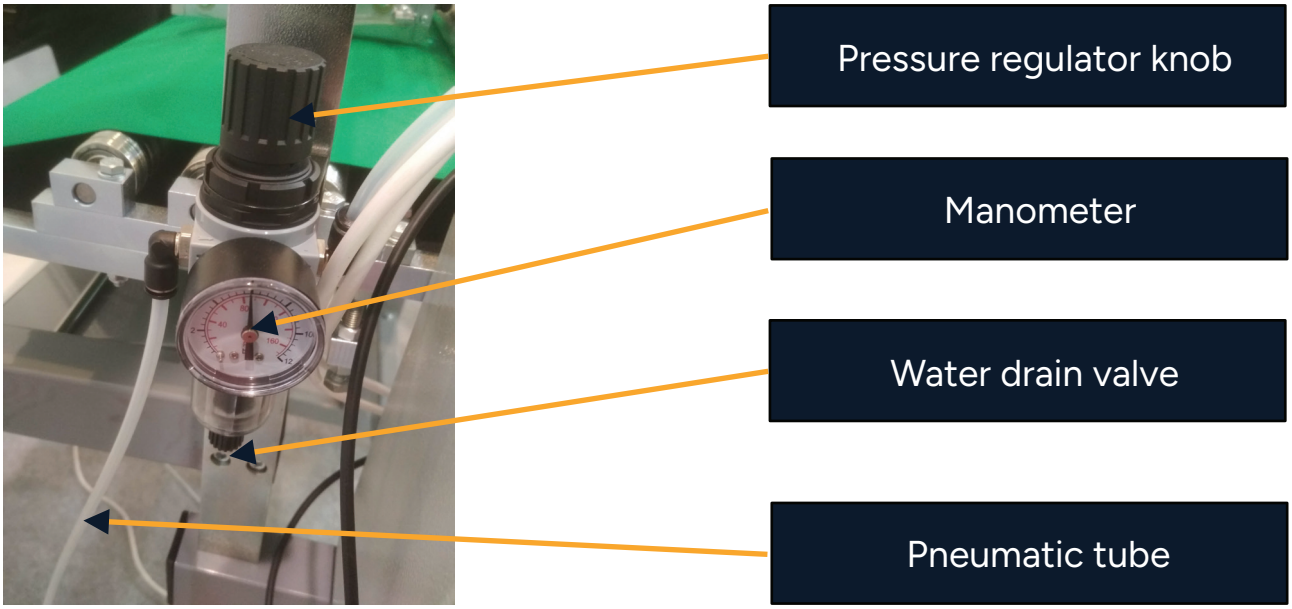


After loosening the M6 fixing nut, you can adjust the conveyor belt tension using the adjusting screw. Once the tension is set, secure the adjusting screw with the M4 nut.

Repeat the same process on the opposite side. Ensure the belt tension is balanced so the belt runs centrally between the left and right guide rollers.



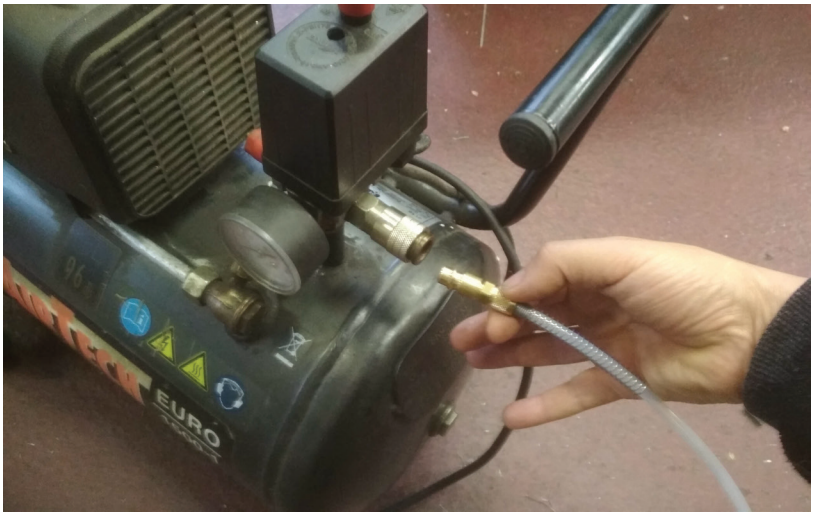
PNEUMATIC FILTER AND REGULATOR



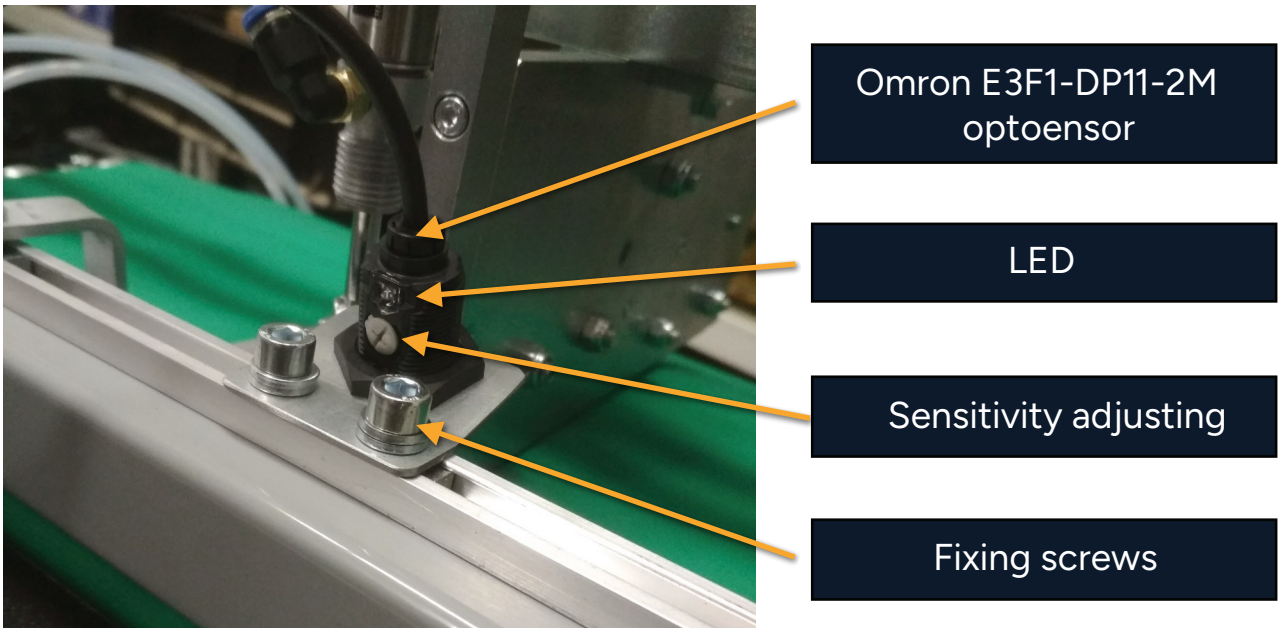
The pneumatic filter removes small particles and harmful oil or water condensate from the compressed air supply. You can adjust the pressure by turning the pressure regulator knob. If it doesn't turn, lift it up first. After setting the pressure, push the knob down to lock it and prevent accidental adjustment.

