

CitoPress-15/-30

Instruction Manual

Original Instructions



CE

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1 About this manual



CAUTION

Struers equipment must only be used in connection with and as described in the Instruction Manual supplied with the equipment.



Note

Read the Instruction Manual carefully before use.



Note

If you want to view specific information in detail, see the online version of this manual.

2 Safety

2.1 Intended use - CitoPress-15/-30

For professional materialographic hot mounting of materials for further materialographic inspection. The machine must be operated only by skilled/trained personnel.

The machine is designed to be used only with Struers consumables specifically designed for this purpose and this type of machine.

The machine is for use in a professional working environment (e.g. a materialographic laboratory).

Do not use the machine for:

Hot mounting of materials other than solid materials suitable for materialographic studies.

Any type of explosive and/or flammable material, or materials that are not stable during heating or pressure.

Model:

CitoPress-15/-30

2.2 CitoPress-15/-30 safety precautions



2.2.1 Read carefully before use

1. Ignoring this information and mishandling of the equipment can lead to severe bodily injuries and material damage.

2. The machine must be installed in compliance with local safety regulations. All functions on the machine and any connected equipment must be in working order.
3. The operator must read the safety precautions and Instruction Manual, as well as relevant sections of the manuals for any connected equipment and accessories.
4. This machine must be operated and maintained only by skilled/trained personnel.
5. The machine must be placed on a workbench that is strong enough to carry the machine's weight, that has an appropriate working height.
6. Make sure that the actual electrical power supply voltage corresponds to the voltage stated on the name plate of the machine. The machine must be earthed (grounded).
7. Safe operation of the machine requires that a Residual Current Circuit Breaker (RCCB) is installed in the power supply circuit. Confirm the installation requirements with a qualified electrician to verify which options are suitable for the local installation.
8. The machine must be disconnected from the electrical power supply before any service.
9. Disconnect the machine from the electrical power supply and water supply before installing or removing the mounting unit.
10. Make sure that the water connections are correctly mounted and without leaks. Turn on the water supply while using the machine. Turn off the water supply if you are going to leave the machine unattended.
11. During operation, the cooling water from the water outlet tube will be very hot. Make sure that it is not possible to come into contact with the cooling water.
12. Make sure that the outlet hose is safely attached to the water outlet system.
13. Only use water or water with approved Struers cooling additives as a cooling medium.
14. Make sure that the mounting unit is installed correctly:
 - The arrows must be aligned to lock the mounting unit into position
 - The retaining screw must be tightened
 - Close the cover, fasten the cover screw and replace the top plate.
15. Make sure that the top closure with the upper ram is correctly mounted on the mounting cylinder before starting the press.
16. Be careful when handling chamfered rams (option) as the metal edges can be sharp.
17. Do not operate the mounting press with a higher force/pressure than recommended for the actual cylinder diameter and mounting material in Struers Application Guide for Hot Mounting.
18. Allow the mounting cylinder to cool for at least 2 minutes after a heating cycle before opening.
19. During operation, make sure that the top closure is tightly fastened.
20. Never leave the machine unattended while a mounting process is running.
21. In the event of a hydraulic leak or any other form of failure, the machine must be serviced immediately.
22. In case of fire, alert bystanders, the fire brigade and cut power. Use a powder fire extinguisher. Do not use water.
23. Struers equipment must only be used in connection with and as described in the Instruction Manual supplied with the equipment.

24. The machine is designed to be used only with Struers consumables specifically designed for this purpose and this type of machine.
25. If the equipment is subjected to misuse, incorrect installation, alteration, neglect, accident or incorrect repair, Struers will accept no responsibility for damage to the user or the equipment.
26. Dismantling of any part of the equipment, during service or repair, should always be performed by a qualified technician (electromechanical, electronic, mechanical, pneumatic, etc.)

2.3 Safety messages

Signs used in safety messages

Struers uses the following signs to indicate potential hazards.



ELECTRICAL HAZARD

This sign indicates an electrical hazard which, if not avoided, will result in death or serious injury.



DANGER

This sign indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.



WARNING

This sign indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.



CAUTION

This sign indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.



CRUSHING HAZARD

This sign indicates a crushing hazard which, if not avoided, could result in minor, moderate or serious injury.

General messages



Note

This sign indicates that there is a risk of damage to property, or a need to proceed with special care.



Hint

This sign indicates that additional information and hints are available.

2.4 Safety messages in this manual

**CAUTION**

Struers equipment must only be used in connection with and as described in the Instruction Manual supplied with the equipment.

**CAUTION**

Risk of burns or scalding
Water from the water outlet hose may become very hot.

**CAUTION**

This machine must be operated and maintained only by skilled/trained personnel.

**CAUTION**

The machine is designed to be used only with Struers consumables specifically designed for this purpose and this type of machine.

**CAUTION**

Prolonged exposure to loud noises may cause permanent damage to a person's hearing.
Use hearing protection if the exposure to noise exceeds the levels set by local regulations.

**CAUTION**

Always follow the recommended heating and cooling parameters described in Struers **Application Guide for Hot Mounting**.

**CAUTION**

During operation, the mount and the mounting unit becomes very hot.

**CAUTION**

During operation, the mounting unit becomes very hot. Make sure that it is cool enough to be handled before you remove it.

**CAUTION**

During operation, the mounting unit becomes very hot. Ensure that the top closure is fully closed, before you start the mounting process.

**WARNING**

Safe operation of the machine requires that a Residual Current Circuit Breaker (RCCB) is installed in the power supply circuit. Confirm the installation requirements with a qualified electrician to verify which options are suitable for the local installation.



WARNING

Check that the protective grid in CitoDoser is intact and that it is not possible to come into contact with the agitator wheel when it rotates.



ELECTRICAL HAZARD

Disconnect the machine from the electrical power supply and water supply before installing or removing the mounting unit.



ELECTRICAL HAZARD

Removal and installation of the mounting unit must be carried out by skilled or instructed persons.



ELECTRICAL HAZARD

Connect the water and electrical connections in the order described. Connecting the water connections before the electrical connections could result in water being leaked into the electrical connections and lead to a short circuit.



ELECTRICAL HAZARD

Switch off the electrical power supply before installing electrical equipment. The machine must be earthed (grounded).

Make sure that the actual electrical power supply voltage corresponds to the voltage stated on the name plate of the machine.

Incorrect voltage can damage the electrical circuit.



ELECTRICAL HAZARD

Do not use the 6-15P cable to connect equipment that use a 110 V power supply. Failure to adhere to this may result in material damage.



HEAT HAZARD

During operation, the mount and the mounting unit becomes very hot. Following a heating cycle, ensure that the mounting cylinder is cooled actively for a minimum of 2 minutes before opening.



ELECTRICAL HAZARD

Disconnect the machine from the electrical power supply while you install the dosing unit.

Installation of CitoDoser must be carried out by skilled or instructed persons.



CRUSHING HAZARD

Take care of your fingers when handling the machine.

Wear safety shoes when handling heavy machinery.

3 Get started - introduction

3.1 Device description

CitoPress-15/-30 are electro-hydraulic units for hot mounting materialographic specimens with Struers hot mounting materials.

Each mounting unit can be equipped with the different cylinder sizes. Cylinders can easily be exchanged if a different diameter is needed. The required cylinder size will depend on the size of the sample to be mounted.

CitoPress-15/-30 have a built-in Hot Mounting Application Guide that contains all Struers resins.

CitoPress-15/-30 automatically adapt the selected method according to cylinder size and the resin selected.

Option: Customer specific methods can be added and stored.

To operate CitoPress-15/-30, the operator raises the ram. The sample is placed onto the ram which is then lowered to its lowest limit. The required mounting material is filled into the cylinder. The top closure is closed, and the mounting process can be started.

When the mounting process is complete, the machine stops automatically.

After the cooling period ends, the top closure can be opened. The ram is raised to its top limit and the mounted specimen removed. The specimen is ready for grinding/polishing.

The machine can be stopped at any time during the mounting process by pressing STOP.

For automatic dosing of resin, a CitoDoser (optional accessory) can be mounted on CitoPress-15/-30.

Struers recommend setting up a local exhaust system to remove dust and fumes from the working area.

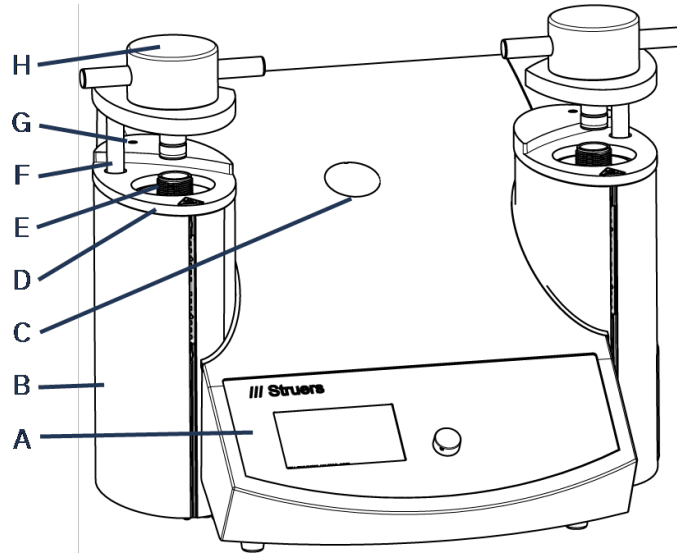
Terms used in this manual

"Sample" – refers to the piece of material which is to be mounted.

"Specimen" – refers to the piece of material which has been mounted and is ready for further preparation.

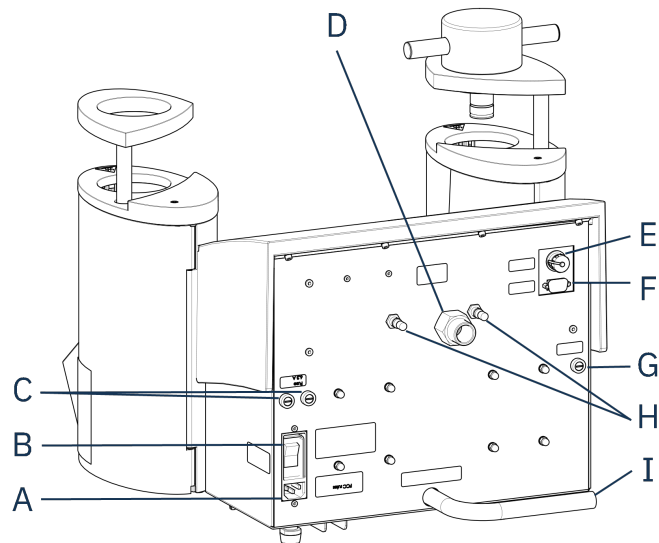
3.2 Overview

Front view



-
- | | |
|---|--|
| A Control panel | E Cylinders |
| B Mounting unit cover | F Swivel arm for top closure (elevator) |
| C Plastic cap (CitoDoser mounting point) | G Cover screw |
| D Mounting unit top plate | H Top closure |
-

Rear view



- | | |
|-----------------------|---|
| A Power supply | E Cooli unit 24 V / CAN control cable connection |
| B Main switch | F RS232 service socket |
| C Fuse holders | G Fuse holder: hydraulic pump |
| D Water inlet | H Ventilation valves |
| | I Water outlet tube |

3.3 Struers knowledge

Materialographic mounting can be regarded as a helping process assisting the mechanical preparation process as well as the final test.

Understanding the different characteristics of mounting materials and being able to evaluate the need for mounting is the key to have specimens that are easy to handle and clean and gives a good image of a coating or an edge.


Hint

For further information, see the section on Mounting on the [Struers website](http://www.struers.com).

3.3.1 Application Guide for Hot Mounting


Hint

Find useful mounting data and hints in Struers **Application Guide for Hot Mounting**. This is delivered with the machine but is also available in the Struers website on <http://www.struers.com>.

3.4 Accessories and consumables

Accessories

For information about the available range, see the CitoPress-15/-30 brochure:

- [The Struers Website](http://www.struers.com) (http://www.struers.com)

Consumables

The machine is designed to be used only with Struers consumables specifically designed for this purpose and this type of machine.

Other products may contain aggressive solvents, which dissolve e.g. rubber seals. The warranty may not cover damaged machine parts (e.g. seals and tubes), where the damage can be directly related to the use of consumables not supplied by Struers.

For information about the available range, see: [The Struers Website](http://www.struers.com) (http://www.struers.com).

4 Installation

4.1 Unpack the machine



CRUSHING HAZARD

Take care of your fingers when handling the machine.
Wear safety shoes when handling heavy machinery.



Note

We recommend that you keep all original packaging and fittings for future use.

Procedure

1. Remove the crate.
2. Remove the carriage bolts from the transport brackets that secure CitoPress-15/-30 to the transport pallet.
3. Remove the brackets.

4.2 Check the packing list

The packing box contains the following items:

CitoPress-15/-30

Pcs.	Description
1	CitoPress-15/-30
1	top closure with upper ram
3	lower ram
1	piston pin
1	mount release agent, Struers AntiStick
1	scraper

4.3 Lift the machine



CRUSHING HAZARD

Take care of your fingers when handling the machine.
Wear safety shoes when handling heavy machinery.



Note

2 persons are required to lift the machine.

- Lift the machine by grasping underneath the base of the machine from the left side and the right side.

4.4 Location

1. Make sure that the equipment is placed close to the electrical power supply, the water supply for the water inlet, and the waste water outlet for the hand-operated water outlet.
2. Place the machine on a rigid, stable workbench with a horizontal surface and an adequate height.
3. If the machine is to be connected to a recirculation cooling unit, make sure that there is room for it underneath the table.
4. For easy access for service and maintenance, allow sufficient space around the machine.



Hint

For dimensions and recommended space, see the Pre-installation checklist.
See also [Recommended workbench dimensions](#) ► 16 in this manual.

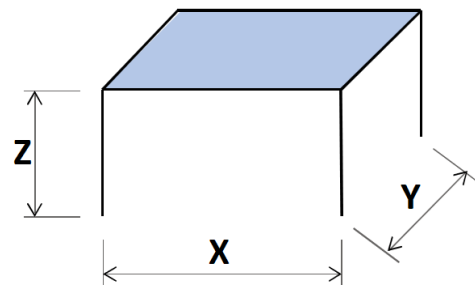
Hint
 Make sure that the work station has adequate lighting. Avoid direct or reflected light in the eyes of the operator.

4.4.1 Recommended workbench dimensions

The machine is designed to be placed on a table or workbench at an appropriate working height. For easy access for service and maintenance, allow sufficient space around the machine.

Recommended workbench dimensions

- X:** 92 cm / 36.2" (width)
- Y:** 90 cm / 35.4" (depth)
- Z:** Local preference (height)



The workbench must be able to carry at least 60 kg/132 lbs.

4.5 Power supply

ELECTRICAL HAZARD
 Switch off the electrical power supply before installing electrical equipment. The machine must be earthed (grounded). Make sure that the actual electrical power supply voltage corresponds to the voltage stated on the name plate of the machine. Incorrect voltage can damage the electrical circuit.

WARNING
 Safe operation of the machine requires that a Residual Current Circuit Breaker (RCCB) is installed in the power supply circuit. Confirm the installation requirements with a qualified electrician to verify which options are suitable for the local installation.

Requirements for electrical installations

Residual Current Circuit Breaker (RCCB)	Type A, 30 mA (EN 50178/5.2.11.1) or better is required
--	---

Note
 If the plug supplied on this cable is not approved in your country, the plug must be replaced with an approved plug.

See section [Technical Data](#) ► 82 for information on electrical supply and consumption.

Electrical power supply cables

The machine is shipped with 3 types of electrical power supply cables (length 2.5 m/8.2"): 1 connection to the machine, 2 single-phase supplies (European and North American), and 1 2-phase supply for CitoPress-30.

4.5.1 Connection to the machine

All cables are equipped with an IEC 320 cable connector. Connect the cable connector to CitoPress-15/-30.



4.5.2 Single-phase supply

Electrical power supply cable with 2-pin plug (European Schuko)

The 2-pin plug (European Schuko) is for use on single-phase electrical power connections.

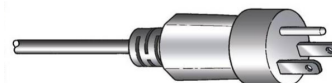


The leads must be connected as follows:

Yellow/Green	Earth (ground)
Brown	Line (live)
Blue	Neutral

Electrical power supply cable with 3-pin plug (North American NEMA 5-15P)

The 3-pin plug (North American NEMA 5-15P) is for use on single-phase electrical power connections.



The leads must be connected as follows:

Green	Earth (ground)
Black	Neutral
White	Line (live)



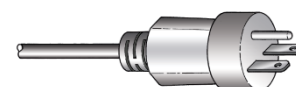
Note

For installation in America and Japan:
If CitoPress-30 is connected to 100-120 V (cable NEMA 5-15P), only one cylinder can heat at a time.

4.5.3 2-phase supply for CitoPress-30

Electrical power supply cable with 3-pin plug (North American NEMA 6-15P)

The 3-pin plug (North American NEMA 6-15P) is for use on 2-phase electrical power connections.





ELECTRICAL HAZARD

Do not use the North American NEMA 6-15P electrical power supply cable to connect equipment that uses a 110 V power supply. Failure to adhere to this can result in material damage.

The leads must be connected as follows:

Green	Earth (ground)
Black	Line (live)
White	Line (live)



Note

For installation in America and Japan:
CitoPress-30 must be connected to 200-240 V to be able to heat on both cylinders simultaneously (use cable NEMA 6-15P).

4.6 Open the ventilation valve

The ventilation valve is closed during transport and protected by a plastic cap.

Open the ventilation valve to equalize the pressure in the machine’s hydraulic system.

Procedure

1. Remove the plastic cap from the valve.
2. Open the valve fully.
3. Secure the valve in the open position using the locking nut.

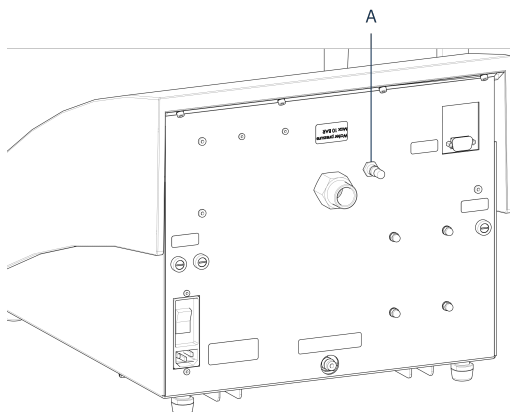
A Ventilation valve



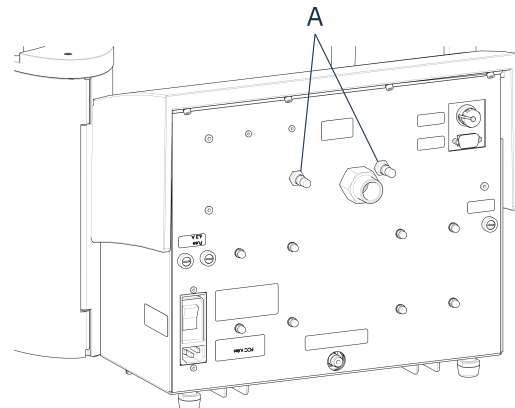
Note

CitoPress-30 has 2 ventilation valves.

CitoPress-15



CitoPress-30



B Ventilation valve

4.7 Water supply

Cooling water is provided either by the water supply or by a recirculation cooling unit.

