

# Struers



# Cooling Units

Instruction Manual

Manual No.: 15767001

Date of Release 2017.06.23



# Struers Cooling Units Instruction Manual

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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.

**Service Manuals:** Struers Service Manual may only be used by a trained technician authorised by Struers. The Service Manual may only be used in connection with Struers equipment covered by the Service 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.

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## **Struers Cooling Units Safety Precaution Sheet**

### **To be read carefully before use**

1. The unit must be installed in compliance with local safety regulations.
2. To achieve maximum safety and lifetime of the machine, use only original Struers consumables.
3. Observe the current safety regulations for handling, mixing, filling, emptying and disposal of the additive for cooling fluid.  
Do not use flammable cooling fluid.  
**Take care; the cooling fluid may be hot!**
4. Use of gloves and safety goggles is recommended when filling and cleaning the tank.
5. The machine must be disconnected from the mains prior to any service.
6. The recirculation pump must be disconnected from the power supply prior to removal from the cooling unit.
7. All safety functions must be intact and in working order. Damaged or malfunctioning safety functions must be replaced and/ or repaired
8. Keep the area around the tank clean and free from spills.  
Risk of falling
9. Take care when closing the cover – use the handle.  
Do not insert hands through the openings into the water inlet ducts on the cover.
10. If any malfunction or unusual noise is detected, the apparatus should be stopped immediately and technical service called.

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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.).

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## **Disposal**

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.

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## **1. Getting Started**

### **Struers Cooling Units Components**

The cooling unit will be delivered as a number of separate components, which will need to be assembled before use.

#### Main components

- 1 Wheel-mounted cooling unit tank
- 1 Recirculation pump
- 1 Filter Bag (with adaptor plate for 100 l and 150 l tanks)
- 1 Control unit
- 1 24 V / CAN control cable
- 2 Mains cables
- 1 Cable connection box

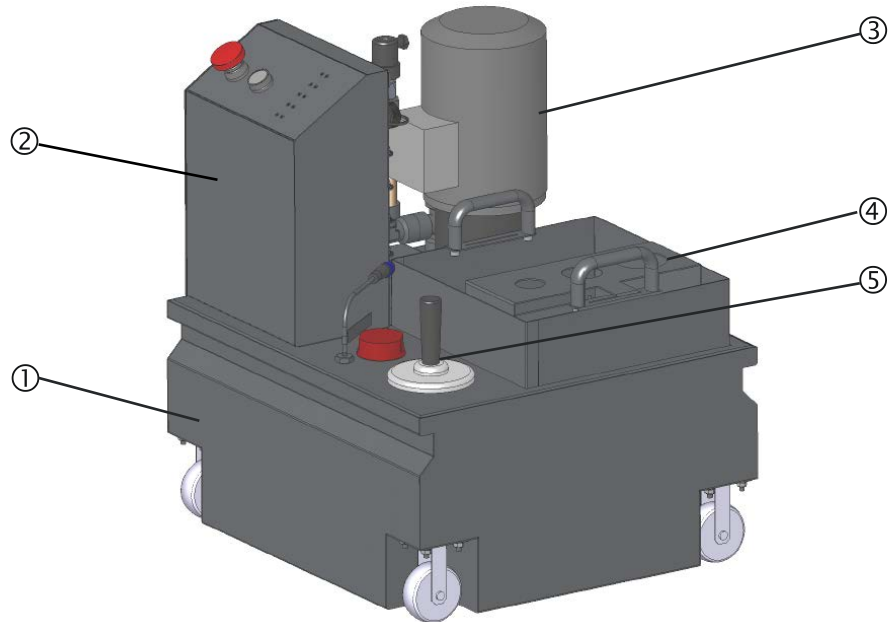
#### Optional Components (to be mounted on the tank)

Magnetic filter  
Water level indicator

**Getting Acquainted with  
Struers Cooling Unit**

Take a moment to familiarize yourself with the location and names of some of the cooling unit's components.

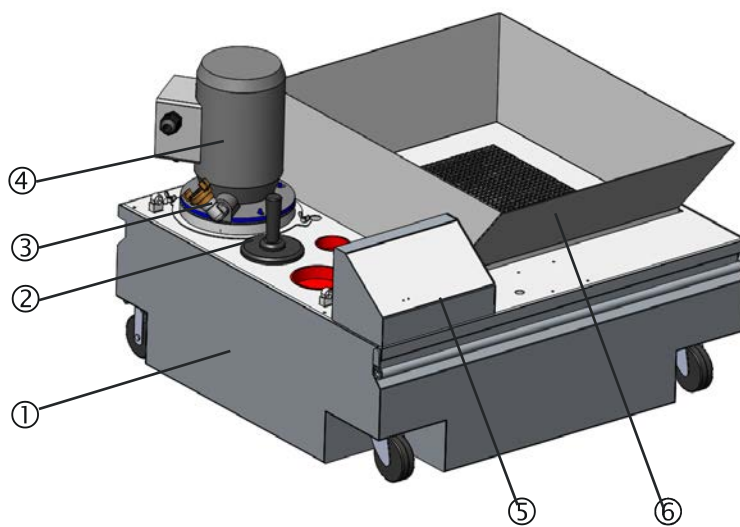
50 l Tank



- ① Wheel mounted tank
- ② Control unit
- ③ Recirculation pump
- ④ Filter Bag
- ⑤ Magnetic filter

*Struers Cooling Units  
Instruction Manual*

100 l Tank

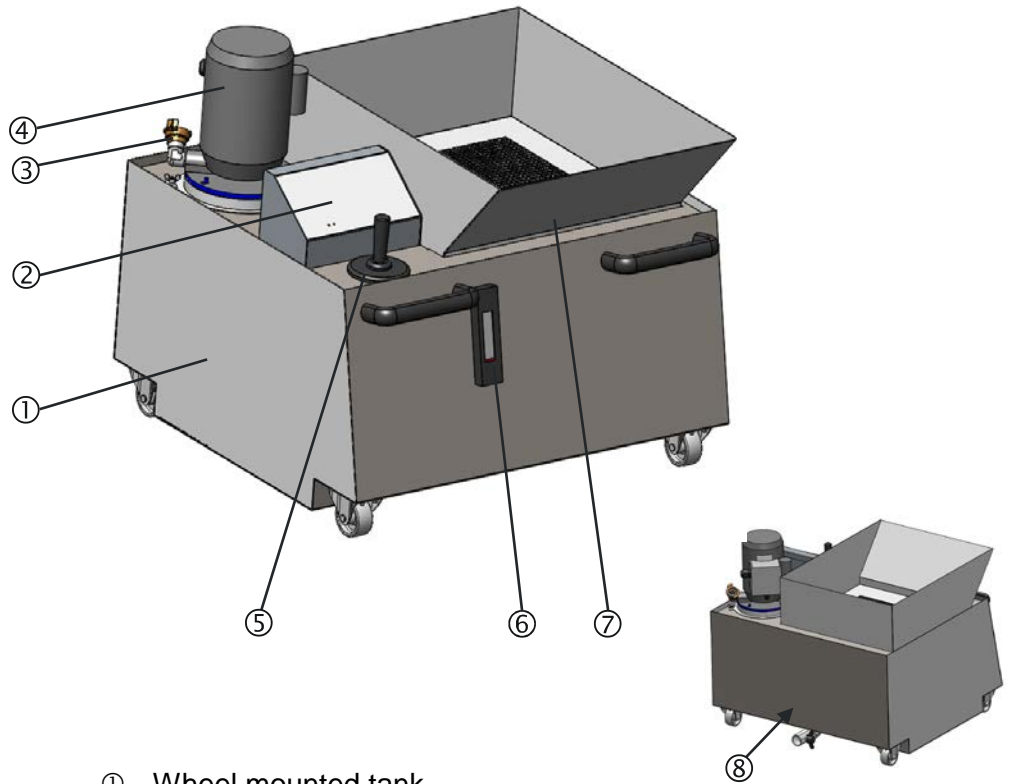


- ① Wheel mounted tank
- ② Magnetic filter
- ③ Gekka connection
- ④ Recirculation pump
- ⑤ Control unit
- ⑥ Filter Tube tray



*Struers Cooling Units  
Instruction Manual*

150 l Tank

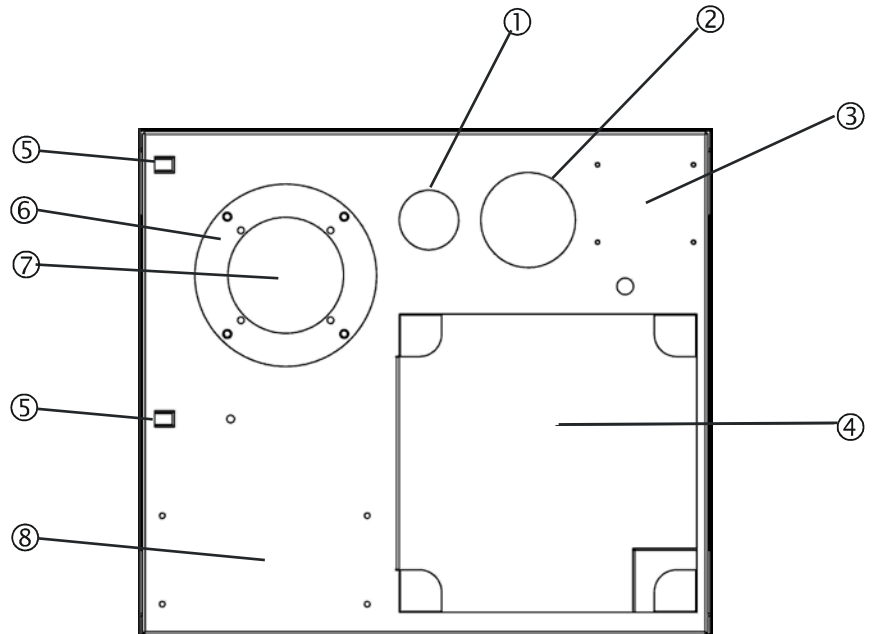


- ① Wheel mounted tank
- ② Control unit
- ③ Gekka connection
- ④ Recirculation pump
- ⑤ Magnetic filter
- ⑥ Water level gauge
- ⑦ Filter tray
- ⑧ Drain valve

## Assembling the Struers Cooling Unit

50 l Tank

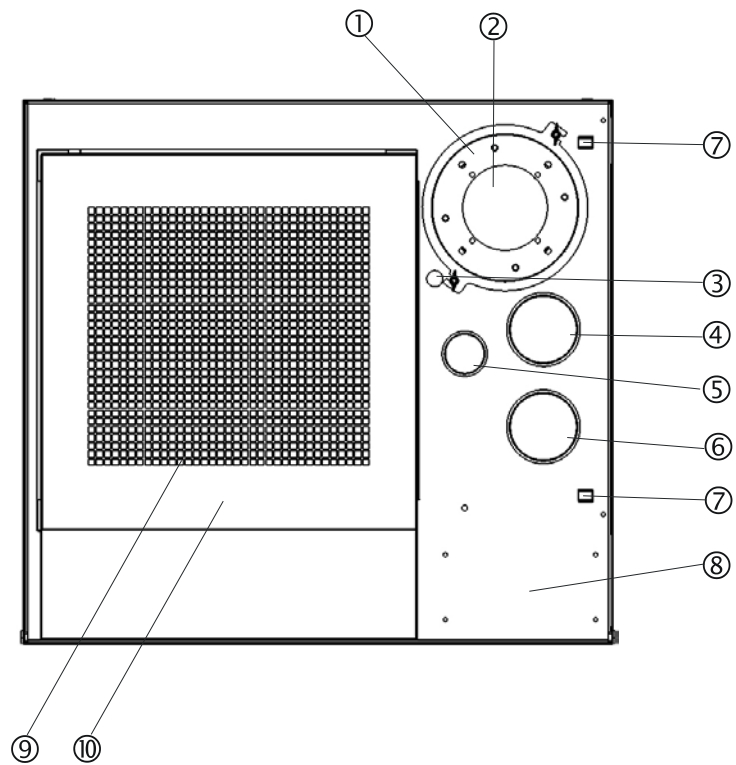
- Mount the components on the tank.



Mounting positions for:

- ① Water level indicator
- ② Magnetic filter
- ③ Not used
- ④ Filter unit
- ⑤ Cable holders
- ⑥ Adapter ring for small pump
- ⑦ Recirculation pump
- ⑧ Cooli control unit

100 l Tank

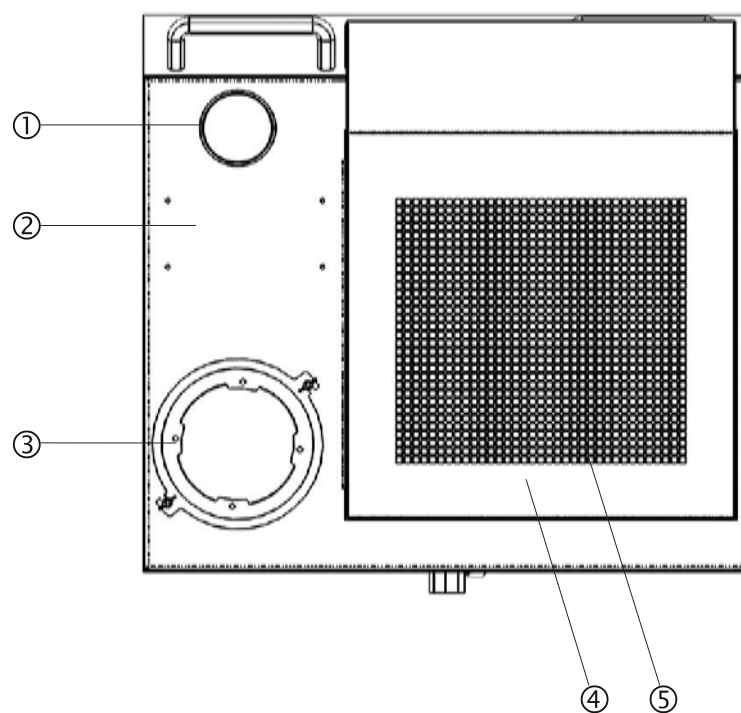


Mounting positions for:

- ① Adapter ring for small pump
- ② Recirculation pump
- ③ Not used
- ④ Not used
- ⑤ Water level indicator
- ⑥ Magnetic filter
- ⑦ Cable holders
- ⑧ Cooli control unit
- ⑨ Filter tray
- ⑩ XL Filter unit

*Struers Cooling Units  
Instruction Manual*

150 l Tank



- Mounting positions for:
- ① Magnetic filter
  - ② Cooli control unit
  - ③ Recirculation pump
  - ④ XL Filter unit
  - ⑤ Filter tray

*Mounting the Cooling Unit's  
Components*

**Note:**  
A number of these components are optional.

Control Unit

- Mount the Cooli control unit by slotting the unit's bolts into the holes provided and then securing (from underneath) with the supplied nuts.

