

# Operating manual

## Pro Iron



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**1. Safety Instructions**



The unit is built according to the state of the art and in accordance with all appropriate safety regulations. Owing to its complex design, the machine must only be operated and maintained by appropriately skilled staff.

All procedures should only be carried out by properly trained and appropriately qualified personnel. ‘Qualified personnel’ refers to people who are able to carry out the required procedures and to recognize as well as prevent potential risks, as a result of their training, experience and instructions. Such personnel should have a good knowledge of any relevant standards, regulations, rules of accident prevention and internal conditions etc.

### 1.1. Personal protective equipment






Personal protective equipment must be used at work. This equipment comprises close-fitting working clothes with tight sleeves and high tearing resistance without any protruding parts. These features prevent operators from getting caught by moving machine parts.

### 1.2. Safety instructions for the operating staff

	All cabinets and covers must always be kept closed. Open cabinets and covers are extremely dangerous as live electrical components are accessible.
	The device must be taken out of operation in case of damage and disconnected from the mains.
	Mechanical or electrical failures must only be repaired by an MHM authorized/approved technician.
	No modifications to any part of the unit that may adversely affect safety must be carried out without the prior approval of MHM.
	All working spaces, passageways, escape and emergency routes and exits must be kept clear.
	Always wear protective gloves and safety goggles during cleaning work, in particular when using solvents!
	Any remains of potentially harmful substances should be disposed of according to the legal requirements of the country or state in which the printing machine is operated.
	All accessories for service and maintenance work (e.g. cleaning agents) must be collected in suitable containers and disposed of according to any relevant regulations.

### 1.3. Additional risks

Even though the machine has been designed and built according to the most stringent safety criteria, as with all machinery we have to anticipate certain additional risks, which are detailed below:

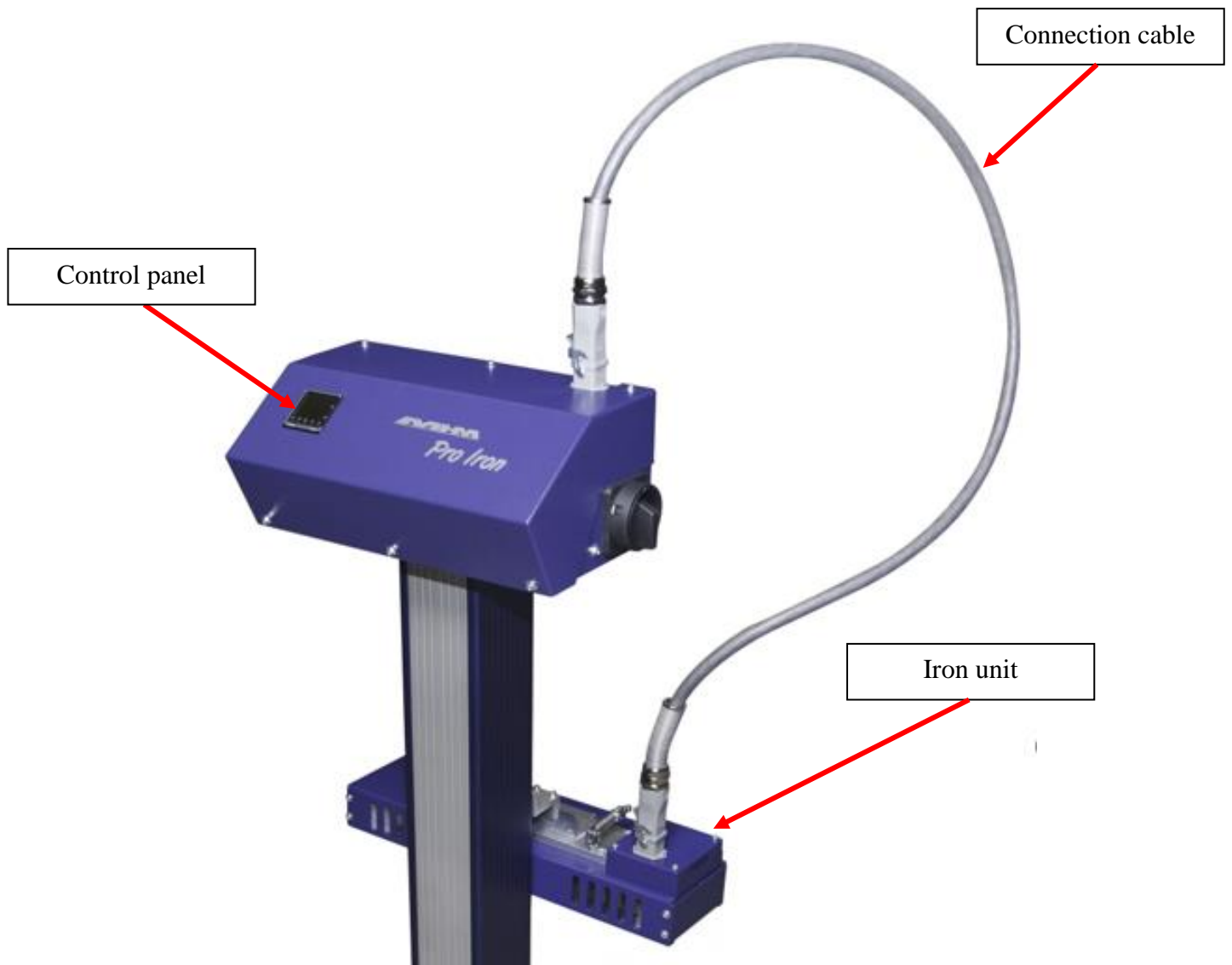
Danger	Description	Behavior/Action
Mechanical threats: Crushing 	Crushing of parts of the body - in particular arms and hands.	Be aware of moving parts whilst operating the machine. Wear protective clothing at all times.
Mechanical threats: Getting caught or trapped 	Danger through moving parts (linear or rotary drive systems).	Danger in reaching into, under or over the machine. Only reach into the machine from the indicated points. Wear appropriately fitting clothes, particularly in the area of the arms.
Mechanical threats: Slipping, stumbling and falling 	Danger of falling (e.g. over obstacles on the floor).	The floor area around the machine must be kept free from any obstacles.
Electrical threats: Indirect contact (in case of defect) 	Danger of life-threatening electrical shock by indirect contact with defective parts carrying voltage (in particular in case of defective insulation).	Unplug machine from power supply! Contact electrician for fault removal.
Danger through contact with or inhaling of substances 	Danger through contact with or inhaling substances or materials with harmful or toxic effects.	Observe the safety instructions for handling such substances.