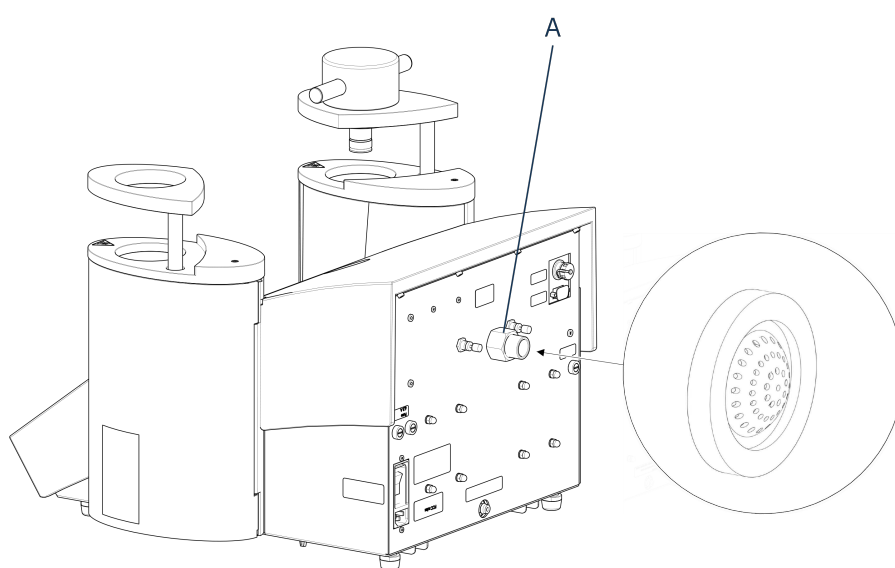
4.7.1 Connect the cooling water inlet



Note
Connect only to cold water.

Procedure

1. Mount the pressure hose onto the water inlet tube on the back of the machine (A).



A Water inlet

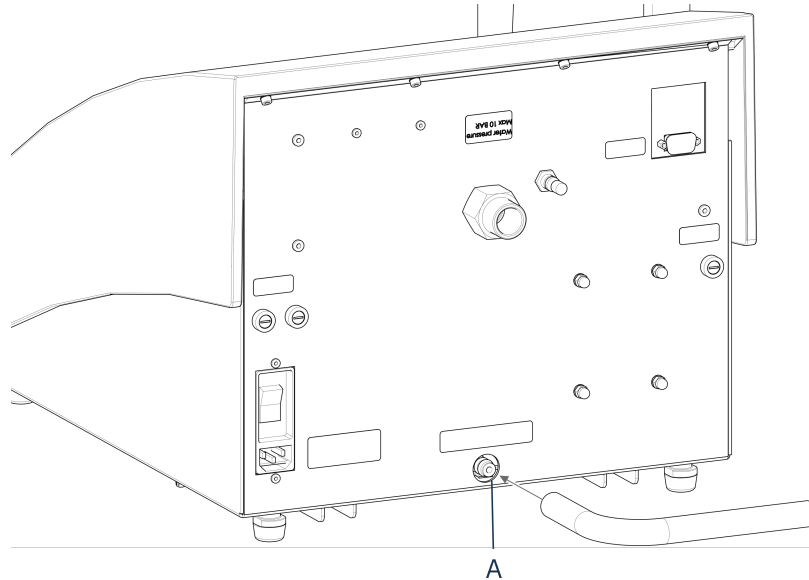
2. Insert the filter gasket in the coupling nut with the flat side facing outwards.
3. Tighten the coupling nut firmly.
4. Mount the other end of the pressure hose on the water supply for cold water.
5. Mount the reduction ring with gasket on the water supply if necessary.
6. Tighten the coupling nut firmly.

4.7.2 Connect the cooling water outlet



CAUTION
Risk of burns or scalding
Water from the water outlet hose may become very hot.

1. Mount a hose on the water outlet. (A)
2. Place the unconnected end of the water outlet hose in a drain.



A Water outlet



Note

Make sure that the hose slopes downward towards the waste water drain throughout its entire length. The drain must be lower than the machine, and the hose must be unobstructed.



Note

Do not connect to a pressurized drain system.

4.8 Noise

For information on the sound pressure level value, see this section: [Technical Data ▶ 82](#).



CAUTION

Prolonged exposure to loud noises may cause permanent damage to a person's hearing.

Use hearing protection if the exposure to noise exceeds the levels set by local regulations.

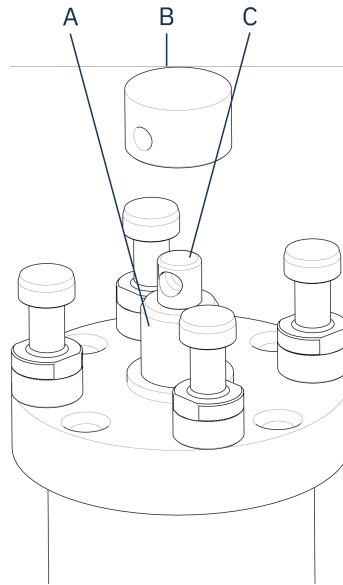
4.9 Install the lower ram

Before you install the mounting unit, install the lower ram.

Procedure

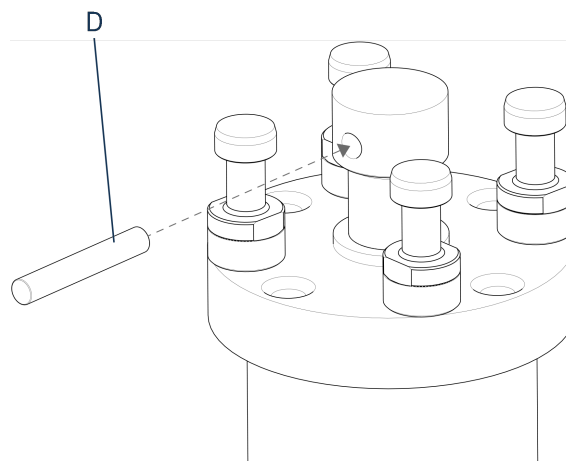
1. Remove the top closure and the swivel arm on the mounting unit (if already mounted).
2. Unscrew the cover screw.
3. Remove the mounting unit top plate.
4. Open the mounting unit cover.

5. Place the lower ram on the top of the piston rod.



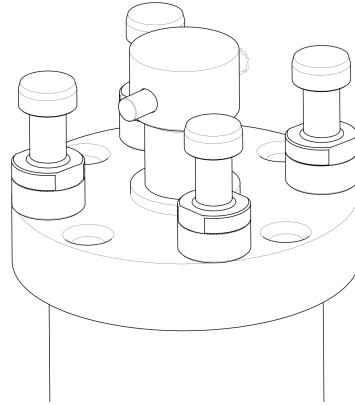
- A** Piston rod
- B** Lower ram
- C** Axle journal

6. Align the hole in the lower ram with the hole in the axle journal on top of the rod.



- D** Piston pin

7. Insert the piston pin.



8. Make sure that the ends of the pin do not protrude.

4.10 Install the mounting unit



ELECTRICAL HAZARD

Disconnect the machine from the electrical power supply and water supply before installing or removing the mounting unit.



ELECTRICAL HAZARD

The mounting unit must only be installed or removed by skilled technicians.

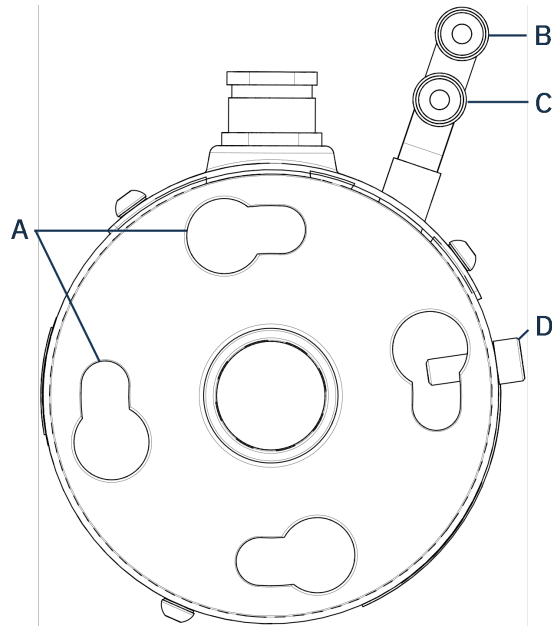


ELECTRICAL HAZARD

Connect the water and electrical connections in the order described. Connecting the water connections before the electrical connections could result in water being leaked into the electrical connections and lead to a short circuit.

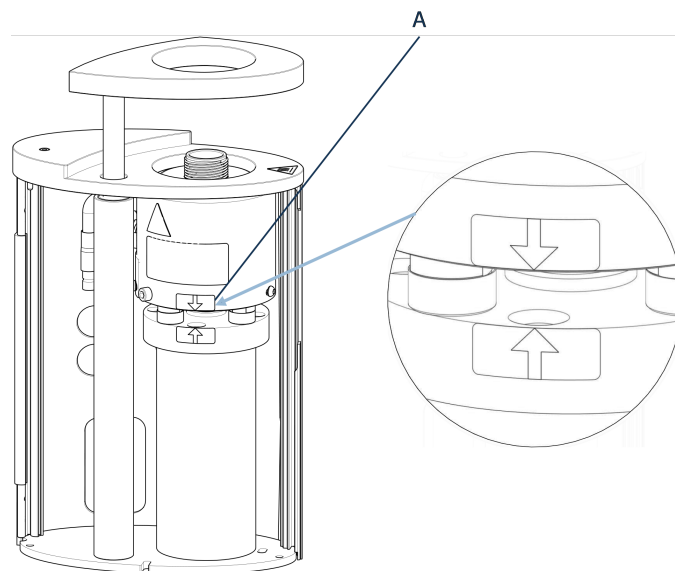
Mounting unit, bottom view

1. Place the mounting unit loosely over the hydraulic cylinder.
2. Rotate the mounting unit to line up the keyhole locking slots with the 4 studs on the hydraulic cylinder.



- | | |
|---|---|
| A Keyhole locking slots | C Inlet connection: male fitting (red) |
| B Outlet connection: male fitting (blue) | D Retaining screw |

3. Lower the unit onto the studs of the hydraulic cylinder.
4. Move the mounting unit's cables and water couplings to one side to ensure that they do not restrict the movement of the mounting unit when you lock it into position.
5. When the mounting unit is located on top of the hydraulic cylinder, turn it clockwise until the 2 arrows are aligned and it locks into position.



- A** Arrows aligned

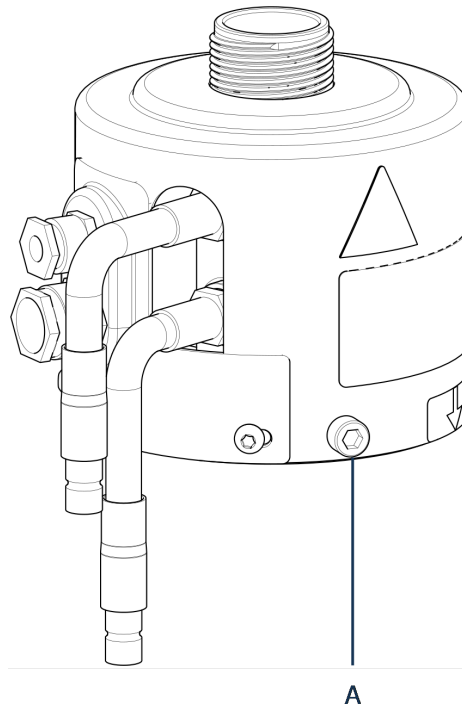


Note

Double-check that the mounting unit is locked into position. If it is not, CitoPress-15/-30 may be damaged during operation.

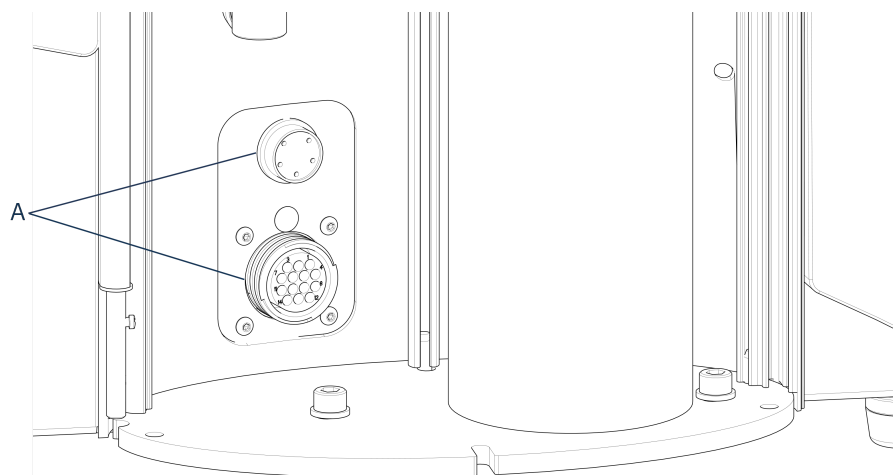
6. For CitoPress-30: If the mounting unit is to be mounted on the right tower, move the retaining screw to the hole for retaining screw for unit 2.
7. Tighten the retaining screw.

Mounting unit, side view



A Retaining screw

8. Connect the mounting unit's 2 loose cables to the 2 sockets on CitoPress-15/-30.
 - The large plug to the large socket (with the red dot on the plug facing up) and the small plug to the small socket.
 - Tighten the coupling nuts on both plugs to secure the connection.

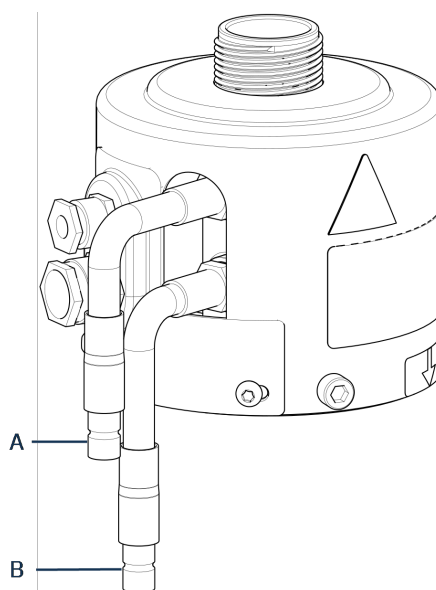


A Sockets

Water connections

The water connections are color-coded:

- The inlet connection is red (B)
- The outlet connection is blue (C)



A Inlet connection: male fitting (red)

B Outlet connection: male fitting (blue)

9. Connect the male inlet and outlet water couplings on the mounting unit to the female fittings on CitoPress-15/-30.
 - Hold the spring-loaded collar down and connect the water coupling.
 - Release the spring-loaded collar and check the water connection is secure.
10. Close the cover.
11. Replace the top plate and fasten the cover screw.



Note

To ensure optimal performance and operator safety:

- Ensure that the arrows are aligned to lock the mounting unit into position.
- Ensure that the retaining screw is tightened.
- Close the cover and replace the top plate.

Install the swivel arm

12. Mount the swivel arm by sliding it through the hole in the top plate and into the sleeve in the mounting unit cover.

Mount the top closure

13. Mount the top closure in the hole in the top of the swivel arm.



Note

When you have changed the mounting unit, you must also change to the appropriate size of top closure.

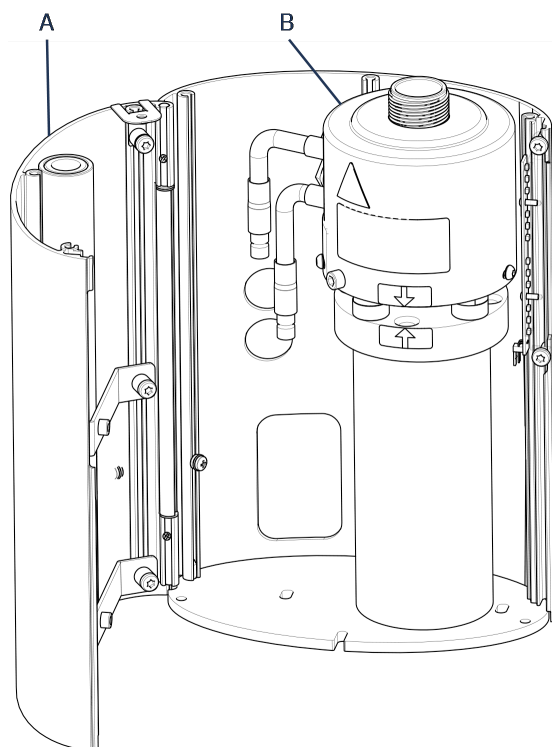
4.11 Replace the lower ram

Access the lower ram

1. Switch the machine on.
2. Hold **Down** for a few seconds to lower the ram to its lowest limit.



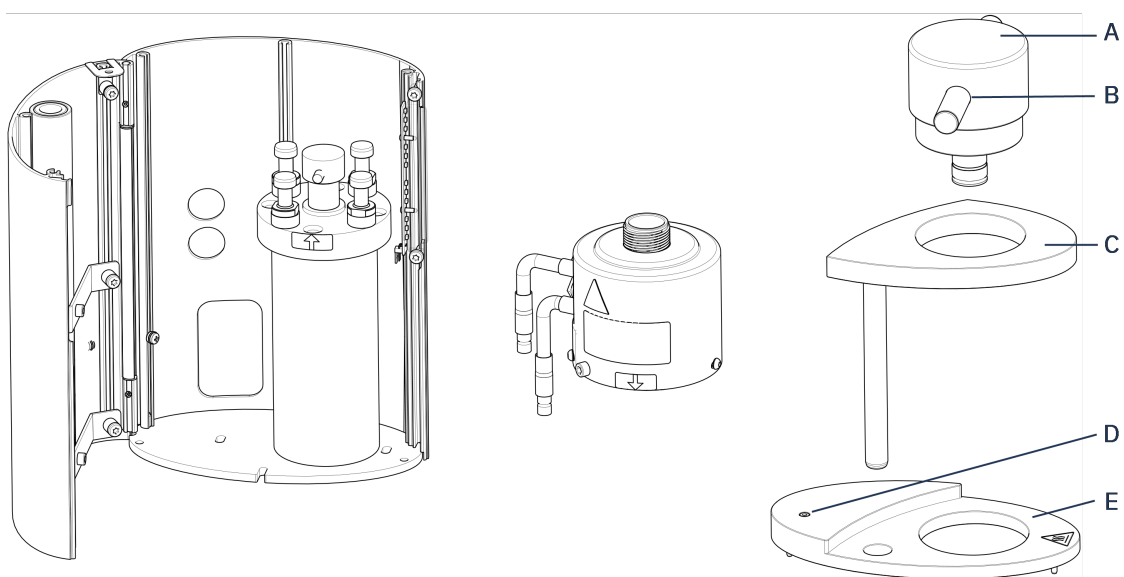
3. Switch the machine off.
4. Remove the top closure and the swivel arm. (See the location of parts in [Overview ▶ 12](#))
5. Remove the cover screw.
6. Remove the mounting unit top plate.
7. Open the mounting unit cover.



A Mounting unit cover

B Mounting unit

8. Disconnect the water hoses – clearly marked blue (inlet) and red (outlet).
9. Remove the retaining screw.
10. Twist the cooling/heating unit counter clock-wise, and lift it off of the mounting unit.