**Note:**  
The control unit's control panel must be mounted facing the cooling unit tank's handle

Recirculation Pump

- Mount the recirculation pump in the hole provided.

Adapter ring:

Small pump: use the adapter ring to reduce the hole size.  
Large pump: remove the adapter ring to increase the hole size.

Magnetic Filter

- Mount the Magnetic filter in the hole provided.

Water level indicator

- Mount the Water level indicator in the hole provided.

Filter Bag  
50 l tank

- Mount the Filter Bag in the filter unit.

100 l tank

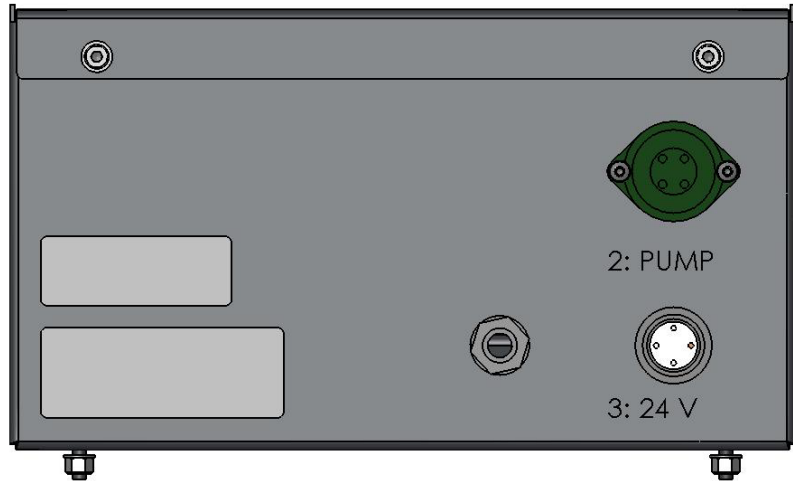
- Place the adapter plate in the filter unit then mount the Filter Bag.

150 l tank

- Insert the positioning rods in the Filter Bag and mount in the filter unit. Place the plate on top of the bag.

*Cooli-1 Control Unit: Rear Panel*

The diagram below shows the sockets to which the cables have to be connected.



**Note:**

The 24 V / CAN (A) is connected to the machine with which the cooling unit is used.  
The 24 V cable used is supplied with the Cooli control unit.

*Connecting Components to the Cooli Control Unit*

After mounting the components on the tank, connect the cables to the Cooli control unit:

- Locate the correct socket and plug in the cable from the component.  
The pin and hole locations of the sockets and cables are all different from each other, so that it's only possible to connect the right cable to the right socket.

## Preparing the Cooling Unit for Use

### Filling the Tank

- Insert a clean plastic liner in the tank.

**Important!**

Ensure that the liner lies flat on the base of the tank so that it will not block the pump.

**Important!**

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 (e.g. the cut-off machine's cooling unit compartment), with the tank's wheels in-line with the sides of the compartment and the control unit at the front 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 in the cooling fluid (percentage stated on the Additive container). Remember to top up with Struers Additive each time you refill with water.

For machines which mainly cut copper and copper alloys, use Corrozip-Cu.

- Fill with cooling fluid comprised of:
  - 50 l tank: 42.7 l water and 1.3 l Corrozip  
(A total volume of 44 l is recommended)
  - 100 l tank: 97 l water and 3.0 l Corrozip
  - 150 l tank: 145.5 l water and 4.5 l Corrozip

**Note**

Do not overfill the tank.  
Avoid spills whilst moving the cooling unit.

*Connecting to the Power Supply*

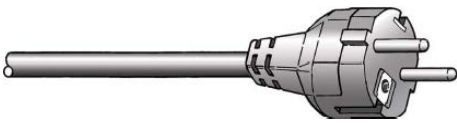
Always remember to switch the power off when installing electrical equipment.

**Important**

Check that the mains voltage corresponds to the voltage stated on the type plate on the machine

The Cooling Unit is shipped with 2 types of Mains cables:

*Single-phase Supply*



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

If the plug supplied on this cable is not approved in your country, then the plug must be replaced with an approved plug. The leads must be connected as follows:

Yellow/green: earth  
Brown: line (live)  
Blue: neutral

*2-phase Supply*



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

If the plug supplied on this cable is not approved in your country, then the plug must be replaced with an approved plug. The leads must be connected as follows:

Green: earth  
Black: line (live)  
White: line (live)



- Connect the mains cable to the power cable on the control unit.

**Important!**

Place the cable box around the connection of the two cables. This protects the cables from water (Protection Rating IP44).

**WARNING!**

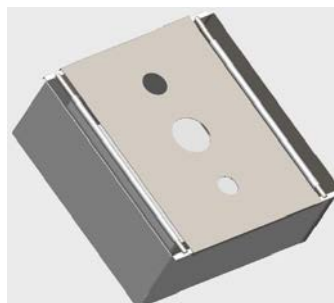
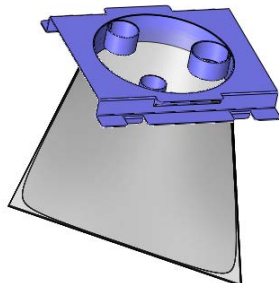
The output voltage from this cable is 200 – 240V and not 110V. DO NOT use this cable to connect equipment that uses an 110V power supply. Failure to adhere to this may result in material damage.

- Hang the cables in the cable hooks mounted on the cooling unit tank (this is to prevent the cable trailing on the ground and being damaged).



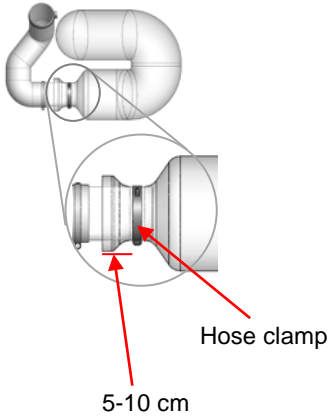
*Filter Bag*

Holes for outlet hose from connected machine



- Insert the water outlet hose from the connected machine into the hole with the correct size.

*Filter Tube*



- Insert 5-10 cm of the filter tube through the quick-release clamp.
  - **Tip:** the end of the rigid connector pipe can be removed whilst mounting the filter tube. Lubricate the sealing ring with grease or soap to facilitate re-insertion.
- Mount onto the outlet hose/pipe, approx. 5 cm from the end of the pipe.
- Place the filter tube in a U-shape in the Cooli filter unit.
- Check that there are no folds in the tube.



**During the first cutting operation:**

- Check that the filter tube expands along its full length as it fills with water.

**Important!**  
If the tube is twisted or has folds, **stop cutting** and reposition the tube.  
Do NOT use the Filter Tube when dry-cutting.

**Important!**  
Do NOT re-use the Filter Tube.

**Connecting the Cooling Unit to the Machine**

- Connect the cooling unit's water outlet hose to the quick coupling on the machine.
- Connect the 24 V / CAN control cable to the Cooli 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 Cooli control unit.
- Place the cooling unit underneath the outlet on the connected machine, or lead the outlet hose from the machine into the filter unit on the cooling unit tank.

## 2. Operation


### Cooli-1 Control Panel

The diagram below illustrates the Cooli-1 control panel.



### Control Panel Indicators/ Functions

The pump LED's will only light up after the cooling unit has been started.

Name	Key	Function
① POWER		Constant Green: Power on. Normal operation. Constant Red: Cooli is on Standby.
② PUMP		Constant Green: Normal operation. Constant Red: Error. Pump failure (Overload).

### **3. System Components and Accessories**

Please refer to the [Struers Cooling System 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.*

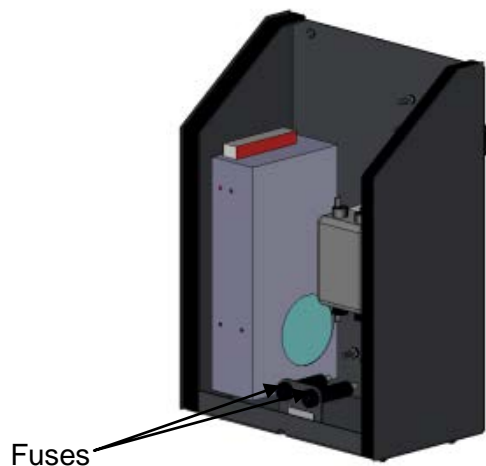
## 4. Troubleshooting

### 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.
	Water overflow in the recirculation water tank.	Remove the excess water in the tank.
Cool unit stops and cannot be restarted.	Blown fuse(s)	Replace using appropriate 15 A, slow-blow fuse(s). See illustration, below.
Samples, cooling unit or equipment corroded.	Insufficient additive for cooling fluid.	Add Struers Additive for cooling fluid to the cooling fluid, using the correct concentration. Check with a refractometer. Follow the instructions in the Maintenance section.

### Location of Fuses



## 5. Maintenance

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

**WARNING!**

Accumulated dirt and swarf (cutting debris) can restrict or cause damage to the water inlet valves.

**Important**

Disconnect the power before performing any maintenance work.

**NB**

Use of gloves and safety goggles is recommended when filling and cleaning the tank.

### Daily

#### Checking the Cooling Fluid

- Check and if necessary replace the cooling fluid. (see the section on Replacing the Cooling Fluid for instructions)  
Top up with cooling fluid if required; the cooling fluid level should be 25 mm below the upper edge of the tank.

**IMPORTANT!**

Replace the cooling fluid immediately if infected by algae or bacteria.

Remember to add Struers Additive Corrozip: One part of Additive for 33 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 2.7 and 3.3 %. Add Corrozip if the concentration is too low.

#### Filter Bag

- Check and if necessary empty and clean the Filter Bag.
  - Disconnect the power.
  - Remove the cooling unit from the machine's compartment.
  - Remove the Filter Bag from the tank and turn it upside down over a waste container of suitable size.
  - Let the debris fall down into the waste container and clean the Filter Bag.
  - Replace the Filter Bag on the tank.

**Important!**

Swarf must be disposed of according to the current safety regulations for handling and disposal of swarf/ additive for cooling fluid.

Filter Tube

- Check and if necessary replace the Filter Tube.  
(Change the Filter Tube when it is full of swarf)

***Important!***

Used Filter Tubes must be disposed of according to the current safety regulations for handling and disposal of swarf/ additive for cooling fluid.

**Please note:**

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 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 produced.

*Examples:*

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

*Aluminum and Copper*

*Zinc and Copper*

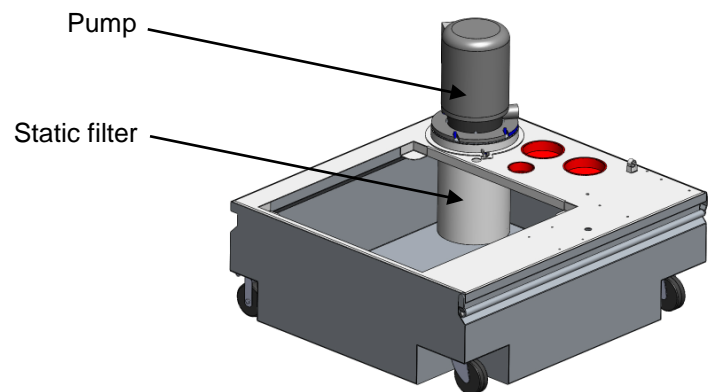


### Magnetic filter

- Check and if necessary clean the Magnetic Filter.
  - Remove the filter from its mounting.
  - Slide the plastic outer tube off the magnet.
  - Use a stiff brush to clean the plastic tube.
  - Refit the plastic tube.
  - Place the filter back in its mounting.

### Static Filter

- Check and if necessary clean the Static filter.
  - Remove the pump.
  - Loosen the wing nut and remove the Static filter.
  - Use a stiff brush to clean the mesh.
  - Rinse the static filter and re-mount.



### Monthly

- Clean painted surfaces, and the control unit with a soft damp cloth and common household detergents. For heavy duty cleaning, use Struers Cleaner (Cat. No. 49900027).



**Note:**  
Ensure that no detergent or cleaning agent residue is flushed into the cooling unit tank; excess foaming will occur.

### Replacing the Cooling Fluid

- Replace the cooling fluid in the Recirculation Cooling Unit at least once a month.

**REMEMBER...**

Avoid skin contact with the additive for cooling fluid.

### Emptying the Cooling Unit Tank

**IMPORTANT!**

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.

- Empty the cooling unit using the recirculation pump:
  - Disconnect the cooling unit's water outlet hose from the quick coupling on the equipment.
  - Place the open end of the hose in a suitable container.
  - Start the equipment.  
This will start the recirculation pump, to pump the cooling fluid out of the tank.
  - Stop the equipment when the tank is empty.
  - Empty the cooling unit completely, remove the plastic liner and clean out all water and debris from the tank.
  - Clean the tank and connected tubes thoroughly.  
If the cooling fluid has been infected with bacteria or algae, flush the tank and tubes with a suitable antibacterial disinfectant e.g Struers Unitclean.

150 l tank

Alternatively, the tank can be emptied using the drain valve (the disposable liner must be moved to allow the cooling fluid to flow freely) or by using an industrial dredge pump.

Refilling the Cooling Unit Tank

**IMPORTANT!**

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 (e.g. the cut-off machine's cooling unit compartment), with the tank's wheels in-line with the sides of the compartment and the control unit at the front so that it is ready to be pushed into position without being moved to the left or right.

- Refill the cooling unit with water using an external water hose or via direct connection to the water mains. Stop refilling when the water level is 25 mm from the upper edge.
- Fill with cooling fluid comprised of :
  - 50 l tank: 42.7 l water and 1.3 l Corrozip  
(A total volume of 44 l is recommended)
  - 100 l tank: 97 l water and 3.0 l Corrozip
  - 150 l tank: 145.5 l water and 4.5 l Corrozip

**NB!**

Never refill by pouring the water into the cutting chamber/ turntable compartment, as it would be impossible to check the increasing level in the tank.

