

Coolimat-2000 Static Filter



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Revision B

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Instruction Manual

Original Instructions

For:

Coolimat-2000 from sn. 65210009



Table of Contents	Page
Intended use	3
Icons and typography	5
Safety Precaution Sheet.....	7
User's Guide	9
Reference Guide	29
Appendix :	
Pre-Installation Checklist.....	41
Contents of the Declaration of Conformity	47

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 cutting 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 intended 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:

Filtering any type of explosive and/or flammable and/or unstable material from the cutting process. Furthermore, the machine must not be used with consumables (cooling fluids, filter materials) that are not compliant with function and materials of Coolimat-2000.

Model:

Coolimat-2000 SF (Static 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](#).

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
Blue text	indicates a link to another section or webpage
■ Bullets	indicates a necessary work step



Coolimat-2000 SF 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 when handling the pump.
13. The Static Filter on the tank may become heavy and should be handled by 2 persons when replaced.
14. All safety functions must be intact and in working order. Damaged or malfunctioning safety functions must be replaced and/or repaired
15. Keep the area around the tank clean and free from spills.

- 16.** If any malfunction or unusual noise is detected, the equipment should be stopped immediately and technical service called.
- 17.** Struers recommend the use of an exhaust system as the cutting materials may emit harmful gasses or dust
- 18.** In case of fire, alert bystanders, the fire brigade and cut power. Use a powder fire extinguisher. Do not use water.
- 19.** 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

Table of Contents	Page
1. Getting Started	
Device Description	11
Coolimat-2000 Components.....	11
Unpacking Coolimat-2000	12
Placing Coolimat	12
Getting Acquainted with Coolimat-2000	13
Assembling the Coolimat-2000.....	14
Mounting a Filter Tube	14
Water Level Indicator	14
Recirculation Pump	14
Connecting the Control Unit	15
Preparing the Cooling Unit for Use	16
Filling the Tank.....	16
Supplying Power	17
Verifying Correct Installation	17
Connecting Coolimat-2000 to the Cut-off Machine	18
Noise Level	18
2. Operation	
Control Panel	19
Control Panel Indicators/ Functions.....	20
Starting Coolimat-2000.....	21
Power off.....	21
Replacing the Filter Tube of the Static Filter	21
3. Maintenance	
Daily	22
Replacing the Cooling Fluid.....	23
Weekly	24
Monthly	24
Yearly Maintenance	24
Testing Safety Devices.....	24

4. Cautionary Statements

List of Safety Messages in the Manual25

5. Transportation and Storage

Transporting Coolimat-200027

Shipping or Storing Coolimat-2000.....27

6. Disposal

Disposal of Filtration Tubes28

1. Getting Started

Device Description

Coolimat-2000 SF 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 one grinding- or cutting machine.

Cooling fluid is directed into the filter tube which is placed on a metal mesh. Filtered cooling fluid is collected in a tank underneath the filter unit and is then recirculated to the cutting machine using a pump which is inserted in the tank. The cooling fluid must be filled/topped up, correctly mixed and replaced according to specifications. When the filter tube is full, it is easily replaced by the operator.

The Coolimat-2000 does not have start and off buttons. It is controlled from the grinding- or cut-off machine via a control cable (slave function). 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 grinding- or cut-off 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 Filter Unit: Static Filter
- 1 Water level indicator
- 1 Recirculation pump
- 1 Control unit Coolimat-2000
- 1 24 V / CAN control cable

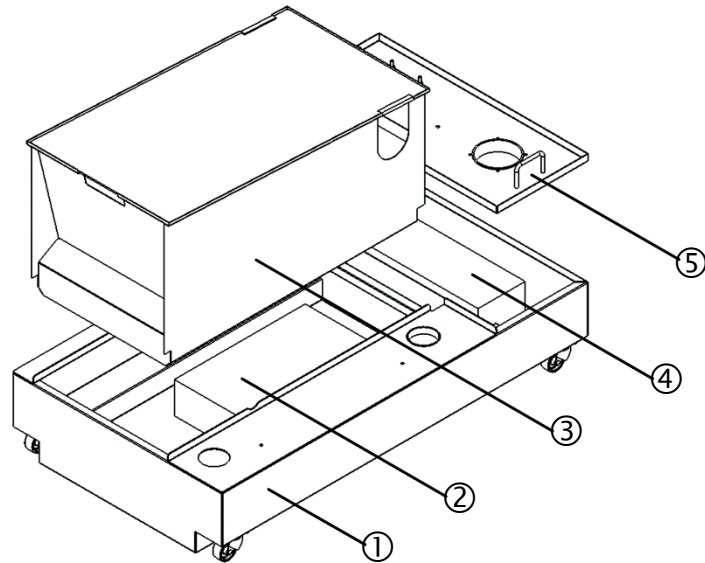
**HINT:**

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

Unpacking Coolimat-2000

Loose parts and the pump are packed in the tank.
The Control unit is packed separately.

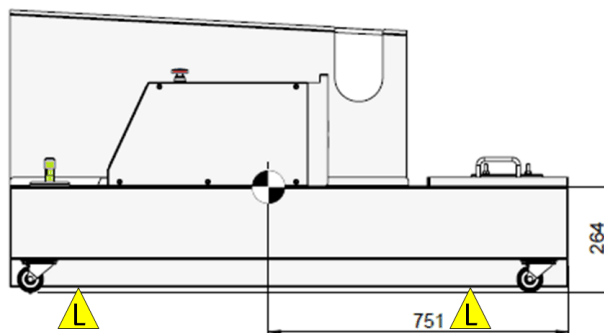
- Remove the plastic wrapping.
- Lift off the filter unit and pump cover, and remove the loose parts from inside the tank.



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

Placing Coolimat

- Lift the tank from the pallet and place on the floor.
 - When using a crane to lift the tank, place the straps parallel to the front and rear of the tank.
 - A lifting bar is recommended to keep the two straps apart below the lifting point.



Coolimat-2000 Static Filter – Lifting points.



CRUSHING HAZARD

Wear safety shoes when handling heavy machinery.