A Top closure cap (of lower ram)

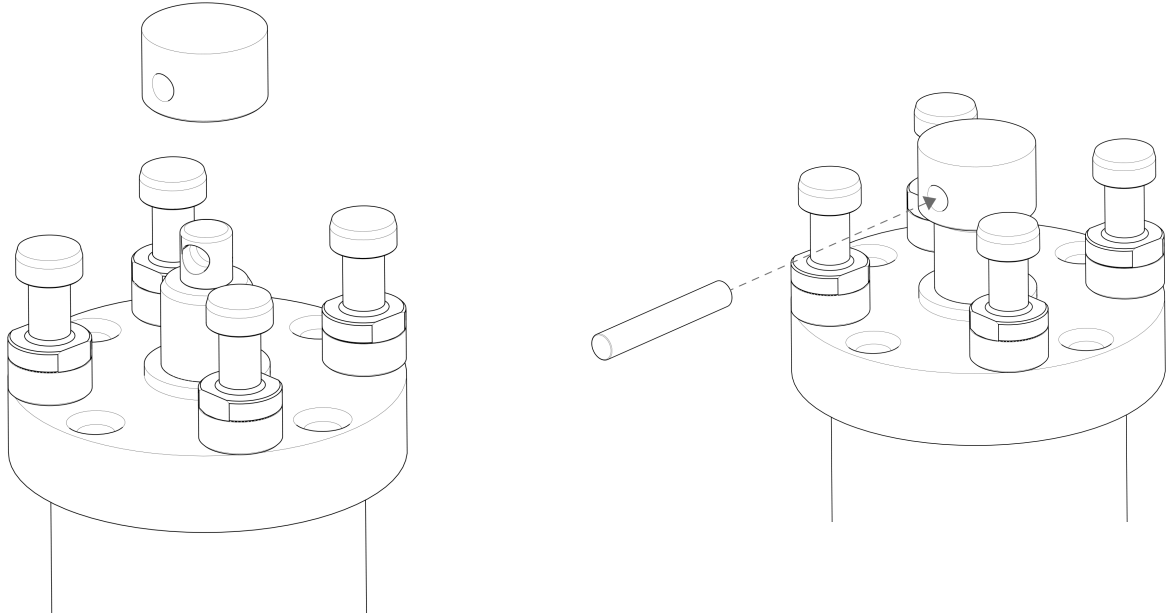
B Piston pin

C Swivel arm for top closure

D Cover screw

E Mounting unit top plate


11. Push the piston pin out from the lower ram, and lift it off.
12. Place the new lower ram on the top of the piston rod.
13. Align the hole in the lower ram with the hole in the axle journal on top of the rod.




14. Insert the piston pin.
15. Make sure that the ends of the pin do not protrude.
16. Push the piston pin out from the lower ram, and lift it off.
17. Place the new lower ram on the top of the piston rod.
18. Align the hole in the lower ram with the hole in the axle journal on top of the rod.

Assemble the mounting unit

1. Mount the mounting unit, and turn it clock-wise until the 2 arrows align.
2. Mount the chamfered retaining screw – do not use force.
3. Connect the water.
4. Close the mounting unit cover, and mount the mounting unit top plate.
5. Fasten the cover screw.
6. Mount the top closure and the swivel arm.

 **Hint**
A build-up of mounting material can make it difficult to remove the lower ram from the mounting unit.

 **Note**
Contact Struers Service for advice on how to loosen the lower ram.

4.12 Remove the mounting unit



ELECTRICAL HAZARD

Disconnect the machine from the electrical power supply and water supply before installing or removing the mounting unit.



ELECTRICAL HAZARD

The mounting unit must only be installed or removed by skilled technicians.



CAUTION

During operation, the mounting unit becomes very hot. Make sure that it is cool enough to be handled before you remove it.

1. Remove the top closure.
2. Remove the swivel arm by lifting it out of its mounting.
3. Remove the cover screw.
4. Remove the top plate.
5. Open the mounting unit cover.



Note

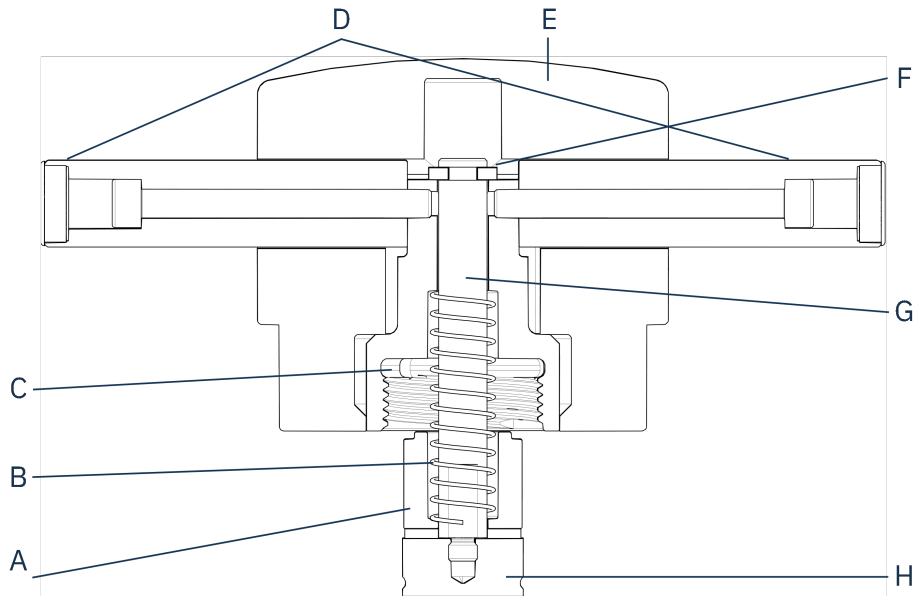
Disconnect the water and electrical connections in the order as described. If you disconnect the electrical connections before the water connections, water could leak into the connections.

6. Disconnect the male inlet and outlet water couplings of the mounting unit from the female fittings of the machine.
7. Wait 5 seconds to allow the water to flow out of the cooling coil.
8. Loosen the coupling nuts on both the large and small electrical plugs, then pull the plugs out of the sockets.
9. Loosen the retaining screw.
10. Turn the mounting unit in an anti-clockwise direction until it stops.
11. Lift the mounting unit free of the hydraulic cylinder.

4.13 Replace the mounting unit

Follow the instructions in [Remove the mounting unit ► 29](#) and [Install the mounting unit ► 22](#).

4.14 Remove the upper ram



- | | |
|------------------|---------------------------|
| A Spacer | E Top closure cap |
| B Spring | F Retaining washer |
| C Top nut | G Rod |
| D Handles | H Upper ram |

1. Unscrew the handles (D) on either side of the top closure cap (E).
2. Remove the handles by turning them counter-clockwise.
3. Remove the top closure cap.
4. Remove the retaining washer (F).
5. Remove the top nut (C), spring (B) and spacer (A).
6. Pull out the upper ram (H). Do not remove the rod (G) from the upper ram unless absolutely necessary.
7. If you must remove the rod, hold the upper ram in a vice or a similar device with soft jaws.



Note

The ram surface must be protected with plastic or soft metal.

4.15 Install CitoDoser (option)



Note

See the Instruction Manual for this unit.

**ELECTRICAL HAZARD**

Disconnect the machine from the electrical power supply while you install the dosing unit.
Installation of CitoDoser must be carried out by skilled or instructed persons.

**Hint**

For information on how to empty and clean the dosing unit, see the Instruction Manual for this unit.

4.16 Connect a Struers cooling unit (option)

**ELECTRICAL HAZARD**

Switch off the electrical power supply before installing electrical equipment.
The machine must be earthed (grounded).
Make sure that the actual electrical power supply voltage corresponds to the voltage stated on the name plate of the machine.
Incorrect voltage can damage the electrical circuit.

**Note**

Before connecting the cooling unit to the machine, follow the instructions in the Instruction Manual of the unit to prepare it for use.

**Note**

To avoid corrosion, use Struers Cooli Additive in the cooling water (percentage stated on the Additive container). Remember to top up with Cooli Additive each time you refill with water.

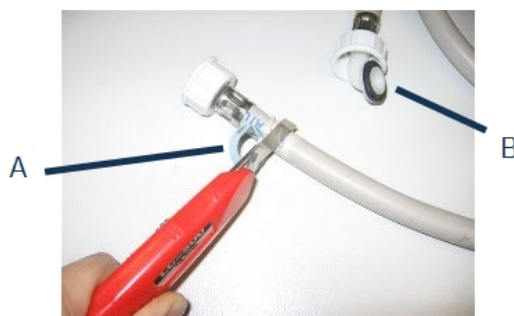
Modify the high-pressure hose

To connect the machine to a Struers recirculation cooling unit, the coupling on one end of the high-pressure hose (supplied with the machine) must be changed to a quick-fit coupling.

**Note**

The Cooli cooling unit, is supplied with 2 quick couplings. Use the smallest one to modify the high-pressure hose.

1. Cut the high-pressure hose just behind the existing screw fitting (A).

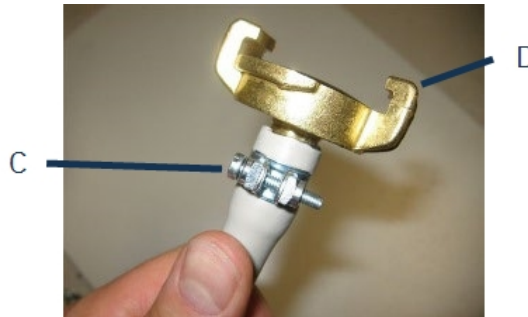




Note

Do not cut at the other end of the hose (B). This is used to connect to the machine.

Place the screw clip (C) onto the hose.

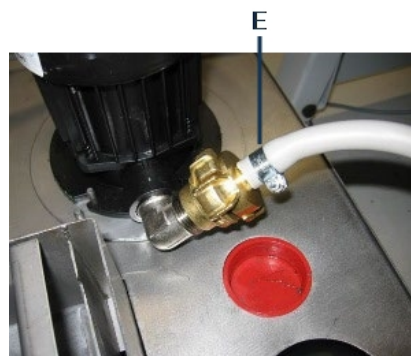


1. Insert the quick coupling (D) into the end of the hose.
2. Slide the screw clip over the shaft of the quick coupling.
3. Tighten the screw clip until the quick coupling is fastened firmly in position.

Connect the Cooli unit

Cooli water inlet

1. Mount the pressure hose onto the water inlet tube on the back of the machine.
2. Insert the filter gasket in the coupling nut with the flat side against the pressure hose.
3. Tighten the coupling nut completely.
4. Connect the quick coupling to the Cooli pump outlet (E).



Cooli water outlet

1. Place the unconnected end of the water outlet tube in the top of the Cooli filter inlet.
2. Check that the outlet hose slopes downwards towards the drain along the whole of its length.

Connect the control unit and the electrical power supply

1. Connect the 24 V / CAN control cable to the Cooli control unit by plugging one end into CitoPress's control socket and the other end into the socket on the rear panel of the control unit.
2. Connect the cooling unit to the electrical power supply.

5 Transport and storage

If, at any time after the installation, you have to move the unit or place it in storage, there is a number of guidelines we recommend that you follow.

- Package the unit securely before transportation. Insufficient packaging could cause damage to the unit and will void the warranty. Contact Struers Service.
- We recommend that you use the original packaging and fittings.



ELECTRICAL HAZARD

Disconnect the machine from the electrical power supply and water supply before installing or removing the mounting unit.



CRUSHING HAZARD

Take care of your fingers when handling the machine.
Wear safety shoes when handling heavy machinery.



Note

Package the unit securely before transportation.
We recommend that you keep all original packaging and fittings for future use.

1. Disconnect the machine from the electrical power supply.
2. Disconnect the water inlet and the water outlet.
Residual water drains from the machine when the water supply is disconnected.
3. Clean and dry the machine and all accessories thoroughly.
4. Disconnect the cooling system, if installed. See the instructions for the specific unit.
5. Lift the machine onto a trolley.
Hold underneath the base of the machine, on the left side and on the right side. 2 persons are required to lift the machine.
6. After transportation, lift the machine off the trolley into its new position.

Long-time storage or shipping – additional steps

1. Close the ventilation valve, secure using the locking nut.
2. Mount a plastic cap on the ventilation valve.



Note

CitoPress-30 has 2 ventilation valves.

3. Place a large plastic sheet on a pallet.
4. Place the machine on blocks on the pallet
5. Secure the machine using the original transport brackets.
6. Place desiccant (silica gel) by the machine.
7. Strap and tape the plastic sheet close to keep the machine dry.
8. Pack the loose parts in the cardboard box and place it on the machine.
9. Build a crate around the machine and secure.

At the new location

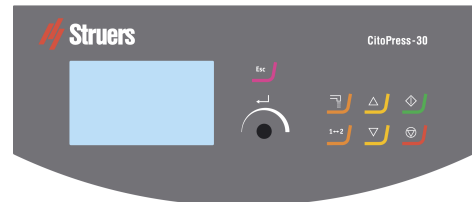
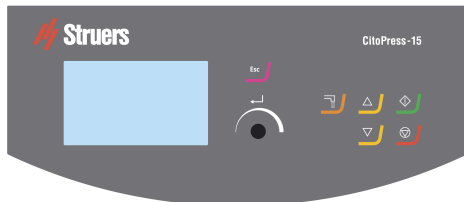
See [Location ► 15](#) and the Pre-installation checklist.



If the CitoDoser is installed on the machine







Follow additional steps as explained in the Instruction Manual for the CitoDoser.

6 Operate the device

6.1 Navigation and control panel



Button	Function
	<p>Esc (Escape)</p> <ul style="list-style-type: none"> • Return to the previous menu. • Exit a selected menu item and discard changes. • Cancel changes.
	<p>Multi-function knob</p> <ul style="list-style-type: none"> • Turn the knob to navigate to menu items. • Turn the knob to change a selected item's value. • Push the knob to select an item. • Push the knob to store a value that has been changed.

Button	Function
	Dosing <ul style="list-style-type: none"> Start the dosing unit (option). The dosing unit stops automatically when the amount of resin (stated in the method) has been dispensed.
	Toggle unit (CitoPress-30 only) <ul style="list-style-type: none"> Switch between the 2 mounting units.
	Up <ul style="list-style-type: none"> Start the upward movement of the lower ram. The ram automatically stops when its upper limit is reached.
	Down <ul style="list-style-type: none"> Start the downward movement of the lower ram. The ram automatically stops when its lower limit is reached.
	Start <ul style="list-style-type: none"> Start the machine – and the recirculation cooling unit if installed.
	Stop <ul style="list-style-type: none"> Stop the machine. – and the recirculation cooling unit if installed. CitoPress-30 only: Press twice to stop the process on both mounting units at the same time.

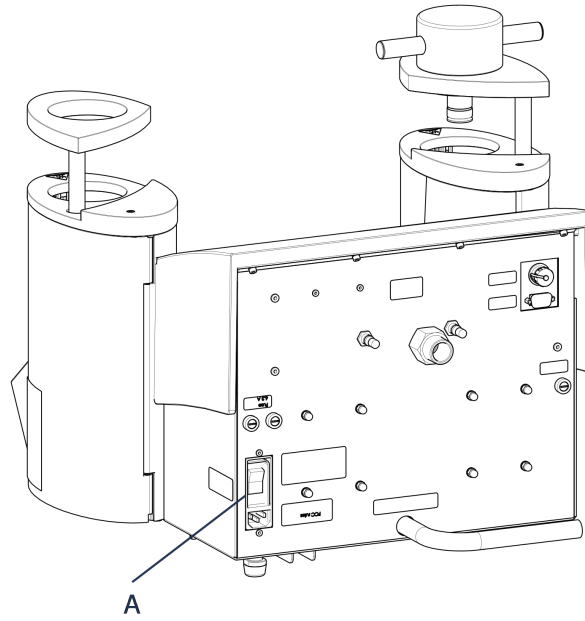
6.2 Switch on the machine



Note

The screens we show in this Instruction may differ from the actual screens on your machine as the software is continuously updated.

1. Switch on the machine on the power switch (A).



2. The initial start up screen is displayed.



3. The first time you start the machine, you are prompted to select the language you wish to use.



4. Navigate to the desired language.



5. Select the language.



6. The start-up screen **Service info** is shown:



7. The main menu appears.



8. From **Main menu** you can choose between the following options:

Process, see [7.1](#).

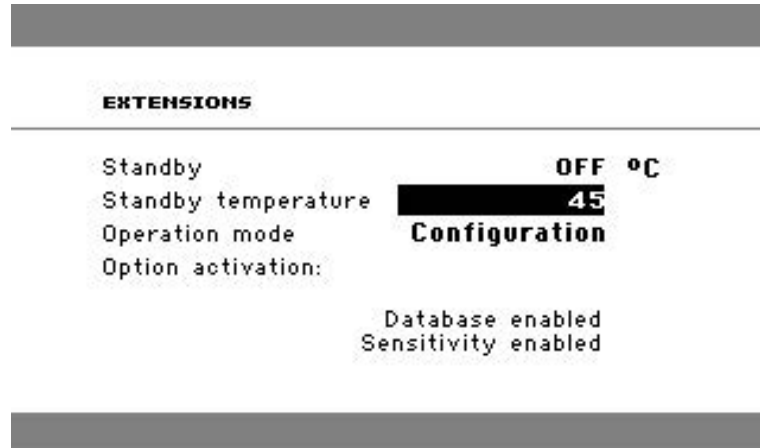
Extensions, see [6.3.1](#).

Configuration, see [6.3.2](#).

Service, see [The service menus ► 69](#)

6.3 Software menus

6.3.1 Extensions



Standby The **Standby** option can be switched ON or OFF.

Standby temperature The **Standby temperature** (the temperature that the machine will maintain in standby mode) can be adjusted.

It is possible to select 3 different operation modes. Different operation modes allow operators different levels of access to parameters as follows:

Operation mode

Configuration: Full functionality, access to all parameters.

Development: No access to parameters in the menu **Configuration**, except **Display contrast**.

Production: No access to parameters. Only **Start**, **Stop** and **Dosing** can be operated.

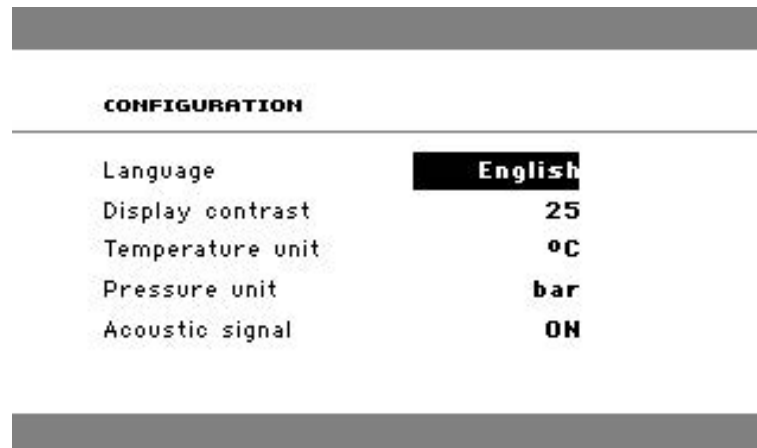
Option activation

If you purchase the options **Database** and **Sensitivity** , you can enable these with the unlock code supplied by Struers.

1. Select **Option activation**.
2. Press the knob to open the menu **Enter password**.
3. Enter passwords.

For more information on how to use this menu, see [Enter method name ▶ 55](#).

6.3.2 Configuration



From the **Configuration** menu you can access a number of settings and parameters.

1. From the **Main menu**, select **Configuration**.

You can configure the following options:

Language

Select the language you wish to use in the software.

The language can be set to English (default), German, French, Spanish or Japanese.

Display contrast

You can adjust the display to make it easier to view. Default value: 22. Adjustment range: 0-15/-300).

Temperature unit

Settings: Celsius or Fahrenheit.

Pressure unit

Settings: Bar or psi.

Acoustic signal

On:

- A beep is heard when the mounting process has been completed.
- Beeps are heard when control buttons are pressed.

Off:

- The acoustic signal is disabled.

