SER 2015 set up and operation manual

installation of inserts into thermoplastics

Content

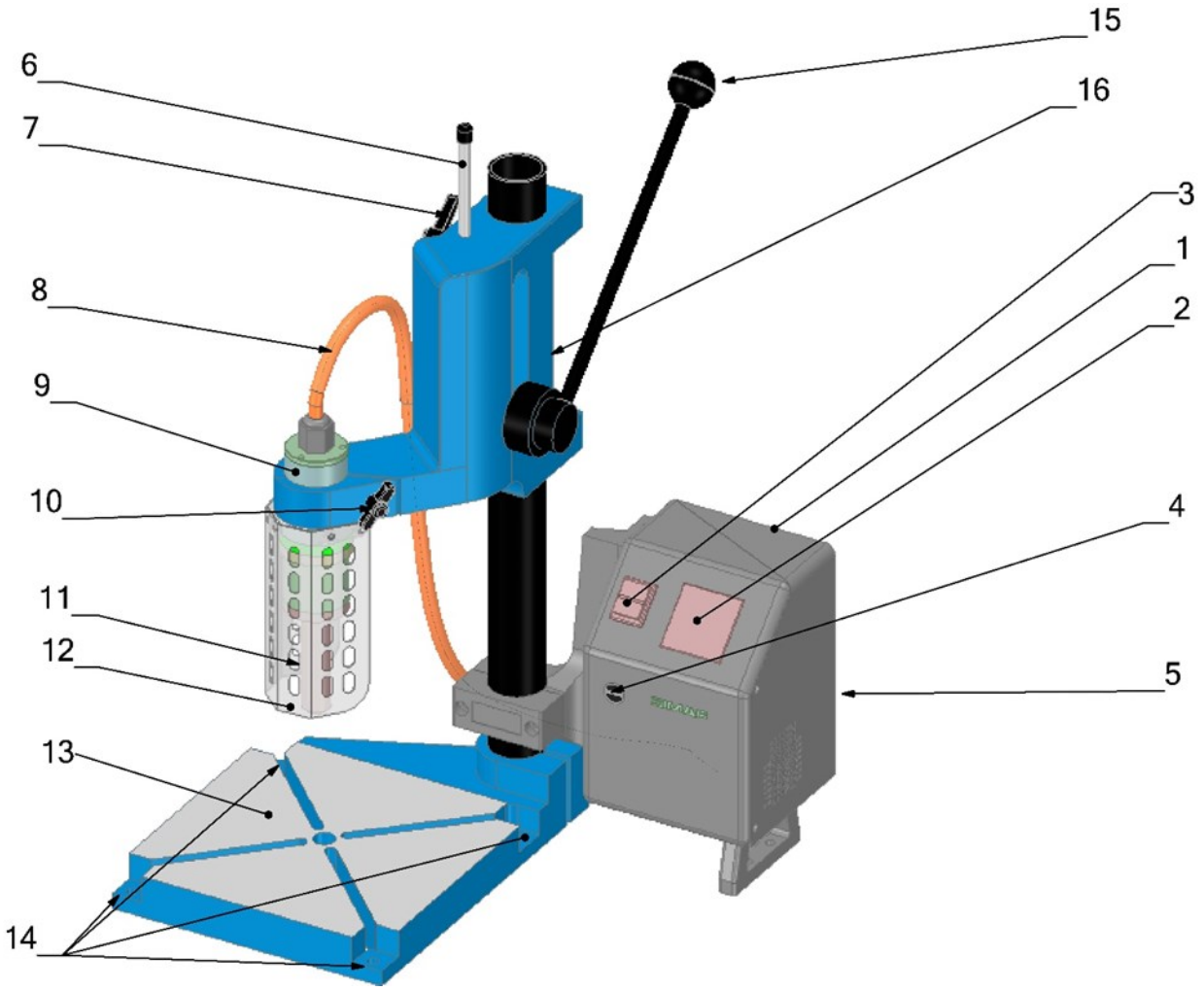
1.1 Main units and their parts

The device consists of two basic units

1) Thermal unit 48 / INS2015

2) Mounting stand type INS-F43 with manual drive.