## 2. Technical data

Description	Requirement/Value
Electric supply	1p 200-240V; 50/60Hz; ±5%
Power consumption	2,1 kVA
Max. heating temperature	210 °C
Heating width	400 mm

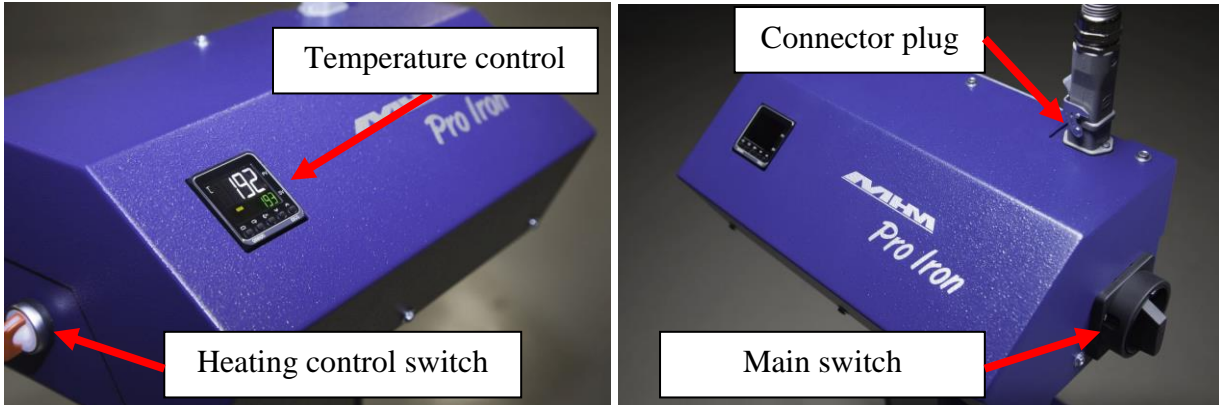
## 3. Construction

The device consists of two parts, the control panel and the iron unit which must be mounted in the machine. Both parts are connected with a connection cable.



## 4. Part description

### 4.1. Control panel



#### 4.1.1. Main switch

Main switch connects or disconnects the unit from the mains. When switch is in ON position, the cooling fans are running. The heating function depends additionally on the Heating control switch. Use the main switch to disconnect the unit from mains in case of emergency.

#### 4.1.2. Heating control switch

The heating control switch enables or disables the heating function. In on position the switch is illuminated.

#### 4.1.3. Temperature control

Temperature control is used to adjust the desired temperature.



The upper white value displays the actual temperature, the lower green value the adjusted temperature. Use the buttons UP or DOWN to change the adjusted temperature.

