



Operating Instructions

Issue no.
Sheets

3
15



Semi-automatic creasing and perforating machine GPM 450 SA

Warnings

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1. INTRODUCTION

We are presenting you with Operating Instructions that contain machine technical data and instructions necessary for correct setting, machine start-up, operation and maintenance.

Instructions are intended for machine operation as well as for service engineers. People manipulating, installing and operating the machine should familiarise themselves with the instructions before they start. We would like to emphasize that service operations can be executed only by an authorized person with proper qualification. This person should be thoroughly familiar with control and all functions of the machine. Any repair done without authorization can lead to a breach of the warranty. We are referring to section 2.2 – Work Safety and Health Protection providing basic information about safety during work with the machine and an operator's health protection. Please pay due attention to this section. Be aware that the final responsibility lies with the individuals working with the machine.

The machine construction complies with the Directive 98/37/EC of the European Parliament and of the Council. If all the instructions in this document are respected, you will be satisfied with precision and performance of the machine.

We can assure you the machine received maximum care. Thoroughness of control ensures machine precision within the scope of the acceptance standards applicable for this machine. We believe these Operating Instructions will be a valuable guide for you.

2. SAFETY RISKS

2.1 Safety Warning

When using GPM 450 SA, all safety rules and procedures as well as all warnings regarding work safety and health protection listed in this document must be observed. Or otherwise, considering the bellow listed factors, a serious injury or death of a person, damage or destruction of the machine, its parts or accessories could occur.

Factors increasing risk:

- Rotating pulleys and moving belts
- Voltage
- Noise made during processing
- Moving parts of the machine and equipment
- Sharp edges created during processing
- Dust created during processing

2.2 General Work Safety and Health Protection

This section provides the user with basic information about work safety and health protection of an operator and all other people who come into contact with the machine.

If the GPM 450 SA is used correctly, it is a very safe machine. However, if used incorrectly, it can be dangerous. When operating the machine, the operator is responsible for their own personal

safety. The manufacturer is not responsible for any injury to a person or damage to the machine caused by use or operation that is not in compliance with the Operating Instructions. The owner of the machine is responsible for the machine being operated, maintained and serviced only by qualified people.

The machine design is in compliance with international standards and regulations for construction of machine tools. For the machines exported to the European Economic Area (EEA), the customer will obtain "**Declaration of Conformity**" together with the accompanying technical documentation for the machine - Operating Instructions. The machine also has the CE marking.

The CE marking on the machinery signifies that the product complies with the technical requirements specified in all the legal regulations that apply to the machinery and that require or allow this marking. This marking also signifies that a specified procedure was followed during the assessment of the stated conformity.

With the document "Declaration of Conformity" the manufacturer certifies that the given machinery complies with the requirements of the Directive 98/37/ES of the European Parliament and of the Council and the harmonised technical standards. Directive 98/37/ES of the European Parliament and of the Council is a document defining the generally applicable basic requirements of the health protection and safety for the machinery operated by a user in the EEA.

The Directive 98/37/ES of the European Parliament and of the Council does not apply to the machinery exported to the countries outside the EEA.

The customer will receive the accompanying technical documentation for the machine – Operating Instructions. The manufacturer hereby asks the user to ensure comprehensive safety as directed by the relevant legal proceedings, standards and regulations, the Operating Instructions and other, by training the workers consistently.

The machine is intended for work in automatic cycles.

The machine operator monitors the process and the operating mode of the machine. Also replaces material with the new one and checks the measurements. Operator's position by the machine is not defined.

3. WARNINGS

Only sheets of the size listed in the parameters can be creased and perforated in the creasing and perforating machine.

- a) It is forbidden to crease and perforate foils, sheet metal or other similar materials.
- b) The machine can be only used in enclosed spaces (e.g. offices, shops).
- c) It is forbidden to use the machine outdoors.
- d) It is forbidden to use the machine when the electric cord is damaged.
- e) It is forbidden to use the machine if it makes strange sounds.

- f) It is forbidden to plug the machine into other voltage than indicated on producer's identification plate.
- g) Read all instructions before using the machine.
- h) It is not suitable for children to be near the machine.
- i) It is forbidden to put fingers or hands into the machine when the electric cord is plugged in.
- j) When the machine is jammed, it is necessary to unplug the machine first and then troubleshoot.
- k) When replacing a faulty electrical component, it is forbidden to use a different type of component or different capacity component. When replacing a component, the electric cord must be unplugged.
- l) Covers can be only dismantled by a trained technician when the machine is unplugged.
- m) The operator or the person appointed for operation cannot use the machine unless they have been trained.