**IMPORTANT!**

Always maintain the correct concentration of Struers Additive, Corrozip, in the cooling fluid (percentage stated on the container of the Additive).  
Remember to add Corrozip each time you refill with water.  
For machines which mainly cut copper and copper alloys, use Corrozip-Cu.

Use only Struers Additive in the Recirculation Cooling Unit.  
Struers Additive is specially selected for use with Struers equipment.  
Other additives may not be compatible with some of the components of the equipment.

## 6. Technical Data

Subject	Specification	
	Metric/International	US
<b>50 l tank</b>		
Height	26 cm	10.2 "
Width (with extended handle)	52 cm (53 cm)	20.7 " (21.0 ")
Depth	46 cm	18.1 "
Volume	50 l	13.2 gallons
<b>100 l tank</b>		
Height	26 cm	10.2 "
Width (with extended handle)	73 cm (74 cm)	28.7 " (29.0 ")
Depth	67 cm	26.4 "
Volume	100 l	26.4 gallons
<b>150 l tank</b>		
Height	74 cm	29.1 "
Width	83 cm	32.7 "
Depth	76 cm	29.9 "
Volume	150 l	39.6 gallons
<b>Small pump</b>		
Flow	60 l/min at 1 bar	16 gallons/min at 1 bar
Power	0.16 kW	
<b>Large pump</b>		
Flow	125 l/min at 1 bar	33 gallons/min at 1 bar
Power	0.7 kW	
<b>Operating environment</b>		
Surrounding temperature	5-40°C/41-104°F	
Humidity	0-95% RH non condensing	

English

## Declaration of Conformity

**Manufacturer**

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

**Herewith declares that**

<i>Name:</i>	Struers Cooling Units
<i>Cat. No.:</i>	057665xx, 057666xx, 057667xx, 057668xx, 057670xx, 057671xx, 057672xx
<i>Function:</i>	Recirculating unit for cooling water for a cut-off machine or a similar type of equipment
<i>Type No.:</i>	576

**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 13850:2008, EN 60204-1:2006/AC: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 61326-1:2013.

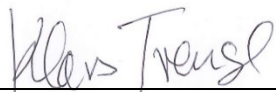
**RoHS Directive  
2011/65/EU**

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

**Supplementary Information**

The equipment complies with the following standards:  
 NFPA70:2014, NFPA79:2012, FCC 47 CFR Part 15, AS/NZS 4251.1

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

**Authorized to compile the Technical File:**


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 Director of Business Development  
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Date of Issue: 2017.10.05



Pederstrupvej 84  
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Denmark

# Struers Cooling Units



Manual No.: 15767001

Date of Release 017.06.23

## Spare Parts and Diagrams





Pederstrupvej 84  
DK-2750 Ballerup  
Denmark





*Struers Cooling Units  
Spare Parts and Diagrams*

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# Spare Parts and Diagrams

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Filter console welded.....	15760660B
Filter Bag Adapt. w. XL Static Filter .....	15760089A
24V Control box, complete .....	15760028E
Door for small Control box, assembly.....	15760029D
Big Pump	
1x100V/50Hz.....	15760090E
1x120V/60Hz.....	15760091E
1x220V/50Hz.....	15760092F
1x240V/60Hz.....	15760093E
Small Pump	
1x100V/50Hz.....	15760094C
1x120V/60Hz.....	15760095H
1x220V/50Hz.....	15760096C
1x240V/60Hz.....	15760097C
1x100-120V/50-60Hz .....	15760098C

Some of the drawings may contain position numbers  
not used in connection with this manual.

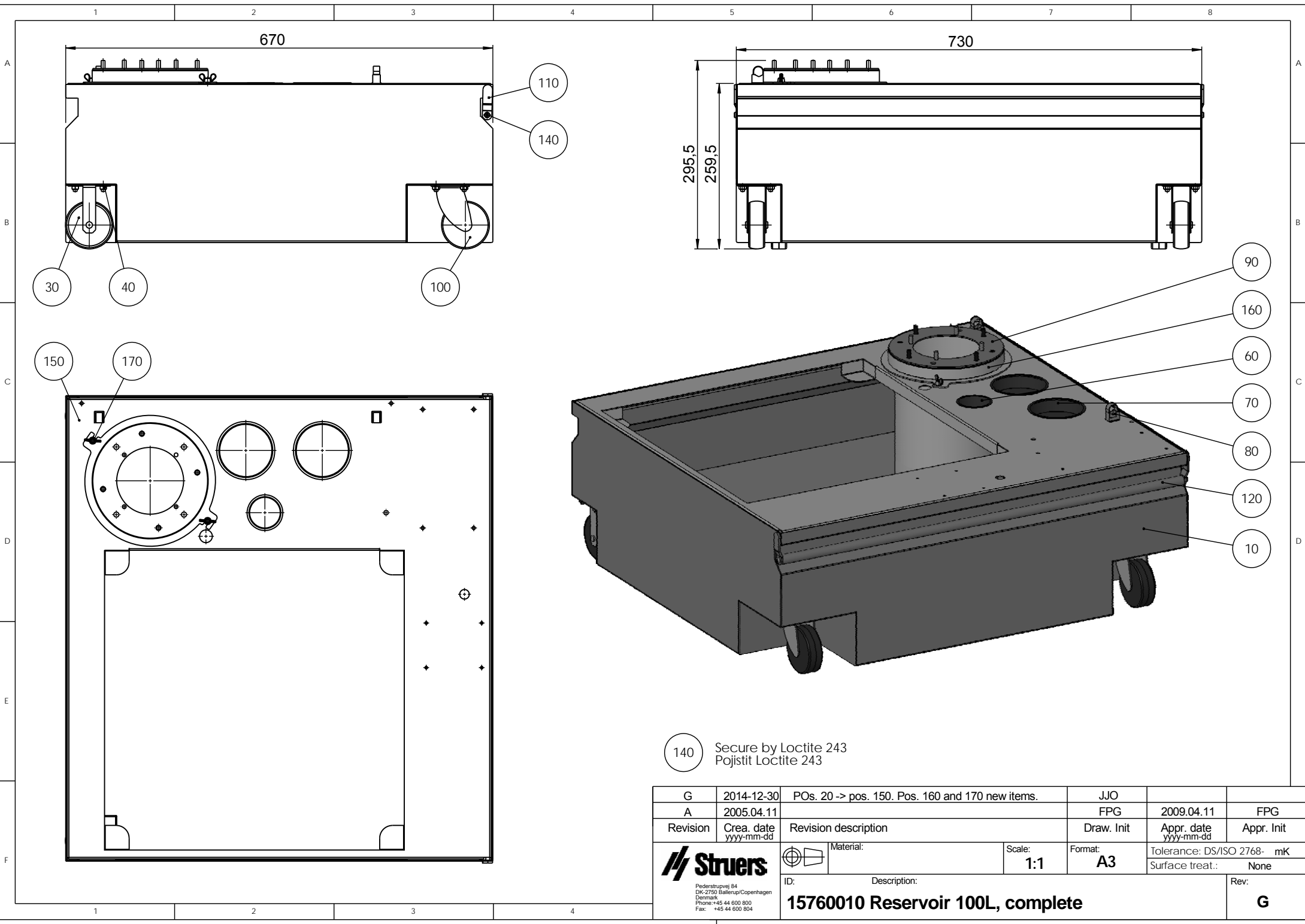
Diagrams	Diagram Nr.
<i>Wiring diagrams</i>	
W1 cable.....	15763501C
Cooli-1 .....	15763593E
Contactora .....	15763581B
<i>Other Diagrams</i>	
Cooli-1 PCB, 2 pages.....	15763004

## Spare Part list for Struers Cooling Units

Drawing	Pos.		Cat no.
<b>15760010</b>		<b>Reservoir 100L, complete</b>	
	10	Body of reservoir-100L-welded	05766905
	20	Cover of reservoir-100L-welded	15760555
	30	Wheel 2478PJH075P60, 2 pcs	2GB00110
	100	Wheel 2470PJH075P40, 2 pcs	2GB00111
<b>15760011</b>		<b>Reservoir 50L, complete</b>	
	10	Body of reservoir-50L-welded	05766906
	30	Cover of reservoir-50L-welded	15760702
	100	Wheel 22198UOI045P60-67X24, 2 pcs	2GB00112
<b>15760086</b>		<b>Tank 150 l, assembly</b>	
	10	Tank 150 l, welded	15041081
	30	Cover of reservoir-150L, welded	15041084
	20	Wheel Fixed Ø65mm, 4 pcs	2GB00130
<b>15760014</b>		<b>Magnetic filter, complete</b>	
	10	Magnetic separator, glued	15760610
<b>15760660</b>	60	O-ring 15.60-2.40 72 NBR 872	2IO24034
		<b>Filter console welded</b>	
<b>15760089</b>		Filter bag	05766928
		Adapter plate for filter bag (05766928) on 100 l tank	05766927
<b>15760028</b>		<b>Filter Bag Adapt. w. XL Static Filter</b>	
	10	Filter Box, welded	15760180
	20	Filter Bag Rod	15760197
	30	Top Closure	15760114
<b>15760028</b>	40	Filter Bag Assembly	15760006
		<b>24V Control box, complete</b>	
	20	Door for small control box,asm.	15760029
	80	CAP for chassis connector IP68	2XM90000
	90	Cap, fem. sock. 08-0202-17-00	2XM90202
	110	Sealing strip Black 3x15 4030	2IP00302
	150	15AT FUSE MDA 6.3 x 32 250V, 2 pcs	2FU17550
160	Fuse holder bayonet No.800	2XS19800	
170	Fuse cap bayonet No.816	2XS19816	

## Spare Part list for Struers Cooling Units

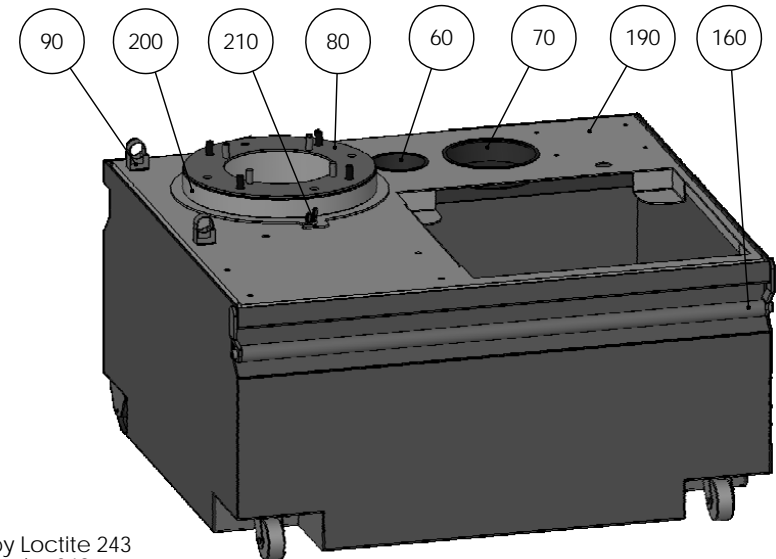
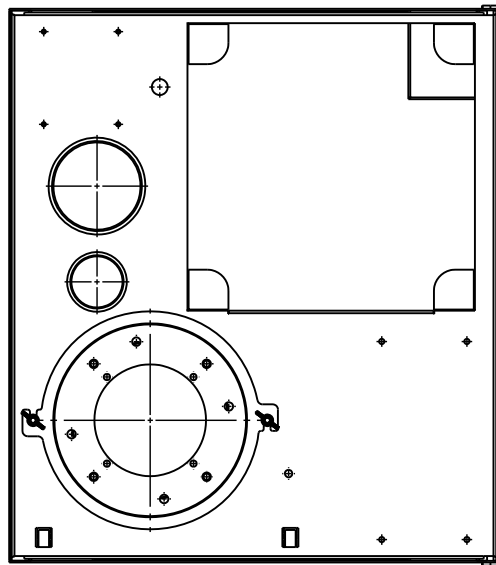
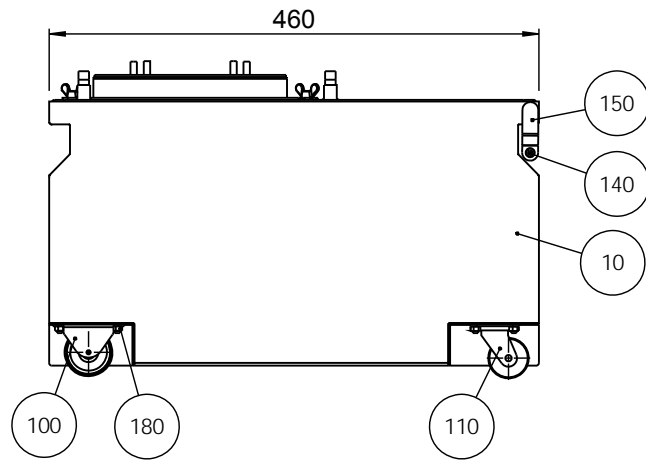
Drawing	Pos.		Cat no.
<b>15760029</b>		<b>Door for small Control box, assembly</b>	
	20	PCB Cooli-1, Tested	15763003
<b>15760092/ 15760091/ 15760092/ 15760093</b>		<b>Big Pump</b>	
	30	GEKA Coupling ¾" int. thread	2NF60002
<b>15760094/ 15760095/ 15760096/ 15760097/ 15760098</b>		<b>Small Pump</b>	
	13	GEKA Coupling ¾" int. thread	2NF60002
		<b>Loose part for Pumps</b>	
	10	Hose Clamp ø12-20 / 9.0-C6 W2, 2 pcs	2NS21220
	20	Hose clamp Norma S24/9Zy, 2 pcs	2NS12409
	30	Reinforced Pressure Hose 5/8 ø16x3, 2.5 m	2NU29322
	40	Reinforced Hose, PVC ½"-Ø12.5, 2.5 m	2NU29316
	50	GEKA Pipe branch ½", 2 pcs	2NF60000
	60	GEKA Pipe branch ¾", 2 pcs	2NF60001
		Static Filter Insert	05766934
		<b>Struers Cooling Units, "loose parts"</b>	
		Mains Cable, 0.75mm², Schuko	2WC04668
		W16 Cooli Connection Cable	15763516
		Mains Cable, AWG16, Nema 5-15P	2WC02520





