

HS-21-SQR Penguin Manual



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Preface

Dear user,

Welcome to the growing group of Thermopatch users. The product you have purchased has been carefully designed and manufactured to ensure that you, the user, will gain the maximum benefit.

All Thermopatch products are specifically designed to ensure ease of use with particular attention to safety requirements.

Should you discover any fault or damage upon receipt of this product, you should immediately contact your local Thermopatch establishment.

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EC - Declaration Of Conformity

We,

Thermopatch B.V.
Draaibrugweg 14
1332 Almere
The Netherlands

herewith declare, on our own responsibility, that the
appliance:

Thermopatch Thermoseal **HS-21-SQR Penguin**,
which this declaration refers to, is in accordance with the
conditions of the following directive(s):

2006/95/EG (Low voltage directive)

2004/108/EG (EMC directive)

The Netherlands, Almere, 29-10-2010

Jan Bausch,

Director

I. Introduction

1. WHAT DID YOU RECEIVE?

The Penguin has been packed in a cardboard box. The following articles should have been delivered:

- Penguin heat seal machine
- Electrical power cable
- User's Guide on CD-ROM

If one of these articles is missing, please contact our customer service or your Thermopatch supplier.

2. THE PENGUIN HS-21 SQR



3. SPECIFICATIONS OF THE PENGUIN

Power consumption	650 watts
Power supply	230 volts
Temperature	50-225 °C
Machine height (open)	525 mm
Machine height (closed)	315 mm
Machine width	465 mm
Machine depth (connections included)	420 mm
Net weight	15 kg
Press pad dimensions	Square 120 x 120 mm
Fuses	3 amps
A-weighted noise level	< 70 dB (A)

4. SAFETY

The Penguin has been equipped with various safety features to ensure safe operation.

a) Safety thermostat

The safety thermostat is installed to prevent overheating when the controller should fail. It switches off the power to the heating element when the temperature exceeds 260°C. If this happens, the machine should be checked by a qualified technician.

b) Acoustic signal

Once the press cycle is complete an acoustic beep will be sound after which the press must be opened.

c) Automatic Switch-Off

When the appliance is not opened after 10 seconds it will automatically switch off to prevent damage.

d) The Penguin has been marked with the appropriate safety symbols for heat radiation on either side of the press head and the symbol for dangerous voltage, next to the power entry on the back side.

5. SAFETY TIPS

The customer service of your distributor has its own service engineers, and if required, maintenance is available. A maintenance contract ensures prompt service in the event of appliance failure together with additional periodic inspections.

Under normal conditions accidents are rare; however, listed below are some practical points to ensure your safety.

- Pull out the electrical plug from the wall socket when doing maintenance or cleaning work on the appliance.
- Ensure that there is sufficient space around the appliance. 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.

6. CONDITIONS FOR WARRANTY AND PRODUCT LIABILITY

Thermopatch warrants a correct working of the appliance and its components for twelve months, excluding the cover on the upper plate, the resilient pad of the lower platen and the thermostat. The warranty period of the temperature sensor and heating element is six months.

II. Installation

1. TRANSPORT INSTRUCTIONS

On receipt the appliance is packed in a cardboard box. Open the box and lift the appliance by means of the orange coloured handle on top.

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 first cool down and push the press arm down.

2. INSTALLING THE APPLIANCE

Take the Penguin out of the box and put the appliance on a worktable near an earthed wall socket. Ensure that there is sufficient free space around the appliance. Also ensure that there are no items near the appliance, which are sensitive to heat radiation.

3. ELECTRICAL REQUIREMENTS

The Penguin should be connected to the electricity grid (230V).

Use the appliance's electrical power cable to provide electrical power. The Penguin is an earthed appliance and has been provided with two fuses of 3 Amps.

III. How to operate the Penguin

1. STARTING WITH THE PENGUIN

- 1 Turn on the Penguin

Switch on the appliance by pushing the main switch to "on".

- 2 Wait until the standard temperature has been reached.

The standard sealing temperature is set on 204 °C. During warming up, which will take a few minutes, the actual temperature is displayed. When the appliance has reached the desired temperature we advise to close it for several moments to heat up the resilient pad.

2. THE PENGUIN DISPLAY



3. HOW TO OPERATE THE DISPLAY

The display has two buttons on the left and two on the right side and a digital screen in the middle.

Adjust seal temperature:

Press the upper left button and increase (+) or decrease (-) the temperature per degree with the buttons on the right side. Default seal temperature: 204 °C

If the temperature on the screen should not equal the actual temperature checked with for instance a thermolabel (available at your distributor's), adjust as follows: Push the upper and lower left buttons on the same time for 3 seconds and adjust temperature with the + and - button. The new data will be stored after not touching the buttons for 3 seconds.

⚠ Should you want to seal a garment with a much lower temperature other than the standard seal temperature, you should set the appliance again to the desired values.

To change from Celsius to Fahrenheit and vice versa

Press the + and - buttons and hold for more than 3 seconds and the LED and setting will change.

Adjust seal time:

Press the lower left button once and change the seal time in seconds (+) or (-)

Default seal time: 12 seconds.

⌚ The seal time ranges from 0-60 seconds.

Adjust energy saver:

Press the lower left button twice to set the energy saver in minutes (+) or (-). The energy saver will start after the set time in minutes.

Default start energy saver: 20 minutes

The information will be stored after 3 seconds of not touching the buttons.

**Day total:**

Press the upper right button (+) once to see the day count during 5 seconds. When pushed 3 seconds, the day count will become 0.

Grand total:

Press the lower right button (-) once to see the grand total during 5 seconds.

**4. ADJUST SEALING PRESSURE**

The pressure on this heat seal machine is not adjustable. Due to its unique construction, a constant pressure is maintained while heat sealing.

5. WORKING WITH HEAT SEAL MATERIALS

With the Penguin it is very easy to apply heat seal material - labels, emblems and patches to textiles. Follow the procedure listed below:

Set the time.

Almost all Thermopatch heat seal materials need 12 seconds for correct adhesion.

Put the fabric over the press pad.

The part of the fabric where the label should be situated fully covers the press pad. Be sure that the fabric is tight. When sealing one garment you can prepare the garment on the second press pad.

Place the label.

Note: Thermopatch materials cannot be removed easily. The material is meant for permanent adhesion. Therefore, make sure that the position is correct.

Press the press arm down.

In this way, you press the heating element against the lower platen. At the same time, the electronic timer is triggered. At the end of the press time, a buzzer will be activated, advising that the operation is complete.

Open the press.

Open the press by moving the arm upward and remove the fabric.

Once cooled off, the label is permanently attached.

a. Repairs

Preferably repair damages without the loss of fibres, such as right-angled tears, from the backside of the fabric. In almost all cases it is sufficient to use a press time of 12 seconds. Exceptions are thick fabrics like materials for gauntlets and patches for protective clothing, which require 15 to 20 seconds.

b. Labels and emblems

Confirm that the fabric does not have a finish or contain impurities. If necessary, wash the fabric or put the part where the label will be positioned under the press for a few seconds.



Some modern fabrics cannot withstand the heat sealing temperature of 204 °C. If you cannot be sure of the result, use a sample of the same fabric, if possible, to establish its heat resistance. Also care labels in garments can inform you of their heat resistant properties (iron ability).

c. How to remove heat sealed Thermopatch labels:

Because Thermopatch labels must be wash resistant to all industrial washing processes, it is not easy to remove heat seal material. You can act as follows:

1. Put the garments with the label to be removed under the press for about 7 seconds. The glue layer will melt again.
2. Leave the garment on the plate and remove the label, if necessary by means of a blunt scraper or tweezers.
3. Please note:
Heating plate and label are hot!!
4. Repeat this procedure if you are not succesful the first time trying.

