

# metos

## NOVA AND DROP-IN COLD AND NEUTRAL UNITS

COLD BASIN D-I CB  
FROST PLANE D-I FrP  
CRUSHED ICE BASIN D-I CIB  
NEUTRAL UNIT N  
SERVING COUNTER SB

TYPE: 450, 800, 1200, 1600

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## Installation and Operation Manual

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Dear Customer,

Congratulations on deciding to choose a Metos appliance for your kitchen activities. You made an excellent choice. We will do our best to make you a satisfied Metos customer like thousands of customers we have around the world.

Please read this manual carefully. You will learn correct, safe and efficient working methods in order to get the best possible benefit from the appliance. The instructions and hints in this manual will give you a quick and easy start, and you will soon note how nice it is to use the Metos equipment.

All rights are reserved for technical changes.

You will find the main technical data on the rating plate fixed to the equipment. When you need service or technical help, please let us know the serial number shown on the rating plate. This will make it easier to provide you with correct service.

For your convenience, space is provided below for you to record your local Metos service contact information.

METOS TEAM

Metos service phone number:.....

Contact person:.....



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# 1. General

Carefully read the instructions in this manual as they contain important information regarding proper, efficient and safe installation, use and maintenance of the appliance.

Keep this manual in a safe place for eventual use by other operators of the appliance.

The installation of this appliance must be carried out in accordance with the manufacturer's instructions and following local regulations. The connection of the appliance to the electric supply must be carried out by qualified persons only.

Persons using this appliance should be specifically trained in its operation.

Switch off the appliance in case of failure or malfunction. The periodical function checks requested in the manual must be carried out according to the instructions. Have the appliance serviced by a technically qualified person authorized by the manufacturer and using original spare parts.

Not complying with the above may put the safety of the appliance in danger.

## 1.1 Symbols used in the manual



This symbol informs about a situation where a safety risk might be at hand. Given instructions are mandatory in order to prevent injury.



This symbol informs about the right way to perform in order to prevent bad results, appliance damage or hazardous situations.



This symbol informs about recommendations and hints that help to get the best performance out of the appliance.

## 1.2 Symbols used on the appliance



This symbol on a part informs about electrical terminals behind the part. The removal of the part must be carried out by qualified persons only.

## 1.3 Checking the relationship of the appliance and the manual

The rating plate of the appliance indicates the serial number of the appliance. If the manuals are missing, it is possible to order new ones from the manufacturer or the local representative. When ordering new manuals it is essential to quote the serial number shown on the rating plate.

## 2. Safety

### 2.1 Safe use of the appliance



For safe use of the appliance, observe the following safety instructions:

- When moving or servicing the appliance, always unplug it from the power supply.
- While cleaning the appliance, be cautious not to allow the electrical devices to come into contact with water. Spraying water in the immediate vicinity of the appliance is forbidden.
- Exposing the appliance to the rain is forbidden.

If the appliance is not used for a long time, it should be unplugged from the power supply, cleaned and wiped dry on the inside.

### 2.2 Disposal of the appliance

The appliance contains parts and components, the disposal of which requires special treatment. Contact local authorities to obtain instructions on how to dispose of the appliance.



## 3. Functional description

### 3.1 Intended use of the appliance

The appliance is intended for short-time storage and distribution of foodstuffs in dining rooms and restaurants.



The manufacturer shall not be held liable for situations which may arise from failure to comply with the warnings and instructions given in this manual.

#### 3.1.1 Use for other purposes



Use of the appliance for any other purposes is prohibited.

Consult the manufacturer in case you intend to use the appliance for other purposes than stated above.

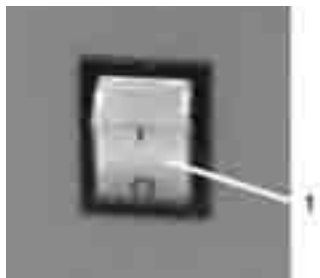
## 3.2 Functional description

The cold basin and frost plane are equipped with a refrigeration unit.