140 Secure by Loctite 243  
 Pojistit Loctite 243

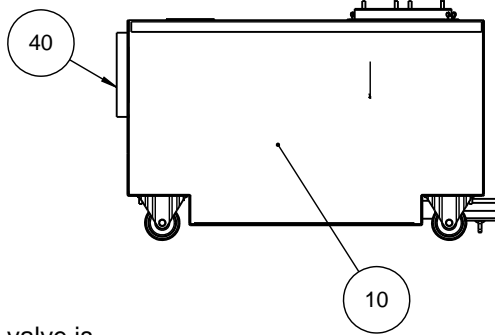
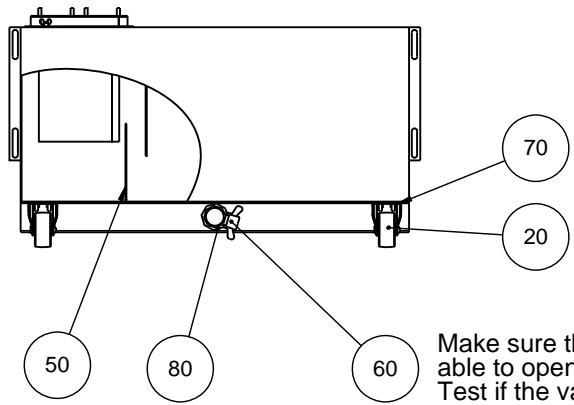
G	2014-12-30	POs. 20 -> pos. 150. Pos. 160 and 170 new items.	JJO		
A	2005.04.11		FPG	2009.04.11	FPG
Revision	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
		Material:	Scale:	Format:	Tolerance: DS/ISO 2768- mK
			1:1	A3	Surface treat.: None
ID:		Description:			Rev:
		<b>15760010 Reservoir 100L, complete</b>			<b>G</b>

**Struers**  
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 Fax: +45 44 600 804

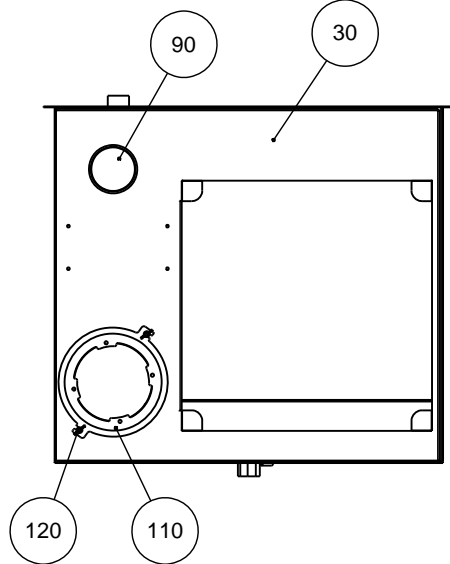
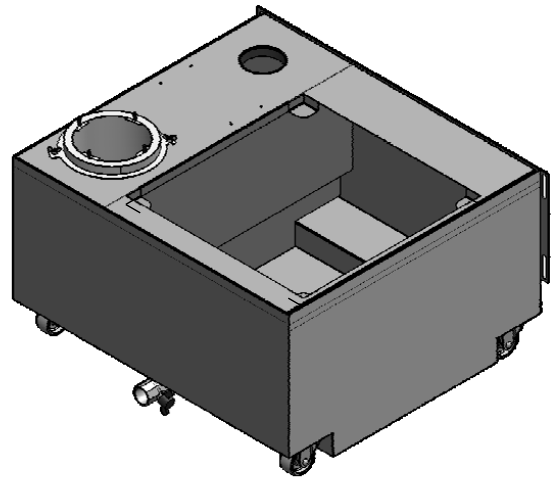


140 Secure by Loctite 243  
Pojistit Loctite 243

F	2015-01-06	Pos. 30 -> pos. 190. Pos. 200 and 210 new item.	JJO		
A	2005.04.11		FPG	2005.04.11	FPG
Revision	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
 <small>Pederstrupvej 84 DK-2750 Ballerup/Copenhagen Denmark Phone: +45 44 600 800 Fax: +45 44 600 804</small>	 Material:	ID: Description:	Scale: 1:1	Format: A3	Tolerance: DS/ISO 2768- mK
			15760011 Reservoir 50L, complete		Surface treat.: None



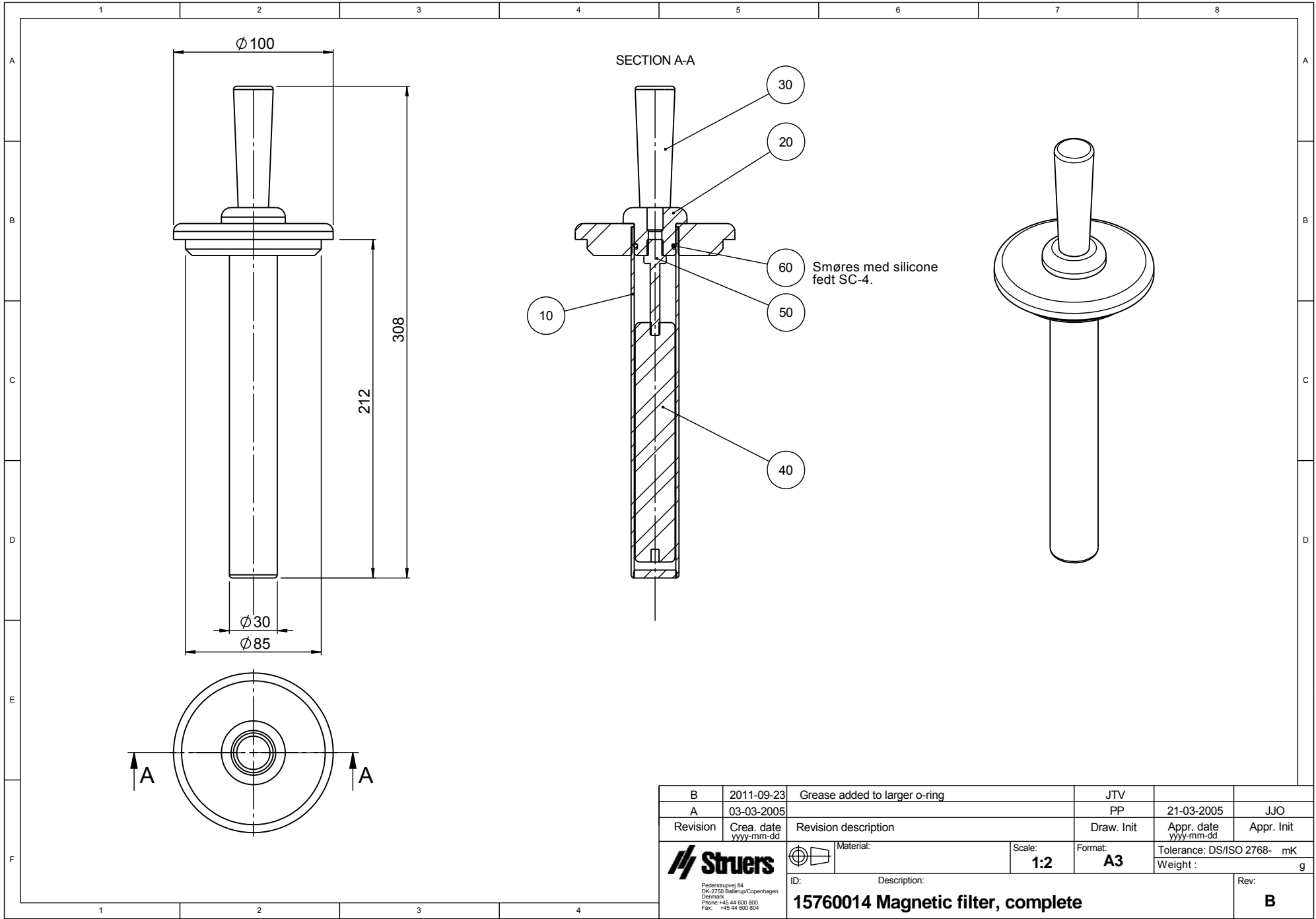
Make sure that the ball valve is able to open and close. Test if the valve is closed



- 60 Mount with teflon tape
- 80 Mount with teflon tape

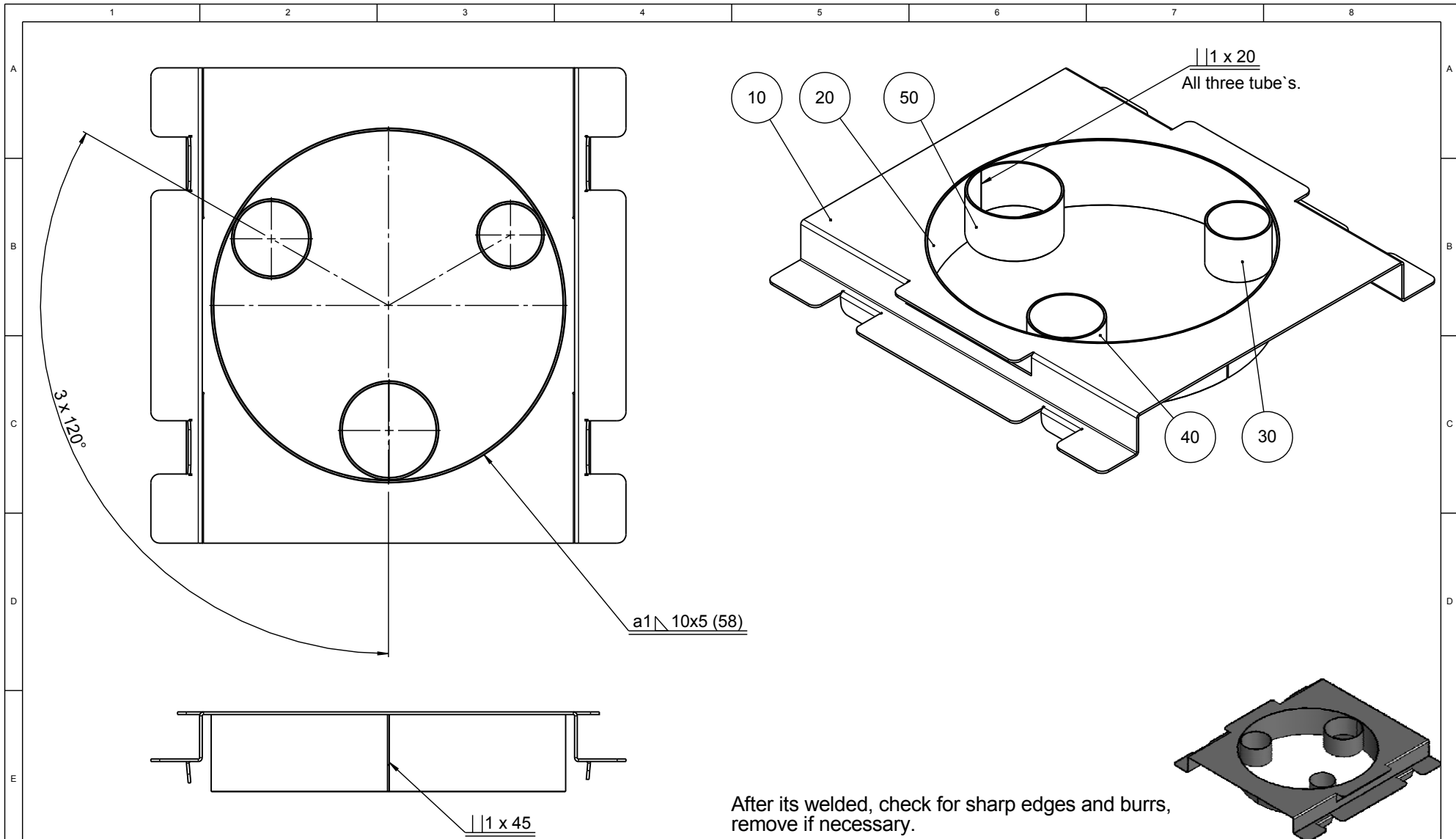
D	2015-05-27	Pos 30 changed. Pos 110+120 added	BRY	2015-06-18	JLI
A	2012-06-18		FPG	2012-06-18	FPG
Revision	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
 <small>Pederstrupvej 84 DK-2750 Ballerup/Copenhagen Denmark Phone: +45 44 600 800 Fax: +45 44 600 804</small>		Material:	Scale: <b>1:10</b>	Format: <b>A3</b>	Tolerance: DS/ISO 2768- mK
			ID: Description: <b>15760086 Tank 150L, complete</b>		Weight : 78764.5 g
					Rev: <b>D</b>





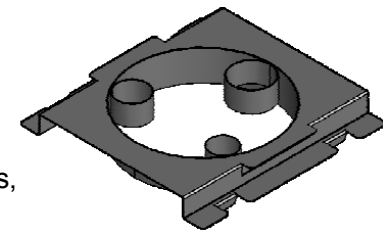
B	2011-09-23	Grease added to larger o-ring	JTV		
A	03-03-2005		PP	21-03-2005	JJO
Revision	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
		Material:	Scale: <b>1:2</b>	Format: <b>A3</b>	Tolerance: DS/ISO 2768- mK Weight : g
ID:	Description: <b>15760014 Magnetic filter, complete</b>				Rev: <b>B</b>

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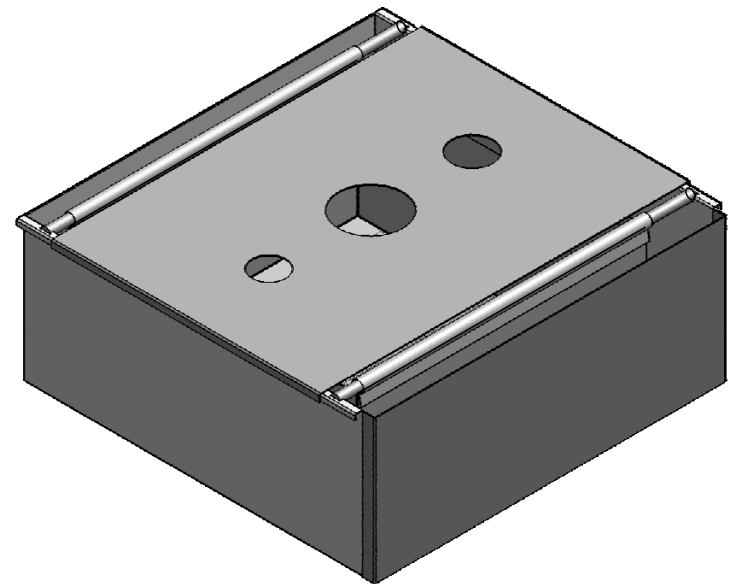
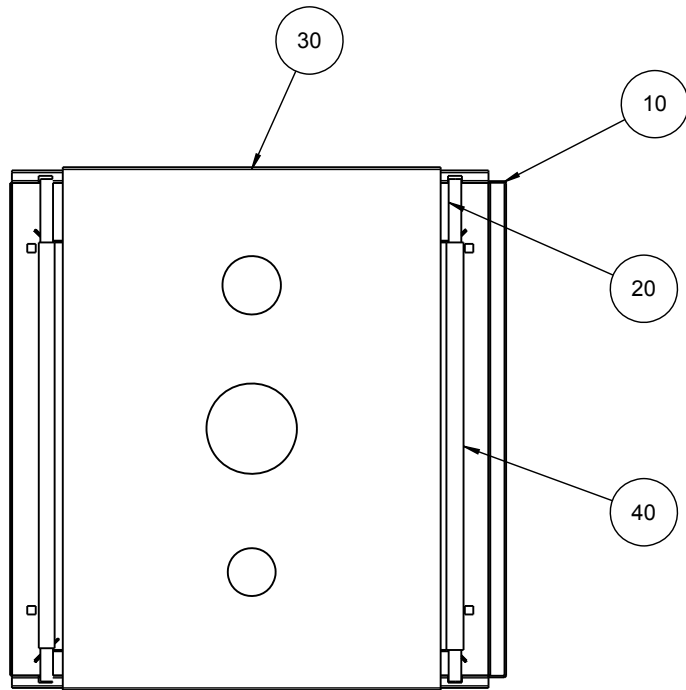
After its welded, check for sharp edges and burrs, remove if necessary.



