Thermopatch
an Avery Dennison Company

USER MANUAL

HS-4-C

EN **v.3.0** - 02/25

Copyrights

Introduction

Dear user,

Congratulations and welcome to the ever growing number of Thermopatch users.You have acquired a machine which has been manufactured by Thermopatch with the greatest possible care. We are confident that you will be enjoying the use of this machine for a long time. Please take note of the contents of this manual to familiarize yourself with the workings and safety aspects of the machine. This manual was written for the benefit of all users and technicians who install and maintain the machine. You will find information on operating, safety and maintenance as well as spare parts and supplies.

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1. General description

1.1 What did you receive?

The HS-4-C has been packed in a cardboard box. The following articles should have been delivered:

- HS-4-C heat seal machine
- Electrical power cable

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

1.2 The HS-4-C

1.3 Your supplier

Please look at our website, www.thermopatch.com to find your supplier.
E-mail: sales@thermopatch.nl

1.4 Specifications of the HS-4-C

The machine HS-4-C is practical and universally applicable. It can be used to apply patches, textile emblems, heat seal transfers, in short all Thermopatch materials suited for marking and mending to textiles and technical fibres.
The HS-4-C machine is a semi-automatic machine wich is manually operated. The set temperature, time and pressure are presented upon its display.
The Thermoseal HS-4-C has been manufactured in accordance with the European guideline for Low Voltage 2006/95/EG and the EMC guideline 2014/30/EU.
You will find this declaration inside this manual on the supplied CD.

Title	Specification
Lower platen sizes	95 x 12 cm (optional)
Heating iron	10.16 x 12.7 cm
Heating range	20-230 °C
Electrical	3 Amps @ 240 vac 50/60 hz
Time settings	0-30 seconds
Height (open)	49.0 cm
Height (closed)	24.0 cm
Length (open)	52.0 cm
Length (closed)	53.34 cm
Width	19.0 cm
Shipping weight	23.6 kg
Net weight	21.0 kg
Warranty	1 year

1.5 Safety

At normal usage no problems are to be expected. Regardless that, we state underneath a few pointers which will limit existing risks to a minimum.

- Unplug the machine from the wall socket whenever you are maintaining or cleaning the machine.
- Make sure there is enough working space around the machine. Although the heat radiation of the press is very low, it is still necessary to have enough room for cooling down. Extensions and connections must not get snagged
- Avoid contact with the press arm and the heating element
- Pull the fabric tightly over the sealing pad.

1.6 Conditions of warranty and product liability

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

2. Installation

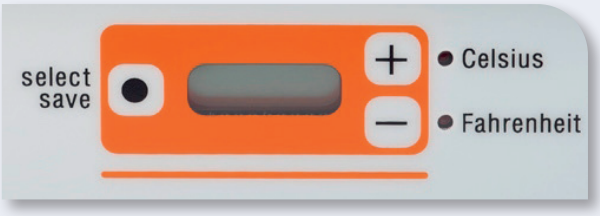
2.1 Instruction for handling

The HS-4-C has been packed in a cardboard box. If you need the relocate the machine at a later point, we advise you to pack the machine in a similar fashion. Let the machine cool down completely before packing and moving it.

2.2 Installing and connecting the HS-4-C

Take the Thermoseal HS-4-C from its box and place it onto a stable worktop near an earthed wall socket. Connect the machine with the supplied power cord to the electrical current (230 Volt, alternating current). Thermoseal HS-4-C is earthed and provided with two fuses (3.15 A).

3. Operating the HS-4-C



3.1 Starting up

You can start operating the Thermoseal HS-4-C as soon as it is connected to the electricity mains. Switch on the HS-4-C 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. The Thermoseal HS-4-C has been factory set for:

- Temperature 204°C
- Time 12 seconds
- Power saver timer 30 minutes
- Power saver temperature 149°C

3.2 Functionality

Switch the machine to the “On” position. Either the Celsius or Fahrenheit LED will blink depending upon the machine settings. The actual temperature of the Heater Element is displayed. During the heat up phase, and when the machine has achieved “Set Temperature”, changes to the machine settings can be made for: Set Temperature, Temperature Display in Celsius or Fahrenheit, Sealing Cycle Time, Power Saver Time and Power Saver Temperature. Changes cannot be made to the machine settings when the machine is active during a Sealing Cycle.

LCD Display Functions:

The following describes the LCD Display functions and displays: The Celsius or Fahrenheit LED will light up continuously once the temperature is within range of the setting. Range is +/- 7°C or +/-15°F. When not in a sealing cycle, the actual temperature of the Heater Element is displayed. During the Sealing Cycle, the LCD will display a countdown of the time in seconds from the preset Sealing Cycle Time.

Procedure to change desired set temperature:

The SET TEMPERATURE of the HS-4-C heat seal machine has been set at the factory to 204°C. To change display between Celsius and Fahrenheit, press and hold the + and - buttons until the LED changes.
To change the SET TEMPERATURE, please follow the procedures below:

1. Press select/save button once.
2. Press + or - button to set the desired Set Temperature.
3. Press select/save to save the setting.

Note: If the + or - button is not touched for 3 seconds the display will change to the actual temperature of the Heater Element and no changes will be saved.

Procedure to change desired Sealing Cycle Time:

The SEALING CYCLE TIME of the HS-4-C heat seal machine has been set at the factory to 12 seconds. To change the SEALING CYCLE TIME, please follow the procedures below:

1. Press the select/save button twice.
2. Press + or - button to set the desired time.
3. Press select/save to save the setting.