Change the language setting

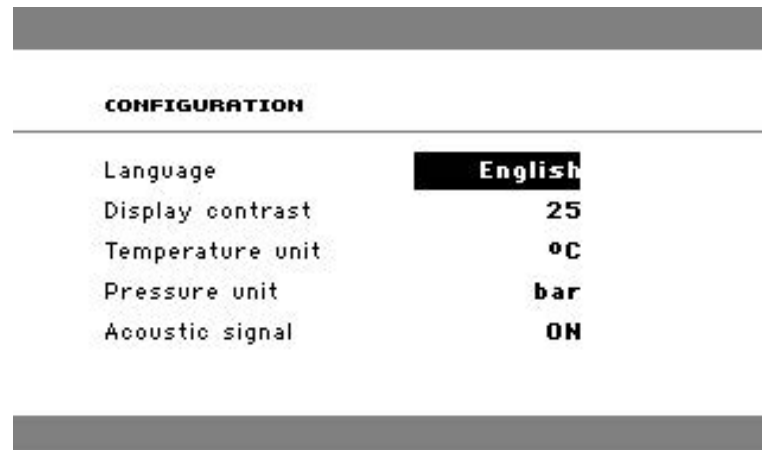
The default language is English but you can change the language after initial start-up.

1. From **Main menu**, turn the knob to highlight **Configuration**.





2. Push the knob to enter **Configuration**.
3. Turn the knob to highlight **Language**.
4. Push the knob to activate the pop-up menu **Select language**.
5. Turn the knob to select the language you prefer.



6. Push the knob to accept the language.
7. The menu **Configuration** now appears in the language you have chosen.
8. Press **Esc** to return to **Main menu**.

7 Basic operation

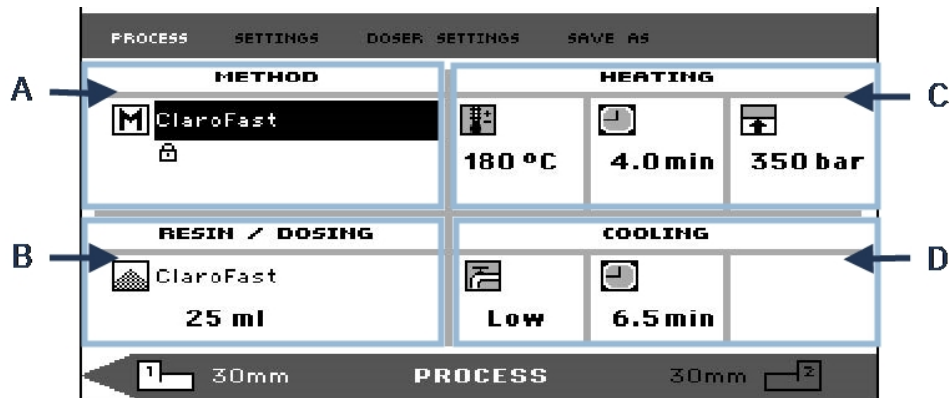


CAUTION

This machine must be operated and maintained only by skilled/trained personnel.

7.1 Process

In **Process**, there are 4 main areas (A-D):



A Method

C Heating

B Resin/Dosing

D Cooling

Upper and lower bar

The display also has an upper and lower bar.

The upper bar provides additional top-level menu items: **Process, Settings, Doser settings** and **Save as**.

The lower bar provides additional status and context information, for example, which mounting unit's process information is being displayed (unit 2) and the cylinder diameters (30 mm and 30 mm above).

Method

The area **Method** (A) displays the selected method. The padlock shows whether the method is locked or unlocked.



Hint

If the Sensitive mode (see) has been installed, the display shows whether it is switched on or off for the current method.

Resin/Dosing

The area **Resin/Dosing** (B) displays information about the resin being used, and whether dosing is manual or automatic.



Hint

If a CitoDoser (option) is being used, the value displayed will be a percentage, not a volume.

Heating

The area **Heating** (C) displays information about the selected method's heating values:



Temperature



Duration

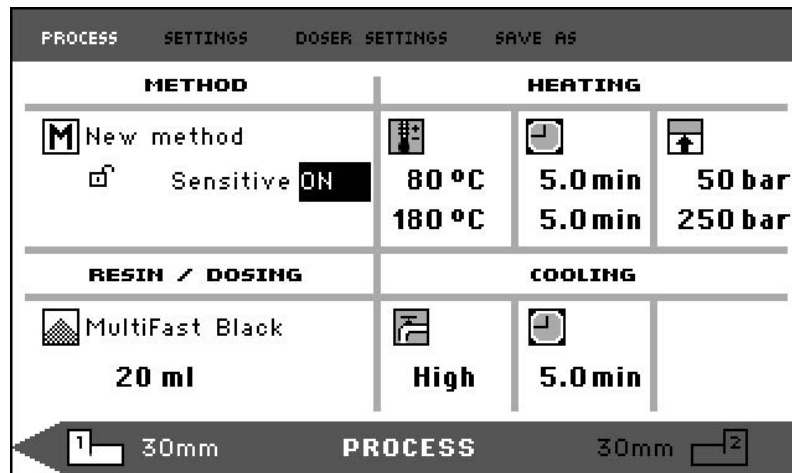


Pressure



Hint

If the Sensitive mode (see) has been enabled, the settings for the 2 phases are displayed on separate lines.



Cooling

The area **Cooling** (D) displays information about the selected cooling method:



Speed: **High, Medium, Low**



Cooling time

7.1.1 Use the menu Process setup

Select a mounting method

Automatic or manual method

When you operate the machine, you can either use a Struers method (which is a stored set of process settings), or a user method. Both are referred to as 'automatic' as all parameters are retrieved automatically.

Alternatively, you can operate the machine simply by modifying the parameters in the process menu. This is referred to as 'manual' operation.

Preset method

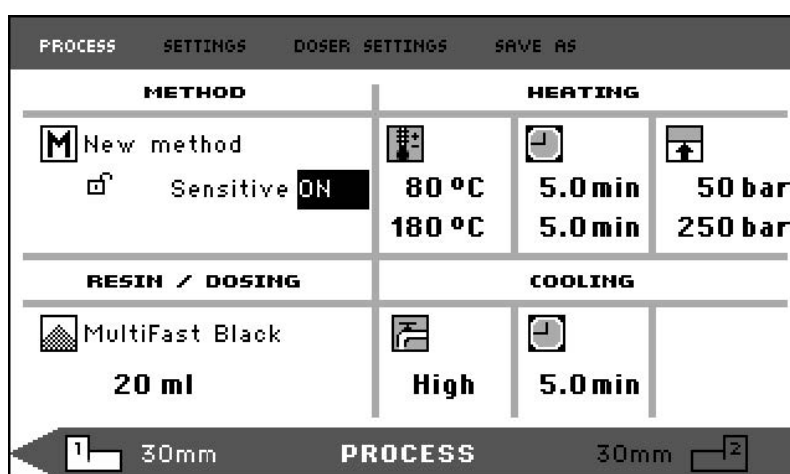
As standard, the machine comes with a library of preset Struers methods matching the Struers range of hot mounting resins (the on-screen Hot Mounting Application Guide). When you choose one of the Struers methods, the method automatically adapts to the cylinder size which greatly reduces the risk of errors.

Storage capacity

You can store up to 2 methods on the mounting press. If you need additional storage space, the Database option is available (see [Methods database \(option\)](#) ► 52). When this option is activated, you can store a total of 15 methods in the machine's database.

Sensitive mode

Sensitive mode, with a dual heating phase, is for fragile/porous samples.



Adjust the values for **Heating** to suit the samples to be mounted.

Examples:

Fragile/brittle samples	Phase 1	Apply heat to melt the resin, no pressure
	Phase 2	Apply heat and pressure
Metal samples	Phase 1	Deduct 1 minute from the total heating time. Apply heat and pressure.
	Phase 2	For 1 minute, apply heat, no pressure
PCB, plastics, and other poor conductors	Phase 1	Apply heat to melt the resin, no pressure for 15 minutes
	Phase 2	For 1 minute, apply heat and pressure

Manual operation

If you use manual settings when you operate the machine, you must change the process settings manually each time you process a sample (unless the previously used settings are appropriate for the next sample).

**Hint**

When a CitoDoser (option) dosing unit is used and the Database option is enabled (see [Methods database \(option\)](#) ► 52), the dosing unit stores information about which method should be used for a particular resin. When you place the CitoDoser on the machine, you select this method.

Reuse the method settings for the next sample

When the machine has completed a specimen preparation, it displays the last used process settings (this also applies after restart).

If these settings are appropriate for the next sample you are going to process, you do not have to make any changes, and you can place the sample.

Change the method settings for the next sample

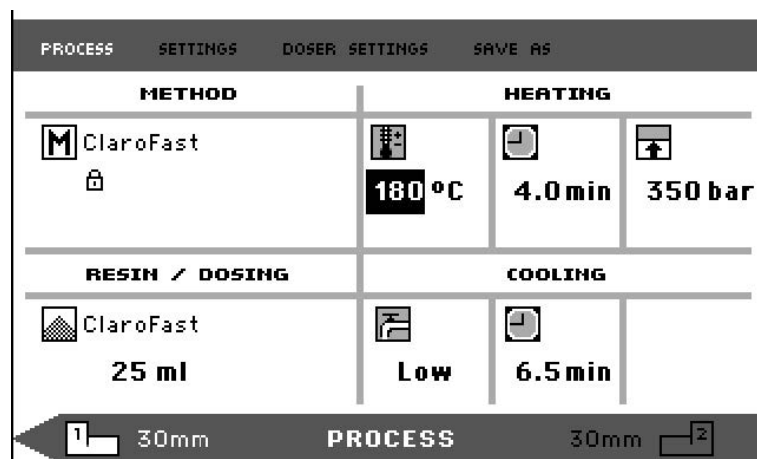
If the process settings last used are not appropriate for processing the next sample, you can change them in 1 of 3 ways:

- Edit the method's values manually
- Select a stored method.
- Change the CitoDoser dosing unit (option).

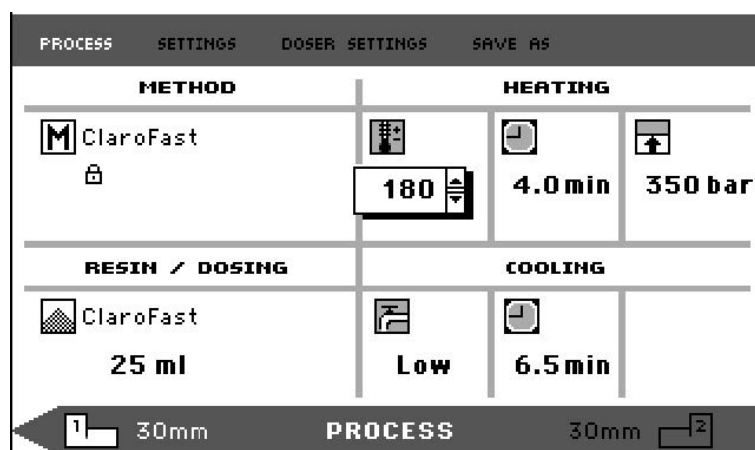
Edit a method's values manually**Note**

The example below illustrates the editing of the method's temperature value. The procedure for editing other values is the same. More than one of the method's values can be edited.

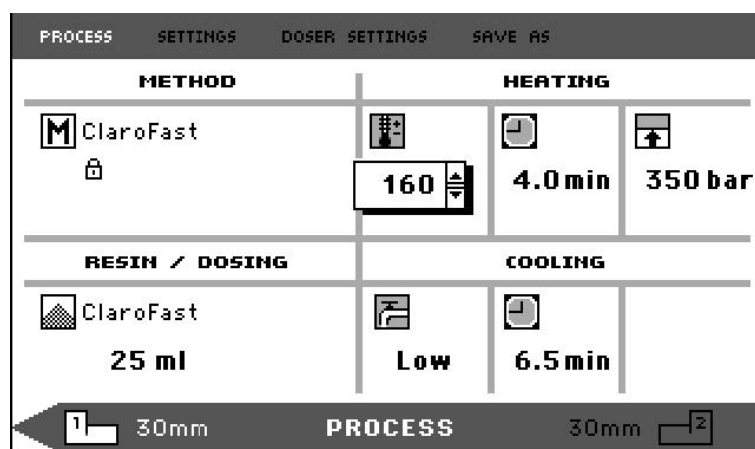
1. In the menu **Process**, turn the knob to highlight the temperature in **Heating**.



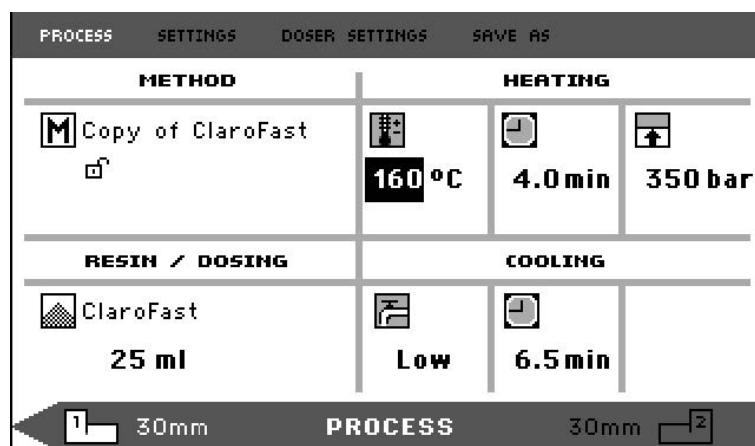
2. Push the knob to edit the value.
3. A scroll box appears around the value.



4. Turn the knob to increase or decrease the numeric value.



5. Push the knob to accept the new value.

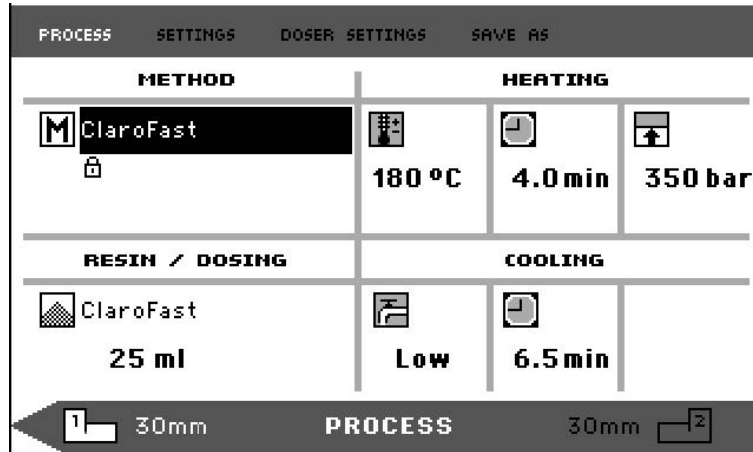


Hint

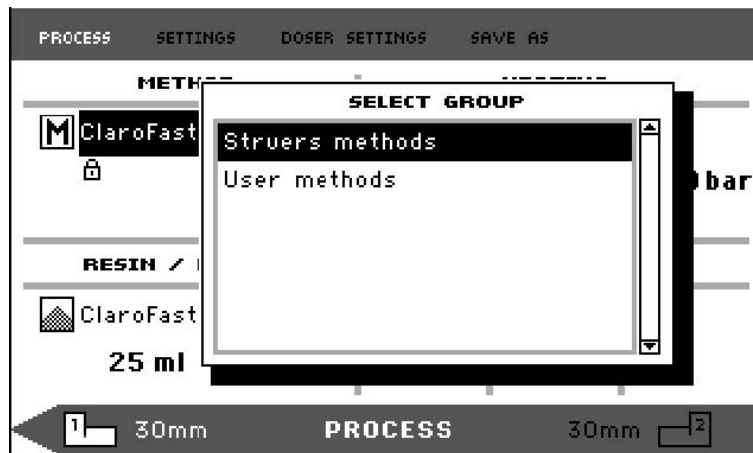
When you edit a stored method's values, a temporary copy of the method is created. This is called "Copy of *Method Name*", for example, "Copy of ClaroFast". These values can be used to process the samples but will not be stored to the database unless the method is saved. If the machine is switched off, before it is stored, the temporary copy will be lost (see [Create a new user method ▶ 52](#)).

Select a stored method from the database

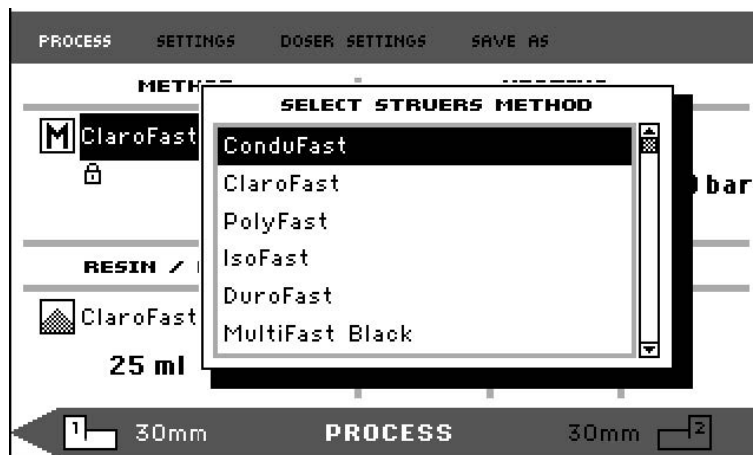
1. In **Process**, turn the knob to highlight the item in **Method**.



2. Push knob to activate the **Select group** pop-up menu.

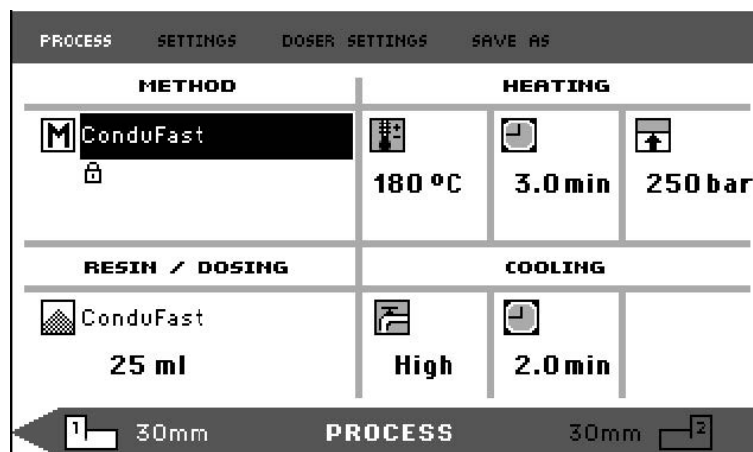


3. Turn the knob to highlight the required group.
4. Push the knob to activate the pop-up screen **Select Struers Method**.



5. Turn the knob to highlight the method required.

- Push knob to accept the method.



Change the CitoDoser (option) to change method

When a dosing unit is replaced with another, the method that is associated with the new dosing unit is automatically recalled from the database (option). See also [CitoDoser association ▶ 61](#).

7.2 Mount a sample

Place the sample

- If necessary, use the toggle unit button to switch to the required cylinder.



- Press **Up** to raise the lower ram to its upper limit.



- Apply the mount release agent to the surface of the lower ram.



Note

A thin layer of mount release agent must always be applied to the mounting rams to prevent the mounting materials sticking to the surface.

- Place the sample on the ram. The sample must be clean, dry and free from grease. The distance between the sample and the cylinder wall must be minimum 3 mm to avoid cracks in the resin.
- Press **Down**.



- The upper ram moves to its lowest limit.

Pour resin over the sample using the dosing unit (option)

1. Press and hold **Down** for a few seconds to lower the ram to its lowest limit.



2. Swivel the CitoDoser dosing unit's outlet spout over the mounting unit.
3. Press the dosing button.

**Note**

If the lower ram has not been lowered when pressing the dosing button, a warning is displayed.