A water drain valve is located at the bottom of the pneumatic filter and regulator. When the TapeMaster is not pressurised, you can use this valve to release condensed water from the transparent tank.

A pneumatic connector is fitted at the end of the pneumatic tube for connecting the device to the air compressor.

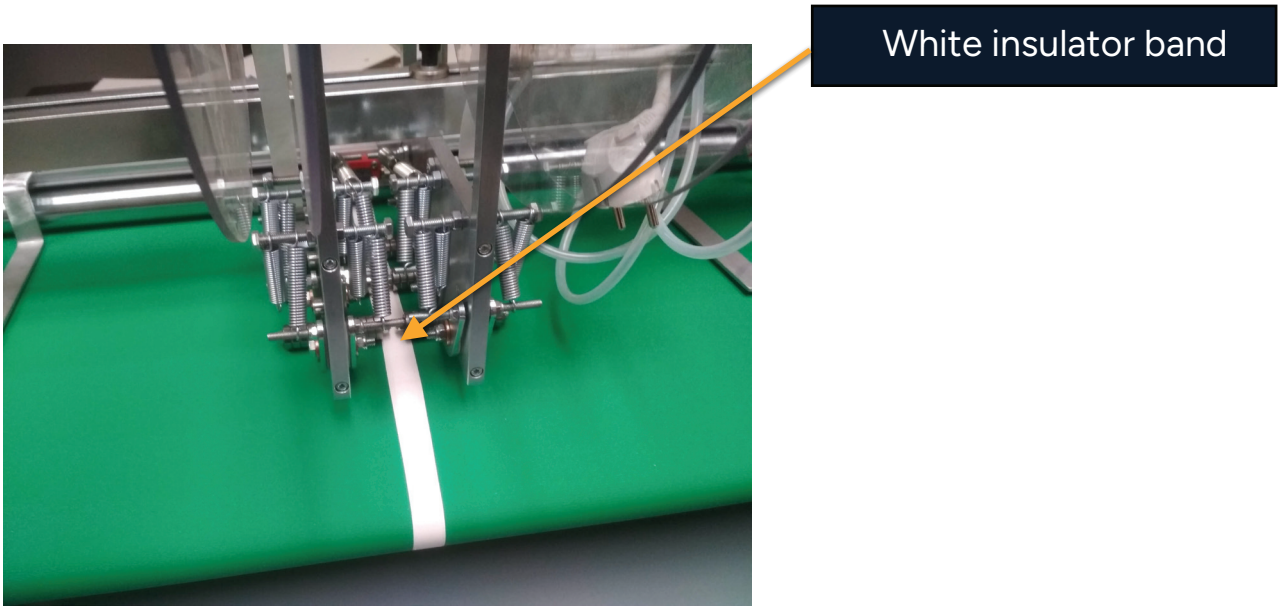


OPTICAL SENSOR



The standard TapeMaster is equipped with an Omron E3F1-DP11-2M optosensor.
The sensitivity of the optosensor can be adjusted with a screwdriver, and its status is shown by LED indicators.

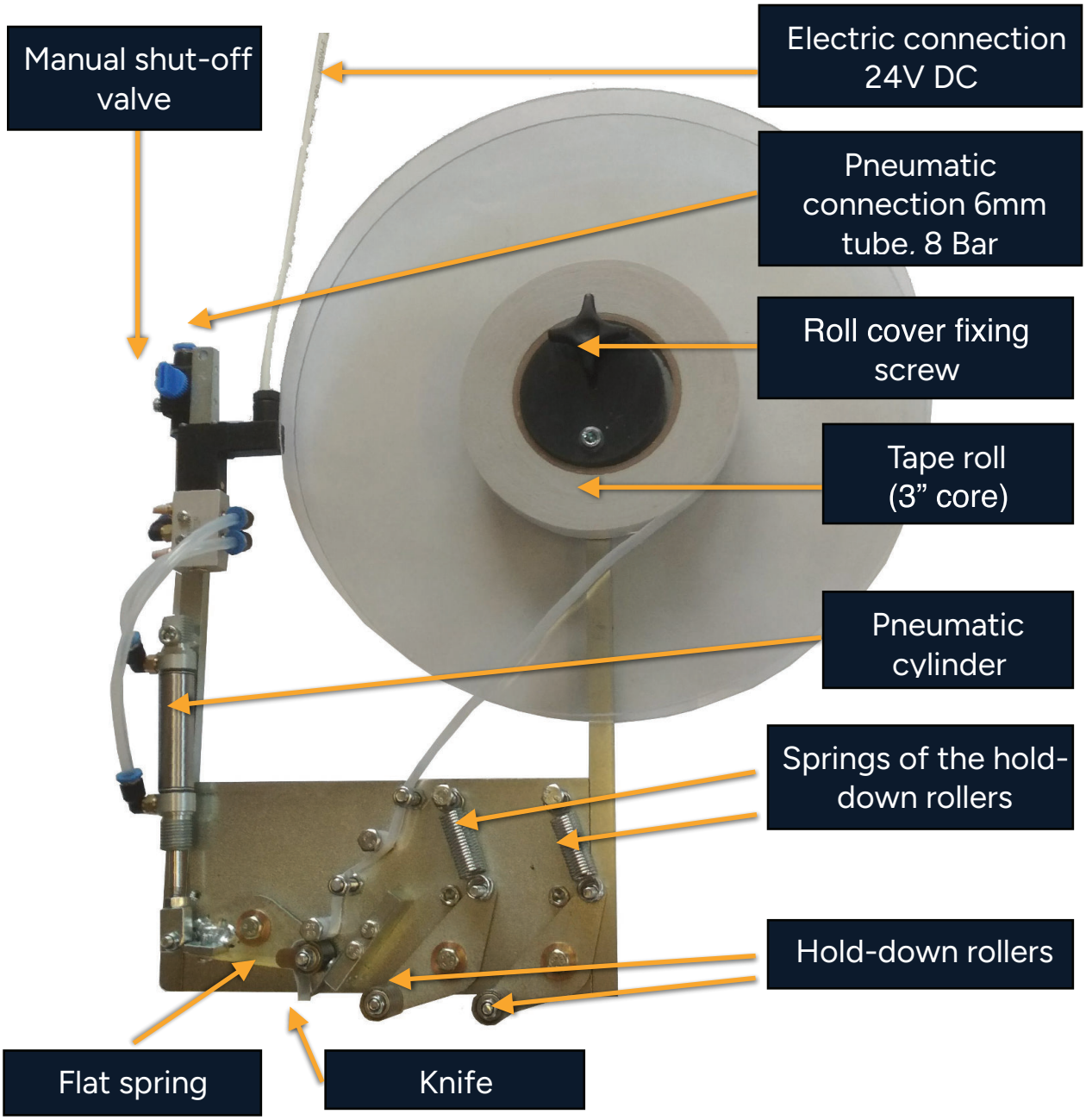
The sensor detects lighter sheets against the background.
If you need to process dark sheets, apply a strip of white insulating tape to the conveyor belt beneath the optosensor and activate the "invert optosensor" function on the controller.