Sealing Pressure:
A label to indicate the direction in which to turn the Lower Press Platen is mounted directly below the Lower Press Platen. To increase inter-platen pressure, turn the Lower Press Platen counterclockwise. To decrease the inter-platen pressure, turn the Lower Press Platen clockwise. The Pressure Settings in the Heat Sealing Guide on page 2-3 are obtained as follows:

1. Turn the Lower Press Platen clockwise until it has bottomed out against the machine base.
2. Turn the Lower Press Platen counterclockwise until the first “click” is detected. This Pressure Setting is zero pressure.
3. To set the Lower Press Platen to a selected Pressure Setting, count the number of “clicks” turning the Lower Press Platen counterclockwise, increasing pressure.
4. To set the Lower Press Platen to a new selected Pressure Setting from and existing setting, count the number of “clicks” from the existing setting, turning the Lower Press Platen clockwise or counterclockwise.
   Settings may vary depending upon garment thickness. Normally, higher pressures will produce more effective heat seals. However, the use of excess pressure may force adhesive through the fabric, with an undesired result.

CAUTION!

Use of excess pressure can cause the HS-4-C machines to become locked in a closed position and difficult to open. Extreme pressure may severly damage the machine.

Difficuly in locking the Seal Arm Handle of the HS-4-C machine in a closed position is anindication of too much inter-platen pressure. To prevent excess pressure when sealing thick garments, screw the Lower Press Platen all the way down. A Lower Press Platen that is worn from use can cause insufficient inter-platen pressure.
The Lower Press Platen should be replaced with Lower Press Platen SPA43941. When the pressure is too high, preventing the machine to open by itself, this has to be done manually. After this, switch off the machine for 5 seconds and switch it on again, resetting the machine.

4. Maintenance

4.1 General

Ensure that the cycle of the machine is finished, before working on the machine. Depending on the planned job you wish to perform, the power can be disconnected.

Temperature:
The temperature of the heating plate can be tested regularly by using Thermolabels can be obtained at your Thermopatch supplier.

Teflon cover:
The Teflon cover of the heating plate should always be clean to prevent labels or patches sticking to it or soiling the heat seal products. Clean the cover with a dry, clean cloth when the machine is still warm. Repeat this several times a day when using the machine intensively. Damaged or soiled Teflon
covers need to be replaced. These can be obtained at your Thermopatch supplier.

Sealing pad:
Clean the sealing pad while it is still warm. Use a clean, lint free cloth to clean it regularly. Do not heat seal on zippers, staples, buttons etc. to avoid damage by puncturing or tearing the sealing pad. Never use solvents to clean the sealing pad.

Replacing the Teflon cover or sealing pad:
The Teflon cover or the sealing pad should, depending on their condition, be replaced regularly. When performing the replacement, make sure the machine has cooled down sufficiently. Peel off the self-adhesive Teflon cover (like a used band-aid). Then carefully remove any glue residue that was left behind. Make sure that all residue is removed and the metal surface is clean, before placing the new cover, without bubbles. Teflon covers and sealing pads can be obtained at your Thermopatch supplier.

Lubrication:
Normally the machine does not require lubrication. However when the Sealing Arm Handle is slow to rise, lubricating the pivots and rotating parts will help the Sealing Arm Handle.

5. Faults

5.1 Faults and possible solutions

Fault	Possible cause	Solution
No heat.	• Machine is unplugged or power source is faulty. • Main power switch is not “On”. • Power Saver feature activated. • Temperature displayed. • Loose wires. • Heat sensor is defective. • Sealing iron is defective. • Relay is defective. • Heat controller is defective.	• Check plug and fuses. • Check • See I. Introduction. • See II. Installation. • Check • Replace • Replace • Replace • Return circuit board to factory for repair.
Temperature too high or too low.	• Heat control requires adjustment. • Temperature display is incorrect. • Power Saver feature activated. • Heat sensor is defective. • Sealing iron defective. • Heat controller is defective.	• See II. Installation to adjust. • See II. Installation to check. • See I. Introduction.. • Replace • Replace • Return circuit board to factory for repairs.
Time malfunction.	• Loose wires. • Timer is defective. • Micro switch is defective.	• Check • Return circuit board to factory for repairs. • Replace
Handle does not stay down. Handle does not return at end of cycle (HS-4-C).	• Insufficient pressure • Excess pressure. • Motor is defective. • Linkage or gas spring is binding or broken. • Springs are weak. • Links broken.	• See III. Operating the HS-4-C. • See III. Operating the HS-4-C. • Replace • Lubricate or adjust. See Page V. Possible faults and VI. Supplies Note 1. • Replace • Replace
Inadequate bond or transfer.	• Insufficient sealing time. • Insufficient pressure. • Insufficient tempeature. • Pad worn. • Teflon shield soiled or worn.	• Increase time in 2 second increments and test. • Increase pressure in one half turn increments and test. • See II. Installation to adjust. • Replace • Clean or replace.
Bleed through.	• Too much time. • Too much pressure.	• Decrease time in 2 second increments. • Decrease pressure in one half turn increments.

5.2 Error codes

Error 1 = Temperature sensor short (0 Ohm)
Error 2 = Temperature sensor broken
Error 3 = Error in Eprom: the processor has no access to the memory for saving or reading of information.
Error 4 (HS-4-C only) = Motor timed out, not in position or motor switch error:The correct position of the Cam Arm Motor cannot be detected. Rotate the Cam Arm Motor Shaft checking actuation of the Motor Detection Switch. Also, check wire connections on the Motor Detection Switch.