#### 4.1.4. Connector plug

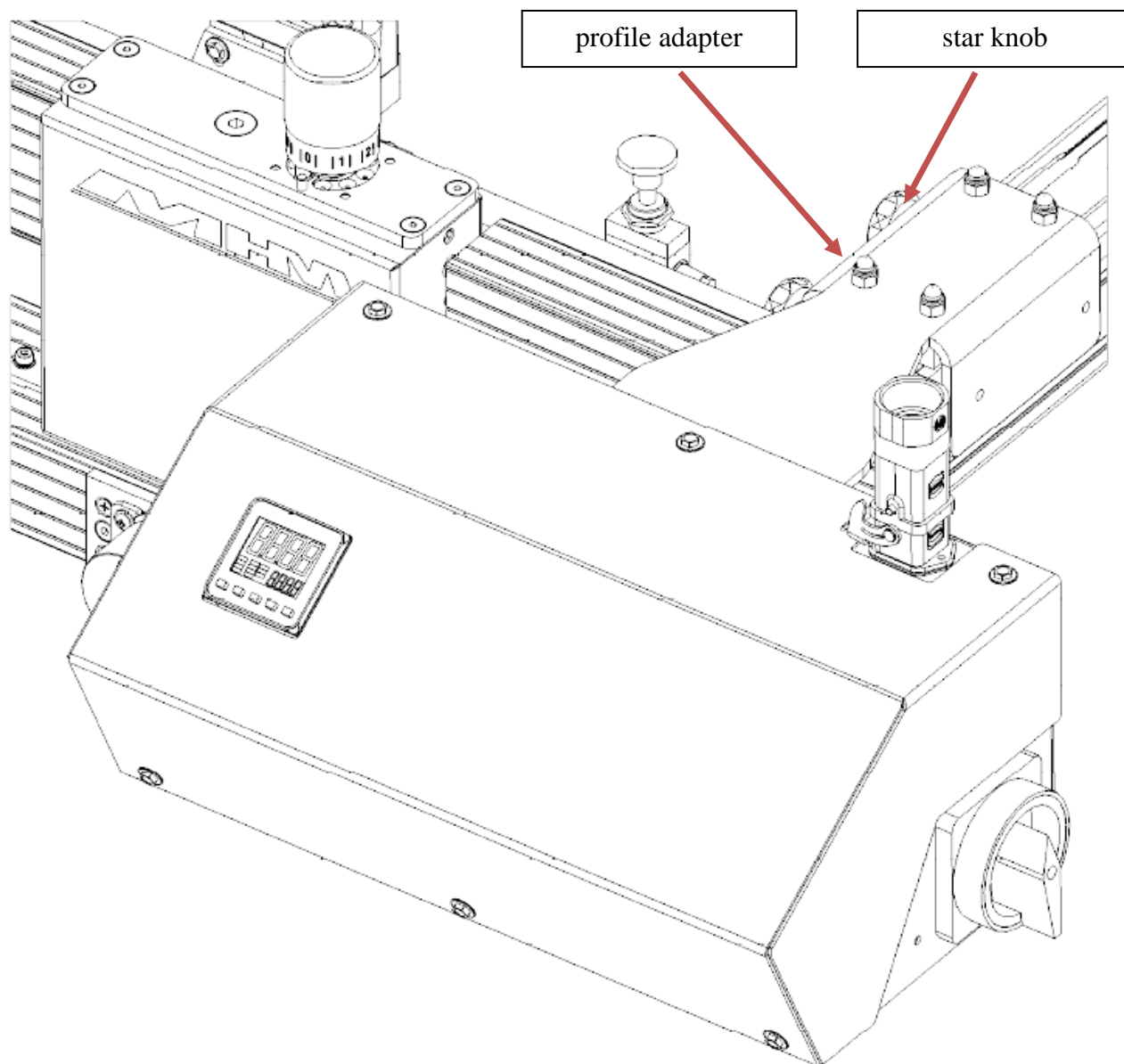
The connector plug connects the control panel with the iron unit. The connections are coded, wrong connection is not possible.

## 5. Installation Pro Iron

The Iron Unit must be inserted into the print station.

