

Thermoseal NL 15R

User's Guide

15

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Preface

Dear user,

Welcome to the large group of Worldpatch users! The product you have bought has been taken good care of since the moment it was produced. We do all we can to ensure that you will have much profit from this Worldpatch product.

In the first place we help you along with this user's guide. Worldpatch products have been developed with extra attention for your convenience. However, we suggest that you go through this manual, to prevent accidents while using the machine.

In this manual you will find information concerning the NL-15-R of Worldpatch in Almere (the Netherlands). This user's guide is meant for all users of the machine, but also for the people who will install and maintain the NL-15-R. You can read about the installation, the maintenance and the various components of the NL-15-R, but of course also about operating the machine.

In case there were any damages on receipt of your product, please contact your Worldpatch distributor.

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1. Introduction Thermoseal NL 15R

1.1 What did you receive?

The Thermoseal NL 15R has been packed in a cardboard box. The following articles should have been delivered:

- ◆ Thermoseal NL 15R heat seal machine
- ◆ Control panel 'smart box' (already installed)
- ◆ Water condenser with pressure regulating valve (already installed)
- ◆ Foot pedal with cable and plug
- ◆ User's Guide

If one of these articles is missing, please contact your Worldpatch distributor.

1.2 Your supplier

Worldpatch

Draaibrugweg 14, 1332 AD Almere (the Netherlands)

PO Box 50052, 1305 AB Almere (the Netherlands)

Telephone number: ++31 36 5491177

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You can easily order supplies or components for the NL 15R from your Worldpatch distributor by filling in the order form (page 23), preferably by fax. Please write down the correct part from the list on page 21 of this user's guide and give the quantity of the items you want to order.

1.3 Specifications of the Thermoseal NL 15R

The pneumatic NL 15R is a practical and universal heat seal press with two press pads for optimal use. Therefore, you do not have to wait during the press cycle, but can prepare the next article.

Textile labels, company emblems, repair patches, transfers, in short all Worldpatch materials for marking and repair are easily and permanently pressed on all types of fabric. The machine is operated with a foot pedal, but can also be set to automatic operation. In that case, the press cycle is performed automatically when the swiveling arm comes in the end position.

The adjusted time, pressure and temperature can be read from the control panel. If the pressure or the temperature are incorrect, or if the machine gets jammed, you cannot patch.

The Thermoseal NL 15R meets the German GS standard under no. 93032 and it also meets the European CE criteria 89/392/EWG and 91/368/EWG.

The machine opens immediately by touching the contact area below the safety frame. Another safety measure that is available is the mechanic switch.

Because of the low heat radiation the machine ensures a lower energy consumption and for the user a strongly reduced exposure to heat.

Attention! In order to achieve the required pressure, the NL 15R must be connected to a compressor with a pressure of at least 6 bar. The air must be dry and clean. You can install a control unit that prevents the pre-pressure from exceeding 6 bar.

Specifications

Power consumption.....	550 watts
Power supply	220/240 volts
Fuses.....	2 x 2.5 amps (slow)
Operating temperature.....	204 °C
Safety temperature	190 - 220 °C
Pre-pressure	< 6 bar
Pressure range.....	3-6 bar
Safety settings pressure.....	3 bar (min.) / 6 bar (max.)
Air consumption per cycle	1.5 litre
Height.....	600 mm
Width.....	170 mm
Depth (connections included).....	670 mm
Press time	1 second - 4 minutes
Press pad dimensions	150 x 125 mm
Net weight	80 kg
A-weighted noise level.....	< 70 dB (A)

1.4 Safety

The Thermoseal NL 15R meets the German GS standard under no. 93026 and also meets the European CE criteria 89/392/EWG and 89/368/EWG. In normal circumstances almost nothing can go wrong. For safety reasons, however, we provide you with some instructions by means of which you can keep the risks to a minimum.

- ◆ Always switch off the power (pull the plug out of the socket) when you do maintenance work or clean the machine.
- ◆ Take care that there is enough space around the machine. Cables and connections must not get jammed. Although the heat radiation of the press is low, there should be enough space for cooling down.
- ◆ Avoid contact with the press element and the heating element.
- ◆ Pull the fabrics tight around the press pad and ensure that your hands are away from the pad before operating the foot pedal.

1.5 Conditions for guarantee and product liability

Worldpatch guarantees a correct working of the machine and its components for twelve months.

2. Installation

2.1 Handling instructions

When you receive the machine, it is packed in a cardboard box. If you have to replace the machine at a later time, it is recommended to pack it in a similar way. Please let the press cool down first.

2.2 Installing the machine

Take the Thermoseal NL 15R out of the box and put the machine on a work table near an earthed socket. Take care that there is enough free space around the machine. Also take care that there are no items near the machine that are sensitive to heat radiation.

The Thermoseal NL 15R should be connected to the electricity grid (220 V alternating current).

Use the machine's power cable to provide current. The NL 15R is an earthed machine and has been provided with two fuses of 2.5 amps (slow).

2.3 Assembly

In order to operate the NL 15R without trouble, it is very important that the machine uses **clean, dry air**. The available water condenser is only an extra safety measure for your machine. The user must take care that the air pressure does not exceed 6 bar. In order to work without problems, there should be an air volume of 0.28 litres per second.

- a Connect an air hose with a diameter of 6 mm to the compressed air unit in your company and also connect it to the condenser of the NL 15.
- b The air and electricity can be supplied from above, below and also from the back of the machine.
- c Install the foot pedal in such a way that you can easily operate it in both positions. Lead the cable underneath the table to the back of the machine. The connection is under the bottom plate, near the electricity box.
- d Place the plug in the machine at the back and screw the locking ring tight. Install the cable at the back of the machine in such a way that it is not tight.
- e Put the second rubber plate on the left holder.

3. How to operate the NL 15R

3.1 Starting with the NL 15R

You can work with the NL 15R when the machine is connected to the electricity grid (see chapter 2).

1 Set the air pressure.

Keep the requirements and procedures in mind which have been discussed in chapter 2.

2 Turn on the NL 15R.

Put the plug in the socket (220 volts). You can find the on/off switch near the control panel.

3 Wait until the standard temperature has been reached.

This will take ten to fifteen minutes. The standard operating temperature has been set to 204 °C.