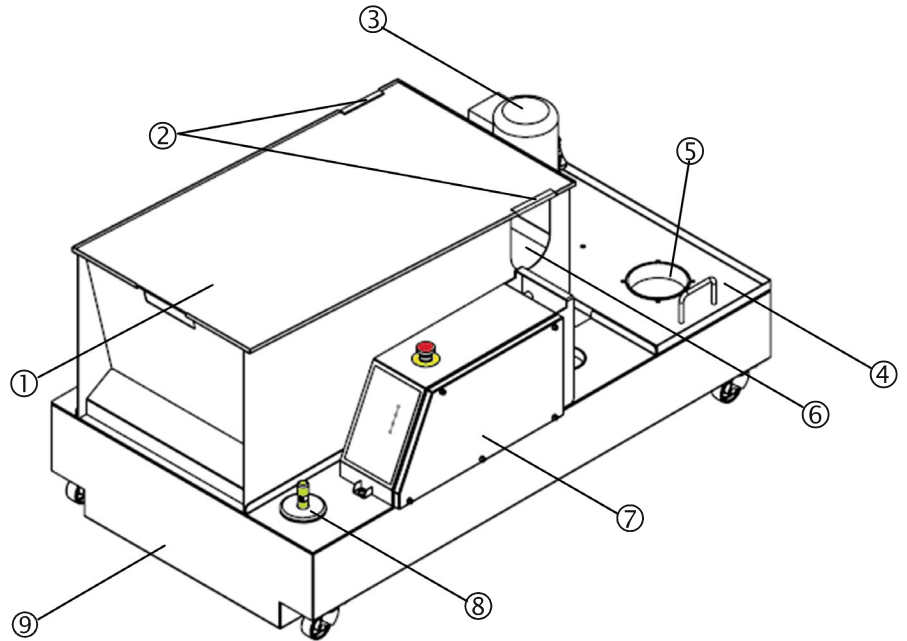
Unpacking the Control unit

- Open the box and carefully remove the control unit.

Getting Acquainted with Coolimat-2000

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

Coolimat-2000 with Static Filter



- | | | | |
|---|-------------------|---|------------------------------------|
| ① | Filter unit cover | ⑥ | Static filter grid |
| ② | Water inlet duct | ⑦ | Control unit |
| ③ | Pump | ⑧ | Water level indicator |
| ④ | Pump cover | ⑨ | Cooling fluid tank (wheel mounted) |
| ⑤ | Pump housing hole | | |

Assembling the Coolimat-2000

- Place the filter unit and the pump cover plate on the tank.
- Mount the control unit to the tank using the attached screws.

Mounting a Filter Tube



Filter tube

The static filter unit is delivered without static filter tubes. The disposable filter tube is a mandatory consumable

- Check that the outlet hose/pipe from the cut-off machine
 - Is not obstructed, and
 - Slopes downwards towards the drain along the whole of its length.
- Insert 5-10 cm of the filter tube through the quick-release clamp.
- Mount onto the other end of the pipe, and secure the quick-release clamp approx. 5 cm from the end of the pipe.
- Straighten the filter and place it on the static filter grid (perforated plate) in the filter unit.
- Close Static filter transparent cover



NOTE:

- ALWAYS use a Filter Tube when wet cutting. Otherwise there is no filtration.
- ALWAYS replace a filled Filter Tube. Otherwise there is a risk of flooding.
- REMOVE the Filter Tube when dry cutting, as sparks may reach the filter unit.
- Do NOT re-use the Filter Tube.

Water Level Indicator

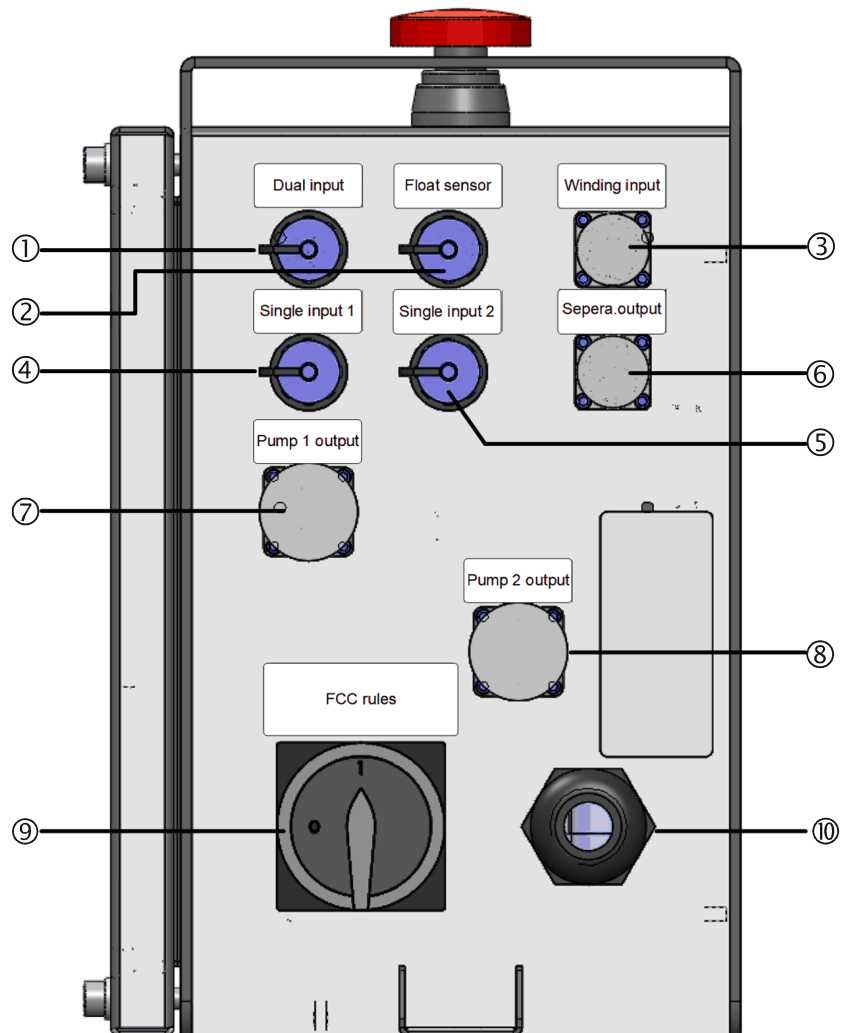


Recirculation Pump

- Place the water level indicator in the hole provided.

- Mount the recirculation pump in the hole provided.
- Connect the pump to the control panel: Single input 1 and Pump 1 output.

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*
- ⑦ Control unit to pump 1
- ⑧ Control unit to pump 2*
- ⑨ Main switch
- ⑩ Power cable

*Not used on Static Filter model

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 the 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.

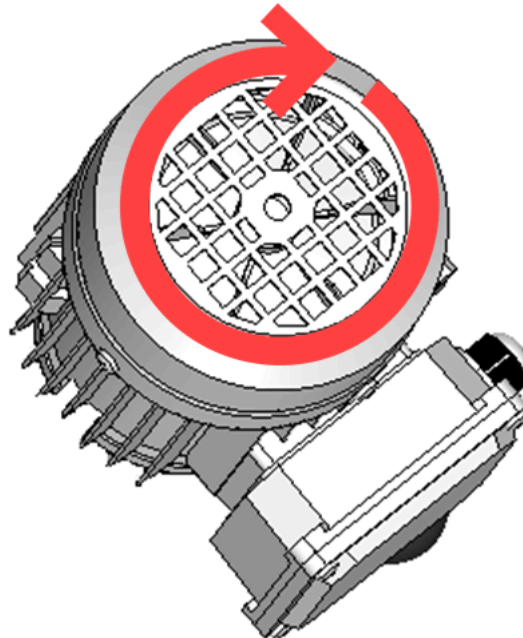
Coolimat-2000 is factory mounted with an electric cable.

