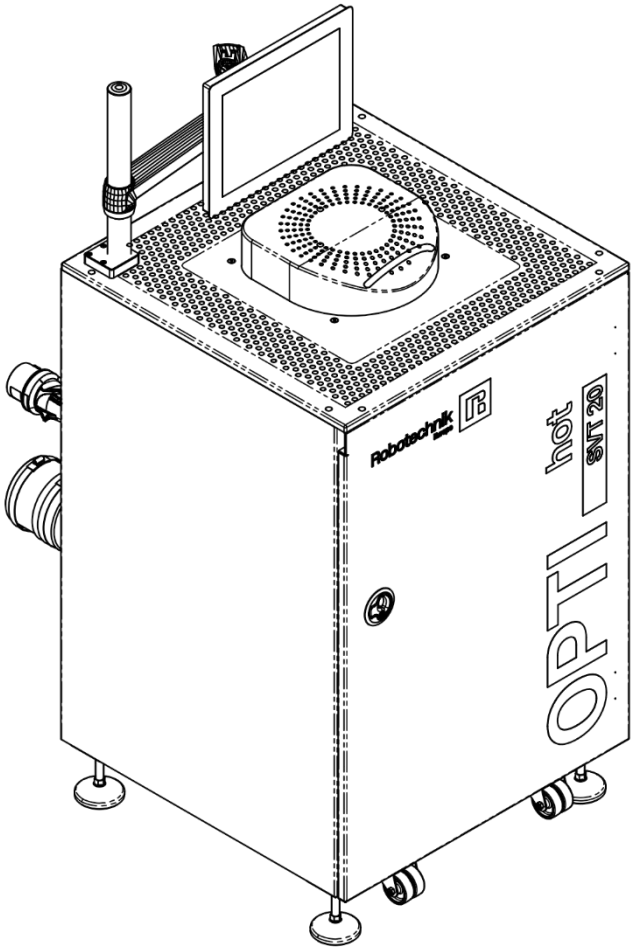
Robotechnik
Europe

OPTIhot SVT20

Priming Hotplate

Operating Instructions



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2 General Information

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2.1 Safety Instructions

All safety instructions will be found in chapter 3 and following ones.
Prior to commissioning, installation, starting-up and operation of the system relevant safety instructions must be read carefully and considered accordingly.

2.2 Liability

The manufacturer of the system accepts no liability for material damage, personal injury or consequential damage resulting from improper operation and/or failure to observe the safety instructions or from the user manual no longer being up to date in the event of subsequent modification of the system or the application programme by third parties. The manufacturer also accepts no liability for consequential damage caused by loss of data.

Our products are subject to a constant technical change process due to optimisations as well as legal guidelines and standards. As a result, in individual cases there may be differences between the description in this documentation and the actual system delivered. In case of ambiguities or differences, please contact the manufacturer immediately.

Product names mentioned in this manual may be trademarks and are used for identification purposes only.

2.3 Edition

Edition	Year / Month	Name of the Item	Description	Number
12.0	2026/02	OPTIhot SVT20	Priming Hotplate	400249

2.4 Warranty

We guarantee for the equipment as stated in the order/contract.
This warranty will expire in case of:

- interference into or modification of the system without prior consent of the manufacturer
- improper use of the system
- insufficient maintenance of the system
- inappropriate operation of the system
- negligence of correct supply requirements
- application of third-part components
- alteration of program or configuration write-ups without manufacturer’s consent

2.5 Service Address

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2.6 Symbols Used in the Manual

Condition
Defined conditions must be met in order to execute next action.

Action
You are requested to do something.

Result
Explains the result of an action.

Help
Actions to make, should problems occur

Decision
Description of alternative actions.

Information and additional advice

< > Text or key / button

[ ] Physical units

☒ Checkbox (option present, if checked)

3 Safety Instructions

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3.1 General

Prior to installation, commissioning and operation of the system, the operating instructions and the safety and warning instructions stated therein must be carefully read and observed.
Persons responsible for the transport, storage, commissioning, use, maintenance and repair of the system must be familiar with the contents of the operating instructions.
All instructions must be observed, especially the safety and warning instructions. This will ensure safe operation of the system.
Possible sources of danger that could result in personal injury or damage to the system are also expressly pointed out again in the relevant chapter of the operating instructions.
These operating instructions provide important information that is a prerequisite for safe and economical operation of the system.
They must be kept accessible in the immediate vicinity of the system.
In addition to the operating instructions, the generally applicable legal and other regulations for accident prevention and environmental protection in the respective country apply.
Warnings and important notes are presented as follows.

DANGER!

The word “Danger!” combined with this or a more specific symbol indicates an immediate hazard while using the system.
Neglecting of instructions given in this documentation or on the system itself can result in personal injury or death of the operator or of persons being close by.
The system, other equipment or the environment can be seriously damaged as well.

WARNING!

The word “Warning!” combined with this or a more specific symbol indicates an impending hazard or fatal unsafe practice while using the system.
Neglecting of instructions given in this documentation or on the system itself can result in severe personal injury of the operator or of persons being close by.
The system, other equipment or the environment can be damaged as well.

CAUTION!

The word “Caution!” combined with this or a more specific symbol indicates a possible hazard or unsafe practice while using the system.
Neglecting of instructions given in this documentation or on the system itself can result in personal injury of the operator or of persons being close by.
The system, other equipment or the environment can be damaged as well.

Please pay particular attention to the safety instructions, which describe possible hazards when operating the system and how to avoid them.

The safety instructions and warnings described in this chapter do not replace the safety regulations and rules that apply to the individual topics but are special instructions that must be followed in addition to the regulations that must be followed anyway.

3.2 General Hazards

This system has been designed and manufactured considering all relevant safety regulations. Improper use or operation by persons not qualified accordingly may result in danger:

- to life and health of the operator
- to the system itself
- to surroundings of the user
- to performance and efficiency of the system.

General hazards of the system, depending on design or type, may arise in the following ways:

- mechanical hazard caused by squeezing, shearing and cutting, catching and winding, stitching or by freely moving parts
- thrust caused by kinetic energy of moving mass
- sharp corners and edges
- electrical hazard caused by touching live parts (directly or indirectly)
- thermal hazard causing burns
- chemical hazard causing poisoning, corrosion and explosion
- toxic hazard due to inhalation of vapours and gases
- gases under pressure
- liquids under pressure
- combination of hazards caused by
  - faulty installation
  - incorrect loading of substrates / wafers
  - malfunction of power or media supply
  - malfunction of the extraction system or the required air flow
  - failure and/or incorrect arrangement of preventive measures
- combination of escaping media
- hazards caused by
  - human misconduct
  - noise
  - allergies, excitations of mucous membrane, unknown effects caused by media
  - ejection of parts
  - disturbance / malfunction of control system
  - leaking of hoses or pipes
  - combination of atmospheres or vapours
  - fire hazard
  - natural hazards caused by lightning, environmental catastrophes etc.

3.3 Maintenance

DANGER!

Never clean an installed chuck with solvent, as the solvent could destroy the motor.

3.4 Mechanical

DANGER!

By applying components of other manufacturers additional and unknown hazards may arise. No liability will be taken in this case.
Use only genuine parts provided by the manufacturer of the system.
Genuine parts are constructed conforming to applicable safety regulations.

DANGER!

Moving parts may cause squeezing or cutting of extremities.
Do not touch any moving parts of the system while in operation.

DANGER!

Operation of the system by several persons may cause hazards based on misconduct or missing mutual understanding.
Operation of the system by two or more persons is therefore not permitted.
If in case of service or maintenance tasks the system has to be operated by two persons, these have to conduct a secure joint procedure.

DANGER!

The system may only be operated while the safety cover / enclosure is closed, and any protection systems are properly positioned. Function of safety cover has to be assured at any time.
In case of any safety deficiencies the system has to be switched off and the service personnel has to be informed accordingly.

DANGER!

Removing safety covers or doors (except for service purposes) is prohibited. The system must never be opened while the process is running or with the mains cable connected.

3.5 Spinning Operation

DANGER!

Ejection of parts (only with low-contact spin chuck)
When using a spin chuck without vacuum, the rotation speed may not exceed 2000 rpm.

DANGER!

Pollution of the spinning module
The spinning module has always to be operated with chuck and wafer / substrate, except when using a low contact chuck.
Without substrate, the medium can get into the vacuum system.
Without chuck, the medium can also get into the interior of the system.

3.6 Power Supply

DANGER!
Electrical hazard
Disconnect the mains plug before opening the control panel.

DANGER!
Electrical hazard
Solvents and process chemicals can be ignited by electric fields or by electrostatic charging of metal and plastic components and lines.
The system must always be grounded during operation. Never disconnect or remove the protective grounding wires in the system or the mains supply line.

DANGER!
Electrical hazard
This system operates under high voltages. Danger of high voltages exists even when the system is switched off, but still connected to the power supply.
Capacitors within the system may be charged even in case the system is switched off and disconnected from mains supply line.

DANGER!
Electrical hazard
While switched on, electrical connectors will be live. Opening of covers or removing of parts may result in exposure to live parts.