4. TECHNICAL PARAMETERS

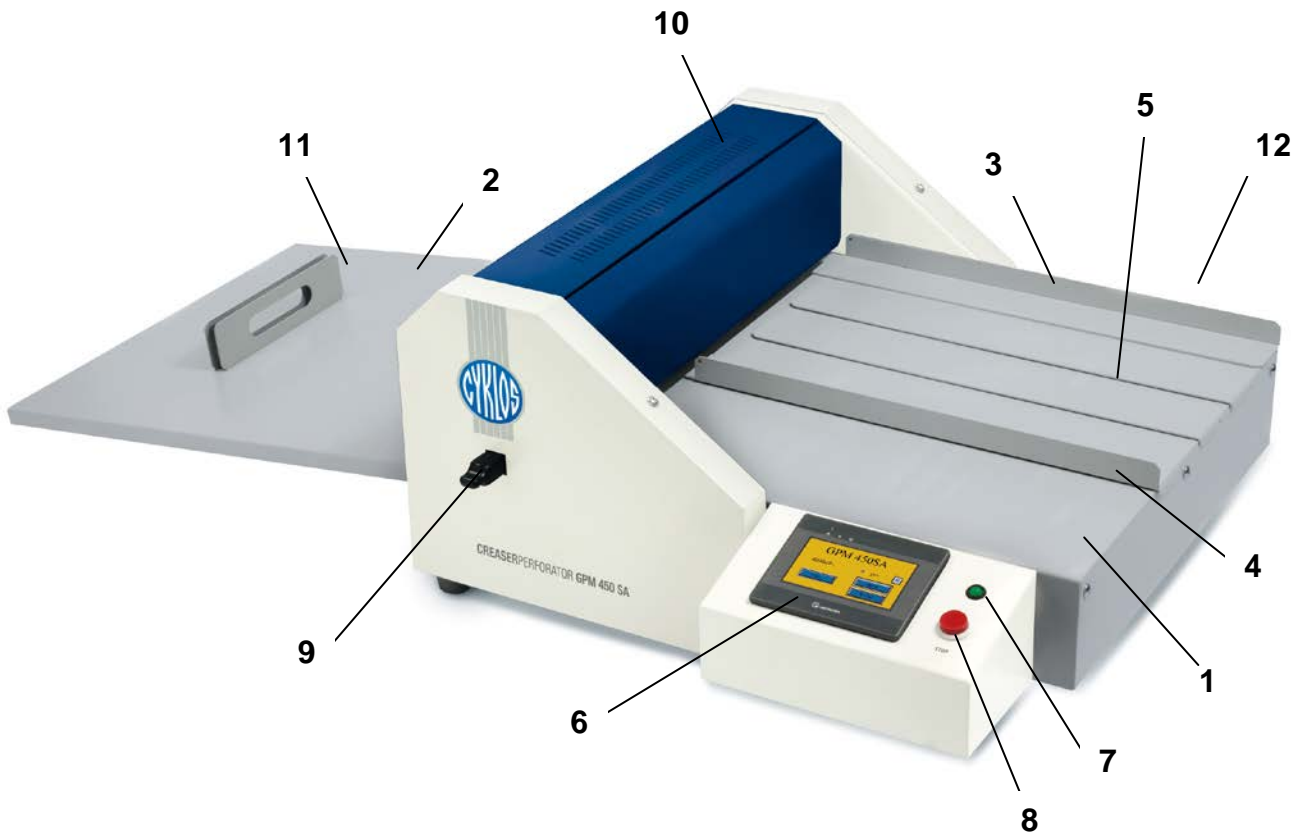
a)	Max. working width	450 mm
b)	Recommended paper grammage - creasing	80 - 400 g/m ²
	Recommended paper grammage - perforation	80 - 250 g/m ²
c)	Crease width *	<p>CITO 1,0 mm - paper thickness < 0,2 mm (mostly 80 - 150 gsm)</p> <p>CITO 1,4 mm - paper thickness 0,2 - 0,4 mm (mostly 160 - 250 gsm)</p> <p>iron channel - paper thickness 0,4 - 0,5 mm (mostly 250 - 400 g/m²)</p>
d)	Max. number of creases per sheet	15
e)	Number of Programmes	5
f)	Min./Max. distance of creases	2/ 1000 mm
g)	Min. distance of crease from edge of the sheet	0 >
h)	Speed	1500 A4 sheets/ hr (with one crease)
i)	Predefined types of fold	1/2, 1/3, 1/4, book cover
j)	Machine dimensions	1200 x 590 x 300 mm
	Packing size	750 x 750 x 400 mm, on pallet 80 x 80 cm
k)	Machine weight	net 52,5 kg, gross 56,5 kg
l)	Voltage / frequency	230 V / 50 Hz, 110 V / 60 Hz
m)	Power input	2 A
n)	Fuse	T3,15 A / 250V