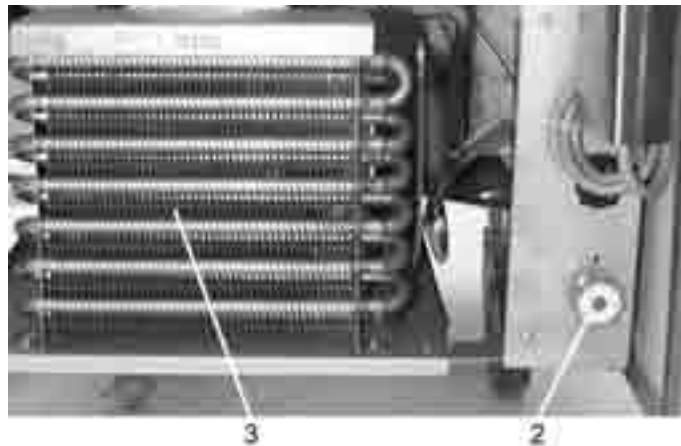
The crushed ice basin is insulated, but it does not include a refrigeration unit.

### 3.2.1 Operating switches

#### Cold basin and frost plane



1. Main switch



2. Thermostat  
3. Condenser

## 4. Operating instructions

### 4.1 Operation

#### 4.1.1 Cold basin CB and frost plane FrP

Before placing products in the unit, wait until it has reached the temperature set with the thermostat.

Correct cold storage of foodstuffs facilitates kitchen activities and affects energy consumption:

- Do not load products until the appliance has reached the correct operating temperature.
- Monitor the internal temperature of the unit daily.
- Always keep the products in good order.
- Do not store spoilt food in the unit.

In normal conditions, the thermostat need not be adjusted.

#### 4.1.2 Crushed ice basin CIB

Before loading the products, put crushed ice or cold bed in the basin.

Points to be observed in use:

- Position the product as close as possible to the cold source, preferably in direct contact with it.
- The basin's insulation extends the working life of crushed ice, but you should watch the melting of ice during operation and add ice as needed.
- The basin can be used even without a cold source, however, not for foodstuffs that require cold storage.
- Place crushed ice/cold bed in the basin as near as possible the serving time.

## 4.2 After use

### 4.2.1 Emptying the basin

Nova and drop-in units have a drain valve beneath the basin. Water can be emptied by opening this valve. The units are fitted with a 1 m drain hose to carry water into an emptying vessel. The emptying vessel should be placed either behind the service door inside the unit or, if not enough space is available, the vessel should be positioned beside the unit for the duration of emptying.

If the unit has not been connected to the sewer system, it is extremely important to keep the drain valve tap closed at all times except during emptying, particularly when the unit has been installed on a water-sensitive floor surface, such as parquet.

### 4.2.2 Cleaning

In normal use, the appliance does not require any other daily care than sufficient cleaning.

For cleaning the interior and exterior, use neutral or slightly alkaline cleaning agents or wipe the surfaces with a damp cloth. Abrasive materials should not be used.



Use of a hose for cleaning the appliance is forbidden.

Clean the condenser once a week. The machinery does not normally require any other cleaning. Vacuum-clean the condensing unit using a plastic nozzle to avoid damaging the condenser.



Before vacuum-cleaning the condenser, switch off the appliance at the mains by unplugging the electric cable from the socket.



Other cleaning procedures except the condenser cleaning should be carried out by an authorised service workshop.



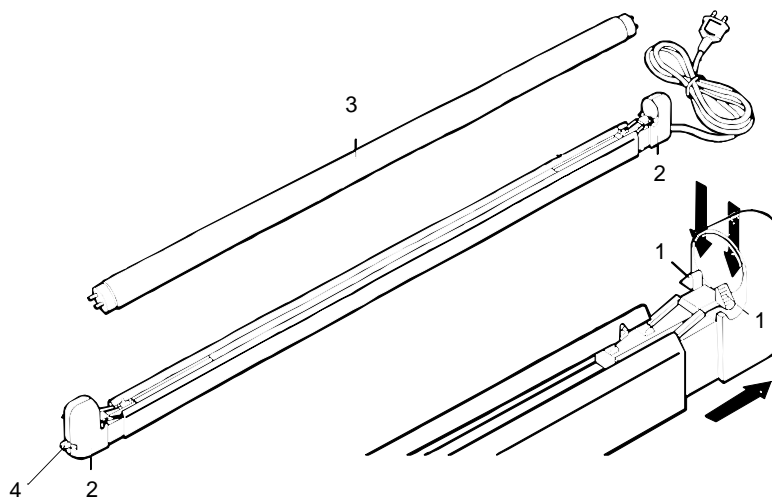
It is recommended to have the compressor cassette cleaned inside by a service company 1-2 times a year.