Part	Description
1	Control unit
2	Display
3	Rocker switch
4	Fuse box
5	Connector (from behind)
6	Stroke stop
7	Stroke stop locking screw
8	Connecting cable
9	Heating head - for mounting with diameter F43
10	Fixing screw
11	Heat probe
12	Heat shield
13	Workspace
14	Holes for mounting the stand
15	Lever
16	Stand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2.2 Description of the device function

Hand press with heat source for pressing metal inserts into thermoplastic moldings and parts.

Parameters:

Thermal unit 48 / INS2015

Probe temperature: adjustable range up to 400 ° C

Heater temperature difference correction ± 99 ° C)

Supply voltage: 240 V AC, 50/60 Hz

Power consumption power: 600W

Fuse: 3.15A

Range: M3 - M12 inserts

Working stroke: 60mm

Weight: 7.6Kg

2.3 Installation and location

2.3.1 Connection

Observe the connection parameters given in Section 2.2.

Supply voltage: 240 V AC, 50/60 Hz

2.3.2 Assembly

Assemble the stand. Test its functionality. Clamp the heat head to the stand together with the cover. Make sure that the heat head is firm clamped. Mount the control unit to the stand with a plastic bracket. (You can attach the control unit to a suitable place independently of the stand).

Fix the stand to a suitable surface so that it cannot overturn or move during work. Thanks to the standardized mounting of the F-43 thermal head, the 48 / INS2015 thermal unit is independent of the supplied INS-F43 stand and can be clamped to another suitable stand or device.

2.3.3 Location

Ambient temperature during operation: 10 ° C to 35 ° C (no condensation or freezing)
Ambient humidity: 25 to 65%
Degree of protection: IP20
Ensure sufficient and clear working space for adjustment and for work performance with regard to the workpiece.

Observe the following instructions to prevent equipment failure, malfunction, and impairment of equipment performance or function, and, most importantly, reduced safety. Failure to follow these instructions may lead to unexpected events.

This product is intended for indoor use only. Do not use the product outdoors or in any of the following places:

in places that are directly exposed to heat from heating equipment,

in places exposed to splashing liquid or oil mist,

in places exposed to direct sunlight,

in places exposed to dust or corrosive gases (in particular sulfur dioxide or ammonia gas),

in places that are exposed to sudden changes in temperature,

in places exposed to icing or condensation,

in places subject to vibration or strong shocks,

in places that are close to flammable substances and aerosols.

Use and store the product within the prescribed ambient temperature and humidity range. (Storage temperature: -25 ° to 65 ° C without condensation or freezing)

Place the device as far away as possible from devices that generate strong high-frequency fields or energy spikes (high-frequency welders, sewing machines, etc. - observe the requirements for the use of these devices). If necessary, ensure that the workplace is protected from EMC effects by adequate shielding.

Do not block the space around the product to allow heat to escape.

The device must not be operated near flammable or volatile substances, the heat probe (29) can reach up to 500 ° C in certain circumstances.

Attach the device to a solid workbench or other dedicated pad.
An unattached stand could tip over and cause property or health damage.
Some parts of this device are hot. The heat probe (29) reaches an operating temperature of up to 400 ° C. Careless handling can result in burns! Take the utmost care when handling. If temperature correction is used, make sure that the probe temperature does not exceed 400 ° C.

When choosing a location, consider the fact that heating to a stable operating temperature takes 30 minutes, sometimes longer. After the end of the work performance, the cooling time to a safe temperature is even longer. Therefore, it is necessary to secure the device so that uneducated and unauthorized persons do not have access to it, even when the device is warming up to operating temperature or cooling down after switching off. The innocent curiosity of an uneducated person can also be the cause of burns.

Recommendation: If possible, do not use the setting for the highest temperature of 400 ° C. Due to the properties of most plastics, it is inappropriate to set the temperature to more than 350 ° C. Use a touch thermometer to determine the actual temperature and adjust the correction.

2.3.4 Storage

Storage temperature: –25 to 65 ° C (no condensation or freezing)

Operating instructions

2.4.1 Commissioning

For commissioning it is necessary:
Electrical distribution (240V) 50Hz according to chapter 2.2.

