

Coolimat-2000 Band Filter



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Instruction Manual

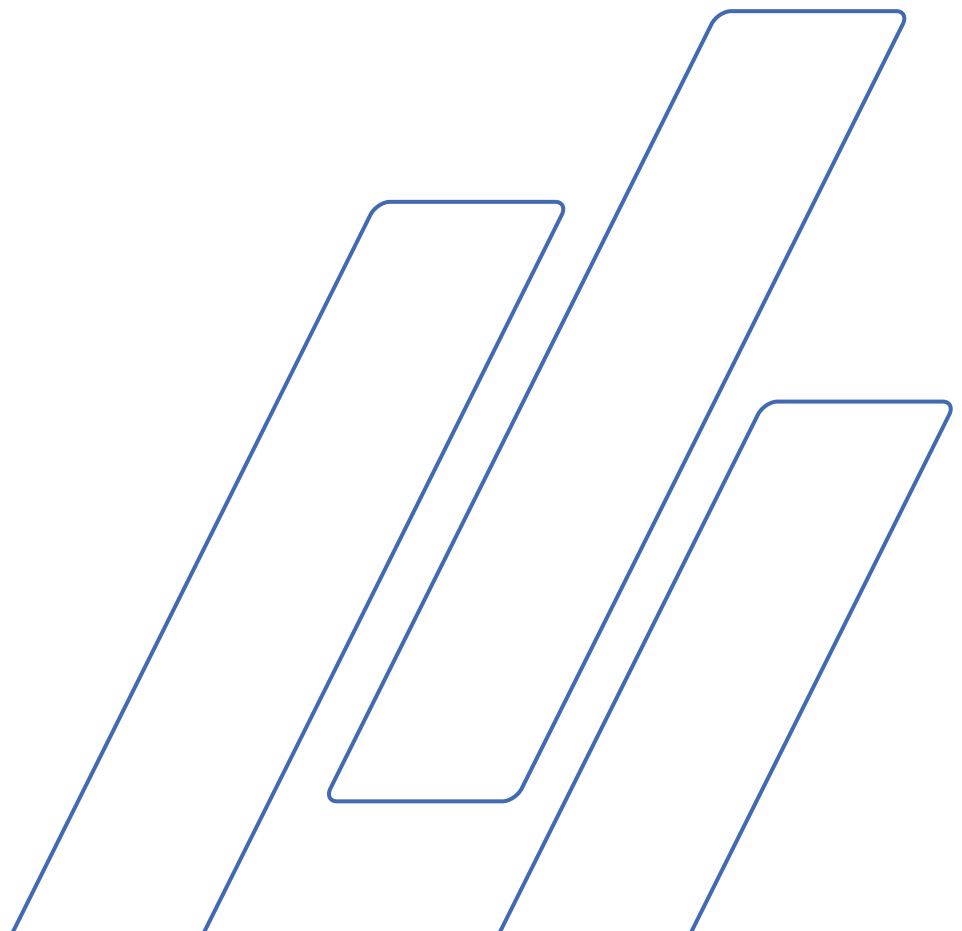


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Intended use

Coolimat-2000 is intended for filtration, cooling and recirculation of cooling fluid containing waste from machining of materials. Coolimat-2000 is designed for use with Struers grinding and cut-off machines. The machine is only to be operated by skilled/trained personnel in a professional working environment (e.g. a materialography laboratory). The machine is only designed to be used with cooling fluids and filter materials which are specified for this purpose and this type of machine*. A signal from the machine it supports is required for Coolimat-2000 to function as intended.

Do not use the machine for:

Cutting any type of explosive and/or flammable material, or materials which are not stable during machining, heating or pressure. Furthermore, the machine must not be used with consumables (cooling fluids, filter materials) that are not compliant with function and materials of Coolimat-2000.

*) See brochure and Struers consumables catalogue for more details about suitable consumables. Contact Struers in case of doubts.

Models:

Coolimat-2000 BF (Band Filter)

**NOTE:**

READ the instruction manual carefully before use.
Keep a copy of the manual in an easy-to-access place for future reference.

Always state Serial No and Voltage/frequency if you have technical questions or when ordering spare parts. You will find the Serial No. and Voltage on the type plate of the machine itself. We may also need the Date and Article No of the manual. This information is found on the front cover.

The following restrictions should be observed, as violation of the restrictions may cause cancellation of Struers legal obligations:
Instruction Manuals: Struers Instruction Manual may only be used in connection with Struers equipment covered by the Instruction Manual.

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

Original instructions. The contents of this manual is the property of Struers. Reproduction of any part of this manual without the written permission of Struers is not allowed.

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Icons and typography

Stuers uses the following icons and typographical conventions. A list of the Safety Messages used in this manual can be found in the chapter on *Cautionary Statements* in the Reference Guide section of the Instruction Manual.

Always consult the Instruction Manual for information on the potential hazards marked by the icons fixed to the machine.

Icons and Safety Messages



ELECTRICAL HAZARD

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



DANGER

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



WARNING

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



CAUTION

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



CRUSHING HAZARD

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



EMERGENCY STOP

General Messages

**NOTE:**

indicates a risk of damage to property, or the need to proceed with special care.

**HINT:**

indicates additional information and tips.

Colour Inside Logo



The 'colour inside' logo on the cover page of this Instruction Manual indicates that it contains colours which are considered to be useful for the correct understanding of its contents.

Users should therefore print this document using a colour printer.

Typographic conventions

Bold type	indicates button labels or menu options in software programs
<i>Italic type</i>	indicates product names, items in software programs or figure titles
■ Bullets	indicates a necessary work step



Coolimat-2000 BF Safety Precaution Sheet

Read carefully before use

1. 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.
2. The operator(s) must read the Safety and User's Guide sections of this manual and the relevant sections of the manuals for any connected equipment and accessories.
3. Do not use cooling liquid other than water mixed with additives, which are compliant with the machine.
4. The operator(s) must read the Instructions for Use and, where applicable, Safety Data Sheets for the applied consumables.
5. Observe the current safety regulations for handling, mixing, filling, emptying and disposal of the additive for cooling fluid.
Take care; the cooling fluid may be hot!
6. Keep a copy of the manual in an easy-to-access place for future reference.
7. Ignoring the information in the Instruction Manual can lead to severe bodily injuries and material damage.
8. Mishandling or modifying the equipment can lead to severe bodily injuries and material damage.
9. To achieve maximum safety and lifetime of the machine, use only original Struers consumables.
10. The machine must be disconnected from the mains prior to any service.
11. Use of gloves and safety goggles is recommended when filling and cleaning the tank.
12. The recirculation pump must be disconnected from the power supply prior to removal from the cooling unit. Use of safety shoes is recommended.
13. All safety functions must be intact and in working order. Damaged or malfunctioning safety functions must be replaced and/or repaired
14. Keep the area around the tank clean and free from spills.

- 15.** If any malfunction or unusual noise is detected, the equipment should be stopped immediately and technical service called.
- 16.** Struers recommend the use of an exhaust system as the cutting process may emit harmful gasses or dust
- 17.** In case of fire, alert bystanders, the fire brigade and cut power. Use a powder fire extinguisher. Do not use water.
- 18.** The machine must be installed in a well-ventilated and well-lit (300 lux) room.

The equipment should only be used for its intended purpose and as detailed in the Instruction Manual.

The equipment is designed for use with consumables supplied by Struers. If subjected to misuse, improper installation, alteration, neglect, accident or improper repair, Struers will accept no responsibility for damage(s) to the user or the equipment.

Dismantling of any part of the equipment, during service or repair, should always be performed by a qualified technician (electromechanical, electronic, mechanical, pneumatic, etc.).

User's Guide

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1. Getting Started

General Description

Coolimat-2000 BF is a filtration and recirculation machine for cooling fluid with waste/debris, typically swarf and particles from cut-off wheels. It is intended to filter and cool down the cooling fluid from up to two cutting and/or grinding machines.

Cooling fluid is directed into the filter paper which is placed on a motorized metal mesh. Filtered cooling fluid is collected in a tank underneath the filter unit and is then recirculated to the cut-off machine using up to two pump which are inserted in the tank. The cooling fluid must be filled/topped up, correctly mixed and replaced according to specifications.

The filter paper is automatically moved to ensure the filter capacity is adapted to the amount of debris. A flotation device activates the motorized metal band filter when a minimum level of cooling fluid in the tank is reached. This ensures that the band continuously positions a fresh section of filter paper under the cooling fluid inlet. The debris is automatically conveyed to a waste bin in front of the machine. When the filter paper moves, the debris is scraped from the used filter paper and is deposited in a waste collection tray. The waste collection tray can be removed to dispose of the debris. When the disposable filter paper is used up, it is easily replaced by the operator.

The Coolimat-2000 does not have start and off buttons. It is activated or stopped by signals via the control cable from the machine to which it is connected. This means, that it will typically start and stop simultaneously with a master, and stand by when circulation is not required.

If emergency stop is activated on the master machine, the Coolimat-2000 will also stop. A category B emergency stop cuts the power to the Coolimat-2000.

Coolimat-2000 Components

- 1 Cooling unit tank, 200 l
- 1 Waste collection bin
- 1 Filter Unit: Band Filter
- 1 Water level indicator
- 1 Recirculation pump
- 1 Control unit
- 1 24 V / CAN control cable



HINT:

The mains cable comes without plug.
Band filter paper is not part of delivery (consumables)

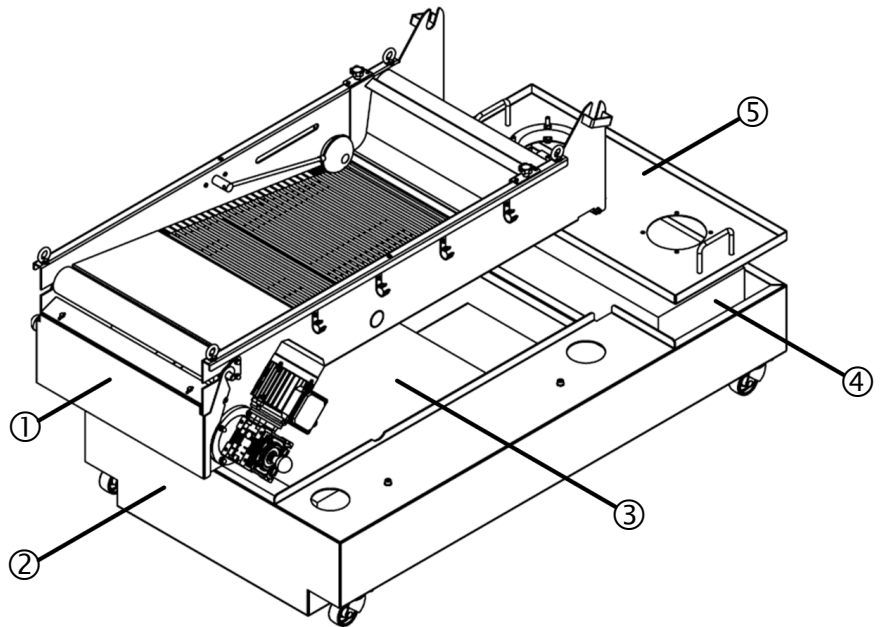
Optional Components

Additional Recirculation pump (to be mounted on the tank)

Unpacking Coolimat-2000

Loose parts and the pump are located in the waste collection box.
The Control unit is packed separately.