* *Note: It is necessary to respect recommended width of creasing channel for different paper thickness. If we use inappropriate width of crease (usually narrow creasing channel for thick paper) inaccuracies in position of crease may appear, crease will be placed in different distance than what we set on display. If we use thick paper in combination with narrow crease, the result is that the paper is pressed into the creasing channel, the rollers start to slip trying to release the paper. Use wider crease in such case.*

5. MACHINE DESCRIPTION

Content of package

- the machine GPM 450 SA 1 x
- magnetic side guide 1 x
- magnetic strip 2 x
- perforating knife 1 x
- creasing knife (fitted on the machine) 1 x
- lower creasing/perforating tool (fitted on the machine) 1 x
- supply cable 1 x
- hexagonal key 1 x



- | | | |
|---------------------|--------------------------|---------------------------|
| 1 – Feeding table | 7 – Control light | 13 – Clamp |
| 2 – Delivery table | 8 – STOP button | 14 – Ram |
| 3 – Fixed T-square | 9 – Square bar | 15 – 6 mm hexagonal screw |
| 4 – Left side guide | 10 – Upper cover | 16 – Locking screw |
| 5 – Magnetic strip | 11 – Magnetic stop | 17 – Pressing mechanism |
| 6 – Display | 12 – Power supply switch | 18 – Adjusting screw |

6. MACHINE INSTALLATION

Electric creasing and perforating machine is suited for final processing of graphic materials up to 450 mm width. Creasing enables easy folding of the paper. Knife change and turning of the square bar (9) allows making perforation. Waste-less perforation allows easy separation of the paper.

After unpacking the machine has to be put on a solid area, the delivery table is put on (2). After the machine has been plugged into the power outlet, it is ready to operate and the display is alight (6). When the upper cover (10) is lifted up the machine is automatically turned off and the control light (7) turns red.



Machine is adjusted for creasing by manufacturer. To start with perforating, it is necessary to change the knife (in the packaging included). First of all the machine has to be unplugged and the upper cover (10) lifted up. Then we have to dismount 2 locking screws (16) located on the joist of the hinged pressing mechanism (17). Then we lift off the hinged mechanism and fix it in the upper position by locking screws inserted into the sideboard. Then we dismount 5 hexagonal screws (15) and the clamp (13). For perforation it is necessary to set the square bar (9) face up by flat side without creasing channels. We do not tighten the knife completely, we carry out a control upstroke to make sure that the upper edge touches the slide and finally we can tighten the screws (15). Then we carry out the assembly of the pressing mechanism (17) which we place in the original position.

6.1 Ram Adjustment

The ram (14) with perforating or creasing tool can be moved down by the help of both adjusting screws (18). The screws should be loosened anticlockwise gradually by 1/12 revolution approx. 30° (the bar moves down) and then it has to be fastened by a nut. After each 30° turn it is necessary to check, whether perforating (creasing) quality is sufficient. When the ram (14) is set-up correctly it is not needful to readjust it with each change of function (perforating, creasing).