6. INTERRUPTING THE MACHINE

You can interrupt the operation at any moment by unlocking the arm of the closed heat seal machine during the press cycle.

When you wish to shut down the machine, push the main switch to off. It is located on the right side of the machine.

The indicators on the control panel are then turned off.

7. TROUBLE SHOOTING

Some problems and failures that can occur, are listed below. After describing each problem, the possible cause (sometimes more than one) is given, as well as a possible solution.

If the described solution cannot solve the problem, please contact the service department of your distributor.

a. Heat sealing problems:

- ♦ Insufficient adhesion of the glue layer
1. Press time too short. Increase the time in steps of 2 seconds and try again.
 2. Temperature too low. Check with Thermolabels and increase the temperature, if necessary.
 3. The pressure is not sufficient. The press pads are wornout. Install a new pad. The sealing pressure is factory set and cannot be adjusted by the client.
 4. The teflon selfadhesive coating of the press element is dirty or worn-out. Clean with a damp cloth and replace it, if necessary. When replacing the old teflon, it is very important that adhesive residue is removed from the heating element. To do this it is necessary to heat up the machine, scrape off the glue remains by using a blunt edged scraper. Try to minimise the scratching. After this is done, degrease the heating element and apply the selfadhesive .

- ♦ Glue layer and/or transfer ink runs
- 1. Sealing time too long. Lower the time in steps of 2 seconds and try again.
- 2. Temperature too high. Check with Thermolabels and lower the temperature, if required.

b. Technical failures:

- ♦ Press does not warm up, the time does not count down or the temperature does not rise on the display
- 1. The machine is not connected to the electricity grid. Put the plug of the power cable in an earthed socket and switch the machine on.
- 2. The machine is not connected. Set the switch at the back of the machine to the correct position.
- 3. A switch has broken or a connector has come loose. Please contact the service department.
- ♦ Press does not warm up
- 1. The sensor is defective. Please contact the service department.
- 2. The safety thermostat has been activated. Please contact the service department.
- 3. The heating element is defective. Please contact the service department.
- ♦ The press time cannot be set correctly
- 1. The electronics are defective. Please contact the service department.
- 2. There is no signal at the end of the press time. The timer or the beeper is defective. Please contact the service department .
- ♦ Press does not close or is difficult to open
- 1. Adjust the excenter screw (see figure next page) and close the machine. By turning the eccentric, the momentum for opening can be easily adjusted. Turn clockwise for a lighter setting and counter clockwise for a heavier setting.



Turn clockwise
for a lighter
setting.

Turn counter
clockwise
for a heavier
setting.

Adjusting the eccentric disc

8. ERROR CODES

Below you will find an overview of the error codes which appear on the display. If these error codes occur, please contact your Thermopatch supplier.

♦ Error code 1

Breakage of wire in PT1600 (resistance high)

♦ Error code 2

PT1600 short circuit (resistance low or 0)

♦ Error code 3

Heating element is broken down.

♦ Error code 4

Electronics are broken down.

IV. Maintenance and settings

1. DAILY MAINTENANCE

For good heat sealing results it is important to keep the press surfaces clean. Therefore, clean the teflon coating of the upper plate with a clean, dry cloth.

Also clean the rubber pads daily with a dry cloth. Do not use solvents or other chemical substances to remove impurities. Do not let buttons, zippers, etc. come between the plates. It will keep the silicone rubber undamaged for a long time.

2. PERIODICAL MAINTENANCE

The mechanism of the Penguin needs no maintenance.

Clean the outside of the machine regularly with a clean, moist cloth. First switch off the machine, let it cool down and pull the plug out of the socket.

Replace the rubber pads and the teflon regularly.

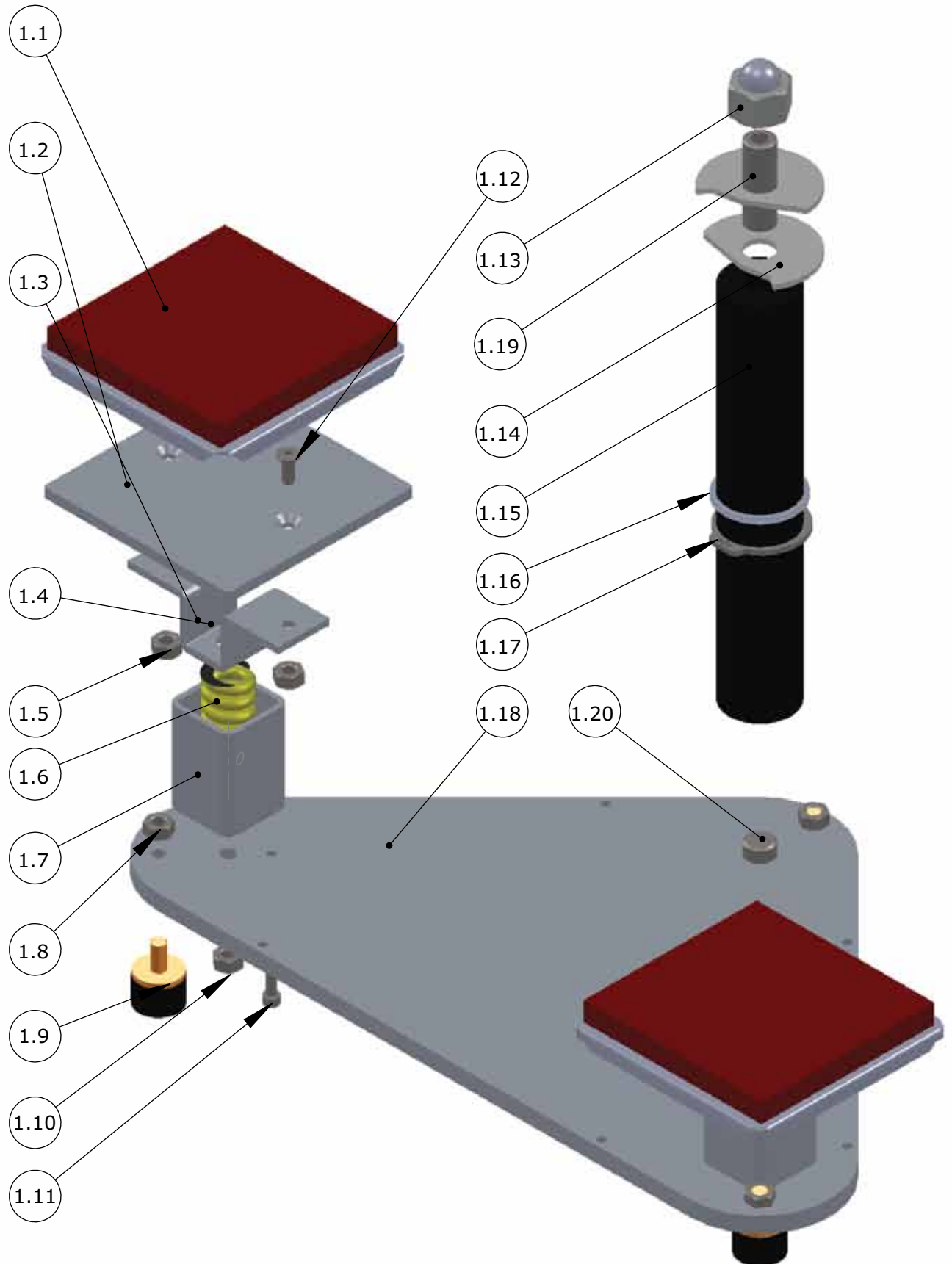
In order to replace the teflon, the press machine must be warm ($\pm 80^{\circ}\text{C}$). Remove the teflon and carefully remove all glue residues from the metal surface with a blunt edged scraper like a putty knife. Then use a copper brush to clean the surface. Finally, use a dry cloth to clean the element. The surface must be absolutely clean and smooth, so that the new teflon sticks well without air bubbles.