### 5.1 Control box and attachment

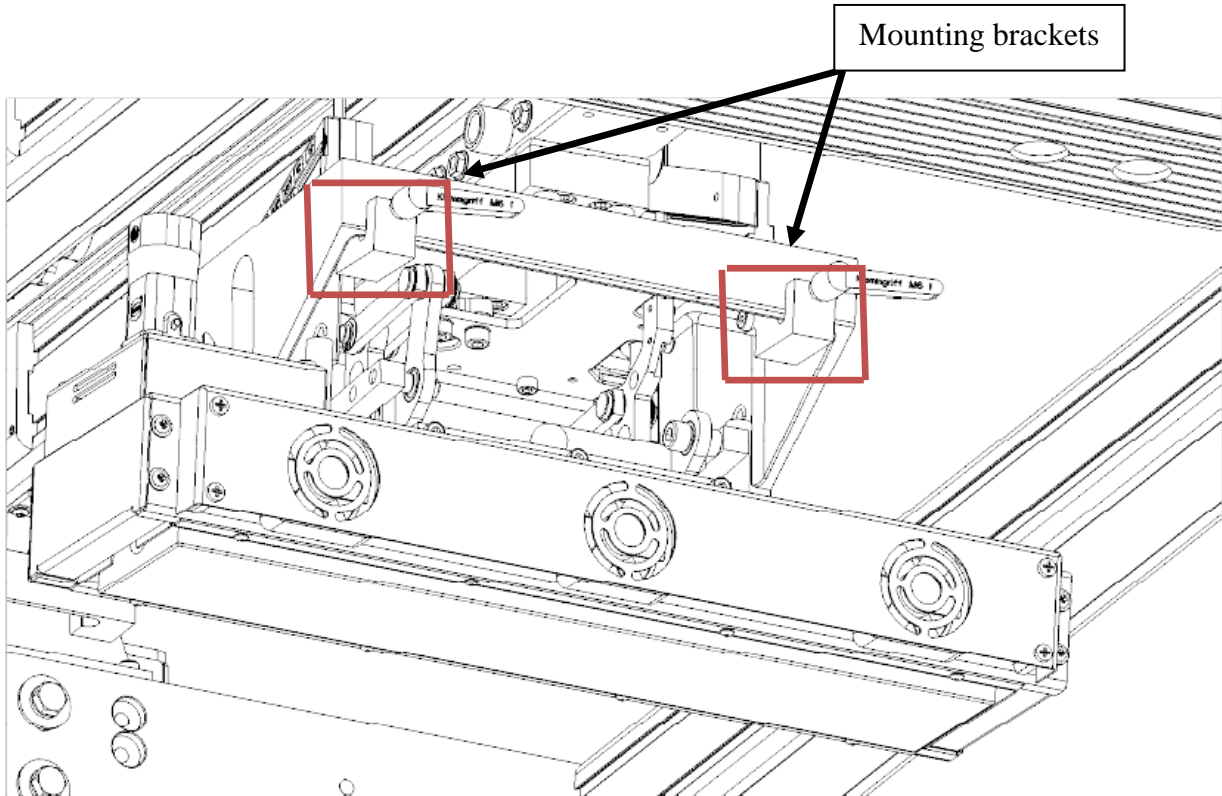
As standard equipment the control box of Pro Iron can be mounted on the linear profiles on the left or right side on MHM printing frames. Use the star knobs to fix the control box securely.



## 5.2 Iron part on squeegee carriage

Fix the iron unit on squeegee carriage similar to squeegee installation. Use the rear position of the squeegee carriage.

Use the two mounting brackets with locking levers to secure the Pro Iron on the squeegee carriage.  
**Note:** the assembled springs guarantee that the iron stays in an up position, even when the squeegee carriage is without pressure!





### 5.3 Flow control squeegee carriage

To guarantee a smooth and clean touch of the iron part with the aluminum pallets regulate the pressure of the down movement with the flow control attached to Pro Iron. Unplug the air pipe of the lower push-in and install the flow control in between (check image).



## 6. Deactivation in case of danger

Use the main switch to disconnect the unit from mains in case of danger. Stop printing machine by using emergency stop buttons and disconnect machine additionally when necessary.

## 7. Terms of the Guarantee

The terms of the guarantee are detailed in the General Terms and Conditions of Machines Highest Mechatronic GmbH.