4 The press can be operated now.

3.2 Function

Immediately after turning on the NL 15, a number for the machine will appear in the LED display of the 'smart box'. For the NL 15, it is number 15. The programme version of the electronics is subsequently shown.

A dot in the field of the upper plate heating and two vertical lines indicate that the machine is heated. You can only operate the NL 15 when the temperature is displayed. This will only happen if the entire display is filled with lines and the default minimum temperature has been reached.

If the pressure is not correct while warming up, the dot and the two lines in the field PRESS. will blink. After warming up, the message 'S' with the number 5 or 6 will appear, instead of the temperature. This message will be alternated with the value of the incorrect pressure.

It is possible to test and adjust the pre-pressure. If the pressure on the press cylinder is too low, you can adjust the pressure regulating valve, which has been built in at the back of the machine.

If any errors are noticed during the warming up of the NL 15, these will be indicated as failures as well. See page 13 about the error codes of the 'smart box'.

After the warming up, the control panel normally shows a temperature of about 204 °C, after which the machine can be operated. This is done by the foot pedal.

The NL 15 has two press plates (shoes) on which you can alternate the sealing. A press cycle can only be started if the swivelling arm is at the end position. A built-in contact switch takes control of this.

You can turn off the sensor when the frame of the sensor is activated by metal parts like zips and buttons. You can turn it off by means of the switch called 'SENSOR', above the control panel. Press this key. If the diode does not light up, it means that the sensor is off.

You can turn the NL 15 on automatic operation with the switch 'AUTOMATIC' (the diode lights up). As soon as the swivelling arm reaches the left or right end position, the press cycle will automatically be started.

If the automatic operation is turned on, you cannot turn off the sensor function, for safety reasons. The sensor is activated automatically.

If you pressed the 'EMERGENCY STOP' key, this can only be undone by turning the knob to the left.

3.3 Checking the pre-pressure

For safety reasons and for the protection of your machine, you should check the pre-pressure after warming up the NL 15 by means of the control panel.

- 1 Press the symbol key 'PRESS.' in the display of the 'smart box'. The actual pressure will now be shown.
- 2 Push the knob of the pressure regulating valve (near the air connection) down and turn it to the left as far as possible.
- 3 The pre-pressure will now be shown. It must not exceed 6 bar ! If there is no regulating valve, it should be built in by your technical department.
- 4 Having finished the check, set the valve of the NL 15 to an operating pressure of 5 bar again and fasten the locking knob once more.

3.4 The control panel 'smart box'

The pressure, temperature and time are shown in the LED display. The minimum, maximum and default values for temperature and pressure have been set by the manufacturer. However, they can be adjusted for each user. Read the instructions on page 13.

The settings of the press time depend on the operations to be done and on the materials that will be used.

3.5 Safety facilities

The NL 15 has been equipped with a double safety structure, namely sensor technique and mechanical technique. The upper shoe of the NL 15 is enclosed by a safety frame. The machine can be opened with a light touch. The control panel confirms the touching of the frame with a beep. The machine can only be operated again after a short period of time.

It may be that you correctly set all instructions, but that the machine opens immediately without sealing. The reason for this can be that the sensor is activated by metal parts, like zips, buttons, etc. If you cannot put the fabrics on the press pad in another way, you should switch off the sensor when using these materials. At the back of the machine, there is a switch, just above the connection of the foot pedal. Do not forget to switch on the sensor again ! It is better to work with the sensor as protection for the hands.

The sensor is a very sensitive element. Its sensitivity is set by the manufacturer under normal conditions. However, it cannot be prevented that conduction can occur by certain rooms or people, which causes the sensor to be activated. Turn to the technical department of your company to correct the sensibility of the electronics.

When the safety frame is operated mechanically (which means that it is raised), the Thermoseal NL 15 is turned off and the machine is opened. The machine must be turned on again.

3.6 Temperature settings

The default operating temperature of 204 °C has been set by the manufacturer. If you want to, a different control panel with another operating temperature and a larger temperature range can be ordered.

Do not try to change the programming of the 'smart box' yourself. In case you want to adjust the operating temperature above or below the default temperature range, please contact your Worldpatch distributor.

The default temperature range is: a minimum of 189 °C, a maximum of 219 °C. If the temperature exceeds this range, the NL 15 cannot be operated. The temperature settings can be adjusted with the control panel, the 'smart box', see page 15.

3.7 Temperature check

The temperature is displayed digitally by pressing one key. An additional check of the temperature between the press plates can be performed by means of Thermolabels.

To check the temperature, do the following:

- 1 Let the machine warm up for about 30 minutes.
- 2 Set the time to 5 seconds and let the machine close.

- 3 After opening the machine, put the Thermolabel on the press pad and let the machine close again.
- 4 Take the label away immediately after opening the machine.

The optimal temperature has been reached when the fields below the field 182-204 °C are black. The lower limit has been reached when all the fields of 182-199 °C are black and the field below 204 °C is dark grey. The upper limit has been reached when all the fields of 182-204 °C are black and the field below 210 °C is dark grey.

3.8 Setting and adjusting the pressure

The working pressure of the machine has been set to 5 bar. The pressure regulator on the machine only influences the pressure on the press cylinder. The opening and closing of the NL 15 is done with the pressure that is supplied by the machine.

The NL 15 has a pressure safety range. This means that a maximum pressure of approximately 6 bar and a minimum pressure of about 3.8 bar is allowed. When the air pressure exceeds these limits, the machine cannot be operated. You can set the pressure with the control panel, see page 17.

3.9 Time settings

The default setting of the NL 15R is 12 seconds. Adjusting the settings can be done with the control panel, the 'control box', see page 16. You can find directions for the time settings of the various products and materials on page 16.

3.10 Protection against overheating

A safety thermostat has been built in on the upper shoe of the machine to prevent overheating. This thermostat interrupts the power supply at a temperature of about 260 °C. After the machine has cooled off to the normal temperature, the thermostat automatically turns on the heating again.

The upper shoe must be disassembled to replace the safety thermostat (component no. AL 49999). Unscrew the safety frame first. Then, unscrew the four screws in the corner of the insulating plate. The thermostat has been built in at the back of the heating plate. Loosen both flat-headed screws and take the component out. Screw the heating plate again during assembly and correctly install the insulating part in again.