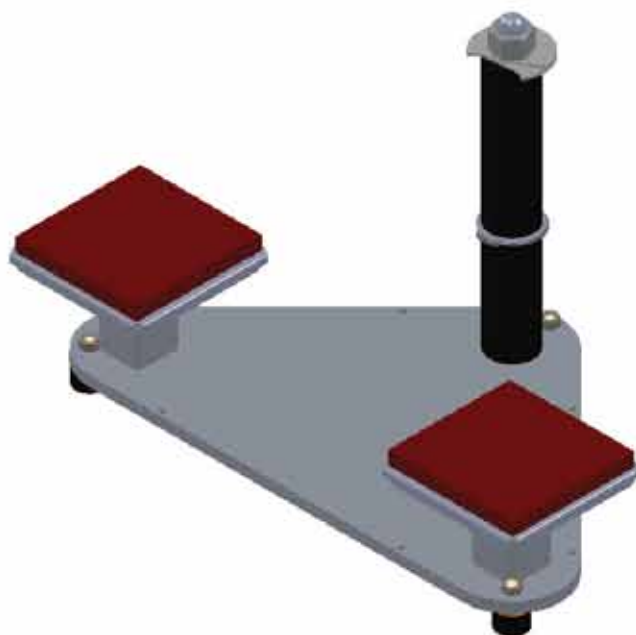
3. ACCESSORIES AND COMPONENTS

The following parts should be replaced regularly:

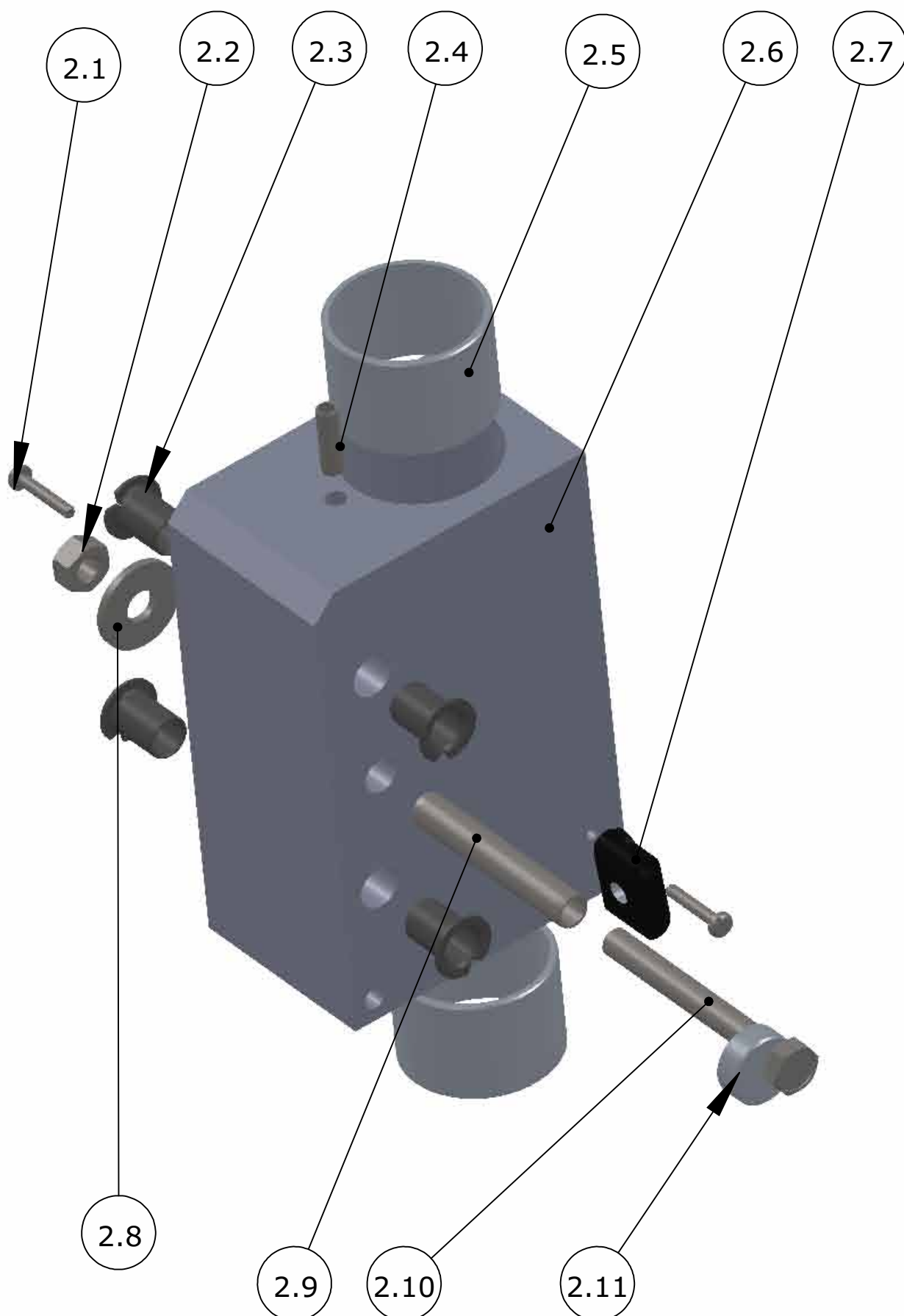
- ♦ Self adhesive press pads 120 x 120 mm square SPAPEN-21026 (more sizes available, see the parts list on page 19)
- ♦ Self adhesive teflon cover 120 x 120 mm square SPAPEN-21316

