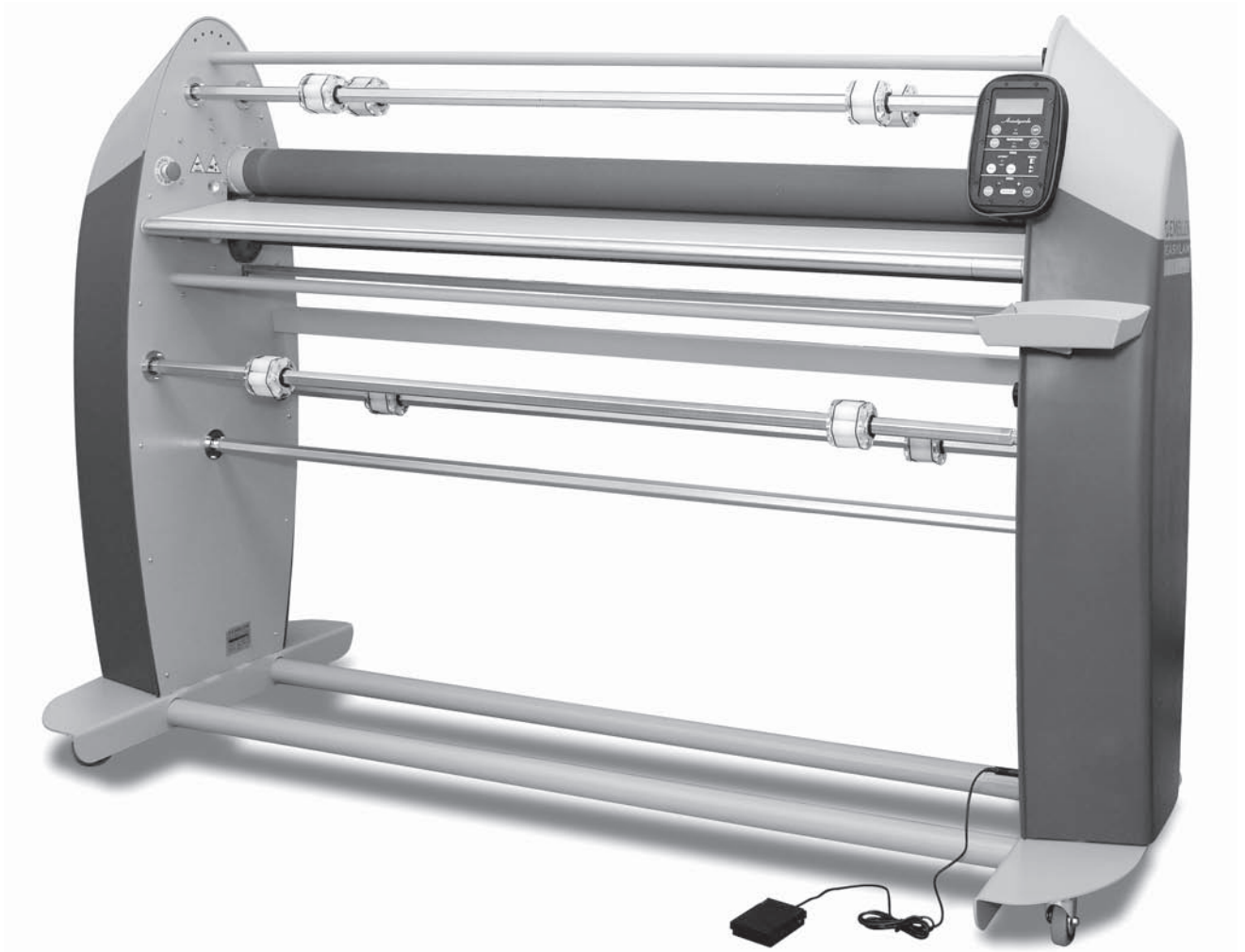


Laminating Machine



Operating Instructions



Printout: November 2007
Issue 1.21

(1) : (Digit as an example): Labeling of an operating handle or a signaling equipment

↗ : The warnings refer to procedures where non-compliance can lead to injuries of the user. The manufacturer does not accept any liability for possible injuries to persons which were caused due to a non-compliance with these references.

[: The remarks include important references and are indicated outside of the text.

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1. GENERAL REFERENCES

1.1 Copyright / Information

This operating manual includes information on the proper use of the machine. All rights reserved.

Reproduction or copying of these directions, also excerpt-related, is prohibited without written authorization from the manufacturer.

In the preparation of these directions, all procedures were considered which occur in case of proper and regular use, as far as possible. This means that these directions are to be followed exactly, in order to guarantee trouble-free and optimal function of the machine. The machine may be used by trained, expert personnel only.

It is recommended not to carry out any repairs or make any interventions which are not explicitly specified. In case of interventions which require the removal of machine parts, the use of authorized, skilled personnel is required.

