



All persons involved in installation, commissioning, operation, maintenance and repair of this product should be made available to these instructions.



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Introduction

The products by Thermopatch are designed with special attention to your convenience. Should you discover any fault or damage upon receipt of this product, please contact your local Thermopatch vendor.

The manual has been prepared in accordance with NEN 5509 and in conformity with the Machinery Directive 2006/42/EC.

This user manual is intended not only for all users of the machine, but also for those who install and maintain the NL-24 Pro. The goal is to familiarize you with the operation, to provide for safe working instructions and guidelines for maintenance.

ATTENTION!

In order to make safe and optimal use of the NL-24 Pro, it is important to take note of and understand the contents of this manual.



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1. General Description

The NL-24 Pro is a practical and universally applicable heat seal machine. This machine can be used to apply patches, textile emblems, heat seal transfers, in short all Thermopatch materials suited for marking and mending to textiles.

1.1 Levering

The NL-24 Pro machines are supplied in a card board box. The NL-24 Pro contains following items:

- NL-24 Proheat seal machine
- Foot switch
- Power cord
- Ø 6 mm air tube, 2,5 m

• CE declaration of conformity with serial number

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- Quick installation guide
- Quality checklist
- The manual incluiding the CE declaration of conformity, on USB

1.2 Warranty

Thermopatch points to its warranty and product liability conditions as laid down in our terms and conditions. These can be obtained from your Thermopatch supplier.

2. Intended use

The NL-24 Pro heat seal machine is a practical and universally applicable heat seal machine. The machine has been designed for the application of repair patches, labels and other Thermopatch heat sealable products.





3. Assembly and installation

3.1 Assembly and installation

1. Electrical installation

Take the NL-24 Pro from its box and place it on a stable work bench, near an earthed wall socket. Connect the machine with the supplied power cord to the electrical mains (230V alternating current). The NL-24 Pro is earthed and provided with two fuses (4A T (slow).

2. Pneumatical installation

It is very important that the NL-24 Pro is provided with clean, dry air. The water condenser is an additional safety measure. Provide air pressure of 2 - 6 bar from the compressor or its own local air supply.

Connect the air tubing with a diameter of 6 mm to the compressor or to your own local air supply, and to the pressure regulator mounted on the back of the machine.

3. Foot switch

The NL-24 Pro has been issued with a foot switch. Connect the foot switch by pushing the connector into the socket on the back of the machine. Secure the connection by fastening the ring by hand.



ATTENTION!

All connections are placed on the back side of the machine



4. Operating instruction

4.1 Operating the NL-24 Pro

You can start operating the NL-24 Pro as soon as it is connected to both the electricity mains and to an airsupply which provides clean and dry compressed air set at a maximum of 6 Bar. Switch on the machine by pressing the on/off (I-0) switch, which is placed on the back of the machine, to "on (I)". Wait until the set temperature has been reached, which will take about one minute.

Starting up:

At start up the display will show the Thermopatch logo. The element is now heating up to the set temperature and the display will show information about the settings.

Stand-by

When the machine is idle for a longer period than the set time for Stand-by, it will go into power saving mode. The factory set time for Stand-by is set after 15 minutes.

The heating element will be deactiveted if this function is enabled. De fabrieksinstelling voor Standby staat op 15 minuten.



ATTENTION!

The NL-24 Pro cannot be in operational mode if you want to change settings.

4.1.1 The control unit and display

The display of the control unit will show the version number of the firmware on display; this will dissapear after about 3 seconds and then it shows the last setting in which the machine was used. If any failures are found at starting up, these will be shown in the display and the machine will not heat up.

See paragraph 4.4, page 8; the cause of the error code needs to be repaired first. The display will show the actual temperature and is ready for use.