The dosing unit will automatically dispense the preset amount of resin for the selected method.

Dosing extra resin

- Press the dosing button again, to add a small amount (20% of the preset amount).



Press **Stop** and then **Dosing** to reset the amount of resin dosed to the preset amount (100%).

**Pour resin over the sample manually**

Fill a suitable amount of mounting material into the cylinder using the funnel supplied.

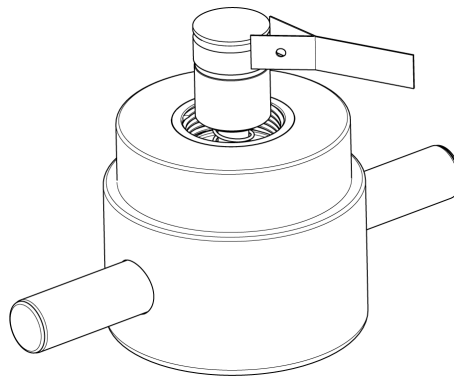
**Hint**

Look for useful mounting data and hints in the section on Mounting on the [Struers website](#).

**Note**

Always make sure there is sufficient mounting material to cover the sample after compression. The volume of the mounting material reduces when the granulate becomes compressed. If insufficient mounting material is used, the rams may come in contact with the sample, and the rams and cylinder may be damaged.

Close the top closure



1. Before use, remove mounting material dust from the upper part of the mounting cylinder.
2. Without damaging the surface, clean the cylindrical surface of the upper ram. Use the scraper to remove cured mounting material.
3. Apply mount release agent to all accessible surfaces of the upper ram.
4. Place the top closure with the upper ram on the mounting cylinder.
5. Press the top closure straight down, turning it clockwise until it is closed.



Note

If the ram does not fit easily into the cylinder, then check ram and cylinder for cured mounting material. The tolerance between the cylinder and the ram is very small and even small amounts of mounting material from previous mountings may cause problems.

7.2.1 Start the mounting process



CAUTION

During operation, the mounting unit becomes very hot. Ensure that the top closure is fully closed, before you start the mounting process.



Note

Before starting the mounting process, to prevent damage at installation, make sure that you have turned the mounting unit clockwise until the two arrows are aligned.

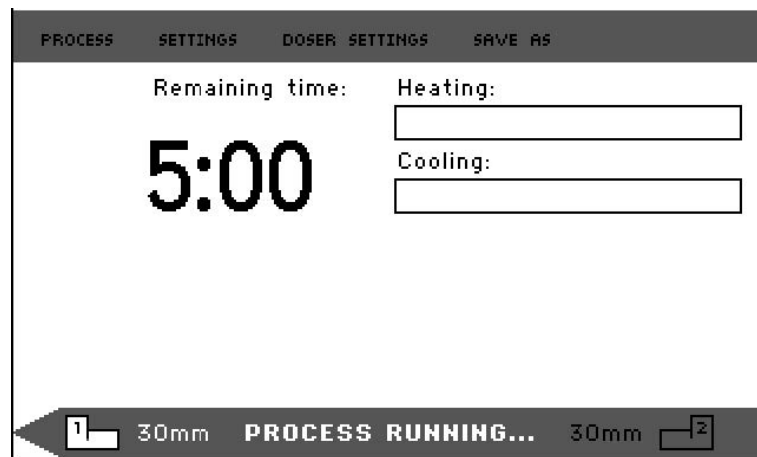
1. Press **Start**.



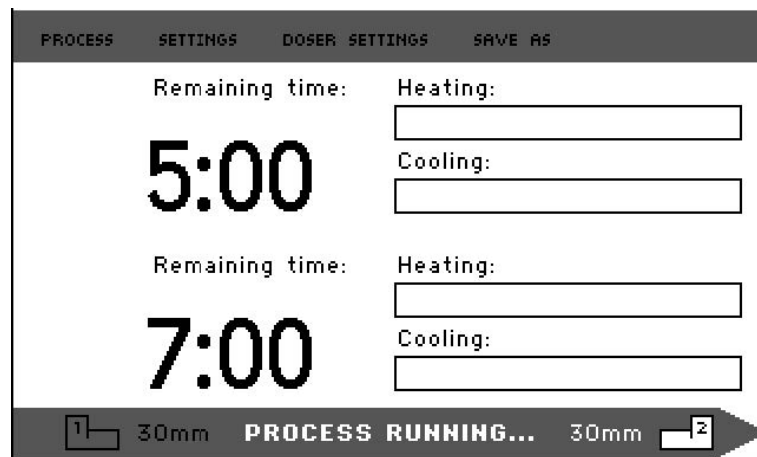
7.2.2 The mounting process

1. During the mounting process the screen shows the progress of the current stage (**Heating** or **Cooling**) and the time remaining before the mounting process is complete.

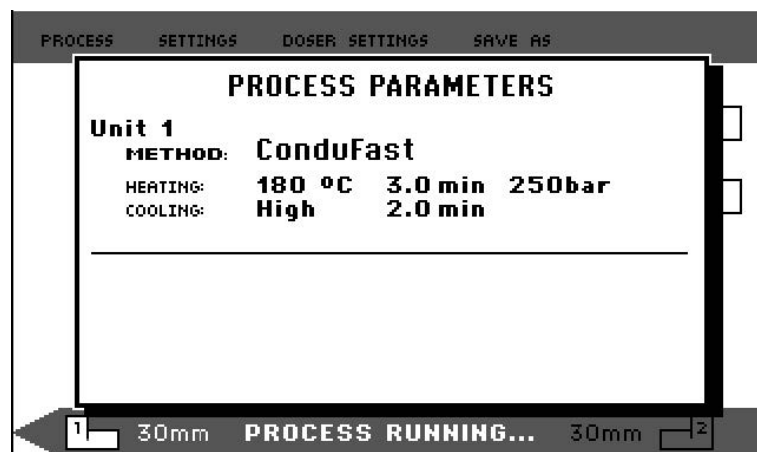
1 unit (CitoPress-15/-30):



2 units (CitoPress-30):



2. To view the process settings, push the knob.



3. Press **Escape** to return to the process screen.

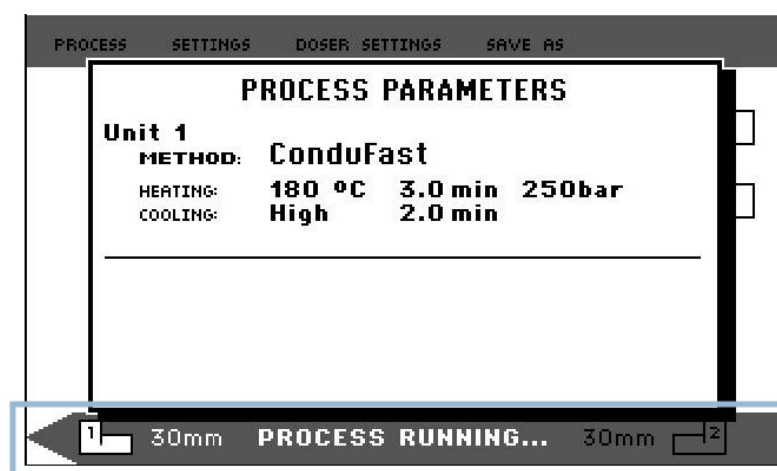


Switching between left and right cylinder (CitoPress-30)

- Press the toggle button to switch between the 2 cylinders.



The arrow on the lower bar changes direction to indicate which cylinder the displayed information applies to. The selected unit is white, the other unit is gray.



7.2.3 Stop the mounting process



CAUTION

During operation, the mount and the mounting unit becomes very hot.



CAUTION

Always follow the recommended heating and cooling parameters described in Struers **Application Guide for Hot Mounting**. See [3.3.1](#).



Note

The mount may be destroyed if you stop the mounting process during the process.
If you must do this, cool the mounting cylinder a minimum of 2 minutes before you open it after a heating period.

Automatically

The machine stops automatically when the cooling time has elapsed.

Manually

- To stop the machine any time during the mounting process, press **Stop**.



Note

CitoPress-30 only:

Press twice to stop the process on both mounting units at the same time.

7.2.4 Remove the top closure



HEAT HAZARD

During operation, the mount and the mounting unit becomes very hot. Following a heating cycle, ensure that the mounting cylinder is cooled actively for a minimum of 2 minutes before opening.



CAUTION

Always follow the recommended heating and cooling parameters described in Struers **Application Guide for Hot Mounting**. See [3.3.1](#).

When the mounting process is finished:

1. Turn the top closure counter-clockwise until it is released from the thread.
2. Press **Up** to raise the lower ram to its upper limit.



3. Turn the top closure to one side so that you can remove the mount.

8 Advanced operation

8.1 Methods database (option)

With the CitoPress database option enabled up to 15 **User methods** can be stored as well as associations between a number of resins and CitoDoser units.

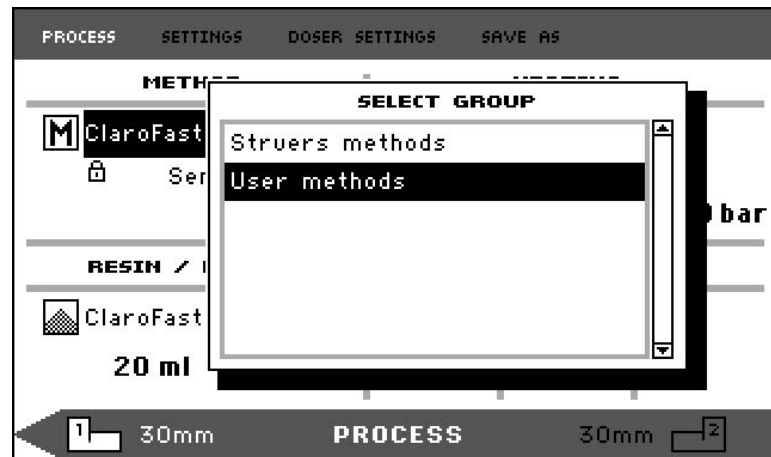


Hint

Without the database option only 2 methods can be stored.

8.1.1 Create a new user method

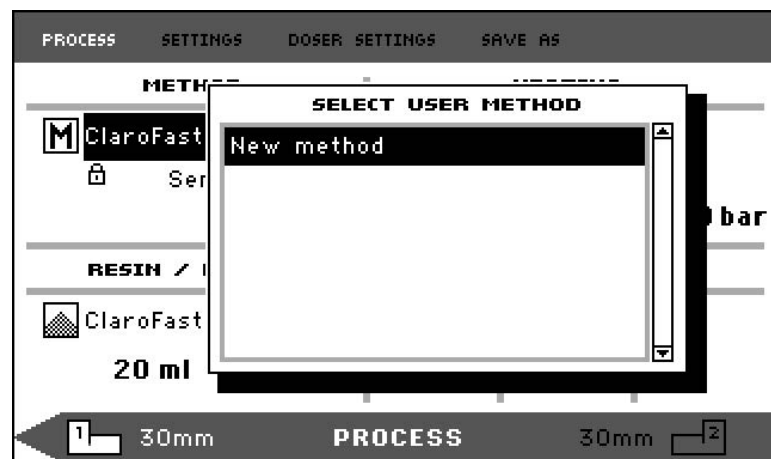
1. From **Select Group**, select **User methods**, then **New method**.



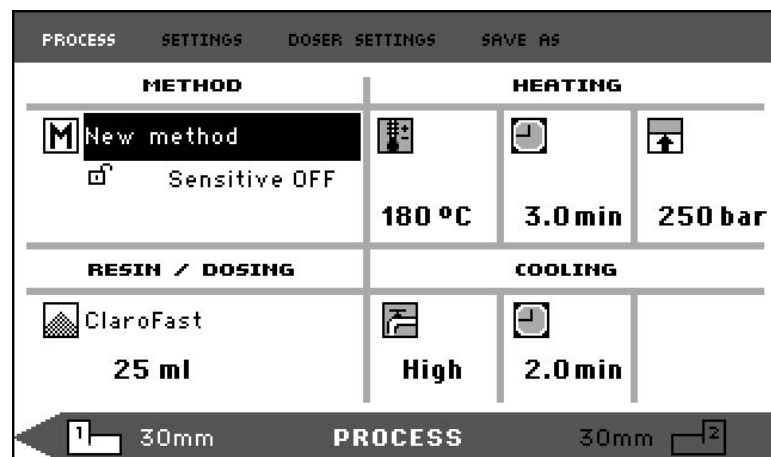
- Turn the knob to highlight the required group.



- Push the knob to activate the pop-up screen **Select user method**.
- A **New method** will automatically be created based on the resin in the current process.



- Turn the knob to highlight the method required.
- Push the knob to accept the new method.



- Edit the method's values to create your user method.

For information on how to edit a method's values, [Edit a method's values manually ▶ 44](#).

8. Save the method to the database.

For information on how to save a method, see [Create a new user method ▶ 52](#).


8.1.2 Modify a method

1. From **Select Group**, select a Struers method.

For information on how to select a method, see [Select a stored method from the database ▶ 46](#).

2. Edit the method's values to create your user method, for information on how to edit a method's values, see [Edit a method's values manually ▶ 44](#).

3. Save the method to the database, for information on how to save a method, see [Create a new user method ▶ 52](#)



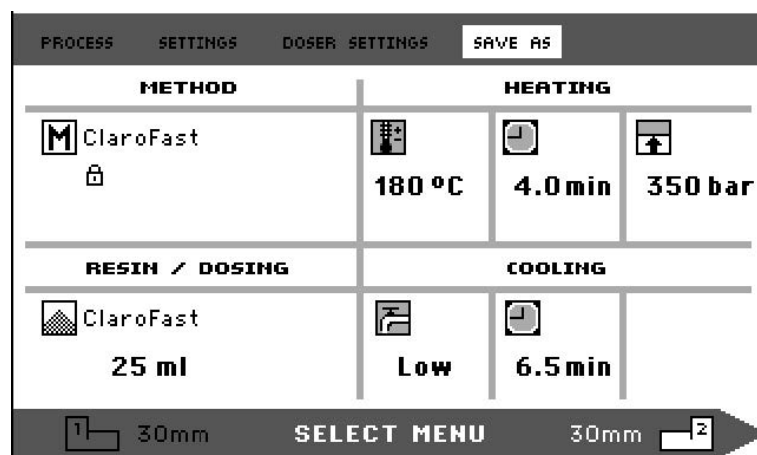
Hint
 The Struers method is not overwritten when the new method is saved. The method has to be saved in a different name.
 All Struers methods are protected and cannot be overwritten.

8.1.3 Save a user method

1. From **Process**, press **Esc** to access the top-level menu items.



2. Turn the knob to select **Save as**.



3. Push knob to activate **Enter method name**.



4. Turn the knob to highlight either the functions at the bottom of the menu or characters to use in **Method name**.

5. Use **Up/Down** for quick navigation from line to line.

For detailed instructions on how to use this menu, see [Enter method name ► 55](#).

6. To accept the name and leave the editor, select **OK**, and then push the knob.

The method will be stored in **User methods**.

8.1.4 Enter method name

In the menu **Enter method name**, you can edit doser associations, resins and method names.

A cursor is available in the field **Method name** at the bottom. A second, large cursor is used for selecting characters or actions.

Enter characters

1. Use **Down** and the knob to move the large cursor and highlight **Del**.



2. Press the knob to delete the existing name.



3. Turn the knob and/or use **Up/Down** to highlight the character to be used.



4. Press the knob to enter the character.

Delete characters from a name

1. Turn the knob to the left or right until the cursor moves from the character selection area to the editing area at the bottom of the menu.



2. Push the knob to activate **Select Group**.



3. Turn the knob to highlight **User resins**.
4. Push the knob to activate the menu **Select user resin**.



5. Turn the knob to highlight **New resin**.
6. Push the knob to activate the menu **Resin name**.



7. To edit the resin name, use the procedure described in [Enter method name](#) ▶ 55.

- Select **OK**, and push the knob to accept the name and leave the editor.

The resin is stored in **User resins**.



Hint

Struers resins are linked to a unique method with the name of the resin. You cannot change these default resins, unless the method is saved under a different name.

The lock icon below the Struers method name signifies that it cannot be edited.

8.1.6 Settings

The menu **Settings** is used to view and, in the case of **User methods**, delete, rename and lock/unlock methods.

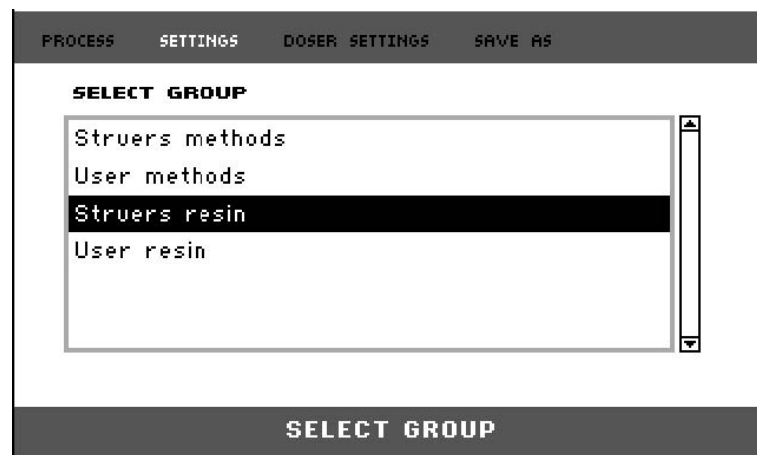
View resin details

CitoPress-15/-30 stores details about Struers resins.

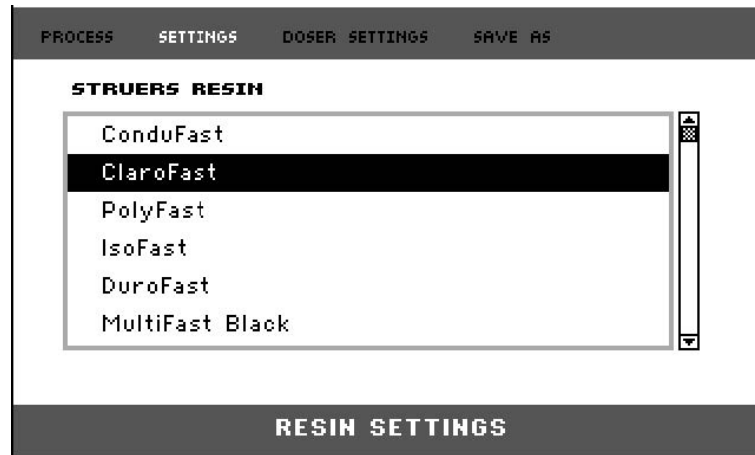
- From **Process**, press **Esc** once to access the top-level menu.
- Turn the knob to highlight **Settings**.



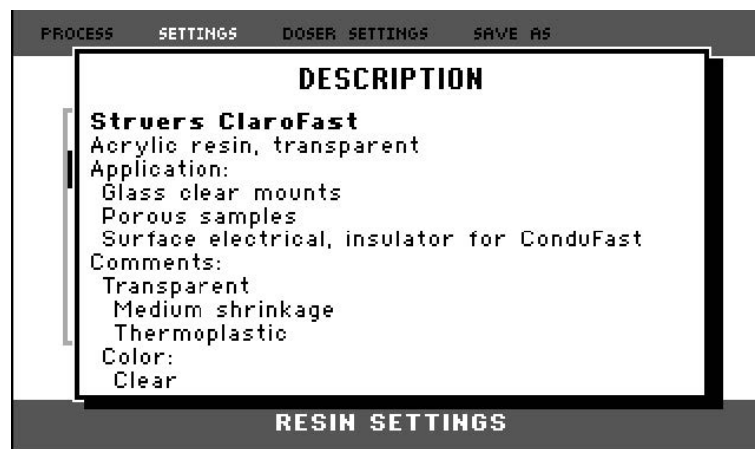
- Push the knob to activate **Settings**.



