THERMOFLAN

Pad Printing

OPERATION MANUAL
TTN 200 EKO TE
TTN 200 EKO 2 TC
TTN 250 EKO 3 TC
TTN 300 EKO 3 or 4 TC

Manual contents.

1 General information.

1.1 Note.

This manual has to be read thoroughly before connecting, using or servicing the machine. Most casualties occurring are caused by failure to observe very simple rules, suggested by prudence and safety requirement.
These accidents can be generally avoided, if the necessary caution and prudence are observed.

-Never carry out maintenance or cleaning activities if the machine is switched on.

-Do not use the machine without safety protections.

-Do not use the machine when out of order.

-It is only allowed for qualified personnel to work with the machine.

-This machine contains high voltage electrical parts. Opening the machine is dangerous and only allowed for experienced technicians.

-The machine is applied with a closed ink-cup. Be aware that the edge of the ink-cup is very sharp.

-The machine is equipped with pneumatic parts that work under high air pressure. During setting of the machine, for example mounting the closed ink-cup, cliché or pad, the machine has to be switched off at all times. This way it is not possible to start the machine if you press the foot-pedal by accident.

-During operation of the machine it is not allowed to hold any limbs into or under the machine.

-Smoking or eating at the machine is not allowed.

ATTENTION: The fat and cursive printed texts point out important things to know about the machine or safety. Read it very well!

259 Chemin de la Côte
30120 MOLIERES-CAVAILLAC (FRANCE)

Tél. +33 (0)4 67 81 14 41
Fax. +33 (0)4 67 81 09 80

THERMOFLAN

E-mail. info@thermoflan.com
www.thermoflan.com

S.A.S au capital de 300000 euros
SIRET 720 201 961 00011
RCS 72B196 NIMES

1.2 Testing.

Before delivery, the machine has been tested in our factory to check perfect performance of the electric system, of all moving parts and general machine operation.
If necessary, available samples supplied by customers have been used for test printing.

1.3 Safety devices.

ATTENTION: Before using the machine, ensure that safety devices are in the right place and working properly.
Transport could have damaged them.
Never tamper safety devices.
Ar every work shift, check the stat of all safety devices and make sure that they are in working order.
If safety devices are not working properly, call the technician in charge.

1.2 Safety regulation

Read this manual carefully before connecting, operating or servicing the machine or carrying out any other operations on the same.
Do not allow unauthorised staff to do anything on the machine.
Consult your employer about current safety regulations and accident prevention devices.
Do not start the machine when out of order.
Before using the machine, ensure that any condition threatening safety has been eliminated.

Ensure that all guards or other protective devices are in place and that all safety devices are present and efficient.
Make sure the operator zone is always free from foreign elements.
Make sure that the working area is well lightes.

Use the machine in conformity with the technical features of the same.
Do not use the machine for works different than the ones for which the machine has been manufactured and supplied.

1.3 Connection with electrical mains.

ATTENTION: Check if present voltage of network corresponds with voltage on type plate on the backside of the machine.

All electrical components and installation procedures must comply with the local electrical codes as they apply.
Make sure that the ground wire is efficient.

2 Safety

2.1 General information.

This part of the manual draws your attention to all safety conditions for the machine operator and for all people involved with the machine for control, operation and maintenance purposes.
The operator is intended as the person in charge to load and to assist the machine during normal production.
He must be in condition to operate the machine by using the control panel and other buttons.
He must survey the loading of the machine, the motions of the articles to be printed, the various operations and the printing quality.
He may proceed with small adjusting and set up concerning the printing.
For further interventions as maintenance and repair, particularly concerning electric and mechanical problems, nobody is authorised to operate but the technicians in charge.

ATTENTION: It is absolutely necessary that every person, operator or technician involved with the machine for any reason become familiar with all relevant information and specifications.

The machine has been designed to operate in a safe way.
Many of these machines are at work in a wide variety of industrial environments without any problem of worker safety or health hazards.
Like other industrial machines, this equipment can present worker safety problems if sufficient care is not taken to install and operate it correctly.

All attention is given to provide sufficient background on this point, but the final references must be the ones issued by local regulations.
This manual provides information concerning various aspects of worker safety with the machine.

With care in installation and operation coupled with adequate worker training, no unusual safety problems should arise.

2.2 Correct and incorrect use of the machine.

The machine has been studied, manufactured and eventually supplied for printing (padprinting) on articles.
Particularly the machine is intended for printing articles as presented to Thermoflan
Any use besides the ones specified and any printing of other articles which are not the ones for which the machine has been supplied, may cause operational, technical and safety problems.
Thermoflan assumes no expense or liability for any accident or damaged caused by an improper or incorrect use of the machine.

2.3 Operation and control places.

The operator must have at least 1 meter of free space particularly in front of the machine (operation zone)
The same space must be left free all around the machine for any kind of operation, maintenance and repair intervention.

2.4 Risk cautions and notices.

The machine is equipped with safety elements. The basic frame is totally closed around with rigid panels. Nobody but authorised person or technician must take away these panels for any reason.

ATTENTION: Do not tamper or try to avoid the protection and safety system.

During normal operation of the machine all safety elements must be in function.

2.5 Dangers from the mechanical motions.

Mechanical parts in motion are usually dangerous and this is a danger common to all machines where mechanical parts are driven by pneumatics. Unfortunately this is also the case with padprinting machines.
Technical parts in motion on this machine are guarded, but risks of accidents during work can never be totally eliminated.

For the above reasons please be sure that:
- Only high specialised persons and technicians must be allowed to remove screw fastened protections.
- They must be in possession of all necessary and proper tools to make the work.
- These person only must be in possession of particular keys or tools enabling the machine to operate without guards.
- Only 1 single person must operate the when the machine is without guard.

2.6 Dangers from the electrical system.

Here too, only very specialised and authorised persons must have access to the electrical equipment.
The electronic system can only be reached when removing the plating from the machine.
Persons with authorised access to the electronic parts must have a comprehensive knowledge of the plant layout and specifications.

2.7 Dangers from inks and solvents.

All chemicals as inks, solvents, thinners, etc. also including UV inks or special formulated inks may have a considerable degree of danger.

ATTENTION: Please always require and refer to safety and health specifications given by inks and general chemicals suppliers.

Following are a few simple and general rules to apply when using inks:

- Avoid direct contact of the ink with the skin (use protective gloves)
- Remove rings and other ornaments, which can be cause of danger not for chemical only.
- Do not touch your face with the hands to avoid delicate skin and eyes contaminations.

- In case of ink enter in your eyes, wash them of under running water for several minutes.
- Clean off and dry any spilt of ink (particularly UV ink).
- Never wash the hands or the skin in general with solvents. Use neutral soap and water only.
- Carefully read all information and health specifications given by the ink supplier.

2.8 Safety elements and parts

The machine frame is completely guarded with rigid plating.
The machine is equipped with safety doors. The safety doors on the side of the machine are fitted with electronic switches. Opening a door will shut down the complete pneumatic system. The electronic system will still function.
An emergency stop pushbutton is assembled on the control panel of the machine, easily reachable for the operator of the machine.
When pushing the emergency stop pushbutton:
- There is no tension on all electro valves.
- There is no air pressure in all pneumatic parts.
- Machine stops immediately.

2.9 Operating conditions.

The pad-printing machine has to be in a room with room temperature (never lower then 20°C).
Because of use of thinners, the room in which the machine is located, has to be well ventilated.
Humidity reduces the static electricity of the product that has to be printed.
A clean working environment has a positive effect on the print-quality.

3 Installation.

3.1 Unpacking

The machine has been duly inspected and packed prior to shipment in a strong wooden case.
Before unpacking, examine all shipping containers for damage.
After unpacking, examine the equipment for damage.
Any damage should be reported immediately to the shipping / forwarding company and to Thermoflan
A delay of more than 10 days may invalidate future claims for damages.

When unpacking, identify and compare each item with the packing list enclosed.

The machine is secured during transport to the crate base by screws.
Take care to avoid damage to the machine when opening the packaging.