4.1.2 Settings

Presented in the display:

Machine in operational mode:

The set temperature: The supplied air pressure:

• The set time:

• Day counter:

The setting of the heat sealing time and temperature is dependant on the labour that has to be executed and the materials to be marked. These can be adjusted by the operator. By pressing the "AUTO" button the NL-24 Pro can be entered into and taken out of operational mode. Only when the NL-24 Pro is taken out of oprational mode, parameters can be altered and presets can be chosen (nr. 1-5) by pressing the + button.

The 24 Ergo Seal has been provided with following 5 preprogrammed presets:

Preset 1, for Thermopatch label products for high temperature applications (up to 95 °C washing):

- Sealing time: 14 seconds • Temperature: 204 °C • Energy saving mode: 15 minutes • Minimum - Maximum pressure: 2.0 - 6.0 bar (0.5 kg cm² minimum) • Set pressure: 5.0 bar Preset 2, for emblems and transfers for high temperature applications (up to 95 °C washing). • Sealing time: 14 seconds • Temperature: 195 °C • Energy saving mode: 15 minutes • Minimum - Maximum pressure: 2.0 - 6.0 bar (0.5 kg cm² minimum) • Set pressure: 5.0 bar Preset 3: for emblems and transfers for high temperature applications (up to 95 °C washing) • Sealing time: 12 seconds 185 °C • Temperature: • Energy saving mode: 15 minutes • Minimum - Maximum pressure: 2.0 - 6.0 bar (0.5 kg cm² minimum) • Set pressure: 5.0 bar Preset 4: for emblems and transfers for medium to low temperature applications (tot 60 °C washing) • Sealing time: 15 seconds 150 °C • Temperature: • Energy saving mode: 15 minutes • Minimum - Maximum pressure: 2.0 - 6.0 bar (0.5 kg cm² minimum) Set pressure: 5.0 bar **Preset 5**: for emblems and transfers for low temperature applications (up to 40 °C washing) Sealing time: 15 seconds • Temperature: 130 °C Unlock the settings screen • Energy saving mode: 15 minutes with the 'AUTO' -button 2.0 - 6.0 bar (0.5 kg cm² minimum) Minimum – Maximum pressure: Set pressure: 5.0 bar
 - P1 P2 P3 P4 P5 **50 12**

Select the required preset by pushing the + button

8

see preset in °C

see preset in sec.

5 bar

Locked



4.1.2.1 Temperature setting

The standard factory setting is 204 °C. When switched to the stand-by mode, the heating element is switched off. Stand-by is activated when the machine is left unused for more than 15 minutes.

The temperature settings can be adjusted after the machine is taken out of operational mode by using the AUTO button.

By pushing the temperatue button the set temperature will appear on display which can be adjusted by using the + or - keys.

Push the button again, or do not touch the keys for more than 3 seconds after which the set temperature will be stored.

You can toggle between °C en °F by keeping the temperature button for 3 seconds.

4.1.2.2 Time setting

The standard factory time setting is 12 seconds. The time settings can be adjusted after the machine is taken out of operational mode by using the AUTO button.

By pushing the time botton once, the set time will appear on display. By pushing the + or - buttons the setting can be adjusted.

Push the time button again, or do not touch the keys for more than 3 seconds, to store the time settings. The Stand-by timer can be set by pushing twice after which the delay time will appear on display.

By pushing + or - the setting kan be adjusted and the machine will de-activate when idle after this time setting.

When the machine is in Stand-by mode it can be re-activated by simply pusing any key on the display.

4.1.2.3 Pressure settings

The standard factory setting for pressure is set at 5 bar. The pressure is easily set to your requirements by turning the air pressure adjustment knob of the air pressure regulator placed on the back of the machine. The adjusted pressure setting will be on display.

The NL-24 Pro has a pressure guard which is set to a minimum of 2,5 and a maximum of 6,0 bar. At too low or too high pressure the machine cannot be operated and a failure code will be on display(4 or 5).