7. SETTING MACHINE USING TOUCH SCREEN

7.1 Language selection

After the power supply switch has been turned on, the display shows the basic menu (fig.1)

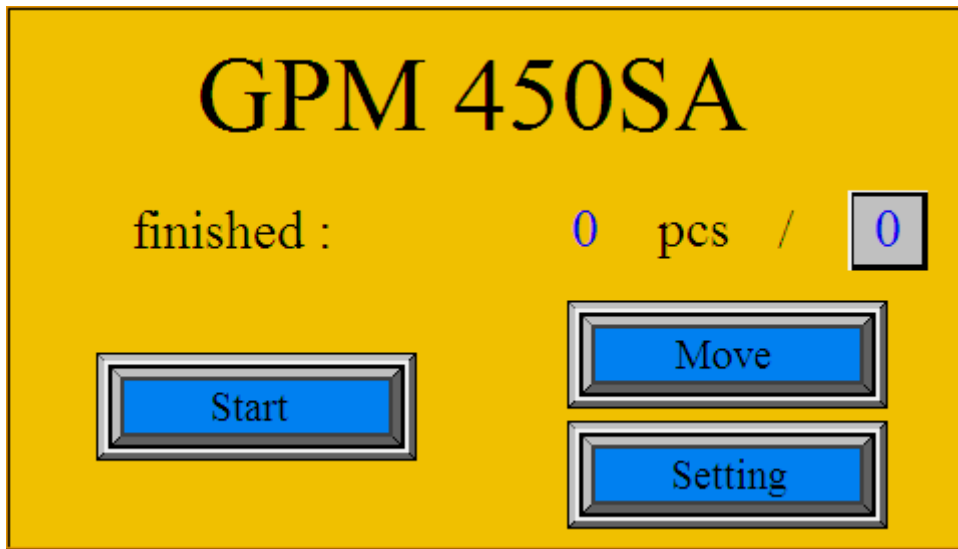


Fig. 1: The Main screen

There is a hidden icon in the left upper corner. If you press this space a language menu comes up (fig.2).



Fig. 2: Language selection

Press an icon with required language. Then the display shows the basic menu in chosen language.

Counter reset (finished)

To reset the meter you should proceed as follows. Press the blue figure „**pcs**“, which is the number of papers that have been processed last. This brings up a figure keyboard. Then we press number „**0**“ and confirm it by pressing „**ENTER**“. That takes us back to the previous menu and the meter shows zero.

7.2 Setting Number of Segments

Pressing the numeric icon under the **"Number of creases"** sign the displays the numeric keypad. By pressing the relevant digit, the number of creases/perforations (segments) is set. The program enables setting of up to 15 segments. The selection of number of segments is ended by pressing the **"Enter"** key. The number of segments is now set.