2.4.2 Before starting work

Check the power supply cable (32) for damage. Inspect the electrically flexible connection (27) between the control unit (5) and the thermal unit (28) for damage. This connection can be damaged, among other things, by abrasion in the event of contact with the structure. Make sure the stand is securely attached. Check the mounting of the thermal head.

In the event of a fault or doubt about the safety of the device, do not put the device into operation and arrange for a professional assessment of the condition and, if necessary, repair.

2.4.3 Preparation and settings

Screw the correct pin (30) onto the heat probe (29).

If you are using the jig, fasten it in a suitable way to the work surface of the stand and place the plastic part in the jig, through the hole for the insertion under the pressing mandrel.

To quickly and accurately press the same parts, it is advisable to use a jig that ensures the correct position of the plastic part with the prepared hole in the axis with the mandrel of the thermal head. If the shape of the plastic part does not require a jig for the correct placing of the insert, the plastic part can be placed directly on the work surface of the stand.

Place the insert on the prepared hole, see Fig. 2.

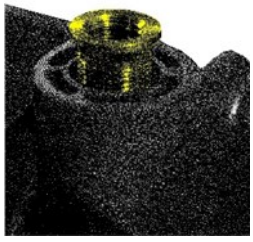


Figure. 2

Figure. 3

Adjust the position of the plastic part so that the insert is in line with the mandrel on the thermal head, see Fig. 3.

Set the desired temperature according to section 2.4.5.

2.4.4 Installation of inserts

The ready stand with the heating unit heated to the required temperature is ready for use.

Notice:

Never leave the stand unattended during heating, during work, during work interruptions, and after switching off the device during cooling down. It must be ensured that an uninformed person burns or that no fire occurs.

Place a plastic part in the jig or directly on the work surface. Place insert on the hole provided. Attention! Keep in mind that you may be burned by a hot probe.

Proceed with caution.

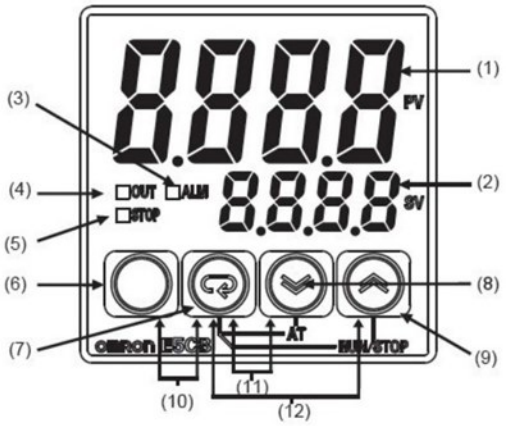
Use the lever to bring the warmed probe closer to the insert and lightly press it against the front of the insert to transfer heat from the probe to the insert. As soon as you notice that the plastic starts to melt around the contact of the insert, slowly push the insert by lever into the hole. Use the speed according to the circumstances and the results achieved. Adjust the stroke stop (6) to achieve the stability of the indentation depth.

It is inappropriate to set the temperature to more than 350 ° C.

2.4.5 Heat unit settings

Controller display description

Diagram of the structure of settings



(1) Display No. 1	Displays the process value (PV) or parameter.
(2) Display No. 2	Displays the set point (SP) or parameter setting.
(3) ALM	Lit while the alarm is ON. Not lit while the alarm is OFF.
(4) OUT	Lit while the control output is ON. Not lit while the control output is OFF.
(5) STOP	Not lit during operation. Lit while operation is stopped.
(6)	Level Key: Changes the setting level.
(7)	Mode Key: Changes the parameter within the setting level.
(8)	Down Key: Reduces the setting.
(9)	Up Key: Increases the setting.
(10) +	Press these keys for at least 3 seconds in Operation Level or Adjustment Level to go to Protect Level. Press these keys for at least 1 second in Protect Level to return to Operation Level.
(11) +	Press these keys for at least 2 seconds to start or stop autotuning.*1
(12) +	Press these keys for at least 2 seconds to start or stop operation.*2

*1: These keys are disabled when starting and stopping autotuning has been disabled with operation control key protection.