The setting of the lower limit for the pressure setting is done as follows:

by pushing the pressure pressure button once, the set lower limit appears on display. This can be adjusted by pushing + or -. When the lower pressure limit is set to 0, the the pressure guarding system is de-activated.

The setting of the upper limit for the pressure setting is done as follows: by pushing the pressure button twice, the set upper limit appears on display. This can be adjusted by pushing + or -.



The closing and opening speed of the press arm can be adjusted by means of two throttle valves. The access these, the back platen of the machine has to be removed. One valve is for setting the opening speed, the other is for setting the closing speed.

By carefully adjusting the required changes in speed can be set.

- Before adjusting, loosen the lock nut on the valve and tighten again after adjusting of the setting.
- By turning the turning knob of the valve clockwise of the concerning throttle valve clock wise, or counter clockwise, the press arm will open faster, or slower.



Remove the plug from the wall socket before removing any screws and housing parts.



4.2 Interrupting the work cycle of the NL-24 Pro

In order to interrupt the work cycle of the machine at any time, push any button on the key board or the **emergency stop button** which is placed on the sealing arm on the front end of the machine.

The machine will shut down immediately and will end the started work cycle and open up. To reactivate the emergency stop button has to be turned clockwise (arrow). It will start up again and be ready for use after reaching the set temperature.



4.3 Reading the counters

By pushing + or - simultaneously the total counter will appear on display. This value cannot be re-set.

By pushing + or -, either one of the two periodical counters can be entered. These can be re-set by keeping the concering button pushed until 0 appears.

The day counter on display will be automatically reset after the machine is switched off.

4.4 Error messages

On display the following error codes can appear:

- 1 = open temperature sensor
- 2 = temperature sensor short circuit
- 3 = heating element defective
- 4 = pressure too low
- 5 = pressure too high
- 6 = safety frame activated



4.4 Switching from pedal control to manual control from V 1.52

The NL-24 is designed for pedal operation and this is the optimum working method with this type of machine.

If the pedal no longer works or because you prefer to work with manual operation, the machine can also be set to manual operation from software version V1.52. To do this, follow these steps:

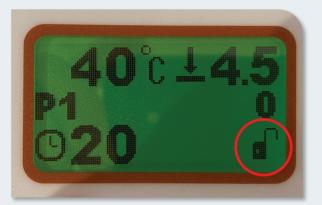
• Check the version number of the machine software (picture 1)



• Machine is standard 'locked' (photo 2: lock closed)



• Short press [AUTO] to release the machine. (photo 3: lock open)





• Then press the [AUTO] button for 2 seconds until you hear a beep. (photo 4)



• Then there is a hand symbol in the display that indicates that the manual function is working. (photo 5 hand: symbol)



• Then briefly press [AUTO] again to 'lock' the machine again. (photo 6: lock closed)





• To operate the machine manually, press the [PRESS] key for 2 seconds, until you hear 2 short beeps, then release. (photo 7)



• The machine will start a press cycle.



5. Overview of safety measures and warnings

5.1 Safety

De NL-24 Pro is fitted with all required safety measures to ensure safe working as required by European safety guidelines.

The safety frame

The heating platen of the NL-24 Pro is protected by a safety frame. When this frame is touched the machine will interrupt the work cycle and open up immediately. In order to resume work switch off the machine and switch it on again.