Under no circumstances must the device be altered or changed. The manufacturer refuses any guarantee for devices which are not in the original condition. The manufacturer does not accept any liability for injuries to persons or animals or damage to material in case of non-observance of these directions, or in case of non-intended utilization of the machine. The manufacturer reserves the right to make changes or improvements to the operating directions and machines, without issuing any prior notice, possibly also to already supplied machines.

The information included in these directions refers to the machine that is described in "1.3 Type designation plate of the machine".

Keep these directions near the machine. These directions belong to the machine. If the machine is sold, these directions must be handed over with the machine.

1.2 Manufacturer

Dataplot GmbH

Gutenbergstraße 15

D-24558 Henstedt - Ulzburg

Germany

Tel. 0049/ 41 93 995 0

Fax 0049/ 41 93 995 220

1.3 Type designation plate of the machine

The Laminator is marked with the following data on the type designation plate:

- Model
- Serial number
- Voltage, frequency and current consumption
-

1.4 Machine description

1.4.1 Planned utilization

The machine is determined for the following purposes:

- The laminating of protective foils on the most varied paper printouts (e.g. inkjet and electrostatic prints, etc.).
- The laminating of double-sided adhesive films on various printed matter or on sheet material determined for this.
- The placement of images on sheets.

The installation is to be carried out by professional, specialist personnel. The machine should be set into operation only in rooms with the following properties:

- Protection against weathering factors.
- Adequate lighting conditions / illumination.
- Permissible temperature range; between 18°C and 35°C.
- Permissible humidity range; between 30% and 80%.
- Power supply; • AC voltage: 230 V / 110 V option in preparation
- Frequency; 50 - 60 Hz
- Current consumption: 11 A

1.4.2 Non-intended utilization

By non-intended utilization is understood every utilization which is not specified under "1.4.1 Intended utilization", in particular:

- Any inappropriate use of the machine which represents an unusual utilization of the machine and can damage the machine structure;
- The use of the machine without safety devices, in particular without photoelectric cells which are attached near the rubber rollers, or without the fixed paneling that prevent the access to the machine interior.
- Non-compliance with the procedures indicated in these directions.
- The utilization of the machine in a fire-endangered or explosion-hazard room, since it is not equipped with Ex-protected parts.
- Utilization in an explosive environment.
- Utilization in an inflammable environment.

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2. NOTES ON SAFETY

2.1 Safety criteria

In case of the conception and manufacture of this machine, all criteria were employed and adequate measures applied in order to correspond to the basic requirements for safety, as well as the basic specifications of systems with low voltage and the EMC Directive. Within the framework of the risk control, which has been carefully implemented by the manufacturer, both anticipated and reasonably foreseeable operating dangers have been eliminated.

The manufacturer recommends to adhere exactly to the references, processes and recommendations in the operating instructions, as well as to any applicable legislation concerning safety at the workplace; this applies also for the utilization of the planned safety devices - whether built-in or as individual equipment.

[The manufacturer does not accept any liability for injuries to persons or animals or damage to material in case of non-observance of the safety regulations and the recommendations included in these directions.

2.2 Personnel qualification

Technical phases of the machine service life	Qualification of the operating personnel
Transport	Professional transport personnel
Installation	Professional personnel
Operation	Professional personnel
Service	Technicians instructed by the manufacturer
Dismantling	Professional personnel

2. Safety devices

[The manufacturer does not accept any liability for injuries to persons or animals or damage to material in case of non-observance of the safety regulations and the recommendations included in this direction.

⚠ Interventions on safety devices and protective equipment impair the safety of the operating personnel and other personnel.

[The manufacturer does not accept any liability for injuries to persons or animals or damage to material which were caused by external interventions on the safety devices of the machine.

The machine possesses the following protective equipment:

- Right-hand cover housing
- Left-hand cover housing
- EMERGENCY OFF buttons
- Photoelectric cells which are attached in front of the rollers.

2.4 Danger zone and residual risks

Every area in proximity to the machine in which a person is exposed to danger of injury or danger to health is regarded as a danger zone.

⚠ In case of laminating, lining and assembly, pay particular attention to where you place your hands.

In case of some interventions in the machine which are detailed in the directions, residual risks exist for the operator. However, these hazards can be eliminated if you adhere exactly to the instructions of this operating manual and apply the necessary security measures in each case, such as:

- The mains cable is to be laid so that it is not crimped or damaged in any way.
- Have services implemented through an authorized service engineer only.

[The manufacturer does not accept any liability for injuries to persons or animals or damage to material, in case of non-compliance with the prescribed security measures and where individual safety devices are not used.

2.5 Operating noise

The specifications included in these directions concerning the operating noise refer to those noise values which were recorded on a machine identical to the one described here, according to the specifications of the "Machinery Directive" (89/392/CEE and following updates).

Average noise level measured continuously in an area 1 meter around the machine:
In the operational state: under 80 dB.

2.5.1 References to noise dangers

The indicated noise values do not represent absolutely fixed values. The noise that the operator is exposed to depends primarily on the noise level of the machine. However, there are other factors which influence these parameters:

The exposure duration, the properties of the work environment and the presence of other, noise-generating machines. The specification concerning machine noise enables the user to generally evaluate the noise dangers.