Attention ! Pull the plug out of the socket before unscrewing the crews!

4. Maintenance

4.1 General

Take care that the work cycle of the machine has been finished before you start working with it. Depending on the actions that must be done, the power supply or the air supply can be disconnected.

All pneumatic components, like the air cylinder, magnet valve and pressure sensor are installed in the swivelling arm of the NL 15. The electronics and the electricity have been stored in a separate box below the back plate of the machine.

a Mechanism

The air cylinder and other parts of the machine do not need maintenance. The bearings are self-lubricating. However, it is a condition that dry and clean air is used for the heat seal machine. The available water condenser is an extra safety measure. Your company should have a well-equipped maintenance service to maintain the machine. Humidity and dirty air disturb a permanent lubricating of the air cylinder. The pre-pressure must not exceed 6 bar !

b Temperature

The temperature of the press plate can be tested regularly by means of Thermolabels.

c Teflon coating

The Teflon coating of the heating plate must always be absolutely clean. If not, patches and labels will stick to the upper plate, or there will be impurities on the products. You can observe this when opening the machine. The fabric is pulled up a little from the lower shoe. Clean the pad with a dry cloth when the machine is still warm. Clean several times a day ! When the Teflon is damaged or cannot be cleaned anymore, replace it immediately.

d Press pad

Clean the coating on the lower shoe, the press pad, regularly with a dry cloth while the pad is still warm. Zips, buttons, staples, etc. must not be put on the pad in order to prevent holes and tears. Never clean the press pad with solvents and thinners or other chemicals. This would absolutely affect the coating. Do not pull the fabrics from the pad after the sealing process, but take it off !

e Replacing the Teflon coating and the lower press pad

The Teflon coating of the upper shoe and the lower press pad must be replaced regularly, depending on their condition. Both are adhesive. The heat seal machine must be cooled down to replace the Teflon ! Pull the old coating off like a plaster. Carefully remove the glue layer from the metal surface. The surface must be absolutely clean and even, so that the new Teflon can stick well. You can find the components on page 20, Accessories and components.

f Air filter

Empty the air filter and, especially, the water condenser daily.

g Cleaning

Only parts that can be reached from the outside of the machine, must be cleaned.

4.2 Replacing the control panel the 'smart box'

Repair of the control panel should be done by the manufacturer ! It is better to order replacement electronics, because they can be installed easily and quickly.

Replacing the 'smart box' can be done as follows:

- 1 Unscrew the cover of the electricity box from the underside. The part on the cover contains the power supply. The 'smart box' is stored in the upper part of the box.
- 2 Loosen both nuts and pull off the plug, after which you can take out the power supply.

The display that is visible from above, is connected to the control panel with a cable, and can be replaced if it is damaged. In this case, the upper part of the electricity box must also be taken out. To do so, unscrew the 3 nuts of the incoming cables, that run via the table. The operating field of the 'smart box' consists of self-adhesive covering.

Attention ! Pull the plug out of the socket before opening the electricity box !

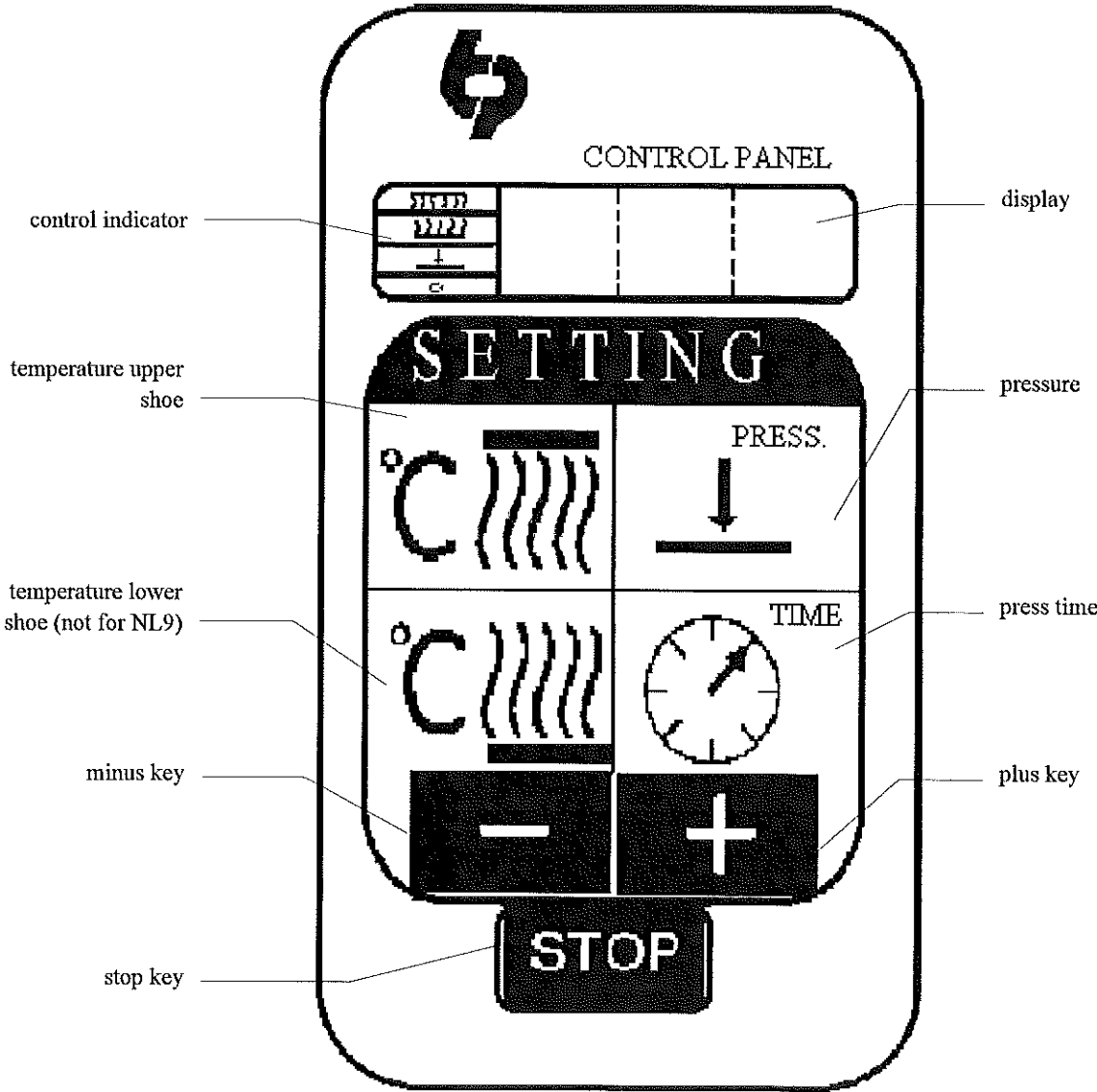
After installing the 'smart box', turn on the machine and check the message in the display to see if the new electronics are fit for model NL 15 and whether the programme version for your machine is correct or not.