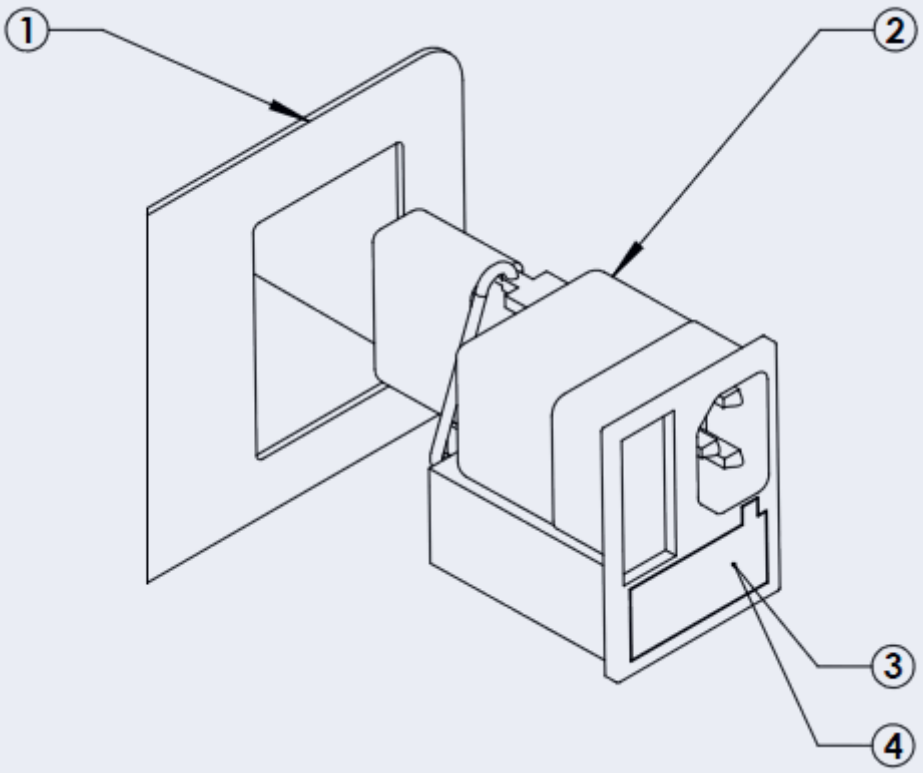
6. Technical annexes

6.1 Most commonly used parts

- Sealing pad SPA43941
- Teflon cover, self-adhesive, SPA9000
- Fuse: 2x 20015-26 3.15 A Fuse

6.2 Parts identification and location of components by name

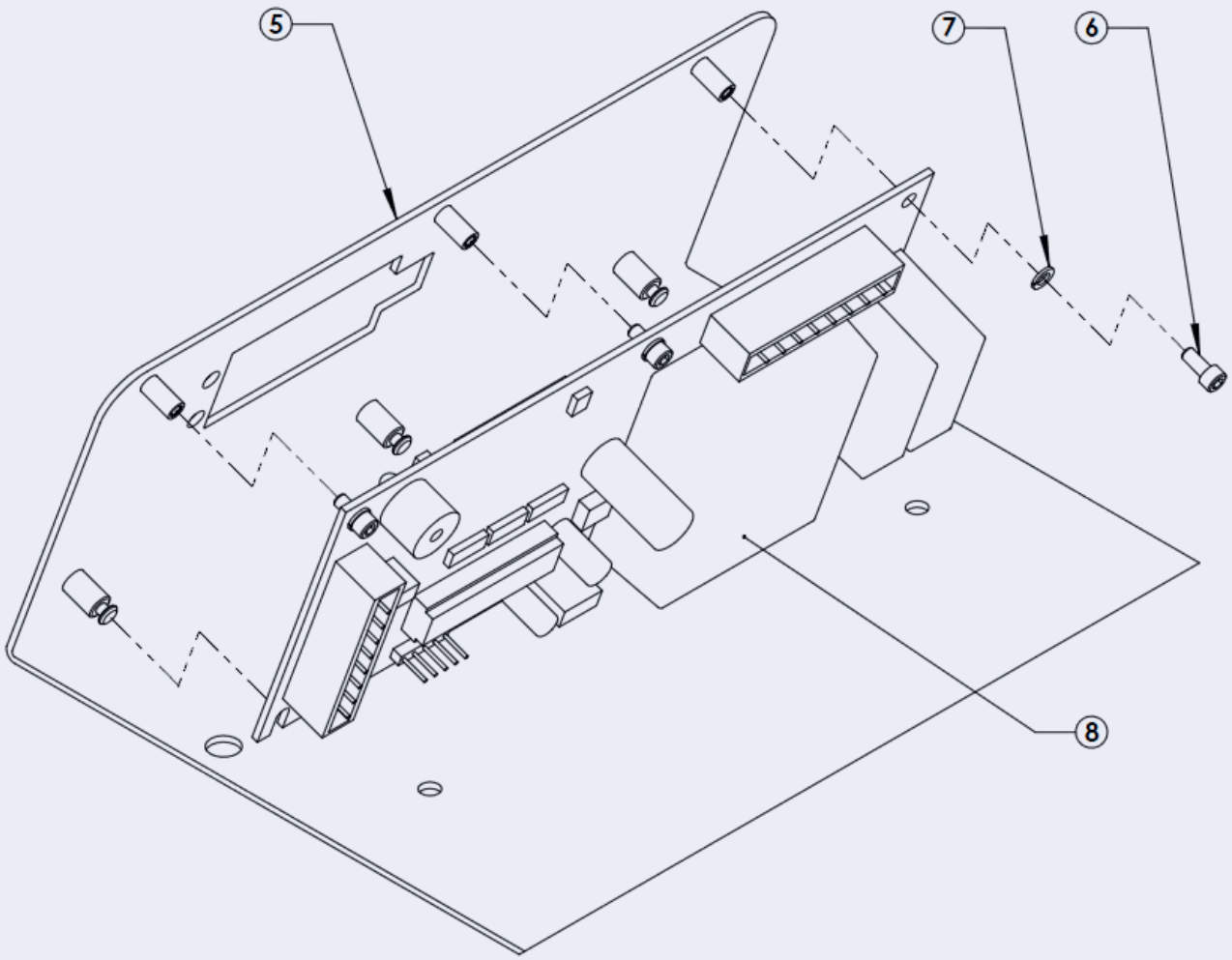
Power Entry Module



Item #	Description	QTY	Part Number
1	Electrical Chassis	1	46326
2	Power Entry Module Assembly (without fuses)	1	46453
3	Fuse Drawer	1	P/O 46453
4	230 VAC 3.15 AMP Fuses	2	20015-16