✗The continuous utilization of the machine and the systems that are probably installed in the same room could mean an increased level of acoustic pollution daily, in total. If the daily, personal noise pollution is at or above a level of 85 dB(A), it is recommended to employ corresponding protective equipment (acoustic protection for ears, earplugs, ...).

If the daily, personal noise pollution is at or above a level of 90 dB(A), the wearing of corresponding protective equipment (acoustic protection, earplugs, ...) is compulsory.

3. Technical data

MODELEASYLAM Avantgarde

Packaging dimensions	length 2400 mm width 1000 mm height 1700 mm
Packed weight (tare)	220 kg
Dimensions	length 2200 mm width 800 mm height 1410 mm
Height of working area	1020 mm
Effective roller length	1640 mm
Max. laminate width	1700 mm
Max. roller separation	40 mm
Power supply	AC Voltage: 230 V frequency: 50/60 Hz current consumption: max. 11 A

[The manufacturer does not accept any liability for faults and defects that are caused by non-compliance with the indicated connected loads.

4. INSTALLATION

4.1 Dispatch / Transport

4.1.1 Packaging / Weight

The machine is dispatched in a wooden crate with protective packaging.

Dimensions mm 2400 x 1000 x 1700

Total weight kg 220

Employ suitable lifting devices and tools, which correspond to the applicable specifications.

[Take all usual precautions to avoid impacting and tilting.

Protect the machine against influences of the weather.

4.1.2 Intact acceptance

Check the machine condition with a visual inspection after you have removed the packaging. Visible dents in the packaging indicate possible damage during transport and could impair the trouble-free functioning of the machine.

Check the trouble-free status of the following parts in particular:

- Operational keyboard
- Right-hand housing
- Left-housing housing
- Pressure indication
- Foot pedal
- Roller axles

4.2 Assembly

The machine does not have to be put together, since it is delivered already completely assembled.

4.3 Storage

Adhere to the recommendations of this chapter in case of possible storage of the machine, e.g. in the following cases:

- If the machine is not immediately installed after delivery.
- If the machine is shut down for a certain time and is placed in storage until it is installed again.

Recommendations:

- Permissible temperature range; between 5°C and 35°C
- Permissible humidity range; between 30% and 80%.
- Adequate weather protection.
- Sufficient space for secure and comfortable lifting and transport.

4.4 Installation

4.4.1 Necessary prerequisites

Power supply

In proximity to the machine, the connected loads are to be provided as indicated in "3. Technical data".

Space requirement

The installation space has to correspond to the space requirements for the planned utilization of the machine, including the utility supply and return lines, considering the dimensions of the images and sheets to be processed.

Weather protection

The machine is to be installed in a room which is closed and protected against climatic influences.

Installation space

Prepare a flat platform according to the machine dimensions.

It is also necessary to consider the accessory equipment and the operating area for the user.

Lighting

Good lighting is indispensable, in order to ensure safe operation and maintenance of the machine.

Room properties

Permissible temperature: 18°C to 35°C.

Corresponding permissible humidity range: 30% to 80%

4.4.2 Power connection

✓ Check that the connection corresponds to the machine performance.

✓ Electrical dangers. Before every connection to the mains, the grounding must be secured.

- Connect the mains cable to a suitable plug socket.

4.4.3 Acceptance / Test

Before the actual operational startup, carry out some sample laminations and assemblies.