3.2 Positioning and lifting.

The machine can be installed in 2 ways:

1 The machine can be mounted to a low pedestal which comes as an accessory to the machine.
In the ground plate of the machine are holes fitted to mount the machine to the pedestal. 2 holes at the front-side of the machine are meant for mounting the machine to the table from the topside with M6 screws. The 2 holes at the backside of the machine are thread holes M6 for mounting the machine to the table from the bottom. The machine has to be installed completely levelled.
The screws for mounting the machine to the pedestal are included.
This low pedestal has to mounted with 4 screws to a solid work table.
The screws for mounting the pedestal to the table are not included.

2 The machine can be mounted on a high pedestal which comes as an accessory to he machine.
The machine can be mounted to the high pedestal in the same way as mounting the low pedestal.

When the machine is mounted to the high pedestal, you are able to lift and move the machine with a fork lift.

The machine does not require special foundations.
Leave at least 1 meter clearance around the machine. This facilitates normal operation and maintenance.
The machine has to be installed completely levelled.

3.3 Electric power supplies.

Along with the machine there is a net cable delivered.
On the backside of the machine is a connector (16) located for connecting the net cable.

ATTENTION: Check if present voltage of network corresponds with voltage on type plate on the backside of the machine.

3.4 Pneumatic supplies.

On the backside of the machine is a “push in” connector (11) located for connecting pressure air. This connector is suitable for air-hose with 6mm thickness.

ATTENTION: Always be sure that the machine is switched off when you connect the air supply.

A good quality of pressure air will take care of a long life of the machine. We recommend to filter and dry the pressure air before the machine. This way it is not possible that pollution and liquid comes into the pneumatic parts of the machine.
On the backside of the machine is 1 reduction-valve (1) mounted. The reduction-valve is equipped with a manometer and a filter-boil. For good operation of the machine you have to reduce the pressure air to 6 bar. This is how to do it: pull the knob on the reduction-valve with manometer (2) up and turn to the right to increase the air pressure. Turn the knob to the left to reduce the air pressure. If the manometer indicates 6 bar, you can push the knob back onto the reduction-valve.

3.5 Connection of foot switch.

The foot switch that is delivered along with the machine, has to be connected to the 2-poled connector (14) on the backside of the machine. To do this you have to push the plug into the connector and screw the nut around the plug to the machine.

4 Setting the machine before use.

4.1 Installation of cliché and closed ink-cup.

To place the cliché on the base-plate (9), you have to take the base-plate out of the machine. After this you can mount the cliché on the base-plate by screwing the cliché with 2 screws M2.5 to the base-plate. Both base-plate and cliché should be clean. Before you can place the base-plate back into the machine, you first have to fill the ink-cup. You can do this by laying the ink-cup upside down and fill the room in the ink-cup with ink. Wait approx. 10 minutes before you place the ink-cup against the cliché. On this way the air bubbles in the ink have the chance to disappear, which will lead to less print problems. After this, you can now place the ink-cup against the cliché. The ink-cup is equipped with magnets, so the ink-cup will stick to the cliché. You can now place the base-plate in the machine. On the ground-plate of the machine are 2 pins mounted to position the base-plate.
The ink-cup holder (5) can now be pushed down into the center of the ink-cup. Make sure that the black screws are not touching the ink-cup when the ink-cup holder is completely down.
Then tighten the 2 lock screws (4) upwards, so that the ink cup holder can’t move up and down again.

When after some printing, the ink cup starts leaking, you can put extra pressure onto the ink-cup with the screws which are mounted in the ink-cup holder. These screws have feathered pins inside, which can put more pressure onto the ink-cup. This way you can secure good scraping of the ink-cup.

ATTENTION: The base-plate has to be installed without any play to the ground-plate. This is necessary to get the same position of the artwork on the product in each print.

4.2 Mounting and setting of pad.

The pad (7) can be mounted to the machine with the XY padholder (6).
The pad must be mounted above the heart of the artwork in the cliché plate. Off course the pad has to be in the back position. The best way to set the pad is with the machine switched off. How to place the pad in its back position is explained in chapter 5.3.2 section C. It is also possible to set the depth of the pad. This is also explained in this chapter. The pad is well set if the pad is closing just around the artwork in the cliché

TIP: to see if the pad is in the right position, you can blow a little condensation on the cliché by blowing over it with your mouth wide open. If the pad now touches the cliché, you can exactly see where the pad is touching the cliché.

4.3 Ink preparation.

The composition of the ink exists in most cases out of ink and thinner. There is also a possibility to add for example hardener, quickthinner, retarder, egalisator, or an other ingredient. Important is that the viscosity of the ink is right. The viscosity of the ink has to be about the same as the viscosity of for example motor oil.
For more information about the ink you want to apply in the machine, you should refer to the technical data sheets belonging to the same ink.

5 Use of the machine.

5.1 Switching on the machine.

If all electrical and pneumatic connections are correctly installed, you can use the machine. On the backside of the machine is a red button located. This is the main power switch (16). By pushing this button the main power will be switched on and the button will lighten red. When you switch on the machine the display will show the TTN logo, our web site address and a version number of the control unit for about 10 seconds. After this the display will show the main menu of the machine.
When you push any of the buttons on the control panel while the introduction page is shown, the machine will immediately go to its main menu.

Attention: be sure that the emergency stop switch (25) is not pressed if you are going to switch machine on. If the emergency stop switch is pressed, the machine is not able to operate when the emergency button is pushed.

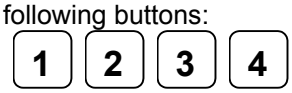
When you press the main power switch, the machine will go to its starting position. The pad will come to the front and will rise to its upper position.

Attention: be aware that the machine can get in motion if you press the green button on the reset switch.

To switch the machine off, you have to push main power switch (16). The red light in this switch will go out.

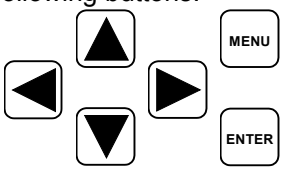
5.2 General use of menu.

At the front of the machine are a control panel and a LCD display with which you can control the functions of the machine.
The control panel is divided into 2 parts.
The upper part contains the LCD display and the following buttons:

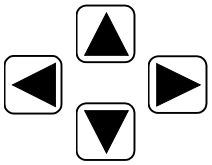


These buttons belong to the icons that are showed in the top of the LCD display.
In chapter 5.2.1 there is more explained about this.

The lower part of the control panel contain the following buttons:



With these buttons:



you are able to choose the function you want set and change its value.
To choose a function you have to confirm you choice with:

Normally the functions are mentioned in black characters.
In the display there is one rule which is black with white characters inside. This is the function that you will choose once you have confirmed you choice by pressing the ENTER button.

At some functions you are able to change a value. Other functions give you the opportunity to choose from a few kind of settings.
To confirm your choice you always have to press:

If you don't do this, the setting will not be changed and will remain in its old setting.

Attention: ALWAYS press the ENTER button after each function choice or setting change.

The control contains a main menu with a multi-level sub menu structure.
If you are not in the main menu and you want to return to it, you can press:

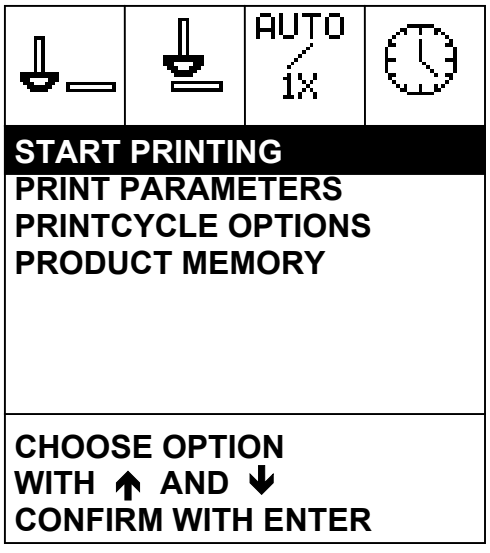
Each time you press this button you will go up 1 level in the menu structure.
If you hold this button for 3 seconds, the control will go directly to the main menu without entering all the sub menus in between.