Figure 5 – Power Entry Module

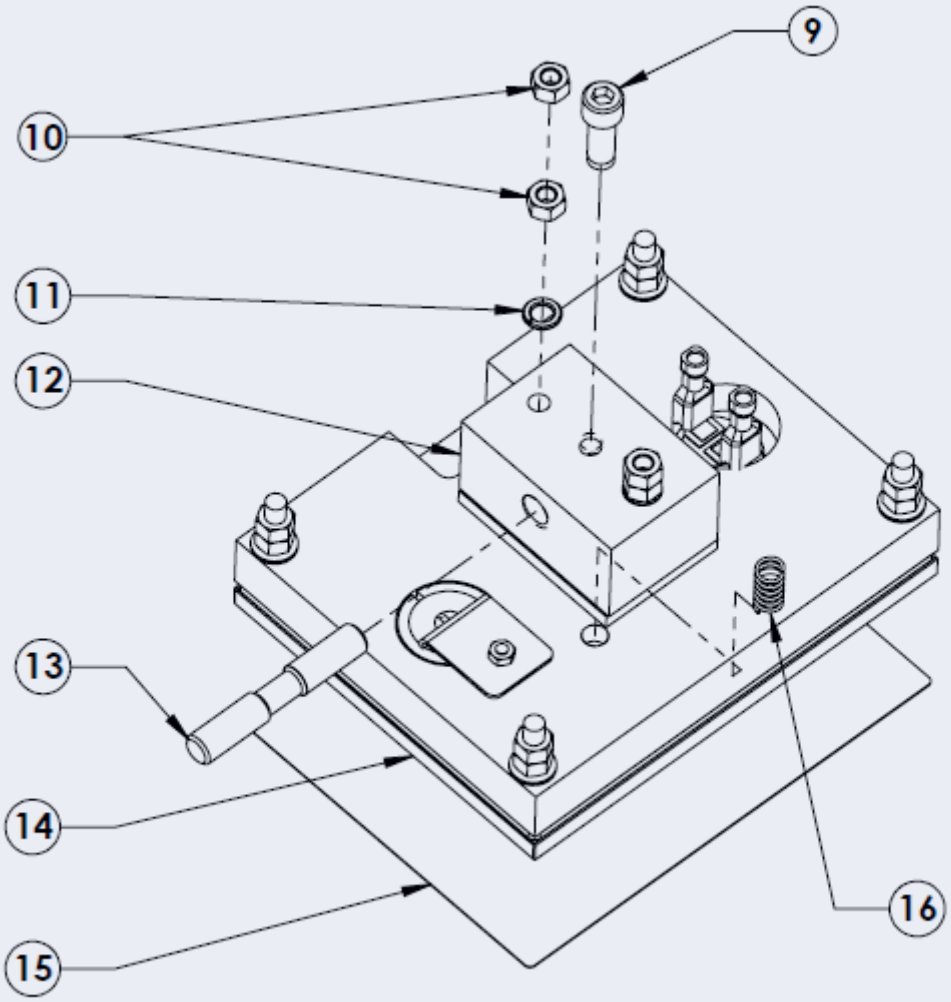
Controller Board



Item #	Description	QTY	Part Number
5	Electrical Chassis	1	46326
6	#4-40unc x ¼" Socket Hex Cap Screw	4	21063-02-C
7	#4 Spring Lockwasher	4	21031-03-C
8	Controller Board	1	46411