Filter consol have to be pickled after welding.

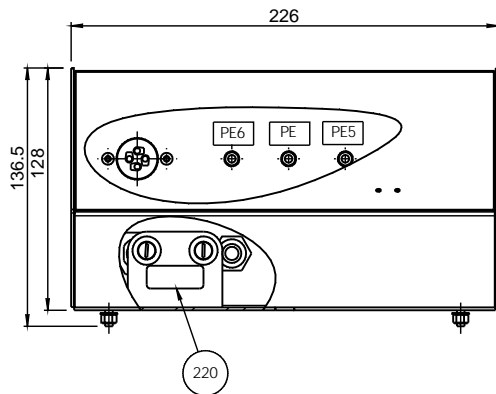
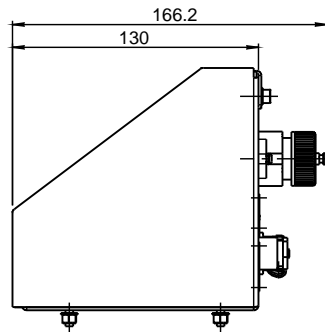
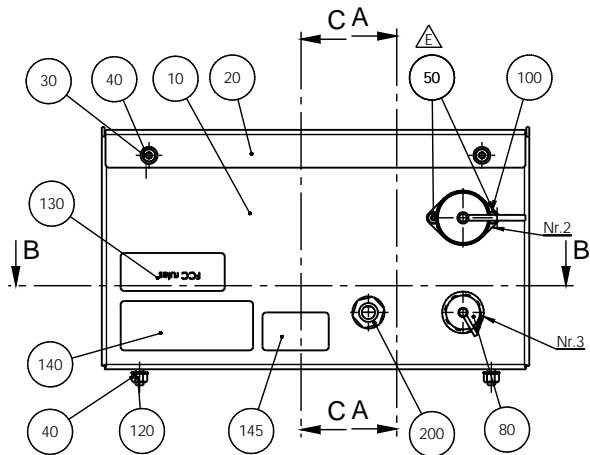


POS. NO.	AMOUNT	DRAW. NO.	NOTE
10	1	15760658 Cover plate	
20	1	15760657 Ring for filter consol	
30	1	15760653 Tube holder for Ø32	
40	1	15760654 Tube holder for Ø40	
50	1	15760655 Tube holder for Ø50	

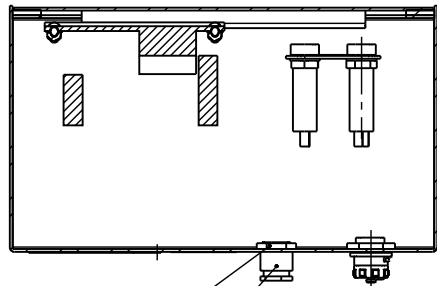
B	2011-12-05	E,5: text added. Pickling after welding.	JJO		
A	201109-28		JJO		
Revision	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
		Material:	Scale: <b>1:2</b>	Format: <b>A3</b>	Tolerance: DS/ISO 2768- mK Weight : 1103.2 g
ID:	Description: <b>15760660 Filter consol welded.</b>			Rev:	<b>B</b>



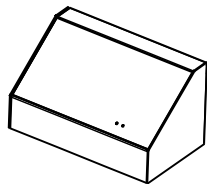
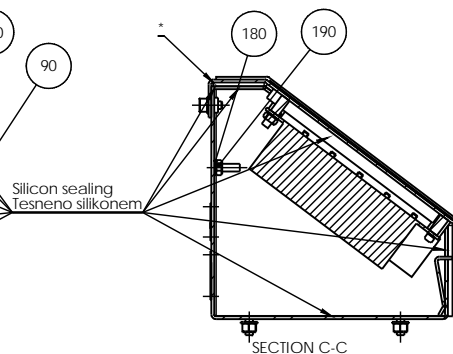
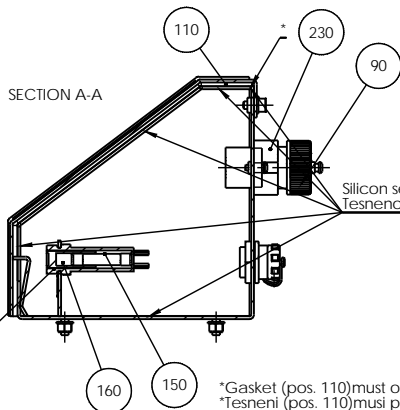
A					
A	2013-09-23		THF		
Revision	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
 <small>Pederstrupvej 84 DK-2750 Ballerup/Copenhagen Denmark Phone: +45 44 600 800 Fax: +45 44 600 804</small>	 Material:	ID:	Scale: <b>1:5</b>	Format: <b>A3</b>	Tolerance: DS/ISO 2768- mK
					Description: <b>15760089 Filter bag adapter with XL static filter, complete A</b>
					Rev:



SECTION B-B



SECTION A-A



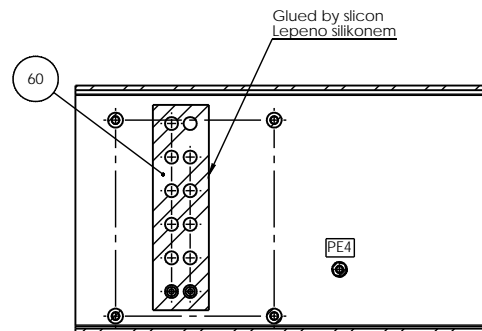
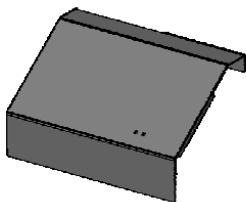
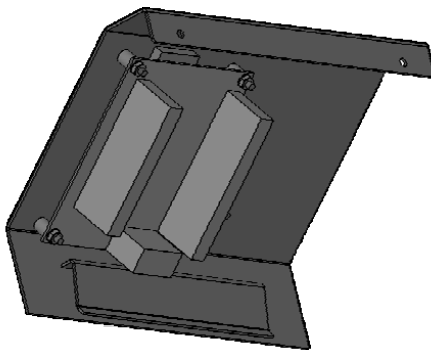
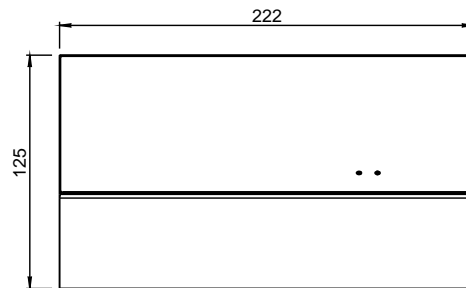
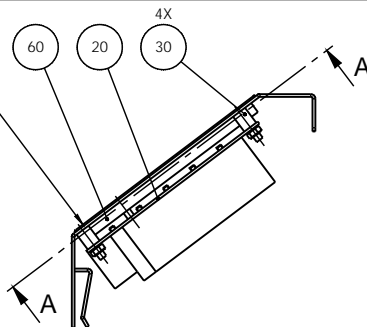
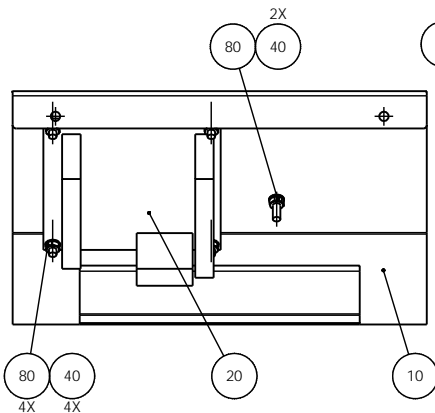
\*Gasket (pos. 110) must over sheetmetal shape -2mm  
 \*Tesneni (pos. 110) musi presahovat obrys plechu -2mm

Wiring diagram:  
 15763593



E	2016/09/19	pos. 50 replaced	GVA	2016/09/19	JPO
A	21.04.05		PP	21.04.05	FPG
Revision	Crea. date dd-mm-yy	Revision description	Draw. Init	Appr. date dd-mm-yy	Appr. Init
		Material:	Scale: 1:2	Format: A3	Tolerance: DS/ISO 2768- mK Surface treat.: None
ID:	Description: <b>15760028 24V Control box, complete</b>				Rev: <b>E</b>

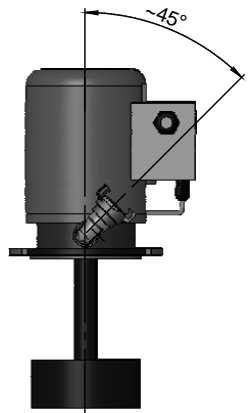
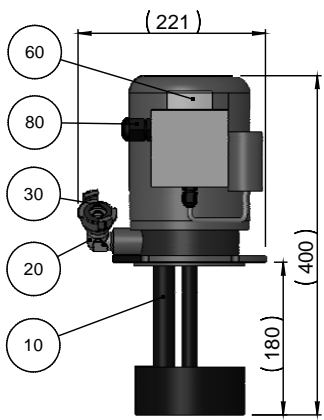
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 DK-7570 Solbjerg-Copenhagen  
 Denmark  
 Phone: +45 44 600 800  
 Fax: +45 44 600 804



SECTION A-A

D	2016-05-20	pos.(60)replaced w.pos.(40)	ABG	2016-05-20	SCA
A	2005-04-21		PPL	2005-04-21	FPG
Revision	Crea. date	Revision description	Draw. Init	Appr. date	Appr. Init
	yyy-mm-dd			yyy-mm-dd	
 Pøttestrømsgvej 84 DK-2750 Ballerup/Copenhagen Denmark Phone: +45 44 900 800 Fax: +45 44 900 804	Material:	Scale: 1:2	Format: A3	Tolerance: DS/ISO 2768: mK	Rev: None
	ID: _____	Description: _____	<b>15760029 Door for small controlbox, assembly</b>		

A

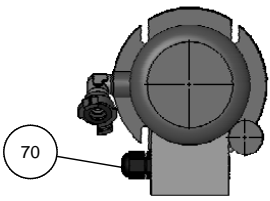


Seal Loctite 577

Seal Loctite 577

C

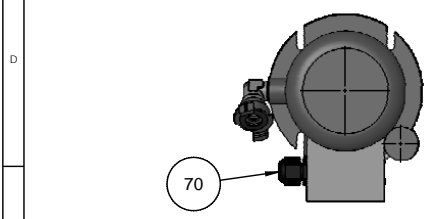
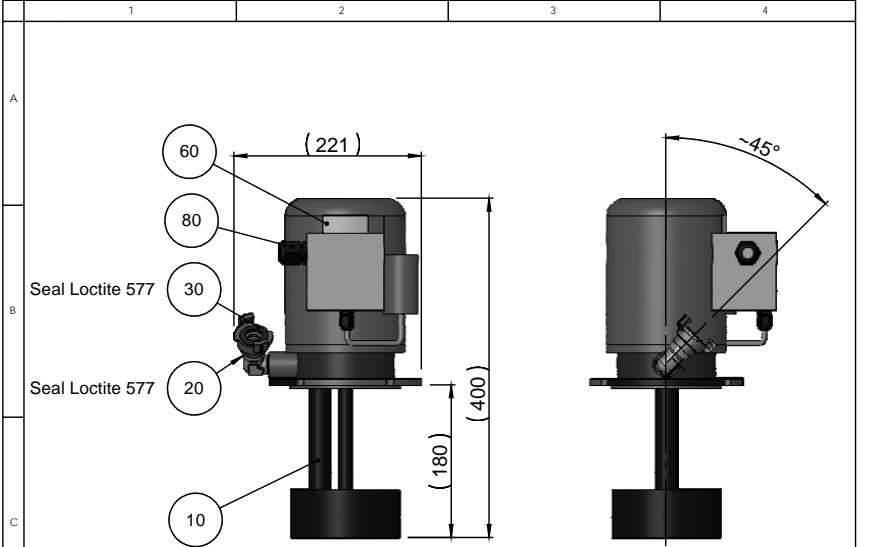
D



E

The Pump is delivered with Terminal block from the supplier.  
The Terminal block in the Wire set shall not be used. (Scrapped)

E	2016-03-30	Text about Terminal block added.	BRY	2016-03-30	JJO
A					
Rev	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
F	<p>Pederstrupvej 84 DK-2750 Bælrup Copenhagen Denmark Phone : +45 44600 800 Fax : +45 44600 804</p>	Material:	Scale: 1:5	Format: A4	Tolerance: DS/ISO 2768 - mK Weight : g
		ID: Description: <b>15760090 Big pump 1x100 50 Hz CSA, complete</b>			Rev: <b>E</b>