DANGER!
Electrical hazard
Interchange of current-bearing wires may result in danger for health and life of operator. Connection to the mains supply must be affected by a qualified electrician according to prevailing regulations. Neutral wire (blue) and ground wire (green/yellow) must be connected in due form.

DANGER!
Electrical hazard
Persons bearing a pacemaker may not operate, clean or service the unit.

DANGER!

Electrical charging hazard
Due to electrical charging plastic components or wiring, solvents and process chemicals could be ignited. Therefore, the system and its components must be grounded.

DANGER!

Danger due to electricity!
Only clean the system when it is de-energised.

DANGER!

Danger due to electricity!
Do not use dripping wet cloths or high-pressure cleaners to clean the system.

DANGER!

Emergency Stop button
The system must not be operated without an emergency stop button.
All systems (insert systems only) without emergency stop button have to be supplied with one. In case of emergency the emergency stop button must be approachable immediately. The maximum distance between emergency stop button and machine is 0.5 m.

3.7 Additional Safety Information

- Do not take actions on the system other than described in this manual.
- Do not operate the system while covers or other protective systems have been removed.
- Maintenance and service work may only be executed by Robotechnik service personnel or persons qualified accordingly.
- Disconnect all wires of power supply prior to opening of the system. In case work has to be done while the system remains open (for adjustments, maintenance etc.) it should only be done by qualified personnel, knowing all potentially dangerous points and being able to prevent hazards by taking appropriate precautions.
- In case fuses have to be replaced make sure that only fuses of same type and current rating will be used.

DANGER!
Under no circumstances use makeshift fuses or short-circuit any fuse holders.

- In case of insufficient grounding or of damaged ground conductor make sure that the system will be inoperable and secure it against unauthorized or unintentional operation.
- Whenever it is likely that the system is no longer electrically safe, make it inoperable and secure it against any unauthorized or unintentional operation.
- The system is likely to be electrically unsafe if:
  a) any damage is visible
  b) it fails to perform according to specification
  c) it has been subject to prolonged storage under unfavourable conditions or has been out of service
  d) it has been subject to severe transport stress.

In these cases the safety state of the machine has to be checked by Robotechnik service personnel.

3.8 Safety Cover Coater (If equipped)

For safety reasons process running is only allowed with closed safety cover.

The cover of the Covered Chuck system serves not only as a process cover but also as a safety cover to prevent operators from getting in contact with the turning chuck during a coating process. The force and movement of cover is limited/reduced. Only when the cover is closed and the motor starts to turn, it will be pushed down with extra force, so it's locked in position. In case of an emergency stop, the chuck cover will stay in its position.

1. Cover of Covered chuck

The force and movement of the closing and opening cover is limited by reducing the used air pressure. The pressure regulator is installed for this purpose and the set air pressure must be checked at regular intervals. The maximum allowed pressure is 2.5 bar.

3.9 Safety Cover Hotplate (If equipped)

For safety reasons process running is only allowed with closed safety cover.

The cover of the Hotplate system serves not only as a process cover but also as a safety cover to prevent operators from getting in contact with the hotplate surface during a priming/baking process. Only when the cover is closed/locked, the recipe starts to run.

1. Cover of Hotplate

3.10 Safety Door (If equipped)

For safety reasons process running is only allowed with closed safety door.

3.11 Handling of Electronic Components

Electrostatic discharges can cause damage to parts.
For handling electronic components several precautions are essential:

- Wear a grounded wrist strap or work on a grounded static-dissipating work surface. If this not possible touch an adjacent earth ground (i. e. central heaters or water pipes) before handling electronic components or printed circuit boards.
- Leave electronic components and printed circuit boards in their original packaging until final installation.
- Handle electronic components by their body or case, avoid touching of leads.
- Keep electronic components and printed circuit boards away from such static-generating materials as vinyl's, plastic bags, etc.

Maintenance and repair work required, but not listed in this manual, should only be done by Robotechnik service or by persons of equivalent qualification.

3.12 Chemicals

Chemicals are provided and applied by the user. Proper handling of chemicals is the user's responsibility.

To prevent the formation of a potentially explosive atmosphere inside the system, it may only be installed in rooms that provide sufficient air flow to the interior of the system.

Connect all 3 connection points for ventilation to the same ventilation system. The system only monitors the ventilation at one connection point.

DANGER!

It is the user's responsibility to mark all containers and supply lines of chemicals (e.g., containers of media and waste) with appropriate labels and warning signs.

DANGER!

When handling chemicals, please observe relevant safety regulations as well as supplier's information (safety data sheet and additional advice).

DANGER!

When handling chemicals, insure proper ventilation and exhaust of vapours.

DANGER!

When handling chemicals, please observe that released chemicals may react with each another, leading to unwanted and unknown substances. These substances may bear major additional risks.

DANGER!

Solvents!
Inflammable, explosive, toxic
- Do not inhale its vapours (danger of suffocation).
- Prevent electrostatic loading.
- Keep away from ignition sources.
- Do not smoke.
- Do not eat (danger of poisoning).
- Do not touch.

DANGER!

Process chemicals!
Inflammable, explosive, toxic
- Do not inhale its vapours (danger of suffocation).
- Prevent electrostatic loading.
- Beware of ignition sources.
- Do not smoke.
- Do not eat (danger of poisoning).
- Do not touch.

DANGER!

Corrosives
Inflammable, explosive, toxic
- Do not inhale its vapours (danger of suffocation).
- Prevent electrostatic charging.
- Beware of ignition sources.
- Do not smoke.
- Do not eat (danger of poisoning).
- Avoid contact to eyes.
- Do not touch.

DANGER!

Gases
Inflammable, explosive, toxic
- Do not inhale (danger of suffocation).
- Prevent electrostatic charging.
- Beware of ignition sources.
- Do not smoke.

DANGER!

In case corrosive, gassing or noxious wet media are applied you have to prevent any peril to your staff by all means.

3.13 Media Waste Canister

DANGER!

Fill-Warning

- Never transport the container when full
  First pump out to the minimum filling or even better empty the complete container
- Empty container slowly
  Avoid splashing or spilling of the media
- Do not overfill the container.

DANGER!

Only change/empty the media waste tank/canister when the system is stopped, otherwise there is a risk of being squeezed by moving parts (e.g., air cylinders).

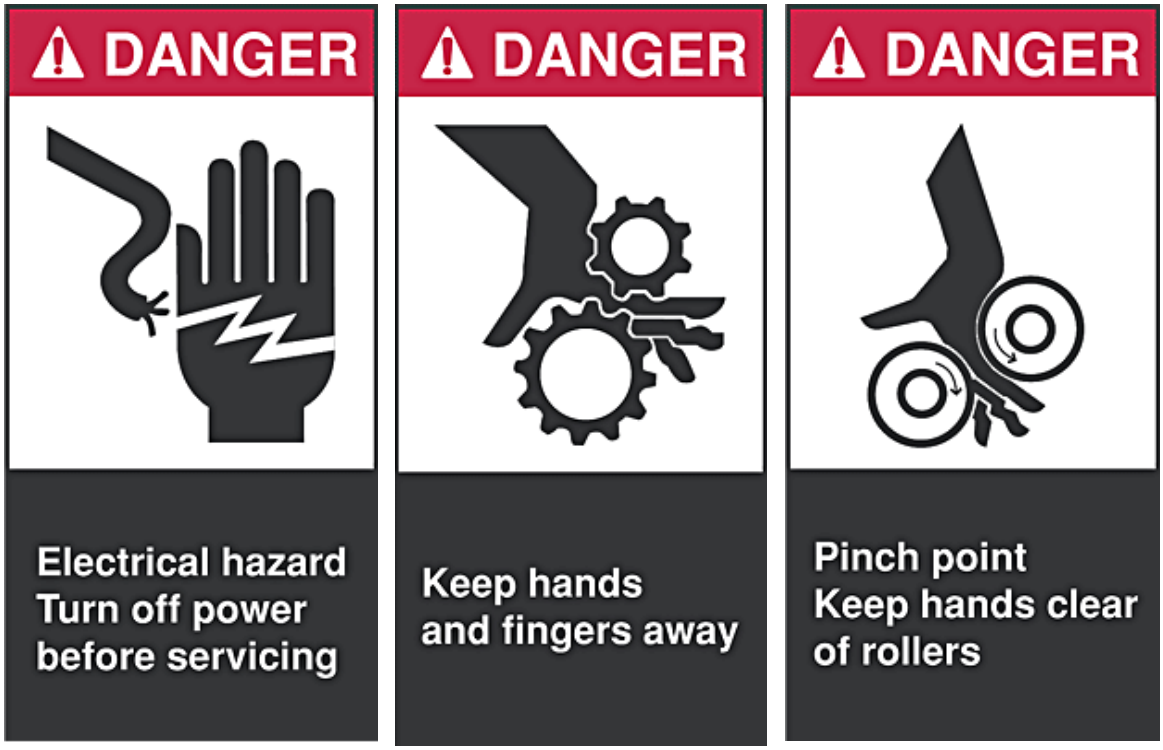
The media waste canister may only be changed or emptied when the system is stopped. If the tank is removed for emptying or changing while the system is running, there is a risk of injury from moving parts (e.g., air cylinders) in the system.