(An additional paper hold-down roller is shown in this photo.)
Using white insulating tape can also help with other optosensors if they struggle to distinguish the sheets from the background due to similar colours.

TAPE APPLICATION HEADS

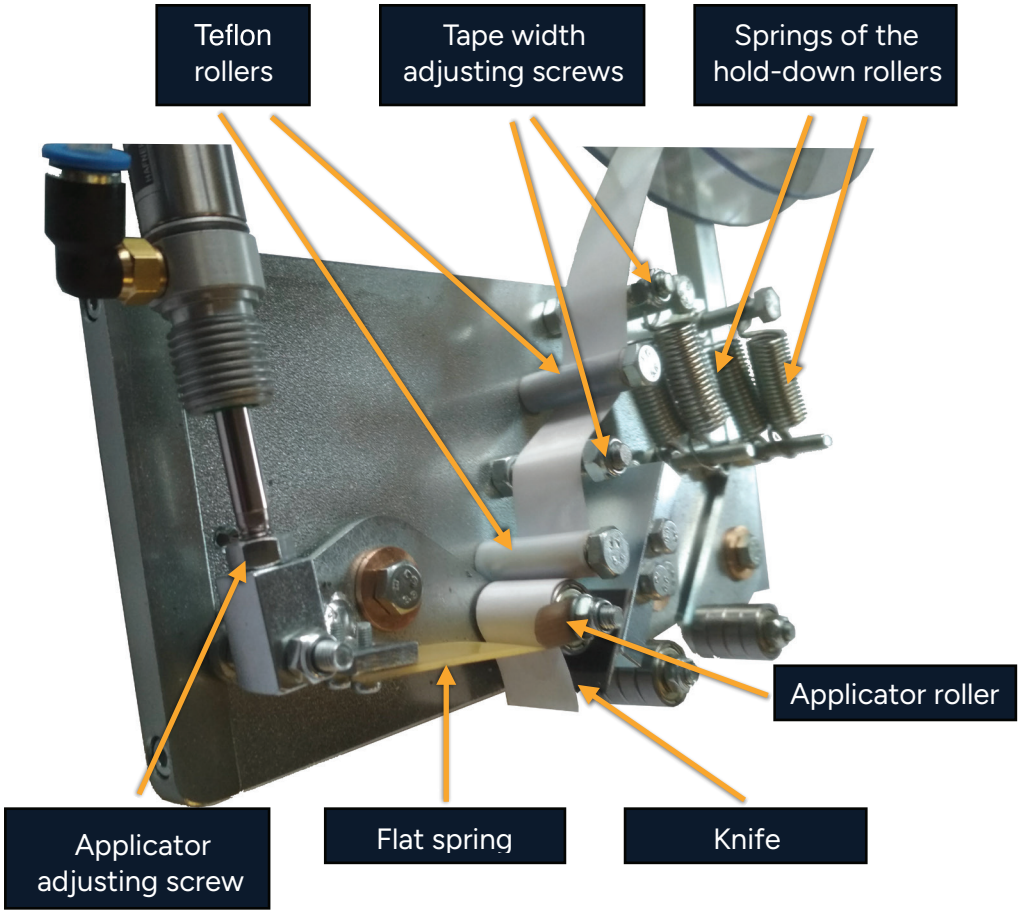
In its standard configuration, the TapeMaster is equipped with two taping heads. The right head is a mirror image of the left head.



SETTING AND USING THE APPLICATOR HEAD

The taping head uses rolls with a 3" (76 mm) inner core and a maximum outer diameter of 30 cm. The maximum tape width is 20 mm.
It is recommended to use easy-tear adhesive tapes, as strong plastic-film tapes may cause unstable operation.

Load the adhesive tape into the head as shown. The adhesive side should run over the Teflon rollers, which prevent sticking. When changing the roll, it is advisable to close the manual shut-off valve.



We recommend adjusting the tape-width screws to match the width of the adhesive tape; otherwise, the tape position may shift sideways during operation.

Compressed air is supplied via a 6 mm outer-diameter plastic tube.

The electrical system operates on 24 V DC. When voltage is applied, the taping head begins applying tape. When the power is switched off, the applicator roller lifts and the knife cuts the tape.

The taped sheet is then fed through the rollers. For thinner, easy-tear tapes, one spring on each side is usually sufficient. For more rigid tapes, use two springs per side.

When repositioning the TapeMaster taping head, we recommend unhooking all springs first, as this makes the head easier to move.

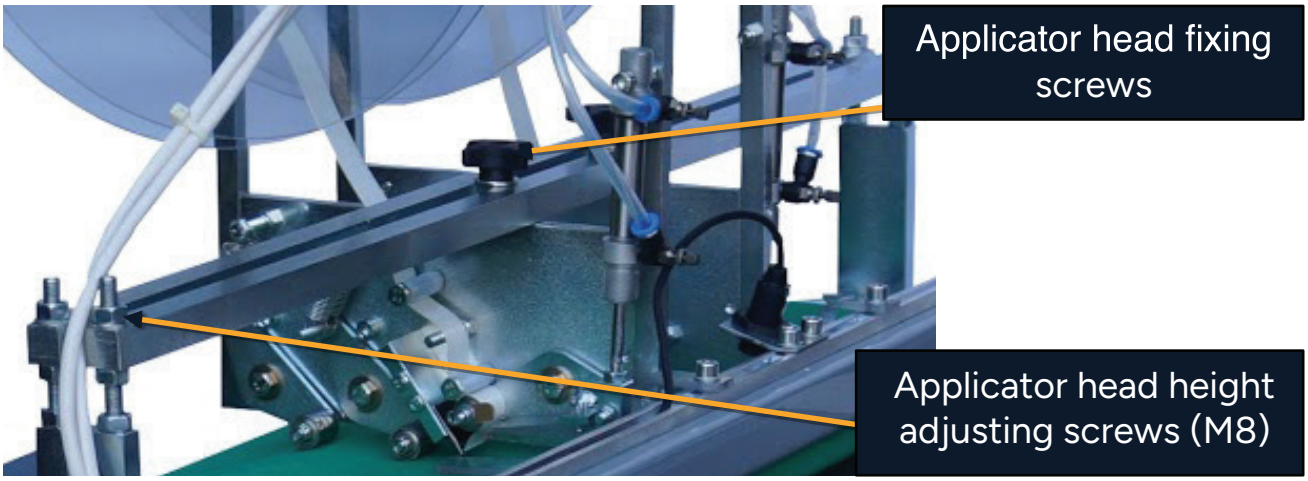
Using the applicator adjusting screw, you can set the upper position of the applicator roller so it presses correctly against the Teflon roller.
If the tape is very sticky but easy to tear, you can adjust the screw so the roller does not touch the Teflon surface, preventing the tape from sticking to it.