5. OPERATION

5.1 User

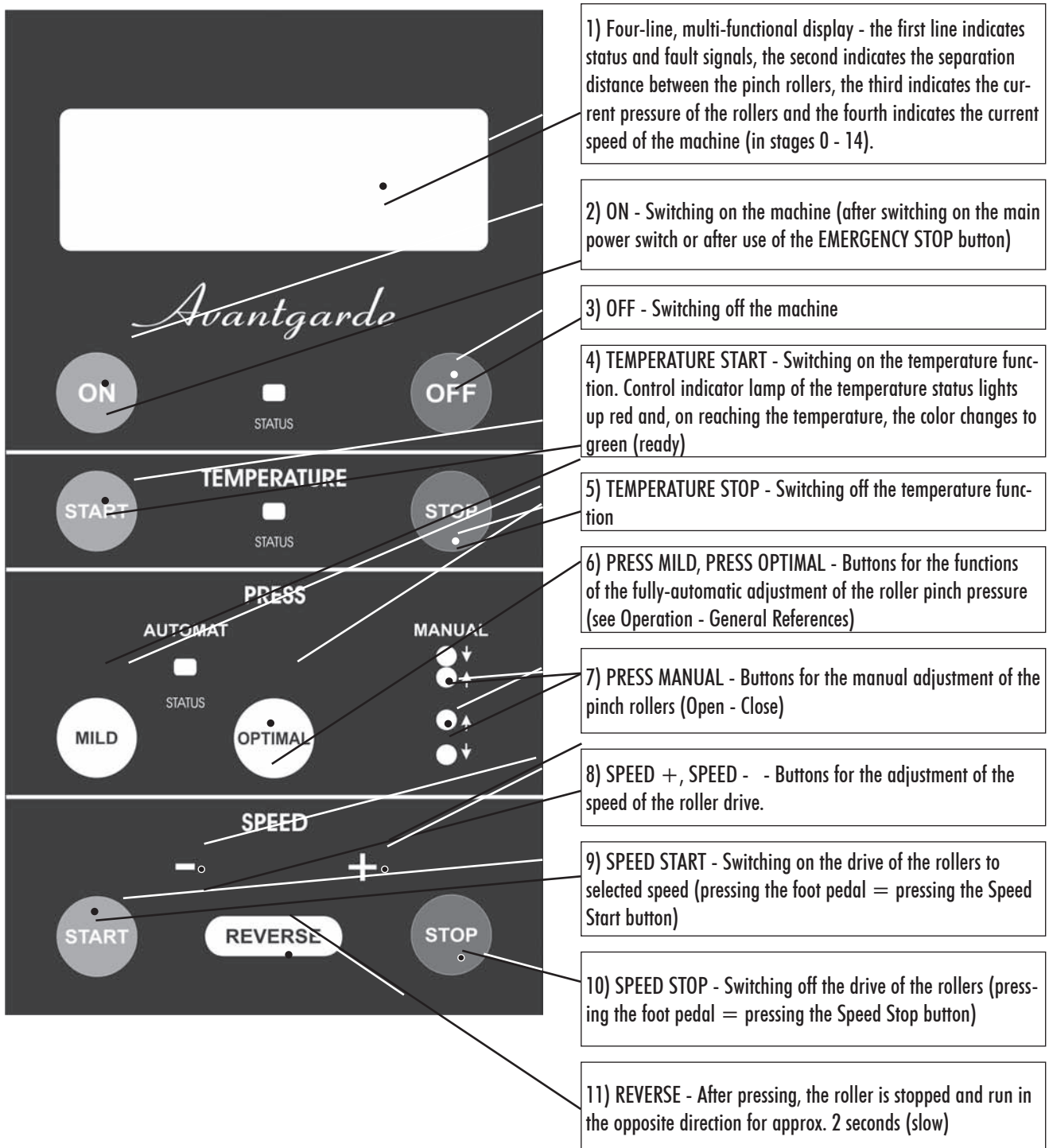
The machine may be operated by qualified personnel only.

5.2 Operating the machine

To insert the print to be laminated, the user stands in front of the machine.

This position can be shifted, according to work operation (e.g. by using foot pedal), to the material output and/or to the rear of the machine. The machine is set in operation through switching on the main power switch and by pressing the ON button on the operating panel (this lights up green after switching on). Measures which are to be introduced and the status of the individual functions of the machine are indicated on the display.

The main power switch is located in the right-hand, lower part of the machine.



Safety devices

In order to protect your hands against possible crushing, the EMBLEM EASYLAM Avantgarde is equipped with highly-sensitive photoelectric cells that are attached in front of the silicone rollers (14). The machine is additionally equipped with EMERGENCY STOP (21) buttons.