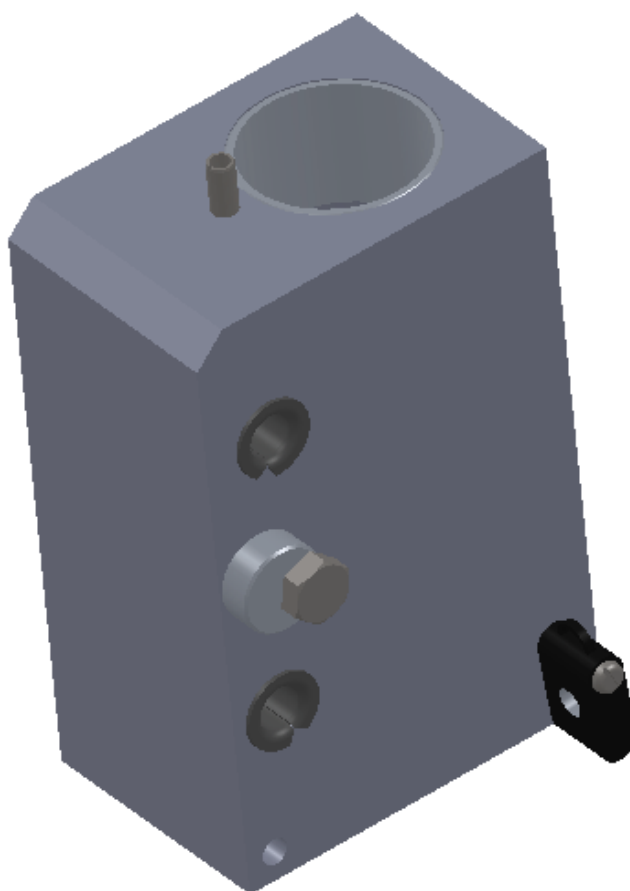
Exploded views and parts



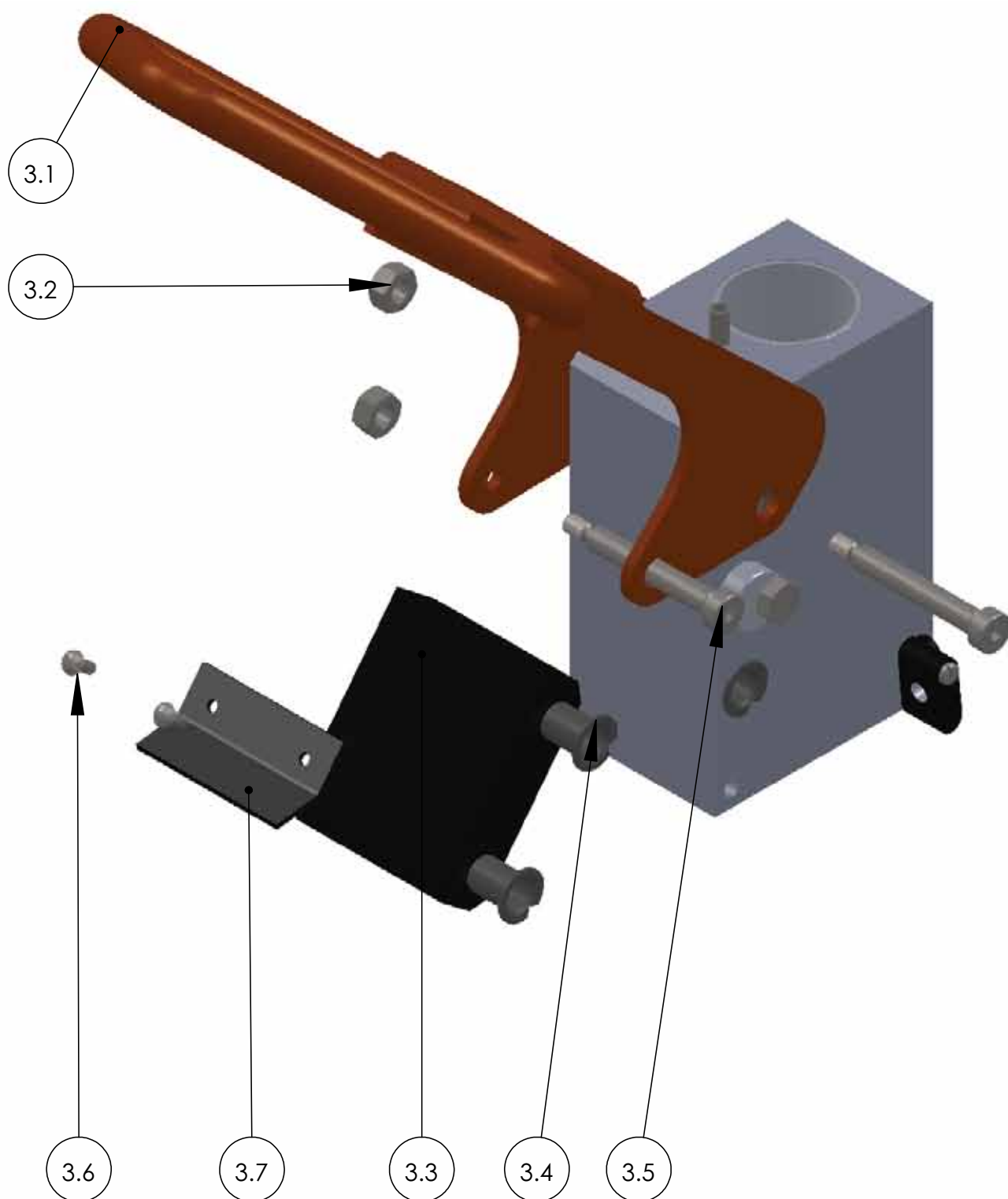


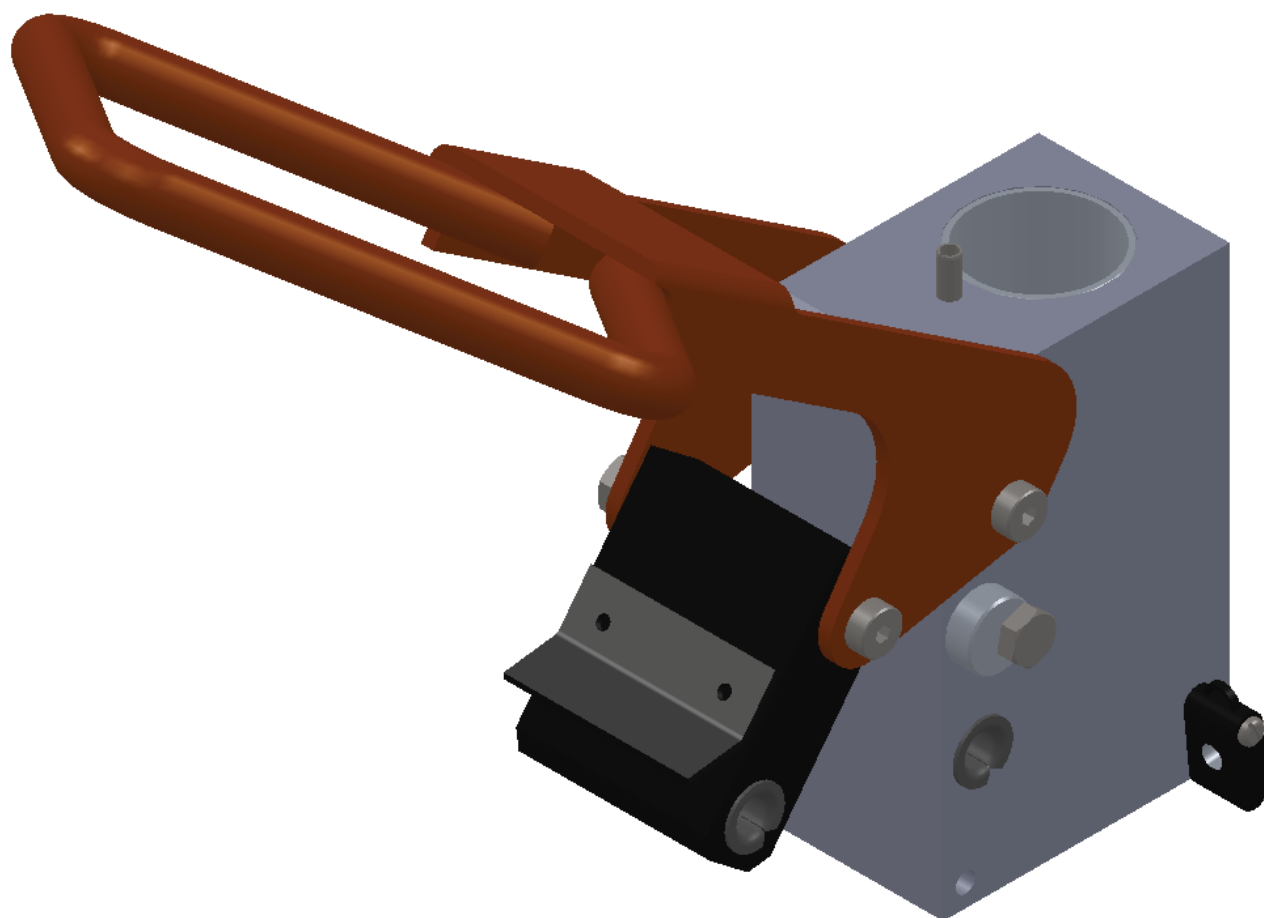
1.1	Sealing plate	120 X 120	2	SPAPEN-21026
1.1	Sealing plate	60 X 20	2	SPAPEN-21026A
1.1	Sealing plate	70 X 30	2	SPAPEN-21026B
1.1	Sealing plate	100 X 120	2	SPAPEN-21026C
1.2	Sealing plate support		2	SPAPEN-21025
1.3	Spring support		2	SPAPEN-21006
1.4	Allen screw	M8 X 65	2	DIN 912
1.5	Nut	M5	2	DIN 934
1.6	Press spring		2	SPAPEN-21033
1.7	Spring retainer		2	SPAPEN-21004
1.8	Nut	M6	3	DIN 934
1.9	Rubber foot	D25 h 20	3	SPAPEN-01-03
1.10	Nut + springwasher	M8	2	DIN 934
1.11	Allen screw + spring washer	M5 X 20	2	DIN 912
1.12	Countersunk screw	M5 X 16	4	DIN 7991
1.13	Cap nut + spring washer	M16	1	DIN 1587
1.14	Locking disc		2	SPAPEN-21013
1.15	Main column		1	SPAPEN -21010
1.16	Filling washer		X	SPAPEN-01-01
1.17	Circlip	Ø40	1	SPAPEN-01-12
1.18	Mounting plate		1	SPAPEN-21023
1.19	Set screw	M16 X 40	1	DIN913
1.20	Bolt	M16 X 40	1	DIN931