### 4.2.3 Replacing the lamp



Switch off the luminaire at the mains before replacing the lamp.

To avoid damaging the starter, it is advisable to replace the lamp before the end of its service life. The starter cannot be replaced.



1. Lever
2. Lamp holder
3. Lamp
4. Switch

Hold down the levers, slide both ends of the lamp holder sideways and remove the lamp. Insert the lamp and return both lamp holders to their original position, making sure they snap into place.

## 5. Installation

### 5.1 Operating conditions

The appliance is designed for operation at temperatures of +10°C to + 25°C.

The appliance should not be placed close to bain-maries or ovens.

### 5.2 Transport and storage

The appliance should be transported to the installation site in its transport package. Do not remove package until in the immediate vicinity of the installation place. The appliance should be transported in an upright position.

The appliance is made of polished stainless steel and of plastic, so it can become scratched very easily in site conditions. Therefore, the appliance should be delivered to the installation site at a later stage of construction work. It is forbidden to use the appliance as an installation base.



The appliance should not be stored outdoors, not even in its transport package.

#### **Cold basin and frost plane**



In case the appliance has been stored in a non-heated location so that its temperature and particularly the temperature of the machinery has fallen below 0°C, the appliance should be kept in room temperature until the machinery temperature is at least 10°C. Starting the cold machinery may damage the compressor.



In case the appliance has been heavily tilted just before the intended start-up, you should wait about 30 minutes before switching the appliance on. Otherwise the oil accumulated in the suction inlets of the compressor may damage the compressor with a hydraulic shock.

### 5.3 Unpacking the appliance

Remove foils protecting the stainless steel and plastic surfaces cautiously to prevent the surfaces from getting scratched.

## 5.4 Installation of drop-in units

Drop-in units are installed inside a separately built counter. The counter must be fitted with an installation opening; for measurements, see drawings in “Technical specifications” at the end of this manual. Sufficient space must be provided under the table top according to the installation drawings (see “Technical specifications”).

Drop-in units are lifted into the installation opening, so that they rest on the table top with their own weight. A sufficient number of people is needed for lifting to avoid damaging the counter or the unit.

### 5.4.1 All units

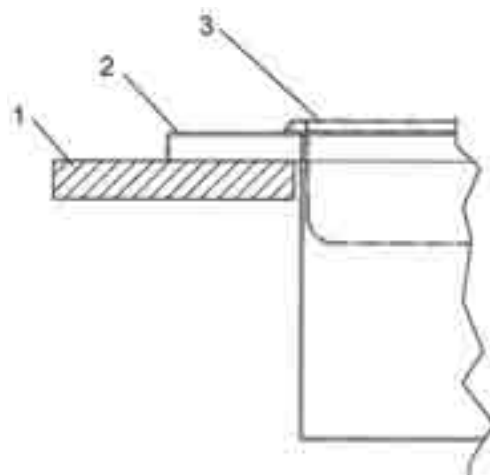
#### Materials

The counter, where drop-in units are installed, must be damp-proof. Recommended material is, for instance, laminate-coated damp-proof chipboard. Extremely important is the choice of material for the table top.

The counter must be strong enough to bear the appliance weight. The weight of the appliance during operation must also be considered when designing the counter structure. The weight is at its most when a cold basin is used, for example, as a bottle basin.

#### Drop-in installation

Drop-in units have a 15 mm tall collar, which remains lying on the table top. Exceptions are a drop-in water dispenser and a drop-in soup warmer, which have different collar heights.



1. Table top
2. Basin
3. GN container

Because of the installation method, the table top must be completely flat, so that the edges of drop-in units rest evenly on the table surface. This is to ensure that dirt does not gather between the table top and the drop-in unit, and water does not enter the counter structure.

The drop-in unit is mounted on the table top with its own weight, and no separate insulation is required. If desired, the junction of the drop-in unit and table top can be sealed with silicone.

If you want to have the collar of the drop-in unit flush with the table top, you can make a recess for the collar in the table top. In this case you should make sure that the table top thickness is greater than the collar height (15 mm) and that the table top material is strong enough.

Space needed for installing the drop-in units should be taken into account: there must be enough free space above the drop-in opening for installation. Upper parts, eventually constructed separately, should be installed after the drop-in units are in place.

## Connections

When constructing the counter, an opening for the connection cable must be considered. The opening must be at least the size of a plug (diameter min. 40 mm). In addition, the edges of the opening must be finished to make sure that the connection cable is not damaged by rubbing against the opening edge.