*2: These keys are disabled when starting and stopping operation has been disabled with operation control key protection.

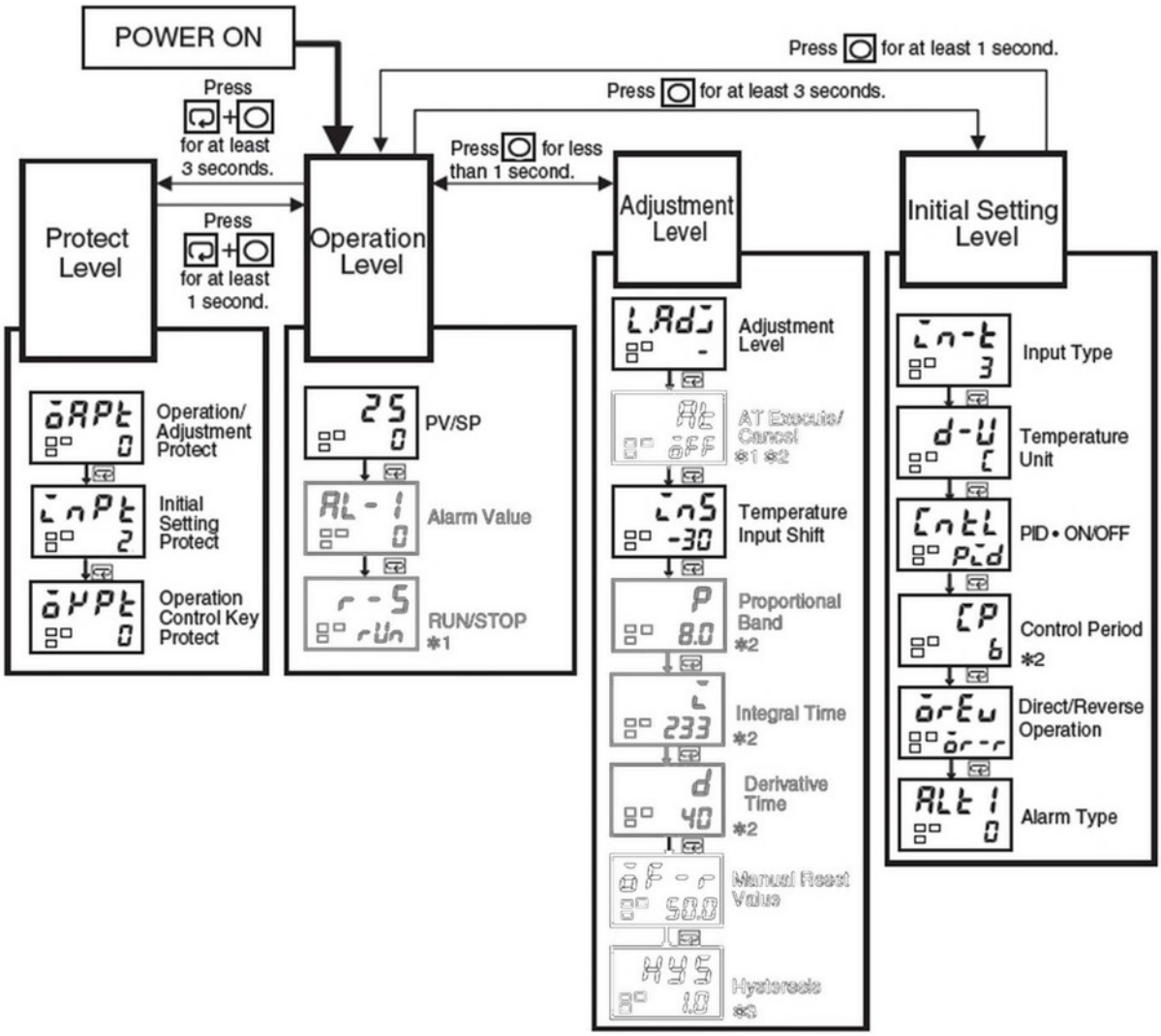
Turn on the control unit. Set the desired temperature by pressing buttons 8 and 9. Wait for the temperature to stabilize. Measure the actual probe temperature with the touch thermometer. If the temperature is lower or higher, change correction to "Temperature Input Shift".