The media waste canister is equipped with a fill level sensor which is connected to the machine PLC. When the canister is full, DelfinNet software will give a warning message.

3.14 Symbols Used on System

i The following safety instructions (caution and command symbols) may be seen on the system:

SYMBOLS, US standards




DANGER
Keep guards in place
DANGER
Flammable
No matches or open lights
DANGER
Pinch point
Watch your hands
CAUTION
Eye protection required
CAUTION
Wear gloves in this area
CAUTION
Hot surface
Do not touch

CAUTION SYMBOLS


Warning
General hazard


Electrical hazard


Flammable material
Fire hazard


Toxic Material
Poison


Explosive material
Explosion hazard


Squeezing hazard
Hand crush


Magnetic field


Pinch point
Hand in rollers


Harmful to health


Hot surface


Laser hazard

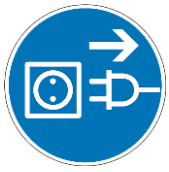

Automatic start-up

COMMAND SYMBOLS


Read the instructions
manual first


Wear protective gloves


Eye Protection
Wear safety goggles


unplug BEFORE open


Respiratory protection
Wear gas mask


Wear protective clothing


Wear conductive boots


Spinning direction clockwise


Spinning direction
anticlockwise

PROHIBITION SYMBOLS


No pacemakers


Do not touch


Keep off area


Do not operate by several persons


Energized enclosure
No touching - high voltage


Do not extinguish fire by water


Do not cover


Do not fold up
Prohibition


Do not switch

The above symbols refer to Robotechnik components and parts. However, components and parts of sub suppliers may show other symbols, not expressly mentioned or referred to in this manual.

DANGER!

The owner of the system is responsible to place adequate danger signals and labels in suitable places.
This applies in particular to signals and labels concerning process chemicals used.
Irrespective of number of caution symbols and information placed on or around the system all safety instructions of this manual have to be observed.

3.15 Emergencies

In case of an emergency (accident with material or personal damage), please observe the following instructions:

DANGER!

In case of emergency immediately push the red emergency stop button <EMERGENCY STOP> and await complete stand-still of the system within a safe distance.
Prior to checking of risk area operate the main switch and disconnect the system from the power, nitrogen and (if present) compressed air and, if applicable, media network.

DANGER!

Restarting the system after an emergency stop may only be done by qualified persons. Prior to switching on, check the system for possible danger points and residual hazards.

DANGER!

In case of emergency while handling chemicals (i.e., cleaning or developer media), medical assistance must be provided immediately (doctor/first aid) and the safety data sheet for the chemical used must be followed.

4 Standards, CE Conformity

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4.1 Standards Conformity 2

4.2 CE Symbol 2

i This system corresponds in its technical design to various international and national standards, partly not listed here, but including other standards, directions and regulations. The most important ones are listed below.

4.1 Standards Conformity

The system is in conformity with:

- EN 349:1993/A1:2008: safety of machinery - minimum gaps to avoid crushing of parts of the human body
- EN ISO 4414:2010: pneumatic fluid power - general rules and safety requirements for systems and their components
- EN 614-1:2006/A1:2009: safety of machinery - ergonomic design principles
- EN 60204-1:2006: safety of machinery - electrical equipment of machines
- EN ISO 12100:2010: general principles for design - risk assessment and risk reduction
- EN ISO 13849-1:2015: safety of machinery - safety-related parts of control systems - Part 1: general principles for design
- ISO/TS 15066:2017: robots and robotic devices - collaborative robots

4.2 CE Symbol

The system is in conformity with CE requirements and bears the CE symbol. A corresponding manufacturer’s statement was forwarded to the user.

CE symbol:

CE

5 Transportation and Storage

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5.1 Transportation 2
5.2 Storage 3

DANGER!

Prior to installation and operation of the unit, the installation and operating instructions have to be thoroughly read and observed.

5.1 Transportation

DANGER!

An overturning unit may cause serious injuries.
During transport tipping forces of the unit including its packaging have to be considered.

DANGER!

The unit is equipped with transportation castors. If placed on inclining ground, the unit has to be secured against rolling.

DANGER!

Upon delivery, moving parts of the system are secured against moving.
If the unit is to be relocated later on, all moving parts have to be fixed.

DANGER!

Depending on the system and installation site, a forklift truck, lift truck or crane must be used for transport. The minimum lifting capacity of the lifting device must be considered. The weight of the packaging must be added to the weight of the system. For safety reasons, the minimum lifting capacity of the lifting device must be twice the weight of the system.

5.2 Storage

The system can be stored safely under following conditions:

- without any liquids (process chemicals etc.)
- ambient temperature - 10°C to + 60°C
- ambient relative humidity max. 80%, no condensation
- dust-free and protected (eventually packed up)

When removing from storage, prior to installation, keep the system for at least one day under approved operating conditions.

6 Installation

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6.3 Place of Installation 3
6.4 Preparing the Installation 4
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6.6 Connecting Power Supply 6

DANGER!

Please read the manual, containing required safety instructions, carefully prior to installation, starting and operation of the unit.

DANGER!

Installation and initiation of the electrical equipment have to be affected by competent and qualified personnel only. All valid national instructions (i.e. VDE) have to be observed. Prior to all works assure the disconnection of all components to be installed of power supply.

DANGER!

Ejection of parts (rotating elements)
Chucks designed for vacuum operation may never be run without vacuum. When operating the system without vacuum, special spin chucks (Low Contact) have to be used. The rotation speed of Low Contact spin chucks may not exceed 2000 rpm.

6.1 Unpacking

i This is a highly sensitive electromechanical appliance.
Be careful while unpacking, installing, starting and operating the unit.

☞ Check the contents upon unpacking for damages during transport.

☞ In case of transport damages or damages in transit, please contact the manufacturer immediately.

☞ Verify receipt of all parts based on packing list.

☞ In case of missing parts, please refer to the manufacturer.

6.2 Operating Conditions

This system will operate correctly under following conditions:

- clean rooms, class ≥10
- ambient temperature + 10° C to + 30° C
- relative humidity max. 60 %, without condensation

DANGER!
Explosive atmospheres!
Do not apply any explosive chemicals.
Do not operate the system in explosive atmospheres.

DANGER!
Do not operate without suitable exhaust.

6.3 Place of Installation

The system may only be placed on a stable, flat, vibration-free and safe surface not to be deformed under the weight of the unit and eventual accessories (see the Facility Requirements List).

6.4 Preparing the Installation

Depending on used features and media special preparations are necessary:

- ☞ Detach the transport safety unit
- ☞ Align the system with the fixation feet
- ☞ Make sure that the main voltage is connected
- ☞ Make sure that the compressed air and vacuum is connected
- ☞ Make sure that media tanks/bottles are sufficiently filled
- ☞ Make sure that the media waste containers are installed and not full
- ☞ Make sure that the operation pressure is set according to the Facility Requirements List
- ☞ Make sure that the exhaust is connected and working

6.5 Connecting Media Supply and Disposal

For detailed information and requirements, please refer to chapter Facility Requirements List, the electrical and pneumatic/vacuum drawings and the customer specific list of connecting values.

All media lines connected with the system's reverse are carrying unmistakable plugs.
The sockets are marked appropriately.

DANGER!
Prior to media connections make sure that the system is disconnected from current.

DANGER!
In case corrosive, gassing or noxious wet media are applied you have to prevent any peril to your staff by all means.

6.6 Connecting Power Supply

i All cables, connected with the system, are carrying unmistakable plugs. The sockets are marked appropriately.

DANGER!
Connect the mains cable at last (after all connections) to the house power supply.

DANGER!
An Emergency Stop button is required.
Look for the connection values in chapter Technical Data. Without Emergency Stop button operating the system isn't allowed. The Emergency Stop button with connection is delivered by the manufacturer.

DANGER!
Each installation and operation work at electrical equipment must be done by qualified personnel.
The valid national instructions (e.g. VDE) have to be followed. Prior all work check the system's disconnection of the power supply.

☞ Make sure that the main switch is in <0/OFF> position

☞ Connect power cable to power supply system

For detailed information and requirements, please refer to chapter Facility Requirements List, the electrical drawings and the customer specific list of connecting values.

7 Product Description

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7.1 Intended Use

The OPTIhot SVT20 Priming Hotplate System is a state-of-the-art equipment for single wafer / substrate HMDS priming process applications. The optimised process chamber for vacuum sealing provides excellent HMDS priming results and cleanliness, as well as repeatability, for substrates of up to 6" x 6" or wafers of up to 200 mm. Please refer to the agreed specifications for more information.

The stand-alone cabinet of the OPTIhot SVT20 has been specifically designed for easy operation and maintenance. With the wide range of options, the system can also be upgraded for higher automation and improved substrate to substrate process repeatability.

The OPTIhot SVT20 system is specially intended

- for laboratories and research institutions to run test or small series productions
- for small series production in industrial clean rooms

DANGER!

This OPTIhot SVT20 is not suited or designed for any other applications than the ones stated above.
Any other use or structural modification of the system is only permitted after consultation with the manufacturer and by written approval.

DANGER!

Chemicals
Without proper protection the system is not suited for the application of explosive or hazardous chemicals.