The length of the connection cable supplied with drop-in units is 3,2 m. When building the counter, it is advisable to design a special place for the extra length of the connection cable in the counter structure.

If drop-in units fitted water connections are installed in the counter, openings for these must also be taken into account.

## Service door

The operating switches of drop-in units are fixed to the units as standard. To facilitate the use of the switches, the counter must be fitted with a service door. The minimum measurements of the service door are shown on the drawings at the end of this manual (see "Technical specifications").

## Drain

It is recommended to carry drain water via the drain valve into the sewer system. This means that, while erecting the counter, sewer pipe openings must be considered. If drain connection is not possible, water is emptied through the service door.

Drop-in units are equipped with a drain valve beneath the basin. Water can be emptied by opening this valve. Drop-in units are fitted with a 1 m drain hose to carry water into an emptying vessel. The emptying vessel should be placed either behind the service door inside the counter or, if not enough space is available, the vessel is positioned beside the counter for the duration of emptying.

If the unit is not connected to the sewer system, it is extremely important to keep the drain valve tap closed at all times except during emptying, particularly when the unit has been installed on a water-sensitive floor surface, such as parquet.



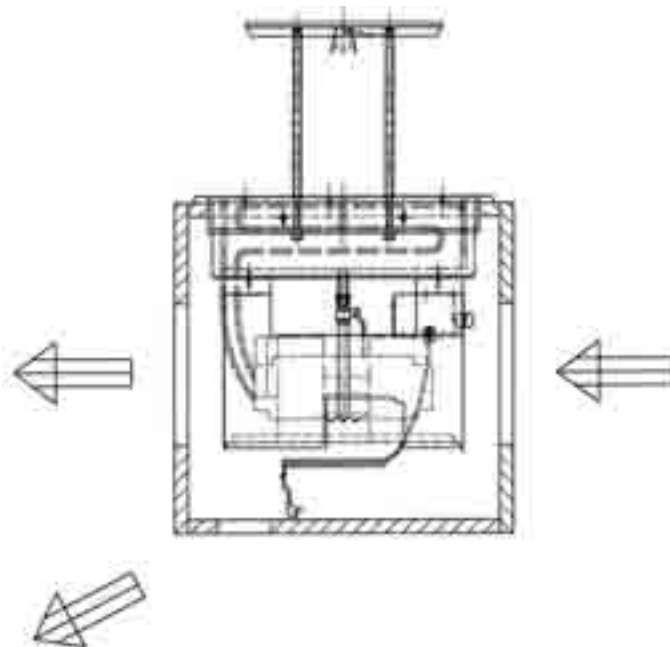
## 5.4.2 Cold units D-I CB and D-I FrP

### Condenser air circulation

Air for the condenser must enter from outside the counter. The panel in front of the refrigeration unit must be fitted with a grid or perforation to ensure fresh air inlet for the condenser. The grid must be larger in size than the condenser area, i.e.  $> 0,09 \text{ m}^2$ . At least 50% of this area must be perforated. It is advisable to attach the grid to the door used as a service hatch.

The best way to provide fresh air inlet for the condenser is to convey air to the condenser with the help of a collar placed between the machinery and the grid.

Condenser air circulation can be improved further by leaving the counter's lower structure open and/or by ensuring flow-through for the counter. Flow-through can be provided by fitting a similar grid as described above on the other side of the refrigeration unit, opposite the grid located in front of the condenser.



#### *Condenser air circulation*

Disregard of condenser air circulation weakens the operation of the cold unit. Insufficient air circulation can considerably reduce the drop-in unit's performance, particularly if the disregard leads to internal air circulation, that is if air blown out of the condenser is sucked back into the condenser.

Insufficient air circulation burdens the refrigeration machinery and shortens the service life of the components. Energy consumption is also greater for drop-in units, if their condenser air circulation has not been properly taken care of.



Failure to provide sufficient air circulation for the condenser invalidates the warranty of the refrigeration machinery.

## **5.5 Installation of Nova units**

If the unit is fitted with wheels, it must be installed on a level surface. When the unit is in its correct place, the wheels must be locked to point away from the centre of the unit. If the unit is fitted with legs, these can be adjusted so that the unit stands steadily on an uneven surface as well.

If a serving line is composed of several units, they can be linked together from under the tray slides with the help of grey Nova connectors delivered with the unit.