If the temperature on display 1 is different from display 2, turn auto tuning on.

Parameters

Depending on the settings, some data may not be displayed.

Operation will stop when the level is switched from Operation Level to Initial Setting Level.



Don't change the initial setting. Never set higher temperature than 400°C. SIMAF CZ reject liability and damage caused by incorrect settings.

For details, refer to the *Instruction Manual OMRON E5CB*.

*3 Initial setting level - the controller is already set, changing parameters is not recommended.

After switching on, the controller is in the operational level. To switch to the initialization level for setting the basic parameters, press the button ◯ used for switching between levels for about 3 seconds. To scroll through the level we use the button ⮌ then the buttons to select the parameters. ⩓ ⩔
The following values are set when the control unit is delivered.

Display	Parameter		
in-t	Set the input sensor type	for thermocouple J	3
d-U	Set temperature units °C(F)		°C
CntL	Set PID or ON/OFF control		Pid
cp	Set the output control time period(PID only)		6
orEv	Set either reverse selection(heating control)		or-r
ALtI	Set alarm type		0

User settings:

Operational settings using the buttons: ⮌ and ⩓ ⩔

⩓ ⩔	Set the desired temperature	0 - 400°C
r-S	Starting and stopping the device *1	rUn/StoP

If the controller is having difficulty reaching the set temperature (higher or lower), turn on the automatic tuning and wait for the tuning process to complete and the temperature setpoint to stop flashing.

Setting level- use only to correct (compensate) the difference of the measured temperature against the displayed temperature. The usual setting is -30.

LAdJ	This display indicates the setting level		
At	Starts/stops auto-tuning (PID only)	*1, *2	oFF/on
Cn5	Set the protection of the AT and RUN/STOP buttons	As required, usually -30°	

Setting the protection of set parameters

oAPt	Set protection for traffic level and settings	0 ÷ 3	0
CnPt	Set the protection for the initial setting level	0 ÷ 3	2
oPPt	Set the protection of the AT and RUN/STOP buttons	0 ÷ 4	0

Short press the buttons to confirm ⮌ and ◯ return to the operational level.

*1 Displayed only when the control protection is set to 4.
*2 Settings cannot be changed during auto-tuning. Autotuning stops if you move to the initial setting level or stop control
*3 The 30/INS2014-RJ controller is supplied with initial setup. Do not interfere with this setting.

RTS accepts no liability for damage caused by unprofessional intervention in the settings. Changing the settings may be grounds for termination of the warranty.

Note: Complete instructions for the E5CB controller are available on the OMRON website.

Safety

At work, it is obligatory to use prescribed personal protective equipment, especially protective goggles, gloves against the effects of heat (if necessary for the activity in the given case) and other PPE as determined by a professionally qualified person in risk prevention.

2.5.1 Equipment installation, commissioning and operation

Operator is obliged to observe the generally applicable safety regulations during installation, work with the machine, its maintenance and disposal.

Before putting the machine into operation, the operator is obliged to appoint authorized persons for its use, cleaning and regular maintenance, so as to ensure, above all, the safety of persons and property, including the determination of sufficient working space.

The operator is obliged to ensure regular maintenance and cleaning.

When installing the machine, the operator is obliged to verify the impedance of the fault loop and assess the suitability of the associated overcurrent protection device.

The operator is obliged to take such measures that the machine cannot be operated by any unauthorized person.

The machine may only be used for the purposes for which it is technically qualified in accordance with the conditions specified by the manufacturer. For these purposes and conditions, its construction, design and technical condition comply with regulations to ensure safety.

Only physically and mentally fit workers, demonstrably trained to operate it and familiar with the operating instructions, which must be stored in an accessible place for the operator, may operate the machine independently.

The operator is obliged to perform regular visual inspections of the condition of the equipment and ensure its basic treatment.

Cleaning, maintenance and repairs can only be carried out after the device has been disconnected from the mains.