The Pump is delivered with Terminal block from the supplier.  
The Terminal block in the Wire set shall not be used. (Scrapped)

E	2016-03-30	Text about Terminal block added.	BRY	2016-03-30	JJO
A					
Rev	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
F	 Pederstrupvej 84 DK-2750 Ballerup Copenhagen Denmark Phone: +45 44600 800 Fax: +45 44600 804	Material:	Scale: <b>1:5</b>	Format: <b>A4</b>	Tolerance: DS/ISO 2768 - mK Weight : g
		ID: Description: <b>15760091 Big pump 1x120 60 Hz CSA, complete</b>			Rev: <b>E</b>

1

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B

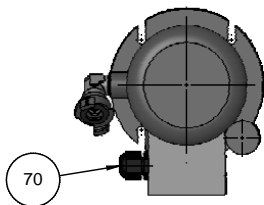
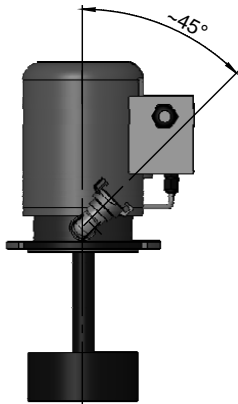
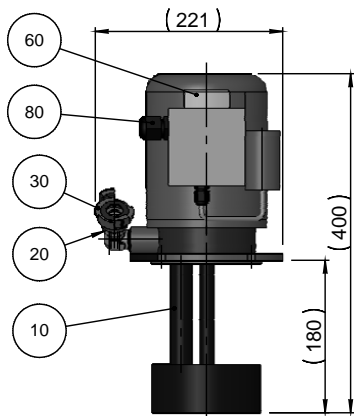
Seal Loctite 577

Seal Loctite 577

C

D

E



The Pump is delivered with Terminal block from the supplier.  
The Terminal block in the Wire set shall not be used. (Scrapped)

E	2013-03-30	Text about Terminal block added.	BRY	2016-03-30	JJO
---	------------	----------------------------------	-----	------------	-----

A					
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Rev	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
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DK-2750 Ballerup  
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Denmark  
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Fax: +45 44600 804



Material:

Scale:

1:5

Format:

A4

Tolerance: DS/ISO 2768 - mK

Weight : g

ID:

Description:

**15760092 Big pump 1x220 50 Hz CSA, complete**

Rev:

E



A

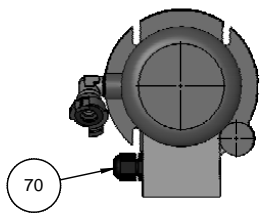
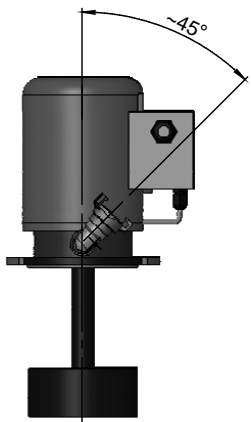
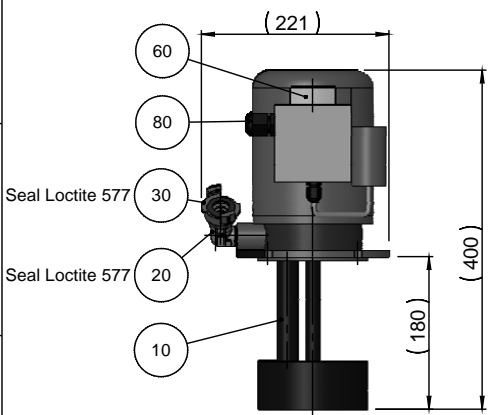
B

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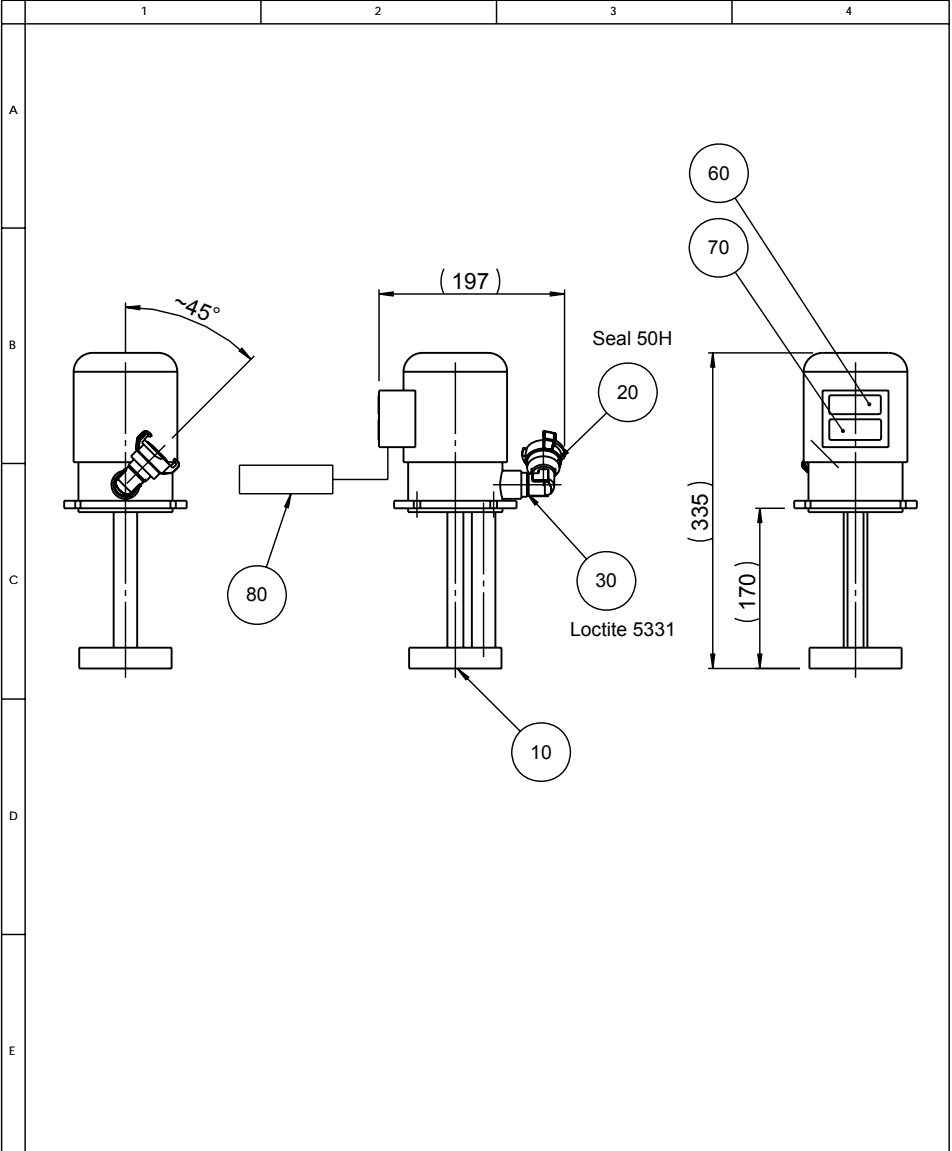
E

F



The Pump is delivered with Terminal block from the supplier.  
The Terminal block in the Wire set shall not be used. (Scrapped)

E	2013-03-30	Text about Terminal block added.		BRY	2016-03-30	JJO
A						
Rev	Crea. date yyyy-mm-dd	Revision description		Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
F	 Pederstrupvej 84 DK-2750 Ballerup Copenhagen Denmark Phone :+45 44600 800 Fax : +45 44600 804	Material:	Scale: 1:5	Format: A4	Tolerance: DS/ISO 2768 - mK Weight :	g
		ID: Description: <b>15760093 Big pump 1x240 60 Hz CSA, complete</b>				Rev:



C	20-12-06	Pos 30, Seal 50H -> Loctite 5331	MPE	.	JTV
B					
A			MPE	09-12-2005	FPG
Rev	Crea. date dd-mm-yy	Revision description	Draw. Init	Appr. date dd-mm-yy	Appr. Init
 Pederstrupvej 84 DK-2750 Ballerup Copenhagen Denmark Phone : +45 44600 800 Fax : +45 44600 804		Material:	Scale: <b>1:5</b>	Format: <b>A4</b>	Tolerance: DS/ISO 2768 - mK Surface treat.: None
ID:		Description: <b>15760094 Small pump 1x100 50 Hz , complete</b>			Rev: <b>C</b>

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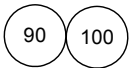
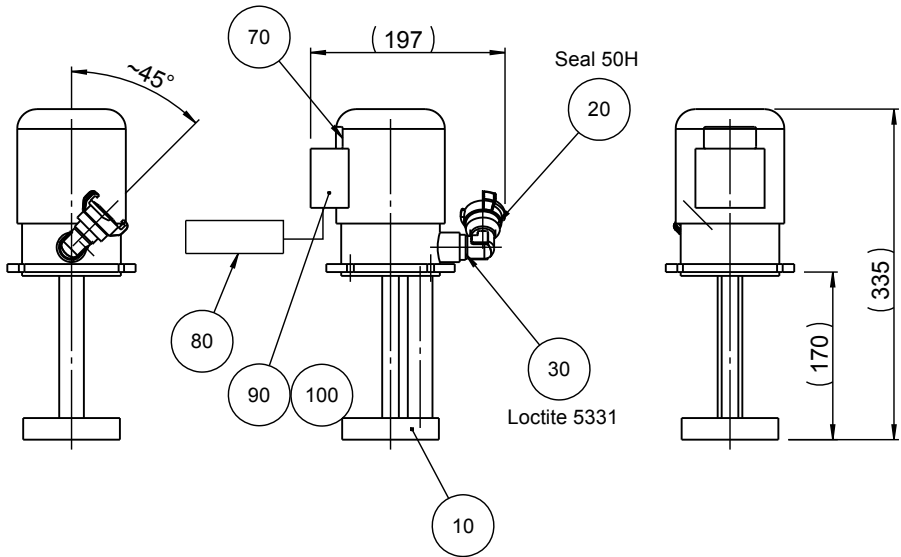
A

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E



The screw for earth wire in the motor is too small.  
 Make a M4 thread in the stud on the motor and  
 use the M4x12 screw and the two tooth washers.  
 Jordledningen sidder ikke godt under den eksisterende skrue.  
 Lav derfor M4 gevind i motorstag og brug M4x12 skrue +  
 tandskiver for montage af jord.

F

E	2011.08.03	Pos.70 77206000->77206011		SPE	2011.08.03	JTV
A	30-11-07			MPE		
Rev	Crea. date yyyy-mm-dd	Revision description		Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
			Material:	Scale: 1:5	Format: A4	Tolerance: DS/ISO 2768 - mK Surface treat.: None
		ID: Description: <b>15760095 Small pump, complete</b>				Rev: <b>E</b>

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1

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A

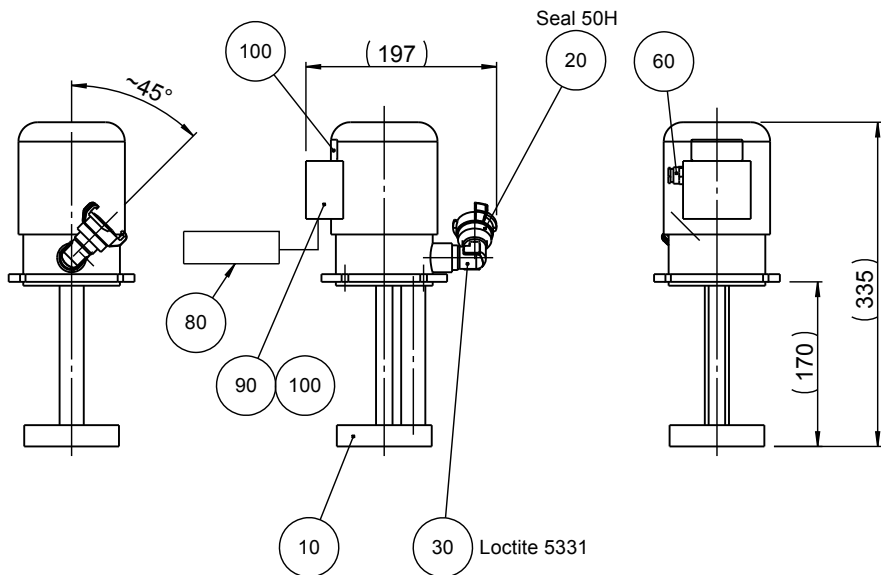
B

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E

F



Observe!  
Plastic housing - Do not tighten fitting (30) hard.