- Turn the knob to highlight **Struers resin** or **User resin**.
- Push the knob to open the resin menu.
- Turn the knob to highlight the resin.



7. Push the knob to view the details for the selected resin.



Delete, rename or lock/unlock User methods

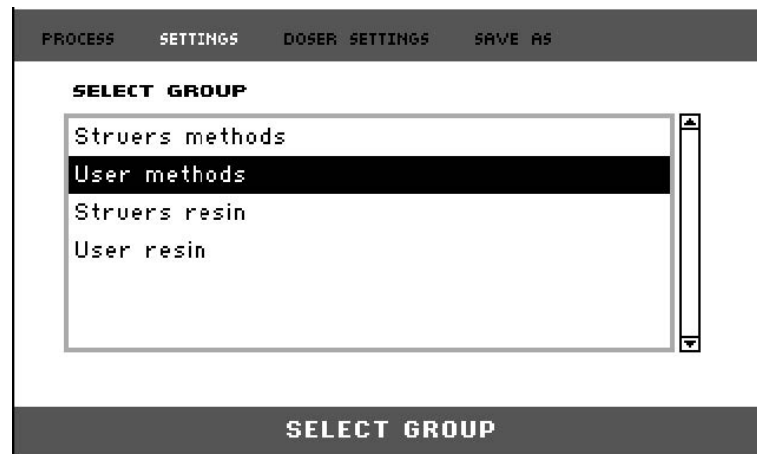
1. From **Process**, press **Esc** once to access the top-level menu.



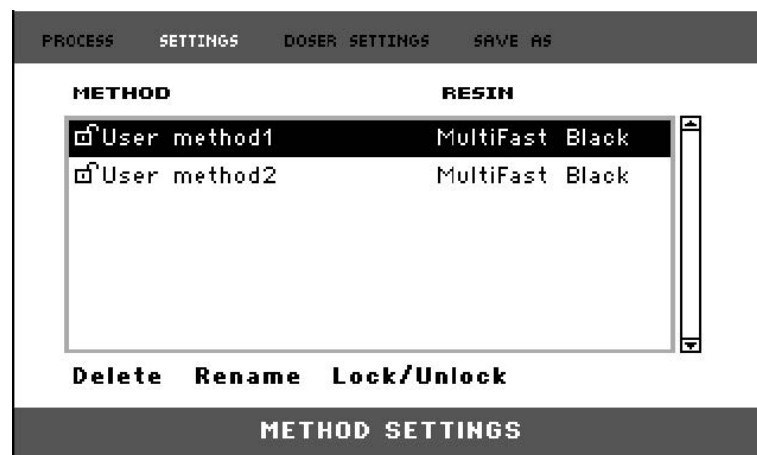
2. Turn the knob to highlight **Settings**.



3. Push the knob to activate the menu **Settings**.



4. Turn the knob to highlight **User methods**.
5. Push the knob to activate the menu **Method settings**.



6. Turn the knob to highlight a **User methods**.
7. Push the knob to select the method.
8. Turn the knob to select either **Delete**, **Rename** or **Lock/Unlock**.
9. Push the knob to carry out the action you selected.
10. Press **Esc** to return to **Process**.

8.2 CitoDoser association

8.2.1 Create a CitoDoser association

A dosing unit is able to store information electronically, and this information associates the dosing unit with a specific method stored in the mounting press.

When you use a dosing unit for the first time or if the dosing unit's association has been deleted, the dosing unit must be associated with a method.

This means that you must select a resin, and the method that uses this resin is then associated with CitoDoser.

Note
For details on this procedure, see the Instruction Manual for the CitoDoser.

8.2.2 Delete a CitoDoser association

To associate the dosing unit with a different method, the existing association must first be deleted.

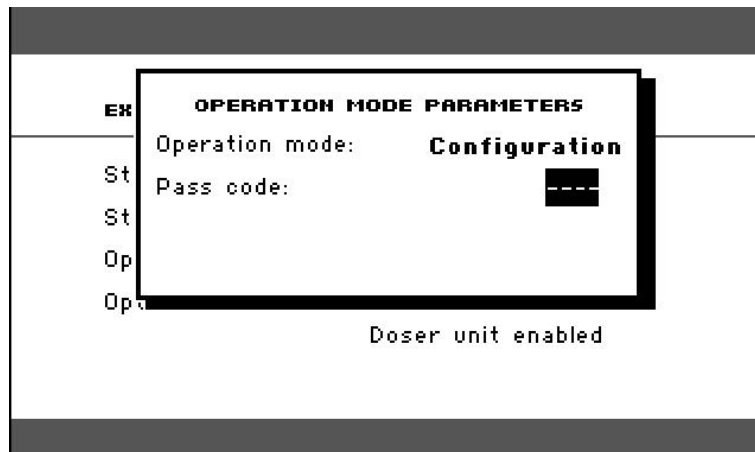
Note
For details on this procedure, see the Instruction Manual for the CitoDoser.

8.3 Change the operation mode and set a new pass code

1. From the menu **Extensions**, turn the knob to highlight **Operation mode**.

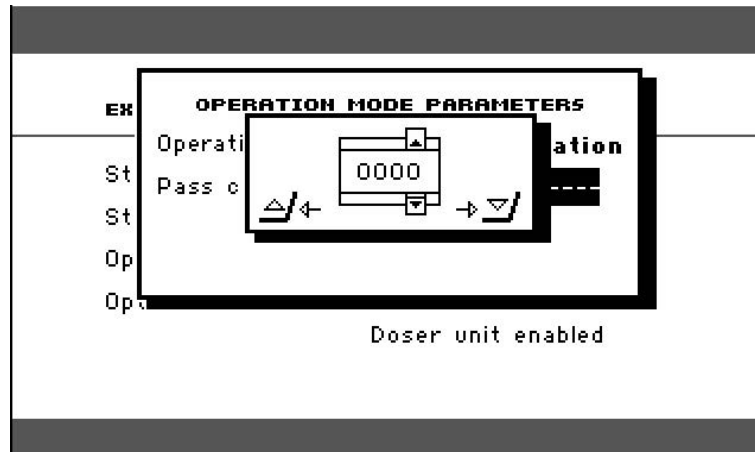


2. Push the knob to activate the menu **Operation mode parameters**.



3. Turn the knob to highlight **Pass code**.
4. Push the knob to select **Pass code**.
5. Turn the knob to change the digits.
6. To enter pass code, press **Up** to move the cursor one place to the left; press **Down** to move the cursor one place to the right.

Note
The default pass code is "2750".



7. Push the knob to accept the pass code.



Note

Remember to make a note of the new pass code as settings can no longer be changed without the pass code.

8. Push the knob to activate the menu **Select operation mode**.
9. Turn the knob to highlight **Operation mode**.
10. Push the knob to accept the changed Operation mode.

9 Maintenance and service

Proper maintenance is required to achieve the maximum up-time and operating lifetime of the machine. Maintenance is important in ensuring continued safe operation of your machine.

The maintenance procedures described in this section must be carried out by skilled or trained personnel.

Technical questions and spare parts

If you have technical questions or when you order spare parts, state serial number and voltage/frequency. The serial number and the voltage are stated on the name plate of the machine.

9.1 General cleaning

To ensure a longer lifetime for your machine, we strongly recommend regular cleaning.



Note

Do not use acetone, benzol or similar solvents.



Note

Do not use a dry cloth on the control box as the display surface is not scratch resistant.

- Clean the front plate with a damp cloth after use.

If the machine is not to be used for a longer period of time

- Clean the machine and all accessories thoroughly.

9.2 Before each mounting

9.2.1 Clean the rams

1. Make sure that there is no mounting material left on the flat surface of the rams from previous operations.
2. Clean the cylindrical surface of the upper ram. Use the scraper supplied to remove any residues of mounting material without damaging the surface of the rams.



Note

If the sides of the rams are heavily scratched, they must be replaced.
If the top closure has been dropped, causing a dent or deformation in the edge of the upper ram, the ram must also be replaced.



Note

Accumulated mounting material can restrict movement or cause damage to the rams.

9.3 Daily

9.3.1 Inspection and cleaning

Inspection

- Check the machine before each use. Do not use the machine until any damage is repaired.

Cleaning

- Clean all accessible surfaces with a soft, damp cloth.



Hint

Do not use a dry cloth as the surfaces are not scratch resistant.
You can remove grease and oil with ethanol or isopropanol.



Note

Never use acetone, benzol or similar solvents.

- Remove residues from exposed surfaces, including the threads

- A** Open the cover (see [Remove the mounting unit ▶ 29](#)).
- B** Close the cover (see [Install the mounting unit ▶ 22](#)).

Cleaning accessories

- See the manual supplied with the specific equipment.

9.3.2 Lubricate the threads of the top closure

A build-up of residues of mounting material can make it difficult to close the top closure.

1. Remove the top-closure, see [7.2.4](#).
2. Use the scraper supplied or a paint brush to remove any mounting material on the threads of the top closure and mounting unit.



Note

The top nut is a wear part because its threads get worn over time. Therefore, it is crucial to remove any residues of mounting material, or it will reduce the lifetime of the top nut.

3. Lubricate the threads with a dry lubricant resistant to high temperatures as the mounting cylinder operates at high temperatures.



Note

Do not lubricate the threads in the joint between the top closure and the mounting cylinder with oil or grease.



Hint

If there is a slight friction in the threads, lubricate with a dry lubricant such as Molybdenum Sulphite or graphite.

9.3.3 Empty the CitoDoser dosing unit

When the optional CitoDoser is fitted to CitoPress-15/-30, use the CitoDoser display to empty the dosing unit of resin.



Note

For details on this procedure, see the Instruction Manual for the CitoDoser.

9.3.4 Clean the CitoDoser dosing unit



Note

Do not use any form of liquid to clean the inside of the CitoDoser. This may result in damage to the doser.



Note

For details on this procedure, see the Instruction Manual for the CitoDoser.

Loosen the agitator wheel



WARNING

Check that the protective grid in CitoDoser is intact and that it is not possible to come into contact with the agitator wheel when it rotates.



Note

For details on this procedure, see the Instruction Manual for the CitoDoser.

9.4 Weekly

9.4.1 Cleaning

- Clean painted surfaces and the control panel with a soft damp cloth and common household detergents.



Note

Do not use a dry cloth as the surfaces are not scratch resistant.



Note

Do not use acetone, benzol or similar solvents.

9.4.2 Check the cooling water level

- Check the level of cooling water in the cooling unit (option).

For other, more detailed, instructions on the use of the recirculation cooling unit, see the Instruction Manual for the specific unit.

9.5 Monthly

9.5.1 Clean under the lower ram

During the process, some cured mounting material will fall down from the lower ram and build up underneath. You must remove this to prevent it from harming the machine.

Pop-up message

A message pops up after 200 mounting cycles (default value) to remind you to clean beneath the lower ram.

1. Press **OK** when you have cleaned the area under the lower ram.
2. Press **Later** to continue operating the machine.

Procedure

1. Remove the mounting unit.

2. Remove the piston pin and dismount the lower ram.
3. Remove the mounting material under the lower ram with a cloth or a soft brush.
4. Remount the lower ram and secure with the piston pin.
5. Install the mounting unit.

9.5.2 Check the threads

The threads of the top nut will get worn over time and therefore the top nut is a wear part.

1. Inspect the threads of the top nut.
2. If the threads are worn, do not use the top closure anymore.
3. Contact Struers Service, and order a new top nut.

9.5.3 Replace the cooling water

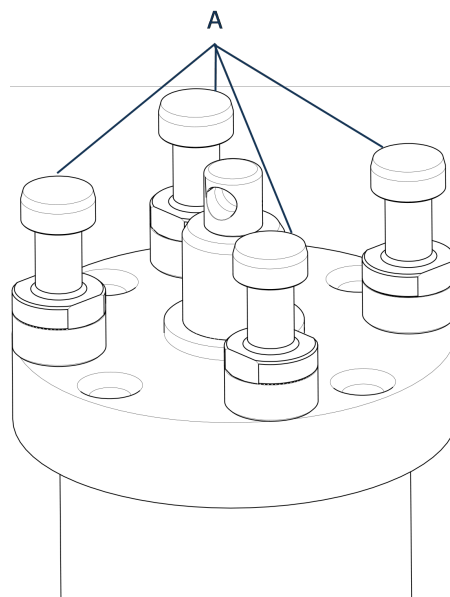
- Replace the cooling fluid in the cooling unit tank.

For other, more detailed, instructions on the use of the recirculation cooling unit, see the Instruction Manual for the specific unit.

9.6 Annually

9.6.1 Check the bolts

1. Use a 17 mm torque wrench.
2. Check that the bolts that hold the mounting unit to the cylinder are tight.
3. If necessary, tighten with a force of maximum 25 Nm / 18 lbf ft.



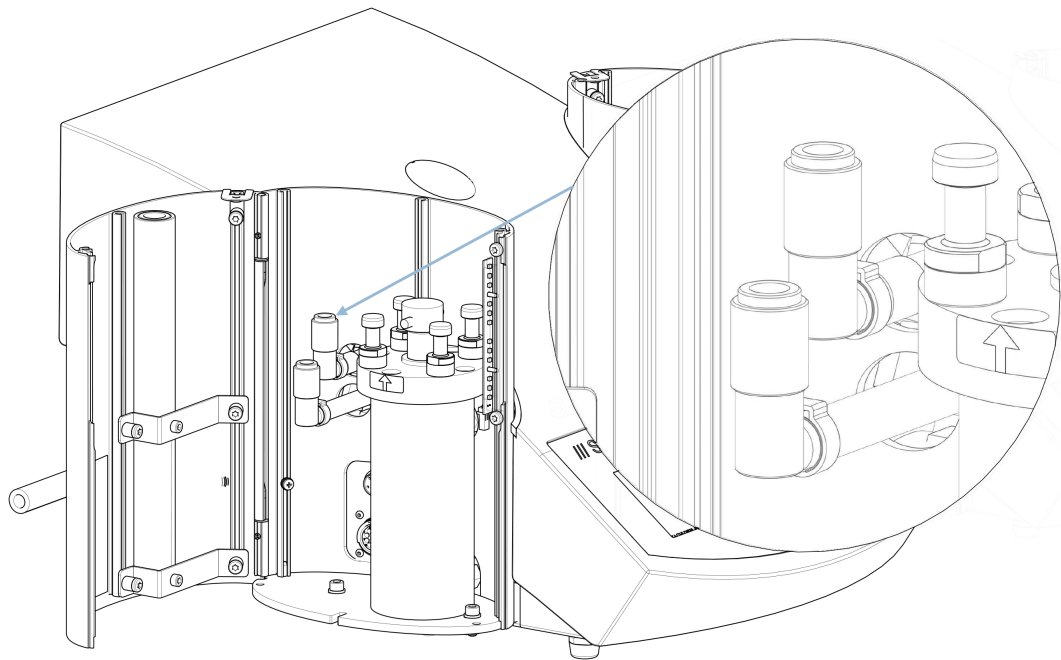
A Bolts

9.6.2 Water couplings

To maintain the inlet and outlet connections for the mounting unit, lubricate the FPM/FKM O-rings in the water couplings.

This is to prevent them from drying out over time, which will make the water couplings difficult to use when you change the mounting unit.

1. Disconnect the mounting unit's male inlet and outlet water couplings from the machine's female fittings.
2. Lubricate the O-rings in the female fittings.



Note

Use a generic tap lubricant resistant to high temperatures (min. 100°C/212°F) to lubricate the FPM/FKM O-ring in the water coupling.

9.6.3 Cleaning the water filter

Small particles can collect in the water filter and should be removed.

1. Switch off the water supply.
2. Dismount the water inlet tube.
3. Remove the filter gasket from the coupling nut and rinse thoroughly with water.
4. Reconnect the water inlet. See [Connect the cooling water inlet ► 19](#).

9.6.4 Decalcify the cooling coil

When you use cooling water from the mains tap in areas with a high chalk or mineral content, deposits can build up in the cooling coil and reduce the cooling effect. In this case, you should decalcify the cooling coil once a year.

1. Remove the mounting unit (see [Remove the mounting unit ► 29](#)).

2. Drain water from the cooling system.
3. Flush the coil with a mild decalcifying acid, and leave for ½ hour.

**Hint****Decalcifying acid**

For decalcification of the mounting unit acetic acid or citric acid is recommended. Do not use oxidizing acids such as nitric acid (HNO₃), this will degrade the copper of the mounting unit and may generate toxic gases. Do not use acids in combination with oxidizing agents such as hydrogen peroxide (H₂O₂), this will degrade the copper of the mounting unit.

4. Flush the cooling coil with clean water.
5. Re-install the mounting unit (see [Install the mounting unit ► 22](#)).

If there are still deposits in the coil, repeat this procedure and leave the decalcifying fluid in the mounting unit overnight before flushing with water the next day.

10 Spare parts

For specific safety related parts, see the section "Safety Related Parts of the Control System (SRP/CS)" in the section "Technical data" in this manual.

Technical questions and spare parts

If you have technical questions or when you order spare parts, state the serial number and the year of production. This information is stated in the name plate on the machine.

For further information, or to check the availability of spare parts, contact Struers Service. Contact information is available on Struers.com.

11 Service and repair

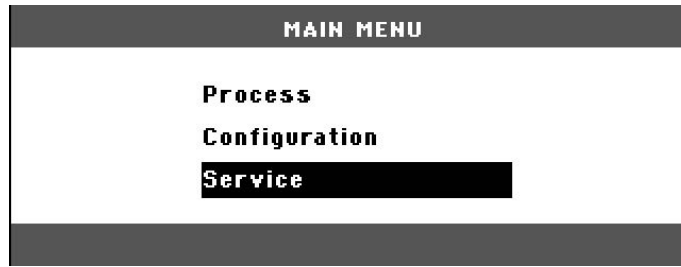
**Note**

Service must only be performed by a qualified technician (electromechanical, electronic, mechanical, pneumatic, etc.). Contact Struers Service.

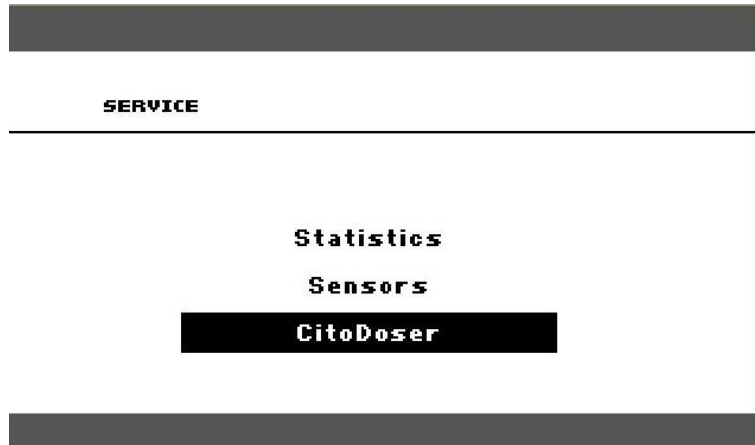
11.1 The service menus

From the menu you can access information about the operational history and current operational state of the machine. In addition, the menu provide a CitoDoser emptying function.

1. From **Main menu** select **Service**.



2. Now select one of the 3 options:



Statistics

See [Statistics ▶ 70](#).

Sensors

See [Sensors ▶ 71](#).

CitoDoser

See [The CitoDoser menu ▶ 73](#).

11.1.1 Statistics

Statistical information about the machine is measured and recorded. This data is shown in the **Statistics** display.

The following table provides information about this statistical data.