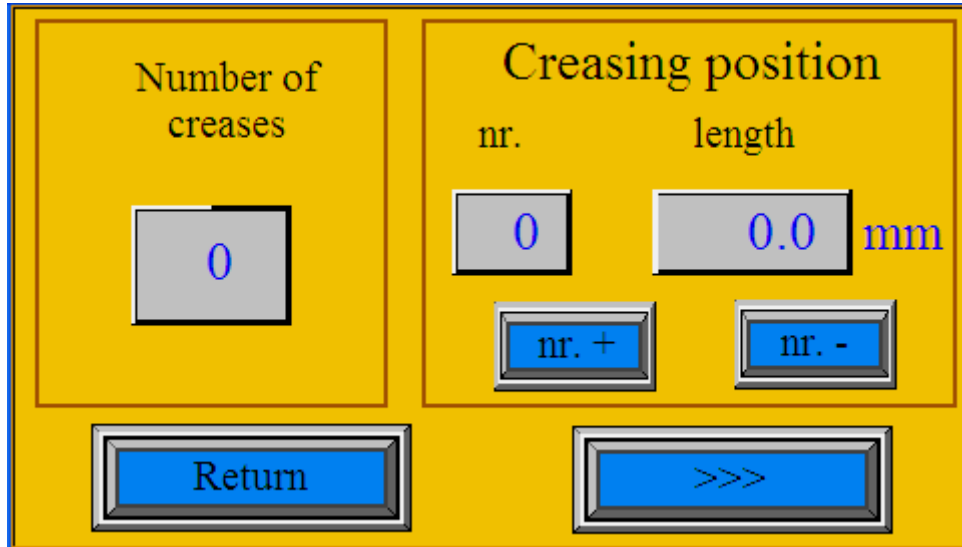


Fig. 3: Setting screen

7.3 Setting Position of Segments

The position of the first segment is set as the distance from the edge of the sheet. The position of each following segment is defined as its distance from the previous segment. The **"no. +"** and **"no. -"** serve for the choice of required segment. Choose the segment number 1 and then press the numeric icon under the word **"length"**. A numeric keypad is now displayed. Use the numeric keypad to set the distance from the edge of the sheet and press **"Enter"**. The position of the first segment is set. Choose the segment number 2 using the **"no. +"** key and then press the numeric icon under the word **"length"** again. Use the numeric keypad to set the distance from the first segment and press **"Enter"**. The second segment is set. Set all the remaining segments the same way. When all the segments are set, press the **"Return"** icon to go back to the main menu. The machine is now ready to process the task.

7.4 Special Types of Folds

By pressing **">>>"** icon in Setting screen we enter to screen where most common types of fold are displayed (fig. 4). To achieve most common folds it is necessary to crease in certain distances like 1/2, 1/3 or 1/4 of the paper. By pressing appropriate icon we can easily achieve one of the most-used folds. First, it is necessary to prepare the required sheet the same way as for the processing. Then press the **"1/2"** icon (other fold types accordingly), followed by **"<<<"**, **"Return"** and **"Start"** icons. On main screen appears symbol of appropriate icon (1/2, 1/3, etc.). One sheet goes through the machine, its length is measured and 1/2 of the length is calculated. The screen changes to the Setting screen (fig. 3). The calculated length of the 1/2 is displayed in the **"length"** box. Then return to the main screen and press the **"Start"** icon. We recommend to process only one sheet and check the position of the 1/2, whether the distance was measured correctly. If the crease is not in precisely in the required distance, return to the Setting screen and correct the distance manually. All other folds work the same way.

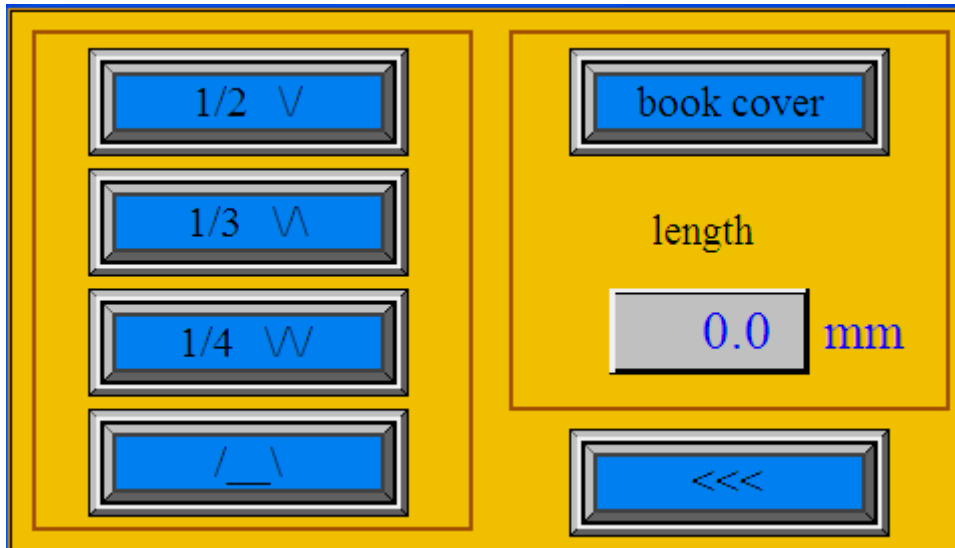


Fig. 4: Most common types of fold

7.4.1 Book cover

Amongst these types of fold there is one very special function called book cover. The machine GPM 450 SA is excellent for making professional book and brochure covers. Book cover is defined by 4 creases made in the middle of the sheet with fixed distances 6 mm between the first and second crease and third and fourth crease. The distance between second and third crease is optional depending on thickness of book. This dimension is defined by “length” icon below book cover icon.

7.5 Saving and Loading of Program

The software allows saving up to 5 different programs. The number and position of the segments is set according to the procedure described in Section 7.3. As soon as the last step of setting (the required number of segments and their position) is done, the program can be saved. On the main screen press the number in the right side of the screen showing program number. The menu for saving and loading of a program (fig. 5) appears.

