

Cooling unit pumps

Instruction Manual

Original Instructions



Doc. no.: 15767026-02_A_en-us
Date of release: 2022.12.01

Copyright

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

All rights reserved. © Struers ApS 2022.12.01.

Table of Contents

1	About this manual	4
2	Safety	4
2.1	Intended use	4
2.2	Device description	4
2.3	Cooling unit pumps safety precautions	5
2.3.1	Read carefully before use	5
2.4	Safety messages	6
2.5	Safety messages in this manual	7
3	Transport and storage	8
3.1	Transport	8
3.2	Long-term storage or shipping	8
4	Installation	9
4.1	Unpack the machine	9
4.2	Check the packing list	9
5	Power supply	9
6	The recirculation pump	10
7	Maintenance and service	10
7.1	General cleaning	11
7.2	Service and repair	11
7.3	Disposal	12
8	Technical data	13
8.1	Technical data	13
8.2	Legal and regulatory information	13
9	Manufacturer	14
	Declaration of Incorporation of Partly Completed Machinery	15

1 About this manual

Instruction Manuals

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



Note

Read the instruction manual carefully before use.



Note

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

2 Safety

2.1 Intended use

The pumps are intended for use with Struers cooling systems for recirculation of cooling fluid. The machine is designed for use with Struers cooling systems.

The machine is for use in a professional working environment (e.g. a materialographic laboratory). The machine must be operated only by skilled/trained personnel.

Do not use the machine for the following

Pumping of 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 (cutting fluids) that are not compliant with function and materials of the pump.

Model

Cooling unit pumps

2.2 Device description

The pump is a machine used for recirculation of cooling fluid.

The pump is controlled via a Cooli-1 control box, which activates and stops the pump. This means that it starts and stops based on the power output from the Cooli-1 control box, and is on stand-by when circulation is not required.

If the Emergency stop is activated on the main machine, the Cooli-1 pump also stops.

2.3 Cooling unit pumps safety precautions



2.3.1 **Read carefully before use**

1. Ignoring this information and mishandling of the equipment can lead to severe bodily injuries and material damage.
2. The machine must be installed in compliance with local safety regulations. All functions on the machine and any connected equipment must be in working order.
3. The operator must read the safety precautions and Instruction Manual, as well as relevant sections of the manuals for any connected equipment and accessories.
4. Only use original Struers consumables as this ensures maximum safety and prolongs the machine's lifetime.
5. When working with cooling fluid always observe the safety regulations for handling, mixing, filling, emptying and disposing of the cooling fluid additive. Never use flammable cooling fluid. Note that the cooling fluid can be hot and must therefore be handled with care.
6. Always wear protective gloves and safety goggles when you clean and fill up the tank.
7. The recirculation pump must be disconnected from the electrical power supply before it can be removed from the cooling unit.
8. All safety functions must be intact and in working order. If they are not, they must be replaced or repaired before the machine can be used.
9. Always use the handle to close the cover.
10. Do not insert your hands through the openings into the water inlet ducts on the cover.
11. Cooling fluid can be slippery - therefore always keep the area around the tank clean.
12. If you observe malfunctions or hear unusual noises, switch off the machine and call technical service.
13. In case of fire, alert bystanders and the fire brigade. Disconnect the electrical power supply. Use a powder fire extinguisher. Do not use water.
14. Always switch off the electrical power supply and remove the plug or power cable before dismantling the machine or installing additional components.

15. The machine must be disconnected from the electrical power supply before any service.
16. Struers equipment must only be used in connection with and as described in the Instruction Manual supplied with the equipment.
17. If the equipment is subjected to misuse, incorrect installation, alteration, neglect, accident or incorrect repair, Struers will accept no responsibility for damage to the user or the equipment.
18. Dismantling of any part of the equipment, during service or repair, should always be performed by a qualified technician (electromechanical, electronic, mechanical, pneumatic, etc.).

2.4 Safety messages

Struers uses the following signs to indicate potential hazards.



ELECTRICAL HAZARD

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



DANGER

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



WARNING

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



CAUTION

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



CRUSHING HAZARD

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



HEAT HAZARD

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

General messages



Note

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



Hint

This sign indicates that additional information and hints are available.

2.5

Safety messages in this manual



WARNING

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



WARNING

Switch off the machine, disconnect the electrical power cable before you dismantle the machine or install additional components.



ELECTRICAL HAZARD

Switch off the electrical power supply before installing electrical equipment.

The machine must be earthed (grounded).

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

Incorrect voltage can damage the electrical circuit.



WARNING

Do not use the machine with defective safety devices.
Contact Struers Service.



WARNING

Safety critical components must be replaced after a maximum lifetime of 20 years.

Contact Struers Service.

3 Transport and storage

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

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

3.1 Transport

- Clean and dry the pump.
- Disconnect the pump from the control unit.
- Disconnect the water inlet and the water outlet.

3.2 Long-term storage or shipping



Note

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

- Disconnect the control unit from the electrical power supply.
- Disconnect the water inlet and the water outlet.
- Clean the machine and all accessories thoroughly.
- Remove the control unit, the pump and the water level gauge. Place the items in a box.
- Place the box in the tank.
- Build a case around the machine.
- To keep the machine dry, plastic-wrap the machine and place a bag of desiccant (silica gel) in the case.
- Place a lid on the case.

At the new location

At the new location, make sure that the facilities required are in place.

4 Installation

4.1 Unpack the machine



Note

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

1. Remove the transport case.
2. Remove the plastic wrapping.
3. Lift off the pump.

4.2 Check the packing list

Optional accessories may be included in the packing box.