Statistics

Item	Display
Serial number	(number)
Software version	(number)
Database version	(number)
Bootloader version	(number)

Total usage

Item	Display
Total operation time	(hours)
Left hydraulic motor run time	(hours)
Right hydraulic motor run time (option)	(hours)
Left heating element run time	(hours) /(sum of all units)
Right heating element run time (option).	(hours) /(sum of all units)
Number of On/Off operations	(counter)
Number of left cooling operations	(counter)
Number of right cooling operations (option)	(counter)
CitoDoser number of activations (option)	(counter)

Usage since last reset (individual reset of each parameter)

Item	Display
Total operation time	(hours)
Operating time since last service	(hours)
Left hydraulic motor run time	(hours)
Right hydraulic motor run time (option)	(hours)
Left heating element run time	(hours) /(sum of all units)
Right heating element run time (option)	(hours) /(sum of all units)
Number of On/Off operations	(counter)
Number of left cooling activations	(counter)
Number of right cooling activations (option)	(counter)
CitoDoser number of activations (option)	(counter)

11.1.2 Sensors

The machine is equipped with a range of sensors. Real time data provided by these sensors is shown listed. This data is shown in the **Sensors** display.

The following table provides information about this sensor data.

PCB voltages

Sensor	Display
Main PCB version	A DC + Volt
+ DC	A DC + Volt
+24 V DC	A DC + Volt
+12 V DC	A DC + Volt
+9.8 V DC	A DC + Volt
+3.3 V DC	A DC + Volt
-22 V DC	A DC + Volt
LCD contrast	A DC + Volt
Transformer overload	Yes/No

PCB outputs

Item	Display
Recirculation	OK/short circuited
LED left	OK/short circuited
LED right	OK/short circuited
Relay for heating left unit	OK/short circuited
Relay for heating right unit (option)	OK/short circuited
Valve for cooling left unit	OK/short circuited
Valve for cooling right unit (option)	OK/short circuited
Relay for pump selector	OK/short circuited
Relay for voltage selector	OK/short circuited
Pump motor in doser (optional)	OK/short circuited
RS232 Service	Connected/not connected

Mounting unit

Item	Display
Left cylinder size	A DC+ (mm or inch)
Left cylinder temperature	A DC + (°C)
Left cylinder oil pressure	A DC + (bar)
Right cylinder size (option)	(mm or inch)
Right cylinder temperature (option)	A DC + (°C)
Right cylinder oil pressure (option)	(bar)

Item	Display
Hydraulic pump current	(A DC + ampere) (mean)
Hydraulic pump voltage	(A DC + + DC volt) (mean)

Main supply voltage

Item	Display
Supply voltage at power on	A DC + Volt
Current supply voltage	A DC + Volt
Minimum voltage (200 hours)	A DC + Volt (field displaying 200 hours of operation)
Maximum voltage (200 hours)	A DC + Volt (field displaying 200 hours of operation)

CitoDoser (option)

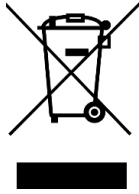
Item	Display
Left position sensor	(A DC-value + active/not active)
Right position sensor	(A DC-value + active/not active)
PCB-ID.	(A DC-value + version x)
RFID number	Number
Motor connection	OK/short circuited

11.1.3 The CitoDoser menu

When the optional CitoDoser is fitted to CitoPress-15/-30, the menu option **Doser** is used to empty the dosing unit of resin.



12 Disposal



Equipment marked with a WEEE symbol contains electrical and electronic components and must not be disposed of as general waste.

Contact your local authorities for information on the correct method of disposal in accordance with national legislation.

For disposal of consumables and recirculation fluid, follow local regulations.

13 Troubleshooting

13.1 Error messages



Note






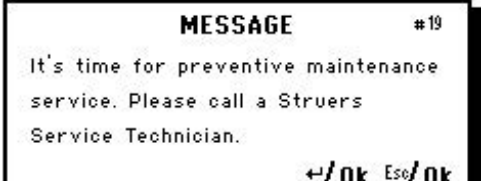
Errors must be corrected before operation can be continued.

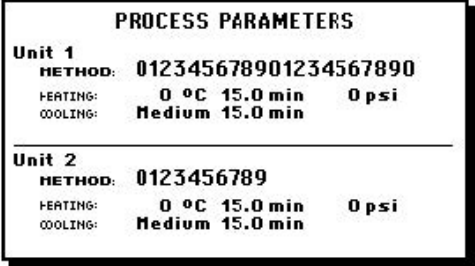




1. Press the displayed buttons for the commands **Ok**, **Yes**, **No**, **Restart**, **Cancel** or **Later** to proceed.






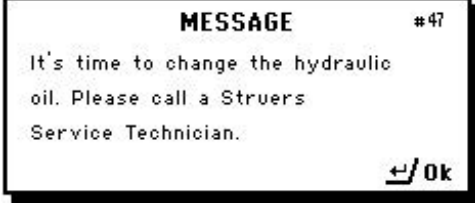





2. If the error remains, contact Struers Service.

Error messages, causes and actions

Error	Cause	Action
	<p>There is room for 2 methods in the database.</p> <p>(15 methods when the database option is purchased and activated).</p>	<p>To save a new method, delete one of the old ones.</p> <p>(Activate the database option)</p>
	<p>Pressure error with the ram movement.</p> <p>CitoPress-30: The message indicates whether the problem occurs with unit 1 or unit 2.</p>	<p>Contact Struers Service.</p>
	<p>No digits have been entered as the password.</p>	<p>Press Esc, and enter 4 digits for the password.</p>
	<p>Temperature error, mounting unit.</p> <p>CitoPress-30: The message will indicate whether the problem occurs with unit 1 or unit 2.</p>	<p>Contact Struers Service.</p>
	<p>The machine was started, but no cylinder was detected.</p>	<p>Make sure that the cylinder is mounted correctly.</p> <p>If the error remains, contact Struers Service.</p>
	<p>Reminder to do preventive maintenance service.</p>	<p>The set interval has expired.</p>

Error	Cause	Action
 <p>PROCESS PARAMETERS</p> <p>Unit 1 METHOD: 012345678901234567890 HEATING: 0 °C 15.0 min 0 psi COOLING: Medium 15.0 min</p> <hr/> <p>Unit 2 METHOD: 0123456789 HEATING: 0 °C 15.0 min 0 psi COOLING: Medium 15.0 min</p>	<p>If you press Enter while a process is running, you can see the process parameters.</p>	<p>To remove the message, press Enter again.</p>
 <p>ERROR #26 P.O.S.T. Main supply voltage too low!</p>		<p>Turn CitoPress-15/-30 off; then turn it back on again.</p> <p>If the error remains, contact Struers Service.</p>
 <p>ERROR #27 P.O.S.T. Main supply voltage too high!</p>		<p>Turn CitoPress-15/-30 off; then turn it back on again.</p> <p>If the error remains, contact Struers Service.</p>
 <p>ERROR #28 P.O.S.T. PCB voltage out of range!</p>	<p>Voltage overload.</p>	<p>Turn CitoPress-15/-30 off; then turn it back on again.</p> <p>If the error remains, contact Struers Service.</p>
 <p>ERROR #29 P.O.S.T. Trafo OVERLOAD!</p>		<p>Turn CitoPress-15/-30 off, wait for 5 minutes, and then turn back on again.</p> <p>If the error remains, contact Struers Service.</p>

Error	Cause	Action
 <p>WARNING #30 No cooling! Do not open top closure. Please check connection Esc/Ok</p>	<p>Insufficient or no cooling. CitoPress-30: The message indicates whether the problem is with unit 1 or unit 2)</p>	<p>Check cooling water connections. If the error remains, contact Struers Service.</p>
 <p>ERROR #37 Doser unit not found! ↵/Restart Esc/Cancel</p>	<p>CitoDoser was removed before it was configured.</p>	<p>Replace the CitoDoser, and select a resin for the doser.</p>
 <p>WARNING #38 Top closure not tightened!</p>	<p>START has been pressed and the CitoDoser nozzle is positioned over the cylinder.</p>	<p>Remove the CitoDoser nozzle and tighten the top closure.</p>
 <p>ERROR #40 Hydraulic system overload Esc/Ok</p>	<p>This Error is displayed if the Hydro pump power current is over the limits (22 Amp).</p>	
 <p>MESSAGE #43 Main supply voltage too low! ↵/Ok Esc/Later</p>	<p>The voltage of the electrical power supply is low at start of the process.</p>	<ol style="list-style-type: none"> 1. Switch off the machine. 2. Switch on the machine. <p>If the error remains, contact Struers Service.</p>
 <p>MESSAGE #47 It's time to change the hydraulic oil. Please call a Struers Service Technician. ↵/Ok</p>	<p>Reminder to change the hydraulic oil.</p>	<p>The set interval has expired.</p>

Error	Cause	Action
	Reminder to clean under the lower ram.	The set interval has expired.
	The mounting process has been stopped manually and the mentioned items may be hot.	<p>The top closure, mount and cylinder may be hot and must be allowed to cool.</p> <p>Before removing the mounting unit, ensure that it is cool enough to be handled.</p>
		<p>The Heating unit has failed.</p> <p>Contact Struers Service.</p>

13.2 Acoustic signals


Error	Cause	Action
Long beep.	The command cannot be accepted.	Use a correct command.
Four double beeps.	There is an error.	See the error message.

13.3 Machine performance

Error	Cause	Action
The process does not start. Strange symbols appear. Or a line is missing in the display.	Heating time and cooling time are set at zero. The machine was switched off then switched on again within 5 seconds.	Set the correct times. Switch the machine off and wait for 5 seconds before switching on again.
The process does not start.	The heating and cooling time settings are set to zero.	Enter the time settings you wish to use.

Error	Cause	Action
Insufficient compression.	The settings for force/pressure are incorrect.	Set the correct parameter. The force should be min. 50 bar/800psi.
	Incorrect configuration of cylinder diameter.	Check the configuration.
	Incorrect unit for force or pressure.	Contact Struers Service.
Insufficient heating.	The setting for time or temperature for heating is incorrect.	Set the correct parameters.
	There is a defect in the heating system.	Contact Struers Service. Check the configuration.
Insufficient cooling.	The setting for cooling time is incorrect.	Enter the time setting you wish to use.
	The setting for cooling rate is incorrect.	Set the correct parameter.
	Temperature unit set is incorrect.	Check the configuration.
	The water supply of cooling water is either closed or not opened sufficiently.	Open the tap.
	The filter at the water inlet is blocked.	Clean the filter.
		Fill to the correct water level.
	Insufficient water within the Recirculation Cooling Unit. The water is too hot.	For detailed instructions on the use of the Recirculation Cooling Unit, see the Instruction Manual for this unit.
	Deposits of lime scale have built up in the cooling coil.	See Decalcify the cooling coil ► 68 .
	Contact Struers Service.	
Cooling water drips beneath the machine.	The quick coupling is not mounted correctly.	Remove the cover from the mounting unit, and check the quick coupling connections.

Error	Cause	Action
The top closure does not start threading on the mounting cylinder.	The lower ram has not been lowered sufficiently to make room for the top closure.	Press the Ram down button to lower the ram.
	The top closure is not mounted correctly.	Press the top closure straight down and turn it counter-clockwise until you hear a click. To close: Press the top closure down and turn it clockwise until it is fully closed.
	The upper ram is too hot.	Let the top closure and the upper ram cool down. Reduce the mounting temperature.
	There is cured mounting material inside the mounting cylinder.	Clean the mounting cylinder with a brass wire brush.
	There is cured mounting material on the cylindrical surface of the upper ram.	Clean the ram with the scraper supplied.
	The top closure has been dropped on the floor/table, denting the edge of the ram.	Replace the upper ram.
	The swivel arm has become askew.	Call a Struers service technician. In the meantime the mounting press can be used without the swivel arm.
	There is damage to the threaded connection in the top closure or to the upper ram.	Remove the upper ram from the top closure (see Remove the upper ram > 30). Try the following procedures to identify the problem: <ul style="list-style-type: none"> • Try to mount the top closure without the upper ram. If this is not possible, contact Struers Service. • Try to insert the disconnected upper ram into the mounting cylinder. If this is not possible, contact Struers Service.

Error	Cause	Action
The top closure cannot be screwed down completely.	There is dirt in the threads on the top closure and the mounting cylinder.	Clean the threads. Use only a dry lubricant powder.
	The disc for thermal insulation, placed on the top of the upper ram, has a larger diameter than the upper ram.	Contact Struers Service.
The top closure cannot be loosened.	There is some cured mounting material on the cylindrical surface of the top ram.	<p>Release the top closure:</p> <ul style="list-style-type: none"> • Move the lower ram up and down several times. <p>If this does not help:</p> <ul style="list-style-type: none"> • Apply heating for 1 min. and try again. <p>If this does not help:</p> <ul style="list-style-type: none"> • Set the force or pressure to zero. • Set the heating time and cooling time to 15 min. • Complete a mounting process.
	There is dirt in the threads of the top closure.	<p>If this does not help:</p> <ul style="list-style-type: none"> • Remove the 2 handles on the top closure. • Remove the plastic foil from the top closure. • Loosen the top closure with a fork spanner.
The mount has sharp edges which damage the grinding/polishing surface.		<p>Replace the lower ram with a Chamfered ram (option).</p> 

14 Technical data

14.1 Technical Data

Mounting units (option)	Diameter:	25, 30, 40, 50 mm (1.25", 1.5")
Compression	Mounting pressure	50-350 bar in steps of 25 bar/725-5076 psi in steps of 363 psi. For 50 mm cylinder in diameter, the max. pressure is limited to 250 bar/3625 psi
Heating (with pressure on)	Temperature	120/150/180°C (248/302/356°F)
	Time	Variable between 1 and 15 minutes
Cooling (with pressure on)	Time	Variable between 1 and 15 minutes
	Rate	High: Full flow (4.8 L/min) Medium: 20% of full flow (0.96 L/min) Low: 3% of full flow (0.14 L/min)
Software and electronics	Controls	Touch pad, turn/push-knob
	Display	LCD 5.2" with LED backlight
Safety standards		See the Declaration of Conformity
REACH		For information about REACH, contact your local Struers office
Operating environment	Surrounding temperature	5-40°C (41-104°F)
	Humidity	< 85% RH non-condensing

Power supply	Voltage/frequency	200-240 V / 50-60 Hz (100-120 V / 50-60 Hz)
	Power supply	1 phase (N + L1 + PE) or 2 phase (L1 + L2 + PE)
	Current, idle	8 W
	Current, max.	CitoPress-15: 1300 W @ 200-240 V (1300 W @ 100-120 V)
		CitoPress-30: 2300 W @ 200-240 V (1300 W @ 100-120 V)
	Current	CitoPress-15: 5.6 A @ 200-240 V (13 A @ 100-120 V)
CitoPress-30: 10 A @ 200-240 V (13 A @ 100-120 V)		
Residual Current Circuit Breaker (RCCB)	Type A, 30 mA (EN 50178/5.2.11.1) or better is required	
Water supply	Pressure	1-6 bar (14.5-87 psi)
	Inlet	3/4"
	Outlet	10 mm (0.4")
Noise level	A-weighted sound emission pressure level at workstations	LpA = 61.5 dB(A) (measured value). Uncertainty K = 4 dB Measurements made in accordance with EN ISO 11202
Vibration level	Declared vibration emission	N/A
Dimensions and weight	Width	CitoPress-15: 48 cm (19")
		CitoPress-30: 55 cm (21.5")
	Depth	56 cm (22")
	Height (with mounting unit and top closure)	45 cm (17.7") (excl. CitoDoser)
		55 cm (21.5") (incl. CitoDoser)
Weight	CitoPress-15: 34 kg (75 lbs)	
	CitoPress-30: 48 kg (106 lbs)	
	CitoDoser: 3.1 kg (7 lbs)	

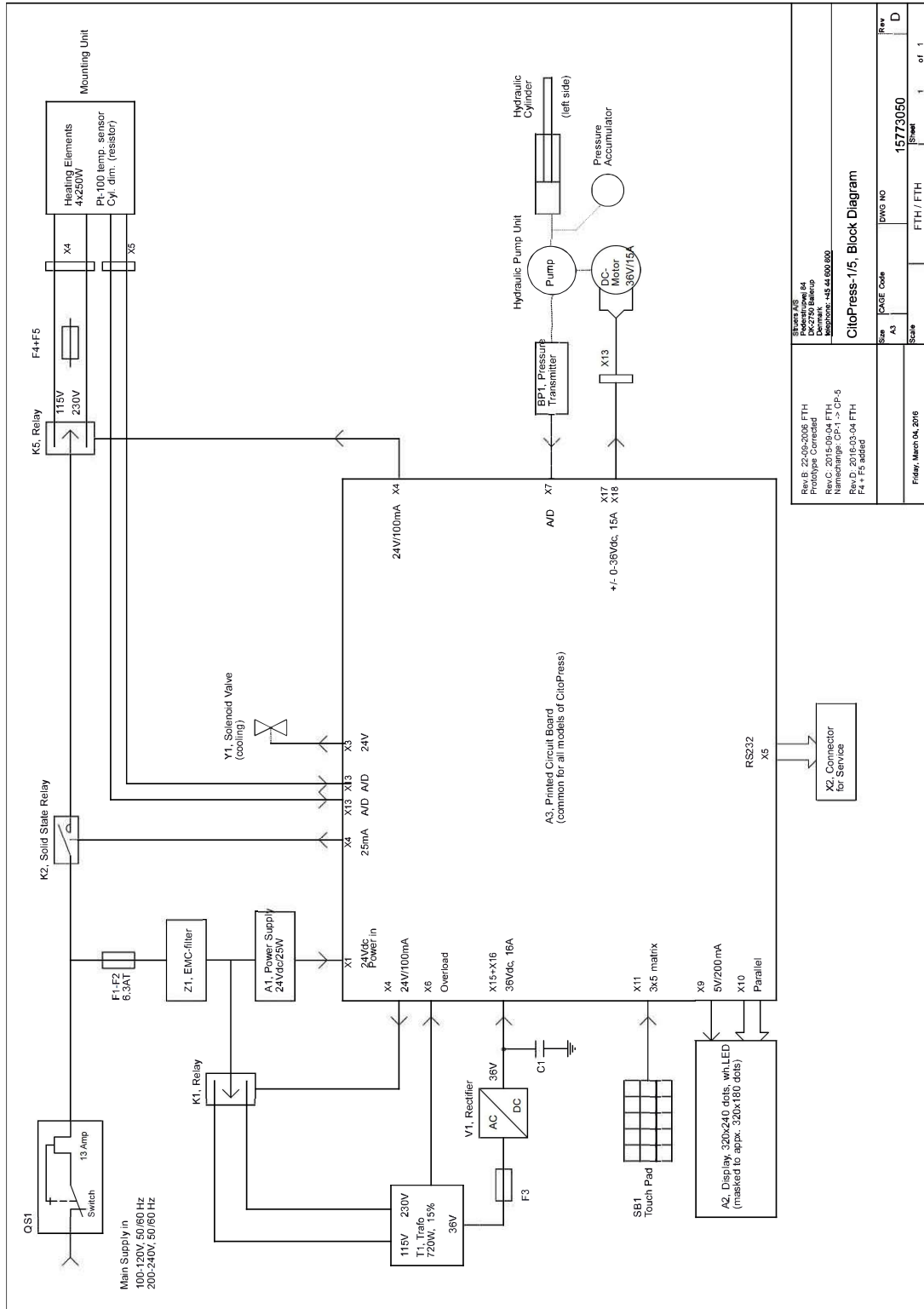
14.2 Diagrams for CitoPress-15

**Note**

If you want to view specific information in detail, see the online version of this manual.