The covers can only be removed, removed or tilted after disconnection from the mains

The device must not be sprayed with water and cleaned with compressed air

If the operator discovers a defect or damage that could endanger the safety of work or the operation of the machine and which he is unable to eliminate, he must not put the machine into operation, he must ensure the off state and report the defect to the operator immediately.

The inscriptions and warning signs on the device must be kept legible. In case of their damage or illegibility, the operator is obliged to restore their condition.

The operator of the machine is obliged to ensure regular testing and verification of electrical equipment in accordance with applicable regulations within the specified deadlines. He is obliged to ensure regular inspections of the electrical connection of the machine.

The operator must assess the possibility of hazardous fumes when heating the plastic. He should also assess the possibility of self-ignition of the plastic in connection with the temperature used to press the insert. The temperature of the insert can reach up to 400 ° C.

To position the plastic parts, use a tool that ensures the correct position and sufficient and secure fastening.

2.5.2 Dangerous places

The danger point of the device is in the area where the heat tip and the metal insert come into contact.
- **There is a risk of injury from burns.**

2.5.3 Fair safety

The machine is not equipped with fire extinguishers. In the area where the machine is to be located, a powder fire extinguisher (or its equivalent) must be installed and the operator must be acquainted with its use. Due to the heat generated during machine operation, there must be sufficient space around the machine.

2.6 Maintenance

Mandatory inspection and maintenance:

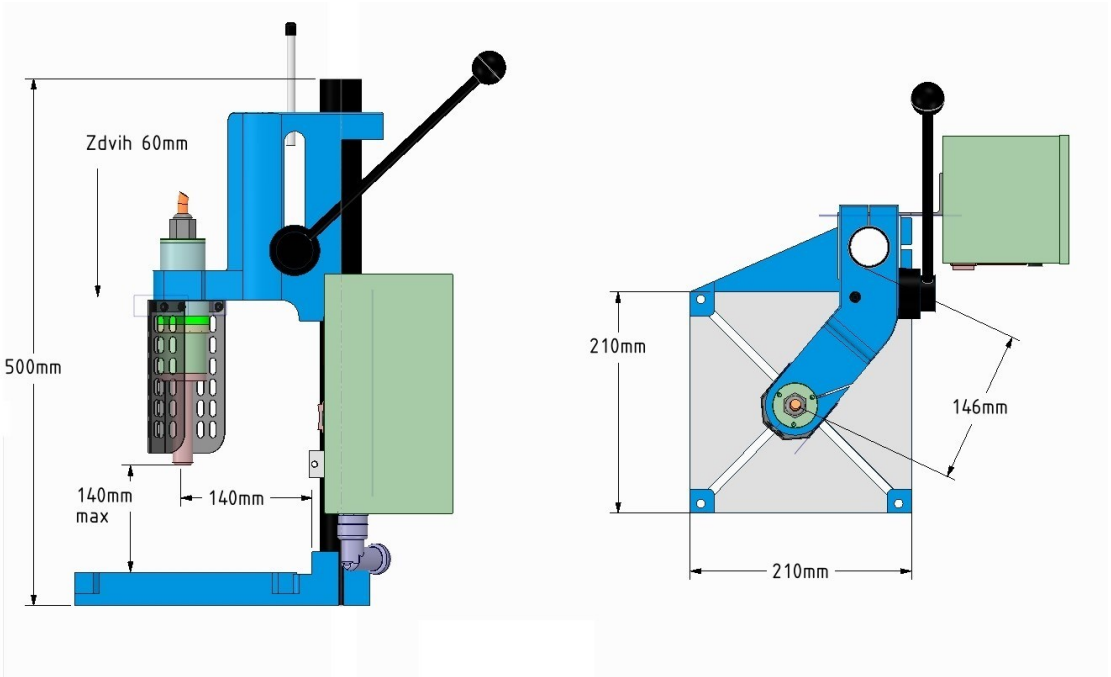
Daily before starting work:

1. Inspection of the machine for safe operation (covers, location, stability, etc.)
2. Check the flexible electrical connection (27) or the supply cable for damage.
3. Check the mounting of the thermal head and the stand