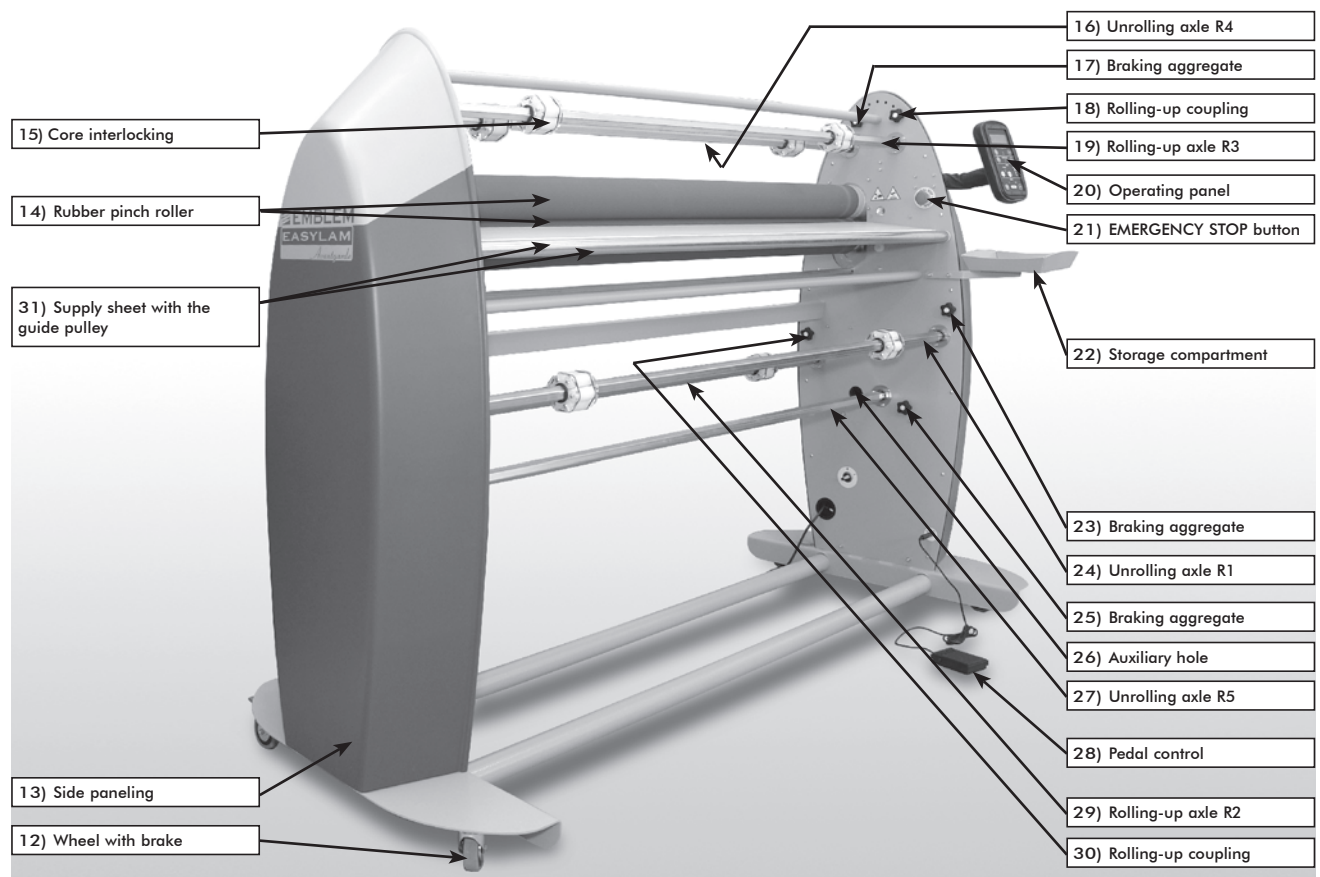
If the photoelectric cells have responded or an emergency stop button is activated, the machine stops immediately. For the restart of operation of the machine, the EMERGENCY STOP (21) button and ON button (2) are to be pressed.

Before the operational startup, check whether the safety devices function trouble-free. These safety devices are indispensable in order to protect your hands and may not be changed or removed.

✗The manufacturer does not accept any liability for alterations to this equipment which are carried out by the operator.

The side paneling (13) which protects the electrical equipment may be removed only by qualified personnel or specialists authorized by the manufacturer.

In case of interruption of the photoelectric barrier, the machine stops. (It is signaled in the display "SAFETY BLOCK!"). Only the buttons for the manual opening (7) of the pinch rollers can then be pressed (all others are blocked)!



General references

The unrolling axles (16, 24, 27) are equipped with brakes (17, 23, 25). There is no precise specification about to what extent the material is to be tightened, since these values are determined by numerous factors which cannot easily be summarized.

Every material has its own features which can be different according to temperature, moisture, adhesive material employed, film type and so forth. The ideal condition of work is where the material is tightened on the upper roll and guided and applied crease-free with minimum braking.

The search for this "Ideal Setting" begins with searching for the point at which the braking aggregate (17, 23, 25) works only lightly, in order to then become harder in stages if required.

In every case it is better not to tighten the film too much, in order to prevent it being stretched at the beginning and then offsetting the laminated product. Provided that the protection liner is to be rolled up, it is recommended not to overdo the rolling-up tension; it is sufficient if there is a slight tension present. Therefore ensure that the rolling-up coupling is adjusted carefully.

Also, the laminating pressure plays an important role. It must be moderated and adjusted with care, in order to avoid that creases are formed between adhesive films and paper. For the correct adjustment of the pressure, you can use either functions MILD (6) (very mild pressure - suitable for foam sheets) and OPTIMUM (6) (optimal pressure - for plates) which are initially preset, or the pressure "O" which is reached through permanent pressing of the button MANUAL (7). The closing of the rollers is ended in the position "O" (the optimal pressure for lamination). If you want to laminate a sheet, you first place the sheet between the silicone rollers and then press "OPTIMAL" or "MILD".

- If the roller pinch pressure is too large, all movements of the machine are stopped and the error report DANGER appears in the display. Only the manual OPENING (7) of the pinch rollers is possible.
- In order to obtain exactly the correct pressure, it is recommended to first carry out a test on a material reject.

In order to avoid stresses and shearing, the material to be processed should be centered, i.e. inserted at the same separation distance from of both sides. Also in case of smaller formats (e.g. in case of a roller width of 1450 mm and a material of 450 mm) the non-employed roller area of 1000 mm is to be made up of 500 mm free on the left-hand and on the right-hand side. In the specific case of laminating, it is important that the film width is selected according to requirement, i.e. according to the image dimensions and not too wide beyond the format, since otherwise the laminating film remains stuck on the roller.

The optimal condition of work is provided when the paper on which the poster is printed is greater than the film to be applied. Otherwise the format difference between laminate and paper is to be held as tight as possible in order to avoid the formation of wrinkles (at most 2 - 3 cm per side).