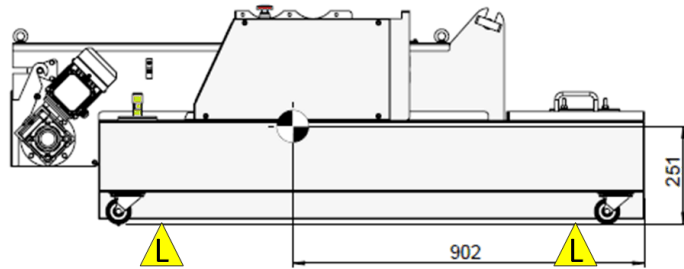
- Remove the transport box.
- Remove the plastic wrapping.
- Lift off the filter unit and pump cover and remove the waste collection bin and the fluid level indicator from inside the tank.



- ① Filter unit
- ② Tank
- ③ Loose parts
- ④ Pump
- ⑤ Pump cover

Placing Coolimat

- Lift the tank from the pallet and place on the floor next to the machine it will work with.
 - Position the straps under the machine, so that they are on the inner side of the rollers.
 - A lifting bar is recommended to keep the two straps apart below the lifting point.



Coolimat-2000 Band Filter – Lifting points.



CRUSHING HAZARD

Wear safety shoes when handling heavy machinery.

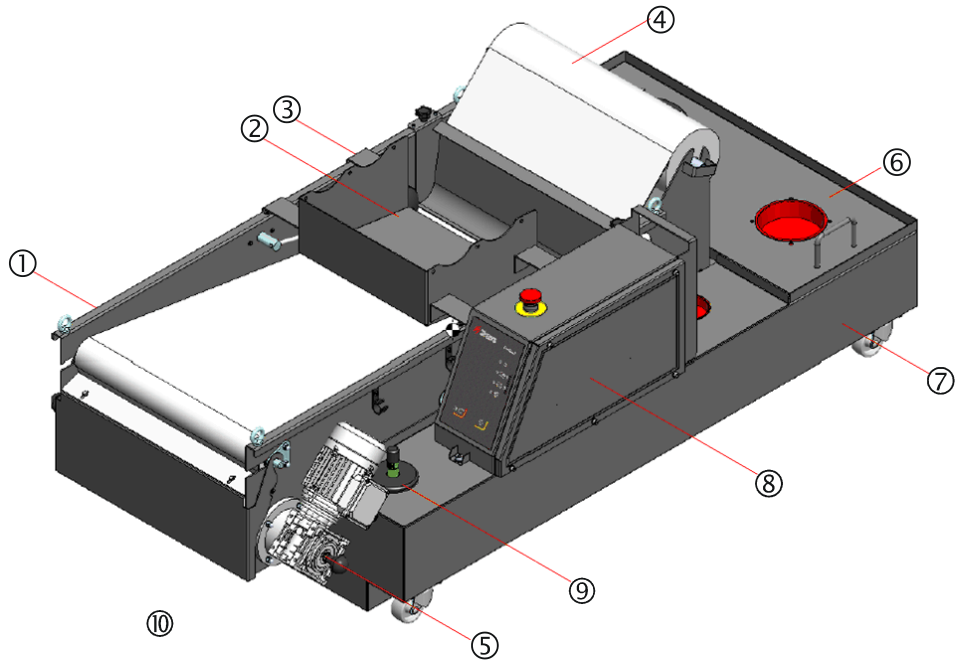
Unpacking the Control unit

- Open the box and carefully remove the control unit.

Getting Acquainted with Coolimat-2000

Coolimat-2000 with Band Filter

Take a moment to familiarise yourself with the location and names of the Coolimat-2000 components.




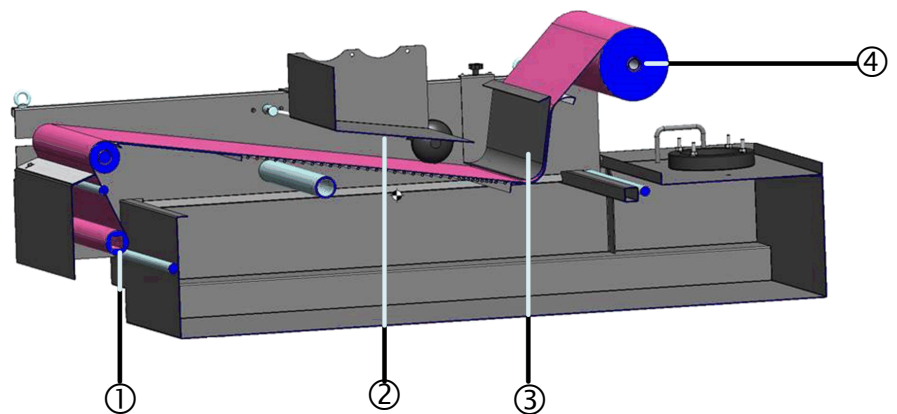
- ① Band filter unit
- ② Water dispersal plate
- ③ Water inlet duct
- ④ Roll of filter paper (consumable) on a paper rod
- ⑤ Band filter motor
- ⑥ Pump cover
- ⑦ Cooling fluid tank (wheel mounted)
- ⑧ Control unit with Emergency Stop
- ⑨ Cooling fluid level indicator
- ⑩ Waste collection bin (not shown)

Assembling the Coolimat-2000

- Place the filter unit and the pump cover on the tank.
- Mount the control unit to the tank using the attached screws.
- Connect water level sensor and winding motor to the Control unit.

Mounting the Filter Paper Roll

- Insert the paper holder rod into the roll of filter paper.
- Mount the roll of filter paper onto the roll holder.
- Pull out approximately 2 meters of filter paper from the roll.
- Guide the paper under the guide rail, and lay flat onto the band filter.
- Tape the end of the filter paper to the collecting rod that came with the filter roll.
- Press  MANUAL PAPER WINDING on the Control box and wind 10-20 cm of filter paper onto the collecting rod.



- | | |
|-------------------------|--------------|
| ① Collecting rod | ③ Guide rail |
| ② Water dispersal plate | ④ Rod |

Water Level Indicator



- Place the water level indicator in the hole provided.

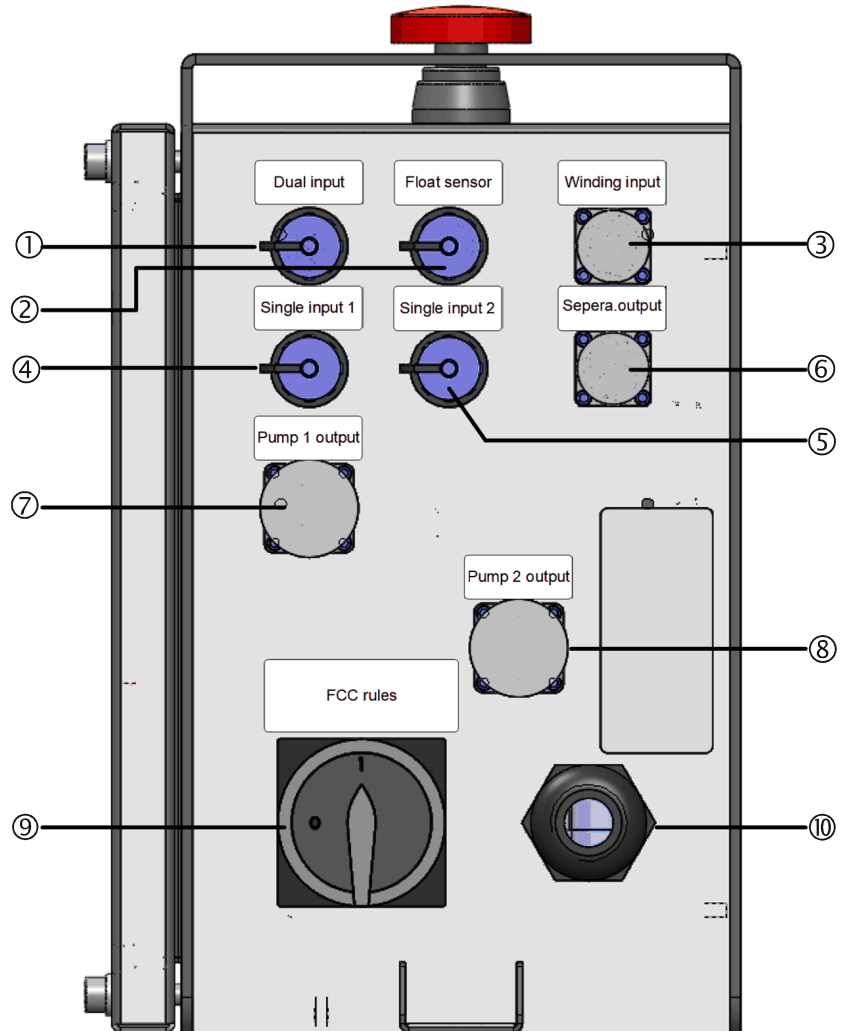
Recirculation Pump

- Mount the recirculation pump in the hole provided.

An additional Pump for increased flow can be mounted in the 2nd hole. This is required in cases, where the Coolimat-2000 BF will work together with two cut-off machines.

- Remove the cover from the 2nd hole and position the adapter ring over the hole.
- Mount the 2nd recirculation pump.
- Connect the 2nd recirculation pump to the control panel.

Connecting the Control Unit
Rear view of Control Panel



- ① Control unit to 2 cut-off machines (option)
- ② Control unit to floater
- ③ Control unit to winding
- ④ Control unit to cut-off machine 1
- ⑤ Control unit to cut-off machine 2
- ⑥ Control unit to optional accessory (unused)
- ⑦ Control unit to pump 1
- ⑧ Control unit to pump 2
- ⑨ Main switch
- ⑩ Power cable

Preparing the Cooling Unit for Use

Filling the Tank

- Fill the tank with cooling fluid comprised of 192 l water and 8.0 l Corrozip-LF.
- Fill the tank through the pump housing hole.



NOTE:

Do not fill the tank by pouring water into the cutting chamber, as it would be difficult to check the increasing level in the tank.

NOTE:

The cooling unit will be very heavy when full.

- Before filling the tank, check that the cooling unit is in position.
- If this is not possible, ensure that the tank is directly in front of its final position with the control unit facing forwards so that it is ready to be pushed into position without being moved to the left or right.

NOTE:

To avoid corrosion, Struers recommends the use of Struers Additive, Corrozip-LF in the cooling water (percentage stated on the Additive container).

Remember to top up with Struers Additive each time you refill with water.

Supplying Power



ELECTRICAL HAZARD

- Switch the power off when installing electrical equipment.
- The machine must be earthed (grounded).
- Check that the mains voltage corresponds to the voltage stated on the type plate on the side of the machine.
Incorrect voltage may result in damage to the electrical circuit.