The emergency stop button

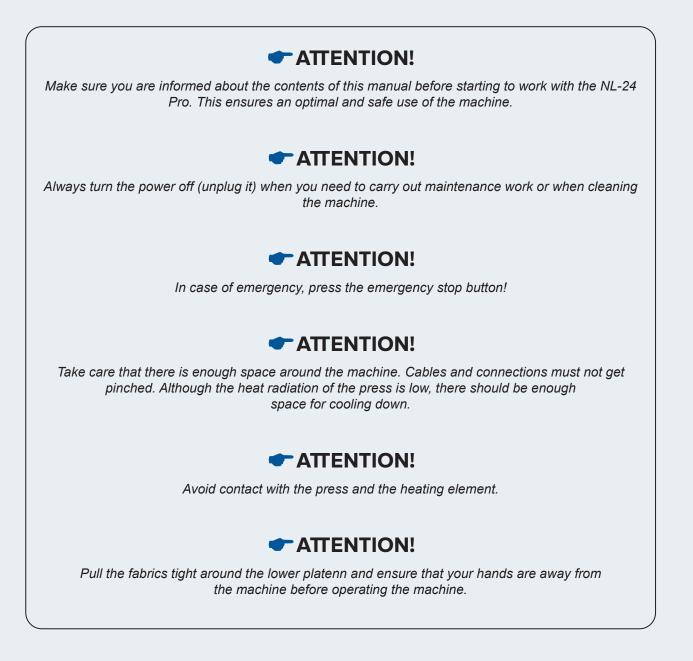
In accordance to the safety measures required by the conformity with the Machinery Directive, an emergency stop button has been installed, to be able to intervene with production in case of unforeseen events. See chapter 4, paragraph 4.2.

Warning symbols

For enhanced security following warning symols are mounted on the machine:









6. Technical specifications

6.1 Specifications of the NL-24 Pro

Energy use at heating up	800 Watt/240 Volt
Voltage	230 Volt
Maximum temperature setting	230°C
Maximum allowed temperature	270°C
Height, open	555 mm
Height, closed	315 mm
Width	225 mm
Depth (with connections)	510 mm
Net weight	20 kg
Size sealing pad	140 x 140 mm
Fuses	2 x 4A T (slow)
A-weighted noise level	< 70 dB(A)
Supplied pressure	< 6 bar
Work pressure	4-6 bar
Safety pressure settings (min/max)	2 / 6 bar
Safety pressure settings (min/max)	2 / 6 bar
Compressed air use (per cycle, 5 bar)	2,6 l/cycle
Heat sealing time stepless adjustment	3 – 60 seconds

7. Transport and storage

7.1 Transport

When the machine needs to be moved, Thermopatch recommends to use the original packaging.

7.2 Storage

When the machine needs to be stored, Thermopatch recommends to use the original packaging. The machine should be stored on a pallet, off the floor, in dry conditions.



8. Maintenance

Before starting any maintenance or repairs, make sure that the machine has finished its work cycle.Depending on the planned job you want to perform both the air – and electrical supply can be disconnected. The air cylinder and other parts of the machine are maintenance free and the bearings are self lubricating. The precondition for a good working performance is the supply of dry and clean compressed air. The mounted water condenser and pressure regulator is an added safety feature. Moisture and unclean air disrupt the self lubricating properties of the air cylinder. Arrange for your maintenance to be performed by qualified staff or a maintenance service.

WARNING!

The supplied pressure should not be higher than a maximum of 6 bar



Remove the plug from the wall socket before starting loosening any screws and housing parts

Temperature:

The temperature of the heating platen can be tested regularly by using temperature indicator strips. These can be obtained through your Thermopatch supplier.

Teflon cover:

The teflon sheet that protects the element has to be cleaned regularly to prevent sticking of labels and patches or transfer of dirt to the garments. Clean the teflon cover with a dry and clean cloth when the machine is still warm. Repeat the procedure regularly as often as is necessary. Damaged or soiled teflon protection should be replaced. These can be obtained through your Thermopatch supplier.

Sealing pad:

Clean the sealing pad while still warm, with a clean lint free piece of cloth. Clean it as often as is necessary. Damaged or soiled sealing pads have to be replaced. These can be obtained through your Thermopatch supplier.

Replacement of the teflon protection and the sealing pad:

The teflon protection sheet and the silicone rubber sealing pad have to replaced regularly. At replacing these consumable parts the machine should be cooled down sufficiently to avoid burns from the heating platenn.