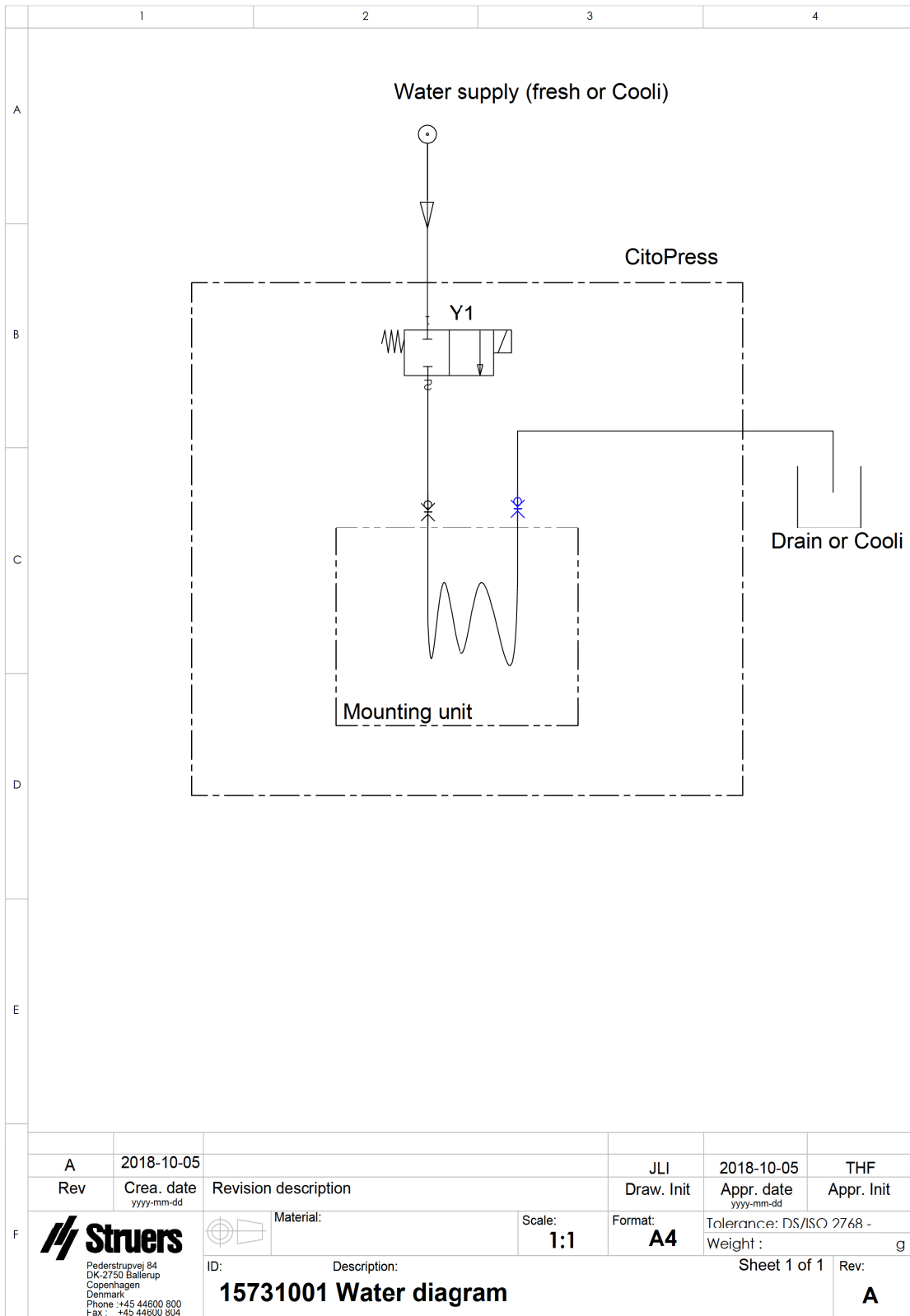
CitoPress-15	
Title	No.
Block diagram	15773050 ▶ 85
Water diagram	15731001 ▶ 86
Hydraulic diagram	15731000 ▶ 87
Circuit diagram	See the diagram number on the name plate of the equipment, and contact Struers Service via Struers.com .



15773050



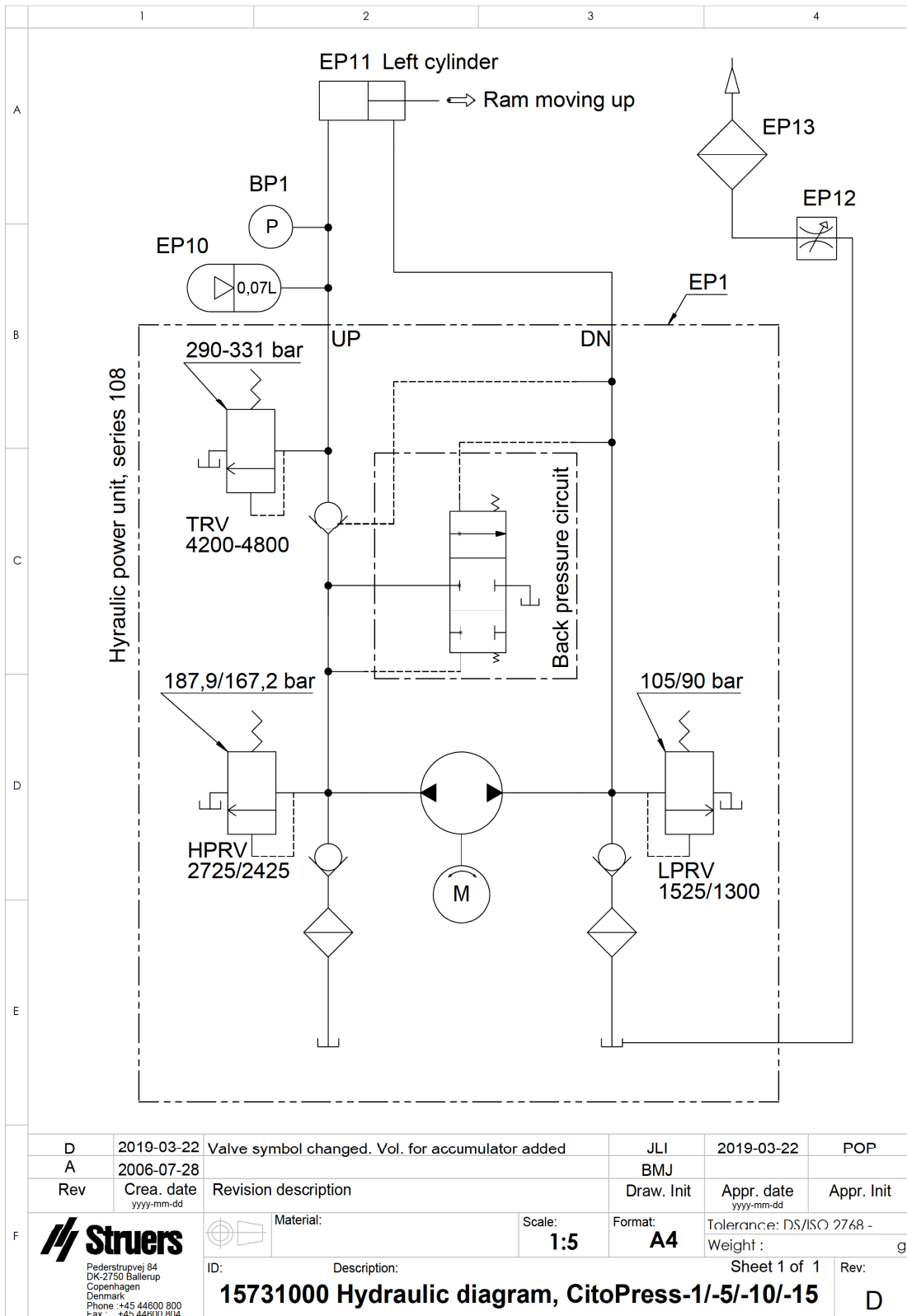
Revision: 22-05-2005 FTH Prototype Corrected Rev.C: 2015-09-04 FTH Rev.D: 2016-03-04 FTH Rev.E: 2016-03-04 FTH F4 + F5 added		Size: A3 Scale: 1:1	
SIDA 2/05 Frederiksøvej 64 2650 Lyngby Denmark Telephone: +45 44 88 28 00		DWG NO: 15773050 Sheet: 1 of 1	
CitoPress-1/5, Block Diagram			
Rev	Scale	Rev	D

15731001



A	2018-10-05		JLI	2018-10-05	THF
Rev	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
F	 Pederstrupvej 84 DK-2750 Ballerup Copenhagen Denmark Phone :+45 44600 800 Fax : +45 44600 804	 Material:	Scale: 1:1	Format: A4	Tolerance: DS/ISO 2768 - Weight : g
ID:		Description: 15731001 Water diagram		Sheet 1 of 1	Rev: A

15731000



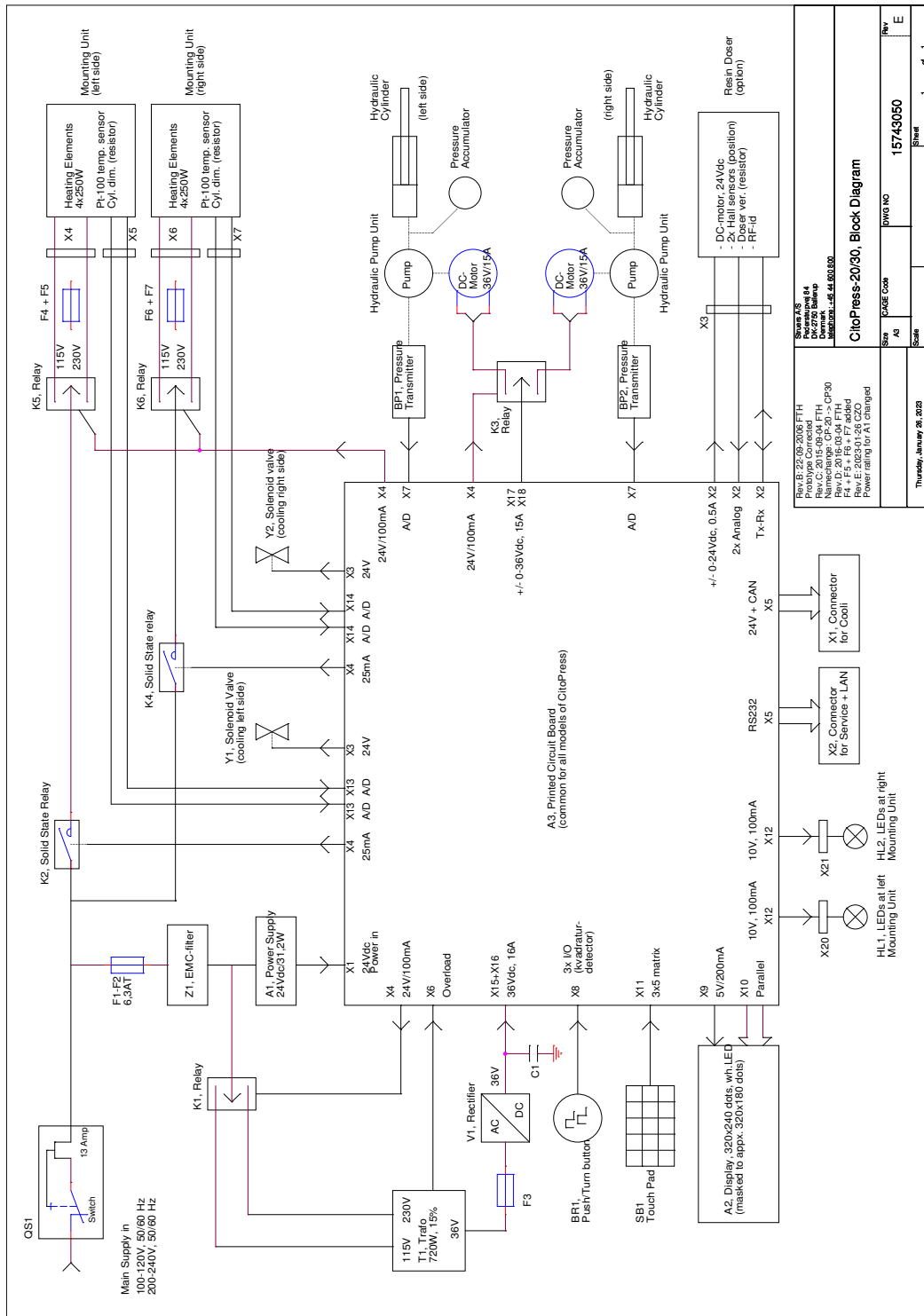
14.3 Diagrams for CitoPress-30

**Note**

If you want to view specific information in detail, see the online version of this manual.

CitoPress-30	
Title	No.
Block diagram	15743050 ▶ 89
Water diagram	15741001 ▶ 90
Hydraulic diagram	15741000 ▶ 91
Circuit diagram	See the diagram number on the name plate of the equipment, and contact Struers Service via Struers.com .

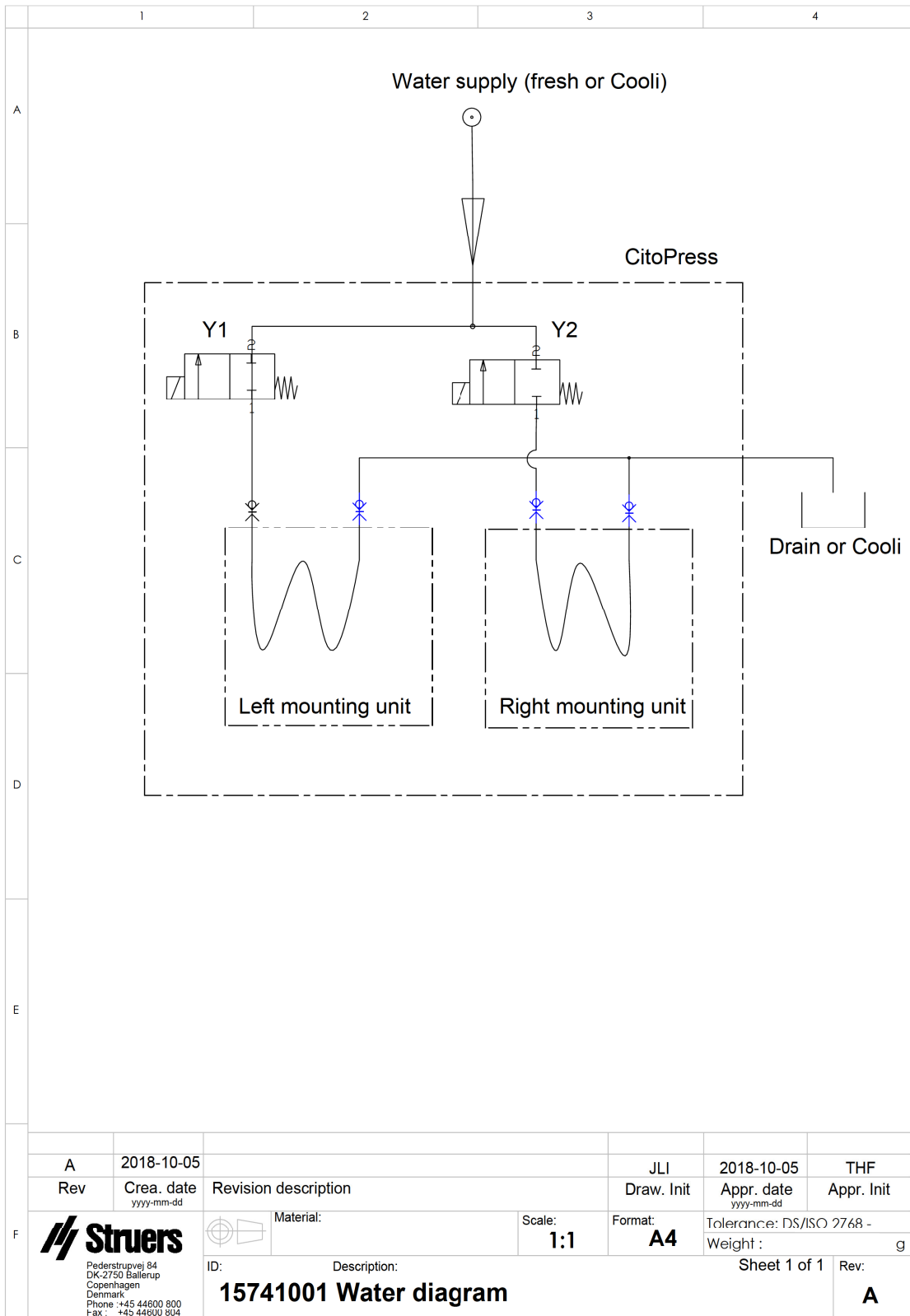
15743050



Rev. B: 22-09-2016 FTH Name: CitoPress-20/30 Name change: CP-20 -> CP-30 Rev. D: 20-09-2016 FTH Rev. E: 2023-01-28 CZO Power rating for A1 changed	
Scale	1 of 1
Size	A3
DATE CODE	15743050
Sheet	1
Rev	E

Rev. B: 22-09-2016 FTH Name: CitoPress-20/30 Name change: CP-20 -> CP-30 Rev. D: 20-09-2016 FTH Rev. E: 2023-01-28 CZO Power rating for A1 changed	
Scale	1 of 1
Size	A3
DATE CODE	15743050
Sheet	1
Rev	E

15741001



14.4 Legal and regulatory information

FCC notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this product not expressly approved by Struers ApS could cause harmful radio interference and void the user's authority to operate the equipment.

15 Manufacturer

Struers ApS
Pederstrupvej 84
DK-2750 Ballerup, Denmark
Telephone: +45 44 600 800
Fax: +45 44 600 801
www.struers.com

Responsibility of the manufacturer

The following restrictions should be observed, as violation of the restrictions may cause cancellation of Struers legal obligations.

The manufacturer assumes no responsibility for errors in the text and/or illustrations in this manual. The information in this manual is subject to change without notice. The manual may mention accessories or parts not included in the supplied version of the equipment.

The manufacturer is to be considered responsible for effects on safety, reliability, and performance of the equipment only if the equipment is used, serviced, and maintained in accordance with the instructions for use.

Declaration of Conformity

Manufacturer	Struers ApS • Pederstrupvej 84 • DK-2750 Ballerup • Denmark
Name	CitoPress-5, CitoPress-15, CitoPress-30
Model	N/A
Function	Hot mounting press
Type	0577, 0573, and/or 0574
Cat. no.	CitoPress-5: 05776127 CitoPress-15: 05736127 CitoPress-30: 05746127
Serial no.	



Module H, according to global approach



We declare that the product mentioned is in conformity with the following legislation, directives and standards:

2006/42/EC	EN ISO 12100:2010, EN 60204-1:2018, EN 60204-1-2018/Corr.:2020
2011/65/EU	EN 63000:2018
2014/30/EU	EN 61000-3-2:2014, EN 61000-3-3:2013, EN 61000-6-1:2007, EN 61000-6-3:2007, EN 61000-6-3-A1:2011, EN 61000-6-3-A1-AC:2012
Additional standards	NFPA 79, FCC 47 CFR Part 15 Subpart B

Authorized to compile technical file/
Authorized signatory

Date: [Release date]

en For translations see
bg За преводи вижте
cs Překlady viz
da Se oversættelser på
de Übersetzungen finden Sie unter
el Για μεταφράσεις, ανατρέξτε στη διεύθυνση
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et Tõlked leiata aadressilt
fi Katso käännökset osoitteesta
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nl Voor vertalingen zie
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pl Aby znaleźć tłumaczenia, sprawdź
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