In some functions you are able to change values.
To do this, you can use these buttons:

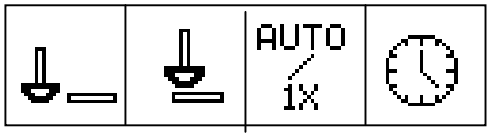
if you press these buttons once, the value will change 1 unit at a time. If you hold the buttons for a longer period, the value you are editing is changing in a more rapid pace. This way you can change values quicker.

5.2.1 Display.

The display is divided into 3 sections:



A. The icon section.
This is the top part of the display. In this part are always 4 icons drawn. These icons belong to the 4 buttons located above the display.
If you press the button right above an icon, you will enter directly the function belonging to this icon without going through the menu structure.
Here follows the standard setting for the icons:



Stands for pad depth on top of product. The function is explained in chapter 5.3.2

Stands for pad depth on top of cliché. The function is explained in chapter 5.3.2

Stands for automatic or single cycle. The function is explained in chapter 5.3.2

Stands for electronic delay. The function is explained in chapter 5.3.2

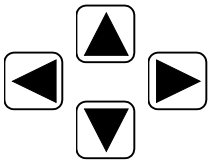
Attention: If the machine is equipped with an electronic shuttle, the icon for the electronic delay is replaced by this icon:

This icon is for the positioning of the electronic shuttle. The function is explained in the manual of the electronic shuttle.

Attention: If the machine is equipped with an optional tape cleaning device, the icon for the electronic delay is replaced by this icon:

This icon is for manual cleaning. The function of this icon is explained in the manual of the tape cleaner.

B. The menu section
The menu section is the middle part of the display. In this part shows the functions which you can choose from.
It also shows the graphics with values which you can change
To navigate through the menu section, you can use these buttons.



C. The help section.

This is the lower part of the display. With each menu or sub menu it mentions what you have to do or which buttons you should press to control the machine in the proper way.
The machine practically explains itself to the user. If an operator doesn't have a lot of experience in using the machine, he can still see how to operate the machine.

5.3 Main menu

When the machine is switched on, the main menu will appear after 10 seconds. If you don't want to wait that long, you can press any button on the control panel. The main menu will appear immediately.

In this chapter each part of the main menu will be explained how it works and how to operate it.

5.3.1 Start printing

When this option is chosen, the display will show the product counter.
If you press the foot switch, the machine will start printing in the way the machine is programmed.
While the machine is printing, the help function shows the following data:

Number of colours
Automatic or single cycle.
Counter counting up or down

Here follows an example which can be seen in the display:

NUMBER OF COLOURS: 2
PRINT CYCLE: AUTOMATIC
COUNTING: UP

You are not only possible to start the machine when you are in the start printing menu.

Attention: It is always possible to start the machine with the foot switch. No matter in what kind of menu or sub menu you are, when you press the foot switch, the machine will start running. There are two exceptions on this. If the control is in the pad depth setting (either on product or on cliché)while the machine is nor running, the foot switch will only operate the stroke of the pad and nothing more.

If you start the machine with the foot switch, the display will always show the start printing display.

Attention: If the machine is running, you are always able to leave the start printing menu by pressing:

The control will return to its main menu. From there on it is possible to navigate to any kind of function.

5.3.2 Print parameters

In this part of the main menu, you are able to change the values of all the parameters within the printing cycles.

When opening this function in the menu, you will get this list of functions which you are able to change.

AUTO/SINGLE CYCLE
PAD DEPTH FRONT
PAD DEPTH CLCHE
ELEC. DELAY
NUMBER OF COLOURS
MOMENT
COUNTER

In this chapter it is explained what each function is and how you can change it.

A. Auto/single cycle.

Here you can choose between automatic and single cycle operation.
If you choose for automatic cycle, the padprinting machine will continuously keep on printing once you have pressed the foot pedal. To stop the automatic cycle, you have to press the foot pedal again.

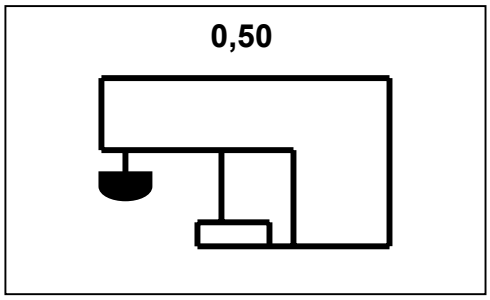
If you choose for single cycle, the machine will only make 1 print cycle once the foot pedal has been pressed. The machine stops after 1 cycle automatically. To make another print, you have to press the foot pedal again.

This function can also be changed using the number 3 button of the icon section in the display.

this is the icon belonging the this function.

B. Pad depth front

This function allows you to change the pad depth while the pad is standing over the product you want to print.
When you choose this function this will appear in the display:



With these buttons:

you are able to change the value of the pad depth.
If you lower this value, the pad stroke will be shorter.
If you increase this value, the pad stroke will be longer.
Don't forget to press the enter button to confirm the setting.

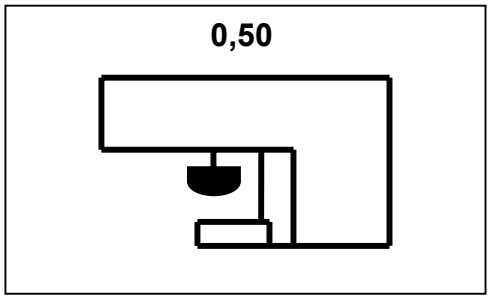
This function can also be changed using the number 1 button of the icon section in the display.

this is the icon belonging the this function.

Attention: Before you set the depth of the pad, it is important that you first adjust the speed of the movement up and down. If you adjust the speed of the movement afterwards, the depth of the pad will change.

C. Pad depth cliché

This function allows you to change the pad depth while the pad is standing over the cliché inside the machine.
When you choose this function this will appear in the display:



With these buttons:

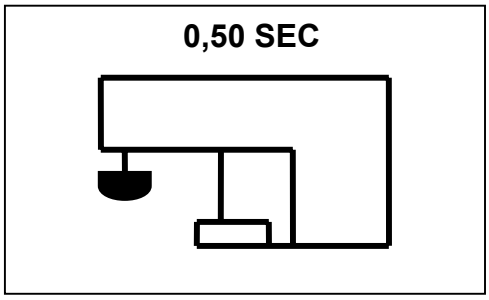
you are able to change the value of the pad depth.
If you lower this value, the pad stroke will be shorter.
If you increase this value, the pad stroke will be longer.
Don't forget to press:

to confirm the setting.
This function can also be changed using the number 2 button of the icon section in the display.

this is the icon belonging the this function.

D. Elec. delay.

Sometimes it could happen that the ink is still to wet to print. with this function you are able to let the pads wait for a certain time with the ink on the pad before printing.
The time can be set from 0.00 to 2.50 seconds
If you choose the function, this will appear in the display:



With these buttons:

You are able to change the value.
Don't forget to confirm your setting before leaving this function

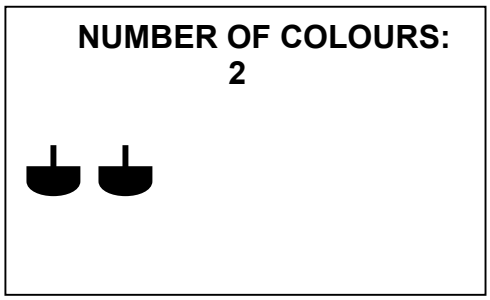
This function can also be changed using the number 4 button of the icon section in the display.

this is the icon belonging the this function.

E. Number of colours.

Attention: this function is only useful if the machine is a multi colour machine. The 1 colour machines are not able to change anything in this function.

If the machine is a multi colour machine, it is possible to change the number of colours you can print with.
With this function you can choose the number of colours you want to print.
If this function is chosen, this will appear in the display:



With these buttons:

you are able to change the number of colours.
If you have set the number of colours, then please do not to forget confirm your choice.

Attention: The machine is configured to the maximum number of colours the machine can print. It is not possible to print more colours then the maximum configuration of the machine.