- 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.

Noise Level

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

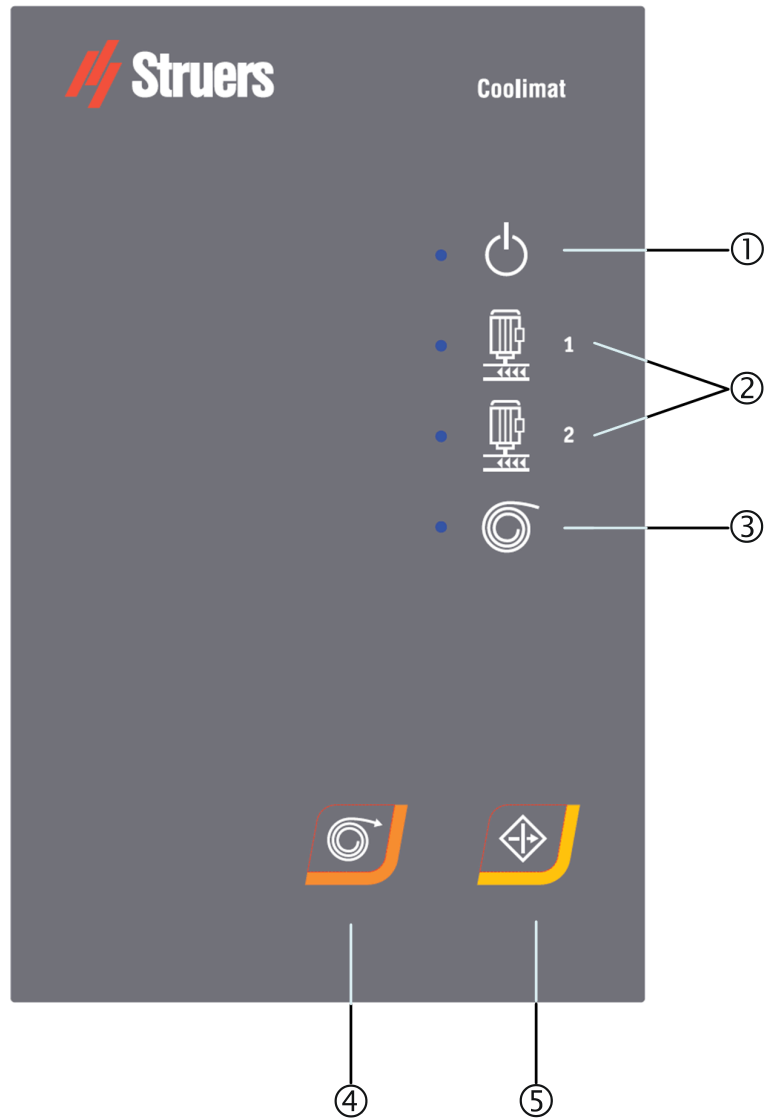


CAUTION







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

- 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 works 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. (see [Checking the Cooling Fluid](#) on page 22 for instructions).

Starting Coolimat-2000

Coolimat-2000 starts automatically when the cutting 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 [28](#) for more information.

Power off

- To disconnect the power supply to Coolimat, turn the main switch off.

Replacing the Filter Tube of the Static Filter

- Turn the main switch off.
- Wait for 10s.
- Remove the Filter Tube from the tank.
- Mount a new Filter Tube on the tank.
- Turn the main switch on.
- Press RESUME to activate the Coolimat-2000.



NOTE:

The filled filter tube is classified as metal waste.

3. Maintenance

Proper maintenance is required to achieve the maximum uptime and operating lifetime of the machine. Maintenance is also important in ensuring your machine's continued safe operation.

The maintenance procedures described in this section must be carried out by skilled or instructed persons.

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 filter tube will be heavy when full and should not be handled without assistance. If possible, leave it to dry out over night. 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 liquid will evaporate and tank level will be reduced over time. This requires the operator to refill or "top up" from time to time.

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 23 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 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.

Filter Tube

- Check and if necessary replace the Filter Tube.
Please refer to [Replacing the Filter Tube of the Static Filter](#) on page 21.

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 28.

NOTE:

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

Use Recirculation Pump

- Empty the cooling unit 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

Use 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.



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 16.



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 tube.

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 and 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 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:

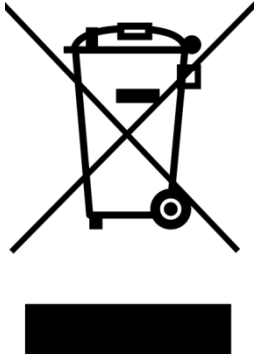
- The facilities required are in place.
- Check the Pre-Installation Checklist.

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.

6. Disposal



Disposal of Filter Tubes

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

Table of Contents	Page
1. System Components and Accessories	30
2. Troubleshooting	
Problem Solving	31
3. Spare Parts and Diagrams	
Safety Related Parts of the Control System (SRP/CS)	32
Spare Parts List	32
Diagrams	33
4. Legal and Regulatory	
FCC Notice	39
EN ISO 13849-1:2015	39
5. Technical Data	40

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.	Reset NOTE: Pressing the Emergency stop on Coolimat-2000 will not stop the cut-off machine.
The water level rises in the machine.	When the filter tube is saturated with swarf or does not filter correctly, the water level in the machine will rise and overflow.	Replace the filter tube. Check that a suitable/compliant filter material is used (Struers Filter Tubes are recommended).
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.
	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
Contactor 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