Our products are subject to a constant technical change process due to optimisations as well as legal guidelines and standards. As a result, in individual cases there may be differences between the description in this documentation and the actual system delivered. In the event of ambiguities or differences, please contact the manufacturer immediately.

7.2 Total View

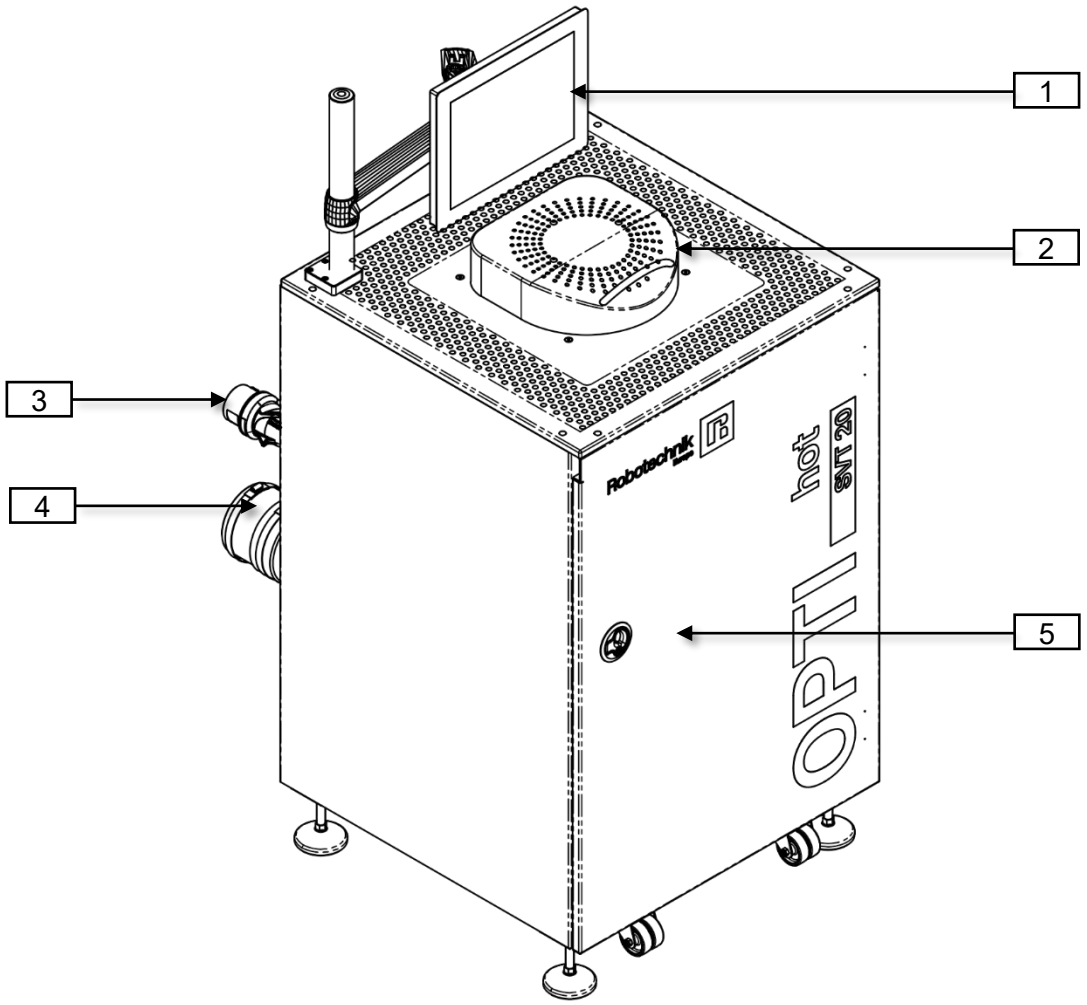

Figure 1: Total view

1. Touch display
2. Priming process chamber
3. Power connection plug
4. Exhaust connector
5. Process Auxiliary Area and Electronical cabinet behind the door

7.3 Priming Process Chamber

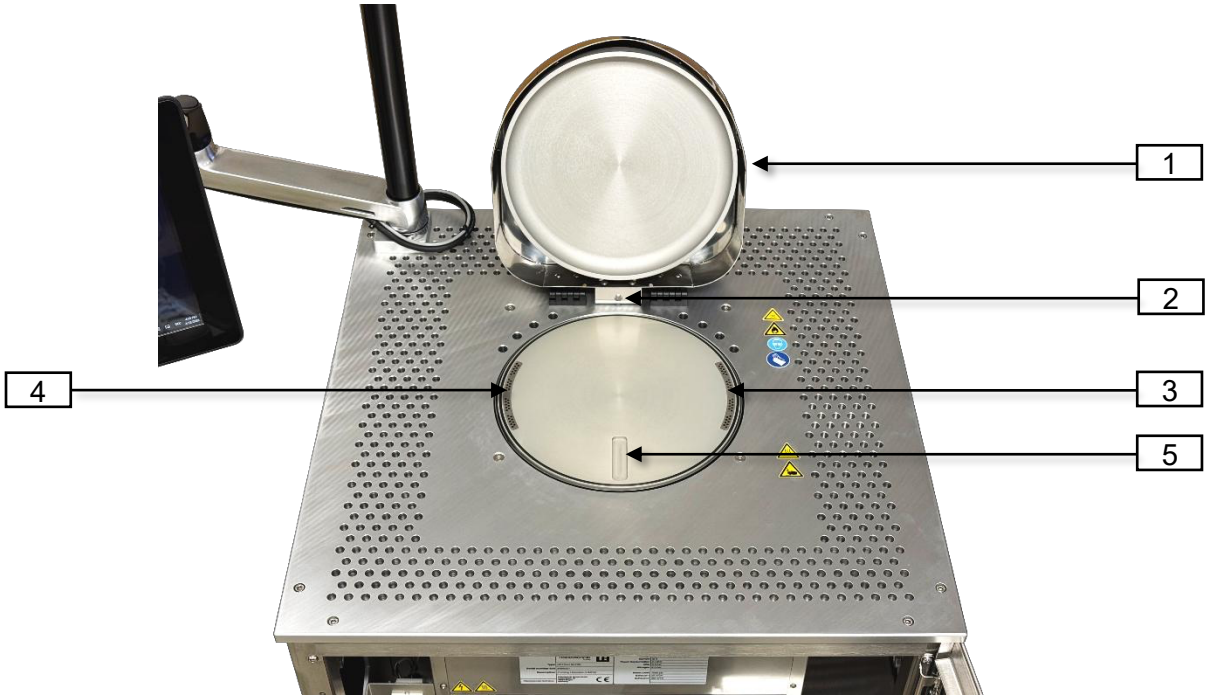

Figure 2: Priming Process chamber

1. Safety lid
2. Safety pin
3. Openings for nitrogen and HMDS
4. Openings for vacuum
5. Void for loading / unloading wafers

The safety lid will lock automatically when the priming process begins. Do not attempt to open the lid during this process.

7.4 Process Auxiliary Area

7.4.1 Process Auxiliary Area 1

Media connections are made according to the relative labels stick on the media connection plate and media hoses.