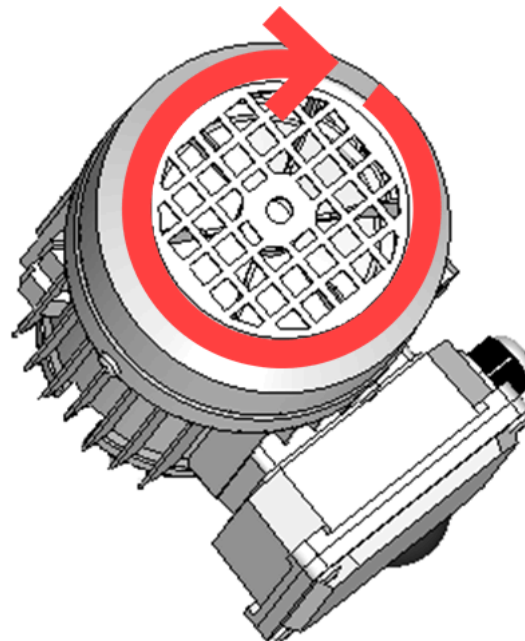
Coolimat-2000 is factory mounted with an electric cable.

- Mount an approved plug on the cable or hard-wire into the mains according to electrical specifications of your unit and local regulations:

EU cable		UL cable	
L1	Brown	L1	Black
L2	Black	L2	Red
L3	Black or grey	L3	Orange/ turquoise
Earth	Yellow/ green	Earth	Green (or Yellow/ green)
Neutral	Blue (Not used)	Neutral	White (Not used)

Verifying Correct Installation

- Check that the fan beneath the intake cover rotates in the direction indicated by the arrow.
- If the fan rotates counter clock-wise, switch two of the phases.



Check the fan's rotation – it must be clock-wise.

Connecting Coolimat-2000 to the Cut-off Machine

The recirculation pump is controlled by the cut-off machine. Water is directed from the cut-off machine to Coolimat via the water outlet pipe supplied with the cut-off machine.

On Struers' large, floor-type cut-off machines the pipe is rigid. A drain angle is supplied with which fits into the water inlet duct on the filter unit cover.

- Connect the 24 V / CAN control cable to the Coolimat-2000 control unit by plugging one end into the machine's control socket (see machine manual for details) and the other end into the socket on the rear panel of the Coolimat-2000 control unit.
- Connect one end of the Coolimat-2000 water hose to the quick coupling on the pump, and connect the other end to the water inlet of the cut-off machine.
- Mount the drain angle to the water outlet from the cut-off machine and insert above the water dispersal plate

Noise Level

See Technical Data in the rear of the Instruction Manual for information on the sound pressure level value.

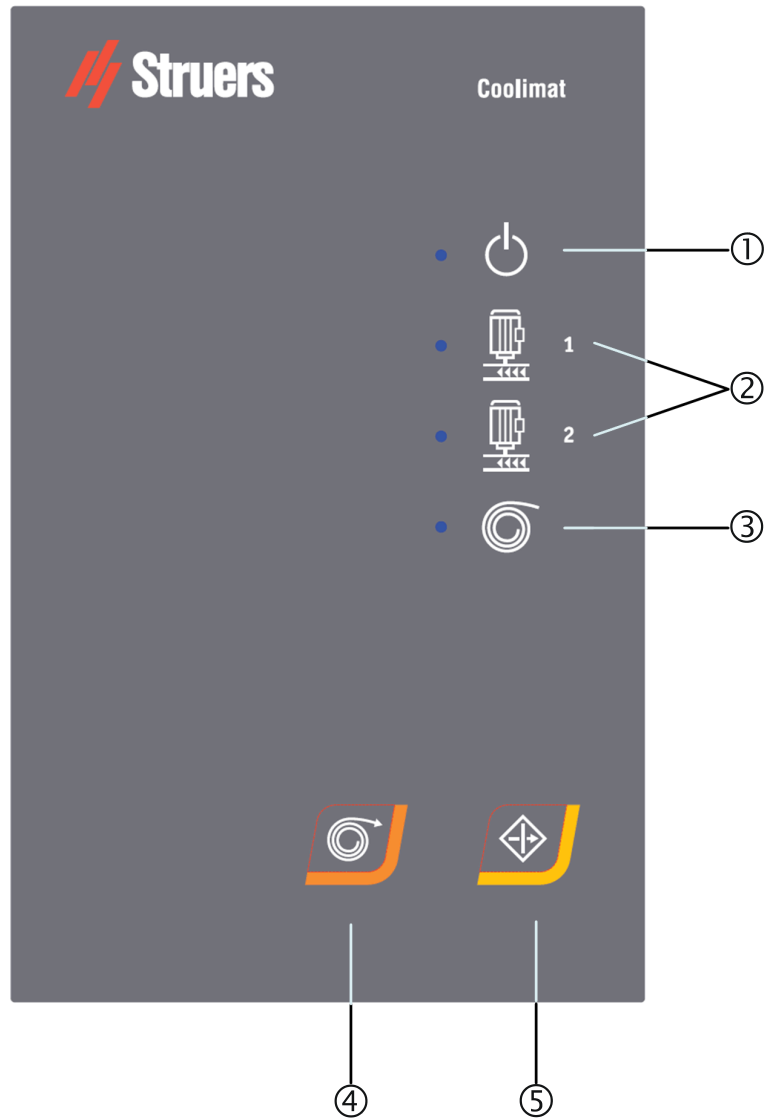


CAUTION







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

2. Operation

Control Panel



Control Panel Indicators/ Functions

Name	Indicator	Function	Name	Key	Function
① POWER		Green LED indicator: Power on. Normal operation. Red LED indicator: Coolimat is on Standby.	④ MANUAL PAPER WINDING		Press MANUAL PAPER WINDING to start winding of paper (Only for band filter version)
② PUMP 1+2		Green LED indicator: Normal operation. Red LED indicator: Error. Pump failure (Overload).	⑤ RESUME		Press RESUME to activate filter unit after main switch turn on and to reset the filter unit after the Emergency Stop has been activated.
③ PAPER WINDING		Green LED indicator: Normal operation. Red LED indicator: Error. Paper winding failure. (Only for band filter version)			The Emergency Stop disconnects the power supply to Coolimat.



MAIN SWITCH

The main switch is located at the rear of the control unit.



The EMERGENCY STOP is located on the top of the machine.

Emergency Stop function:

- Push the red button to Activate.
- Turn the red button clockwise to Release.



NOTE:

Do not use the Emergency stop for operational stop of the machine during normal operation.

BEFORE releasing (disengaging) the Emergency stop, investigate the reason for activating the Emergency stop and take any necessary corrective action.

NOTE:

The emergency stop work both in conjunction with the cut-off machine and independently.

Water Level Indicator

The water level indicator is a simple float device.

- Top up or refill the tank with cooling fluid when the level is too low.

The concentration of additive should always be between 3.7% and 4.3%. Add Corrozip-LF if the concentration is too low. Use a refractometer check the concentration of additive (see [Checking the Cooling Fluid](#) on page 27 for instructions).

Starting Coolimat-2000

Coolimat-2000 starts automatically when the cut-off machine starts to cut. Coolimat-2000 will enter Standby mode when cutting is stopped.

- Turn on using the main switch.
- Check the POWER LED is GREEN, if not press RESUME.



NOTE:

Be aware of possible exothermic reactions dependent on the combination of the metallic swarf produced during cutting. See the section on *Disposal* on page 33 for more information.


Power off

To disconnect the power supply to Coolimat:

- Turn the main switch off.

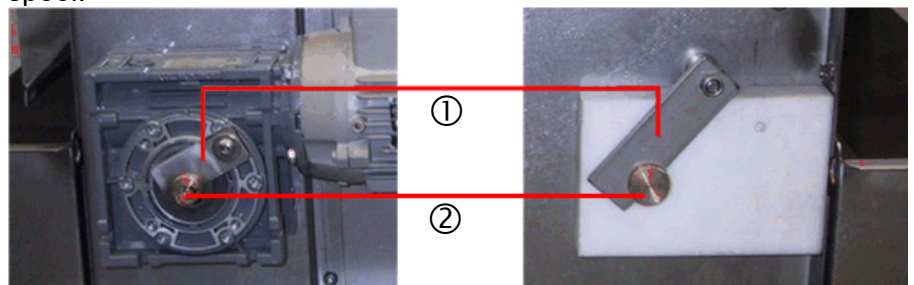


NOTE:

Before turning off Coolimat, press  MANUAL PAPER WINDING to replace the used, wet paper with new, dry paper.

Changing the Paper in the Band Filter

- Turn the Main switch off to disconnect the power and wait 10 seconds.
- Remove the waste collection bin.
- Remove any remaining paper and clean the surfaces that are in contact with the filter paper.
- Remove Filter Paper.
- Remove the waste collection bin.
- Turn the Main switch off and wait 10 seconds.
- On each side of the Band Filter Unit, lift the safety bar securing the catch for the collector bar and pull the catch to release the spool.



Release the safety bars on right- and left-hand side.

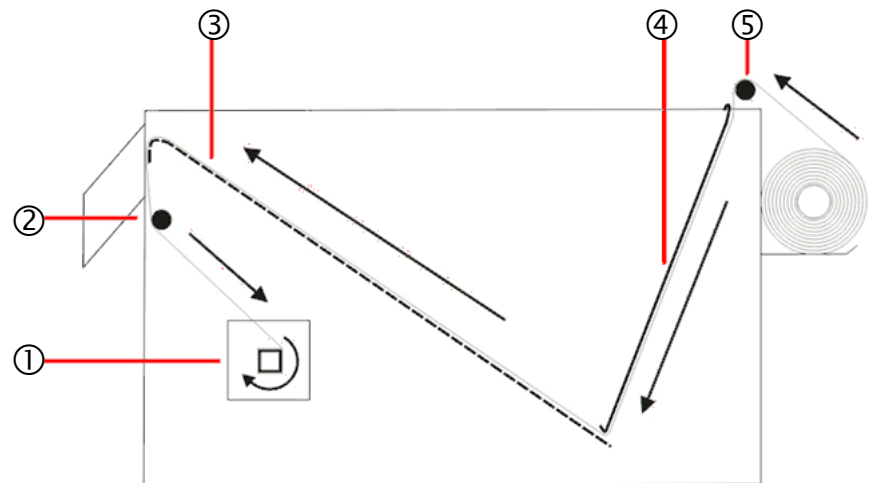
① Safety bar

② Catch

- Remove the spool of used paper together with the collector bar and discard.
- Fit a new collector bar.

Inserting Filter Paper

- Mount a roll of filter paper onto the paper roll holder.
- Remove the metal plate (for holding the filter paper in place).
- Guide the filter paper over the guide roller, around the guide bar and secure onto the collector bar (see illustration).
- Slide the metal plate into position.



- | | |
|---------------------------|----------------|
| ① Collector bar | ④ Metal plate |
| ② Guide bar | ⑤ Guide roller |
| ③ Perforated bottom plate | |

- Check the operation of the level float mechanism by raising and lowering the float.
- Check that the level float is positioned correctly so that the filter paper is replaced before the level of cooling fluid reaches the edge of the perforated bottom plate.
If necessary, adjust the angle of the level float by loosening the adjustment screw located on the end of the arm of the level float. Re-tighten the screw when adjustment is completed.
- Place the Band Filter Unit into position in the Cooling Unit compartment.
- Turn the main switch on.
- Press the RESUME button to activate the Coolimat-2000.