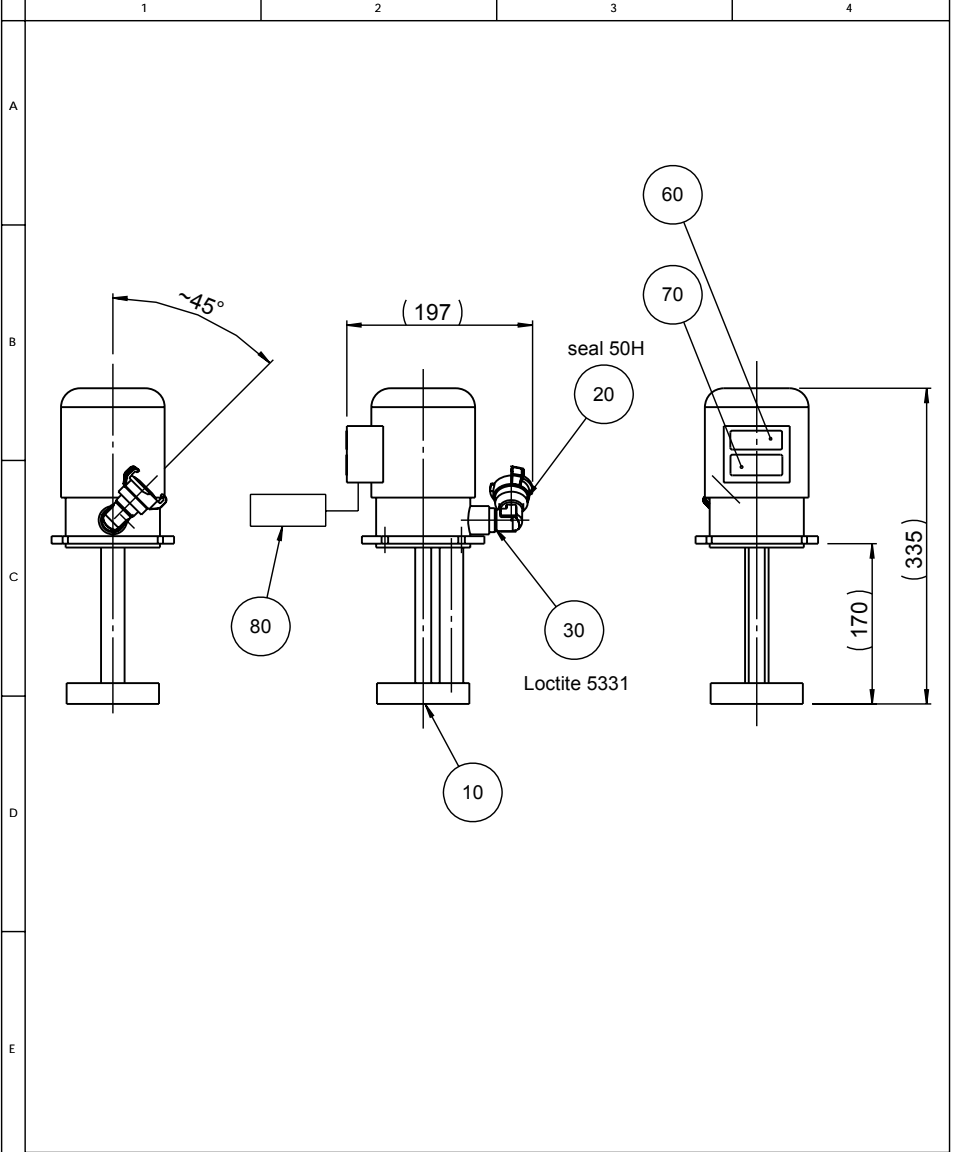
OBS!  
Plast pumpehus - Spænd ikke vinkelfitting (30) hårdt.

90 100 The screw for earth wire in the motor is too small.  
Make a M4 thread in the stud on the motor and use the M4x12 screw and the two tooth washers.

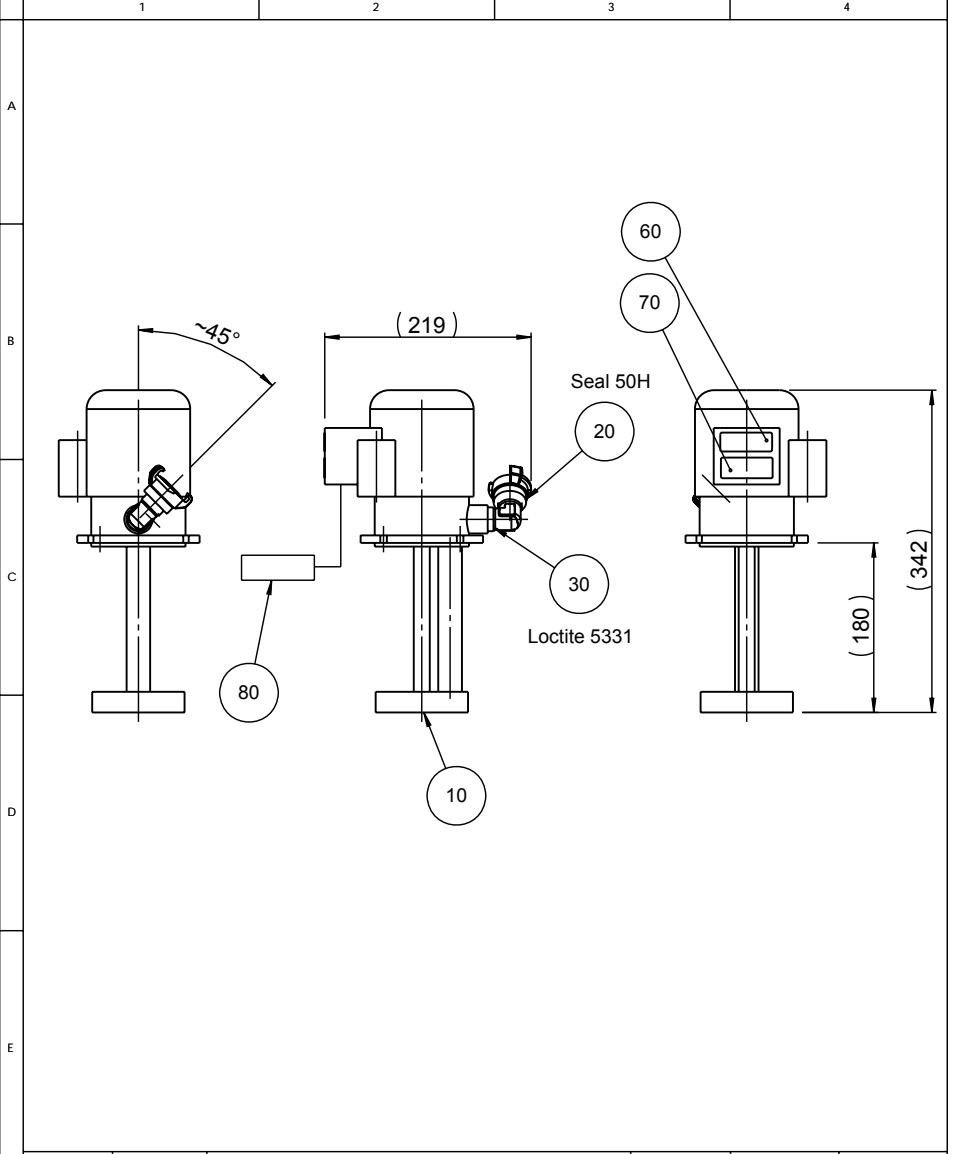
Jordledningen sidder ikke godt under den eksisterende skrue.  
Lav derfor M4 gevind i motorstag og brug M4x12 skrue + tandskiver for montage af jord.

H	2012-01-30	Text about Plastic housing added.	BRY	2012-01-30	JTV
A	30-11-07		MPE		
Rev	Crea. date yyyy-mm-dd	Revision description	Draw. Init	Appr. date yyyy-mm-dd	Appr. Init
F		Material:	Scale: <b>1:5</b>	Format: <b>A4</b>	Tolerance: DS/ISO 2768 - mK
		Surface treat.:			None
ID:		Description: <b>15760095 Small pump, complete</b>			Rev: <b>H</b>

Pederstrupvej 84  
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Copenhagen  
Denmark  
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Fax: +45 44600 804

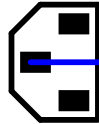


C	20-12-06	Pos 30, Seal 50H -> Loctite 5331	MPE	20-12-06	JTV
B					
A			MPE	09-12-2005	FPG
Rev	Crea. date dd-mm-yy	Revision description	Draw. Init	Appr. date dd-mm-yy	Appr. Init
F	 Pederstrupvej 84 DK-2790 Ballerup Copenhagen Denmark Phone: +45 44600 800 Fax: +45 44600 804	Material:	Scale: <b>1:5</b>	Format: <b>A4</b>	Tolerance: DS/ISO 2768 - mK Surface treat.: None
		ID: Description: <b>15760097 Small pump 1x240 60 Hz , complete</b>			



C	20-12-06	Pos 30, Seal 50H -> Loctite 5331	MPE	20-12-06	JTV
B					
A			MPE	09-12-2005	FPG
Rev	Crea. date dd-mm-yy	Revision description	Draw. Init	Appr. date dd-mm-yy	Appr. Init
F			Material:	Scale: 1:5	Format: A4
			Tolerance: DS/ISO 2768 - mK		Surface treat.: None
ID:		Description: <b>15760098 Small pump 1x100-120 50-60 Hz CSA, complete</b>			Rev: <b>C</b>
<small>           Pedersstrupvej 84            DK-2750 Ballerup            Copenhagen            Denmark            Phone: +45 44600 800            Fax: +45 44600 804         </small>					

**PLUG AC**



100-240V  
50/60Hz  
5%

**W1**  
input cabel  
AWG16 x 3 mains cable, plug CSA

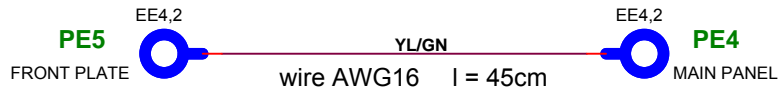
**BK** on the left  
S4,8 + cover

**WH** on the right  
S4,8 + cover

**TO FUSE HOLDERS**

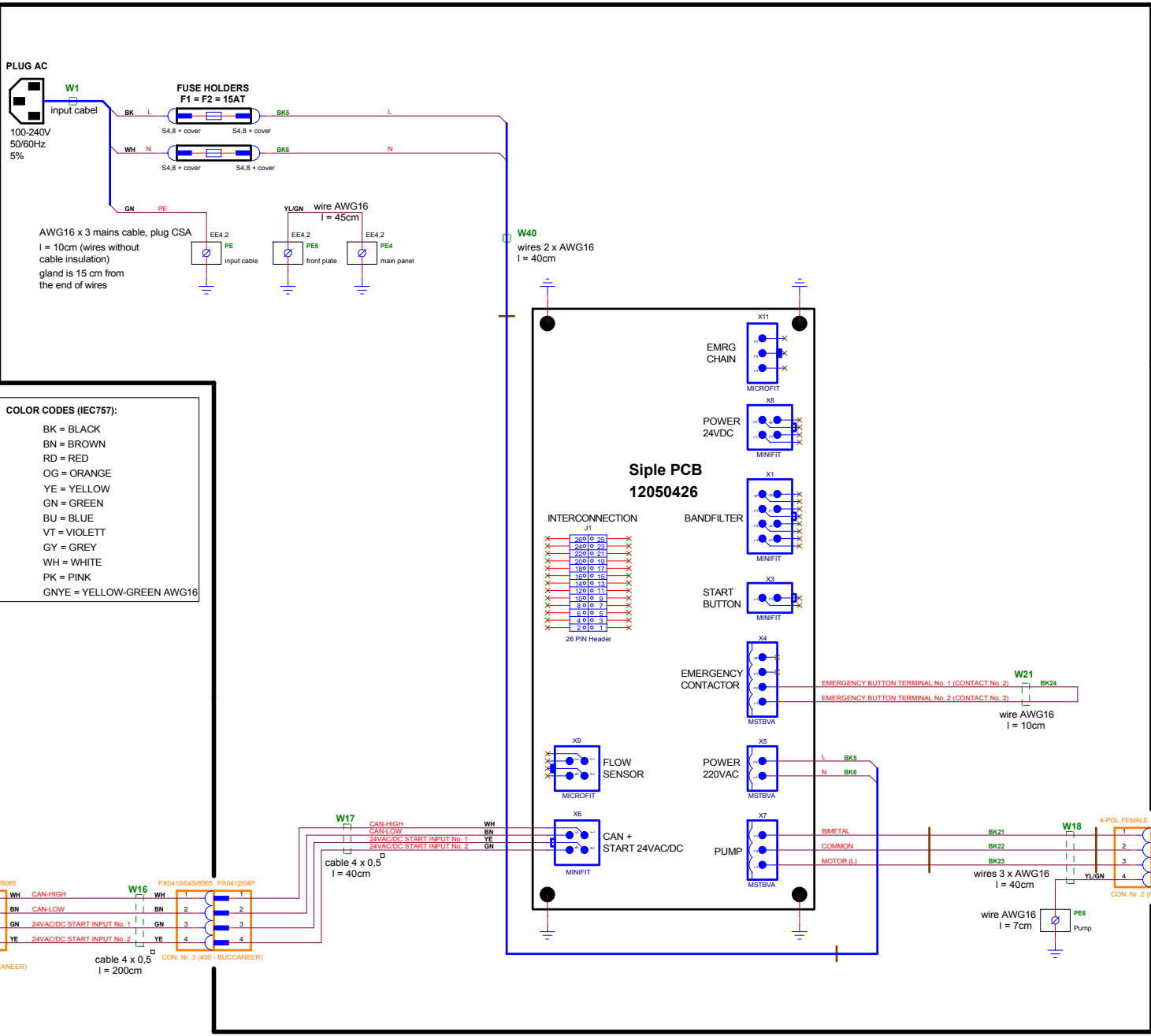
**GN** **PE**  
INPUT CABLE  
EE4,2

I = 10cm (wires without  
cable insulation)  
gland is 15 cm from  
the end of wires



**W1 is marked with LABEL**  
**PE, PE4, PE5 are marked with LABEL**

11.7.2006 (OH) rev B changed W1 28.07.2009 (OHO) rev C W1 - corrected wires colors		Roper Engineering Technologicka 372 Ostrava - Pustkovec Czech Republic PHONE: +420596995848		
<b>W1 CABLE</b>				
Size A4	CAGE Code <Cage Code>	DWG NO <b>15763501</b>	Rev <b>C</b>	
Friday, August 15, 2014	Scale	Sheet	1	of 1



**COLOR CODES (IEC757):**

- BK = BLACK
- BN = BROWN
- RD = RED
- OG = ORANGE
- YE = YELLOW
- GN = GREEN
- BU = BLUE
- VT = VIOLETT
- GY = GREY
- WH = WHITE
- PK = PINK
- GNYE = YELLOW-GREEN AWG16

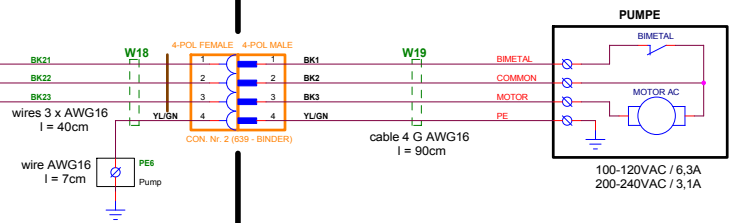
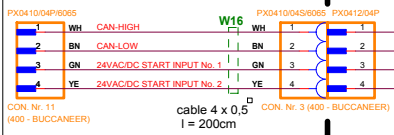
**KEY:**

- S...Socket (S4,8 - faston socket 4,8mm...)
- EE...Electric Eye (EE4.2 - Electric Eye with inside diameter 4,2mm...)
- green...LABELS on the wiring (W1, PE1...)
- binding belt 100 x 2,5mm
- red...electrical meaning (GND-S...)