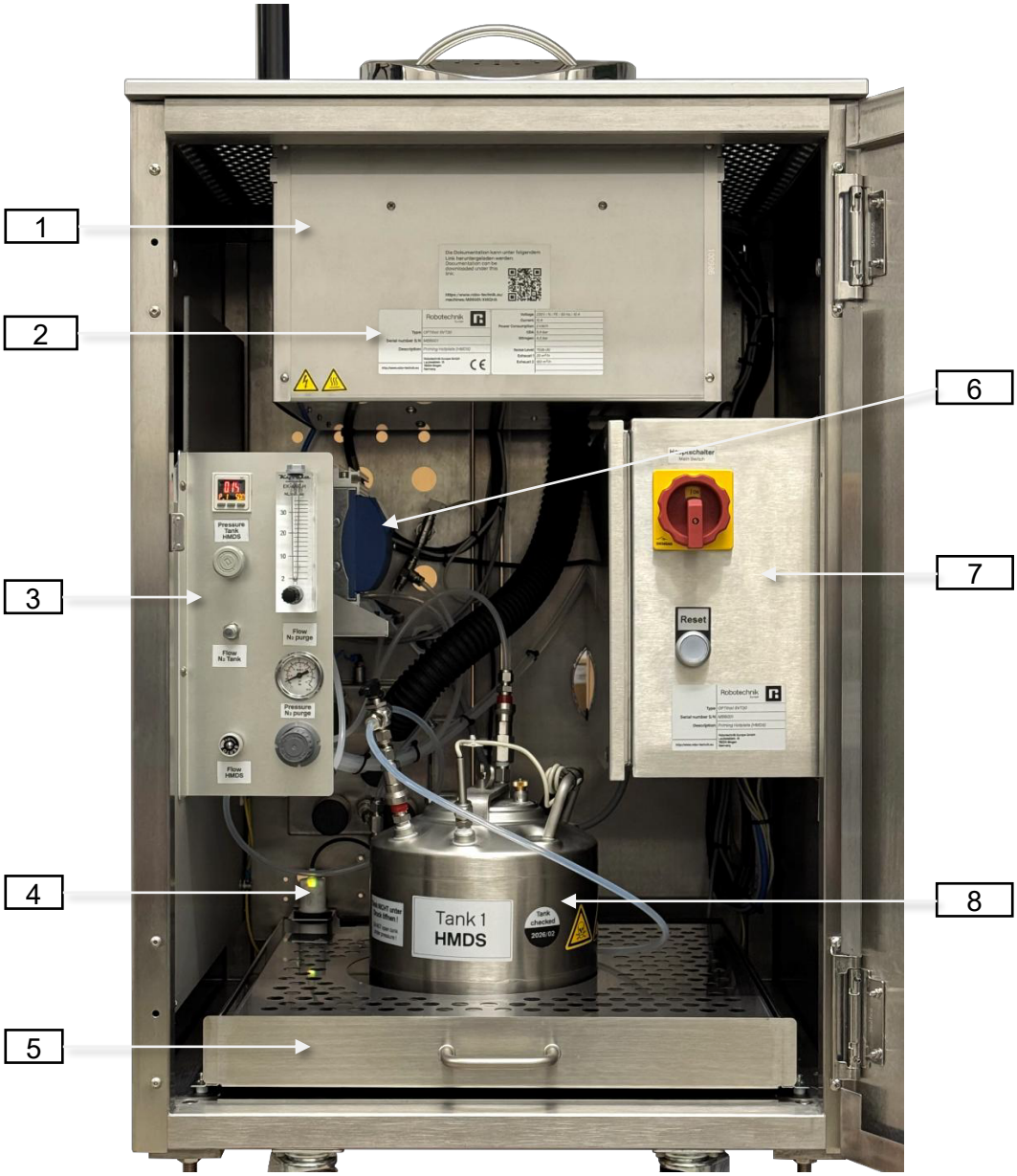

Figure 3: Process Auxiliary Area 1

1. Hotplate with electronics
2. System label and documents download link
3. Flowmeters and regulators panel
4. Leakage sensor
5. Media drawer
6. Vacuum pump
7. Electric cabinet
8. HMDS pressure tank

7.4.2 Process Auxiliary Area 2

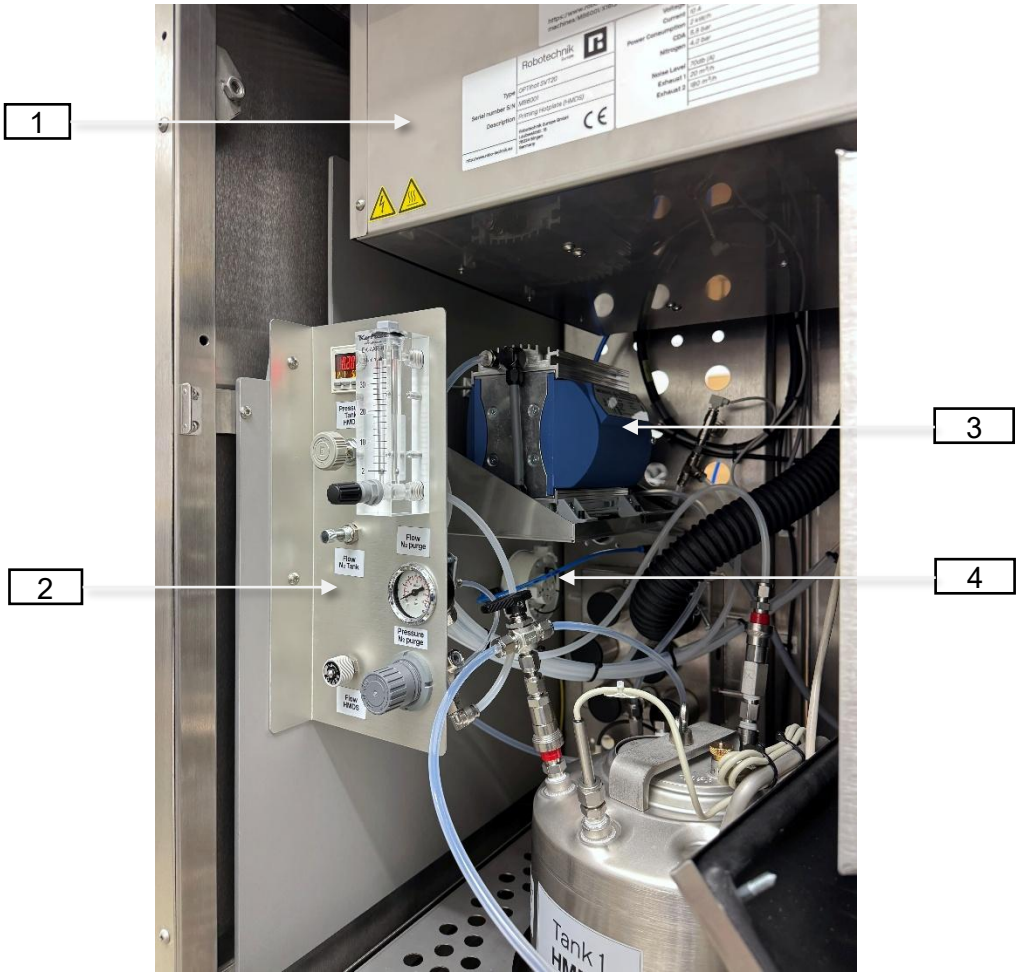

Figure 4: Process Auxiliary Area 2

1. Hotplate with electronics
2. Flowmeters and regulators panel
3. Vacuum pump
4. Exhaust pressure sensor

7.4.3 Flowmeters and regulators panel

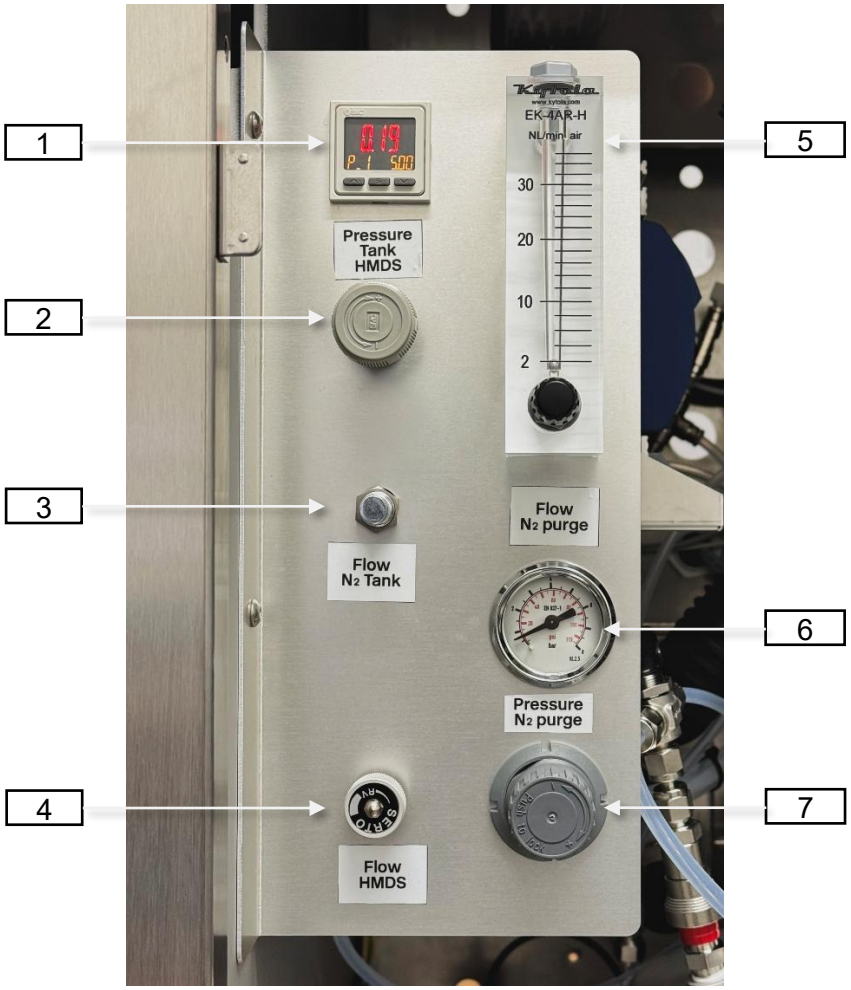

Figure 5: Flowmeters and regulators panel

1. N2 Pressure sensor for the HMDS tank
2. N2 Pressure regulator for the HMDS tank
3. N2 Flowrate control for the HMDS tank
4. Flowrate control for the HMDS
5. Flowmeter for the N2 purge
6. Pressure for the N2 purge
7. Pressure regulator for the N2 purge

Every flowmeter or regulator is clearly labelled for its intended use. Adjustments should only be made by an experienced process or equipment engineer.