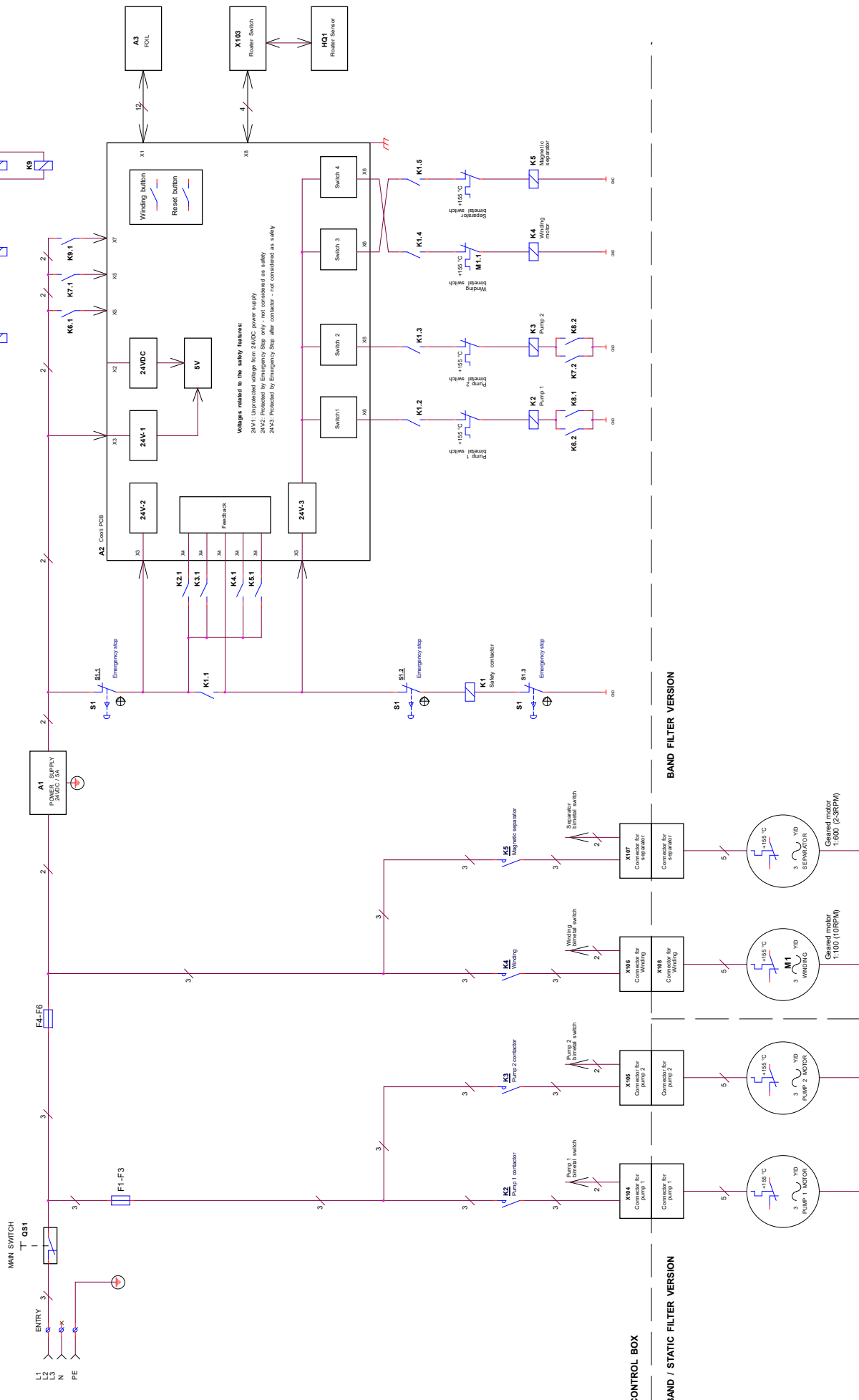
The following is a list of selected wear parts that may need replacement during the lifetime of the machine.
For further information, or to check the availability of other replacement parts, please contact your local Struers Service department. Contact information is available on Struers.com.

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

Coolimat-2000 SF
Instruction Manual

Diagrams

Block diagram Coolimat-2000	16523050
Circuit diagram, Coolimat-2000, 4 pages.....	16523100



Warnings related to the safety features:
 24V1: Upvoltage voltage from 24VDC power supply
 24V2: Protected by Emergency Stop only - not contained as a safety
 24V3: Protected by Emergency Stop after contactor - not considered as a safety

CONTROL BOX

BAND / STATIC FILTER VERSION

BAND FILTER VERSION

PUMP /2 are an accessories

Separator is an accessories

REVISION	DATE	BY	CHK
01	2018-11-13		
Consult with 813 users			
Coilmat2000 - Block Diagram			
Size	Code	Rev. No.	Rev. Date
A	M	1	16/02/2010
Title			Page 1 of 1

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MUST BE EXTERNALLY FIUSED
(see Table 1 below)

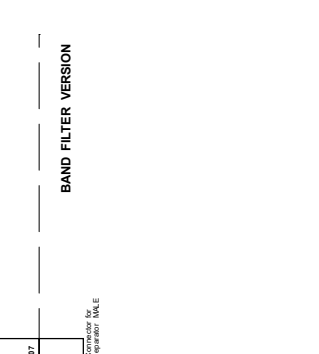
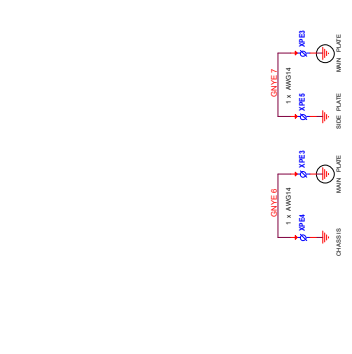
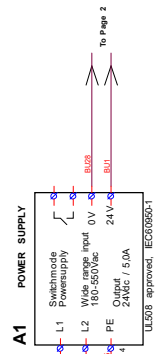
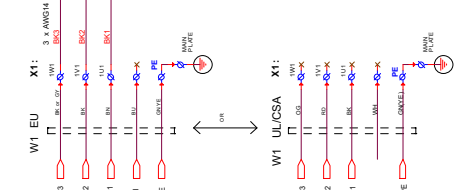


TABLE 1

VOLTAGE / FREQ.	Nbr. unit. (min/max)	F1 + F2 + F3 (line size)	F4 + F5 + F6 (line size)	M1 connection
3 x 380-415V / 50Hz	3 x 30AT	3 x 4AT (AM)	3 x 2AT (AM)	STAR
3 x 230-240V / 60Hz	3 x 30AT	3 x 3AT (CC)	3 x 2AT (CC)	DELTA
3 x 400-480V / 60Hz	3 x 30AT	3 x 3AT (CC)	3 x 2AT (CC)	STAR

Note:
CC = Class-CC characteristic
AM = Class-AM characteristic

SEPARATOR IS AN ACCESSORIES
(see diagram 16523102)

PUMP / MOTOR 1/2 ARE AN ACCESSORIES
(see diagram 16523103)

WINDING MOTOR (GEARED)
M1

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

COILS
X311-2

WINDING MOTOR (GEARED)
M2

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M3

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M4

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M5

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M6

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M7

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M8

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M9

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M10

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M11

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M12

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M13

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M14

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M15

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M16

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M17

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M18

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M19

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M20

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M21

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M22

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

WINDING MOTOR (GEARED)
M23

MAGNETIC SEPARATOR MOTOR (GEARED)
DY

COLOR CODES (IEC797):
BK = BLACK
BRN = BROWN
RD = RED
OR = ORANGE
YL = YELLOW
GRN = GREEN
VT = VIOLETT
WH = WHITE
PK = PINK