Each 'smart box' is adjusted by the manufacturer to the machine concerned. The spare part has only default settings. If you want specific settings, replacing the control panel has to be done by the Worldpatch distributor.

Please check the adjusted time, pressure and temperature after the warming up of the machine and set these values to the values you wish to have.

5. Functions of the 'smart box'

5.1 Illustration of the 'smart box'



5.2 Messages in the LED display

A description is given below of the messages in the display which appear immediately after turning on the machine. Further, we will discuss some failure codes that can be displayed on the control panel display.

Messages

After turning on the machine, the address for the machine for which the electronics has been set, is first shown in the display.

15 is model NL 15

Secondly, the programme version of this 'smart box' is displayed.

21 is version 2.1.

Thirdly, the normal programme functions are displayed.

Failure codes

There are 7 different failure codes that can be displayed.

0	Safety switch not in end position or failure in the 24 Volt circuit of the electronics.
1	Temperature sensor in upper shoe not connected.
2	Temperature sensor in upper shoe is defect.
3	Not displayed for the NL 15.
4	Not displayed for the NL 15.
5	Pressure too low.
6	Pressure too high.

The failures are indicated by 'S -'. The notation is 'S', followed by a dash and a number 0-6.

This message is alternated with the incorrect values that are measured by the electronics.

Some examples:

CODE	EXPLANATION
'S - 5' Alternated by '2.8'	Failure no. 5 Pressure too low, only 2.8 bar.
'S - 1' Alternated by '238'	Failure no. 1 Sensor in the upper shoe not connected; actual temperature is 238 °C.

5.3 Changing the settings

A description is given below of the way in which the settings of the control panel of the NL 15 can be adjusted.



The input of the temperature (in °C), the pressure (in bar) and the time (in seconds) can be checked in the display. In the left part of the display, the symbol of the key which was selected and shortly pressed is indicated by a red indicator. The value on the display refers to this symbol.

The meaning of the symbols is as follows:



1 Temperature symbol

The temperature is given in °C. In the display the latest entered value of the temperature is given. The work setting and the recommended value is 204 °C. The temperature range is a minimum of 189 °C and a maximum of 219 °C.



2 Pressure symbol

The air pressure is expressed in bar. The display shows the latest entered pressure. The range is from about 3.8 bar - 6 bar. These settings only regulate the air pressure. The closing process of the machine is not adjusted.



3 Time symbol

The press time in seconds. The display shows the latest entered press time in seconds. The run down of the press time is displayed by means of a timer.



4 Plus key

By means of the plus key the values can be raised.



5 Minus key

By means of the minus key the values can be lowered.



6 Stop key

After pressing a symbol, the new value is displayed for almost 30 seconds. Restoring the value is done automatically, but by the 'STOP' key is it done immediately.

After changing a value, the corresponding symbol must be pressed at the same time as the 'STOP' key to save the new value.

5.4 Setting the temperature with the 'smart box'

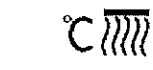



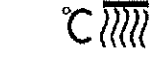
Below we will describe the way to adjust the temperature settings for the NL 15.

Attention ! Let the machine warm up for at least 15 minutes before you make any changes to the temperature setting.

The operating time between two keys must not be more than 8 seconds.

The work settings and the default value is 204 °C. The temperature range is between 189 °C and 219 °C. Settings between 100 °C and 230 °C and longer ranges can be programmed by the manufacturer. It is also possible to program a fixed default value for your machine.






Shortly press the keys explained below:

	1. Key with the temperature symbol of the upper shoe.	The display shows the last entered temperature.
	2. Key '+' If the temperature must be higher.	The value in the display will become higher.
	Key '-' If the temperature must be lower.	The value in the display will become lower.
	3. Press the temperature key and hold it. Then press 'STOP'. <u>In this order !</u>	The display shows 3 horizontal lines with a dot instead of the temperature value. A beep is also given.
	4. Press the temperature key again to check the new value.	The display shows the new value.

5.5 Press time settings on the 'smart box'

The time between pressing the keys must not be more than 8 seconds. The work setting is 12 seconds. The time range is 1 to 255 seconds.

Press the keys explained below:

	1. Key with the time symbol of the upper shoe.	The display shows the last entered press time in seconds.
	2. Key '+' If the press time must be longer.	The value in the display shows the larger press time in seconds.
	Key '-' If the press time must be shorter.	The value in the display shows the shorter press time in seconds.
	3. Press the time key and hold it. Then press 'STOP'. <u>In this order !</u>	The display shows 3 horizontal lines with a dot instead of the time value. A beep is also given.
	4. Press the time key again to check the new value.	The display shows the new value.

5.6 Pressure settings on the 'smart box'

The work setting is approximately 5 bar. The value '50' in the display means 5.0 bar. The pressure range is 3 - 6 bar.

The pressure regulating valve is on the right side of the housing, as seen from the front of the machine. To adjust the pressure, the valve must be turned down a little to become unlocked. When turning the valve to the right, the pressure becomes higher, to the left the pressure becomes lower. After adjusting the pressure, press the valve in again.

The proceedings are as follows:

- 1 Set the press time to 2-3 seconds (see the setting of the press time above).
- 2 Pull the pressure regulating valve out and unlock it.
- 3 Pressure key.
The display shows the latest entered air pressure in bar.
- 4 Set the correct pressure on the display by means of the valve and close the press plates. After opening the plates, check the air pressure by pressing the symbol key. When the displayed setting is not correct, you must repeat adjusting the opening/closing process until the correct values +/- 0.2 bar appear. The value is displayed for almost 30 seconds.
- 5 Press the regulating valve again to lock it.
- 6 Press 'STOP'
Pressing this key will set the electronics in the working position.
- 7 Check again by pressing the pressure symbol, if you want to.
- 8 Set the press time to the correct value again !