NOTE:

Empty the waste collection bin periodically to prevent blockages.

Adjustment of the Water Float Sensor

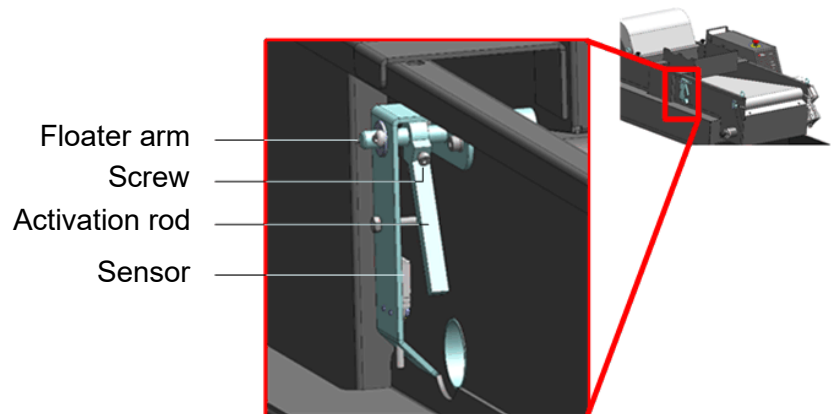
The Floater is adjusted before the band filter is shipped. It is possible to adjust the position of the floater to achieve higher water filtration or lower paper consumption.

- Ensure that there are no cutting operations from the connected machine.
- Wait until there is no water above the paper.
- Release the waste paper roll from the winding mechanism (or make an adjustment before new paper is inserted)
- Lift the floater from the bottom, until the Paper winding ☉ LED on the Control panel turns green – this is the set water level for this machine.
- Adjust the position of the activation rod (in millimetres):
 - Release the tightening screw.
 - Raise the floater for less paper consumption.
 - Lower the floater for better filtration.
 - Move the activation rod until the sensor is activated and the ☉ LED is green.
 - Tighten the screw.
- Reposition the waste paper roll in the winding mechanism.
- Press ☉ MANUAL PAPER WINDING to check the function.



NOTE:

DO NOT leave equipment without checking that the new setting works correctly and that automatic paper winding is activated as required.



Water float adjustment.

3. Maintenance

To ensure a longer lifetime for your equipment, Struers strongly recommends regular cleaning.



WARNING

Disconnect the power before performing any maintenance work.



CAUTION

- Wear gloves and goggles when handling cooling fluid.
- The collection bin is heavy when full and should not be handled without assistance.
- Use of safety shoes is recommended when handling the pump.
- **Take care; the cooling water may be hot!**



NOTE:

Accumulated dirt and swarf can restrict or cause damage to the water inlet valves.

Daily

Checking the Cooling Fluid

During use, cooling fluid will evaporate and the level in the tank will be reduced over time. This requires the operator to refill or “top up” periodically.

For the cooling fluid to maintain the same function, always maintain a constant mix of additive and water.

- Check and if necessary replace the cooling fluid.
(See [Replacing the Cooling Fluid](#) on page 28 for instructions.)
- Top up with cooling fluid if required; the cooling fluid level should be approx. 25 mm below the upper edge of the tank (follow the marking on the floater).

**NOTE:**

- Replace the cooling water immediately if infected by algae or bacteria.
- Flush the tank and tubes with a suitable antibacterial disinfectant, e.g. Struers Unitclean.

Remember to add Struers Additive Corrozip-LF: One part of Additive for 25 parts of water.

To check the concentration of additive, use a refractometer.

Concentration = 1.9 x Brix value.

The concentration of additive should always be between 3.7% and 4.3%. Add Corrozip-LF if the concentration is too low. Information on the cooling fluid additive must be followed.

**HINT:**

Struers Additive Corrozip-LF (Low Foaming) is recommended to minimize foam generation in the cooling fluid.

- Check and if necessary empty the waste collection bin.
 - Empty and clean the waste collection bin.
- Check and if necessary replace the roll of filter paper.

**NOTE:**

Always ensure that there is sufficient filter paper on the roll. The band filter unit will continue to operate even if the filter paper runs out.

Replacing the Cooling Fluid Emptying the Cooling Unit Tank



NOTE:

The cooling fluid will contain additive and cutting swarf and may **NOT** be disposed of into a main drain. Cooling fluid must be disposed of in compliance with local safety regulations. See [Disposal](#) on page 33.

NOTE:

Do not leave equipment unsupervised when emptying the Cooling Unit Tank.

Using the Recirculation Pump

- Empty the cooling unit tank using the recirculation pump:
 - Disconnect the cooling unit's water outlet hose from the quick coupling on the cut-off machine.
 - Place the open end of the hose in a suitable container.
 - Start the recirculation pump by activating water gun on the cut-off machine.
 - Turn off Coolimat-2000 on the main switch when the tank is empty.

OR

Using a Dredge Pump

- Empty the cooling unit tank using an industrial dredge pump.
 - Place the open end of the hose in a suitable container.
 - Empty the cooling unit completely, and clean out all water and debris from the tank.
 - Clean the tank and connected tubes thoroughly.
- Empty any debris that may be left in the tank before refilling it.



CAUTION

- Avoid spilling cooling fluid when filling, emptying or topping the tank.
- Wear working shoes with slip-resistant soles.

Refilling the Cooling Unit Tank

Please refer to [Filling the Tank](#) on page 18.



NOTE:

Always maintain the correct concentration of Struers Additive, Corrozip-LF, in the cooling water (percentage stated on the container of the Additive). Remember to add Struers Additive each time you refill with water.

Weekly

- Clean all the surfaces in contact with the filter paper.

Monthly

- Clean all surfaces with a damp cloth.

Yearly Maintenance

Testing Safety Devices

Only skilled/trained personnel may carry out the safety test.

Test 1

- Start a cutting process.
Both cut-off machine and Coolimat start.
- Activate the Emergency stop on the cut-off machine.
The filter pump(s), band filter motor and optional auxiliary equipment should stop. The cut-off machine should stop.
If not, turn off the Coolimat-2000 on the main switch and contact Struers Service.

Test 2

- Start a cutting process.
Both cut-off machine and Coolimat start.
- Activate the emergency stop on the Coolimat.
- The filter pump(s), band filter motor and optional auxiliary equipment should stop.
If not, turn off the machine on the main switch and contact Struers Service.



WARNING

Do NOT use the machine with defective Safety Devices.
Contact Struers Service.

4. Cautionary Statements

List of Safety Messages in the Manual



CRUSHING HAZARD

Wear safety shoes when handling heavy machinery.



ELECTRICAL HAZARD

- Switch the power off when installing electrical equipment.
- The machine must be earthed (grounded).
- Check that the mains voltage corresponds to the voltage stated on the type plate on the side of the machine. Incorrect voltage may result in damage to the electrical circuit.



CAUTION

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



WARNING

Disconnect the power before performing any maintenance work.



CAUTION

- Wear gloves and goggles when handling cooling fluid.
- The collection bin is heavy when full and should not be handled without assistance.
- Use of safety shoes is recommended when handling the pump.
- **Take care; the cooling water may be hot!**



CAUTION

- Avoid spilling cooling fluid when filling, emptying or topping the tank.
- Wear working shoes with slip-resistant soles.



WARNING

Do NOT use the machine with defective Safety Devices.
Contact Struers Service.



WARNING

In case of fire, alert bystanders, the fire brigade and cut power. Use a powder fire extinguisher. Do not use water.



WARNING

Safety critical components are to be replaced after a maximum lifetime of 20 years. Contact Struers Service for information.

5. Transportation and Storage

Transporting Coolimat-2000

- Disconnect the power supply.
- Clean and dry the filter unit and tank.
- Lift Coolimat-2000 onto a pallet and move to its new location.

At the new location, check that:

- The facilities required are in place.
- Check the Pre-Installation Checklist (contact Struers for a copy).

Shipping or Storing Coolimat-2000


If the machine is bound for long-time storage or shipping:

- Remove the Control unit, pump(s) and the water level indicator and place in a box.
- Place the box in the tank.
- Build a crate around the machine.
- To keep the machine dry, plastic-wrap the machine and place a bag of desiccant (silica gel) in the crate.
- Place a lid on the crate.

6. Disposal



Disposal of Swarf

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

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



NOTE:

Be aware of possible exothermic reactions of the metallic swarf produced during cutting.

This must be taken into consideration during disposal.

Depending on which metals are being cut, it is possible that the combination of the metallic swarf from metals with a large difference in electro positivity (a large distance apart in the electrochemical series), could result in exothermic reactions when 'favourable' conditions are present.

Therefore it is always good practice to bear in mind which metals are being cut and the amount of swarf (cutting debris) produced.

Examples:

The following are examples of combinations which could result in exothermic reactions if a large amount of debris is produced during cutting/ grinding on the same machine, and when favourable conditions are present:

Aluminum and Copper

Zinc and Copper



WARNING

In case of fire, alert bystanders, the fire brigade and cut power. Use a powder fire extinguisher. Do not use water.

Reference Guide

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1. System Components and Accessories

Please refer to the [Coolimat-2000 brochure](#) for details of the range available.

*The use of Struers consumables is recommended.
Other products (e.g. coolants) 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 non-Struers consumables.*

2. Troubleshooting

Problem Solving

The following table describes the problems that users may potentially experience when using the cooling units and contains advice on how to solve them.

Error	Explanation	Action
Water leaking.	Leak in recirculation water hose.	Check the hose and tighten the hose clamp.
	The drain from the cut-off machine is blocked with debris.	Check and clean the drain and tubes.
	Water overflow in the recirculation water tank.	Remove the excess water in the tank.
Cooling unit stops and cannot be restarted.	Blown fuse(s)	Contact Struers Service
Samples, cooling unit or equipment corroded.	Insufficient additive for cooling fluid.	Add Struers Additive for cooling fluid to the cooling water, using the correct concentration. Check with a refractometer. Follow the instructions in the Maintenance section.
The pump has stopped.	Emergency stop on the cut-off machine has been activated. This will stop the pump.	Release the Emergency stop. NOTE:- Pressing the Emergency stop on Coolimat-2000 will not stop the cut-off machine.
Filter paper does not move and/or the water level rises.	When the filter paper is saturated with swarf, the water level rises, and a float activates the winding motor, which automatically feeds fresh filter paper.	Check that the float is functioning correctly. Adjust the water sensor, if needed. Check that the filter paper is not torn close to the winding mechanism.
No or low flow of cooling fluid in the cut-off machine.	The direction of the pump is incorrect.	Switch two of the phases. See Verifying Correct Installation on page 19 .
	The water inlet to the cut-off machine is blocked.	Check the water inlet hose for blockages. For cut-off machines with an In-line filter, see the Instruction Manual for the machine.

3. Spare Parts and Diagrams

Safety Related Parts of the Control System (SRP/CS)

Spare Part	Cat. no.
Emergency stop button	2SA10400 2SA41603 2SB10071
Relay G7SA	2KL20751 2KL20714
Contactors J7KNA-12-10	2KM70911



WARNING

Safety critical components are to be replaced after a maximum lifetime of 20 years.
Contact Struers Service for information.