REVISIONS

REV.	DATE	DESCRIPTION
1	2016.05.13	Initial release

COORDINATE

Doc No.	16523100
Doc Rev.	01
Doc Type	Diagram

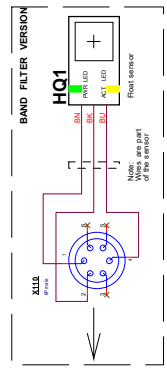
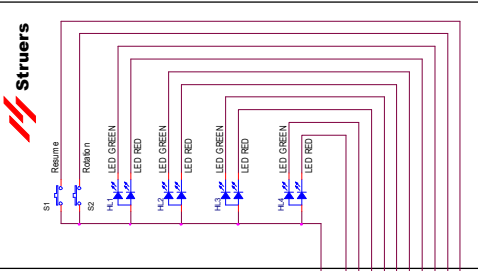
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TABLE 1

VOLTAGE / FREQ.	Nbr. unit. (min/max)	F1 + F2 + F3 (line size)	F4 + F5 + F6 (line size)	M1 connection
3 x 380-415V / 50Hz	3 x 30AT	3 x 4AT (AM)	3 x 2AT (AM)	STAR
3 x 230-240V / 60Hz	3 x 30AT	3 x 3AT (CC)	3 x 2AT (CC)	DELTA
3 x 400-480V / 60Hz	3 x 30AT	3 x 3AT (CC)	3 x 2AT (CC)	STAR

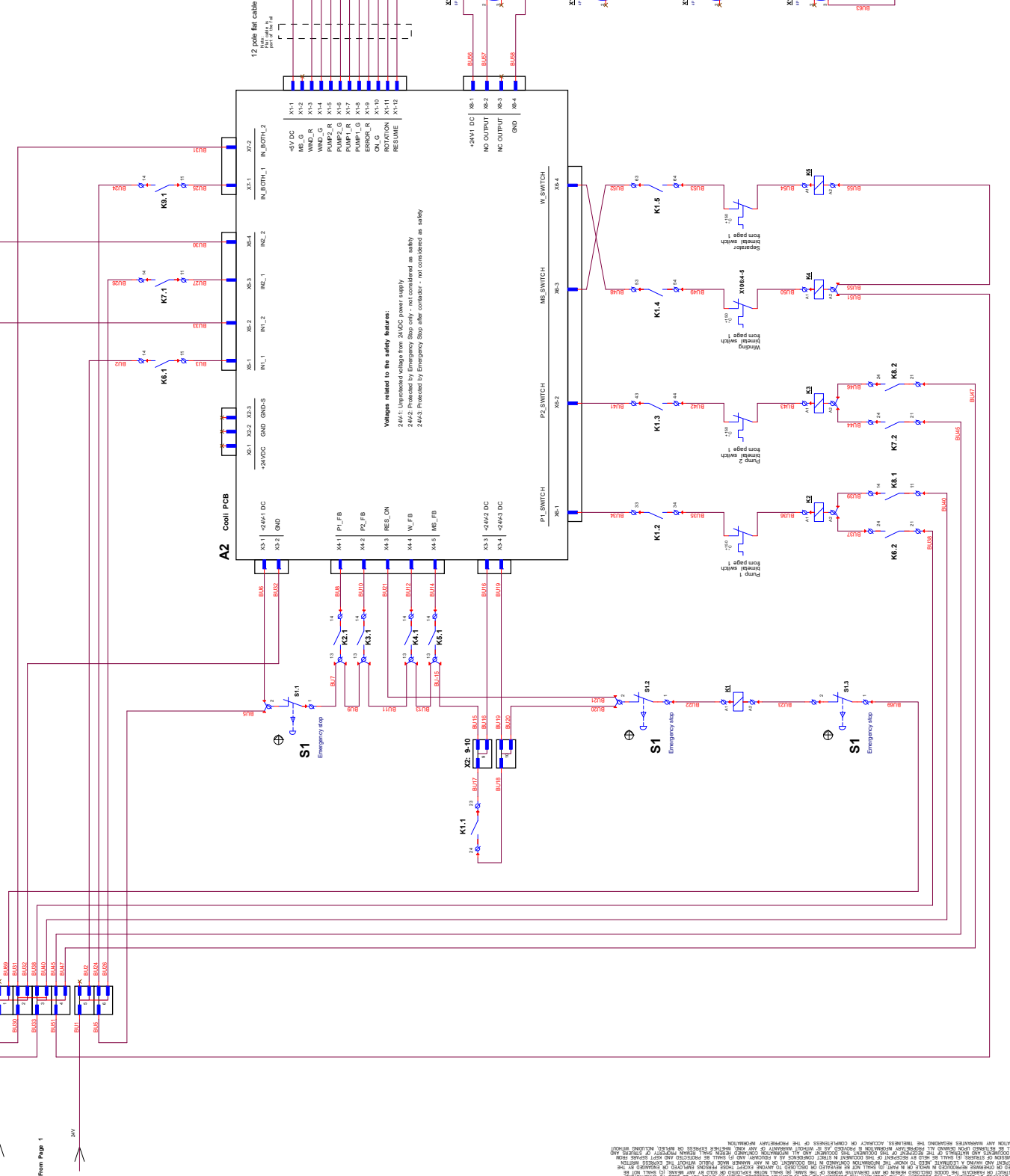
Note:
CC = Class-CC characteristic
AM = Class-AM characteristic

A3 Matrix Keyboard



COLOR CODES (IEC797):
 BK = BLACK
 BK/WH = BLACK/WHITE
 RD = RED
 OG = ORANGE
 YE = YELLOW
 GN = GREEN
 GR = GREY
 VT = VIOLETT
 OY = GREY
 WH = WHITE
 PK = PINK