SETTING THE POSITION OF THE APPLICATOR HEADS

The longitudinal position of the tape application can be set through the program, but the lateral position must be adjusted manually.

Unhook all springs from the paper hold-down rollers. Loosen the applicator head fixing screws and slide the head to the desired position.
Tighten the fixing screws and reattach as many springs as required.

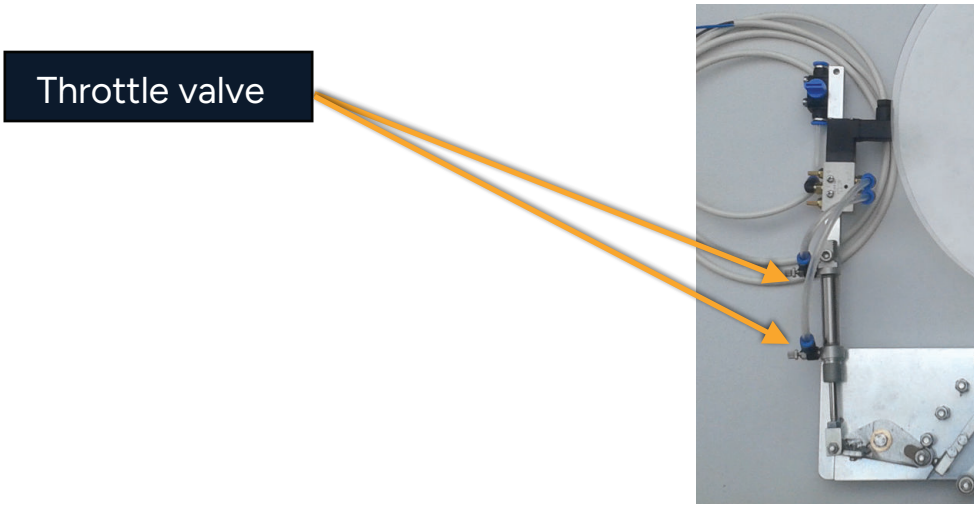
You can also adjust the height of the taping heads using the M8 adjusting screws. This is useful when processing thicker materials.



EXTRA ACCESSORIES (CUSTOM ORDERING)

Throttle valves

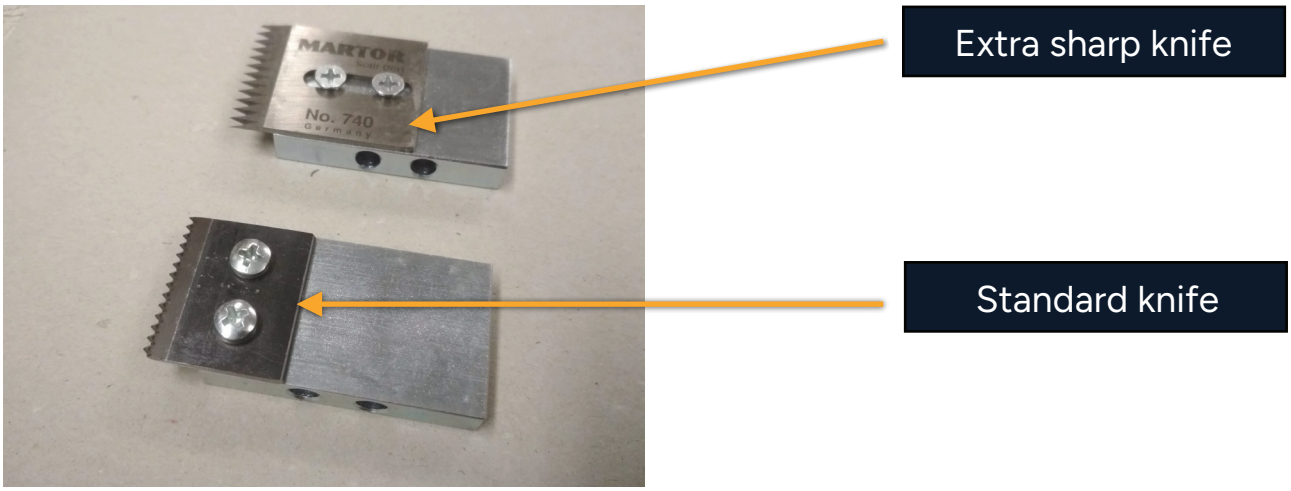
The taping heads can be fitted with throttle valves. These valves allow fine adjustment of the taping position.



Because the TapeMaster is a programmable device, this adjustment is rarely required, so the valves are generally left fully open.

However, if the TapeMaster tears the tape from the sheet or if the knife marks the sheet surface during cutting, you can use the lower throttle valve to slow the upward movement of the applicator roller. Reducing this speed can help prevent these issues.

Sharper knives



The standard knife cuts easy-tear tapes effectively and leaves minimal tooth marks on the tape.

The extra-sharp knife is better suited for stronger tapes, but it produces more tooth marks and is extremely sharp, so handle it with care.
This knife also allows for vertical adjustment.

Leuze KRTW 3B/4.1321-S8 Optosensor

This is a contrast sensor with a white LED. It can detect both light and dark sheets as they pass along the conveyor belt. It offers strong sensitivity and several adjustment options, so in most cases you do not need to apply white insulating tape to the conveyor belt when working with materials close in colour to the belt. (However, it can still be useful in some situations.)

Setting for Standard Sensitivity

Ensure nothing is under the optosensor.
Press and hold the button on the sensor for 2–7 seconds to teach the background.
During this process, the two LEDs will flash simultaneously.
After releasing the button, the green LED will stay on and the yellow LED will light only when a sheet is detected.

Setting for High Sensitivity

High sensitivity is typically recommended. Ensure nothing is under the sensor.
Press and hold the button for 7–12 seconds. The two LEDs will flash alternately.
After releasing the button, the green LED remains on and the yellow LED will activate only when a sheet is present.

Reducing Sensitivity

Press the sensor button for 0.2–2 seconds.
You can repeat this action multiple times to further reduce sensitivity.