## **5.6 Electrical connections**

Connect the appliance to the power supply with an earthed socket. For making the connection, a socket protected with a fuse of max. 16 A has to be provided for each unit.

## **5.7 Start-up**

### **5.7.1 Cold basin and frost plane**

After connecting the appliance to the power supply, turn on the main switch (green) and make sure that the indicator light of the switch lights up.

In case you have problems with taking the appliance into use, contact the Metos service.

## 6. Troubleshooting

In case the appliance does not function as expected, review the following list of problems to find out if the appliance can be put in order without a service call. In all enquiries, please contact the nearest Metos service. Most problems can be managed on the phone.

PROBLEM	POSSIBLE CAUSE	ACTION
The appliance does not start even if the main switch is turned on.	Electrical cable is not properly plugged in the socket.	Put the cable properly in the socket.
	Defective fuse.	Replace the fuse.
Cold basin and frost plane: The compressor is running, but the temperature does not fall to the set value.	Condenser is covered by dust.	Vacuum-clean the condenser.
	Ambient temperature exceeds the maximum value (+25°C).	Make sure that the appliance has not been placed close to a heat source. If necessary, provide mechanical ventilation.
	Prevented air circulation beside the condenser.	Remove obstacles to ensure free air circulation.



The appliance does not contain parts that can be serviced by the user. Service must be carried out by an authorised service company.