7.4.4 Pressure tank HMDS

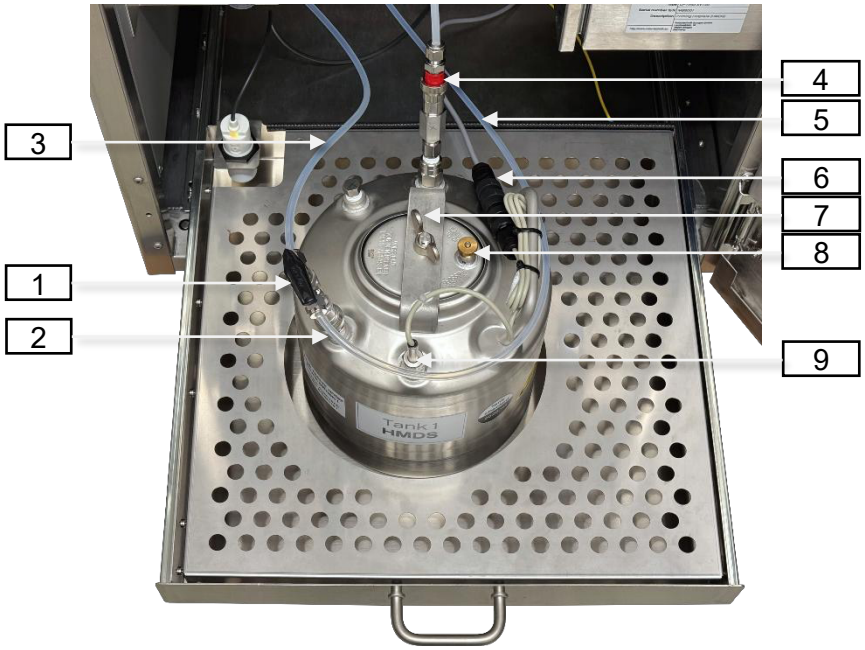

Figure 6: Pressure tank HMDS

1. 3-way ball valve
2. Quick connector
3. HMDS line
4. Quick connector
5. Depressurize line
6. Tank empty level sensor plug
7. Screw to open/close the lid
8. Pressure release screw
9. Tank empty level sensor

The pressure tank lid may only be opened when the tank has been depressurised by turning the ball valve [1] to the depressurised position. **Do not use the pressure release screw [8] to depressurise HMDS.**

Do not refill the pressure tank in the machine.

To disconnect the pressure tank, first depressurize the tank by turning the ball valve [1] to the depressurized position, then disconnect the quick connectors [2] and [4], and finally disconnect the empty level sensor plug [6].

7.4.5 System type label and facility requirements list

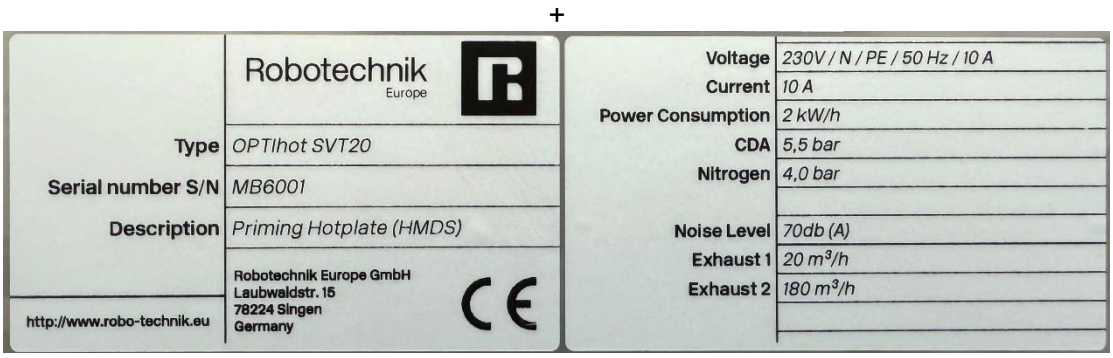

Figure 7: System type label and facility requirements list

For more information, please refer to Appendix A: facility requirements list.

7.5 Electric Cabinet

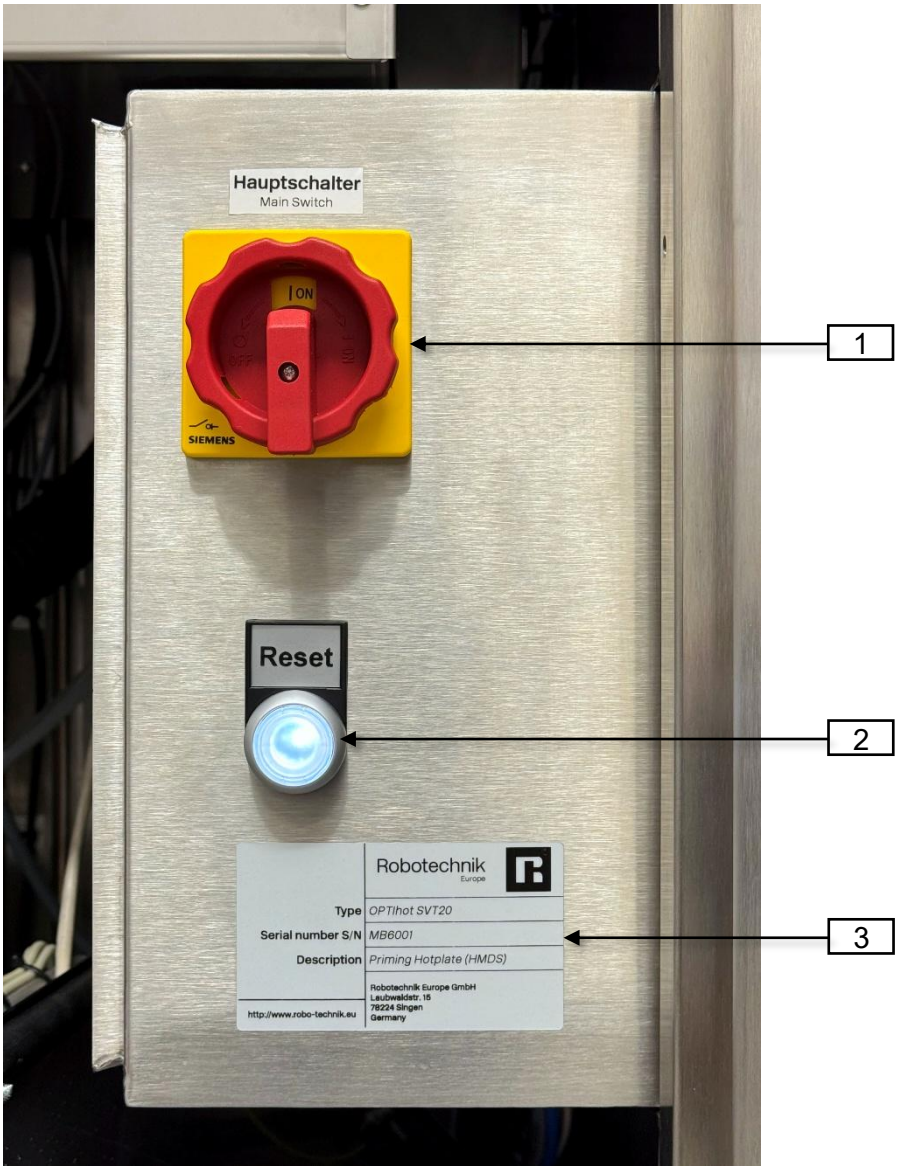

Figure 8: Electric cabinet

1. Main switch
2. Reset button: button to switch on the actuator voltage
3. System type label

The electric cabinet can be opened for service purpose. The transportation lock should be locked during transportation or relocation the machine.

The actuator voltage can only be activated if the machine is connected to an adequate exhaust system and the leakage sensor is not triggered.

7.6 Back Side of the Machine

Media connections are made according to the relative labels stick on the reverse side. Maybe they differ from the following figure.

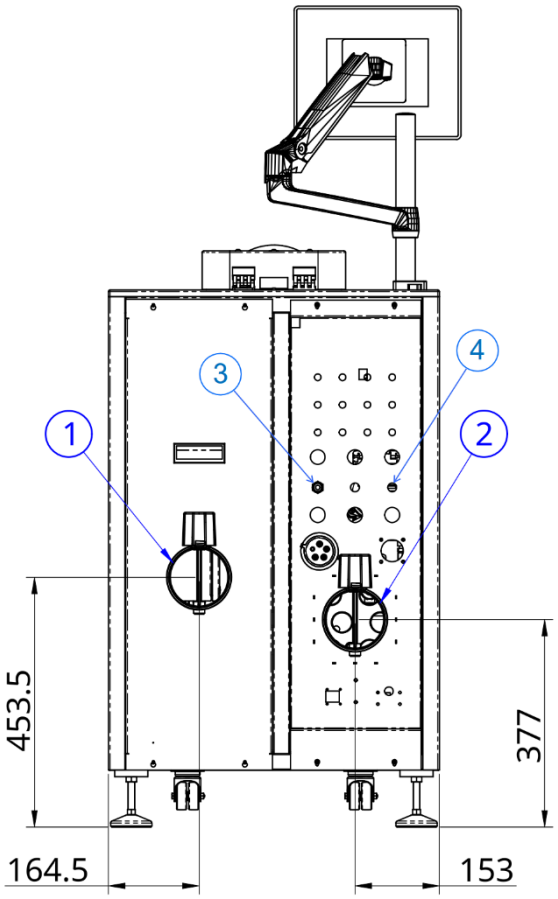

Figure 9: Back side

1. Exhaust #1, outer Ø110 mm
2. Exhaust #2, outer Ø110 mm
3. N2, push in connector for tube outer Ø6 mm
4. CDA, push in connector for tube outer Ø6 mm

Please run exhaust 30 min prior to operation.