Remove the teflon protection cover like a band aid when the platenn is still warm to the touch. Remove any glue residue from the heatin element carfully. When placing the new self adhesive teflon ensure a smoot and clean surface in order to have a bubble free adhesion.

The sealing pad can easily be worked loose with a screwdriver after which the replacement sealing pad can be clicked into place on the mounting platen.

Both the teflon cover and the sealing pad are available through your Thermopatch supplier.



Air filter pressure regulator:

The air filter pressure regulator (1) has to be checked daily and be cleaned by turning the plastic nut underneath to open.

Replacing the fuses

Ensure that the NL-24 Pro is disconnected from the electrical supply and the plug is unplugged from the wall socket. Replace the fuses 4 A (slow) (2) by taking them from the power entry which is mounted on the back of the machine. Before reconnecting the plug into the wall socket, make sure the power entry shows the right voltage setting (230V). If the wrong setting is shown, remove the fuse holder, turn it 180° and insert it back in again. After the fuses have been replaced the machine can be reconnected to the wall socket and switched on again.



Please ensure that the right voltage annotation is shown before powering the machine



ATTENTION!

Flip open for access to the fuse holder make sure the power entry shows the right voltage setting reconnecting the machine!



9. Technical annexes

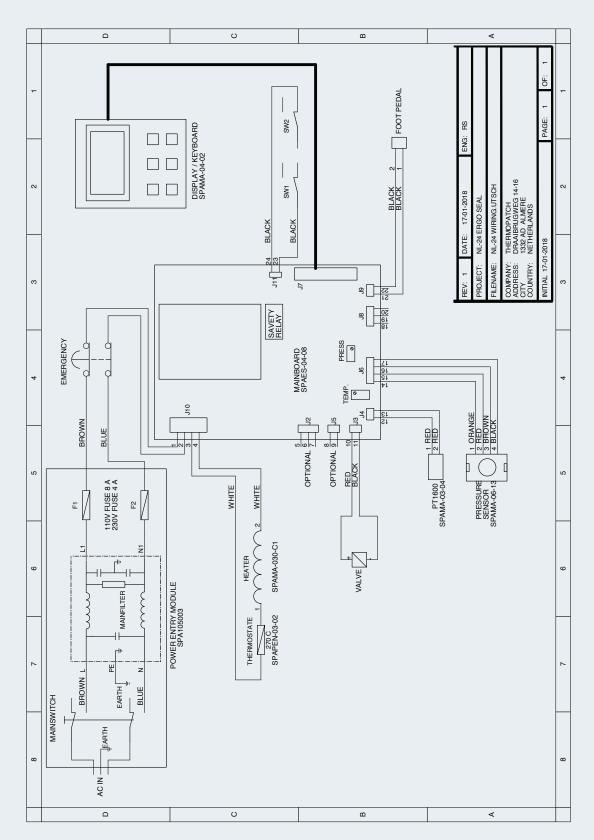
9.1 Spare parts

Sealing pad (other sizes are available) SPAMA-01-04-VA SPAMA-03-21-V Teflon cover element Heating element SPAMA-030-C1 Temperature sensor SPAMA-03-04 SPAES-038 Front cylinder SPAES-039 Main cylinder SPA-FUSE-4T Fuse 4A T(slow) Air valve 24V SPA106005 SPAPEN-03-02 Thermostat 270 Mainboard SPAES-04-08 SPAMA-04-02 Display board