NOTE:

Replacement of Safety critical components can only be performed by a Struers engineer or a qualified technician (electromechanical, electronic, mechanical, pneumatic, etc.).
Safety critical components may only be replaced by components with at least the same safety level.

Contact Struers Service for information.



Information:

SRP/CS (Safety-related parts of a Control System). Parts that have an influence on safe operation of the machine.

Spare Parts List

The following is a list of selected wear parts that may need replacement during the lifetime of the machine.
For further information, or to check the availability of other replacement parts, please contact your local Struers Service department. Contact information is available on Struers.com.

Spare Part	Cat. no.
Wheel Swivel Ø65mm, 2 pcs.	RGB00120
Float assembly	R6160022

Coolimat-2000 BF
Instruction Manual

Diagrams

Block diagram Coolimat-2000	16523050
Circuit diagram, Coolimat-2000, 2 pages.....	16523100

MUST BE EXTERNALLY FUSED
(see table 1 below)

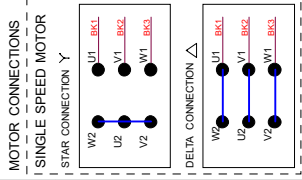
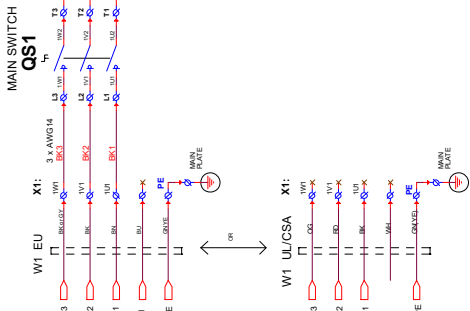
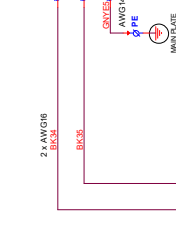


TABLE 1

VOLTAGE / FREQ. (see manual)	Max. c.c. FUSE	F1 + F2 + F3 Size size	F4 + F5 + F6 Size size	M1 connection
3 x 380-480V / 50Hz	3 x 40A	3 x 4AT (AM)	3 x 2AT (AM)	STAR
3 x 220-240V / 60Hz	3 x 30A	3 x 6AT (CC)	3 x 4AT (CC)	DELTA
3 x 480-480V / 60Hz	3 x 30A	3 x 4AT (CC)	3 x 2AT (CC)	STAR

Note:
CC - Class-CC characteristic
AM - All characteristic

A1 POWER SUPPLY

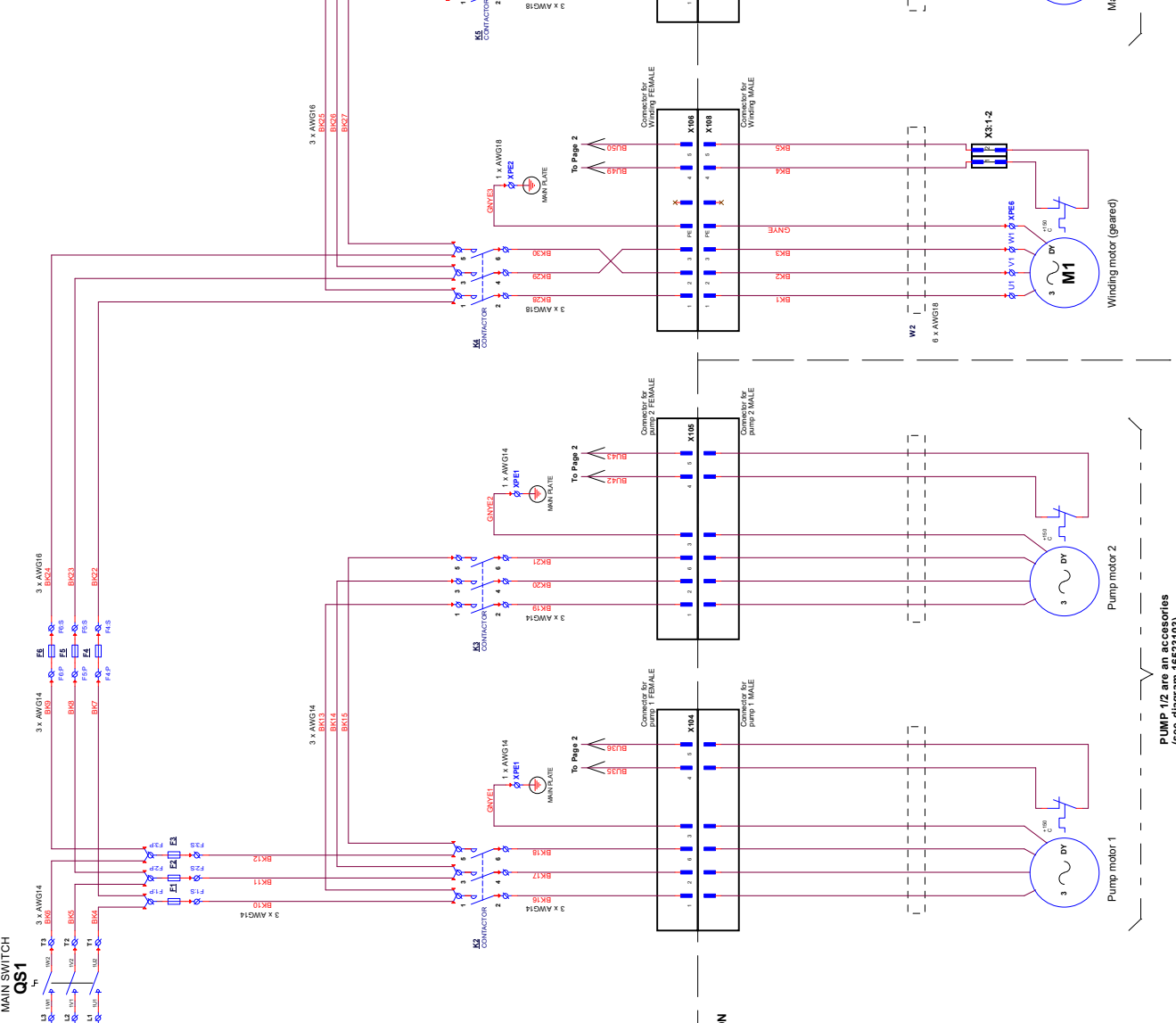


Switchmode Power supply
Wide range input 0V-24V
180-260V AC
Output 24VDC 1.50A
UL938 approved, IEC60950-1

COLOR CODES (EC97):
BK = BLACK
BN = BROWN
RD = RED
OO = ORANGE
YE = YELLOW
BL = BLUE
VT = VIOLET
GY = GREY
WH = WHITE
PK = PINK

REV. A/1818		REV. A/1818	
DATE	DESIGN	DATE	DESIGN
Colimat2000 - Circuit Diagram, MAIN		Page 10	1652100
REV. A/1818		REV. A/1818	REV. A/1818

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PUMP 1/2 are an accessories
(see diagram 1652103)

Separator is an accessories
(see diagram 1652103)

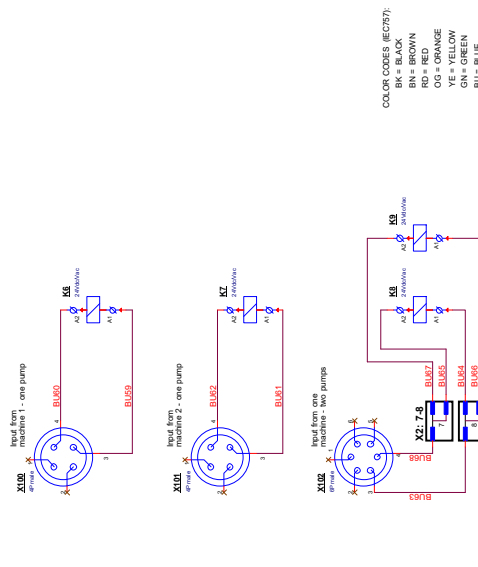
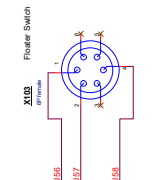
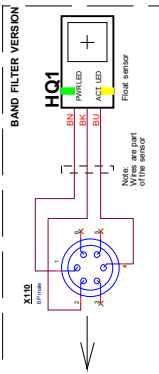
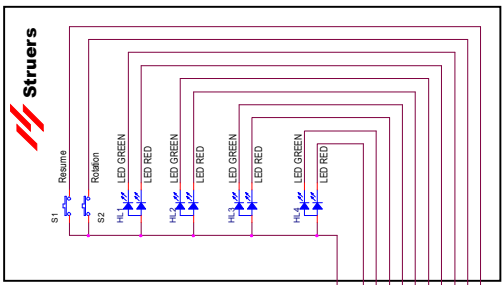
CONTROL BOX