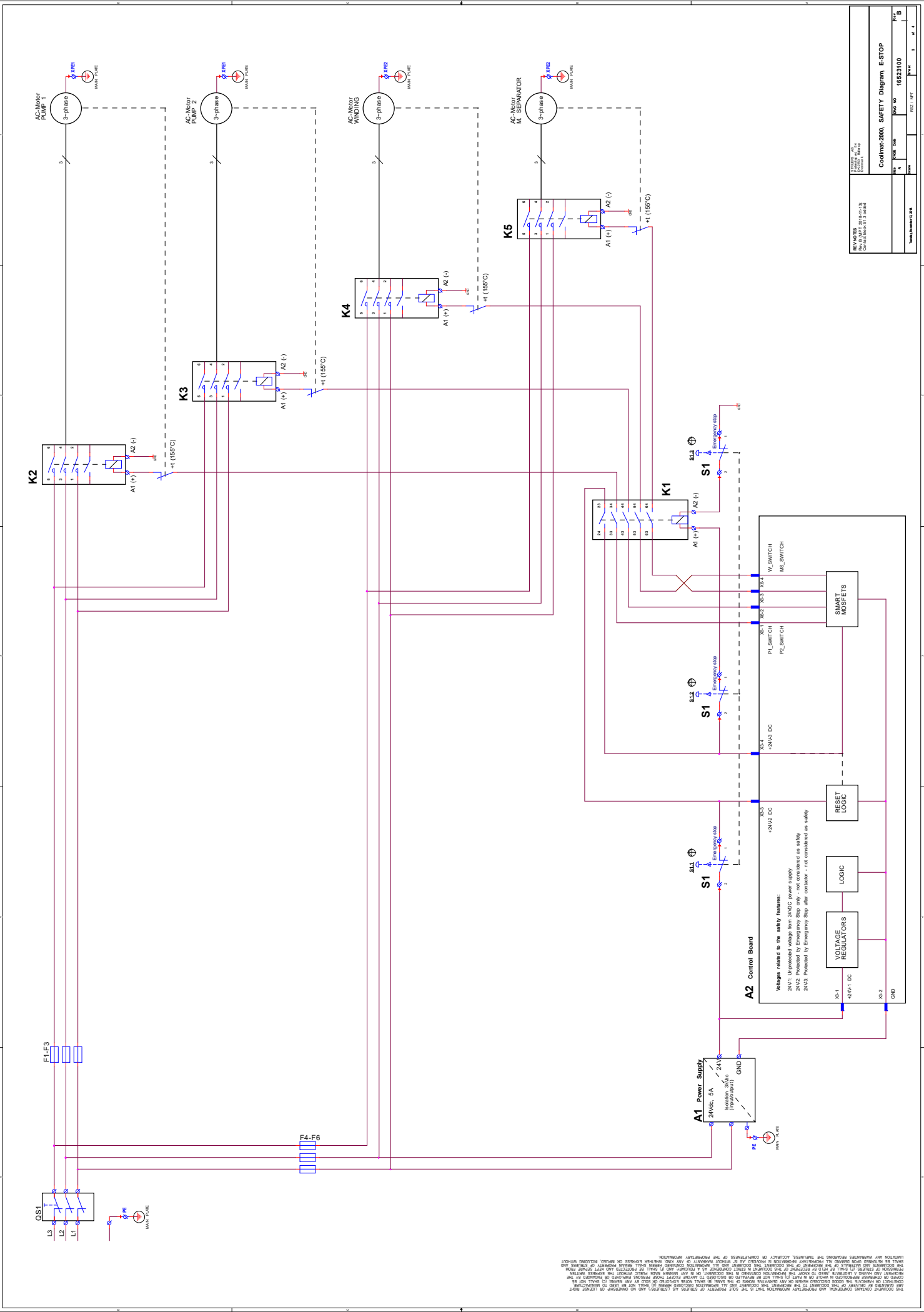
REV	DATE	BY	CHK	APP
1	15.08.2018
Title: Coolimat2000, Circuit Diagram, CONTROL				
NO	REV	DATE	BY	CHK
1	1	15.08.2018
Total: 1/1/1/1/1/1				



Warnings related to the safety features:
 24V1: Unprotected voltage from 24VDC power supply
 24V2: Protected by Emergency Stop only - not considered as safety
 24V3: Protected by Emergency Stop after contactor - not considered as safety

From Page 1

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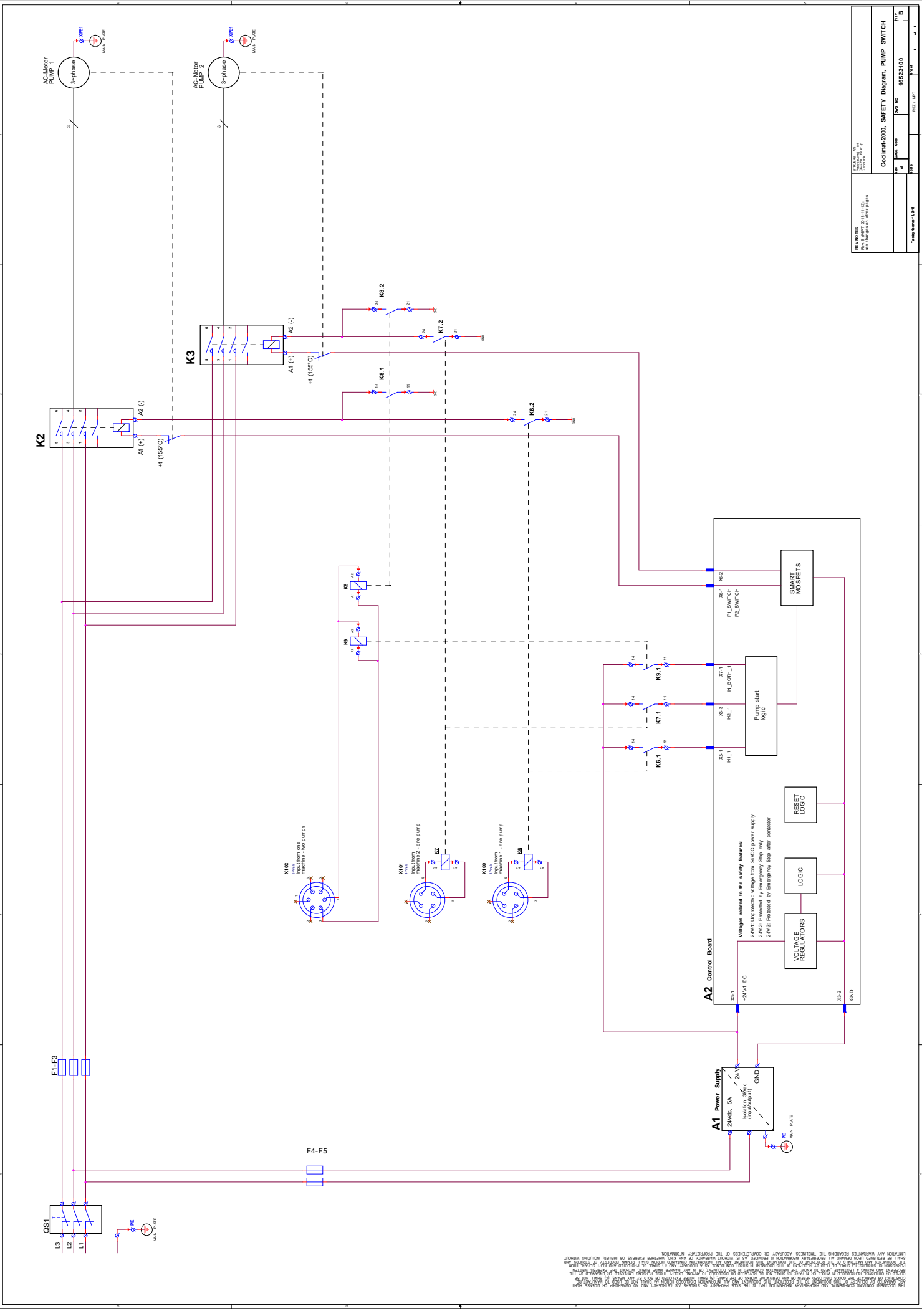