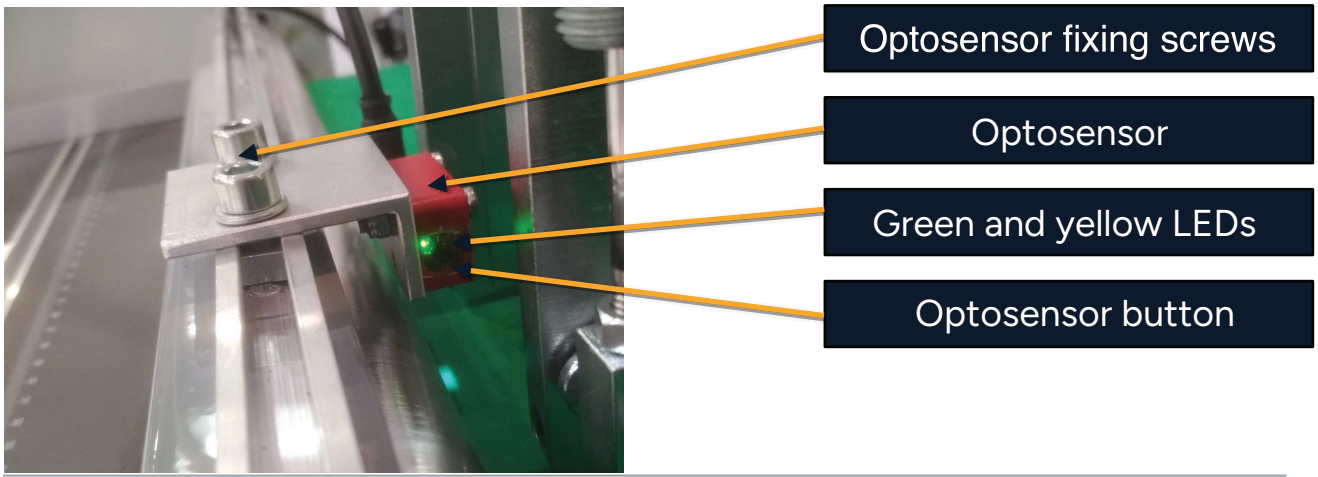
Increasing Sensitivity

Press the sensor button for 0–0.2 seconds. Repeat as needed to increase sensitivity.

For additional information, refer to the manufacturer's documentation.

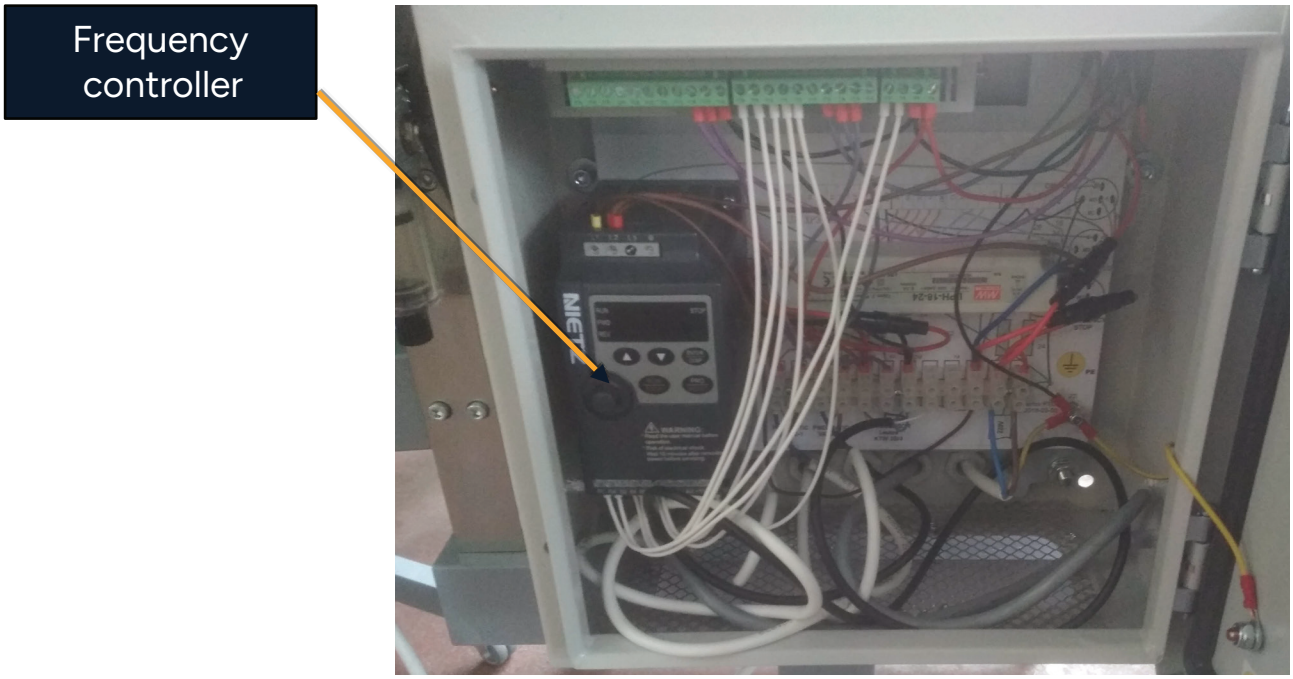
Adjusting the Position of the Optosensor

After loosening the optosensor's fixing screws, you can reposition it as required.



Adjustable speed and direction

The TapeMaster can be equipped with a frequency controller, allowing you to set conveyor speeds of 2, 10, 20, or 30 m/min.
The slowest speed (2 m/min) is intended for testing and adjustment. If selected, you can increase this speed using the potentiometer on the frequency controller.

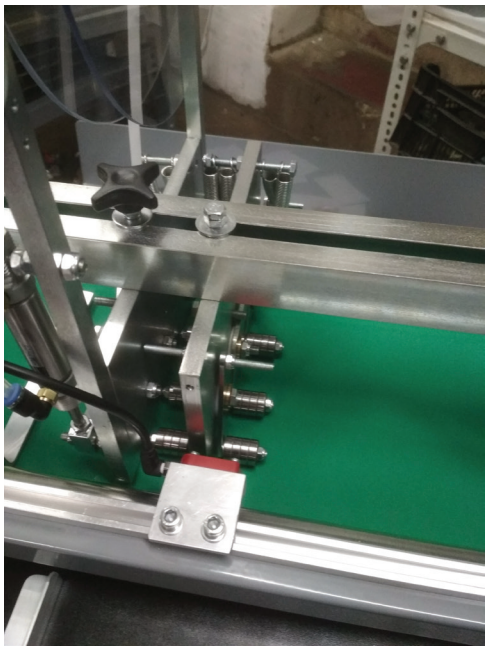


You can change the conveyor belt direction using the “Motor reverse direction” checkbox on the controller. This can be useful for clearing paper jams or when placing white insulating tape under the optosensor if the sheet colour cannot otherwise be detected.

When you adjust the speed, the operational parameters update automatically to match the selected speed.

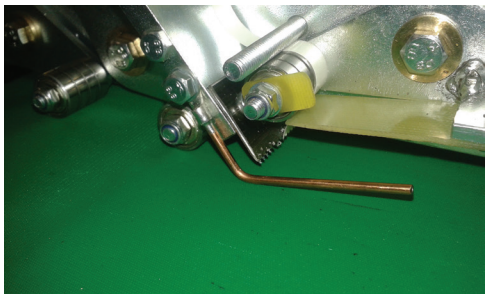
For TapeMaster units without a frequency controller, the speed is fixed at 20 m/min. The software, however, remains the same. In this case, always use speed setting “3”, as this corresponds to the standard 20 m/min operating parameters.

Extra hold-down rollers



The TapeMaster generally works well with cardboard, but some challenging materials may require additional hold-down rollers. These are useful when the standard rollers cannot hold the sheet firmly enough or when the normal rollers leave marks on sensitive surfaces.