all AWG wires and cables have an UL/CSA approval

**WIRING SETS:**

- W1
- W40
- W21
- W17
- W18



28.07.2009 (OHO) rev E  
W1 - corrected wires colors

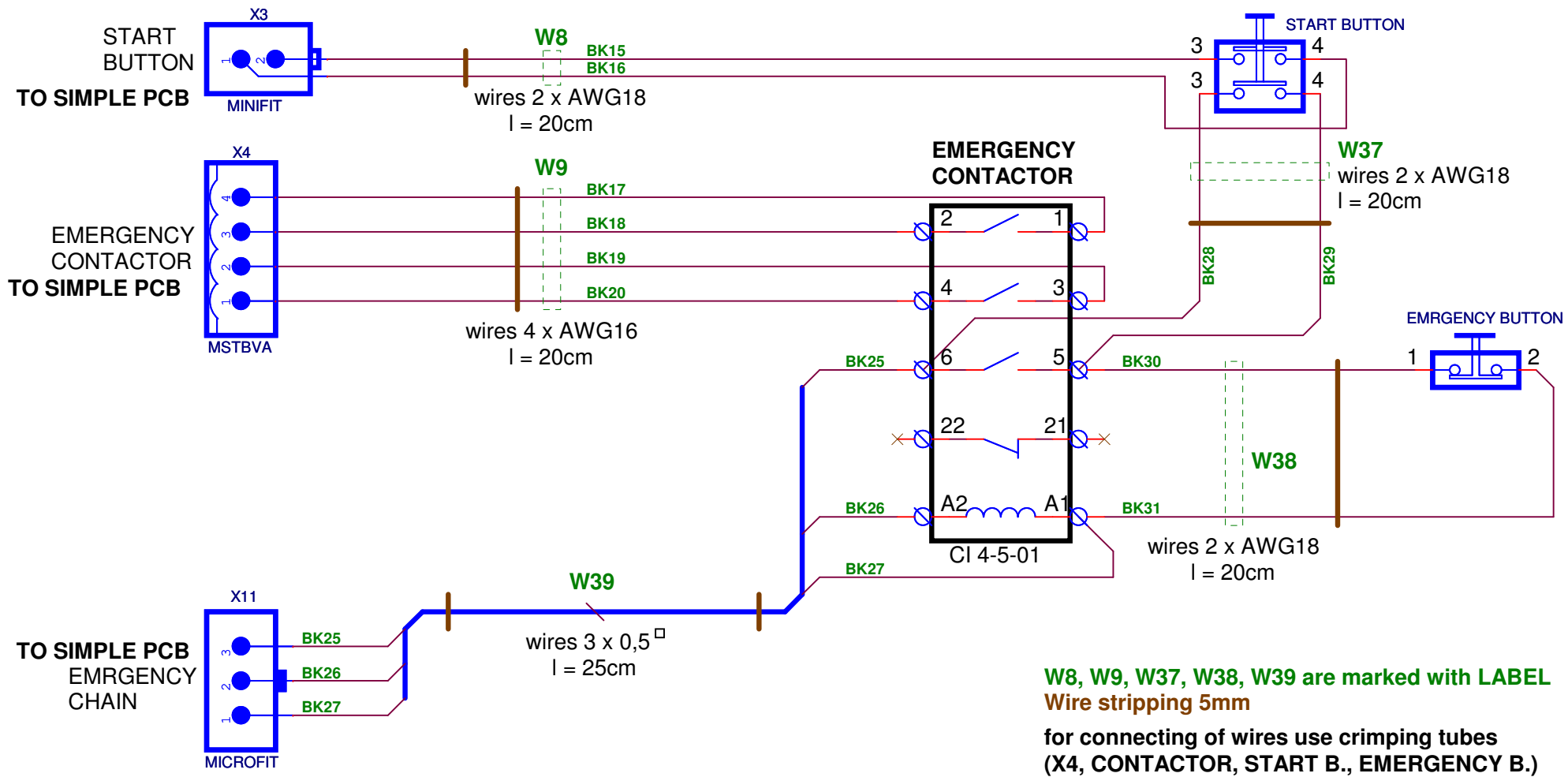
18.2.2008 (OHT) rev B  
changed Connector Nr. 10 from female to male  
changed X10 to Minifit 4 pole  
11.7.2006 (OH) rev C  
changed length of wire for: PE6  
changed W1  
changed fuses F1, F2  
27.02.2008 (AKR) rev D  
Changed W18

Roper Engineering  
Technická 372  
Ostrava - Pustkovec  
Czech Republic  
PHONE: +42059595848

**COOLI-1 WIRING DIAGRAM**

Size A2	CAGE Code <Cage Code>	DWG NO <b>15763593</b>	Rev <b>I E</b>
Tuesday, July 28, 2009	Scale	Sheet 1 of 1	





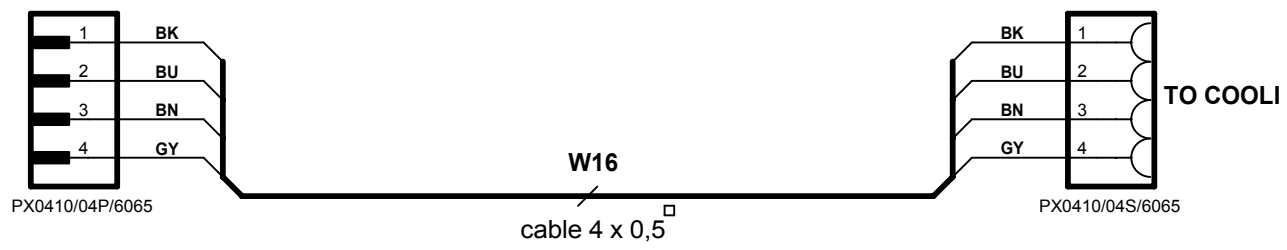
26-05-2006 (OH): length of all wires was increased by 5cm		Roper Engineering Technologicka 372 Ostrava - Pustkovec Czech Republic PHONE: +420596995848	
<b>WIRING SET CONTACTOR</b>			
Size A4	CAGE Code <Cage Code>	DWG NO <b>15763581</b>	Rev <b>B</b>
Friday, May 26, 2006	Scale	Sheet 1 of 1	

D

C

B

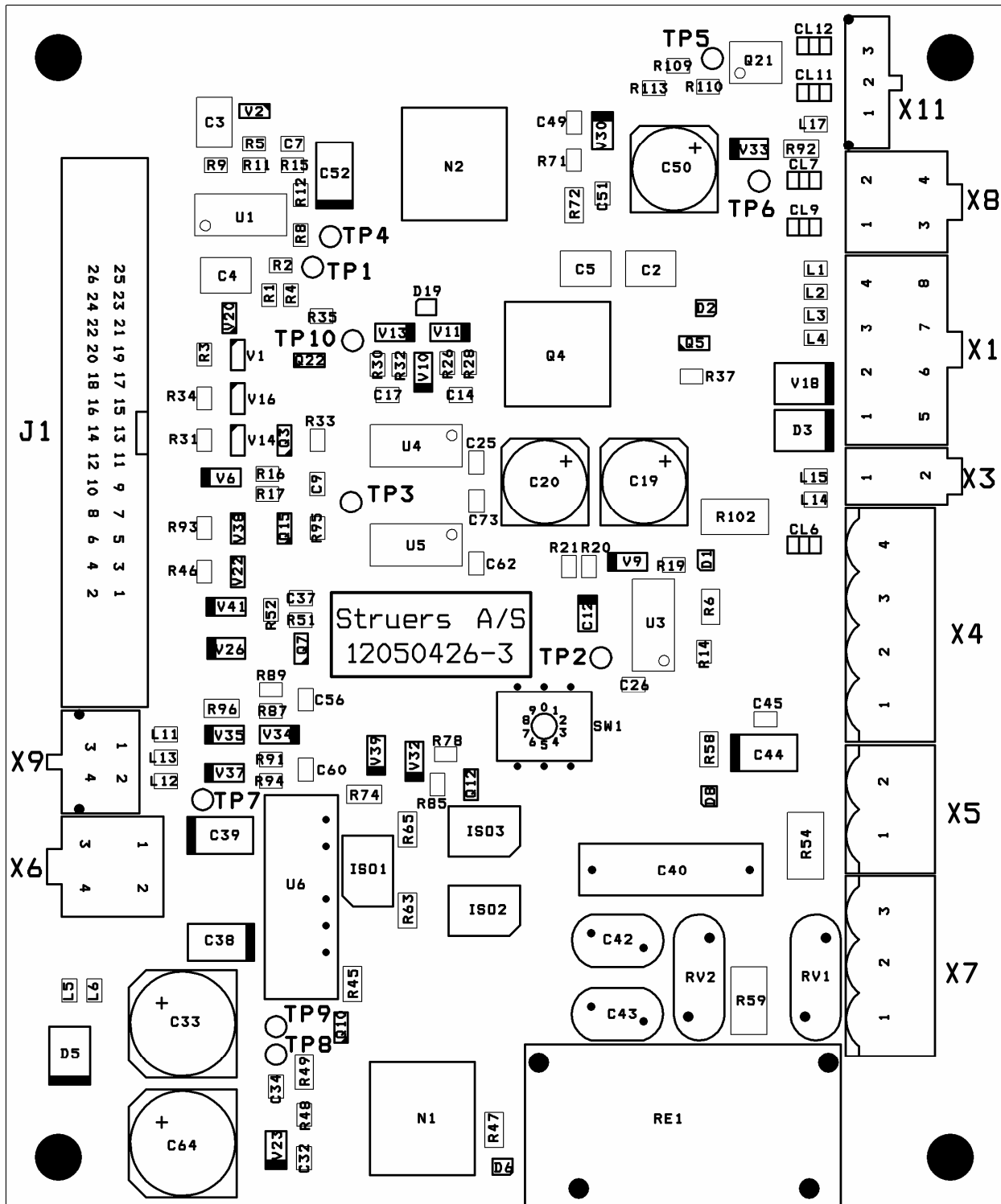
A

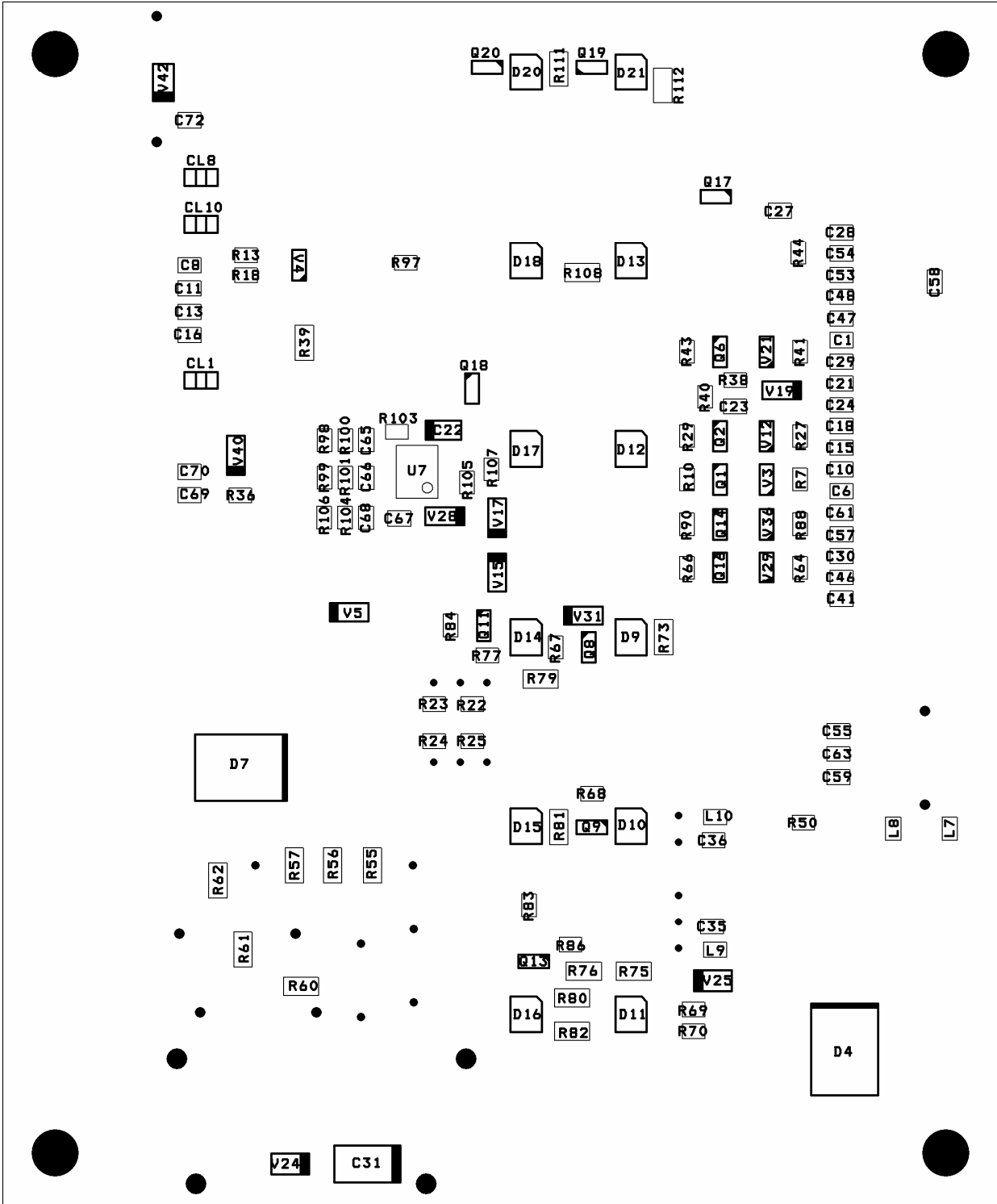


W16 is marked with LABEL

<b>REV B: OH (2007/06/29)</b> - lenght deleted	STRUERS A/S Pederstrupvej 84 DK-2750 Ballerup Denmark			
	<b>WIRING SET FOR LOOSE CABLE</b>			
	Size A4	CAGE Code <Cage Code>	DWG NO <b>15763603</b>	Rev <b>B</b>
Friday, June 29, 2007	Scale		Sheet 1 of 1	

# ASSEMBLING of the Simple PCB (12050426-3) detail









Pederstrupvej 84  
DK-2750 Ballerup  
Denmark