BAND / STATIC FILTER VERSION

BAND FILTER VERSION

TABLE 1

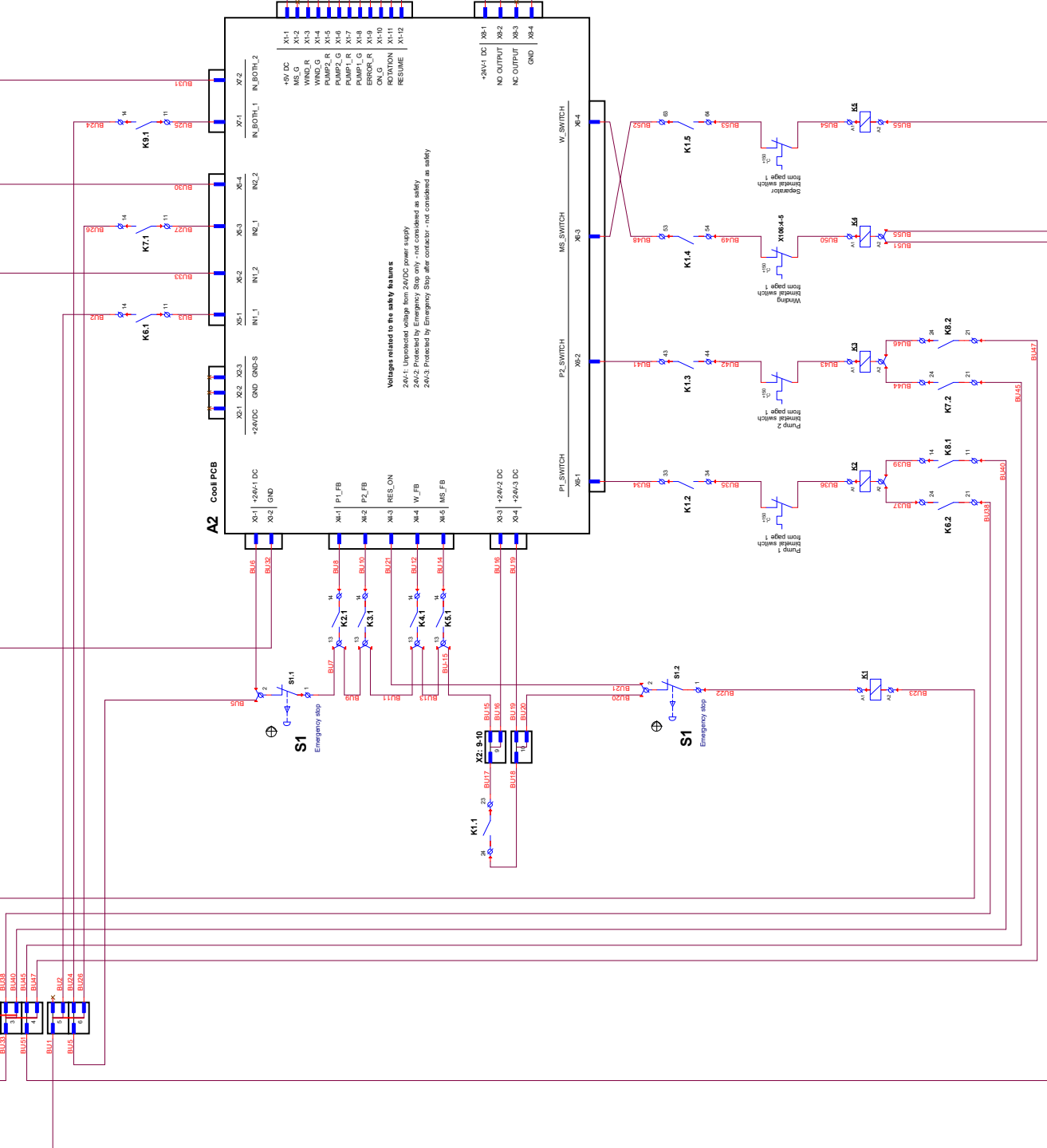
VOLTAGE / FREQ. (see manual)	Max. c.c. FUSE	F1 + F2 + F3 Size size	F4 + F5 + F6 Size size	M1 connection
3 x 380-480V / 50Hz	3 x 40A	3 x 4AT (AM)	3 x 2AT (AM)	STAR
3 x 220-240V / 60Hz	3 x 30A	3 x 6AT (CC)	3 x 4AT (CC)	DELTA
3 x 480-480V / 60Hz	3 x 30A	3 x 4AT (CC)	3 x 2AT (CC)	STAR



12 pole flat cable
Note: Make sure part of the flat cable is connected to the correct pins

Colors related to the safety features
24V-1: Unprotected voltage from 24VDC power supply
24V-2: Protected by Emergency Stop only - not considered as safety
24V-3: Protected by Emergency Stop after contactor - not considered as safety

Color CODES (EC787):
BN = BROWN
RD = RED
OG = ORANGE
GN = GREEN
GY = GREY
WH = WHITE
PK = PINK



PI SWITCH X4-1
P2 SWITCH X4-2
MS SWITCH X4-3
W. SWITCH X4-4

X1-1 +24V-1 DC
X1-2 GND
X1-3 +24V-2 DC
X1-4 +24V-3 DC
X1-5 P1_FB
X1-6 P2_FB
X1-7 RES_ON
X1-8 W_FB
X1-9 MS_FB

X2-1 IN_BOTH_1
X2-2 IN_BOTH_2
X2-3 IN_1
X2-4 IN_2
X2-5 IN_1
X2-6 IN_2
X2-7 IN_1
X2-8 IN_2
X2-9 IN_1
X2-10 IN_2
X2-11 RESUME
X2-12 RESUME

X3-1 MS_G
X3-2 WIND_R
X3-3 WIND_L
X3-4 PUMP2_R
X3-5 PUMP2_L
X3-6 PUMP1_R
X3-7 PUMP1_L
X3-8 ERROR_L
X3-9 ERROR_R
X3-10 GND
X3-11 REDUND
X3-12 RESUME

X4-1 NO OUTPUT
X4-2 NO OUTPUT
X4-3 GND
X4-4 GND

X5-1 +5V DC
X5-2 MS_G
X5-3 WIND_R
X5-4 WIND_L
X5-5 PUMP2_R
X5-6 PUMP2_L
X5-7 PUMP1_R
X5-8 PUMP1_L
X5-9 ERROR_L
X5-10 ERROR_R
X5-11 GND
X5-12 RESUME

X6-1 +24V-1 DC
X6-2 GND
X6-3 +24V-2 DC
X6-4 +24V-3 DC
X6-5 P1_FB
X6-6 P2_FB
X6-7 RES_ON
X6-8 W_FB
X6-9 MS_FB

X7-1 IN_BOTH_1
X7-2 IN_BOTH_2
X7-3 IN_1
X7-4 IN_2
X7-5 IN_1
X7-6 IN_2
X7-7 IN_1
X7-8 IN_2
X7-9 IN_1
X7-10 IN_2
X7-11 RESUME
X7-12 RESUME

X8-1 NO OUTPUT
X8-2 NO OUTPUT
X8-3 GND
X8-4 GND

X9-1 MS_G
X9-2 WIND_R
X9-3 WIND_L
X9-4 PUMP2_R
X9-5 PUMP2_L
X9-6 PUMP1_R
X9-7 PUMP1_L
X9-8 ERROR_L
X9-9 ERROR_R
X9-10 GND
X9-11 REDUND
X9-12 RESUME

X10-1 +5V DC
X10-2 MS_G
X10-3 WIND_R
X10-4 WIND_L
X10-5 PUMP2_R
X10-6 PUMP2_L
X10-7 PUMP1_R
X10-8 PUMP1_L
X10-9 ERROR_L
X10-10 ERROR_R
X10-11 GND
X10-12 RESUME

X11-1 +24V-1 DC
X11-2 GND
X11-3 +24V-2 DC
X11-4 +24V-3 DC
X11-5 P1_FB
X11-6 P2_FB
X11-7 RES_ON
X11-8 W_FB
X11-9 MS_FB

X12-1 IN_BOTH_1
X12-2 IN_BOTH_2
X12-3 IN_1
X12-4 IN_2
X12-5 IN_1
X12-6 IN_2
X12-7 IN_1
X12-8 IN_2
X12-9 IN_1
X12-10 IN_2
X12-11 RESUME
X12-12 RESUME

X13-1 NO OUTPUT
X13-2 NO OUTPUT
X13-3 GND
X13-4 GND

X14-1 MS_G
X14-2 WIND_R
X14-3 WIND_L
X14-4 PUMP2_R
X14-5 PUMP2_L
X14-6 PUMP1_R
X14-7 PUMP1_L
X14-8 ERROR_L
X14-9 ERROR_R
X14-10 GND
X14-11 REDUND
X14-12 RESUME

X15-1 +5V DC
X15-2 MS_G
X15-3 WIND_R
X15-4 WIND_L
X15-5 PUMP2_R
X15-6 PUMP2_L
X15-7 PUMP1_R
X15-8 PUMP1_L
X15-9 ERROR_L
X15-10 ERROR_R
X15-11 GND
X15-12 RESUME

X16-1 +24V-1 DC
X16-2 GND
X16-3 +24V-2 DC
X16-4 +24V-3 DC
X16-5 P1_FB
X16-6 P2_FB
X16-7 RES_ON
X16-8 W_FB
X16-9 MS_FB

X17-1 IN_BOTH_1
X17-2 IN_BOTH_2
X17-3 IN_1
X17-4 IN_2
X17-5 IN_1
X17-6 IN_2
X17-7 IN_1
X17-8 IN_2
X17-9 IN_1
X17-10 IN_2
X17-11 RESUME
X17-12 RESUME

X18-1 NO OUTPUT
X18-2 NO OUTPUT
X18-3 GND
X18-4 GND

X19-1 MS_G
X19-2 WIND_R
X19-3 WIND_L
X19-4 PUMP2_R
X19-5 PUMP2_L
X19-6 PUMP1_R
X19-7 PUMP1_L
X19-8 ERROR_L
X19-9 ERROR_R
X19-10 GND
X19-11 REDUND
X19-12 RESUME

X20-1 +5V DC
X20-2 MS_G
X20-3 WIND_R
X20-4 WIND_L
X20-5 PUMP2_R
X20-6 PUMP2_L
X20-7 PUMP1_R
X20-8 PUMP1_L
X20-9 ERROR_L
X20-10 ERROR_R
X20-11 GND
X20-12 RESUME

X21-1 +24V-1 DC
X21-2 GND
X21-3 +24V-2 DC
X21-4 +24V-3 DC
X21-5 P1_FB
X21-6 P2_FB
X21-7 RES_ON
X21-8 W_FB
X21-9 MS_FB

X22-1 IN_BOTH_1
X22-2 IN_BOTH_2
X22-3 IN_1
X22-4 IN_2
X22-5 IN_1
X22-6 IN_2
X22-7 IN_1
X22-8 IN_2
X22-9 IN_1
X22-10 IN_2
X22-11 RESUME
X22-12 RESUME

X23-1 NO OUTPUT
X23-2 NO OUTPUT
X23-3 GND
X23-4 GND

X24-1 MS_G
X24-2 WIND_R
X24-3 WIND_L
X24-4 PUMP2_R
X24-5 PUMP2_L
X24-6 PUMP1_R
X24-7 PUMP1_L
X24-8 ERROR_L
X24-9 ERROR_R
X24-10 GND
X24-11 REDUND
X24-12 RESUME

X25-1 +5V DC
X25-2 MS_G
X25-3 WIND_R
X25-4 WIND_L
X25-5 PUMP2_R
X25-6 PUMP2_L
X25-7 PUMP1_R
X25-8 PUMP1_L
X25-9 ERROR_L
X25-10 ERROR_R
X25-11 GND
X25-12 RESUME

X26-1 +24V-1 DC
X26-2 GND
X26-3 +24V-2 DC
X26-4 +24V-3 DC
X26-5 P1_FB
X26-6 P2_FB
X26-7 RES_ON
X26-8 W_FB
X26-9 MS_FB

X27-1 IN_BOTH_1
X27-2 IN_BOTH_2
X27-3 IN_1
X27-4 IN_2
X27-5 IN_1
X27-6 IN_2
X27-7 IN_1
X27-8 IN_2
X27-9 IN_1
X27-10 IN_2
X27-11 RESUME
X27-12 RESUME

X28-1 NO OUTPUT
X28-2 NO OUTPUT
X28-3 GND
X28-4 GND

X29-1 MS_G
X29-2 WIND_R
X29-3 WIND_L
X29-4 PUMP2_R
X29-5 PUMP2_L
X29-6 PUMP1_R
X29-7 PUMP1_L
X29-8 ERROR_L
X29-9 ERROR_R
X29-10 GND
X29-11 REDUND
X29-12 RESUME

X30-1 +5V DC
X30-2 MS_G
X30-3 WIND_R
X30-4 WIND_L
X30-5 PUMP2_R
X30-6 PUMP2_L
X30-7 PUMP1_R
X30-8 PUMP1_L
X30-9 ERROR_L
X30-10 ERROR_R
X30-11 GND
X30-12 RESUME