Material feed

The support axles (16, 19, 24, 27, 29) can carry both protective material with silicone paper, as well as double-sided adhesive film. After use, they are divided into controlled-driven rolling-up axles (19, 29) and controlled-braked unrolling axles (16, 24, 27). In order to position the rollers, consider the illustrations and proceed as follows:

Removal of the support axle

(For the removal of the unrolling axle R5 (27), please employ auxiliary hole (26))

- Lift the steel axle to the left (as viewed from in front of the machine) approx. 2 cm out of the bracket.
- Now pull the axle from the right-hand bracket and take it out.

Slide the support axle into the roll core of the material roll to be mounted.

Thanks to the ring-fastener-system core-interlocking (15), the support axle can be easily inserted into the roll core and pulled out again.

As soon as the machine starts, the two interlocks in the core are locked and the roll

rotates with the axle. These brackets are secured against displacement through two flexible rubber rings. (Position the rolls centered at equal distances from the sides, even if you are working with a narrow material roll).

Installation of the support axle

(Employ the auxiliary hole (26) for installation of the unrolling axle R5 (27))

- Slide the axle bracket with the slot onto the axle pin.
- Insert the axle into the right-hand bracket.

6. Placing material into the machine

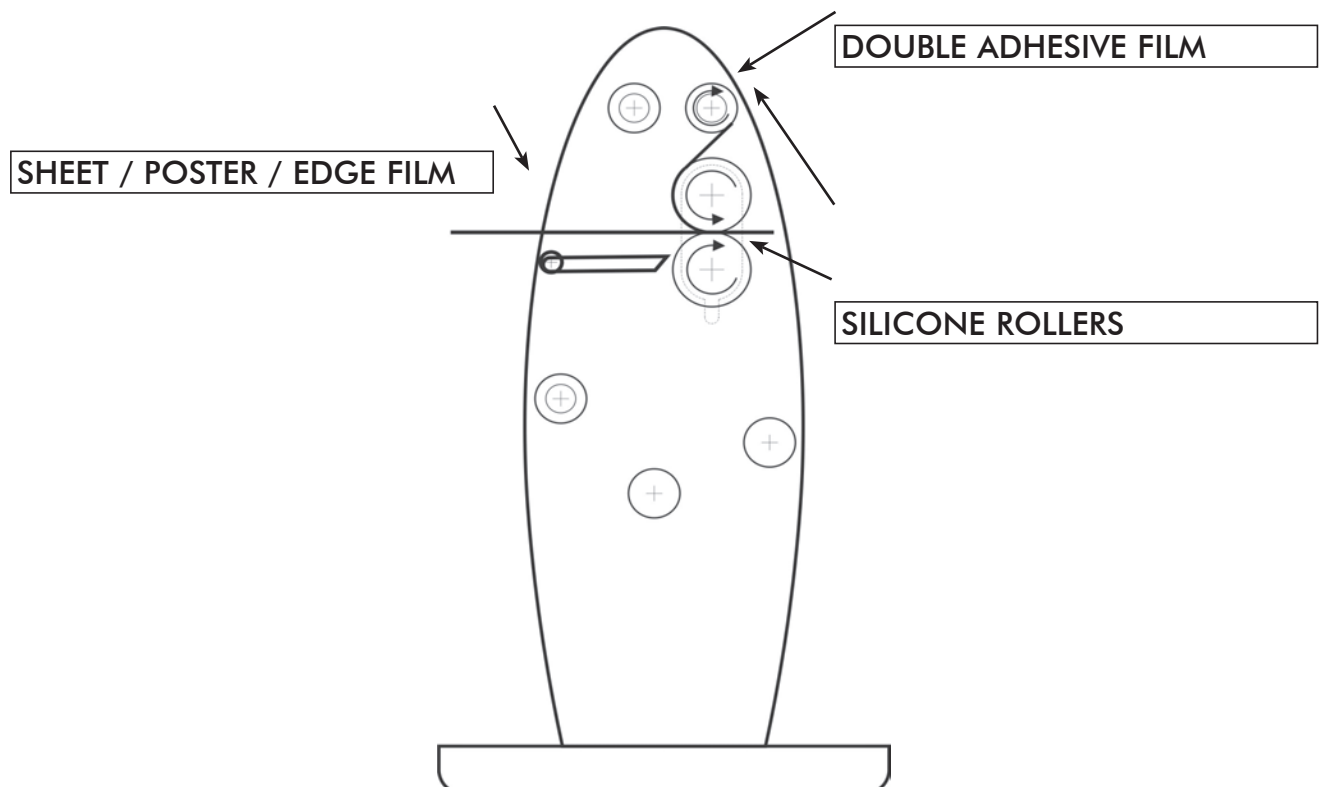
6.1 Placement of double-sided laminating film / application tape on sheet / poster / edge film

Open the laminating roller (14) through pressing the button manual OPEN (7) and place the adhesive film onto that smoothed out, as indicated in the illustrations. Ensure in this case that the film rests completely smoothly on the roller and indicates no wrinkles or creases. Secure the film by light attachment to the rear working area.