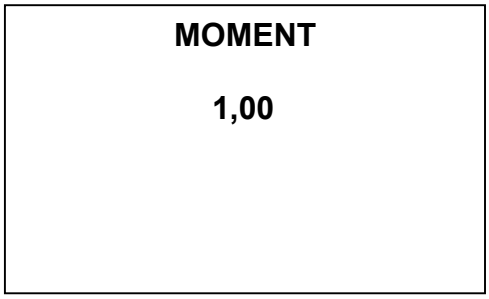
If the machine is a 1 colour machine, it is not possible to change this setting.

F. Moment

Normally when the machine is printing in multiple colour printing, the machine works as follows.

Each time the machine has made a print, the shuttle waits to move until the pads are in their upper position. For the shuttle it would be possible to move if the pads are loose from the product.
The function MOMENT takes care of that. With this function you are able to give the start signal to the shuttle earlier so that the shuttle is able to move while the pads are still going upwards. This way the machine can make more prints per hour.

If this function is chosen, this will appear in the display:



With these buttons:

you are able to change the value of the moment setting.

The value stands for the time starting when the pads go up again.
For example: If the value is set at 0,25 the shuttle will start moving after 0,25 seconds counted from the moment when the pads have gone upwards.

If this value is set at the right value, please don´t forget confirm your choice by pressing:

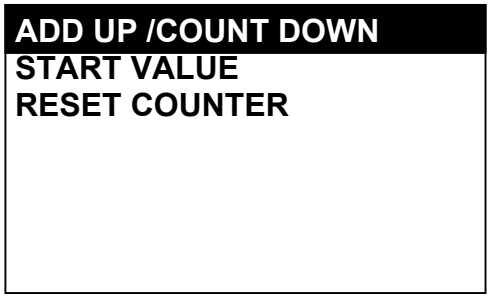
Attention: Before you set the moment of the pad, it is important that you first adjust the speed of the movement up and down. If you adjust the speed of the movement afterwards, the moment of the pad will change.

G. Counter

The padprinting machine is equipped with a programmable counter.

The function COUNTER allows you to program and to reset the counter.

If this function is chosen, this will appear in the display:



When you choose the function ADD UP /COUNT DOWN, you can choose to program the counter in 2 ways.
ADD UP: The counter is starting from 0 to count up.

COUNT DOWN: The counter is starting at a certain programmed start value. From there on it will count down to 0. If the counter is at 0, the machine will stop automatically.

When using the COUNT DOWN option, you have to program a certain start value. The machine will start counting down from this value. If the counter is counted down to 0. the machine stops. If you start the machine again, it will start counting from the programmed start value again.
It is also possible to reset the counter.

If you have programmed the counter as ADD UP, the counter will return to 0 if you reset the counter.

If you have programmed the counter as COUNT DOWN, the counter will return to the programmed START VALUE.
If the function reset is chosen, this will appear in the display:

ADD UP /COUNT DOWN
START VALUE
RESET COUNTER
ARE YOU SURE?
CONFIRM WITH ENTER

If you press:

The counter will reset.

5.3.3 Print cycle options

The padprinting machine is able to make all kinds of print cycles.
If you choose the function PRINT CYCLE OPTIONS in the main menu and confirm with enter, this will appear in the display:

1X PICK UP 1X PRINT
2X PICK UP 1X PRINT
1X PICK UP 2X PRINT
2X PICK UP 2X PRINT
SCRAPE SETTING
PAUSE SETTING
TESTPROGRAMM

This chapter will explain what each function does.
To choose a function use these buttons:

and confirm your choice with:

A. 1X PICK UP 1X PRINT.

This function is the most common way of printing. The machine picks up ink once after which the print is done once.

B. 2X PICK UP 1X PRINT.

For a thicker layer of ink, you can use this function. The machine picks up ink twice after which the print is done once.

C. 1X PICK UP 2X PRINT.

If the ink is not transferring very easy onto the product you can choose this function. The machine picks up ink once after which the print is done twice. If the machine is set up as a multi-colour print, the machine is printing each colour double.

D. 2X PICK UP 2X PRINT.

For a thicker layer of ink while the ink is not transferring very easy onto the product you can choose this function. The machine picks up ink twice after which the print is done twice.
If the machine is set up as a multi-colour print, the machine is printing each colour double.

E. Scrape setting.

This function is meant to see if the ink cup is scraping the ink off in a proper way.
If you choose this function, the display will show:

SCRAPE SETTING

Each time when you press the foot pedal. The ink cup(s) will move 1 time.

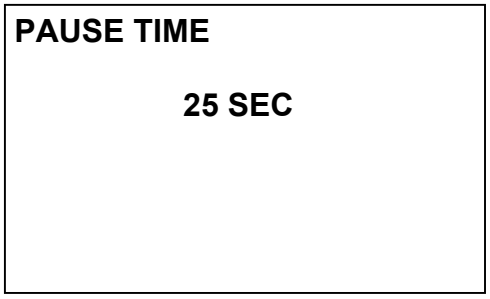
The first time they will go to the back. The second time when you press the foot pedal, the ink cup(s) will go to the front.

You can repeat this as often as you like.

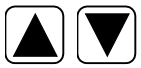
To leave this function, you can press any button on the control panel.

F. Pause setting.

If the operator is having a coffee break, he can set the machine into PAUSE SETTING.
When this function is chosen, the machine will automatically scrape the cliché clean with intervals. This interval can be set by the operator.
If the machine is in PAUSE SETTING the display will show:

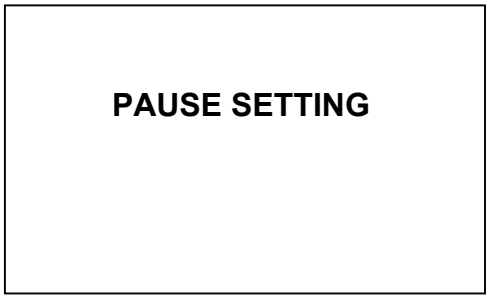


Here the operator can set the interval time between each scrape movement. By using these buttons:



When the interval time is ok the operator must confirm with:

The display will now show:



When the foot pedal is pressed the machine will start its pause setting.
The help function also explains this.

To stop the pause setting, the operator can push any button on the control panel to make the machine stop.

This function is also handy if you have changed the composition of the ink while the ink cup is still inside the machine.
If the pause time is set to 0 seconds, the machine will start scraping without any interval.
Because of the movement of the ink-cup, the ink will get mixed up with the thinner you put inside.

Attention: when the machine is in pause setting, the machine can get into motion at a moment when it is not expected it, because of the interval time.
If the machine is in pause setting, the sentence which says pause setting will blink each few seconds. This way the operator can expect the machine to get in motion.

G. Test program.

The machine is equipped with a test program which could be helpful in case of malfunction.
With this function the operator or technician is able to test all sensors, valves, buttons, etc inside the machine. Also the sensors of the pneumatic shuttles and external input and output which is connected to the machine, can be tested.
If the function test program is chosen, all buttons which can be pressed on the control panel appear in the display.
Now the operator is able to test the keyboard of the control panel. By pressing one of the buttons on the panel, the corresponding icon on the display will light up. This way the operator can see if the button is functioning properly.
When these two buttons are pressed at the same time:

a list of all the available input and output is visible.
With the help of this list the operator can check if an item inside the machine is malfunctioning.
If the 2 buttons are pressed at the same time, this will appear in the display.

NO.	VALVE	SENSOR
01	1	0
02	0	1
03	0	0
04	0	1
05	1	0
06	-	0
07	-	0

When this function is opened, a cursor is blinking under valve No. 1
With the buttons:

the operator can change the value of the valve.
When air is connected to the machine, the movement belonging to this valve will get in motion.
The corresponding sensors will also show a change.
With these buttons:

The valve can be chosen which the operator wants to change in value. If the list shows “1” the valve or sensor is switched. If the list shows ”0” the valve or sensor is not switched.

This is the list of valves and sensors corresponding to the numbers in the list.