REV. NO. 001		Codimat2000, Safety Diagram E-STOP	
Author	Drawn	Code	16223100
Checked	Rev.	Part	1 of 1
Title: Rev. 001		Date: 16/07/2010	

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Values related to the safety relays:

- 24V1: Interlocked voltage from 24VDC power supply
- 24V2: Protected by Emergency Stop only - not considered as safety
- 24V3: Protected by Emergency Stop after contactor - not considered as safety



Title: SAFETY DIAGRAM - PUMP SWITCH Date: 2016-03-13 Author: [Name] Project: [Project Name]	
Code: [Code] Rev: [Rev]	Date: 2016-03-13 Rev: 1.0
Project: 16523100	
Title: SAFETY DIAGRAM - PUMP SWITCH	
Author: [Name] Date: 2016-03-13	Rev: 1.0

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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
Static Filter	Height	655 mm		25.8"
	Width	800 mm		31.5"
	Depth	1,400 mm		55.1"
	Weight	30kg		123 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)	2,150 W	2,150 W	2,150 W
	Power (idle)	10 W	10 W	10 W
	Current (nominal)	7.8 A	4.29 A	3.87 A
	Current max	15.6 A	8.58 A	7.74 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.

Coolimat-2000, Pre-Installation Checklist

Read the Installation instructions in the Instruction Manual *before* installing the machine.

Installation Requirements

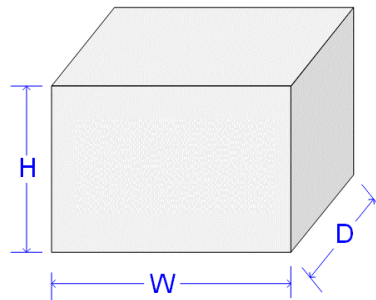
- Crane and straps* or
- 2 persons

Required Accessories and Consumables (ordered separately)
 (Please refer to the [Coolimat Brochure](#) for details of the range available).

- Recirculation pump
- Additive for recirculation cooling unit

**) Crane and straps must be approved to at least twice the weight of the load.*

Crating Specifications



Band Filter

H	80 cm / 31.5"
W	120 cm / 47.3"
D	200 cm / 78.8"
Weight	130 kg / 287 lbs

Static Filter

H	83 cm / 32.7"
W	120cm / 47.3"
D	200cm / 78.8"
Weight	110 kg / 243 lbs

Location

The machine must be placed close to the power supply.
 Place on a stable and level floor.



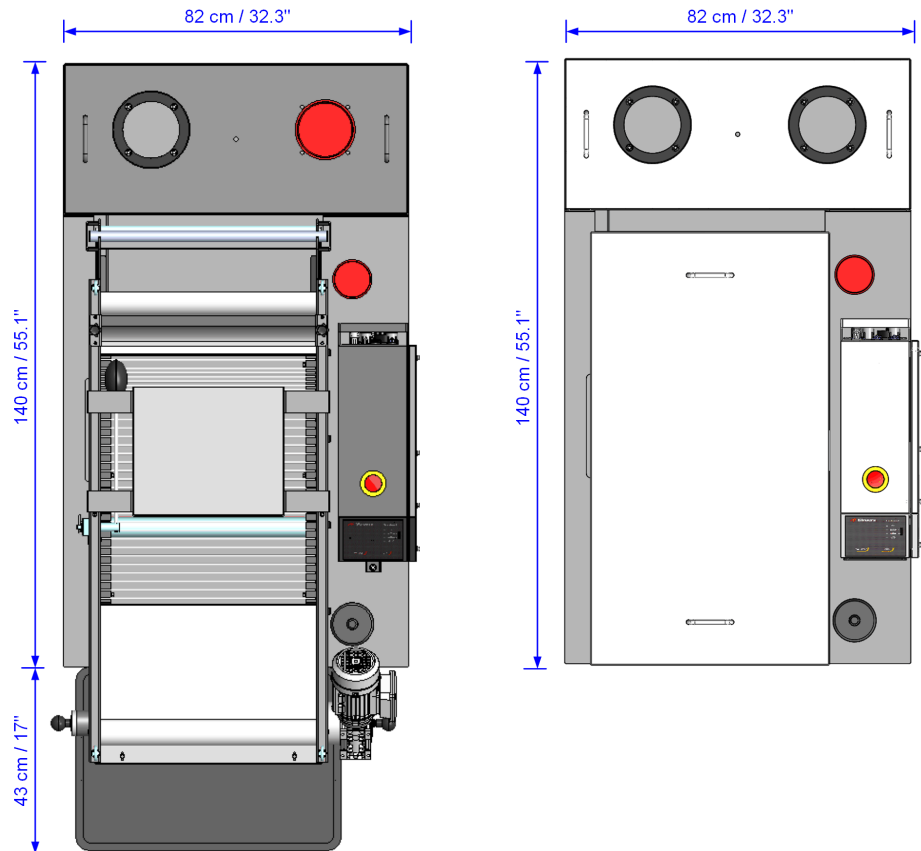
NOTE:

The cooling unit will be very heavy when full.

- Before filling the tank, check that the cooling unit is in position. Or,
- Ensure that the tank is directly in front of its final position so that it is ready to be pushed into position without being moved to the left or right.

Dimensions

Footprint



Coolimat-2000 Band Filter w. waste basket.

Coolimat-2000 Static Filter.

Height

Band Filter	- with filter paper roll	64 cm / 25.2"
	- without filter paper roll	56 cm / 22.0"
Static Filter	- with cover	72 cm / 28.3"

Recommended Space

Front: Recommended space at the front: 100 cm / 40".

Rear: The machine may be placed against a wall.

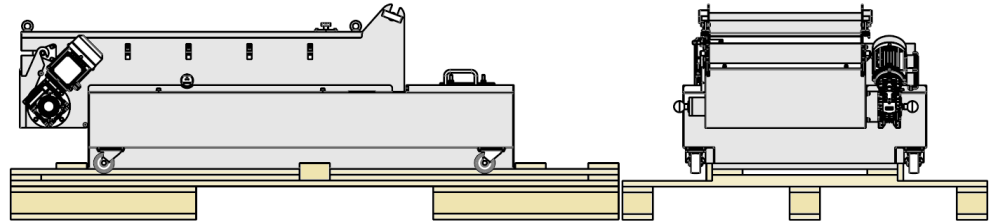
Side:

- Check there is at least 2 cm / 7" between Coolimat-2000 and the cut-off machine to ensure that no hoses or tubes are constricted.