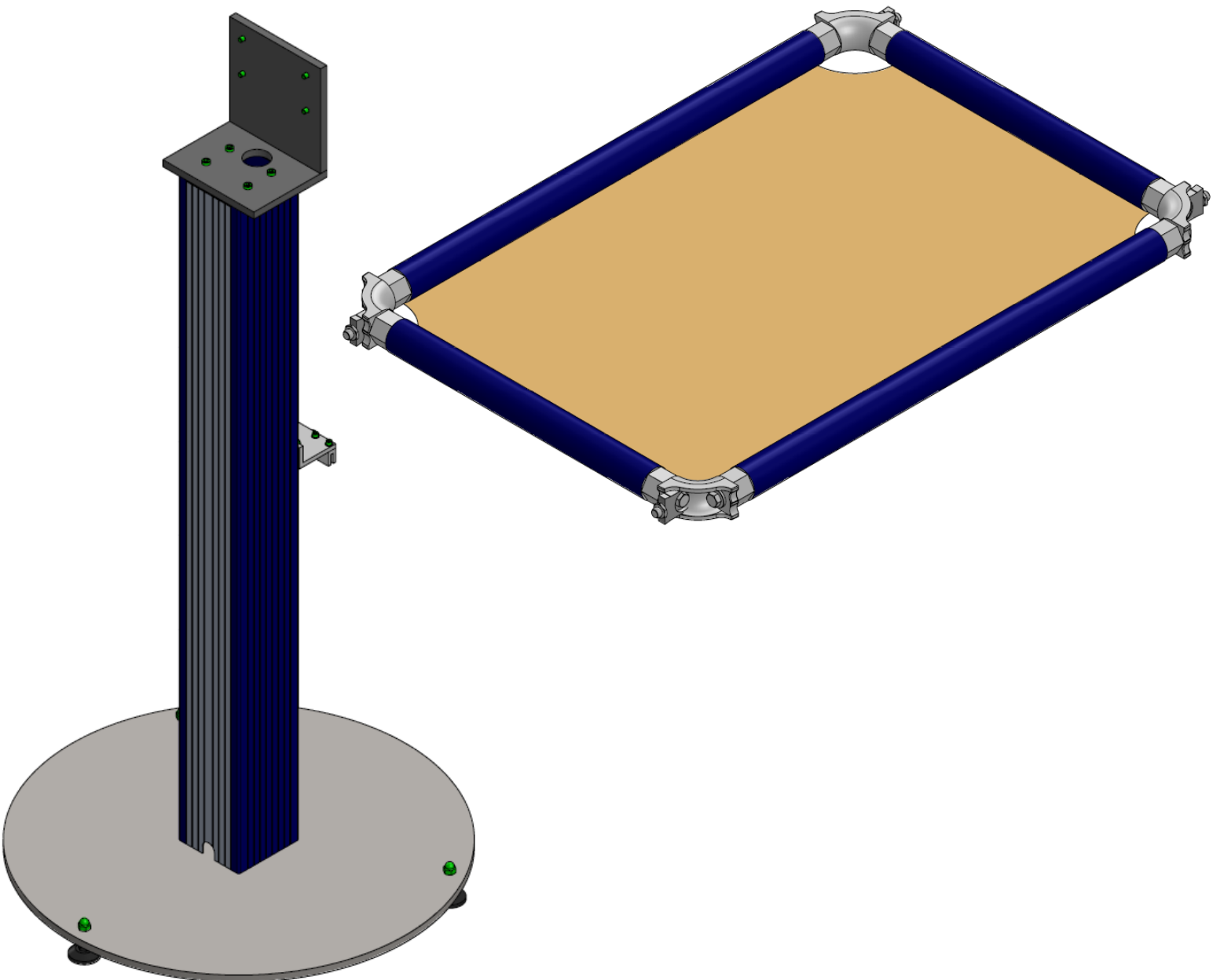
## 8. Limitation of liability

Warranty and liability claims for personal injury and material damage are **excluded** if they can be attributed to or are a result of one or several of the following:

- Improper use of the printing machine.
- Incorrect assembly, operation or maintenance of the printing machine by the operator.
- Operation of the machine with defective safety devices and/or safety devices which are missing / removed or not in correct working order.
- Failure to comply with the safety instructions in this document with regard to transportation, assembly, start-up, installation, operation, control and maintenance of the printing machine.
- Failure to comply with the Operating Instructions.
- Unauthorized modifications to the printing machine (e.g. disassembly of original MHM components and/or use of any non-original MHM components)
- Unauthorized modifications to any part of the drive or control systems (e.g. change of control components or frequency converters).
- Lack of monitoring and maintenance of machine parts/components subject to wear and tear.
- Repair measures, maintenance or service work carried out by unauthorized persons.
- Use of lubricants other than those recommended by MHM.
- Operation of the machine under technical conditions other than those specified by MHM (e.g. excessive power supply voltage and/or excessive air pressure).
- Damage by any foreign object and/or force majeure.
- Omission of specified maintenance, service measures and procedures.
- Operation of the printing machine by untrained personnel.

