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THERMOFORM MACHINE
INSTRUCTION BOOK

INSTRUCTION BOOK OF THERMOFORM MACHINE

A- MODELS INVOLVED: TRM 1 TRM 2

TRM 1: THERMOFORM MACHINE WITH FIXED TRAY
TRM 2: THERMOFORM MACHINE WITH MOVABLE TRAY

B- TECHNICAL CHARACTERISTICS

Number of trays	: 2 of them, with optional dimensions
Command Control Panel	: Automatic and safe control establishment with PLC CONTROL
Heat Detector	: Detection of remote surface temperature with infrared sensor
Operation Period	: An average of 60 seconds/ 1 printing
Defect Alarm System	: Automatic protection against user errors
Type of Heater	: 80 Items of 600 Cassette quartz resistance
Voltage Output	: 24 VDC
Energy Consumption	: 48 KWATT/HOUR
Power Cons. By a Printing	: 1,2 KWAT/HOUR
Vacuum Power	: 100 m3/hour -759mmg pressure oily-type vacuum pump
Weight	: 2,500 kg
Sizes	: WIDTH: 180 cm LENGTH: 750cm Height: 160 cm

Picture-1

C- INSTALLATION

1-After the machine is fixed an appropriate place; it is adjusted according to floor.
2-Electrical connection must be 380V. It is connected to entrance container within a 4x10 cable (the electricity entrance box is located in the middle back side of the machine).
3-Ground cable is connected to entrance container.
4-Air connection is made from the compressor that will provide a min.7 bars and max.9 bars of air.
5-Vacuum trays are cleaned.
6-Primary switch is opened, electrical connected is checked.
7-Machine is started by opening emergency stop buttons.
8-Direction of rotation of the vacuum motor is checked. If it becomes reversed, it will be exchanged. (In case of a probable reverse or wrong connection in the phase sequence relay, the machine will not be activated)
9-The functions of machine are checked. If there is a failure, it will be fixed. (Necessary explanations are described below)

D-PREPARATION

1-Desired mold model (aluminum or wooden mold) is brought adjacent to the machine.
2-The plate materials to be used (PVC, abs, pp, pet, acrylic) are brought adjacent to the machine.

E-OPENING CLOSING THE TRAY

1-There are control buttons in the cap located in the forefront of the tray to be used. The yellow button is the button of opening-closing the frame. This yellow button is also located in the left or right side of the master control panel. When pressed for 1 time, the frame is opened, when pressed for the second time, it is closed. 2 conditions are

required for this system to operate properly.

a) For the left frame; the heater car should not be on the left frame. It should be in the middle or on the right frame. When the heater car is on the move, it cannot be opened or closed.
   For the right frame; the heater car should not be on the right frame. It should be in the middle or on the left frame. When the heater car is on the move, it cannot be opened or closed.

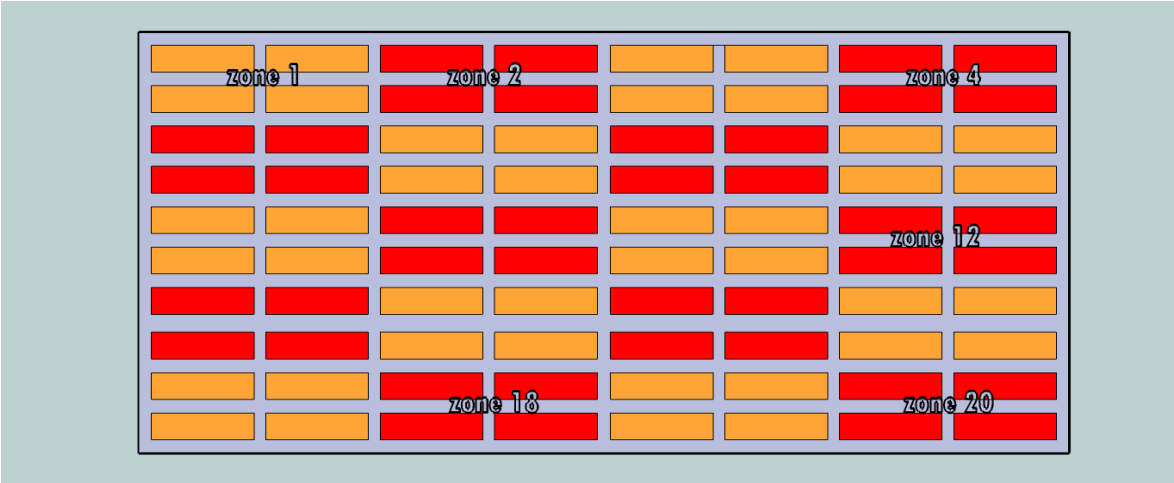
b) For the left frame; there is a sensor on the 50x400 pneumatic cylinders in the front-left side of the left tray. In order to see this sensor, the cap on the left head should be opened. The light of this sensor should be lit while the frame is closed. If the light is not lit while the frame is closed, the frame cannot be opened, the heater car cannot move.
   For the right frame; there is a sensor on the 50x400 pneumatic cylinders in the front-right side of the right tray. In order to see this sensor, the cap on the right head should be opened. The light of this sensor should be lit while the frame is closed. If the light is not lit while the frame is closed, the frame cannot be opened, the heater car cannot move.