X31-1 +24V-1 DC
X31-2 GND
X31-3 +24V-2 DC
X31-4 +24V-3 DC
X31-5 P1_FB
X31-6 P2_FB
X31-7 RES_ON
X31-8 W_FB
X31-9 MS_FB

X32-1 IN_BOTH_1
X32-2 IN_BOTH_2
X32-3 IN_1
X32-4 IN_2
X32-5 IN_1
X32-6 IN_2
X32-7 IN_1
X32-8 IN_2
X32-9 IN_1
X32-10 IN_2
X32-11 RESUME
X32-12 RESUME

X33-1 NO OUTPUT
X33-2 NO OUTPUT
X33-3 GND
X33-4 GND

X34-1 MS_G
X34-2 WIND_R
X34-3 WIND_L
X34-4 PUMP2_R
X34-5 PUMP2_L
X34-6 PUMP1_R
X34-7 PUMP1_L
X34-8 ERROR_L
X34-9 ERROR_R
X34-10 GND
X34-11 REDUND
X34-12 RESUME

X35-1 +5V DC
X35-2 MS_G
X35-3 WIND_R
X35-4 WIND_L
X35-5 PUMP2_R
X35-6 PUMP2_L
X35-7 PUMP1_R
X35-8 PUMP1_L
X35-9 ERROR_L
X35-10 ERROR_R
X35-11 GND
X35-12 RESUME

X36-1 +24V-1 DC
X36-2 GND
X36-3 +24V-2 DC
X36-4 +24V-3 DC
X36-5 P1_FB
X36-6 P2_FB
X36-7 RES_ON
X36-8 W_FB
X36-9 MS_FB

X37-1 IN_BOTH_1
X37-2 IN_BOTH_2
X37-3 IN_1
X37-4 IN_2
X37-5 IN_1
X37-6 IN_2
X37-7 IN_1
X37-8 IN_2
X37-9 IN_1
X37-10 IN_2
X37-11 RESUME
X37-12 RESUME

X38-1 NO OUTPUT
X38-2 NO OUTPUT
X38-3 GND
X38-4 GND

X39-1 MS_G
X39-2 WIND_R
X39-3 WIND_L
X39-4 PUMP2_R
X39-5 PUMP2_L
X39-6 PUMP1_R
X39-7 PUMP1_L
X39-8 ERROR_L
X39-9 ERROR_R
X39-10 GND
X39-11 REDUND
X39-12 RESUME

X40-1 +5V DC
X40-2 MS_G
X40-3 WIND_R
X40-4 WIND_L
X40-5 PUMP2_R
X40-6 PUMP2_L
X40-7 PUMP1_R
X40-8 PUMP1_L
X40-9 ERROR_L
X40-10 ERROR_R
X40-11 GND
X40-12 RESUME

X41-1 +24V-1 DC
X41-2 GND
X41-3 +24V-2 DC
X41-4 +24V-3 DC
X41-5 P1_FB
X41-6 P2_FB
X41-7 RES_ON
X41-8 W_FB
X41-9 MS_FB

X42-1 IN_BOTH_1
X42-2 IN_BOTH_2
X42-3 IN_1
X42-4 IN_2
X42-5 IN_1
X42-6 IN_2
X42-7 IN_1
X42-8 IN_2
X42-9 IN_1
X42-10 IN_2
X42-11 RESUME
X42-12 RESUME

X43-1 NO OUTPUT
X43-2 NO OUTPUT
X43-3 GND
X43-4 GND

X44-1 MS_G
X44-2 WIND_R
X44-3 WIND_L
X44-4 PUMP2_R
X44-5 PUMP2_L
X44-6 PUMP1_R
X44-7 PUMP1_L
X44-8 ERROR_L
X44-9 ERROR_R
X44-10 GND
X44-11 REDUND
X44-12 RESUME

X45-1 +5V DC
X45-2 MS_G
X45-3 WIND_R
X45-4 WIND_L
X45-5 PUMP2_R
X45-6 PUMP2_L
X45-7 PUMP1_R
X45-8 PUMP1_L
X45-9 ERROR_L
X45-10 ERROR_R
X45-11 GND
X45-12 RESUME

X46-1 +24V-1 DC
X46-2 GND
X46-3 +24V-2 DC
X46-4 +24V-3 DC
X46-5 P1_FB
X46-6 P2_FB
X46-7 RES_ON
X46-8 W_FB
X46-9 MS_FB

X47-1 IN_BOTH_1
X47-2 IN_BOTH_2
X47-3 IN_1
X47-4 IN_2
X47-5 IN_1
X47-6 IN_2
X47-7 IN_1
X47-8 IN_2
X47-9 IN_1
X47-10 IN_2
X47-11 RESUME
X47-12 RESUME

X48-1 NO OUTPUT
X48-2 NO OUTPUT
X48-3 GND
X48-4 GND

X49-1 MS_G
X49-2 WIND_R
X49-3 WIND_L
X49-4 PUMP2_R
X49-5 PUMP2_L
X49-6 PUMP1_R
X49-7 PUMP1_L
X49-8 ERROR_L
X49-9 ERROR_R
X49-10 GND
X49-11 REDUND
X49-12 RESUME

X50-1 +5V DC
X50-2 MS_G
X50-3 WIND_R
X50-4 WIND_L
X50-5 PUMP2_R
X50-6 PUMP2_L
X50-7 PUMP1_R
X50-8 PUMP1_L
X50-9 ERROR_L
X50-10 ERROR_R
X50-11 GND
X50-12 RESUME

X51-1 +24V-1 DC
X51-2 GND
X51-3 +24V-2 DC
X51-4 +24V-3 DC
X51-5 P1_FB
X51-6 P2_FB
X51-7 RES_ON
X51-8 W_FB
X51-9 MS_FB

X52-1 IN_BOTH_1
X52-2 IN_BOTH_2
X52-3 IN_1
X52-4 IN_2
X52-5 IN_1
X52-6 IN_2
X52-7 IN_1
X52-8 IN_2
X52-9 IN_1
X52-10 IN_2
X52-11 RESUME
X52-12 RESUME

X53-1 NO OUTPUT
X53-2 NO OUTPUT
X53-3 GND
X53-4 GND

X54-1 MS_G
X54-2 WIND_R
X54-3 WIND_L
X54-4 PUMP2_R
X54-5 PUMP2_L
X54-6 PUMP1_R
X54-7 PUMP1_L
X54-8 ERROR_L
X54-9 ERROR_R
X54-10 GND
X54-11 REDUND
X54-12 RESUME

X55-1 +5V DC
X55-2 MS_G
X55-3 WIND_R
X55-4 WIND_L
X55-5 PUMP2_R
X55-6 PUMP2_L
X55-7 PUMP1_R
X55-8 PUMP1_L
X55-9 ERROR_L
X55-10 ERROR_R
X55-11 GND
X55-12 RESUME

X56-1 +24V-1 DC
X56-2 GND
X56-3 +24V-2 DC
X56-4 +24V-3 DC
X56-5 P1_FB
X56-6 P2_FB
X56-7 RES_ON
X56-8 W_FB
X56-9 MS_FB

X57-1 IN_BOTH_1
X57-2 IN_BOTH_2
X57-3 IN_1
X57-4 IN_2
X57-5 IN_1
X57-6 IN_2
X57-7 IN_1
X57-8 IN_2
X57-9 IN_1
X57-10 IN_2
X57-11 RESUME
X57-12 RESUME

X58-1 NO OUTPUT
X58-2 NO OUTPUT
X58-3 GND
X58-4 GND

X59-1 MS_G
X59-2 WIND_R
X59-3 WIND_L
X59-4 PUMP2_R
X59-5 PUMP2_L
X59-6 PUMP1_R
X59-7 PUMP1_L
X59-8 ERROR_L
X59-9 ERROR_R
X59-10 GND
X59-11 REDUND
X59-12 RESUME

X60-1 +5V DC
X60-2 MS_G
X60-3 WIND_R
X60-4 WIND_L
X60-5 PUMP2_R
X60-6 PUMP2_L
X60-7 PUMP1_R
X60-8 PUMP1_L
X60-9 ERROR_L
X60-10 ERROR_R
X60-11 GND
X60-12 RESUME

X61-1 +24V-1 DC
X61-2 GND
X61-3 +24V-2 DC
X61-4 +24V-3 DC
X61-5 P1_FB
X61-6 P2_FB
X61-7 RES_ON
X61-8 W_FB
X61-9 MS_FB

X62-1 IN_BOTH_1
X62-2 IN_BOTH_2
X62-3 IN_1
X62-4 IN_2
X62-5 IN_1
X62-6 IN_2
X62-7 IN_1
X62-8 IN_2
X62-9 IN_1
X62-10 IN_2
X62-11 RESUME
X62-12 RESUME

X63-1 NO OUTPUT
X63-2 NO OUTPUT
X63-3 GND
X63-4 GND

X64-1 MS_G
X64-2 WIND_R
X64-3 WIND_L
X64-4 PUMP2_R
X64-5 PUMP2_L
X64-6 PUMP1_R
X64-7 PUMP1_L
X64-8 ERROR_L
X64-9 ERROR_R
X64-10 GND
X64-11 REDUND
X64-12 RESUME

X65-1 +5V DC
X65-2 MS_G
X65-3 WIND_R
X65-4 WIND_L
X65-5 PUMP2_R
X65-6 PUMP2_L
X65-7 PUMP1_R
X65-8 PUMP1_L
X65-9 ERROR_L
X65-10 ERROR_R
X65-11 GND
X65-12 RESUME

X66-1 +24V-1 DC
X66-2 GND
X66-3 +24V-2 DC
X66-4 +24V-3 DC
X66-5 P1_FB
X66-6 P2_FB
X66-7 RES_ON
X66-8 W_FB
X66-9 MS_FB

X67-1 IN_BOTH_1
X67-2 IN_BOTH_2
X67-3 IN_1
X67-4 IN_2
X67-5 IN_1
X67-6 IN_2
X67-7 IN_1
X67-8 IN_2
X67-9 IN_1
X67-10 IN_2
X67-11 RESUME
X67-12 RESUME

X68-1 NO OUTPUT
X68-2 NO OUTPUT
X68-3 GND
X68-4 GND

X69-1 MS_G
X69-2 WIND_R
X69-3 WIND_L
X69-4 PUMP2_R
X69-5 PUMP2_L
X69-6 PUMP1_R
X69-7 PUMP1_L
X69-8 ERROR_L
X69-9 ERROR_R
X69-10 GND
X69-11 REDUND
X69-12 RESUME

X70-1 +5V DC
X70-2 MS_G
X70-3 WIND_R
X70-4 WIND_L
X70-5 PUMP2_R
X70-6 PUMP2_L
X70-7 PUMP1_R
X70-8 PUMP1_L
X70-9 ERROR_L
X70-10 ERROR_R
X70-11 GND
X70-12 RESUME

X71-1 +24V-1 DC
X71-2 GND
X71-3 +24V-2 DC
X71-4 +24V-3 DC
X71-5 P1_FB
X71-6 P2_FB
X71-7 RES_ON
X71-8 W_FB
X71-9 MS_FB

X72-1 IN_BOTH_1
X72-2 IN_BOTH_2
X72-3 IN_1
X72-4 IN_2
X72-5 IN_1
X72-6 IN_2
X72-7 IN_1
X72-8 IN_2
X72-9 IN_1
X72-10 IN_2
X72-11 RESUME
X72-12 RESUME