Valve no:	Corresponding to:
01	Pad sledge
02	Pad up/down
03	Extra output 1
04	Extra output 2
05	Blade up/down
06	X table 2
07	X table 1
08	Tape clean in/out
09	Tape clean motor
10	Blade sledge
11	Pad-cylinder 1
12	Pad-cylinder 2
13	Pad-cylinder 3

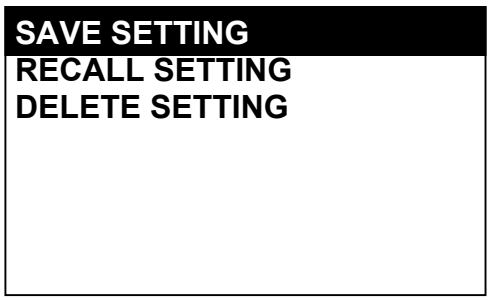
The following list contains the sensors. These sensors can be operated manually when pressure air is taken away from the machine, or by switching the corresponding valves.

Sensor no:	Corresponding to:
01	Foot pedal
02	Pad sledge front position
03	Pad sledge back position
04	Pad upper position
05	In pos (external)
06	Not connected
07	Wait (external)
08	Extra input 1
09	Extra input 2
10	Tape clean front position
11	Tape clean back position
12	Blade front position
13	Blade back position
14	Pad-cylinder 1 upper position
15	Pad-cylinder 2 upper position
16	Pad-cylinder 3 upper position

5.3.4 Product memory.

The machine is equipped with a memory for storing 25 settings.
All parameters which can be adjusted in the machine can be stored in a setting. This way it is much easier to set up the machine when the operator has to print the same product several times.

When this function is chosen this will appear in the display:



Before storing a setting, the operator has to set the machine just the way he likes it best. If this setting has to be stored, then choose SAVE SETTING in the product memory menu. And confirm with:

The operator is now entering the list of setting numbers which are available or already occupied.
If a setting number is not occupied, it mentions “EMPTY”.
With these buttons:

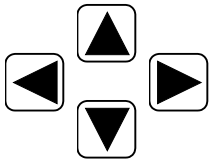
The position for storing the setting can be chosen.
By pressing the enter button, the operator will enter the page for entering the setting name and other text fields.
The display shows this:

SAVE SETTING
NAME: EMPTY

USED PADS:

USED INK:

With these buttons:



The operator is able to enter a name for the setting and all the other text fields.
The buttons:

can be used to chose a character or number:
the character go from A-Z followed by the numbers 0-9. Before the A there is the possibility to enter a space.
To go to the next character use these buttons:

when a text is entered complete, confirm with:

The control goes automatically into the next text field.
If the PADS and INK are entered, the display shows this:

SAVE SETTING
TABLE HEIGHT: 50.0

USED CLICHE:

REMARKS:

Here the operator is able to enter a table height.
When the machine is equipped with a high pedestal, the operator can set the table height manually.
A ruler is mounted on the front of the pedestal where the operator can see where to put the product table.
Filling out each text field is done in the same way as done in the former display.
When the last text field is entered, the help section of the display mentions:

SETTING SAVED
PRESS MENU TO RETURN
TO MAIN MENU

To recall a setting a setting the operator has to choose:

SAVE SETTING
RECALL SETTING
DELETE SETTING

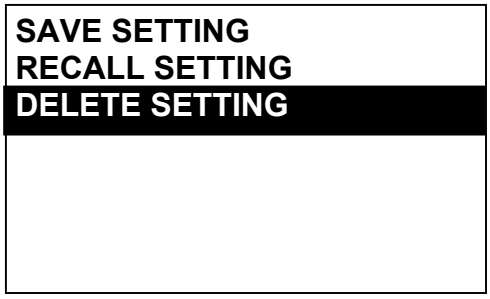
And confirm with:

The machine shows the list of setting numbers which have been stored before.
The operator is able to choose from this list.

If a setting is chosen, the display shows all the text-fields which have been entered during storage of the setting.
This way it is possible to see which pads, ink, cliché are used, which table height the product table must have and the remarks.
When the enter button is pressed after seeing the last display the setting is recalled.

Attention: the only thing the product memory can't store is the speed of the pneumatic cylinders. If this has been changed, the depth of the pads will not be the same as the first time during storage of the setting.
So perhaps it is necessary to change the air speed of the motions to get the right pad depth when recalling a setting.

It is possible to delete a setting.
To do this choose:



And confirm with:

the display shows the list of settings numbers.
With these buttons:

the operator can choose the setting that has to be deleted.
If the operator confirms the setting with

The help section mentions "ARE YOU SURE".
If ENTER is pressed again, the setting is deleted.

5.3.5 Set up shuttle(s).

If the machine is equipped as a multi colour machine, it is possible that machine operates together with one or 2 electronic shuttle(s).
Before the machine is supplied, it has to be equipped with extra electronics and connectors to connect 1 or 2 electronic shuttles to the control of the padprinting machine. This can only be done in the TTN factory.

The electronic shuttle(s) can than be programmed from the control panel of the padprinting machine.

How to do this is explained in the manual of the electronic shuttle.

5.3.6 Set up tape cleaner.

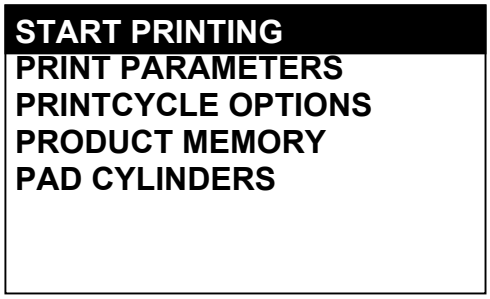
As an option to this padprinting machine, it is possible to connect a tape cleaning device to the padprinting machine.
Before the machine is supplied, it has to be equipped with an extra connector to connect the tape cleaner to the control of the padprinting machine. This can only be done in the TTN factory.

The tape cleaner can than be programmed from the control panel of the padprinting machine.

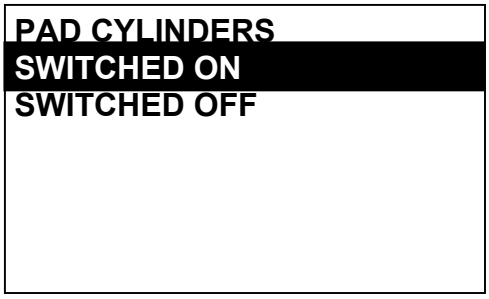
How to do this is explained in the manual of the tape cleaner.

5.3.7 Pad cylinders.

As an option to the machine, it is possible to equip the machine with separate pad cylinders. Off course this is only useful with multi colour machines.
If the machine is equipped with pad cylinders, then the main menu has an extra sentence.
Like this:

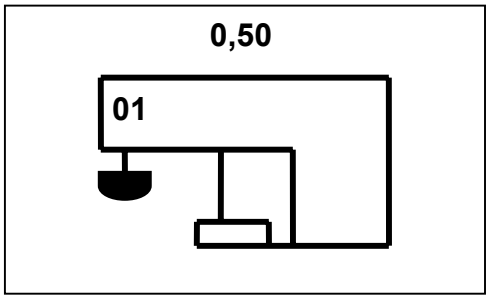


When this option pad cylinders is chosen, the display shows the following:



In this function the operator can choose to work with or without the pad cylinders.
If the pad cylinders are switched off, the padprinting machine work s as a standard padprinting machine where all pads are going downwards at the same time.
When the pad cylinders are switched on, the pad cylinders can be controlled separately.
It is possible to set the pad depth separately for each pad cylinder.

This is done in the same way as explained in chapter 5.3.2 section B and C.
The only thing that is different is that the operator is able to choose the cylinder he wants to change
When pad depth is going to be changed while the pad cylinder option is switched on, this is visible in the display.



With these buttons:

the operator can choose which cylinder he wants to change.

5.4 Use of reduction valves.

On the right side of the control panel are 4 valves (20,21,22,23) mounted with which you can adjust the speed of the movements that the machine makes.
Valve (20) regulates the speed of the upward going movement of the pad.
Valve (21) regulates the speed of the downward going movement of the pad.
Valve (22) regulates the speed of the frontward going movement of the pad and ink-cup.
Valve (23) regulates the speed of the backward going movement of the pad and ink-cup.
All valves work the same way. If you turn the valves anti clockwise, the speed will increase. If you turn them clockwise, the speed will reduce.