Figure 6 – Controller Board

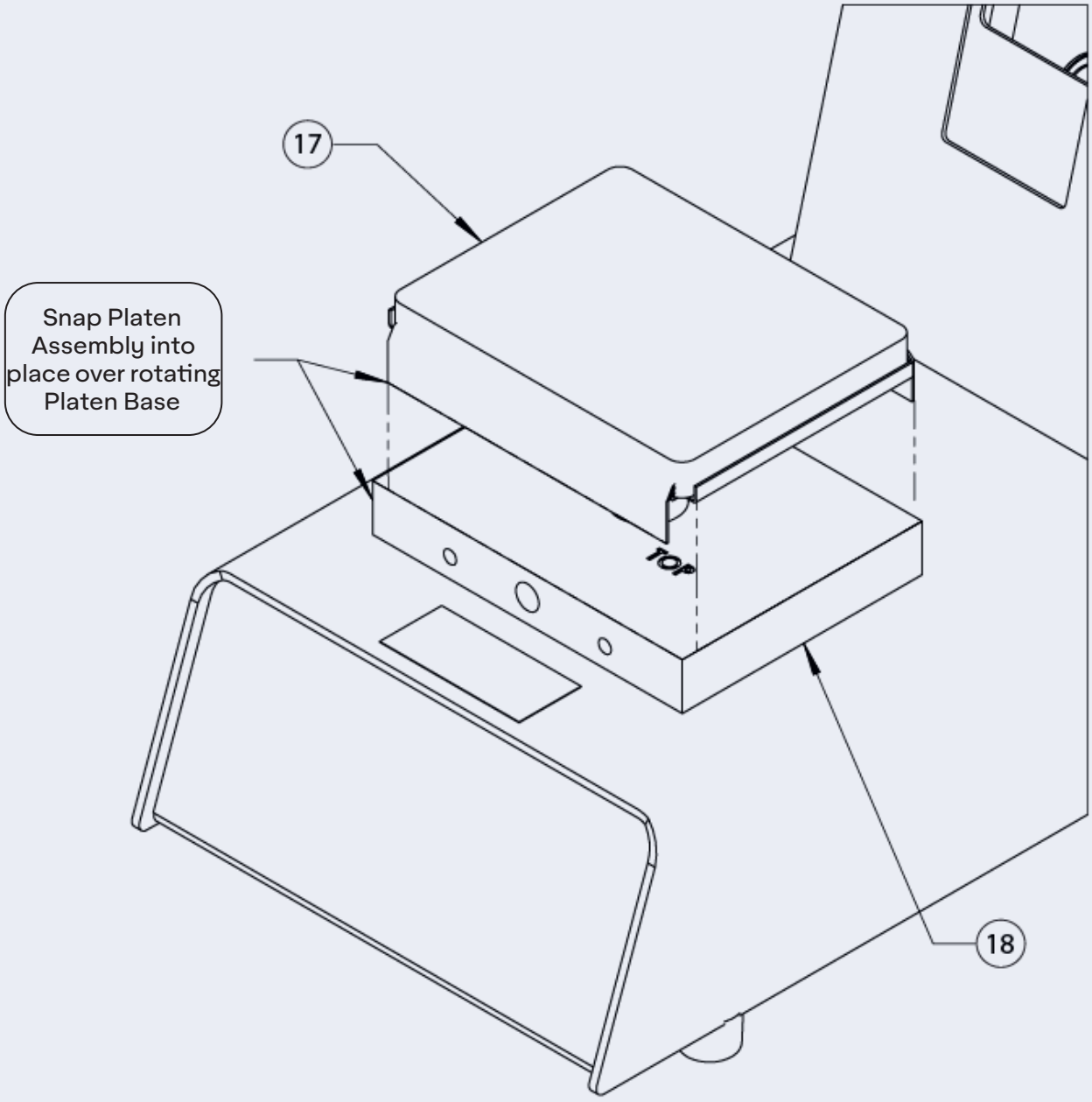
Heater Element



Item #	Description	QTY	Part Number
9	¼ 20unc x 5/8” Socket Hex Cap Screw	1	21063-05-K
10	M5 Hex Nut	4	21045-07-A
11	M5 Spring Lockwasher	2	21046-06
12	Pivot Block	1	46378
13	Pivot Block Pin	1	46379
14	Heater Unit Assembly	1	SPAHS40000
15	Teflon Cover	1	46375
16	Compression Spring	2	24075-36

Figure 7 – Heater Element

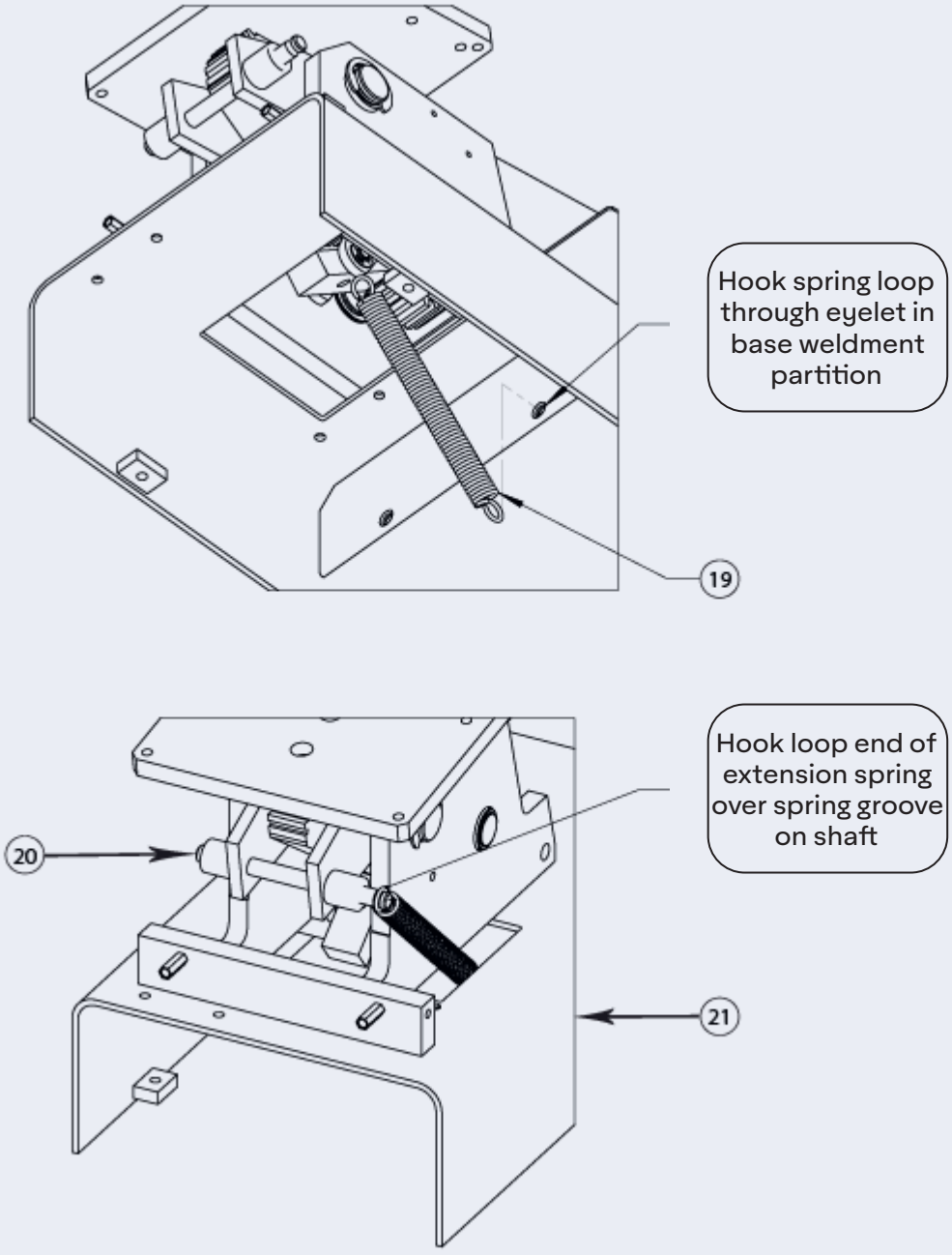
Platen Assembly



Item #	Description	QTY	Part Number
17	Platen Assembly	1	43941
18	Rotating Platen Base	1	43663