Attention ! If the requested pressure even after turning the valve up to the correct position is not reached then there is insufficient pre-pressure (input pressure). Check the pressure pipe. The pressure must not exceed 6 bar !

6. Trouble shooting

Failure	Possible causes	Solution
Heating plate remains cold	<ol style="list-style-type: none"> 1. ON/OFF switch is not set to ON 2. Machine is not connected to the electricity grid 3. Electronics not connected to the machine 4. Temperature sensor defective 5. Electronics wrongly set 6. Electronics defective 7. Heating element defective 8. Safety thermostat against overheating was activated and has not been turned on after cooling down 	Check Put the plug into the socket Check Replace Correct Replace Replace Check thermostat and, if necessary, replace it
Heating plate becomes too hot or too cold	<ol style="list-style-type: none"> 1. Check set value by pressing symbol key 	Set correctly
Indicator blinks during the warming up and the red dot of the check box is on the field PRESS.	<ol style="list-style-type: none"> 1. Insufficient pressure 	Set the pressure correctly
After the warming up, the indicator does not show the temperature, but the pressure	<ol style="list-style-type: none"> 1. Insufficient pressure 	Set the pressure correctly
Machine opens too early	<ol style="list-style-type: none"> 1. Check set value by pressing the symbol keys 2. Safety frame was touched 	Set correctly Put textile correctly on the pad
Machine cannot be closed	<ol style="list-style-type: none"> 1. Foot pedal not connected 2. Incorrect pressure or temperature 	Check Check
Machine is closed, but does not seal	<ol style="list-style-type: none"> 1. Pressure too low 2. Textile too thick, machine cannot be locked 	Check air pressure system Put textile correctly on the pad

<p>Insufficient adhesion of patches, label tapes, labels or fixing of the transfers</p>	<ol style="list-style-type: none"> 1. Press time too short 2. Incorrect pressure 3. Heating plate too cold 4. Press pad of lower plate worn out 5. Teflon below heating plate dirty or defective 	<p>Increase time settings by 2 seconds and check results Set pressure correctly with knob and check results Check temperature Replace Clean with soft cloth or replace</p>
<p>Transfer colour or layer penetrates</p>	<ol style="list-style-type: none"> 1. Time setting too long 2. Temperature too high 	<p>Decrease time setting Reduce temperature</p>

7. Accessories and components

7.1 Components that should be replaced regularly

◆ **Press pad with thin metal plate, self-adhesive**

145 x 120 mm N 15 - 15010

◆ **Teflon coating, self-adhesive**

150 x 125 mm N 15 - 15082

7.2 List of components (see drawings from page 24 onwards)

Drawing no.	Component no.	Description
1	N15 001	Housing swivelling arm
2	N15 002	Housing
3	N15 003B	Rotary shaft
4	N15 004	Ball bearing axis
5	N15 005	Cover plate
6	N15 006	Flat-headed screw M6x15
7	N15 007	Pin 12mm
8	N15 008	Pin 8mm
9	N15 009	Back plate 150 x 130
10	N15 15010	Lower press pad
11	N15 011B	Heating plate
12	N15 012B	Heating element 220 V / 550 W
14	N15 014B	Intermediate plate
15	N9 9088	Temperature sensor PT 100, 50 x 3 mm
16	AL 49999	Safety thermostat
17	N15 017B	Sensor frame
18	N15 018B	Safety frame
19	N15 019	Flat-headed screw M3x10
20	N15 020	Fillister head screw
21	N15 021	Flat ring
22	N15 022	Gear wheel
23	N15 023B	Insulating / press plate
24	N15 024	Flat-headed screw M16 x 25
25	N9 9086	Microswitch for safety frame
26	N15 026B	Housing for switch
27	N15 027	Fillister head screw M5 x 10
28	N15 028	Flat ring M5
29	N15 029	Gear wheel M5
30	N15 030	Fillister head screw M3 x 20
31	N15 031	Flat ring M3
32	N15 032	Fillister head screw M5 x 30
33	N15 033	Bush for spring throughput
34	N15 034	Compression spring
35	N15 035	Bar of the switch
36	N15 036	Connecting bar
37	N15 037	Cross-slotted screw M3 x 16
38	N15 038B	Cover plate with cable guide
39	N15 039B	Air cylinder
39a*	N15 039 REP	Repair kit for air cylinder
40	N15 040	Screw M8 x 10
41	N15 041	Fillister head screw M10 x 90
42	N15 042	Handle
43	N15 043	Flat-headed screw
44	N15 044	Cover plate
45	N15 045	Flat-headed screw M3
46	N15 046	Cover plate for housing
47	N15 047	Gear wheel M6
48	N15 048	Pivot pins
49	N15 049	Cross-slotted screw M3 x 20
50	N15 050	Box for power supply
51	N9 9090	Foot pedal with cable and plug
52	N9 9092	Electricity cable with plug

Drawing no.	Component no.	Description
53	N15 053	Pull relief
54	N15 054	Emergency button
55	N15 055	ON/OFF switch
56	N9 9083	Mains guide plate
57	N15 057	Control panel 'smart box'
58	N15 058	Safety switch
59	N15 059	Contact switch
60	N15 060	Gasket safety hose
61	N15 061	Safety hose
62	N15 062	Gasket safety hose
63	N15 063	Safety hose
64	N15 064	Cable bundle I
65	N15 065	Cable bundle II
66	N15 066	Distributor case
67	N9 9089	Pressure sensor with cable
68	N9 9157	Coupling regulating valve
69	CE 2497	Fuse 2.5 A (slow)
70*	N15 070	Sound muffler
71	N9 9061	Magnet valve 24 volts
72	N9 9059	Angle hose coupling
73	N15 073	Reducer sleeve 1/4 - 1/8 with jointing ring
74	N9 9060	Angle hose coupling
75	N9 9055	Double hose coupling
76	N9 9054	Connecting nipple with nut
77	N15 077	Air filter unit / reducing valve unit
78	N9 9051	Hose coupling, air connection
79	N15 079	Hexagonal screw M4 x 10
80	N15 080	Flat ring M4
81	N15 081	Gear wheel M4
82	N15 15082	Teflon layer, self-adhesive
83	N15 083	Cover key unit 'smart box'
84	TP 0522	Solid state relay
85	N15 085	Nut M4
86	N15 086	Flat-headed screw M3.5 x 16
87	N15 087	Nut M3.5
88	N15 088	Flat-headed screw M5 x 15
89	N15 089	Flat-headed screw M5 x 12
90	N15 090	Switch AUTOMATIC ON/OFF
91	N15 091	Switch SENSOR ON/OFF
92	N15 092	Cover plate
93	N15 093	Fillister head screw M3 x 8
94	N15 094	Back plate for switch connection
95	N15 095	Guide plate for lower shoe
96	N15 096	Fillister head screw M10 x 10
98	N15 098	Holder for contact switch
100	N15 100	Adjusting foot