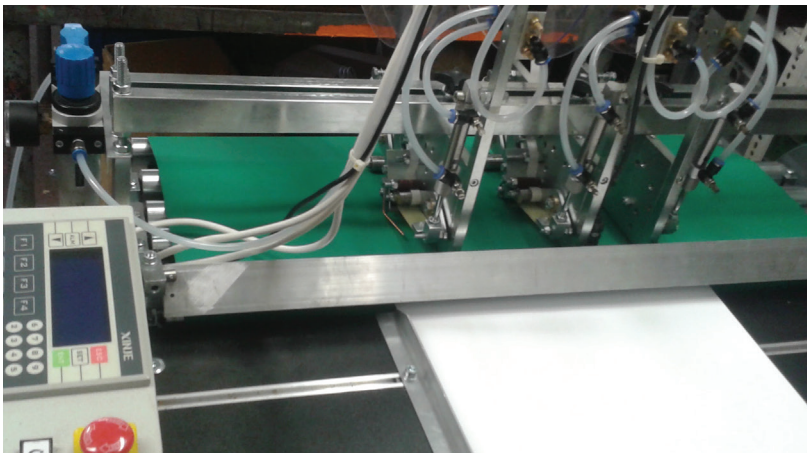
Extra paper guides



With this small paper guide, you can process heavy paper without creating unwanted “dog ears”.

Additional TD-1 heads

The TapeMaster is designed to operate with two taping heads—one left and one right.



Additional heads can be installed, but only within certain limitations.

The TapeMaster can control only two groups of heads, so any extra heads will operate simultaneously with the primary two.

Tape insertion and head adjustment require space, so the heads cannot be positioned too closely together. If they are, adjustments may become difficult.

PROGRAMMABLE CONTROLLER (PLC)

You can set the tape application position and other parameters using the PLC. The display contains several screens, each with different functions.

Use the “up” and “down” arrow buttons on the left side of the PLC to navigate between screens. Operating instructions and data fields can be accessed using the function and numeric buttons.

Press the SET button to enter a value in the highlighted data field. Confirm the entry and move to the next field by pressing ENT.
If you do not wish to complete all fields, you can exit the setting mode at any time by pressing ESC.

MAIN SCREEN

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

The value shown after “Length:” indicates the length of the sheet that has passed through the TapeMaster.

The value shown after “Counter:” is the number of sheets that have passed through the device since the counter was last reset. You can reset the counter using the F1 function key.

You can switch the sheet-forwarding motor on or off using the physical motor switch, or by pressing the F2 function key when the main screen is displayed.

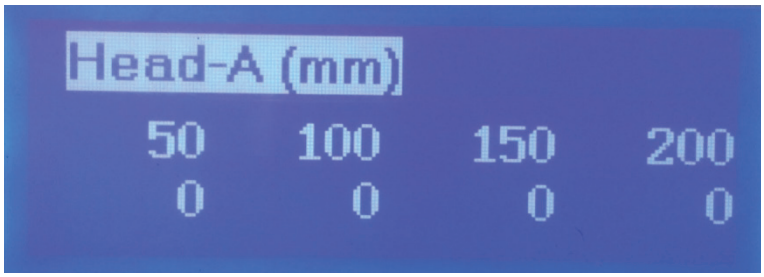
The indicator lamps on the right side of the display are for diagnostic use (Optosensor, Override Time, Head-A, and Head-B).

HEAD-A/HEAD-B SCREENS

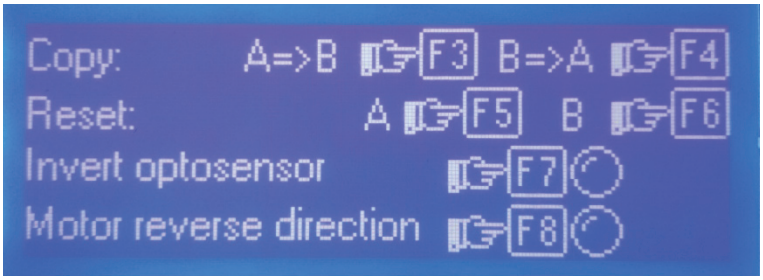
There are eight numeric fields on this display.
The first field sets the starting position of the first tape strip, the second sets the end position of that strip, the third sets the starting position of the second tape strip, and so on. This allows you to program up to four tape strips on a single sheet.

Do not enter “0” as a starting position, as this value deactivates that position.
To begin at the start of the sheet, enter “1” as the first starting position.

Press the SET key to edit a field, then press ENTER to confirm and move to the next field.
If you do not need to fill out all fields, you can exit at any time by pressing ESC.



COPY/RESET SCREEN

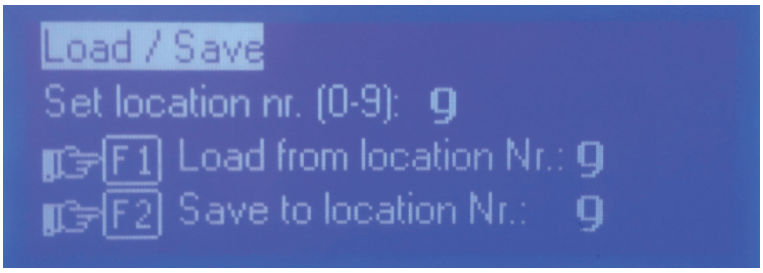


You can copy the settings from Head-1 to Head-2 by pressing F3, and from Head-2 to Head-1 by pressing F4.
All values can be reset to “0” using the F5 or F6 buttons.

F7 – Invert Optosensor
Pressing F7 inverts the optosensor signal. This is useful when the sensor cannot reliably detect dark materials.
Applying a white insulating strip to the conveyor belt can help, and inverting the signal allows the sensor to recognise dark sheets more effectively.

F8 – Motor Reverse Direction
Pressing F8 reverses the conveyor direction.
(Note: this function is available only on models equipped with a frequency controller.)

LOAD/SAVE SCREEN



You can save the current settings or load previously saved settings.
Press the SET key and enter the storage location number (0–9).

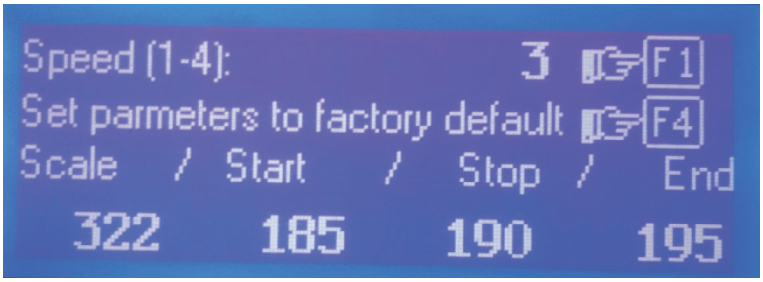
Press F1 to load the settings stored in that location, or F2 to save the current settings to the selected location.

PARAMETER SCREEN

On this screen, you can set the machine speed and adjust its parameters using F1. The available speeds are 2, 10, 20, and 30 m/min.

Speed 1 can also be fine-tuned with the potentiometer on the frequency controller, with a minimum of 2 m/min.