Figure 8 – Platen Assembly

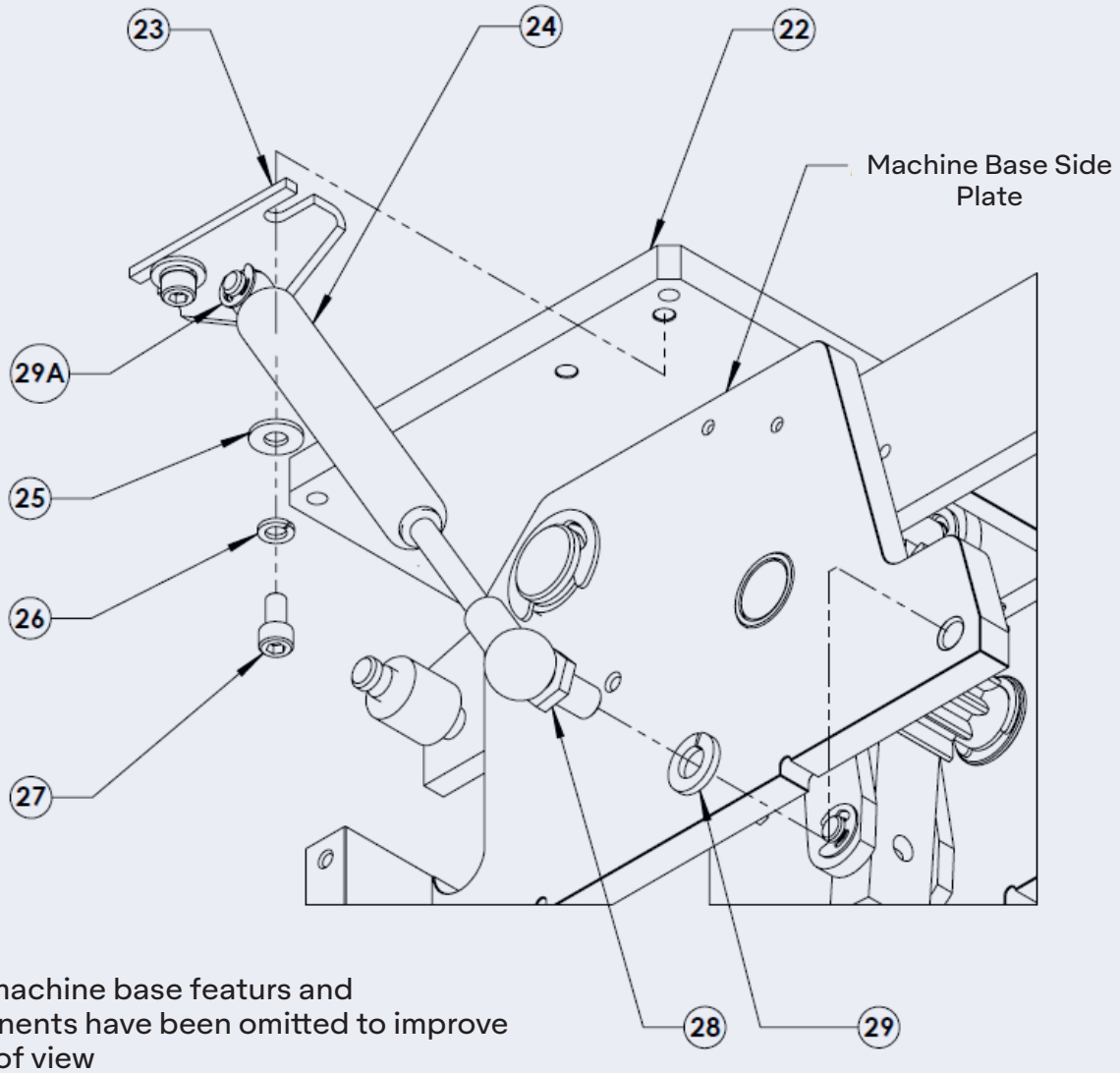
Extension Spring Assembly



Item #	Description	QTY	Part Number
19	Extension Spring	1	24080-35
20	Bumper	2	24091-44
21	Base Frame Assembly	1	47263