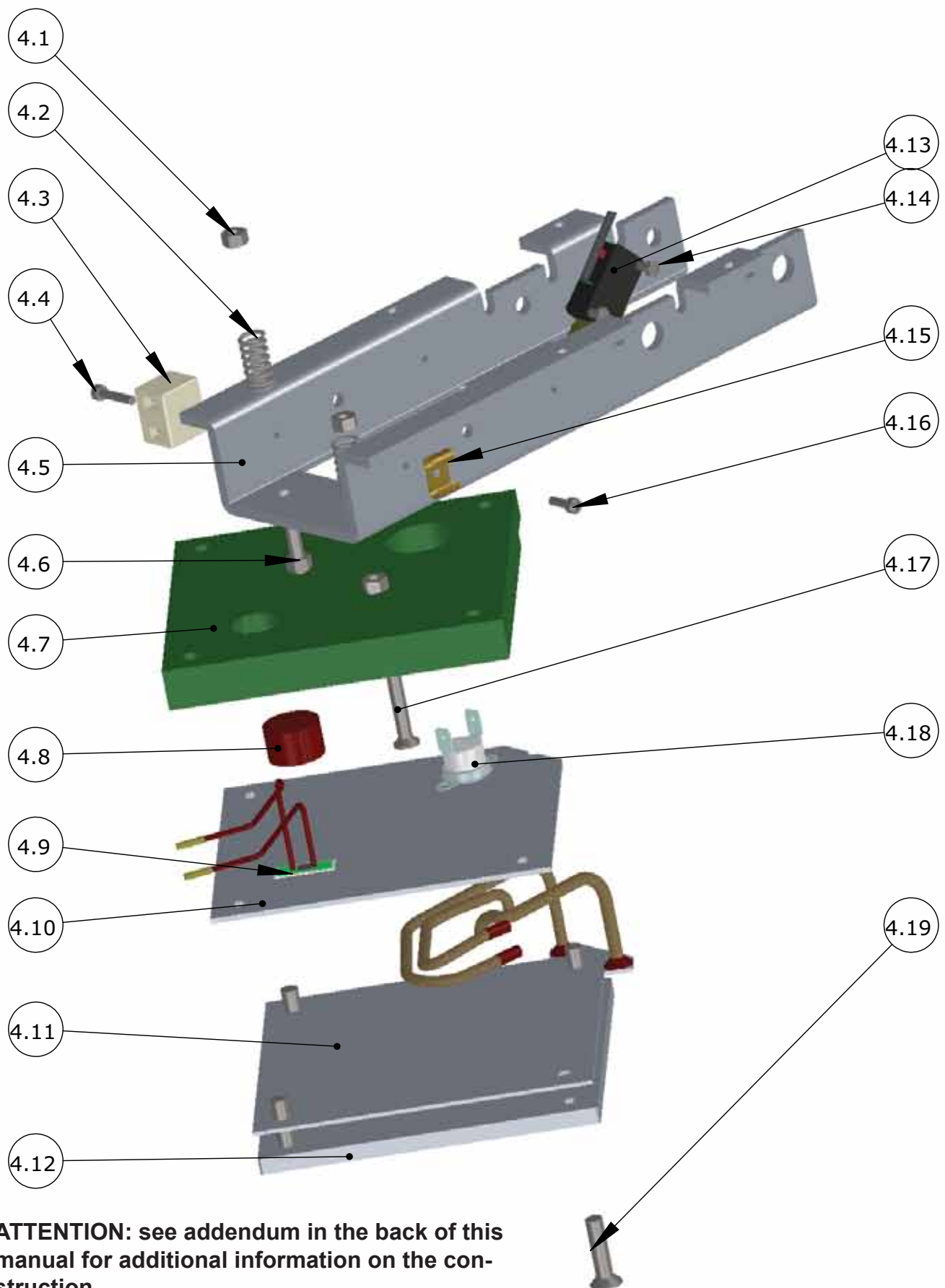


2.1	Tapping screw	3 X 25	2	DIN 965
2.2	Nylock nut	M8	1	DIN 7971
2.3	Collar bearing	10170-P14 10-12-10	4	SPAPEN-21012
2.4	Spring dowel	Ø 6 x 40	1	DIN 7344
2.5	Bearing	4030-P10	2	SPAPEN-21203
2.6	Hinge block		1	SPAPEN-21017
2.7	Pull relief		2	SPAPEN 02-02
2.8	Ring	M8	1	DIN 9021
2.9	Spring dowel	Ø 10 x 8.5 x 60	1	DIN 7346
2.10	Bolt	M8 x 80	1	DIN 933
2.11	Eccentric disc		1	SPAPEN-21005