## **7. Technical specifications**

**Connection diagram S00142 A4**

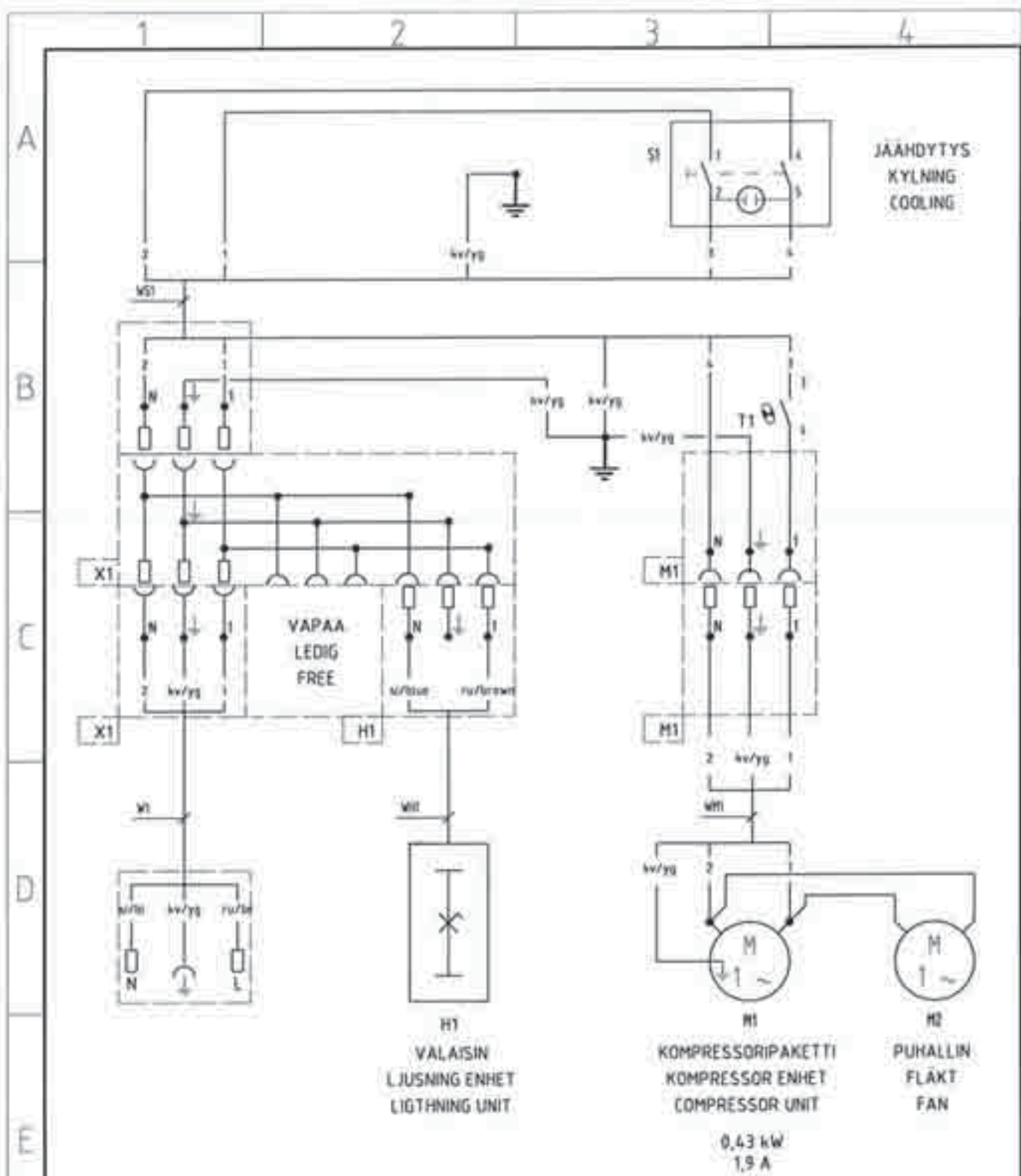
**Installation drawing X01979 A3**

**Measurements, drop-in 450**

**Measurements, drop-in 800**

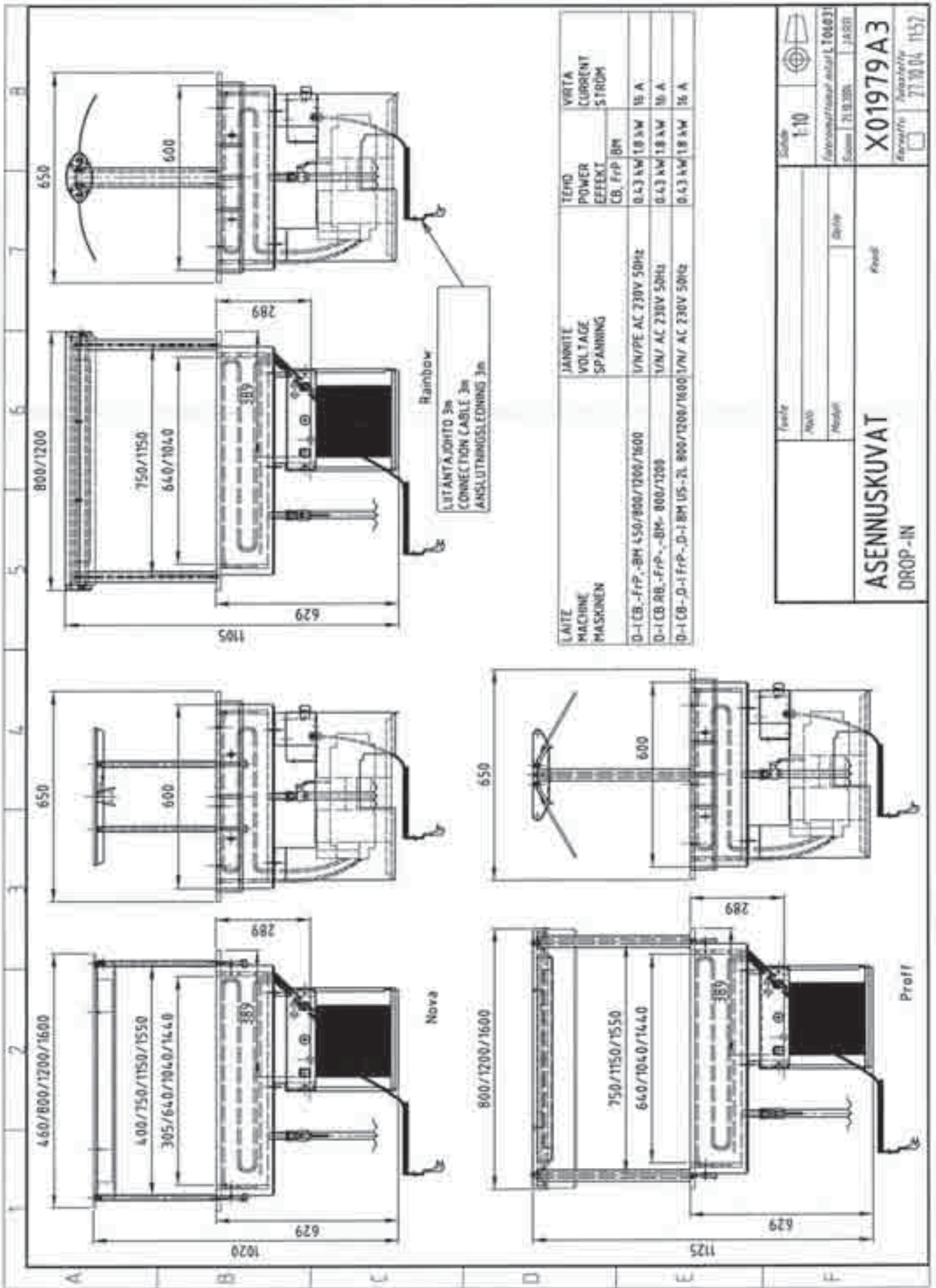
**Measurements, drop-in 1200**

**Measurements, drop-in 1600**



	<i>Tuote</i>	D-I CB, D-I FrP	<i>Suhde</i>	1:1	<i>Lehti</i>	1 (1)
	<i>Malli</i>	4, 5, 8, 12, 16	<i>Suunn.</i>	21.02.2002	PAAK.	
	<i>Moduli</i>		<i>Optio</i>	<i>Lisätyt</i>		
			<i>Koodi</i>			
F	<b>KYTKENTÄKAAVIO</b> <b>CONNECTION DIAGRAM</b>			<b>S00142A4</b>		