Figure 9 – Extension Spring Assembly

Gas Spring Mounting

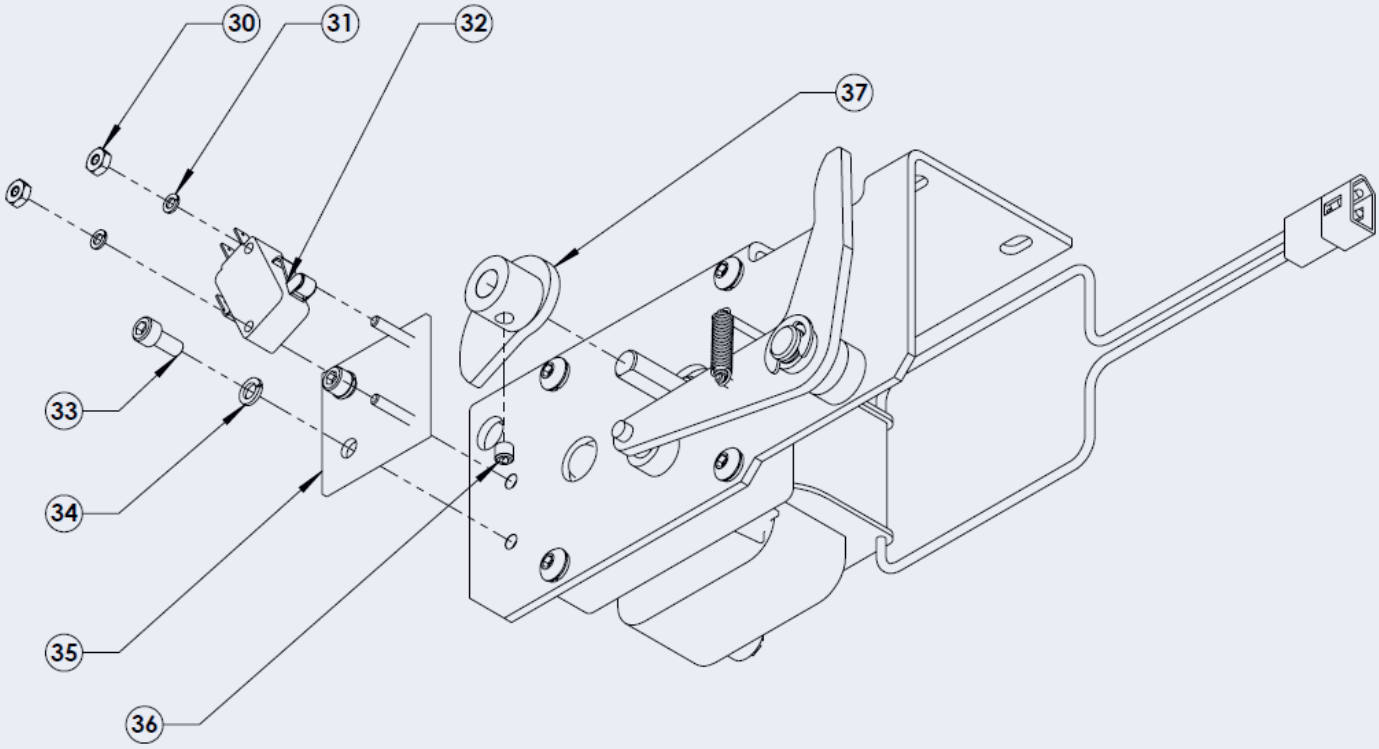


NOTE:
Some machine base featurs and components have been omitted to improve clarity of view

Item #	Description	QTY	Part Number
22	Top Cover Mounting Plate	1	46312
23	Gas Spring Bracket	1	46374
24	Gas Spring	1	24091-48
25	#10 Flat Washer	1	21023-01
26	#10 Spring Lockwasher	1	21012-07-C
27	#10-32unc x 3/8” Socket Hex Cap Screw	1	21063-03-J
28	Gas Spring Ball Joint	1	24901-77
29	5/16” Spring Lockwasher	1	21021-10-C
29A	Retaining Ring	1	D-9706

Figure 10 – Gas Spring Mounting

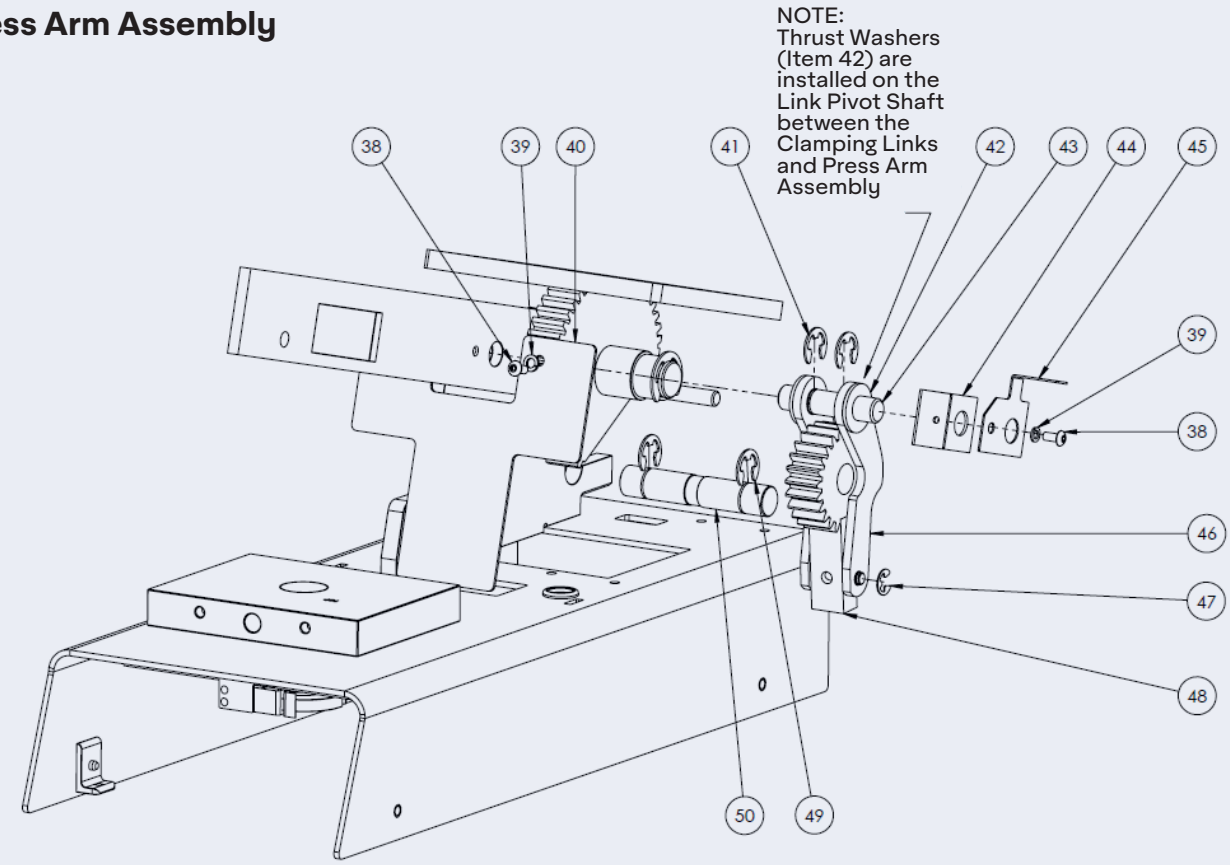
Seal Arm Release Mechanism



Item #	Description	QTY	Part Number
30	#4-40unc Hex Nut	2	21051-03-A
31	#4-40 Spring Lockwasher	2	21021-03-C
32	CAM Release Arm Switch	1	20055-62
33	#8-32unc x 3/8” Hex Socket Cap Screw	2	21063-03-G
34	#8 Spring Lockwasher	2	21021-06-C
35	Cam Arm Switch Bracket	1	47187
36	#10-32unf x 3/16” Set Screw, Socket Hex Cup Point	1	21011-04-K
37	Cam Release Lobe	1	46408

Figure 11 – Seal Arm Release Mechanism

Press Arm Assembly



NOTE: Item No. 42 is installed on machines manufactured after July 2014.