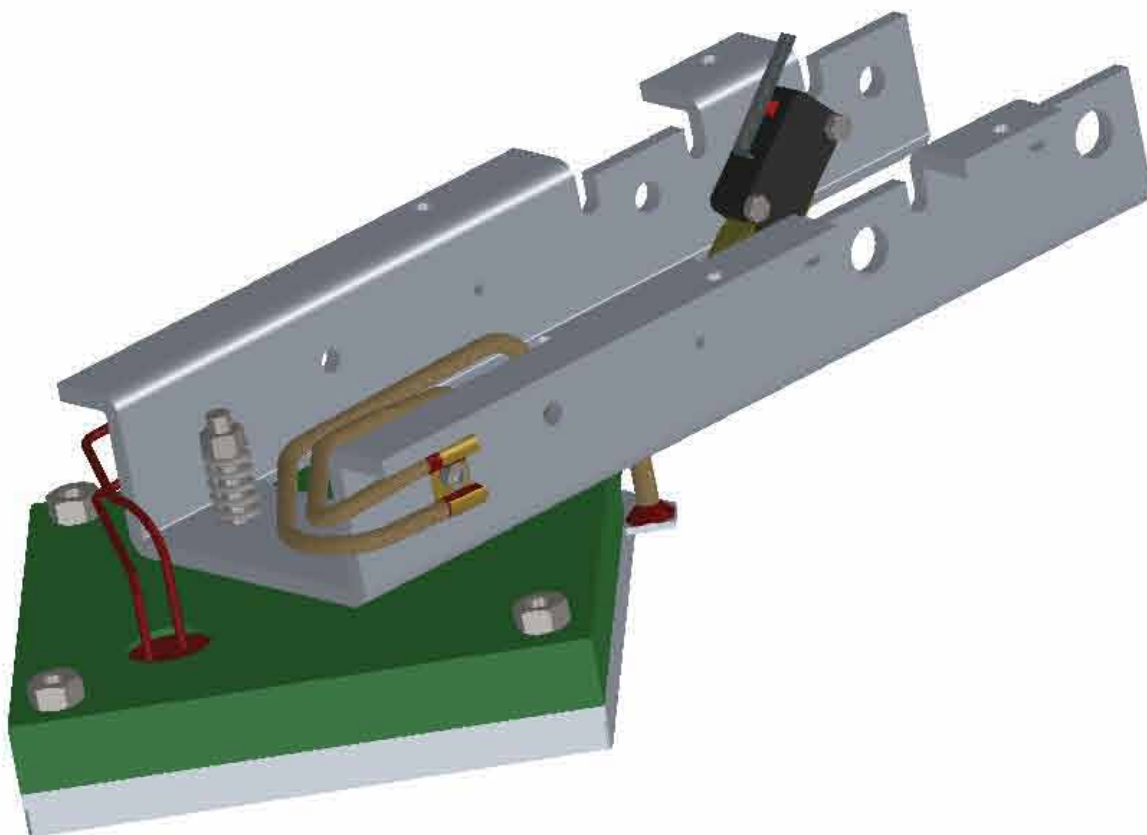




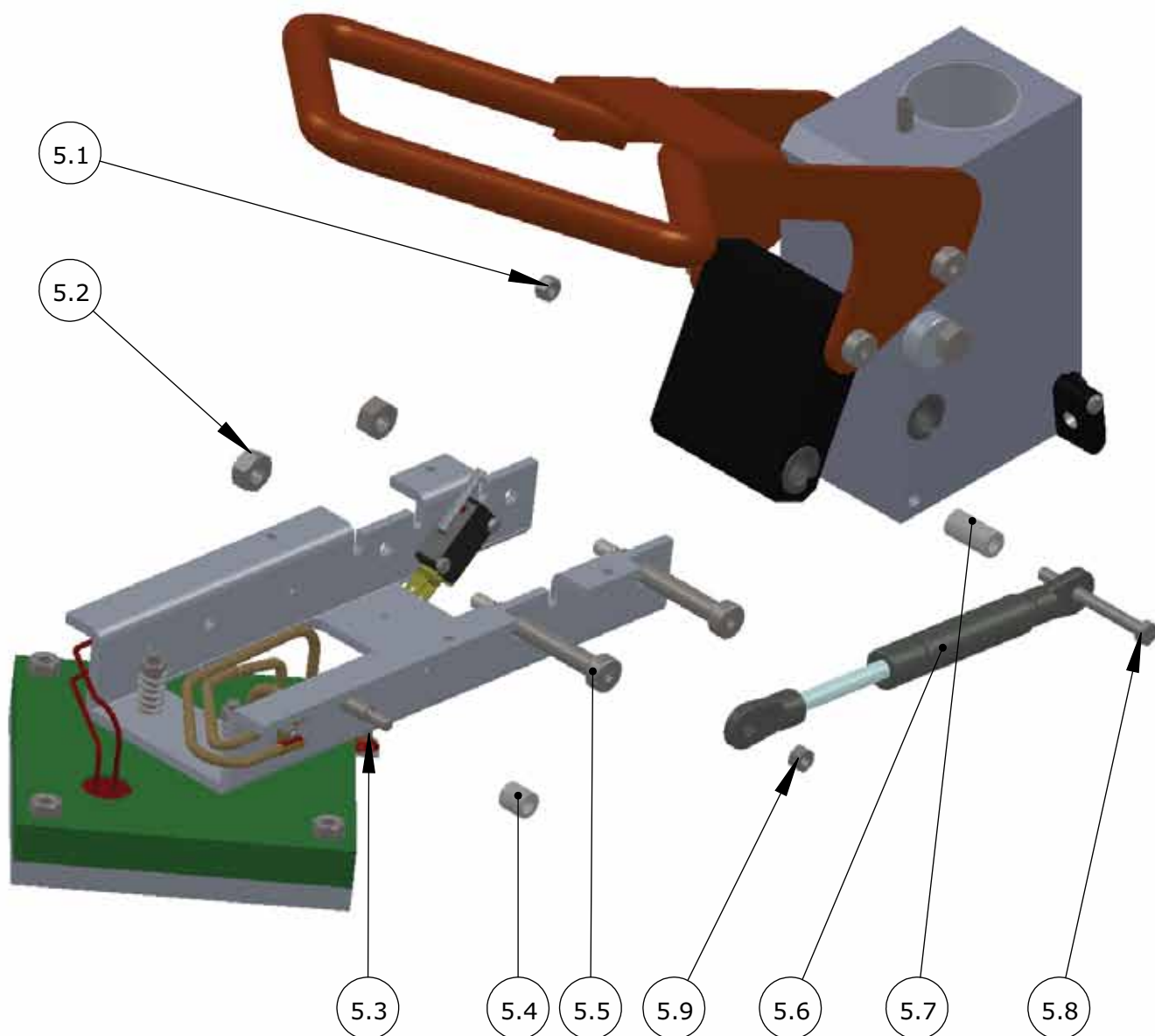
3.1	Handle		1	SPAPEN-21015
3.2	Nylock nut	M8	2	DIN 985
3.3	Nylon press link		1	SPAPEN-21001
3.4	Collar bearing	10170-P14	4	SPAPEN-21012
3.5	Shoulderbolt	C7111.080.070	2	ISO 7393
3.6	Screw	3 x 10mm	2	DIN 7971
3.7	Cover plate (black)		1	SPAPEN 009

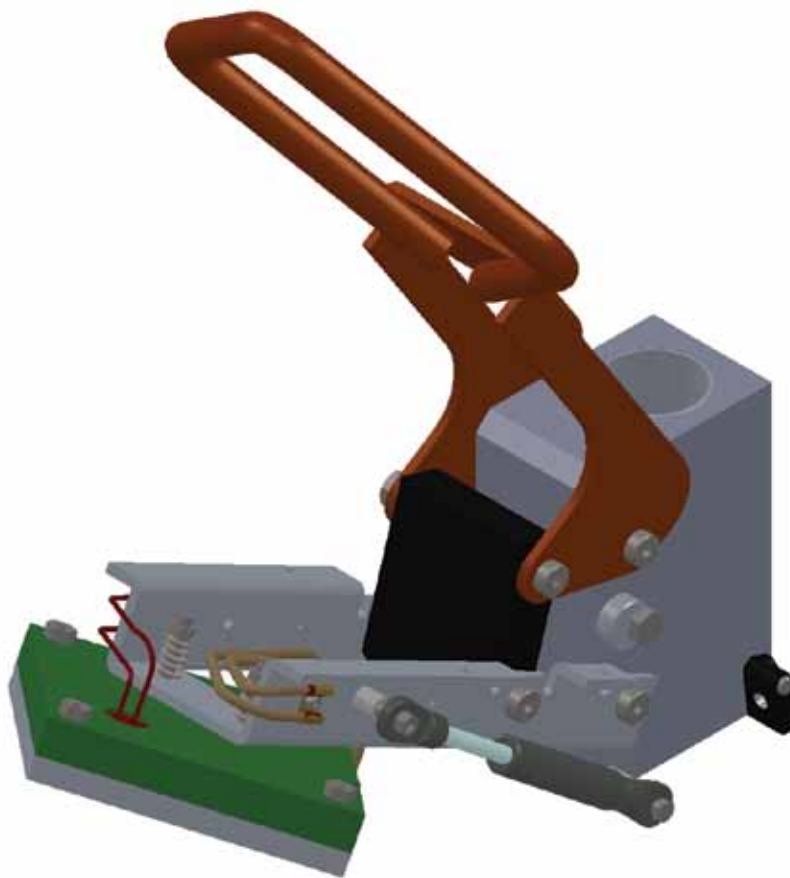


ATTENTION: see addendum in the back of this manual for additional information on the construction.