ATTENTION: always adjust the valves while the machine is running. In this way you have a better control on how the machine is reacting to the changes of the valves. If you change the speed of the movements, don't do this very fast. Turn the valves very gently and see what the machine does. On this way you prevent the machine to make any sudden fast movements.

ATTENTION: always set the speed of the movements before you are going to change the depths of the pad. If you change the speed of the movements after setting the pad depths, it is likely that the depths of the pad will change as well.

You can achieve a good setting of the machine only by experimenting. The more you use the machine, the more experienced you will get in setting the machine.

5.5 Use of emergency stop.

In the front of the machine is a emergency stop button (25) located. You are able at all times to press it in case of an emergency. The machine will stop immediately after using the emergency stop, and all pressure air will disappear from the pneumatic system in the machine and all movements are free to move without any resistance.
If you want to take the machine back into operation, you have to turn the red emergency button a little bit to the right. You will feel that if you turn the button far enough, the button is coming outside again to its

normal position. The machine will go to its beginning position.

5.6 Ending work.

If you have finished printing, you take the pad and base-plate with ink-cup(s) from the machine. Next you can remove any ink stains from the machine with thinner. The paint on the machine and the front foil are thinner resistant.
Take the ink-cup(s) from the base-plate while you are holding it upside down. Take the cliché from the bas-plate. Clean the ink-cup, cliché and if necessary base-plate with for example TTN 2575 cleaner. You can clean the pad with self adhesive tape or alcohol. Switch the machine off by pushing the red button on the backside of the machine.

6 Maintenance

Check regular if there is liquid in the filter-boil under the reduction-valve (1). Possible liquid can be removed by pulling the knob (3) under the filter-boil. Furthermore it is wise to clean the machine after each time you have used the machine.
Further the machine is maintenance free.

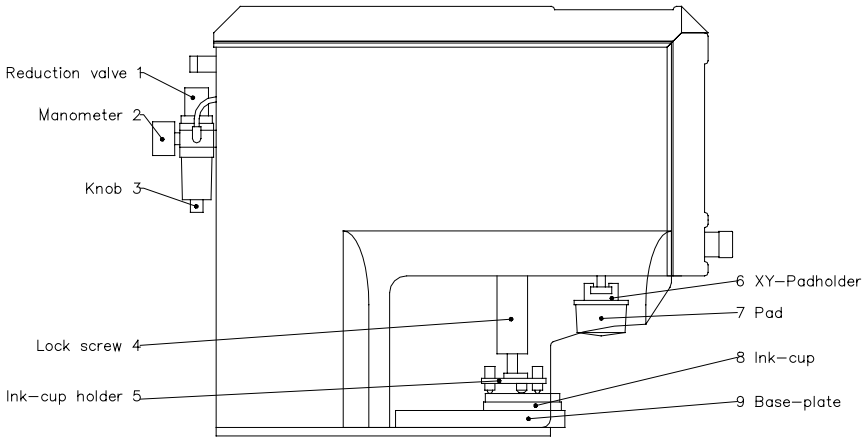
7 Specifications

Pressure air connection:	6-8 Bar
Maximum pad pressure:	TTN 200, TTN 250: 750 Newton TTN 300: 1150 Newton
Net supply:	220 Volt AC (50 Hz) 115 Volt on request
Work voltage:	22 Volt DC 11 Volt DC
Produced sound:	< 70 dB (A)
Dimensions:	700x360x510mm
Weight:	65 Kg
Ink-cup dimensions:	TTN 200 EKO: 1x90x190mm Oval 2xØ90mm TTN 250 EKO: 3xØ65mm TTN 300 EKO: 4xØ65mm 3xØ90mm
Cliché sizes:	TTN 200EKO: 200x200mm TTN 250EKO: 250x200mm TTN 300 EKO: 140x175mm
Heart to heart distance for colour positioning with electronic shuttle:	TTN 200 EKO: 2xØ90mm: 100mm TTN 250 EKO: 3xØ65mm: 80mm TTN 300 EKO: 3xØ90mm: 100mm 4xØ65mm: 75mm
Heart to heart distance for colour positioning with pneumatic shuttle:	TTN 200 EKO: 2xØ90mm: 98mm TTN 250 EKO: 3xØ65mm: 78mm