	1/N/PE AC 230V 50Hz, 2/PE AC 230V 50Hz			<i>Korvattu</i>	<input type="checkbox"/>	<i>Tulostettu</i>

Connection diagram S00142 A4

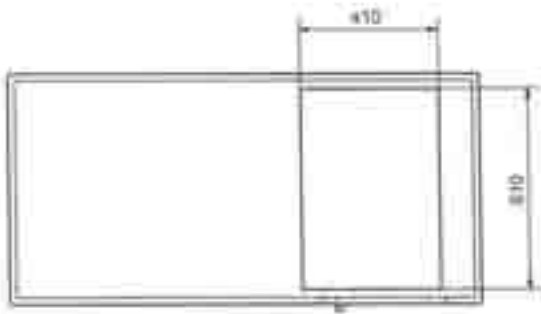
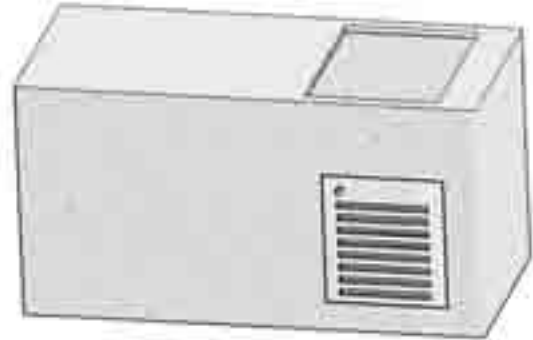
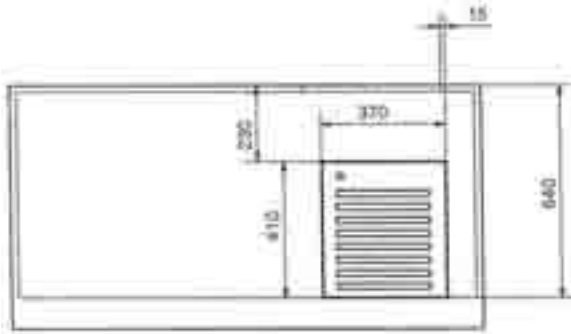


Installation drawing X01979 A3

**Technical specifications**

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## Measurements, drop-in 450

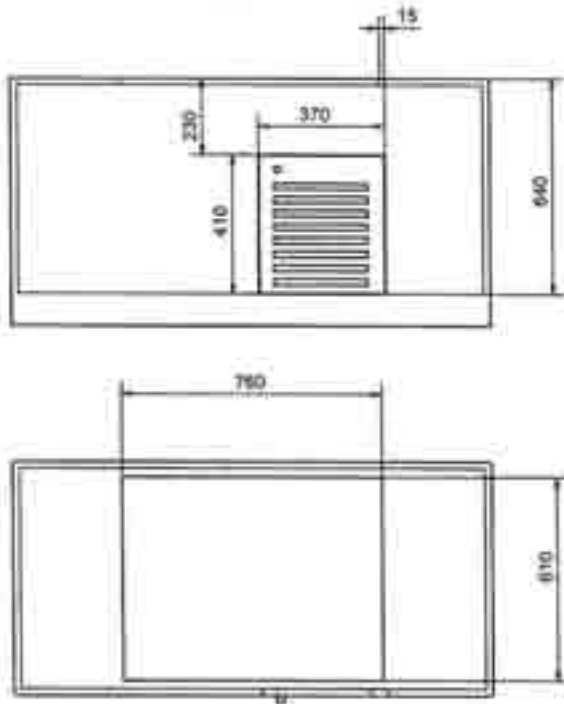


Vapaata tilaa pöytätaason alapuolella 640 mm  
Free space under table top 640 mm  
Fritt utrymme under bordstylan 640 mm