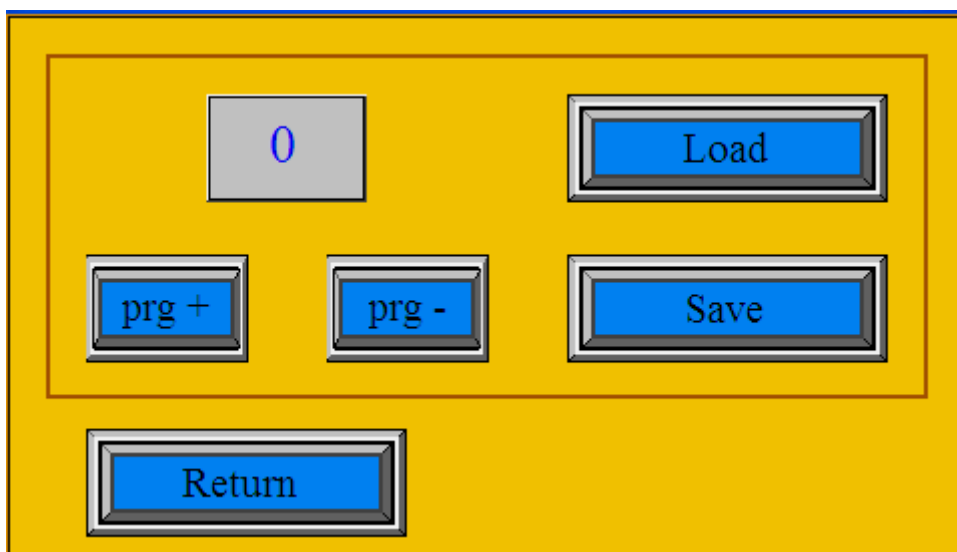


Fig. 5: Saving and loading program

Choose the number for numbering the program using the keys "**prg +**" and "**prg -**". Press the "**Save**" icon. Go back to the main menu by pressing "**Return**". The program is saved. Load the program as follows: On the main screen press the number in the right side of the screen showing program number. Choose the number of the program you want to load using the keys "**prg +**" and "**prg -**". Press the "**Load**" icon. Go back to the main menu by pressing "**Return**". The machine is ready to operate according to the loaded program.

***Warning:** The screen displays the number of the last program saved or loaded. For more effective work the operator can change the program without saving it. In such case, the number of the last program saved or loaded is still displayed, but the machine operates according to the operator's last setting, even though this setting has not been saved. If the machine is turned off and then turned on again by the electric switch, the machine operates according to the program displayed on the screen. The last unsaved setting is deleted.*

7.6 Working Cycle

You can either choose a preset program or create your setting. First you have to adjust the movable left side guide (4) on the feeding table according to the paper size. Between side guides we either remove or add magnetic strips (5) which prevent paper from deflection. Then we have to set the distance of the magnetic stop (11) on a delivery table according to the paper size. Press the "**Start**" icon on the screen (fig. 1). The machine starts up and the working cycle screen is displayed (fig. 6). There are a "**Stop**" icon and information about the number of processed sheets displayed on the screen.



Fig. 6: Working cycle screen

Then we can start feeding the machine with the paper. It is very important to do this accurately. When the machine is creasing or perforating the red diode on the main panel is on. We can put more paper in the machine after the red light changes into green again. The machine can be turned off by pressing the "**Stop**" button on the display. In case of emergency you can use a red „**STOP**“ button placed on the main panel.

7.7 Manual Control

When changing the tools it is necessary to carry out a testing upstroke (turn) to make sure that both tools are parallel, and also to make sure that either creasing or perforating tool is leaned

against the slide. We do it by pressing the „**Move**“ icon and the following menu comes up – „**Manual control**“ (fig. 7).