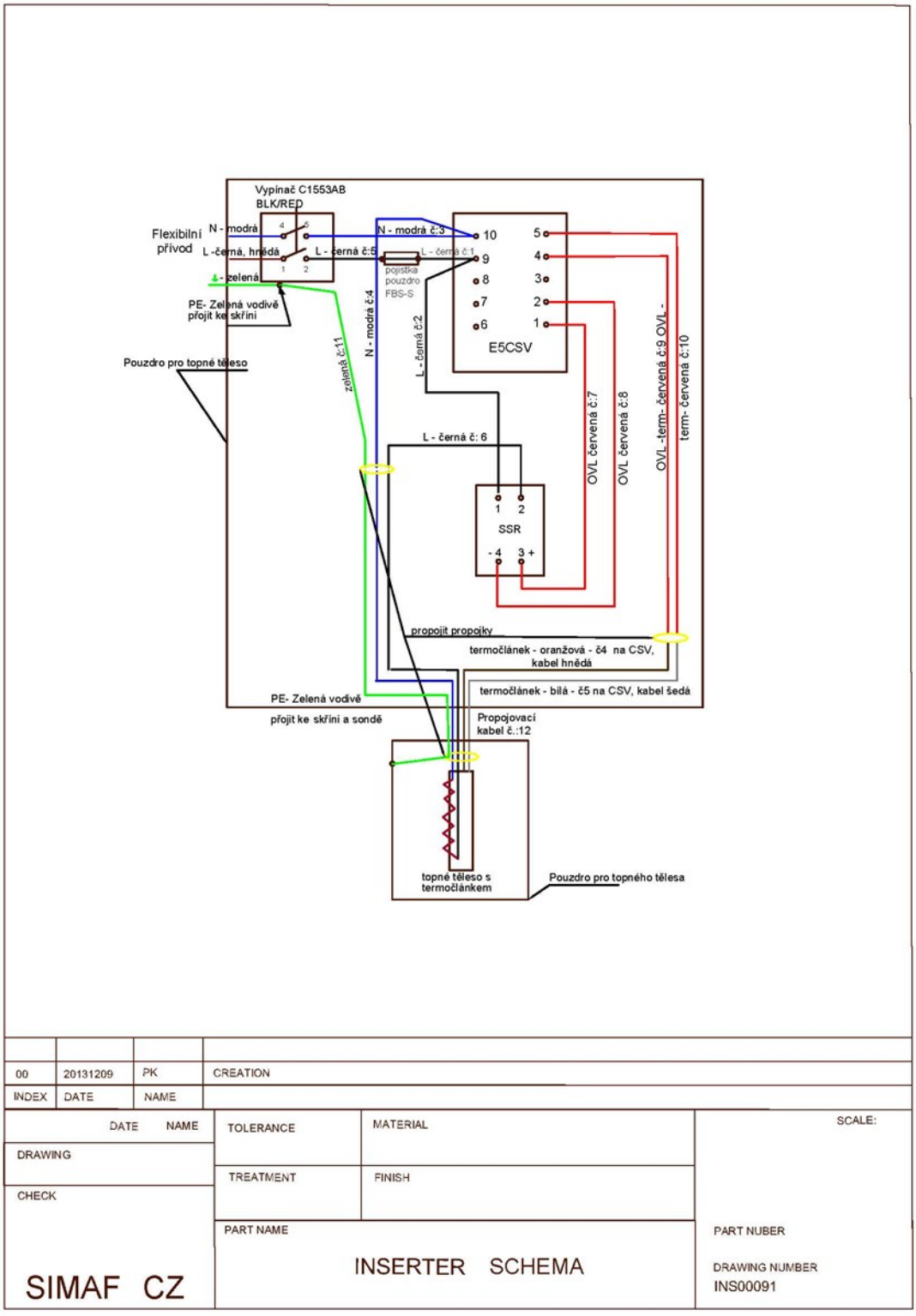
Periodic:

1. Check all connections on the stand and on the heat probe.
2. Revision according to current legislation

2.7 Dimensions of the mounting stand



2.8 Electrical circuit diagram



Warning!

This machine uses thermal technology and can get extremely hot!

Please also remember that the inserts will remain hot for a long time.

DO NOT TOUCH!

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