F-DRIVING THE HEATER CAR

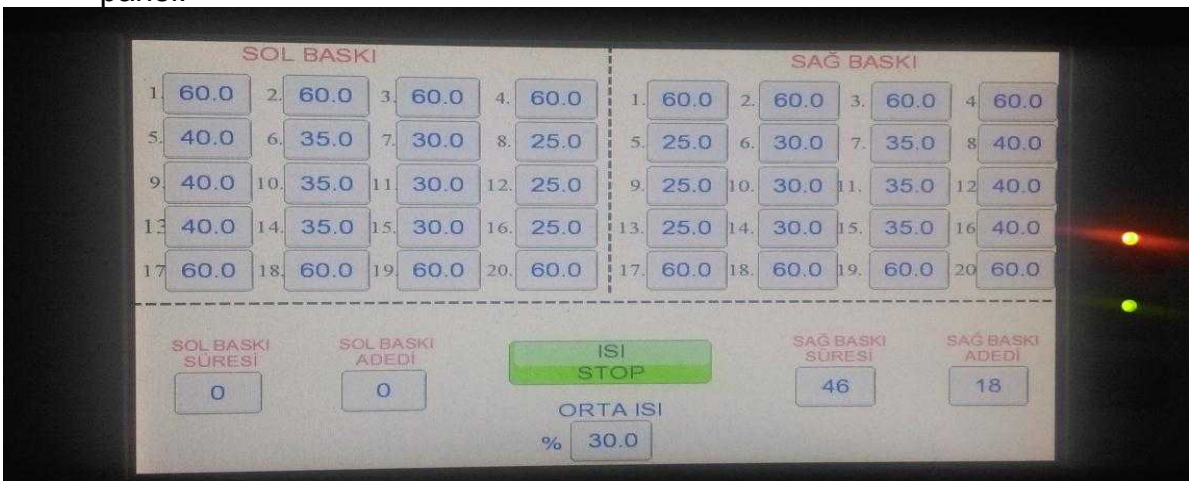
1-The buttons to be used for driving the heater car are located in the master control panel, front left side and the front right side of the machine. The commands can be issued from each 3 points. On these buttons, (<) sign to send to left and (>) sign to send to right are found. In order to command the heater car, the button that shows the desired direction is pressed.
The heater car will be stopping automatically in the left, middle or right stations.
There are 3 switches found in the back bottom of the heater car.
The switch on the left stops the car in the left station.
The switch on the middle stops the car in the middle station.
The switch on the right stops the car in the right station.
If the car doesn't move, the left or right frame might have stayed open. (See C/1/b)

G- HEAT CONTROL AND OPENING-CLOSING

a) There are 20 different heating zones for 80 cassette quartz resistance. The resistances are separated into 20 regions in groups of 4.



b) The heat controls are commanded with the touch screen on the master control panel.



c) The screen is divided into two. Different heat values might be entered for the left and the right printings. When the heater is sent to the left, it receives the left heat values, when it is sent to the right; it receives the right heat values automatically.

d) The heat value is calibrated as % proportional. The alignment value range is between (0%-100%). When the heat value is calibrated as (0%), the resistance doesn't give any heat. When the heat value is calibrated as (100%), the resistance gives heat continuously. The (100%) value is equal to 1 complete second. Accordingly, when the heat value is calibrated to (50%), the resistance gives heat for half second and doesn't give heat for half second. In other words, it makes an open-close continuously.