https://www.thermopatch.com/en/products/spare-parts/

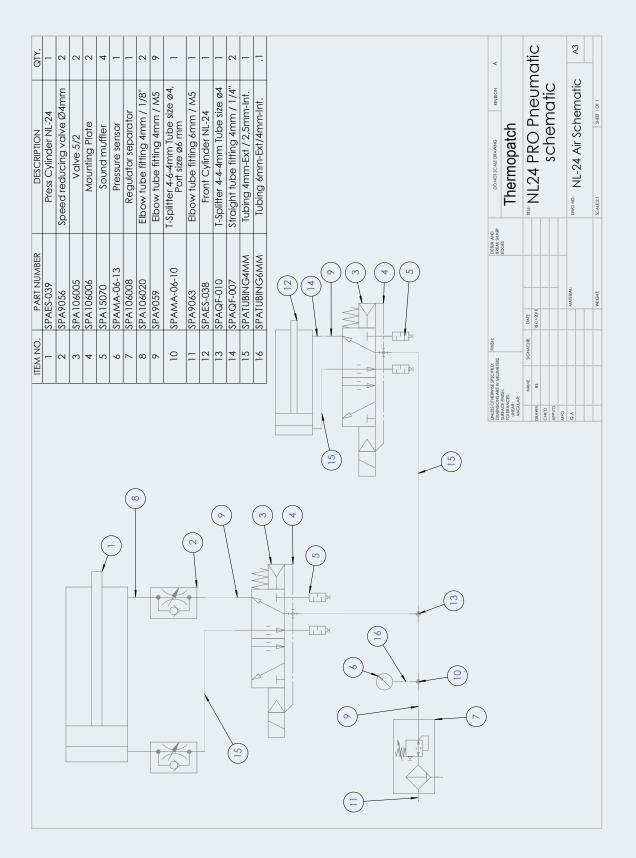


9.2 Electrical wiring diagram





9.2 Pneumatics diagram





10. End of life

Choose to dispose of the machine responsibly when it has reached its end of life. Electrical machinery, accessories and packaging should be recycled as much as possible in an environmentally responsible manner.

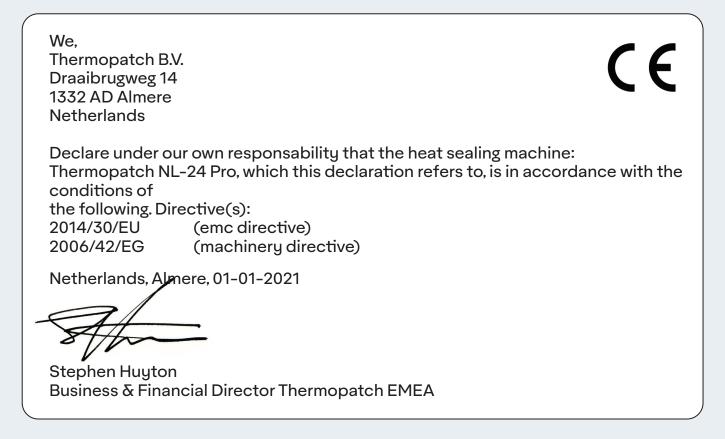
- Dismantle the machine groups: steel parts / pneumatic components / electrical components
- These can be separated and returned for recycling.



ATTENTION!

Always dispose according to current and locally applied guidelines for health and safety and disposal requirements.

11. Declarations of conformity





ŪΚ We. Thermopatch BV Draaibrugweg 14 1332 Almere Netherlands declare that the DoC is issued under our sole responsibility and belongs to the following product: Thermopatch NL-24, which this declaration refers to, is in accordance with the conditions of the following guidelines: Electromagnetic Compatibility Regulations (EMC) 2016 Electrical Equipment (Safety) Regulations (LVD) 2016 Supply of Machinery (Safety) Regulations 2008 The Netherlands, Almere, 01-05-2022 Stephen Huyton Business & Financial Director Thermopatch EMEA

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For any warranty Thermopatch B.V. refers to its general terms and conditions.

We can confirm that the machines we supply conform to CE when in standard configuration. Using sealing pads of any format other than the standard supplied with the machine may render the CE declaration invalid.

Thermopatch accepts no responsibility for any damage or injury that may result from possible non-conformity.

Choosing an alternative configuration other than the standard is at the customer's own responsibility.

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