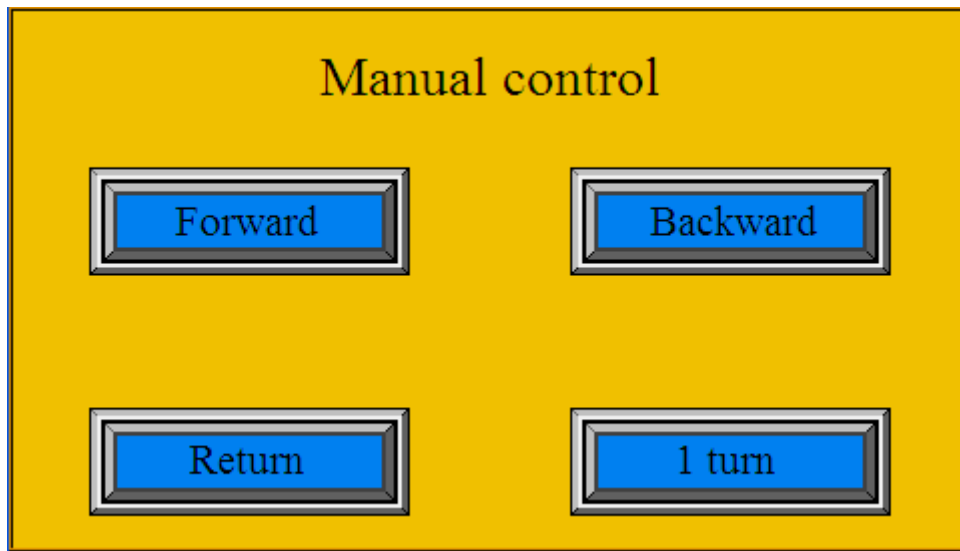


Fig. 7: Manual control

After activating the „**1 turn**“ icon the control upstroke is carried out. In case the crease depth is not the same on the both sides of the paper or perforation does not result in direct separation of the paper, we can adjust the ram (14) with a perforation knife. This can be done using the adjusting screws (18). It is necessary to loosen the screws gradually anticlockwise (slide goes down) by 1/12 of the turn (30°), and then secure it with a nut. You should check the quality of perforation after each turn (30°). After the machine has been adjusted for perforation, it is adjusted for creasing as well.

Icons „**Forward**“ and „**Backward**“ are used to release stuck piece of paper from the machine. For return to the main menu, press „**Return**“.

7.8 Service Menu

There is a hidden icon in the right upper corner. This icon serves for service technicians trained by Cyklos. To access this icon you need to enter a password (fig. 8).

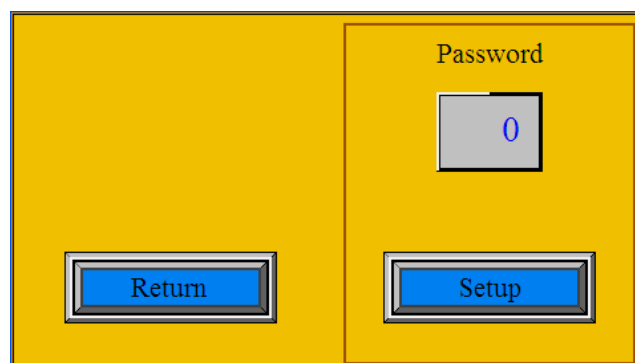


Fig. 8: Service screen

8. THE MOST COMMON FAULTS (TROUBLESHOOTING)

a) upstroke stoppage: If this problem occurs during adjusting and checking the upstroke of the ram (14), it is necessary to loosen locking nuts and then turn clockwise by the adjusting screws (18) two revolutions (the ram goes up). When the upstroke cycle is terminated, then the red diode is on. After the machine is turned back on the upstroke process should finish. It is necessary to readjust the ram (14).

b) paper jam: When the paper gets jammed or damaged, it is necessary to turn the machine off immediately (press the STOP button 8). After the machine has been stopped we have to tap on the MOVE icon. Before we remove the paper it is necessary to carry out an upstroke (1 turn icon). Then we can use button **Backward** or **Forward** depending on situation.

c) crease is in incorrect position compared to values set on display

It is necessary to respect recommended width of creasing channel for different paper thickness. If we use inappropriate width of crease (usually narrow creasing channel for thick paper) inaccuracies in position of crease may appear, crease will be placed in different distance than what we set on display. If we use thick paper in combination with narrow crease, the result is that the paper is pressed into the creasing channel, the rollers start to slip trying to release the paper. Use wider crease in such case. Look for correct crease width in chapter 2, c.

9. MACHINE DISPOSAL

When the lifetime period is over, it is forbidden to dispose of the machine into the common waste. The machine must be disassembled and metallic, non-metallic, plastic, rubber and electronic parts sorted. These parts are disposed of in the relevant points of recycling. Some parts of the machine can contain dangerous substances that are harmful to the environment and health.