7.6.1 Process chamber exhaust with exhaust monitor

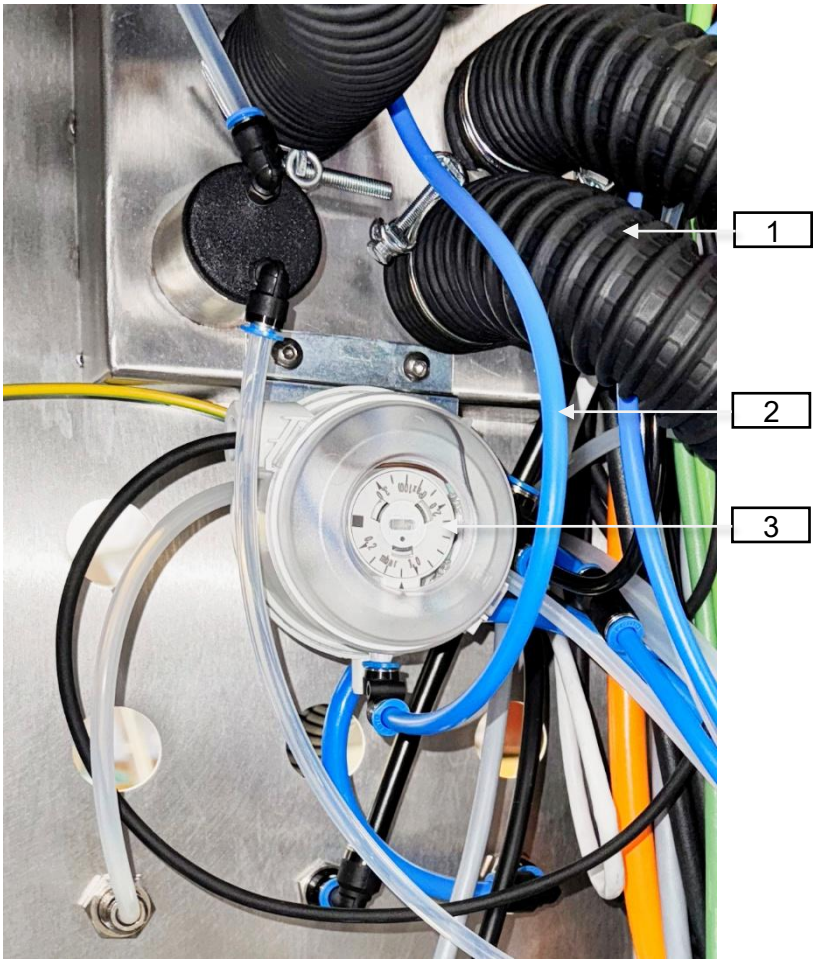

Figure 10: Media exhaust with exhaust monitor

1. Media exhaust hose
2. Measuring point exhaust monitor
3. Exhaust monitor

The exhaust connection may look slightly different to that shown in the above picture.

7.6.2 Exhaust pressure monitor

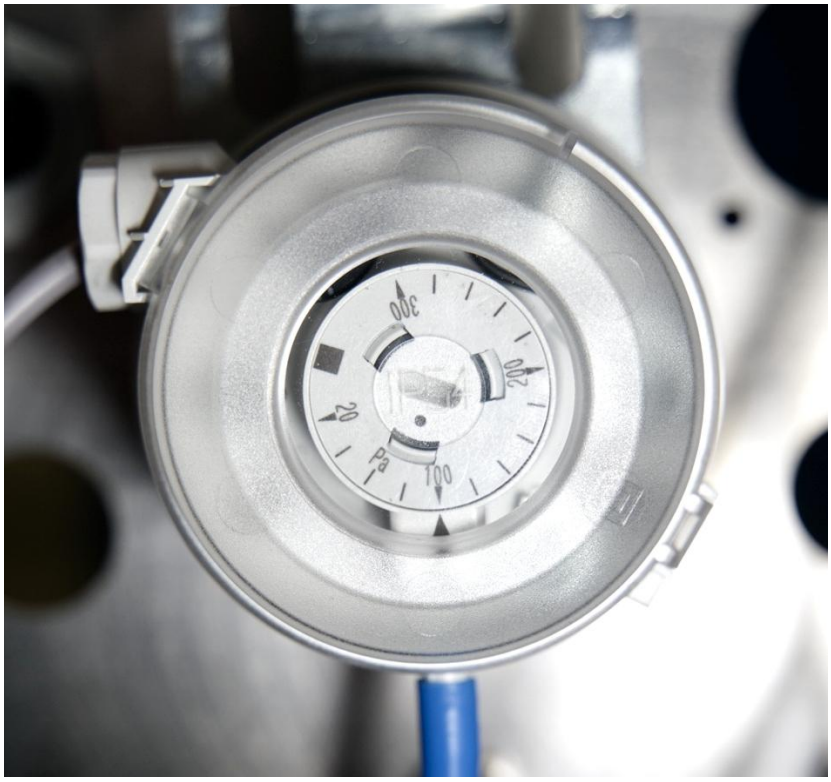

Figure 11: Exhaust monitor

The exhaust monitor (differential pressure monitor) checks if the process bowl connected to an exhaust system. A warning message will be shown on the DelfinNet software if the exhaust is not connected, or no pressure difference is detected.

Open the protective cap with a screwdriver and set the exhaust pressure level by adjusting the inner disc by hand according to your exhasut.

No further warning message should appear on the DelfinNet software.

7.7 Vacuum Pump

Figure 12: Vacuum pump from VACUUBRAND

1. Vacuum pump from VACUUBRAND (type: md 1 vario-sp)

The vacuum out connector needs to be connected to the VAC connector on the back side of the hotplate.

Please pay attention to the manufacturer's operating instructions!

8 Operation

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8.1 Preparation 2
8.2 Switching On 3
8.3 Switching Off 4
8.4 Stop a recipe in progress 4
8.5 Process Flow 5

DANGER!

The system may never be operated without exhaust.
Without exhaust, dangerous vapours and fumes can be set free damaging health or parts of system.

DANGER!

The system may never be switched on nor operated without vacuum and compressed air.

i If additional/optional features are applied, the actual process may differ from the given description.

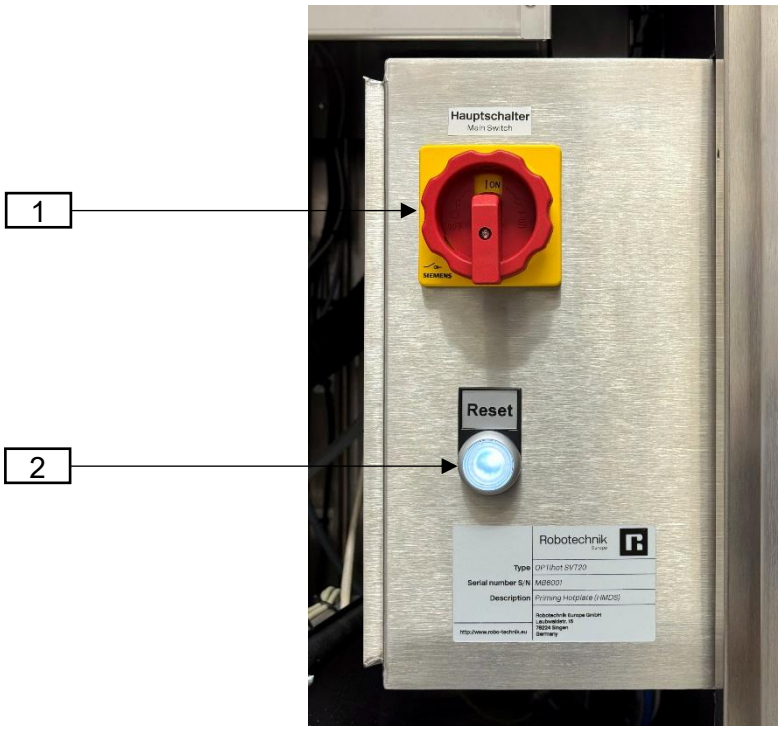
8.1 Preparation

Depending on features used with the system (options) and applied media certain preparations are necessary:

☞ Assure that media tanks / bottles are sufficiently filled.

☞ Assure that compressed air, vacuum and the exhaust is connected and working.

8.2 Switching On



1. Main switch (red)
2. Reset button (white)

☞ Assure that compressed air, vacuum and exhaust are connected and functional. Assure that the leakage sensor is not accidentally triggered.

☞ Assure that the exhaust system has been running for 30 minutes before turning on the machine.

- Turn the main switch **[1]** on the electronics cabinet to <ON>.
- Wait about two minutes till the IPC boots up and the software ***DelfinNet*** (§9 Software) automatically opens.
- After about another minute the Reset button (Actuator Voltage) **[2]** starts to flash.
- If the Reset button does not flash, check if the Emergency Stop (if equipped) is pressed.