If your TapeMaster doesn't have a frequency controller, the speed is fixed. In that case, use speed setting "3", which matches the standard 50 Hz operating speed.



Press F3 to change the conveyor speed.

Press F4 to load the factory default parameters for the selected speed. These defaults are less precise but provide a good baseline.

Scale sets the link between time delay and tape position. Adjust it by running a sheet through the machine so the "Length" reading matches the sheet length.

Start sets when tape application begins based on the distance between the optosensor and the taping head.

Stop and End set where tape application finishes according to the programmed positions.

Use “1” as the starting position and adjust it so the tape begins 1 mm from the sheet edge.

Stop works like Start but defines where tape application ends. Set it by measuring the tape endpoints and adjusting the delay.

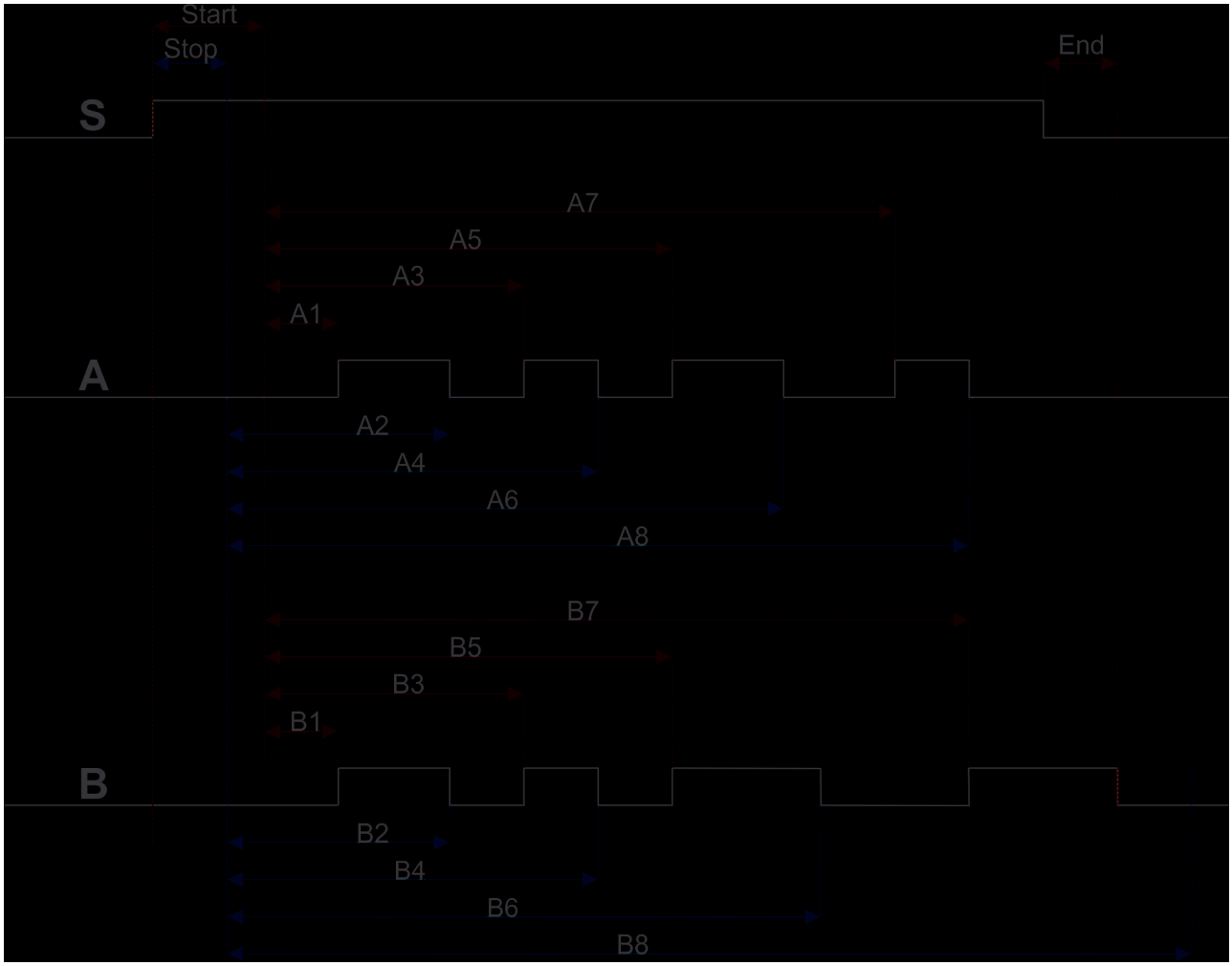
End is similar to a “taping end delay” and determines when the sheet’s trailing edge reaches the applicator head.
If you want the tape to run to the actual end of a long sheet, enter the true sheet length so the tape stops exactly at the end.
Otherwise, you can simply use a larger value and the device will still operate correctly.

If the sheet has holes or colours that confuse the optosensor, tape may stop early. In that case, increase the End delay for stable operation.

Enter parameters using SET, then confirm with ENTER.
Each speed stores its own set of parameters.

SETTING THE PARAMETERS

In the drawing below, you can see how the parameters work.



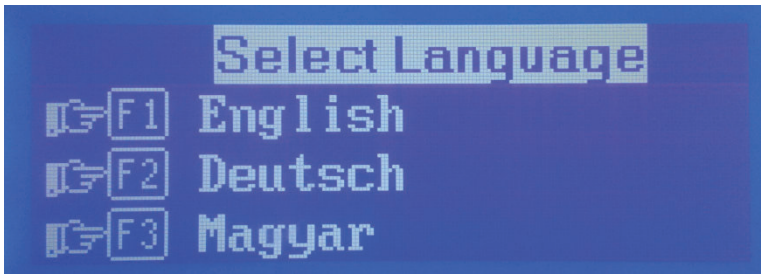
S: Optosensor signal
A: Driving signal for Head A
B: Driving signal for Head B

After the sheet passes the optosensor, the Start delay determines when it reaches the taping rollers. The machine uses this delay to calculate the tape start points.

The Stop delay determines where tape application ends. This may vary slightly due to mechanical differences (for example, the knife may slide slightly on the tape before cutting).

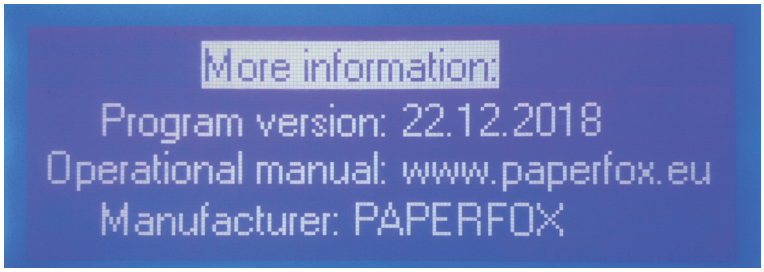
The End delay measures the time between the sheet leaving the optosensor and leaving the taping head.
If the sheet exits the taping head before the programmed stop point is reached, the taping process still ends when the sheet runs out.