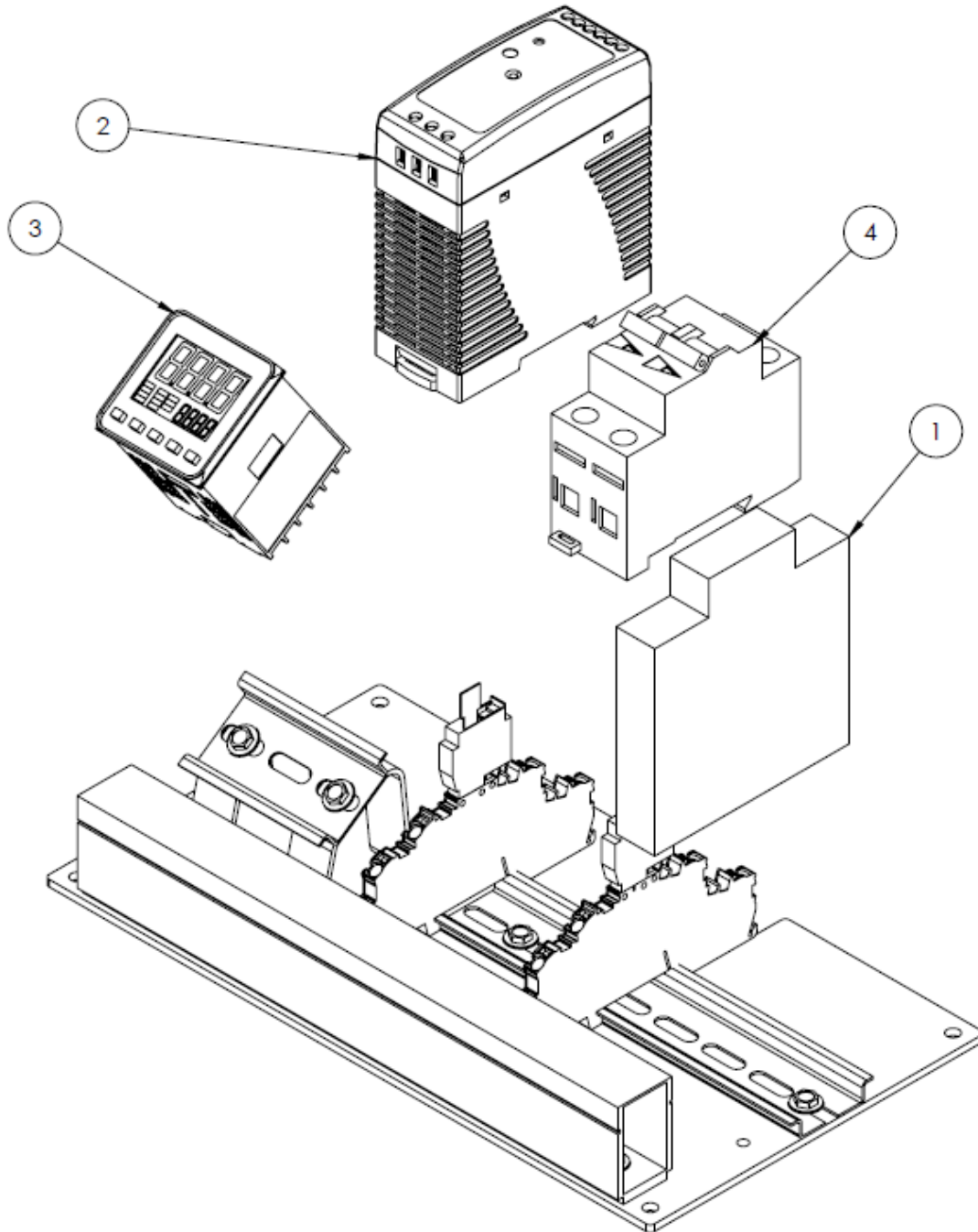
## 9. Additional equipment

- **20-0-0-0201-0 Option stayer mounting Pro Iron**  
The stayer gives the opportunity to have the whole Pro Iron equipment on one place. Also, the printer is more flexible in front of the printing station.
- **20-0-0-0202-0 Textile Roller Frame with Teflon**  
A screen with Teflon inside is good to protect Pro Iron from ink or other substrates. Also, for example it is possible to flatten the under based white after the flash cure.