Item #	Description	QTY	Part Number
38	#8-32unc x 3/8" Button Head Socket Screw	1	21029-48
39	#8 Spring Lockwasher	1	21021-06-C
40	Close Out Cover	1	46363
41	E Style ½" Diameter Retaining Ring	2	21025-26
42	Thrust Washer OD= 1", ID= 0.5"	2	21022-13
43	Link Arm Pivot Shaft	1	46328
44	Close Out Cover Bracket	1	46364
45	Switch Actuator	1	46334
46	Clamping Link Arm	2	46307
47	E Style ¼ " Diameter Retaining Ring	1	D-9702
48	24 Tooth Gear Assembly	1	46493
49	E Style 5/8" Diameter Retaining Ring	2	21025-28
50	24 Tooth Gear Pivot Shaft	1	46492

Figure 12 – Press Arm Assembly

Electrical Wiring Schematic HS4C

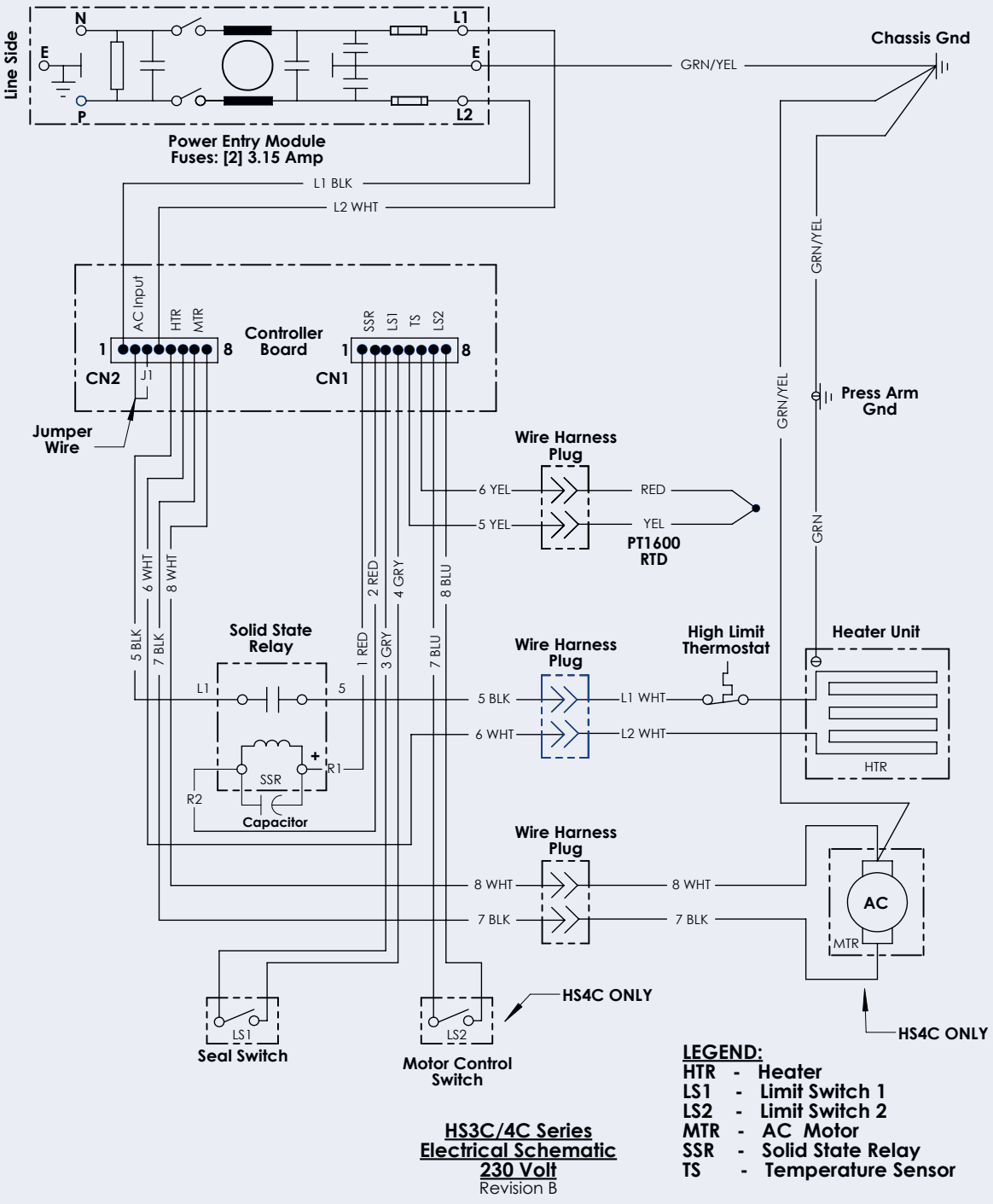


Figure 13 – Schematic

7. End of life

When disposing of the machine at the end of its life, choose responsible processing.

- Electrical machines, accessories and packaging must be recycled as much as possible in an environmentally responsible manner.
- Disassemble the machine into groups: steel parts / pneumatic components / electrical components
- These can be handed in separately and reused.

8. Declaration of Conformity CE and UKCA

We,
Thermopatch B.V.
Draaibrugweg 14
1332 Almere
Netherlands

herewith declare, on our own responsibility, that the applyance: Thermopatch HS-4-C, which this declaration refers to, is in accordance with the conditions of the following Directive(s):

2006/42/EG (Machinery directive)
2014/30/EU (EMC directive)

The Netherlands, Almere, 05-07-2016

Stephen Huyton
Business & Financial Director Thermopatch EMEA

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 HS-4-C, 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

9. Disclaimer

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Thermopatch BV, its subsidiaries, the directors, employees and agents cannot be held liable for the use and reliance of the opinions and findings in this document.
For any warranty Thermopatch BV 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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