* not represented

7.3 Order form components Thermoseal NL 15

If you want to order components for the Thermoseal NL 15R, copy this form, fill it in and send or fax it to your Worldpatch distributor.

Drawing no.	Component no.	Description	Quant.

SENDER:

Company name: _____

Contact: _____

Address: _____

Postcode and town: _____

Telephone number: _____

Fax number: _____

Date: _____

8. Drawings and diagrams

On the next pages the following drawings are given:

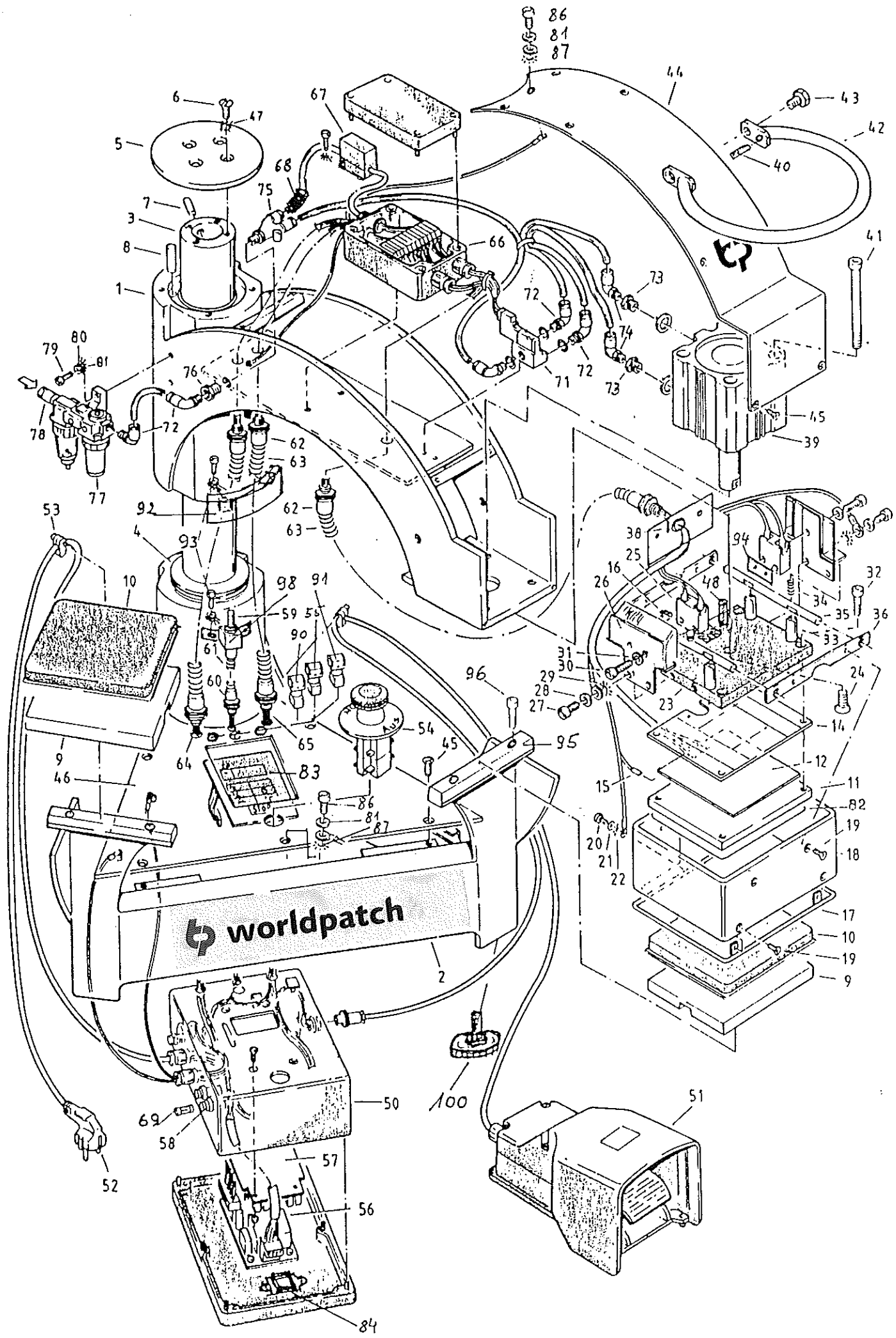
8.1 Exploded view NL 15R

Meaning of the cables on the exploded view:

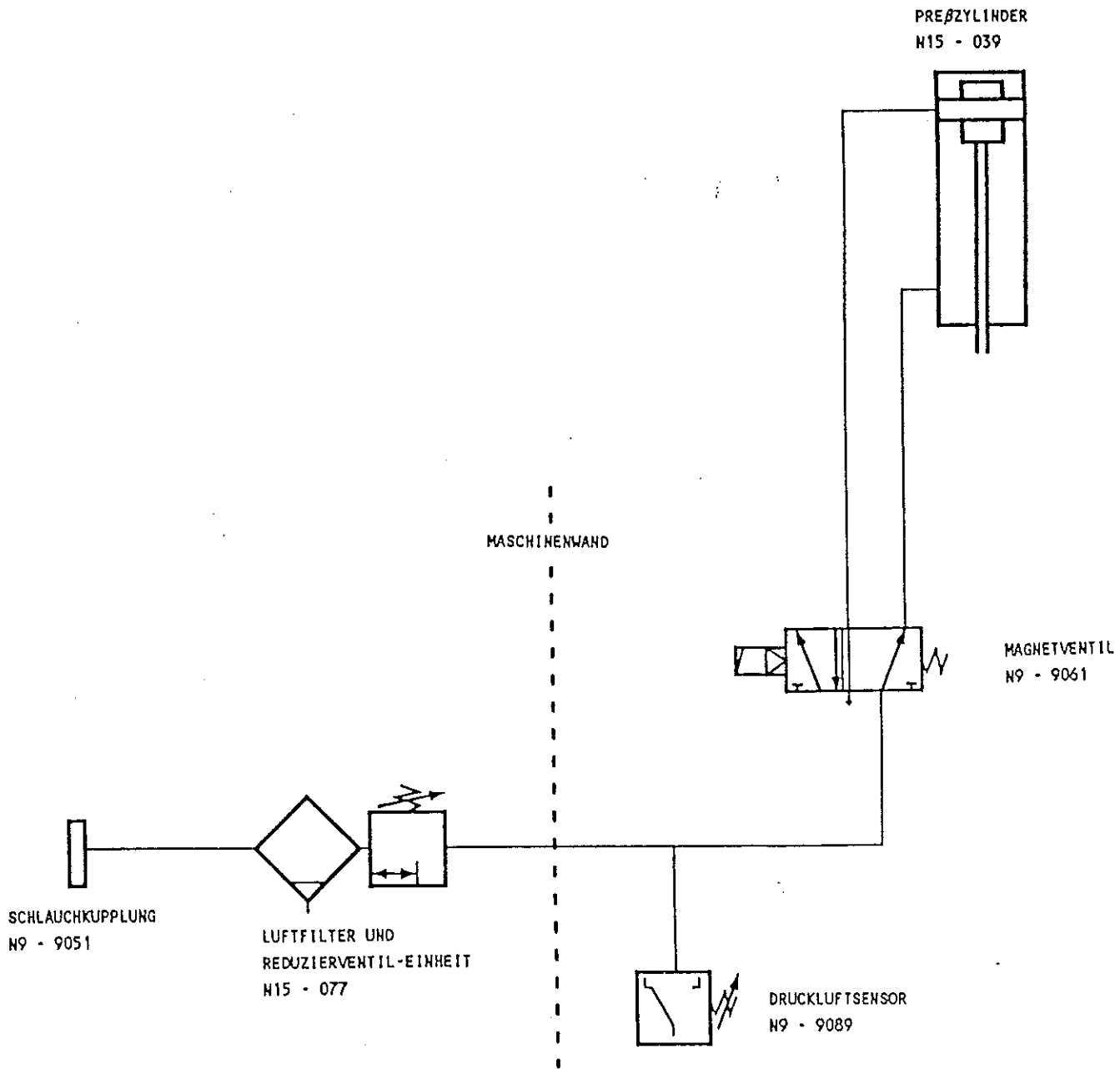
- ◆ **Middle cable bundle**
The connection of the electricity box to the contact switch.
- ◆ **Cable bundle, no. 64 on the drawing**
Power supply of 220 volts from the heating element and all earthed cables to the various parts of the machine.
- ◆ **Cable bundle, no. 65 on the drawing**
Contains the operating and control cable (low voltage).