X73-1 NO OUTPUT
X73-2 NO OUTPUT
X73-3 GND
X73-4 GND

X74-1 MS_G
X74-2 WIND_R
X74-3 WIND_L
X74-4 PUMP2_R
X74-5 PUMP2_L
X74-6 PUMP1_R
X74-7 PUMP1_L
X74-8 ERROR_L
X74-9 ERROR_R
X74-10 GND
X74-11 REDUND
X74-12 RESUME

X75-1 +5V DC
X75-2 MS_G
X75-3 WIND_R
X75-4 WIND_L
X75-5 PUMP2_R
X75-6 PUMP2_L
X75-7 PUMP1_R
X75-8 PUMP1_L
X75-9 ERROR_L
X75-10 ERROR_R
X75-11 GND
X75-12 RESUME

X76-1 +24V-1 DC
X76-2 GND
X76-3 +24V-2 DC
X76-4 +24V-3 DC
X76-5 P1_FB
X76-6 P2_FB
X76-7 RES_ON
X76-8 W_FB
X76-9 MS_FB

X77-1 IN_BOTH_1
X77-2 IN_BOTH_2
X77-3 IN_1
X77-4 IN_2
X77-5 IN_1
X77-6 IN_2
X77-7 IN_1
X77-8 IN_2
X77-9 IN_1
X77-10 IN_2
X77-11 RESUME
X77-12 RESUME

X78-1 NO OUTPUT
X78-2 NO OUTPUT
X78-3 GND
X78-4 GND

X79-1 MS_G
X79-2 WIND_R
X79-3 WIND_L
X79-4 PUMP2_R
X79-5 PUMP2_L
X79-6 PUMP1_R
X79-7 PUMP1_L
X79-8 ERROR_L
X79-9 ERROR_R
X79-10 GND
X79-11 REDUND
X79-12 RESUME

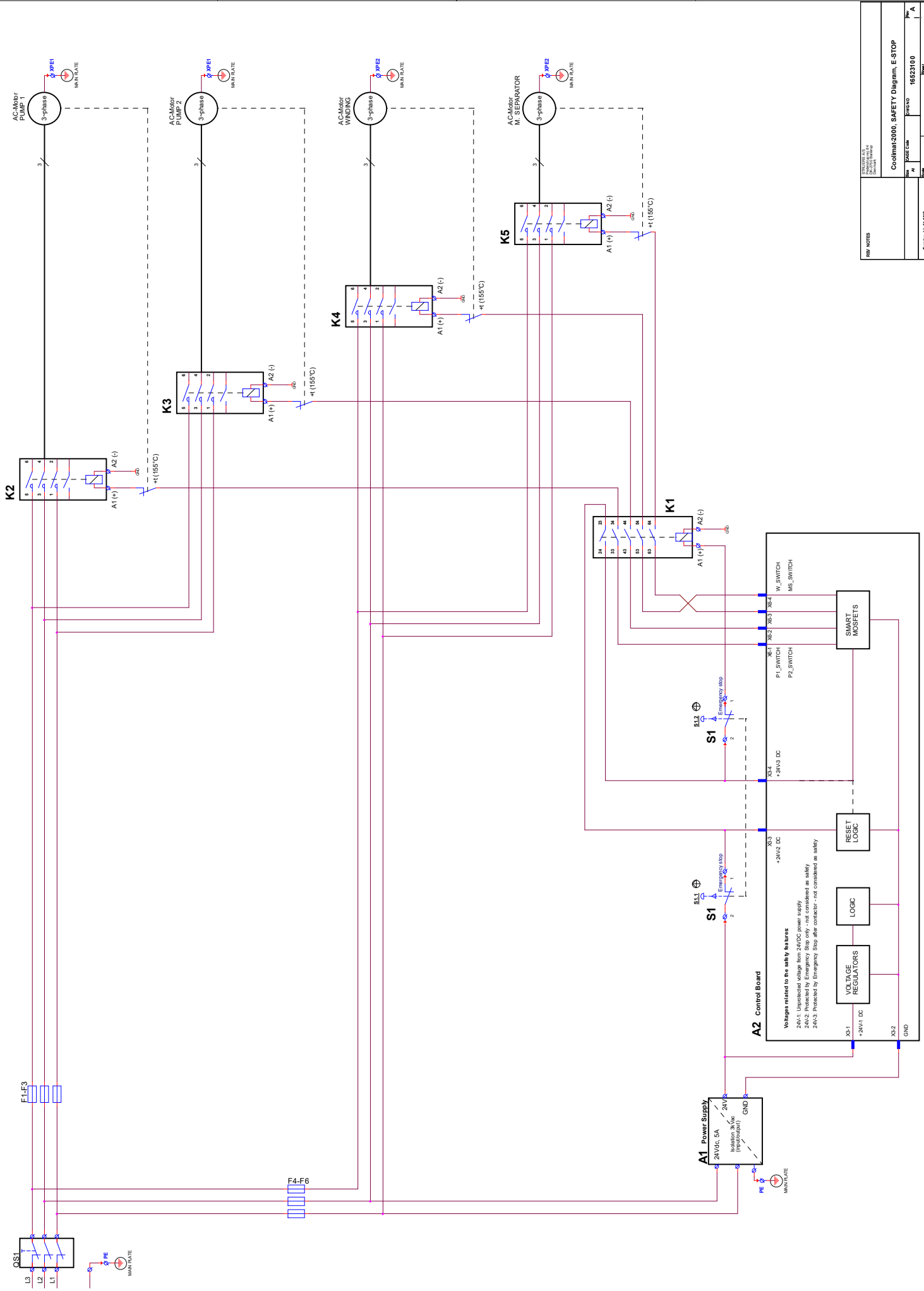
X80-1 +5V DC
X80-2 MS_G
X80-3 WIND_R
X80-4 WIND_L
X80-5 PUMP2_R
X80-6 PUMP2_L
X80-7 PUMP1_R
X80-8 PUMP1_L
X80-9 ERROR_L
X80-10 ERROR_R
X80-11 GND
X80-12 RESUME

X81-1 +24V-1 DC
X81-2 GND
X81-3 +24V-2 DC
X81-4 +24V-3 DC
X81-5 P1_FB
X81-6 P2_FB
X81-7 RES_ON
X81-8 W_FB
X81-9 MS_FB

X82-1 IN_BOTH_1
X82-2 IN_BOTH_2
X82-3 IN_1
X82-4 IN_2
X82-5 IN_1
X82-6 IN_2
X82-7 IN_1
X82-8 IN_2
X82-9 IN_1
X82-10 IN_2
X82-11 RESUME
X82-12 RESUME

X83-1 NO OUTPUT
X83-2 NO OUTPUT
X83-3 GND
X83-4 GND

X84-1 MS_G
X84-2 WIND_R
X84-3 WIND_L
X84-4 PUMP2_R
X84-5 PUMP2_L
X84-6 PUMP1_R
X84-7 PUMP1_L
X84-8 ERROR_L
X84-9 ERROR_R



REV. NOTAS		REVISOR		PROYECTO	
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4		4		4	

INSTRUMENTACIÓN DE SEGURIDAD		REVISOR		PROYECTO	
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Coolimat-2000. SAFETY Diagram. E STOP		REVISOR		PROYECTO	
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Coolimat-2000. SAFETY Diagram. E STOP		REVISOR		PROYECTO	
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Coolimat-2000. SAFETY Diagram. E STOP		REVISOR		PROYECTO	
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Coolimat-2000. SAFETY Diagram. E STOP		REVISOR		PROYECTO	
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Coolimat-2000. SAFETY Diagram. E STOP		REVISOR		PROYECTO	
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Coolimat-2000. SAFETY Diagram. E STOP		REVISOR		PROYECTO	
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Coolimat-2000. SAFETY Diagram. E STOP		REVISOR		PROYECTO	
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4. Legal and Regulatory

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 Instruction Manual, 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.

EN ISO 13849-1:2015

All SRP/CS are limited to a lifetime of 20 years. After expiration of this period, all components must be replaced.

5. Technical Data

Subject		Specification		
		Metric/International		US
200 l Tank	Height	275 mm		10.8"
	Width	800 mm		31.5"
	Depth	1,400 mm		55.1"
	Volume	200 l		52.8 gallons
Band Filter	Height: with filter paper roll without filter paper roll	620 mm 545 mm		24.4" 21.5"
	Width	800 mm		31.5"
	Depth:- (without /with waste bin)	1,625 / 1,825 mm		64" / 71.9"
	Weight	52 kg		114 lbs
Pump	Flow	65 l/min at 1 bar		17 gal/min at 1 bar
	Power	0.75 kW		
	Water outlet	GEKO ¾"		
Electrical specifications (1 pump)		3x220-240V 60 Hz	3x380-400V 50 Hz	3x460-480V 60 Hz
	Power Nominal load	2,300 W	2,300 W	2,300 W
	Power idle	10 W	10 W	10 W
	Current nominal	9.2 A	5.21 A	4.71 A
	Current max	18.4 A	10.42 A	9.42 A
Safety Standards	Designed to comply with a minimum of:	Emergency stop: EN13850:2015, Performance Level C		
Operating Environment	Noise Level ¹	LpA=69.2 dB(A), K=4 dB(A) measured. (In combination with Magnutom-5000 cutting an Aluminium alloy rod Ø110 mm).		
	Surrounding temperature	5 – 40°C / 41 – 104°F		
	Humidity, non-condensing	10 – 85% RH		
Storage Conditions	Surrounding temperature	0 – 60°C / 32 – 140°F		
	Humidity, non-condensing	10 – 85% RH		

¹ Declared Noise emission values in accordance with EN ISO 4871:2009.
Values determined according to noise test code given in EN 11202.

Contents of the Declaration of Conformity

Manufacturer

Struers ApS
Pederstrupvej 84
DK-2750 Ballerup, Denmark
Telephone +45 44 600 800

Herewith declares that

<i>Name:</i>	Coolimat-2000
<i>Function:</i>	Recirculation cooling unit
<i>Type:</i>	065261xx, 065262xx

fulfils all the relevant provisions of the:

**Machinery Directive
2006/42/EC**

according to the following standard(s):
EN ISO 12100:2010, EN ISO 13849-1:2015, EN ISO 13849-2:2012, EN ISO 13850:2015,
EN 60204-1:2006/A1:2009/COR:2010, EN ISO 13857:2008

and is in conformity with the:

**EMC Directive
2014/30/EU**

according to the following standard(s):
EN 61000-6-2:2005/COR:2005, EN 61000-6-3:2007/A1:2011/A1-AC:2012,
EN 61000-3-2:2014, EN 61000-3-3:2013

**RoHS Directive
2011/65/EU**

according to the following standard(s):
EN 50581:2012

Supplementary Information

The equipment complies with the following standards:
NFPA79:2018, FCC 47 CFR part 15, subpart B

The above has been declared according to the global approach, module A.

Authorized to compile the Technical File:

Klavs Tvenge
Director of Business Development
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