H-PATTERN PLACING AND CHANGEOVER

1-For the left tray; there are 4 pneumatic pistons within the tray. These pistons can raise the pattern 10 cm up.

a) The left frame is opened.

b) The open-close button (0-1 latch button) on the left front cap is opened and 4 pistons are provided to be risen.

c) The aluminum pattern is delivered on these pistons manually.

d) The open-close button (0-1 latch button) on the left front cap is closed and the pattern is lowered on the tray.
e) If it had not snapped into the slot completely, it is provided to be snapped by adjusting manually.
f) The left tray is ready for use.

1-For the right tray; there are 4 pneumatic pistons within the tray. These pistons can raise the pattern 10 cm up.

a) The right frame is opened.
b) The open-close button (0-1 latch button) on the right front cap is opened and 4 pistons are provided to be risen.
c) The aluminum pattern is delivered on these pistons manually.
d) The open-close button (0-1 latch button) on the right front cap is closed and the pattern is lowered on the tray.
e) If it had not snapped into the slot completely, it is provided to be snapped by adjusting manually.
f) The right tray is ready for use.

I –MANUAL APPLICATION

1-FOR THE LEFT TRAY

a) The “auto-manual” button which is located in the master control panel should be chosen as “manual”.
b) The left frame is opened.
c) The PVC foil is placed on the pattern.
d) The left frame is closed.
e) The heater car is called to the left direction (<). The heater car comes and stops on the left frame.
f) The movement of the PVC is monitored by looking from the wind screen.
g) PVC will first be waved and then will become smooth.
h) In some situations, PVC might be ensured to swell by pressing the “+blow” button which is located in the left of the master control panel.
(This is not always necessary)
i) The vacuum pumping process is materialized by pressing the “vacuum” button located in the left of the master control panel.
j) The ‘vacuum’ button remains open until the PVC foil aluminum pattern snaps into the slot completely. (this process will approximately last for 5 seconds)

k) When the fully snap into the slot is provided, the “vacuum” button is closed.
l) The heater car is sent to the right side by pressing the (>) button.
m) The cooling fans are activated by opening the “cooling” button which is located in the left of the master control panel. The cooling is provided as long as requested and then closed again.
n) The left frame is opened and a new one is placed after the finished product is taken.

2-FOR THE RIGHT TRAY

a) The “auto-manual” button which is located in the master control panel should be chosen as “manual”.
b) The right frame is opened.
c) The PVC foil is placed on the pattern.
d) The right frame is closed.
e) The heater car is called to the right direction (<). The heater car comes and stops on the right frame.
f) The movement of the PVC is monitored by looking from the wind screen.
g) PVC will first be waved and then will become smooth.
h) In some situations, PVC might be ensured to swell by pressing the “+blow” button which is located in the right of the master control panel.
(This is not always necessary)
i) The vacuum pumping process is materialized by pressing the “vacuum” button located in the right of the master control panel.
j) The ‘vacuum’ button remains open until the PVC foil aluminum pattern snaps into the slot completely. (this process will approximately last for 5 seconds)
k) When the fully snap into the slot is provided, the “vacuum” button is closed.
l) The heater car is sent to the left side by pressing the (>) button.
m) The cooling fans are activated by opening the “cooling” button which is located in the right of the master control panel. The cooling is provided as long as requested and then closed again.
n) The right frame is opened and a new one is placed after the finished product is taken.

J –AUTOMATIC APPLICATION

1-FOR THE LEFT TRAY

a) The “auto-manual” button which is located in the master control panel should be chosen as “AUTO”.
b) The “surface temperature” device which is located in the master control panel is adjusted to the desired set value. Desired set value is entered with the up-down buttons by holding down the “set” button on the device. For example; 140 ‘C, the “set” button is left. When the PVC heat reaches at this set value, the machines will automatically printing.

c) The left frame is opened.
d) The PVC foil is placed on the pattern.
e) The left frame is closed.
f) The heater car is called to the left direction (<). The automatic application is started. The machine will be making heating, vacuum and cooling respectively. (The setting of the vacuum and cooling periods are defined in the below lines.)
g) When the cooling process is finished, the Left frame is opened and a new one is placed after the finished product is taken.