Close the upper roller through pressing the button manual CLOSE (7), to a point about 1 cm separation distance from the lower roller. In this phase, the film can loosen and possibly does not cling perfectly to the roller. Pull the film smooth again so that it is slightly tense.

After you have placed the substrate to be processed under the laminating roller (14), close the rollers completely (to position O). In case of paper substrates which are not stiff, place on the adhesion film so that it extends beyond the rubber roller and the slot toward the working area, so that the substrate does not stick on start-up.

Loosen the film which has been previously attached to the rear working area. Set the roller drive in motion (9). For the selection of the mode of operation, read the corresponding paragraph.



6.2 Placement of laminate (with cover paper) from above onto individual for-

Open the laminating roller (14) through pressing the button manual OPEN (7) and place on the adhesive film as indicated in the illustrations. Slide an empty roll core onto the rolling-up axle (19) so that the protection liners can be rolled up.

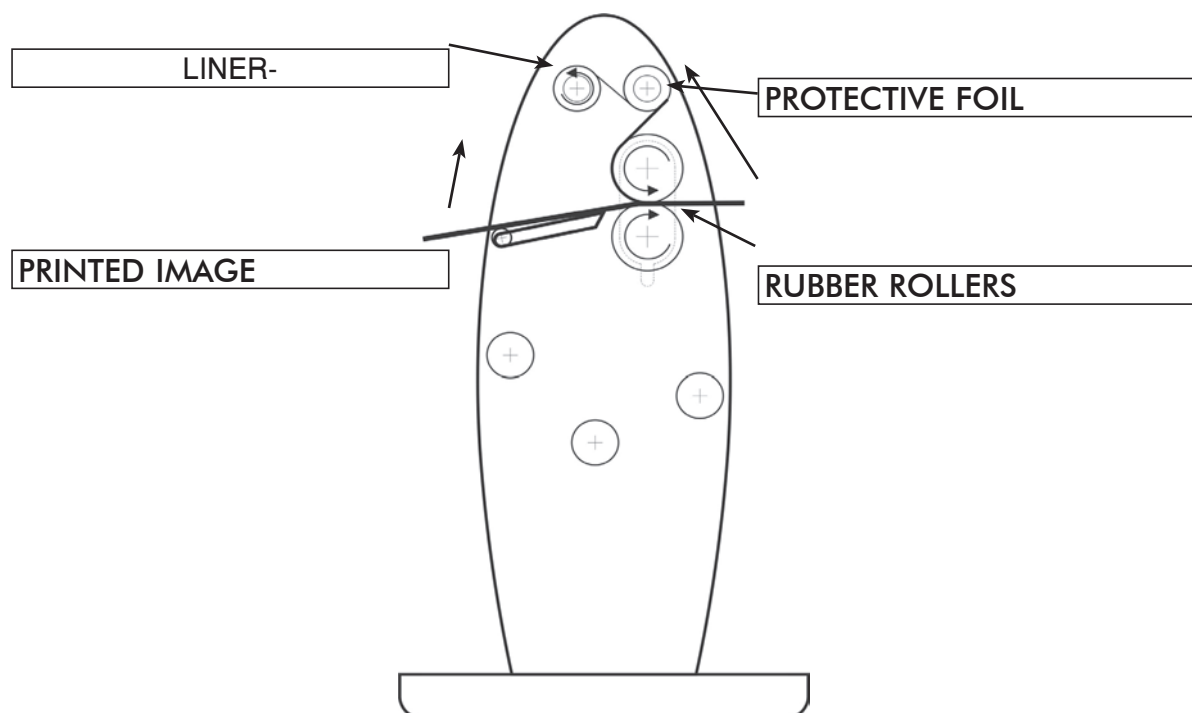
After you have positioned the film between the pinch-pressure and steel cylinders (see illustration), disconnect the protection liner and fix it with adhesive tape to the paste-board core that you have positioned on the axle (19). Ensure that the protection liner is fixed uniformly and without diagonal creasing. Pull the film through under the roller (14) and bond it securely with light pressure to the rear working area. Ensure here as well that it is laid uniformly over the whole width. If wrinkles or light creasing should occur, repeat the steps until the material is positioned trouble-free. If you start the machine in a status which is not trouble-free, the processing will probably not be perfect. It is recommended to carry out these steps carefully.

As you have noted, the protection liner is rolled up through the axle rotation (19). With the grip (18, 30) the rolling-up tension can be adjusted. As explained in the Chapter "General reference", a small force is necessary for the winding of the liner.

It is therefore recommended not to overdo the tension when adjusting this value. The necessary braking force is usually small only, unless the protection liner possesses a significantly larger thickness than the film. Then the tension force should be increased. Close the upper roller through pressing the button manual CLOSE (7) until it is about 1 cm from the lower roll. In this phase the film can loosen and no longer adheres trouble-free to the roller. Readjust the film into the proper position.