  ☞ Press the Reset button to activate the Actuator Voltage.

- If the Reset button continues to flash after being pressed, please ensure that the exhaust system is connected and that the leakage sensor has not been accidentally triggered.
- The Reset button will be lighted up constantly when the Actuator Voltage is activated.

Press the <Init> button on the DelfinNet software to initialize the system.

After the initialization, the cover is unlocked and the application program is ready for loading a new recipe.

8.3 Switching Off

Finish the current recipe.

Close the application programs **DelfinNet** and **RecipeNet**.

Shutdown the MS-Windows operating system.

Turn the main switch (red) on the electronic cabinet to <OFF>.

8.4 Stop a recipe in progress

Press the STOP button on the DelfinNet software.

The safety cover/door will be automatically unlocked after the recipe is stopped.

8.5 Process Flow

Following steps make up a typical process flow:

1. Program recipes in ***RecipeNet*** software (see §9 Software)
2. Download a recipe
3. Put the wafer / substrate on the required chuck/hotplate
4. If it's a vacuum chuck, wwitch on the vacuum if it's a vacuum chuck
5. For the coating process, dispense the photo resist manually
6. Start the recipe
7. The safety lid/door will be locked automatically
8. Wait till the recipe is finished and the safety cover/door is open/unlocked
9. Take out the processed wafer / substrate
10. For the coating process, move the pins down if the coater is equipped with pin lifting.

i It the process bowl is equipped with a Covered Chuck system, the cover of the Covered Chuck system acts not only as a process cover but also as a safety cover to prevent the operator from getting in contact with the turning chuck during a coating process. The chuck cover is limited by its force and by its speed. When the cover is closed and the motor starts to turn, it will be pushed down with extra force and locked in position.

i After the application of the resist the surplus resist is slung away by the rotation of the spin chuck, leading to a very thin coat of photo resist. The Covered Chuck Technology (optional) assures that the coat will be even, especially on the corners and edges of rectangular substrates.

9 Software

Please refer to the separate software user manuals for DelfinNet and RecipeNet.

10 Cleaning

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10.1 Cleaning in General 2

i The OPTIhot SVT20 doesn't need any special maintenance, except occasional cleaning. Cleaning intervals depend on usage intensity and the type of applied media.

☞ Do not use scratching or scouring cleaning agents or tools.

DANGER!
Prior to cleaning work inside the unit, the unit and additional modules have to be disconnected from all external and media supplies.
Pay attention to all additional safety instructions in chapter Safety Instructions

DANGER!
Danger due to electricity!
Only clean the system when it is de-energised.

DANGER!
Danger due to electricity!
Do not use dripping wet cloths or high-pressure cleaners to clean the system.

DANGER!
Danger of destruction of system components
When cleaning the system and components of the system, do not use any solvents that have a corrosive or destructive effect.

10.1 Cleaning in General

☞ Clean the process chamber with DI water or a solvent which is suitable for the process chemical.

☞ Clean the stainless-steel surfaces, the armatures and the cabinet only with alcohol or equal solvents.

☞ Rinse the hose lines (media lines and exhaust hoses) with a suitable cleaning agent if necessary. This cleaning agent depends on the process media previously used and must not harm any system components.

11 Maintenance

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11.1 Maintenance Guidelines 2
11.2 Daily Maintenance 3
11.3 Weekly Maintenance 3
11.4 Monthly Maintenance 3

11.1 Maintenance Guidelines

DANGER!

Cleaning the process chamber!
Clean the process chamber with a suitable detergent, otherwise unsuitable solvent could destroy the motor.

DANGER!

By applying components of other manufacturers additional and unknown hazards may arise. No liability will be taken in this case.
Use only genuine parts provided by the manufacturer of the system.
Genuine parts are constructed conforming to applicable safety regulations.

DANGER!

Moving parts may cause squeezing or cutting of extremities.
Do not touch any moving parts of the system while in operation.

DANGER!

Maintenance and servicing work may only be carried out by specially qualified personnel.

DANGER!

Operation of the system by several persons may cause hazards based on misconduct or missing mutual understanding.
Operation of the system by two or more persons is not allowed.
If in case of service or maintenance tasks the system has to be operated by two persons, these have to conduct a secure joint procedure.

11.2 Daily Maintenance

Code: 1 = check 2 = clean 3 = adjust 4 = replace 5 = lubricate

Check Point	Designation	Code	Action	Information
	N2/VAC/HMDS openings in the process chamber	1/2	• Ensures these openings are not blocked	

11.3 Weekly Maintenance

Code: 1 = check 2 = clean 3 = adjust 4 = replace 5 = lubricate

Check Point	Designation	Code	Action	Information
	Process chamber, Safety lid	2	• Cleaning with suitable solvent	Note media resistance of components.
	HMDS media filter*	4	• Replacing media filter – *dependent on media*	
	Piping	1	• Stability and tightness	
	Sensor connection	1 / (3)	• Plug connections - retightening if necessary	
	Pressure regulator	1 / (3)	• Check the pressure adjust it if necessary	Assure that the pressure is not above 2.5 bar. To read the real pressure value, it is necessary to put the machine in service mode and close the process lid.
	Front panel and side panels	2	• Checking and cleaning with suitable solvent	

* Dependent on media - the maintenance rate depend on media and the system's operating life.

11.4 Monthly Maintenance

Code: 1 = check 2 = clean 3 = adjust 4 = replace 5 = lubricate

Check Point	Designation	Code	Action	Information
	Piping	1	• Checking tube connectors, screwing fittings and retorque if necessary	
	HMDS media filter*	4	• Replacing media filter – *dependent on media*	

i This maintenance rate applies for 1-shift operation.

12 Trouble Shooting

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12.2 Trouble Shooting 3

12.1 Trouble Shooting Guidelines

DANGER!

By applying components of other manufacturers additional and unknown hazards may arise. No liability will be taken in this case.
Use only genuine parts provided by the manufacturer of the system.
Genuine parts are constructed conforming to applicable safety regulations.

DANGER!

Moving parts may cause squeezing or cutting of extremities.
Never reach into the switched-on system with your hand or any other part of your body.

DANGER!

Trouble shooting work may only be carried out by specially qualified personnel.

DANGER!

Operation of the system by several persons may cause hazards based on misconduct or missing mutual understanding.
Operation of the system by two or more persons is not allowed.
If in case of service or maintenance tasks the system has to be operated by two persons, these have to conduct a secure joint procedure.

12.2 Trouble Shooting

There is no vacuum in the process chamber and/or an error appears.	→ Is the vacuum connected? → Is the vacuum sufficient? → Is the required vacuum level too low?
No actuator voltage available, the Reset button keeps blinking.	→ Is the softPLC running? → Is the required exhaust pressure reached? → Sensor triggered (e.g. leakage)?
Exhaust does not work.	→ Check hose between differential pressure monitor and the exhaust tube → Check the value set on the differential pressure monitor.
Recipe does not run correctly.	→ Are the end conditions set? → Error in the program sequence

Please refer to the separate software user manuals for more software related trouble shooting.

13 Disposal

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13.1 Disposal of the System 2

13.2 Disposal of Chemicals 2

13.1 Disposal of the System

i At the end of its life span the system has to be disassembled and disposed according to applicable laws and regulations.

☞ Upon disposal, consider the following:

- Separate materials.
- Forward metals to a recycling process.
- Forward plastic parts to a recycling process.
- Forward electrical/electronic parts to a special waste disposal process.

Recommendation: Get in contact with a waste disposal professional.

13.2 Disposal of Chemicals

i Chemicals used in processes or cleaning must be disposed according to applicable laws and regulations.

Recommendation: Contact a specialist company that specialises in disposal.

14 Spare Parts List

Artikel Nr. Part No.	Kurztext Part Description
100598	12" Touch Display
100599	Ultra-compact industrial PC
100616	Power Supply 2.5A/12VDC
101048	Manometer 0-2,5BAR M5I A2 switchboard
833258	2/2-way bellow seal valve
833664	Vacuum switch with digital display
834394	Pressure spring 0,8x6,3x23 A2 VD130
834963	Solid state relay 3-32VDC/40-280VAC
835041	Level switch for 5l tank
836097	Pressure controller 0,5/10bar G1/8"I MS
836994	One-way restrictor supply outlet air G1/8
837061	Seal ring 1/8" PVC hard
837851	Cable connector 7-POL/LÖT
837885	Bimetal switch 200°C
839095	Throttle valve DN3,5 G1/8" A2
839436	Pressure controller 0,5/2bar G1/8" I Al
842586	Coupling socket ID6, O-seal Kalrez A2
842587	Connector plug ID6, O-seal Kalrez A2
860730	O-seal 230x3 FPM
860733	Hotplate OPTIhot VB20
862081	Connector plug A2 NPT 1/4" Kalrez
862192	Single connector plate valve cluster
862195	5/2-way valve NC for 62172
862196	3/2-way valve double for 62172
866234	Venturi valve P=ID6 V=ID6, EX=ID8,34L/Min
868100	Manometer-1 1...0Bar M5I control panel

15 OEM Manuals

Further OEM manuals are available on request.