2-FOR THE RİGHT TRAY

a) The “auto-manual” button which is located in the master control panel should be chosen as “AUTO”.
b) The “surface temperature” device which is located in the master control panel is adjusted to the desired set value. Desired set value is entered with the up-down buttons by holding down the “set” button on the device. For example; 140 ‘C, the “set” button is left. When the PVC heat reaches at this set value, the machines will automatically printing.
c) The right frame is opened.
d) The PVC foil is placed on the pattern.
e) The right frame is closed.
f) The heater car is called to the left direction (<). The automatic application is started. The machine will be making heating, vacuum and cooling respectively. (The setting of the vacuum and cooling periods are defined in the below lines.)
g) When the cooling process is finished, the Right frame is opened and a new one is

placed after the finished product is taken.

K – TIME SETTINGS

1- There is one PVC (Schneider) control unit in the electrical panel which is located in the back right side.

2- The menu is opened by pressing the ‘’menu/ok’’ (green) button.
3- The ‘parameter’ is chosen by pressing the “down” button and the “menu/ok” (green) button is pressed.
4- Desired time parameter is chosen with the “up” “down” buttons. And the chosen value blinks. For example, “TT1”. This list is indicated below.
5- ‘’>’’ button is pressed once and the time value is seen to be blinking.
6- Desired time value is adjusted with the “up” and “down” buttons. For example; 020.00 sec
7- The value is taken into the memory by pressing the ‘’menu/ok’’ (green) button.
8- You might turn back to the main page by pressing the ‘’menu/ok’’ (green) button again.

TT2- LEFT VACUUM DURATION (20 sec)
TT3- RIGHT VACUUM DURATION (20 sec)
TTD- LEFT COOLING DURATION (25sec)
TTE- RIGHT COOLING DURATION (25sec)

L- CLEANING AND MAINTENANCE

1-MAINTENANCE OF VACUUM PUMP

a) The Oil Change; the vacuum pump works with the oil circulation.
Used oil becomes thin or diminished over time. In average, oil change is required once in 6 months. The oil container is connected to the same trunk with the vacuum pump. It has the discharge trap in its sub-section and the filling cap in its upper part. The old oil should be emptied during every maintenance. An amount of 2 liters of **‘’SHELL TELLUS 100’’ ‘’MOBIL VITREA 100’’** OIL SHOULD BE

INSERTED.

b) Filter cleaning; the filter is located above the vacuum pump. Its shape is Round. The filter is removed by disassembling the screws on it and is cleaned. Or it is changed with a new one.

2-MAINTENANCE OF AIR SYSTEM

a) Oiling; the oil tube is found in the air input located in the right back side of the machine.

The air link coming to the machine is closed. The oil tube is removed from its place and number **"10"** thin oil is placed. The tube is reassembled back to its place and the air that comes to the machine is opened.

3-CLEANING

a) Daily Cleaning; the surrounding of the Machine is swept away before starting to work every morning. The machine is cleaned with the compressed air. The patterns are cleaned with the wet rag.

M- PROBLEMS AND SOLUTIONS

1-**Clamping frame is not arising.**

a) Emergency stop button might be closed.
b) Air input is controlled whether it is MIN. 7 bars or not.
c) The heater car is controlled whether it is on the LEFT, MIDDLE OR RIGHT or not.
d) When the gathering hoop is on the heater car, it doesn't arise.
e) For the left frame; there is a sensor on the 50x400 pneumatic cylinders which is located in the front-left side of the left tray. In order to see this sensor, the cap in the left side should be opened. The light of this sensor should be on when the frame is closed. If the light is not on when the frame is closed, the frame cannot be opened. The heater car doesn't move.
For the right frame; there is a sensor on the 50x400 pneumatic cylinders which is located in the front-right side of the right tray. In order to see this sensor, the cap in the left side should be opened. The light of this sensor should be on when the frame is closed. If the light is not on when the frame is closed, the frame cannot be

opened. The heater car doesn't move.