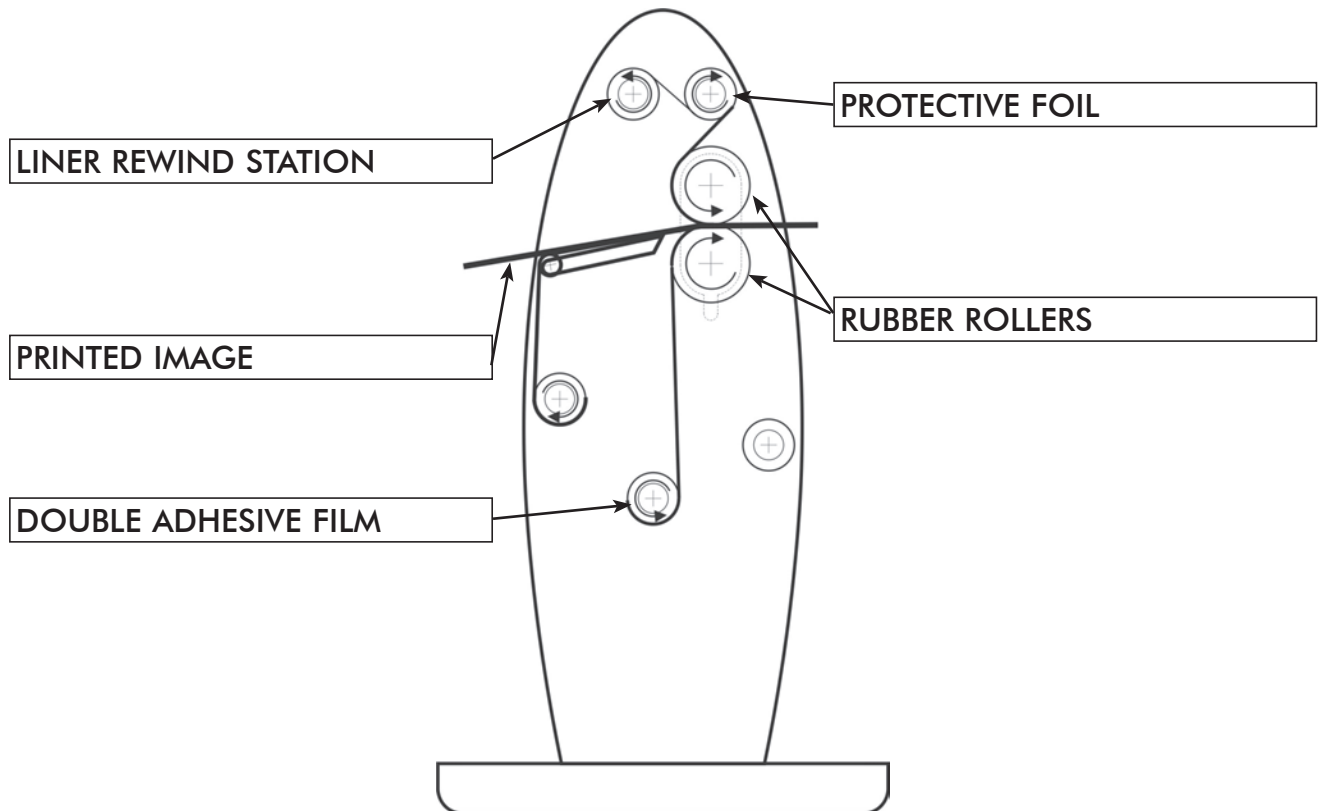
Place the substrate to be processed under the laminating roller (14), as indicated in the illustration, and close the rollers completely (Position O). Refer to "General references" for the working pressure setting.

Loosen the film which you have affixed at the rear. Set the roller drive in motion (9).



6.3 Laminating from above and below simultaneously, or rear-sided, self-adhesive equipping on roll formats

With protection on both sides of the print with laminating film, proceed as under 6.2. In addition, for the laminating from below, use the rolling-up axle R2 (29) for the cover paper of the laminate and the unrolling axle R5 (27) for the laminate. All employed cores must now be equally wide and assembled so that they are perfectly flush on the side. In order to facilitate this procedure, measure the separation distance from both sides.



6.4 Installation of ready-laminated paper material on sheet

Take an underlay sheet which is already provided with double-sided adhesion film. Adjust the height of the supply sheet (31). Pull off approx. 3 to 4 cm of the protection liner so that the sticking-layer is open. Center the image on the sheet, where you place it above the part still protected by the liner and affix it to the free-standing zone. It is recommended to implement the adhesion from the middle of the sheet progressing out to the sides in each case. Ensure that no wrinkles or creases form in the paper, because this will negatively affect subsequent processing. Guide the sheet between the sufficiently opened rollers (14). Ensure in this case that the central part of the roller is covered with the zone where the display is lifted from the double-sided adhesive film. Open out the laminating goods upward over the pinch roller, so that it adheres well to the roller. Press the buttons in the sequence "MILD" or "OPTIMAL" (6), and set the machine in movement (9).