The packing box contains the following items:

Pcs.	Description
1	Recirculation pump
1	Gekka connection with pressurized hose
1	Instruction Manual set

The pump is available in the following variants:

Small pump	05766116, 05766123, 05766216, 05766122, 05766124
Large pump	05766016, 05766023, 05766022, 05766024
Large pump (long)	05765016, 05765023, 05765022, 05765024

5 Power supply



ELECTRICAL HAZARD

The machine must be earthed (grounded).

Switch off the electrical power supply before installing electrical equipment.

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

Incorrect voltage can damage the electrical circuit.

Power socket

The electrical power supply socket must be easy to access.



Note

The equipment is shipped with 2 types of electrical power cables. If the plug supplied on these cables is not approved in your country, the plug must be replaced with an approved plug.

6 The recirculation pump

- Mount the recirculation pump on the connection for the pump.

Adapter ring

- A small pump: use the adapter ring to decrease the diameter of the connection.
- A large pump: remove the adapter ring to increase the diameter of the connection.

Magnetic filter

- Mount the magnetic filter in the hole. See the section "Assembling the cooling unit" in the Cooli System Instruction Manual.

Water level gauge

- Mount the water level indicator in the hole. See the section "Assembling the cooling unit" in the Cooli System Instruction Manual.

7 Maintenance and service

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

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

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

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

Technical questions and spare parts

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

7.1 General cleaning

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



Note

Disconnect the machine from the power supply before cleaning it.

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

- Clean the machine and all accessories thoroughly.

7.2 Service and repair

We recommend that a regular service check be carried out yearly or after every 1500 hours of use.

When the machine is started up, the display shows information about total operation time and the machines service information.

After 1500 hours of operation time, the display will show a message reminding the user that a service check should be scheduled.



Note

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

Contact Struers Service.

Service check

We offer a range of comprehensive maintenance plans to suit the requirements of our customers. This range of services is called ServiceGuard.

The maintenance plans include equipment inspection, replacement of wear parts, adjustments/calibration for optimal operation, and a final functional test.

7.3 Disposal



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

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

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



Note

Dispose of swarf according to the current local safety regulations for handling and disposal of swarf and cooling fluid additive.



Note

The cooling fluid contains 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.

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

Always bear in mind which metals you cut and the amount of swarf the cutting produces. Some combinations of metals can result in exothermic reactions if a large amount of swarf is collected during cutting.

Examples:

Aluminum and Copper

Zinc and Copper

8 Technical data

8.1 Technical data

Electrical data					
Small pump	1 x 100 V/50 Hz	1 x 100-120 V/60 Hz	1 x 100-120 V/50/60 Hz	1 x 220-240 V/50 Hz	1 x 220-240 V/60 Hz
Power consumption	120 W	120 W	120 W	90 W	90 W
Current, nominal load	1.5 A	1.7 A	1.8 A	0.7 A	0.87 A
Current, maximum load	3 A	3.4 A	3.6 A	1.4 A	1.74 A

Electrical data				
Large pump/large pump, long	1 x 100 V/50 Hz	1 x 100-120 V/60 Hz	1 x 220-240 V/50 Hz	1 x 220-240 V/60 Hz
Power consumption	550 W	550 W	550 W	550 W
Current, nominal load	8.6 A	8.5 A	4.6 A	4.5 A
Current, maximum load	17.2 A	17 A	9.2 A	9 A

8.2 Legal and regulatory information

FCC notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio

frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

9 Manufacturer

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

Responsibility of the manufacturer

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

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

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

Struers ApS
Pederstrupvej 84
DK-2750 Ballerup, Denmark

Declaration of Incorporation of Partly Completed Machinery

Manufacturer	Struers ApS • Pederstrupvej 84 • DK-2750 Ballerup • Denmark
Name	Cooling unit pumps
Model	N/A
Function	Circulation of cooling water through a filter, magnetic or static or both
Type	N/A
Cat. no.	05766116 05766123 05766216 05766122 05766124, 05766016 05766023 05766022 05766024, 05765016 05765023 05765022 05765024 In combination with: 05761116, 05766906 05766905 05766929 05766930 05766931

The above listed machinery is only intended to be used with:

And shall not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with this regulation, where appropriate.

Serial no.

Struers machinery, cooling units and consumables



Module H, according to global approach

EU

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

2006/42/EC	EN 60204-1:2018
2011/65/EU	EN 63000:2018
Additional standards	NFPA 79, FCC 47 CFR Part 15 Subpart B

Authorized to compile technical file/
Authorized signatory

Date: [Release date]

en For translations see
bg За преводи вижте
cs Překlady viz
da Se oversættelser på
de Übersetzungen finden Sie unter
el Για μεταφράσεις, ανατρέξτε στη διεύθυνση
es Para ver las traducciones consulte
et Tõlked leiata aadressilt
fi Katso käännökset osoitteesta
fr Pour les traductions, voir
hr Za prijevode idite na
hu A fordítások itt érhetők el
it Per le traduzioni consultare
ja 翻訳については、
lt Vertimai patalpinti
lv Tulkojumus skatīt
nl Voor vertalingen zie
no For oversettelser se
pl Aby znaleźć tłumaczenia, sprawdź
pt Consulte as traduções disponíveis em
ro Pentru traduceri, consultați
se För översättningar besök
sk Preklady sú dostupné na stránke
sl Za prevode si oglejte
tr Çeviriler için bkz
zh 翻译见

www.struers.com/Library