2-**Heating is not actualized, the resistances are not on.**

- **a)** Emergency stop button might be closed.
- **b)** The heat indicators in the master control panel might be closed.
- **c)** The circuits from the electrical panel which are located in the right back are checked.

3-**Vacuum pump is not working.**

- **a)** Emergency stop button might be closed.
- **b)** Motor protective thermal switch which is located in the main panel might be turned off. If the black switch which is on the thermal switch is outside, this means that it is turned off, then the black switch is pushed.
- **c)** The connection of the electric cable which comes to the machine is changed, if the phase alignment changes, the machine shrouds and doesn't activate the vacuum pump to avoid the pump to turn down and to be damaged. It will be returning to normal when the right phase alignment is provided.

4-**Vacuum is not pulling.**

- **a)** Emergency stop button might be closed.
- **b)** The air input is checked whether it is 6 bars or not.
- **c)** PVC might not be inserted into the tray completely.
- **d)** PVC might be punctured or torn.

N- CARRYING AND TRANSPORT

- **a)** Before removing the machine from its place, the heating car unit should be fixed to the main chassis.
- b) The machine can be lifted from the upper part of the chassis within a long knifed forklift or within a capstan through the help of ropes. You might see the transport example in the picture below.

For Technical Assistance;

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INSTRUCTION BOOK OF PANEL BONDING MACHINE

INSTRUCTION BOOK OF PANEL BONDING MACHINE

A- MODELS INVOLVED: PNL 1 – PNL 2 – PNL 3 – PNL 4

B- TECHNICAL CHARACTERISTICS

1-	Cylinder Stroke	: 1000 mm
2-	Printing speed	: 25mm/1sec.
3-	Press Opening	: Manually
4-	Total Pressure	: 40-220 Tons
5-	Pressure gauge on control panel	: present
6-	Emergency Stop Switch	: present
7-	CONTROL PANEL	: automatic
8-	Sizes	: width: 1300mm length: 2300mm Height: 2200mm
9-	Weight	: 1250 kg

C- INSTALLATION

1- After the machine is placed an appropriate place, it is adjusted according to floor.
2- Electrical connection must be 380V. It is connected to entrance container within a 4x2.5 cable.
3- Ground cable is connected to entrance container.
4- Primary switch is opened, electrical connected is checked.
5- Oil level of hydraulic unit is checked. (it must be more than a half)
6- Machine is started by opening emergency stop buttons.
7- Direction of rotation of hydraulic pump motor is checked. If it becomes reversed, it will be exchanged.
8- The functions of machine are checked. If there is a failure, it will be fixed. (necessary explanations are described below)

D- OPENING AND CLOSING TRAY OF THE PRESS

1- There are same group of buttons for every stations in the control panel. Tray of the press is opened or closed by ‘’up-down’’ buttons. This process is only active when the hydraulic pump is in start position.

2- There are no limits for lifting up.

3- The switch of leveling down is limited with a pressure switch.
This pressure switch is placed on the hydraulic unit. There is 1 piece of pressure switch for every station. Pressure switch is adjusted by turning left or right. When it is turned to the left, the pressure power is decreased. When it is turned to the right, the pressure power is increased.

4- Tray of the press will level down during ‘’down’’ button is pressed. When the pressure reaches the value of the pressure switch, ‘’down’’ button will not be active no longer.

5- Hydraulic pump is closed by pressing red colored ‘’stop’’ button. When the press is in press, hydraulic pump is not needed to be working.

E- APPLICATION

1- The products to be bonded are placed to the loading table which is front of the machine, on end and not passing the highest of pressure length.
2- Tray of the press is lifted up to the highest level by pressing up arrow (^) button on the control panel.
3- Carrier rolls are lifted up by pressing 0-1 catch button on the control panel and bring it to open position.
4- Carrier rolls are leveled down with materials together by pressing 0-1 catch button on the control panel and provided to be placed to the floor.
5- Tray of the pressure is leveled down by pressing down arrow (v) button. Pressing process is provided by holding down the button. And when requested pressure is reached, pressure switch stops the pressure by preventing the tray leveling down much more. At this time, (v) down arrow is set free.
6- Time counter is activated and the machine is waited to perform bonding. (See: D: time setting)