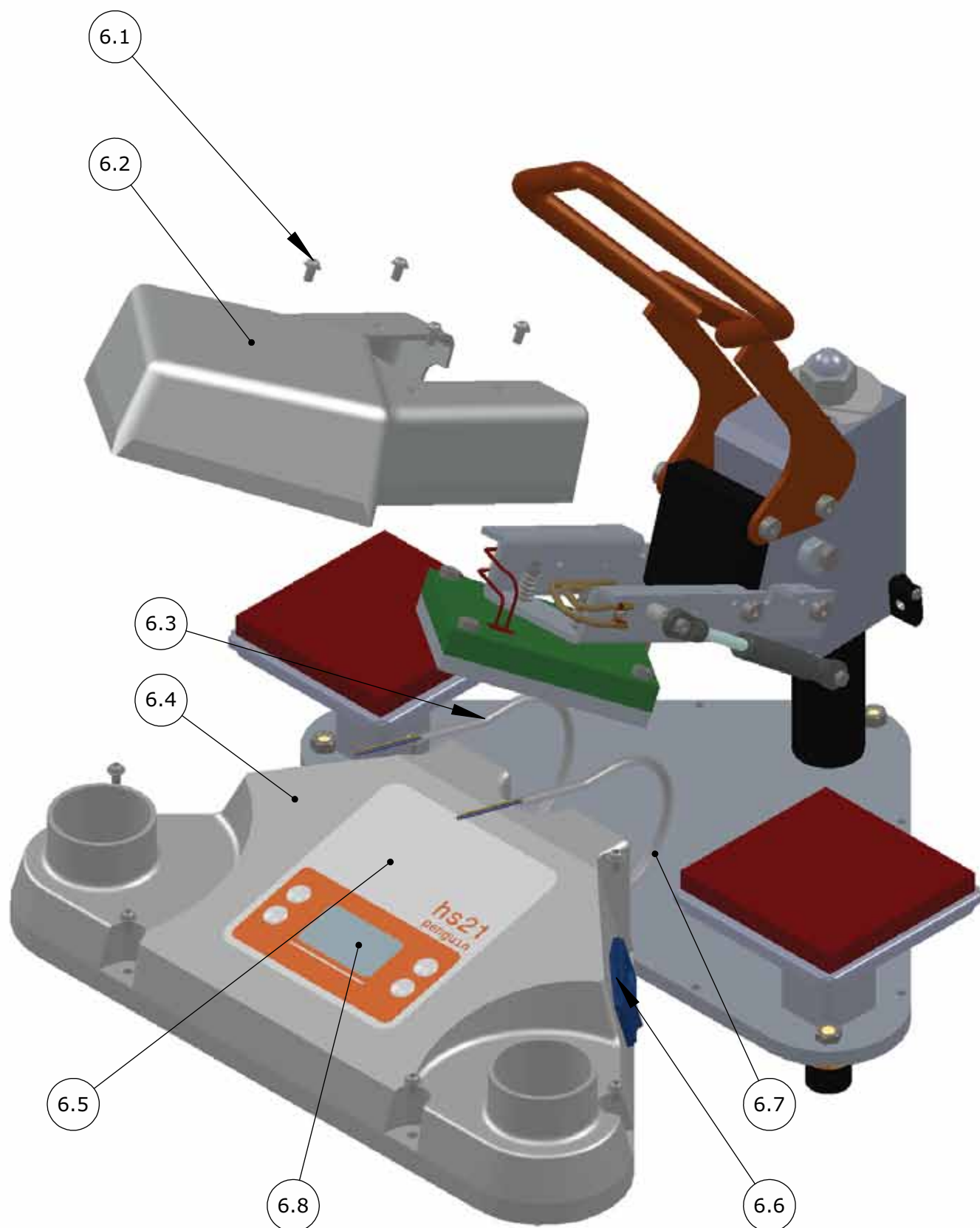


4.1	Nylock nut	M5	6	DIN 985
4.2	Spring	D-180S	2	SPAPEN-21032
4.3	Connector	Porcelain	1	SPAPEN-03-04
4.4	Allen screw	M3 x 20	1	DIN 912
4.5	Press arm		1	SPAPEN-21011
4.6	Nut	M5	2	DIN 934
4.7	Isolating plate		1	SPAPEN-21027
4.8	Rubber		1	SPAMA-01-01-A
4.9	Heat sensor	PT 1600	1	SPAPEN-03-11
4.10	Sensor plate		1	SPAPEN-21023
4.11	Heating element		1	SPAPEN-21031
4.12	Heat shield		1	SPAPEN-21021
4.13	Micro switch			SPAPEN 03-09
4.14	Allen screw + nut	M3 x 16	2	DIN 912
4.15	Cable clamp		1	SPAPEN-21033
4.16	Allen screw	M3 x 5	1	DIN 912
4.17	Countersunk screw	M5 X 35	2	DIN 7991
4.18	Thermostat		1	SPAPEN 03-02
4.19	Countersunk screw	M5 X 30	4	DIN 7991