Unpacking

Coolimat-2000 is delivered on a pallet and fastened with cable ties.

- Remove the box.
- Remove the plastic wrapping.
- Save the packing crate and pallet for future use.



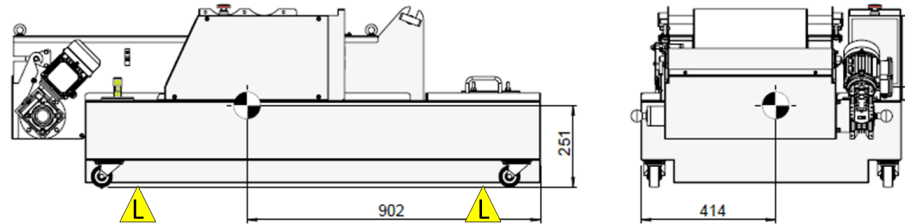
Lifting

Weight

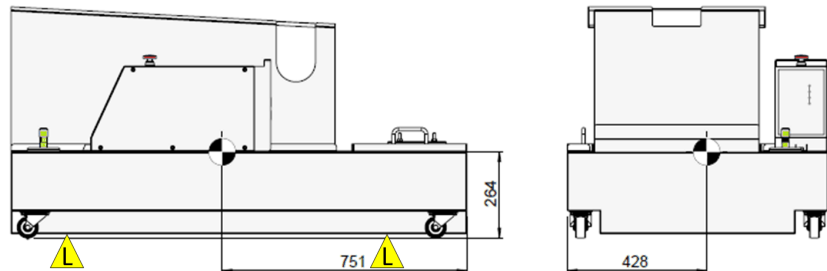
Coolimat-2000 with Band Filter: **87 Kg/ 192 lbs**

Coolimat-2000 with Static Filter: **56 Kg/ 123 lbs**

Lifting Points and Centre of Gravity



Coolimat-2000 Band Filter – lifting points (L).



Coolimat-2000 Static Filter – lifting points (L).

With a crane

- Place the two lifting straps* under the machine.
 - 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.

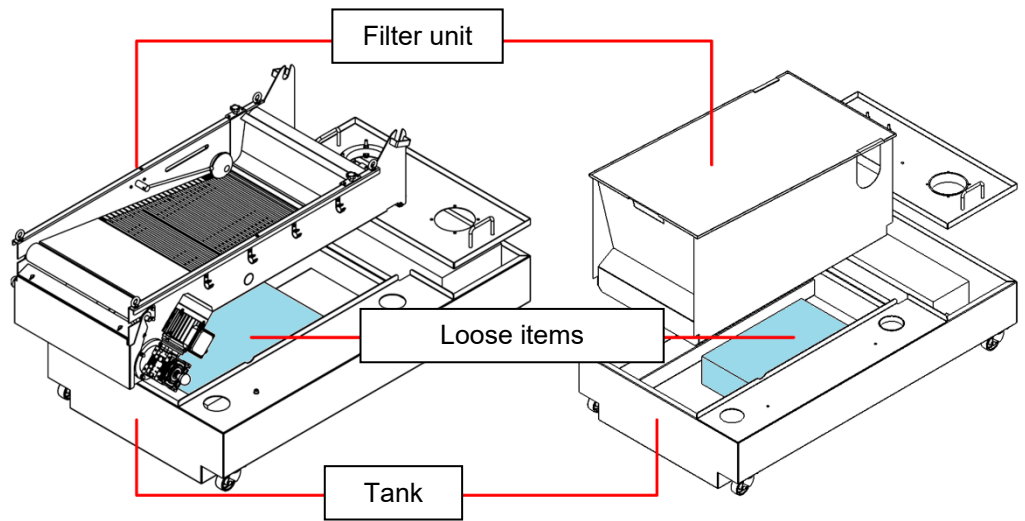


CRUSHING HAZARD

Wear safety shoes when handling heavy machinery.

2 persons

- Lift off the filter unit and remove the loose items from inside the tank



Power Supply

The machine is shipped with an 1.8 m power cable.

Electrical Data

<i>Voltage/frequency</i>	<i>Max. Load</i>
3x380-415V, 50Hz	6A
3x220-240V, 60Hz	
3x460-480V, 60Hz	

Safety Specifications

Stop Mechanisms

	Designed to comply with a minimum of
Emergency stop	EN60204-1, Stop Category 1 EN13850:2015, Performance Level C

Ambient Conditions



5 – 40 °C / 40 – 105 °F (operation)
0 – 60 °C / 32 – 140 °F (storage)



10 – 85 RH % (operation)
10 – 85 RH % (storage)

Water Supply

Required Option

Coolimat-2000's recirculation tank is filled with water from a main supply (no hose is supplied).

Water Inlet Duct: 115mm / 4.5" dia.

Water outlet - Drain

Required Option

Emptying of the recirculation tank is carried out using the recirculation pump or by using an external dredge pump (not supplied).

Cooling fluid must be disposed of in compliance with local safety regulations.



NOTE:

The cooling fluid will contain additive and cutting swarf and **may NOT** be disposed of into a main drain.

Compressed Air

Required Option

Not required.

Exhaust

Required Option

It is recommended to establish a suction point to ventilation above any Cooling System to extract heat and potentially harmful components from the cooling fluid. For more information, please refer to the material safety data sheet of the cooling fluid.

Accessories & Consumables

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

Accessories

Required

Large pump. Capacity of 65 l/min at 1 bar (17 gallons/min).

Additional Recirculation Pump

A second Pump can be mounted to supply cooling fluid to 2 machines. When purchased from Struers, the pump is equipped with a cable, that can be plugged directly into the rear of the control box

Consumables

Required

Additive for recirculation cooling unit, to prevent corrosion and improve cutting results.

Struers cooling fluid *Corrozip-LF* is recommended.

Filter paper is required. It is recommended to use a roll of filter paper rolls with a tensile strength of 20N and a length of 100 meters. Struers art. no. 06526901

Recommended

For easy cleaning, use a plastic inlay (liner) to collect surplus waste material.

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.

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 13857:2008
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

and is in conformity with the:

**EMC Directive
2014/30/EU**

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

**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
Struers ApS
Pederstrupvej 84
DK-2750 Ballerup, Denmark

Date of Issue: 2018.08.31



Pederstrupvej 84
DK-2750 Ballerup
Denmark