LANGUAGE SCREEN



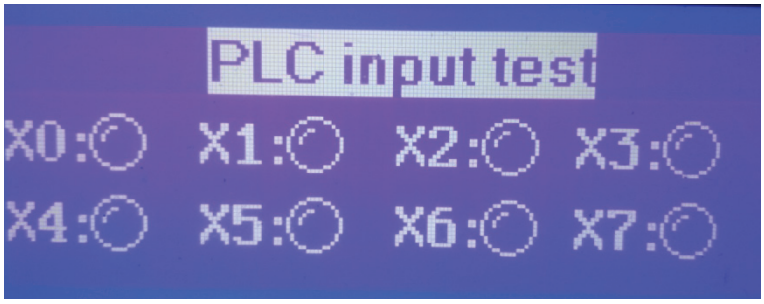
You can select the operating language using the F1, F2, or F3 buttons.

INFORMATION SCREEN



The More Information screen provides useful details about the device, including program version and documentation links.

PLC INPUT TEST SCREEN



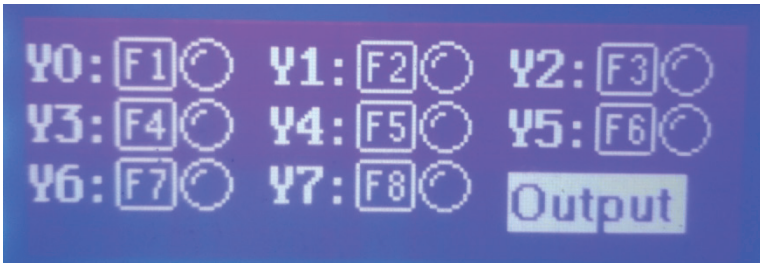
This screen allows you to check PLC inputs for diagnostics.

X0 = Optosensor

X1 = Motor switch

All other inputs are not used.

PLC OUTPUT TEST SCREEN



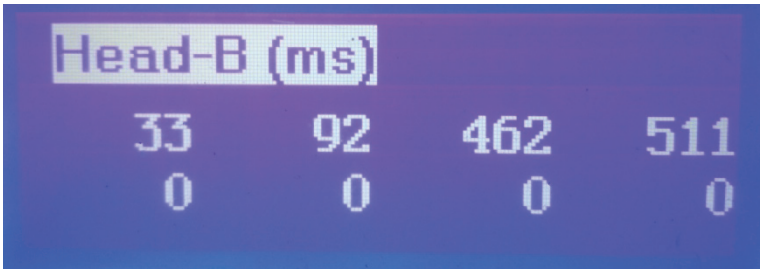
You can test the PLC outputs for diagnostics.

Y0 and Y1 control the pneumatic valves for Heads A and B.

Y2 controls the lamp at the motor switch.

Y4 controls the motor.
All other outputs are unused.

DELAY SCREENS



For diagnostics, you can review the delay values.

Problems and solutions

There is no light on the controller and on the main switch after switching on the TapeMaster.	• 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 light of the optosensor changes if you insert a sheet of paper under the optosensor.	• Check the pneumatic pressure on the manometer. If it doesn't shows any pressure, then check if it connected to a compressor and is the compressor under pressure. • Check the pressure adjusting knob if the right pressure adjusted. If you can't turn the knob, then pull it up. • Check the position settings on the PLC. If not all of them zero.
The tape applicator heads don't move at all. The light of the optosensor don't changes if you insert a sheet of paper under the optosensor.	• The upper light on the main screen shows the state of the optosensor and there is a light on the optosensor to check the state. Check the optosensor. Is there any change if you insert a sheet of paper under the optosensor? • Is the optosensor in a right position, the paper goes under it? • If the sheet has similar color as the conveyor belt maybe that the optosensor can't sense the difference. Adjust the sensitivity of the optosensor as it is described in the part "Optosensor".
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. • 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. • Test it manually if the tape stick well on the sheet.
The tape application is inaccurate.	• If you use strong or foam based tapes, then the knife can't cut it well, it sliding on the surface of the tape before cutting it. It can cause inaccuracy or even jam. • 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 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.

At the end of the tape application, the device tears-off the paper or the knife cuts in the paper.	• 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 th paper.
The device applies tape, but absolutelly not in the desired position, or stops the application before the desired length.	• Check the “Invert optosensor” in the Copy/Reset screen. Usually this parameter should be off. • Check the “Speed” in the “Parameters” screen. If your has no adjustable speed the set it to “3”. If you have changed the parameters, you can restore the factory setting by pressing “F4”. • Check the sheet under the optosensor. If there is a hole or a printed part with similar color than a conveyor belt, maybe that the device thinks that it is the end of the sheet. If you can’t adjust the position of the optosensor to avoid this region, then 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.
The hold-down rollers of the taping heads living 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 on spring on a roller. If the paper guiding is not stabile, then use two springs to holding stronger the sheets.
The taping position in side direction is not stabile.	• Check the adjustment of the tape width adjusting screws. This screws guiding the tape to the proper position.

RESTRICTIONS AND COMPATIBILITY

Tape width

TapeMaster supports double-sided tapes up to 25 mm wide.

Do not use tapes wider than the machine's specified max width per dispenser.

Tape construction (carrier/backing)

Use only double-coated pressure-sensitive adhesive (PSA) tapes with an easy-to-tear carrier, such as:

1. Paper carrier
2. Felt or non-woven carrier

Avoid or test very carefully:

1. Plastic film carriers (acrylic or other films) that stretch when pulled
2. Thick foam carriers that stretch or deform heavily

If the backing stretches instead of tearing, the applicator may not cut the tape cleanly.

Release liner

Use tapes with a thin, easy-to-tear paper release liner.

Standard liners that match the tape width are preferred.

"Finger-lift" tapes with extended liners can be used only if they run cleanly in testing – the overhanging liner can snag in guides and knives.

Adhesive type

Acrylic adhesive is recommended for most applications – stable over time with better temperature and chemical resistance.

Rubber-based adhesive offers higher initial tack but can lose strength if stored too long; older rolls may give unreliable bonding.

RESTRICTIONS AND COMPATIBILITY

Tape condition/storage

Do not use rolls where there are gaps between turns or the adhesive feels dry – this indicates ageing and poor bond strength.

Keep tapes stored as per the manufacturer's guidelines (temperature, humidity, shelf life) and rotate stock.

Simple "tear test" before use

To quickly check if a tape is suitable for TapeMaster:

Try to tear the tape across by hand.

If it tears easily and cleanly, it is generally suitable.

If it stretches and is hard to tear, it may require special blades or may not be compatible with the applicator.

Example tape constructions used in similar applicators

The following double-sided tapes (paper/non-woven carriers with PSA adhesive) have performed well in comparable tape applicator heads and are a useful reference point:

1. Hyena Tissue Tape by Rite Adhesives
2. Blazebond Tissue Tape by Rite Adhesives

If you hope to use a specific type of tape, we may need to test this, please contact us first.