F- TİME SETTING

1- There is one time counter on the control panel.
2- Time counter is opened and closed within adjacent open-close buttons (0-1 catch button). Device is adjusted according to requested time value. To adjust, ‘’preset’’ button is pressed and the note of ‘’t-on’’ is seen on display. When ‘’preset’’ button is pressed again, the note of ‘’t-off’’ is seen on display.
‘’t-on’’ whistle time = no need to change a setting.
‘’t-off’’ waiting time = waiting time of press. You can enter a waiting time according to the characteristics of the bond to be used.
3- To adjust the waiting time, ‘’preset’’ button is pressed and the note of ‘’t-on’’ is seen on display. When ‘’preset’’ button is pressed again, the note of ‘’t-off’’ is seen on display. While ‘’t-off’’ value is on display, just so ’set’’ button is hold down, requested time value is entered within ‘’up-down’’ buttons. Digits can be slide within “preset” button. While these settings are done, ‘’set’’ button must be pressed.
4- Time counter must be normally in close position. It must be opened after products are given to the station and pressing is done. Time counter starts to count down automatically. When the time to be set is up, signal tone is heard. Firstly, press is lifted up. Furthermore, material pressed is removed out.
5- Time counter is closed.

G- PRESSURE SETTING

1- 1 piece of pressure switch is available on hydraulic unit.
2- The power of pressure can be decreased or increased by adjusting pressure switch to the requested pressure value.
3- During the pressure, this pressure switch protects the material by stopping the pressure in accordance with the adjusted value.

H- CLEANING AND MAINTENANCE

1- THE MAINTENANCE OF THE HYDRAULIC PUMP

a) Oil change;

Oil used becomes timely thin or decreases. Oil sight glass on the oil tank must be in the minimum amount of ½. If there is a decrement, hydraulic oil must be added. There is a discharge trap on the bottom side and filling cap on the upper side. Hydraulic oil must be used.

2- CLEANING

a) Daily cleaning; every morning before begin to work, the environment or the machine is swept. The machine is cleaned within compressed air.

3- Any foreign matter must not be left on the rails.

İ- PROBLEMS AND SOLUTIONS

1- If the hydraulic pump does not work
   a) Motor protection switch may be off.
   b) Motor protection switch may be blown out.
   c) There may be a breakage in electrical cables.

2- If tray of the press cannot be leveled down;
   a- Hydraulic oil must be decreased.
   b- Hydraulic pump may not be working.
   c- Hydraulic pump motor may become reversed.
   d- The adjustment of pressure switch may be in less value than the requested value.
   e- The trunks may be punctured.

3- If tray of the press cannot be lifted up;
   a- Hydraulic oil must be decreased.
   b- Hydraulic pump may not be working.
   c- Hydraulic pump motor may become reversed.
   d- Tray of the press may be lifted up to the maximum level.

J- CARRYING AND TRANSPORT

a) Before removing the machine from its place, electrical contact must be disconnected.

The machine can be lifted from the upper part of the chassis within a long bladed forklift or within a capstan through the help of ropes.

For technical assistance;

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INSTRUCTION BOOK OF PANEL OPENİNG MACHINE

INSTRUCTION BOOK OF PANEL OPENING MACHINE

A- MODELS INVOLVED: PNÇ

B- TECHNICAL CHARACTERISTICS

1- Cylinder Stroke	: 300 mm
2- Printing speed	: 25mm/1sn
3- Press Opening	: Manually
4- Total Pressure	: 40-220 Tons
5- Pressure gauge on control panel	: present
6- Emergency Stop Switch	: present
7- CONTROL PANEL	: automatic
8- Sizes	: width: 1200mm length: 1400mm Height: 1700mm
9- Weight	: 1450 kg

C- INSTALLATION

1- After the machine is placed an appropriate place, it is adjusted according to floor.
2- Electrical connection must be 380V. It is connected to entrance container within a 4x2.5 cable.
3- Ground cable is connected to entrance container.
4- Primary switch is opened, electrical connected is checked.
5- Oil level of hydraulic unit is checked. (it must be more than a half)
6- Machine is started by opening emergency stop buttons.
7- Direction of rotation of hydraulic pump motor is checked. If it becomes reversed, it will be exchanged.
8- The functions of machine are checked. If there is a failure, it will be fixed. (necessary explanations are described below)
9- Trolley is placed to the front of the machine.