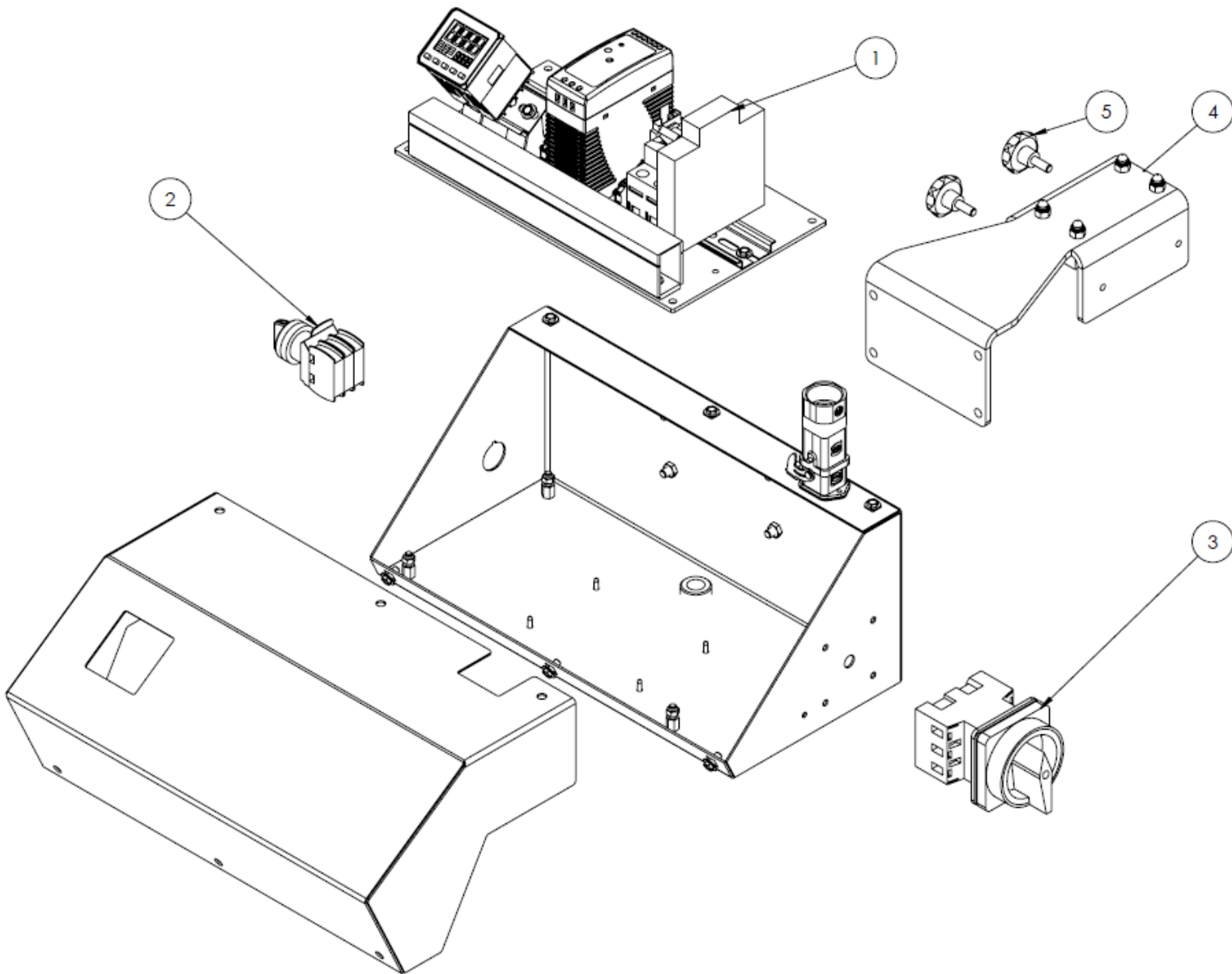
## 10. Spare Parts

### 10.1. Electric panel Pro Iron



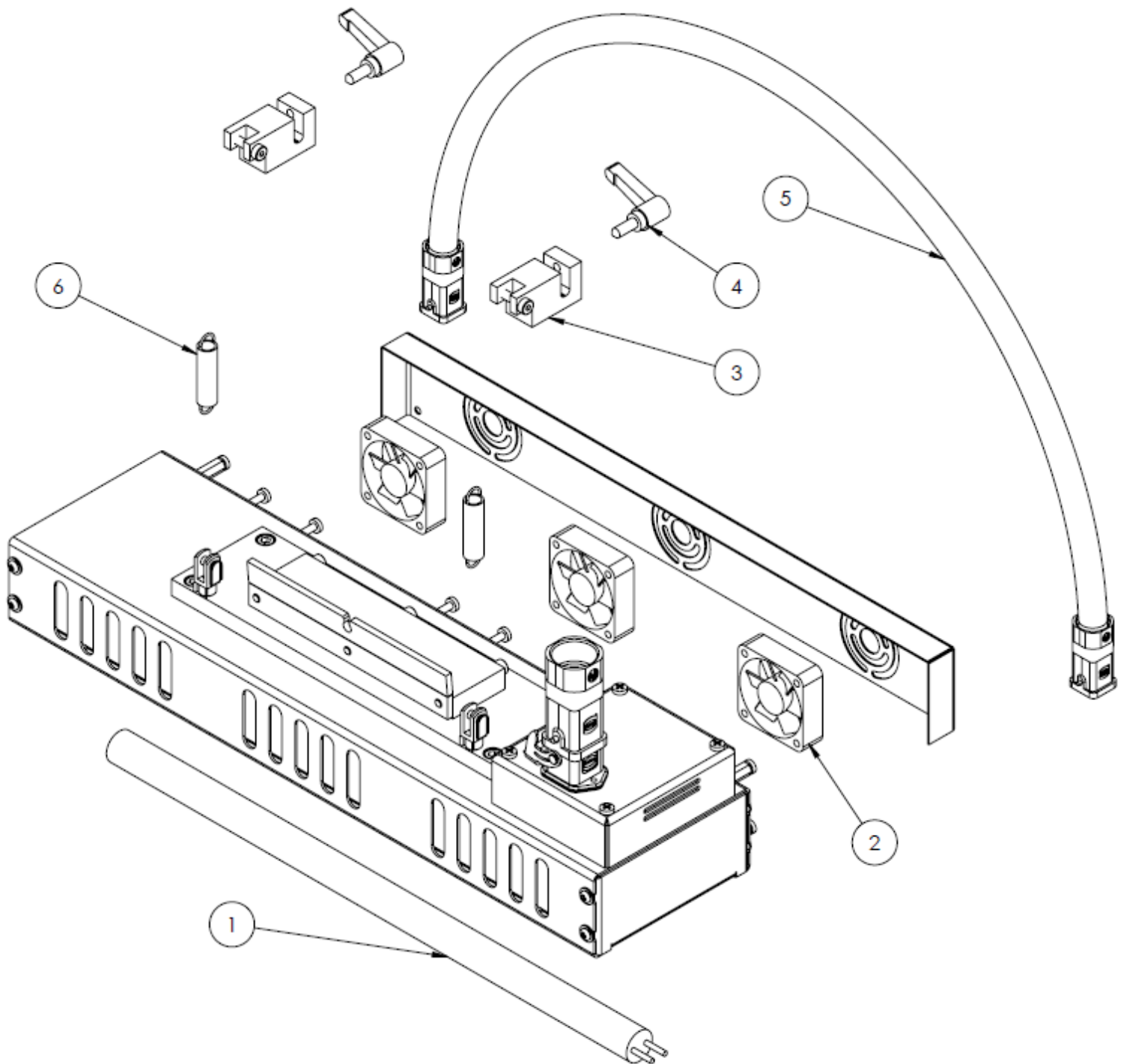
POS-NR.	Zeichnungs-Nr./ drawing number	Benennung	description
1	07-0-0-0618-0	Halbleiterrelais 20A 230V	solid-state relay 20A 230V
2	07-0-0-0202-3	Netzteil 24VDC 2,5A 60W	power supply 24V 2,5A
3	07-0-0-0532-0	Temperaturregler E5CC Omron PID	temperatur regulator E5CC Omron PID
4	07-0-0-0617-0	Si-Automat 2N-MW	automatic circuit breaker 2N-MW

## 10.2. Control box & attachment Pro Iron



POS-NR.	Zeichnungs-Nr./ drawing number	Benennung	description
1	20-0-0-0152-0	Elektroaufnahmeplatte Pro Iron	electric panel Pro Iron
2	90-0-0-0176-0	EIN-AUS Schalter mit LED Element	ON-OFF switch with LED element
3	07-0-0-0008-1	Hauptschalter KG41 3_380-440V	Main switch KG41 3_380-440V
4	02-5-1-0112-0	Befestigungswinkel Steuerungsgehäuse	mounting angle control box
5	10-1-6-0645-0	Sterngriffschraube M6x15 D32	star knob with screw M6x15 D32

### 10.3. Iron part and cable for signals Pro Iron



POS-NR.	Zeichnungs-Nr./ drawing number	Benennung	description
1	07-0-0-0624-0	Heizpatrone	heating cartridge
2	07-0-0-0625-0	Lüfter 24V	fan 24V
3	04-2-1-0481-0	Befestigungsbacken Zugfeder	mounting bracket pull spring
4	30-0-0-6005-0	Klemmhebel M6 innen RAWA E	locking lever M6 squ.carr. E
5	20-0-0-0197-0	Signalkabel Pro Iron	cable for signals Pro Iron
6	30-5-1-0022-0	Zugfeder d=1.25 De=11.2 L0=50.1	pull spring d=1.25 De=11.2 L0=50.1