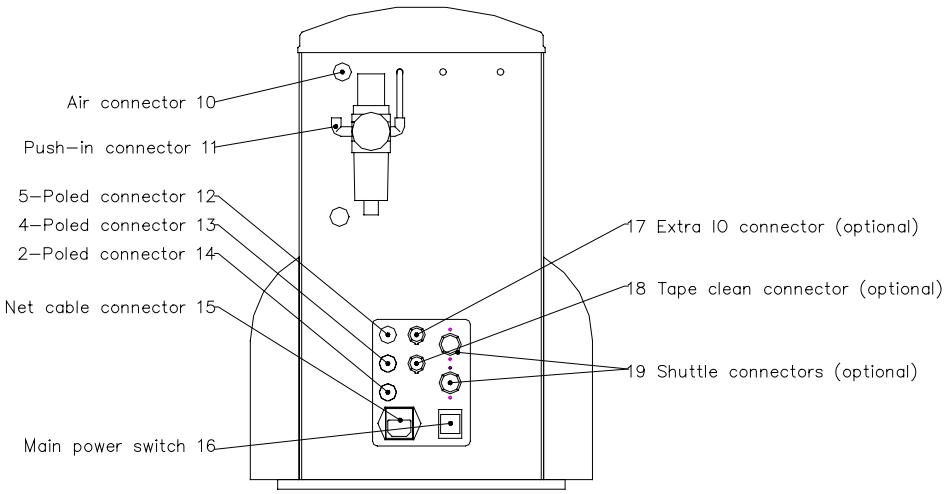
8 Appendixes

1 Drawing side view left
2 Drawing rear view
3 Drawing front panel

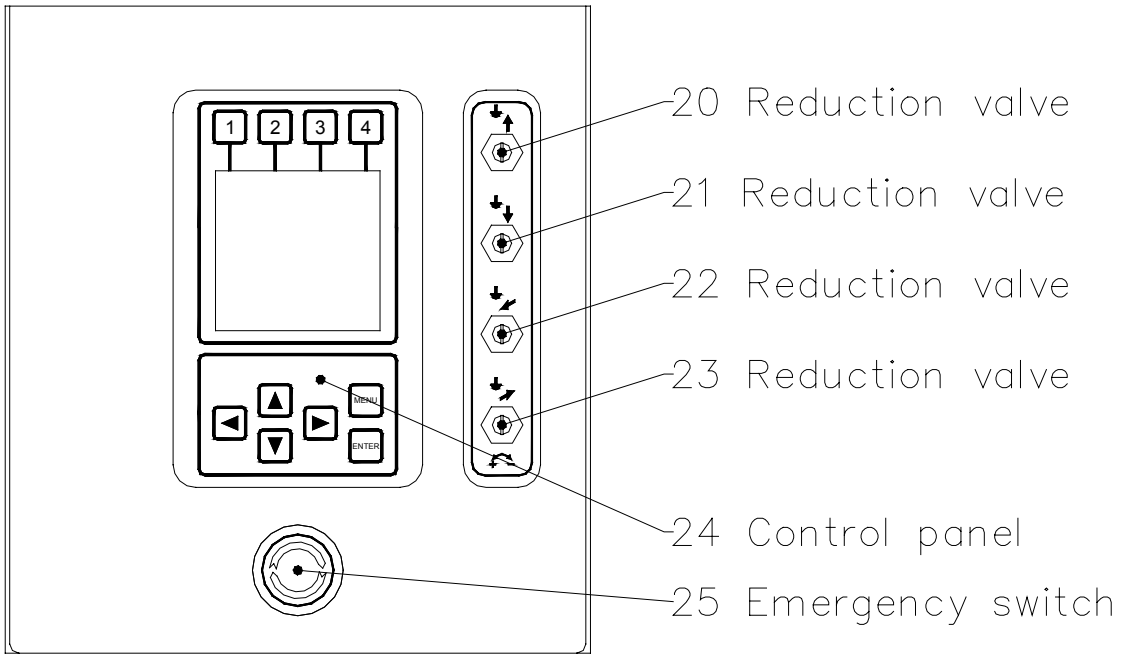
1 Drawing side view left



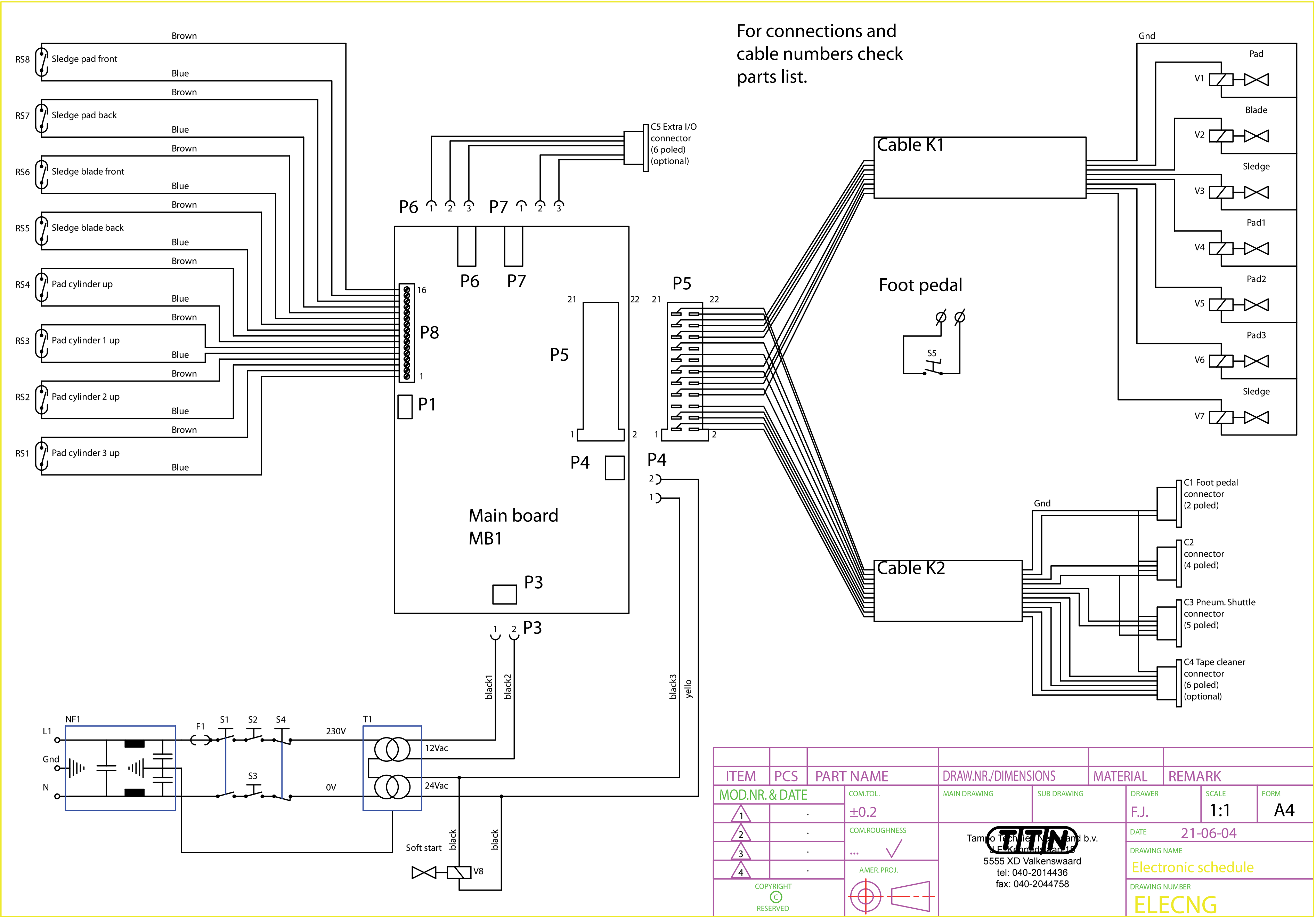
2 Drawing rear view



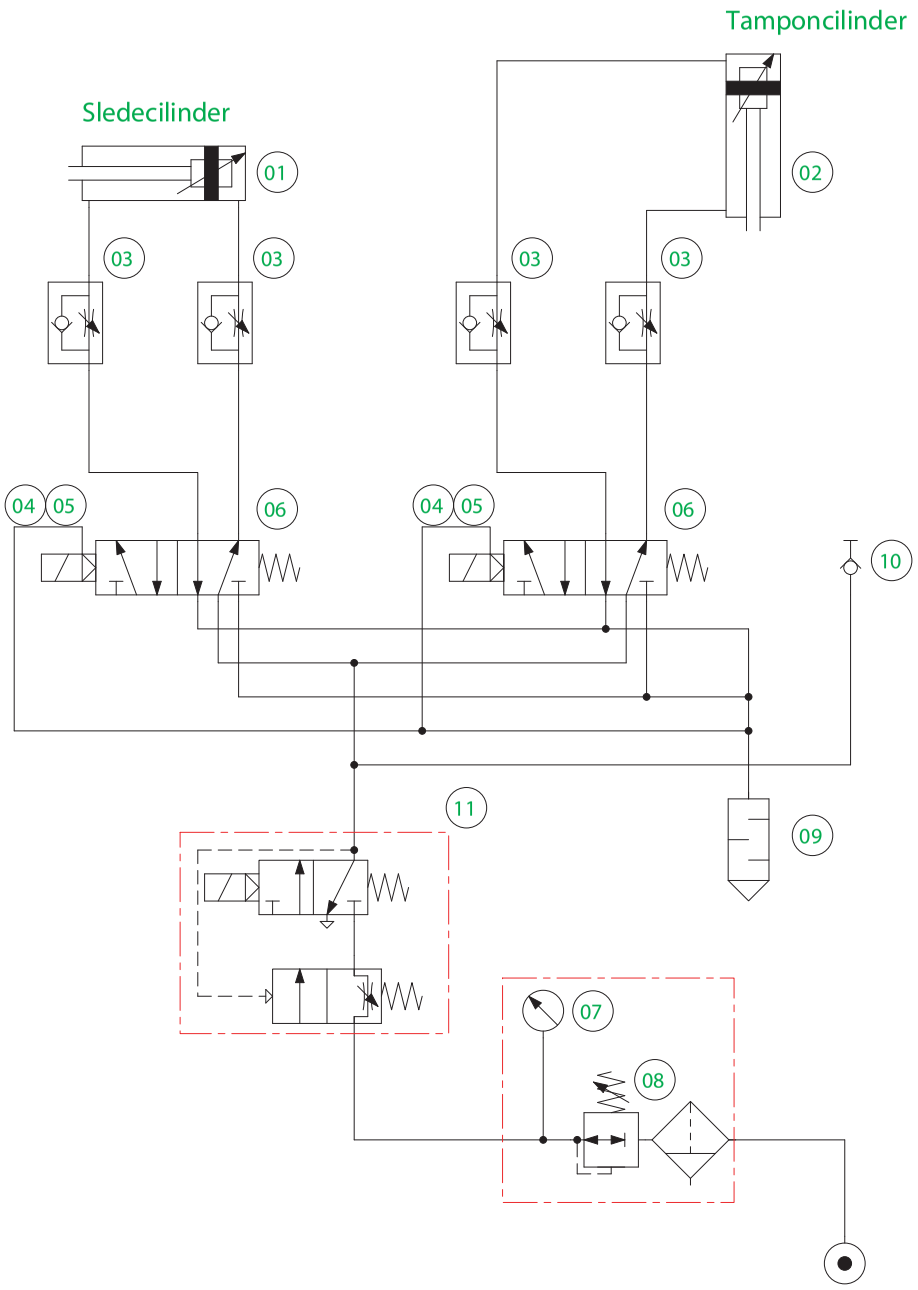
3 Drawing front panel



9 Electronic schedules


For connections and cable numbers check parts list.
RS8 Sledge pad front
RS7 Sledge pad back
RS6 Sledge blade front
RS5 Sledge blade back
RS4 Pad cylinder up
RS3 Pad cylinder 1 up
RS2 Pad cylinder 2 up
RS1 Pad cylinder 3 up
Brown
Blue
C5 Extra I/O connector (6 poled) (optional)
P6 1 2 3
P7 1 2 3
P6
P7
P8
16
1
P1
P5
21
22
1
2
P4
P3
Main board MB1
Cable K1
Cable K2
Foot pedal
S5
Gnd
Pad
Blade
Sledge
Pad1
Pad2
Pad3
V1
V2
V3
V4
V5
V6
V7
C1 Foot pedal connector (2 poled)
C2 connector (4 poled)
C3 Pneum. Shuttle connector (5 poled)
C4 Tape cleaner connector (6 poled) (optional)
black1
black2
black3
yello
NF1
L1
Gnd
N
F1
S1
S2
S3
S4
230V
0V
T1
12Vac
24Vac
Soft start
black
V8
ITEM
PCS
PART NAME
DRAW.NR./DIMENSIONS
MATERIAL
REMARK
MOD.NR. & DATE
COM.TOL.
±0.2
COM.ROUGHNESS
AMER. PROJ.
COPYRIGHT © RESERVED
MAIN DRAWING
SUB DRAWING
DRAWER
F.J.
SCALE
1:1
FORM
A4
DATE
21-06-04
DRAWING NAME
Electronic schedule
DRAWING NUMBER
ELECNG
5555 XD Valkenswaard
tel: 040-2014436
fax: 040-2044758

10 Pneumatic schedules



ITEM	PCS	PART NAME	Manufacturer	Dim.	Code
11	1	Soft start	Numatics		S22CG02A.JP
10	1	Coupling	Metal work	1/8"	101001
09	1	Silencer	Festo	1/4"	2316
08	1	Filter reducer	Metal work	1/8"	5105008
07	1	Manometer	Metal work	0-10	9700106
06	2	Valve 5/2	Metal work	1/8"	7010021100
05	2	Connector	Metal work	L22std.	W0970510011
04	2	Coil	Metal work	24Vdc	W0215000101
03	4	Flow control	Metal work	U 1/8"	9041002
02	1	Cylinder	Metal work	40x125	121A400125CP
01	1	Cylinder	Metal work	20x100	1130200100CP

MOD.NR. & DATE
1 .
2 .
3 .
4 .

COM.TOL. ±0.2

COM.ROUGHNESS ...

AMER. PROJ.

MAIN DRAWING

SUB DRAWING

DRAWER F.J.

SCALE 1:1

FORM A4

TTN
Tampo Techniek Nederland b.v.
J.F. Kennedylaan 18
5555 XD Valkenswaard
tel: 040-2014436
fax: 040-2044758

DATE 29-01-01

DRAWING NAME

DRAWING NUMBER 200EKOPNEU

P8	16	Brown	12Vdc	-	RS8		
P8	15	Blue	Sledge pad front	Input	RS8		
P8	14	Brown	12Vdc	-	RS7		
P8	13	Blue	Sledge pad back	Input	RS7		
P8	12	Brown	12Vdc	-	RS6		Not connected
P8	11	Blue	Sledge bl. front	Input	RS6		Not connected
P8	10	Brown	12Vdc	-	RS5		Not connected
P8	9	Blue	Sledge bl. back	Input	RS5		Not connected
P8	8	Brown	12Vdc	-	RS4		
P8	7	Blue	Pad cyl. up	Input	RS4		
P8	6	Brown	12Vdc	-	RS3		Optional
P8	5	Blue	Pad cyil.1 up	Input	RS3		Optional