D- OPENING AND CLOSING TRAY OF THE PRESS

1- It is checked from control panel.
2- Hydraulic pump is activated by pressing ‘’green’’ start button. Press must be in open position during it is used.
3- Tray of the press is opened or closed by ‘’up-down’’ buttons. This process is only active when the hydraulic pump is in start position.
4- The process of leveling down is limited with two opposing sensors.

These sensors are present on both two sides of tray of the press in alignment. Tray of the press will level down during ‘’down’’ button is pressed. When it comes in alignment with the sensors, ‘’down’’ button will not be active no longer. Tray of the press will stop and will lift up automatically.

5- When it is necessary, hydraulic pump is closed by pressing red colored ‘’stop’’ button.

E- APPLICATION

1- Press must be activated.
2- Tray of the press must be up.
3- There must be no foreign matters in and on the press.
4- Blades to be used will be adjacent to the press.
5- PVC materials that open the glass margin must be adjacent to the press.
6- 1 or 2 pieces of PVC materials are left onto the trolley.
7- Appropriate blades are placed on the PVC.
8- PVC and blades together must be given into the press. All blades must be provided to be symmetrically centered. It must not be adjacent to the corners.
9- Cutting process is performed by pressing ‘’down’’ button. For the first use, you need to be careful. If the sensors are unadjusted, the blades can be damaged or cannot cut any more. For this reason, tray of the press is leveled down step by step through pressing “down” button in short ranges. If the sensors meet with tray of the press, tray of the press will be lifted up automatically. If the sensors do not meet with tray of the press, “down” button is pressed until the sound of cutting is heard from PVC. If the sound of cutting is heard, ‘’down’’ button must not be pressed no longer.
The tray of the press is lifted up by pressing ‘’up’’ button. PVC and blades are pulled backwards on the trolley. The cutting process is checked by removing the blades.
If the cutting process is not performed, sensors must be leveled ‘’1mm’’down. This manual application must be done until the cutting process is performed properly.
When the cutting process is performed accurately with the sensors, serially activation can be started.

F- CLEANING AND MAINTENANCE

1- THE MAINTENANCE OF THE HYDRAULIC PUMP

a) Oil change;
Oil used becomes timely thin or decreases. Oil sight glass on the oil tank must be in the minimum amount of ½. If there is a decrement, hydraulic oil must be added. There is a discharge trap on the bottom side and filling cap on the upper side. Hydraulic oil must be used.

2- CLEANING

a) Daily cleaning; every morning before begin to work, the environment or the machine is swept. The machine is cleaned within compressed air.
b) Any foreign matter must not be left in and on the press.

G- PROBLEMS AND SOLUTIONS

1- If tray of the press cannot be leveled down;
   a- Hydraulic oil must be decreased.
   b- Hydraulic pump may not be working.
   c- Hydraulic pump motor may become reversed.
   d- The trunks may be punctured.

2- If tray of the press cannot be lifted up;
   a- Hydraulic oil must be decreased.
   b- Hydraulic pump may not be working.
   c- Hydraulic pump motor may become reversed.
   d- Tray of the press may be lifted up to the maximum level.

H- CARRYING AND TRASNPORT

a) Before removing the machine from its place, electrical contact must be disconnected.

The machine can be lifted from the upper part of the chassis within a long bladed forklift or within a capstan through the help of ropes.

For technical assistance;

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INSTRUCTION BOOK OF GLUE SPREADING MACHINE

INSTRUCTION BOOK OF GLUE SPREADING MACHINE

A- MODELS INVOLVED: TSM

B- TECHNICAL CHARACTERISTICS

1-	The length of roll	: 1000 mm
2-	Rotational speed	: 3 seconds/meters.
3-	Roll diameter	: 200mm
4-	Total Pressure	: 40 - 220 Tons
5-	Emergency Stop Switch	: present
6-	CONTROL PANEL	: automatic
7-	Sizes	: width: 1200mm length: 1500mm Height: 1600mm
8-	Weight	: 350 kg

C- INSTALLATION

1- After the machine is placed an appropriate place, it is adjusted according to floor.
2- Electrical connection must be 380V. It is connected to entrance container within a 4x2.5 cable.
3- Ground cable is connected to entrance container.
4- Primary switch is opened, electrical connected is checked.
5- Air intake is connected. (it must be minimum 6 bars)
6- Machine is started by opening emergency stop buttons.
7- Direction of rotation of motor is checked. If it becomes reversed, it will be exchanged.
8- The functions of machine are checked. If there is a failure, it will be fixed. (necessary explanations are described below)
9- Water connection is done or water tank is filled with water.