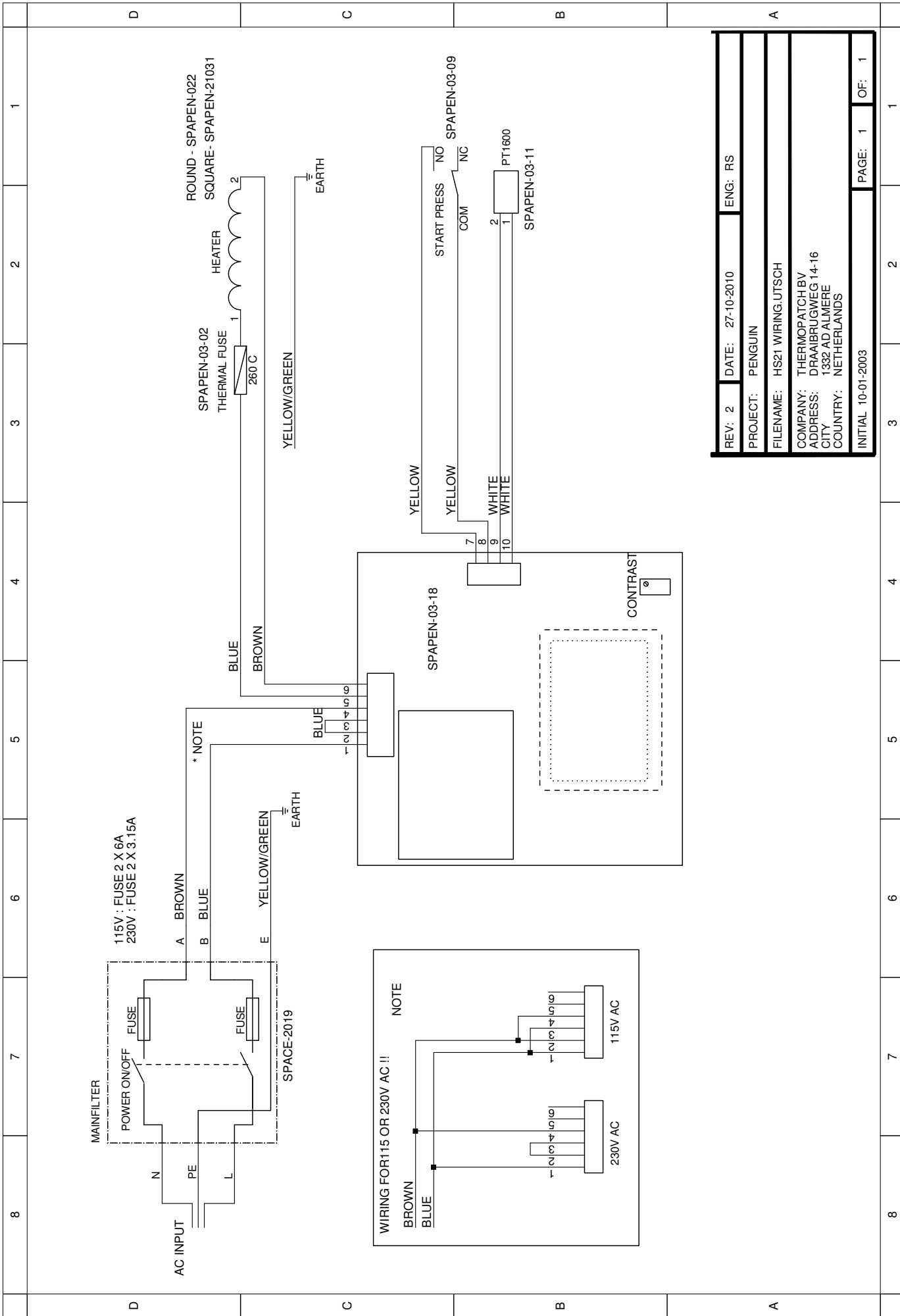
5.1	Nylock nut	M6	1	DIN 985
5.2	Nylock nut	M8	2	DIN 985
5.3	Shoulder bolt	M5 x 35	1	DIN 7379
5.4	Nylon bushing	10 x 10 x 6.5	1	SPAPEN 02-08
5.5	Shoulder bolt M8x70	07111-080-070	2	DIN 7379
5.6	Gas spring	21381K	1	SPAPEN 02-09
5.7	Nylon bushing	20 x 10 x 6.5	1	SPAPEN-02-13
5.8	Hex bolt	M6 X 95	1	DIN 933
5.9	Nylock nut	M5	1	DIN 985





6.1	Cap screw	M5 x 10	10	ISO 7380
6.2	Press arm cover		1	SPAPEN-21020
6.3	Harness, low voltage		1	SPAPEN-21603
6.4	Base cover		1	SPAPEN-029
6.5	Panel sticker		1	SPAPEN-KEYBOARD
6.6	Power inlet		1	SPAPEN-03-13
6.7	Harness, 230 Volt		1	SPAPEN-21607
6.8	Electronics	Not drawn	1	
6.9	Teflon self adhesive cover	120 x 120 mm	1	SPAPEN-21316

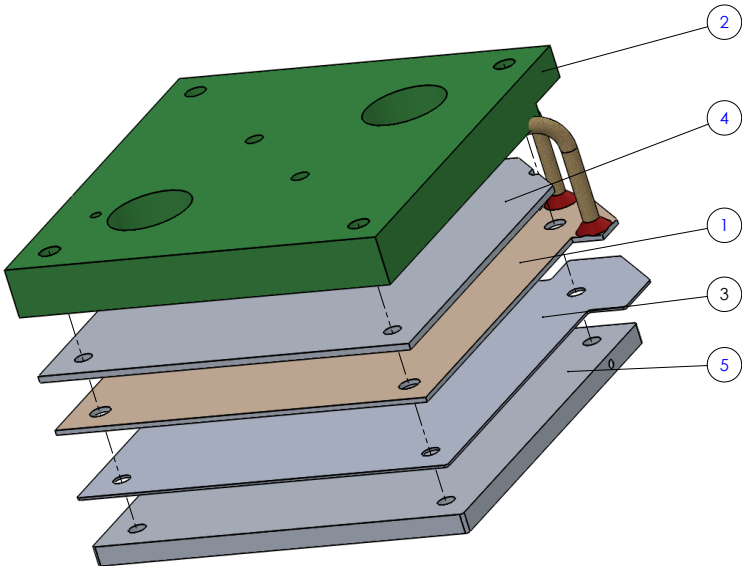
Wiring diagram for the HS-21 SQR Penguin



Addendum June 2018

Enhancement of the heating element to improve the construction of the part.

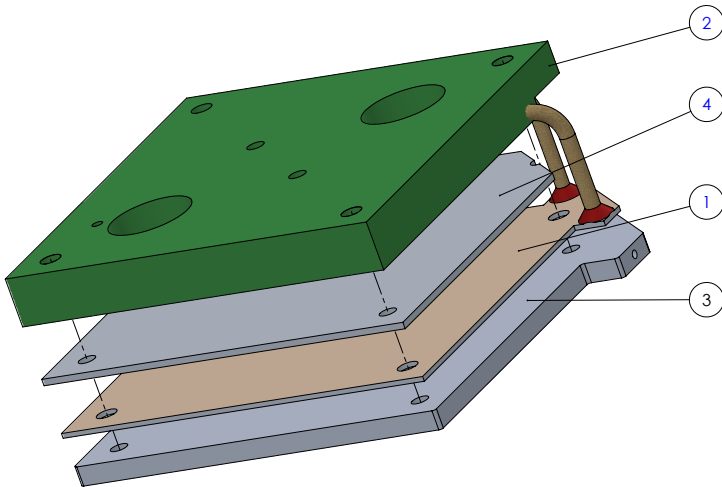
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SPAPEN-21031	Heating element HS-21 SQR	1
2	SPAPEN-21027	Insulation plate HS-21	1
3	SPAPEN-21021-1	Heating element protector HS-21 square	1
4	SPAPEN-21023	Heater shield HS-21 square	1
5	SPAPEN-21021	SQR Heater Shield	1



Previous, up until serial number
HS21SQR-18-12867

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:	DEBUR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
DRAWN: RS				SIGNATURE:	DATE: 29-05-2018	TITLE: Thermopatch From serial number HS21SQR-18-12867	
CHKD:				MATERIAL:		DWG NO. Replace setup square heater	A3
APPRD:				WEIGHT:		SCALE: 1:2	SHEET 1 OF 1
MFG:							
QA:							

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SPAPEN-21031	Heating element HS-21 SQR	1
2	SPAPEN-21027	Insulation plate HS-21	1
3	SPAPEN-21021-B	SQR Heater Shield	1
4	SPAPEN-21023	Heater shield HS-21 square	1



Adaptation starting from serial
number HS21SQR-18-12917

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:	DEBUR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
DRAWN: RS				SIGNATURE:	DATE: 29-05-2018	TITLE: Thermopatch From serial number HS21SQR-18-12917	
CHKD:				MATERIAL:		DWG NO. New setup square heater	A3
APPRD:				WEIGHT:		SCALE: 1:2	SHEET 1 OF 1
MFG:							
QA:							

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