P8	4	Brown	12Vdc	-	RS2		Optional
P8	3	Blue	Pad cyl.2 up	Input	RS2		Optional
P8	2	Brown	12Vdc	-	RS1		Optional
P8	1	Blue	Pad cyl.3 up	Input	RS1		Optional
P7	3	5	Extra output 1	Output	C5	5	Optional
P7	2	4	Extra output 2	Output	C5	4	Optional
P7	1		AGnd	-			
P6	3	3	Extra input 2	Input	C5	3	Optional
P6	2	2	Extra input 1	Input	C5	2	Optional
P6	1	1	AGnd	-	C5	1	Optional
P5	22	10 (K2)	Tape motor	Output	C4	5	Optional
P5	21	9 (K2)	Tape cylinder	Output	C4	4	Optional
P5	20	8 (K1)	Sledge blade	Output	V7		Not connected
P5	19	7 (K1)	Pad cyl. 3	Output	V6		Optional
P5	18	6 (K1)	Pad cyl. 2	Output	V5		Optional
P5	17	5 (K1)	Pad cyl. 1	Output	V4		Optional
P5	16		AGnd	-			
P5	15	6 (K2)	Table 2	Output	C3	3	
P5	14		AGnd	-			
P5	13	4 (K2)	Table 1	Output	C2	4	Also C3 pin 5
P5	12	1 (K2)	AGnd	-	C1	1	
P5	11	4 (K1)	Sledge pad	Output	V3		
P5	10	1 (K1)	AGnd	-	V1-V7		
P5	9	3 (K1)	Blade	Output	V2		Not connected
P5	8	2 (K1)	Pad	Output	V1		
P5	7	8 (K2)	Tape back	Input	C4	3	Optional
P5	6	7 (K2)	Tape front	Input	C4	2	Optional
P5	5		N.C	-			
P5	4	3 (K2)	In pos	Input	C2	2	
P5	3	5 (K2)	Wait	Input	C3	2	
P5	2	2 (K2)	Pedal	Input	C1	3	
P5	1	11 (K2)	24Vdc	-	C4	6	Optional
CONNECTOR	PIN	CABLE NO.	SIGNAL	IN-/OUTPUT	DESTINATION	PIN	REMARK

RS8	1	Reed switch	W0952022180	Metalw.	
RS7	1	Reed switch	W0952022180	Metalw.	
RS6	1	Reed switch	W0952022180	Metalw.	Not connected
RS5	1	Reed switch	W0952022180	Metalw.	Not connected
RS4	1	Reed switch	W0952022180	Metalw.	
RS3	1	Reed switch	W0952022180	Metalw.	Not connected
RS2	1	Reed switch	W0952022180	Metalw.	Not connected
RS1	1	Reed switch	W0952022180	Metalw.	Not connected
V8	1	Coil softstart	S22CG02AJP	Numatics	
			Valve included		
V7	1	Coil	W0215000101	Metalw.	Not connected
V6	1	Coil	W0215000101	Metalw.	Not connected
V5	1	Coil	W0215000101	Metalw.	Not connected
V4	1	Coil	W0215000101	Metalw.	Not connected
V3	1	Coil	W0215000101	Metalw.	
V2	1	Coil	W0215000101	Metalw.	Not connected
V1	1	Coil	W0215000101	Metalw.	
T1	1	Transformer	9815524	Jaspers	
S5	1	Foot pedal	6210-0027	Herga	
S4	1	Emergency sw	ZB2 BS44	Telemec.	
	2	Switch unit	ZB2 BE102	Telemec.	
S3	1	Safety switch	V-163-1C5	Omron	
S2	1	Safety switch	V-163-1C5	Omron	
S1	1	Power switch	C7053SANAB	Feller	
F1	1	Fuse	2A Slow		
NF1	1	Net filter	PS20/A0620/63	Timonta	
MB1	1	PC board	020219/1	TTN	
ITEM	PCS	PART NAME	BRAND CODE	BRAND	REMARK

MOD.NR. & DATE		COM.TOL.	MAIN DRAWING	SUB DRAWING	DRAWER	SCALE	FORM
1	.	±0.2			F.J.	1:1	A4
2	.	COM.ROUGHNESS			DATE	21-06-04	
3	.	...			DRAWING NAME	Electronic parts list	
4	.	AMER. PROJ.			DRAWING NUMBER	STL090120E	

5555 XD Valkenswaard
tel: 040-2014436
fax: 040-2044758