PANADUR

D- PREPARATION

1- Materials to be used and glue are brought adjacent to the machine.
2- Sub and upper glue depots are approached tangentially to the rolls. It must not be contacted to the roll but it must be at the most adjacent distance such as 0,5 mm.
3- Upper roll is leveled down and is approached to the roll.

A stopper limits its level down. This stopper also determines the distance of two rolls. In other words, it must be 0,5 mm down to the thickness of the material to be used. For example: If the material to be used is 18 mm and the distance between two rolls must be 17,5 mm. The roll is lifted up by pressing the button for adjustment and adjusted stoppers are pushed backwards of 2.5 cm and are provided to level one basement down (0,5mm). The roll is leveled down by pushing the button. The rolls are activated for manual control and a material is put among it. While the material is among two rolls, rolls are stopped and the material among them is forced to be pulled manually. If it can be pulled backwards within a power more than a middle power, it is normal. If it can never be pulled, upper roll is lifted up by one level. If it can be pulled very easily, upper roll is leveled down by one level.

4- At the entrance of the machine, there are roller rolls. At the exit, there must be a table which consists of vertical disks. There are water spraying apparatus on this table. After material pass among two rolls, it is perceived within a photocell and water is sprayed over it. When the passing of material is over, water spraying process will be also over.
5- The rolls are turned by pressing start button. (during this period, glue depot must be the most adjacent place as it does not contact with the roll)
6- Glue is put into the glue depot. Glue level is adjusted according to the necessity. In initial usage, it can be at the level of half depot.
7- At the same time, glue circle starts due the rolls are in turning order.
8- Glue which is taken by skimming the depot is returned back to the depot by the roll.

E- APPLICATION

1- Products to be glued are relatively taken and given among the rolls by pushing over the rollers. The rolls will pull the material. This process is repeated consistently.
2- Materials are checked at the exit of the roll. If glue is less spread
3- Whether there is any water spraying process or not is checked discontinuously at the exit of the roll.
4- Whether there is any glue or not is checked discontinuously at the glue depots. New glue must be added before it is over. If the material to be glued decreases, the amount of glue to be added is adjusted according to this material.

F- MACHINE CLEANING

1- When glue spreading process is over, firstly upper roll must be lifted up. Unless

upper roll is lifted up, manual cleaning must never be done.

2- Glue depots are approached to the turning rolls in a non-forcing way and all glue over the roll will be skimmed.
3- Rolls are stopped and the excess glue on the depots is taken by a trowel or a spatula.
4- Furthermore, rolls are activated again and the amount of 0,5 lt. of cleaner liquid is put over the glue depots. (Cleaner liquid can be supplied with glue. If there is no cleaner liquid, cellulosic thinner will serve the same propose.)
5- Rolls are activated until cleaner liquid is over. When cleaner liquid is over, the rolls are stopped and rolls are cleaned with a cloth.
6- Furthermore, the same process is repeated by adding the amount of 0,5 lt. of cleaner on the depots.
7- Finally, the rolls are stopped and depots are pulling backwards and final cleaning is done by cloth and cleaner liquid together.

G- PROBLEMS AND SOLUTIONS

1- If the rolls are not turning
   a) Motor protecting switch may be off.
   b) Motor protecting switch may be blown out.
   c) There may be a breakage in electrical cables.

2- If upper roll cannot move down or up;
   a- Air intake must be controlled.
   b- Whether there is an air leakage or not is checked.
   c- Whether there is a foreign matter or not among the rolls is checked.
   d- Air pressure adjustment may be at less level than desired level.
   e- The trunks may be punctured.

H- CARRYING AND TRANSPORT

a) Before removing the machine from its place, electrical contact must be disconnected.

The machine can be lifted from the upper part of the chassis within a long bladed forklift or within a capstan through the help of ropes.

For Technical Assistance;
Telephone number
E- Mail address