8.2 Pneumatic Diagram NL 15R

8.3 Connection diagram circuit board NL 15R

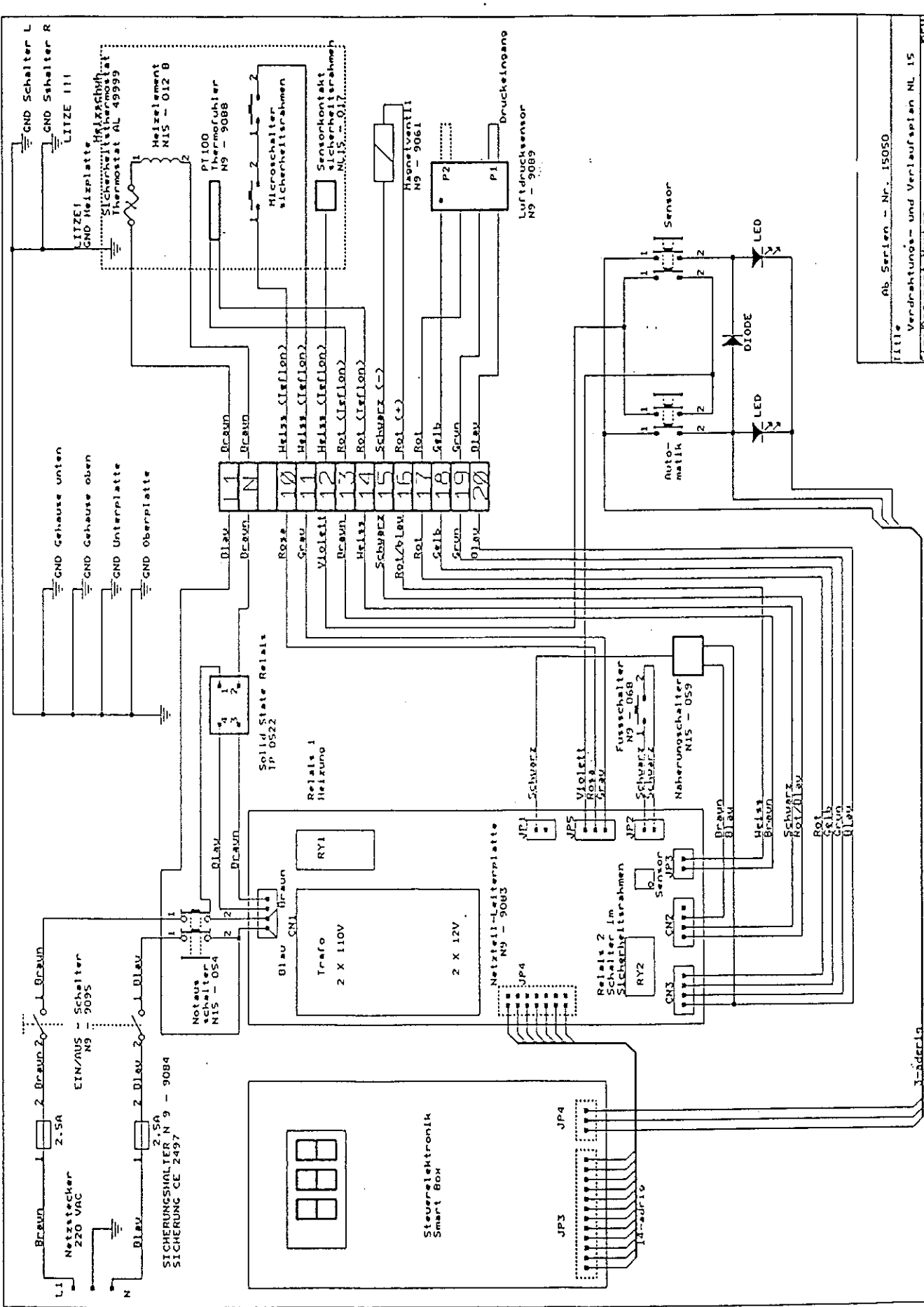


PNEUMATIK - CHEMA

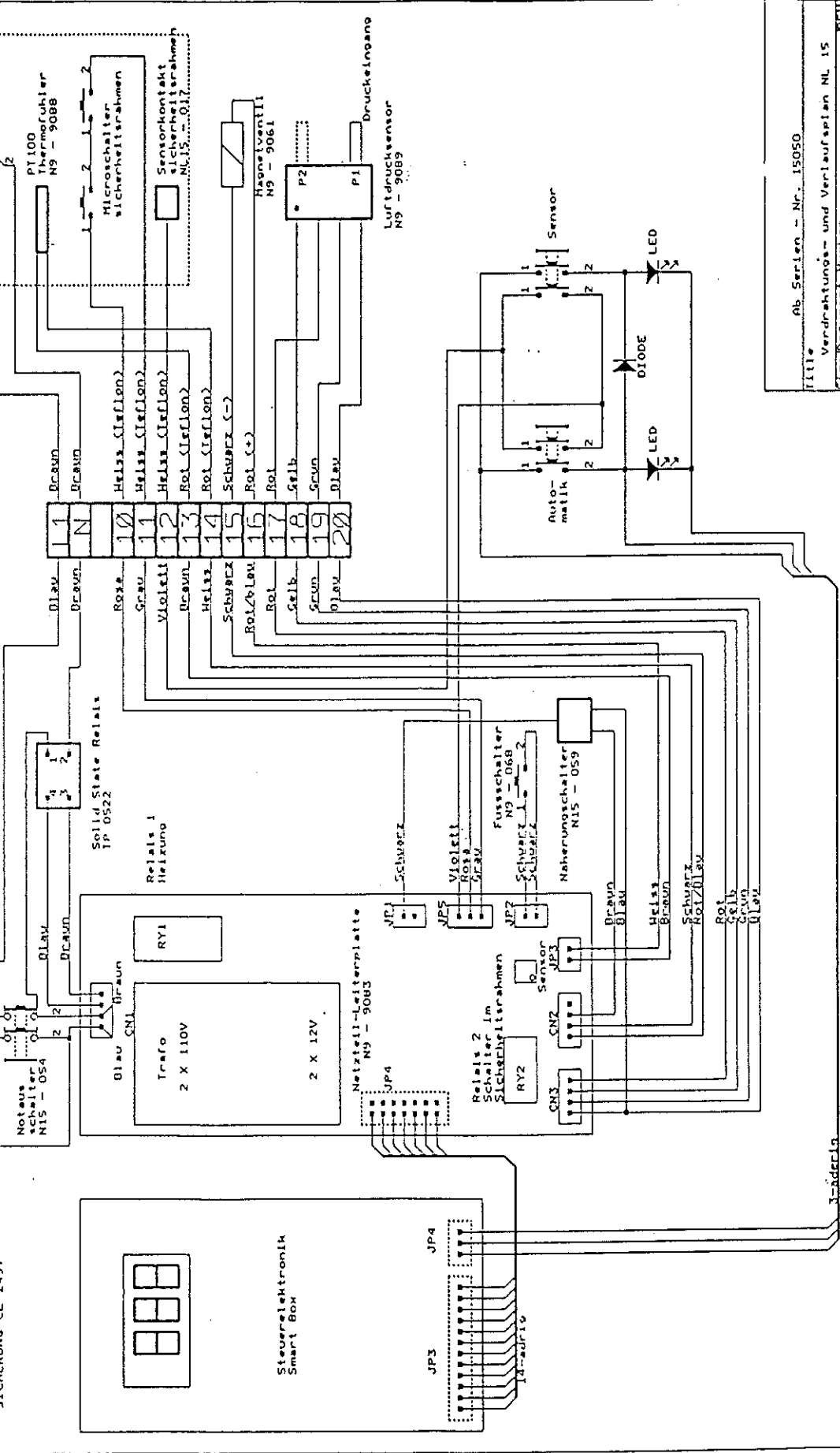


worldpatch

	THERMOSEAL NL 15
	PNEUMATIC DIAGRAM
	1993 / 12 / 15



L1
 Netzstecker 2.5A
 230 VAC
 E1N/0US - Schalter N9 - 9095
 2 D1av
 2 SA
 SICHERUNGSSCHALTER N 9 - 9084
 SICHERUNG CE 2497
 2 D1av
 2 SA
 GND Gehäuse unten
 GND Gehäuse oben
 GND Unterplatte
 GND Oberplatte
 LITZE
 GND Heizplatte
 LITZE 111
 GND Schalter R
 GND Schalter L
 Heizschicht
 Sicherheitsthermostat
 Thermostat AL 49999
 Heizelement
 N15 - 012 B
 PT100
 Thermoelement
 N9 - 9088
 Microschalter
 sicherheitsrahmen
 Sensorkontakt
 sicherheitsrahmen
 N15 - 017
 Magnventil
 N9 - 9061
 P2
 P1
 Luftdrucksensor
 N9 - 9089
 Druckeinsang
 Sensor
 Auto-
 matik
 DIODE
 LED
 LED



Ab Serien - Nr. 15050
 Verdrahtungs- und Verlaufsplan NL 15
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