**Technical specifications**

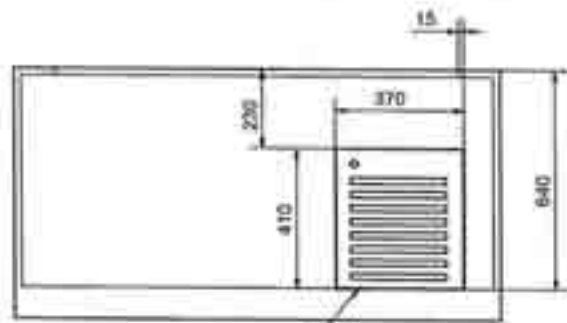
## Measurements, drop-in 800



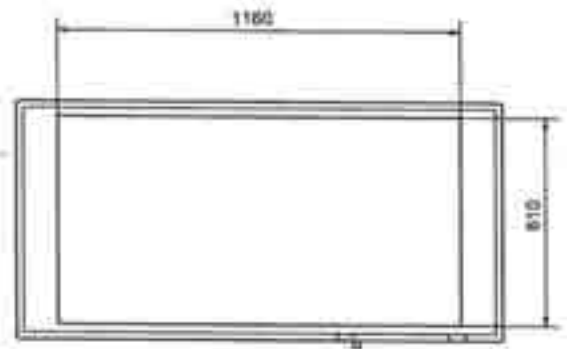
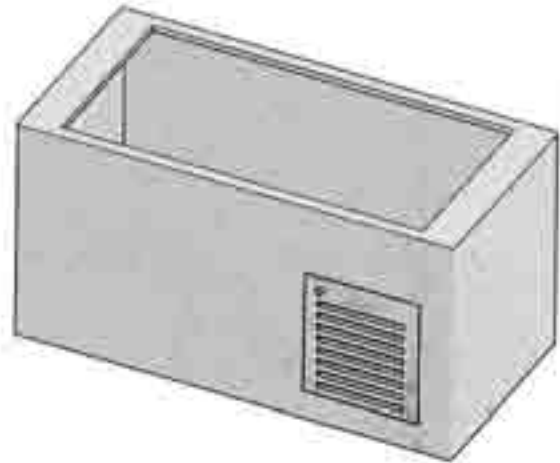
Vapaa tilaa pöytäpinnan alapuolella 640 mm  
Free space under table top 640 mm  
Fritt utrymme under bordsytan 640 mm

## Technical specifications

### Measurements, drop-in 1200



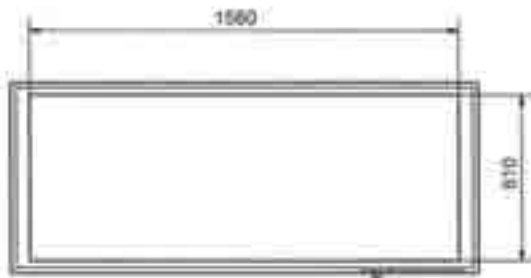
Huoltoluukku  
Service door  
Servicefucker



Vapaata tilaa pöytätaasen alapuolella 640 mm  
Free space under table top 640 mm  
Fritt utrymme under bordsytan 640 mm

**Technical specifications**

## Measurements, drop-in 1600



Vapaa tilaa pöytätason alapuolella 640 mm  
Free space under table top 640 mm  
Fritt utrymme under bordsytan 640 mm

## Technical specifications

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Item	Model	Specification
Electrical connection		230V 50Hz
Power input, refrigeration unit	CB,FrP	0,43 kW
Power input, lamp	CIB,N	18/30 W
Refrigerant	CB,FrP	R134a
Insulation material	CB,FrP,CIB	Foamed polystyrene
Control unit	CB,FrP	Thermostat

CB=COLD BASIN D-I CB, FrP=FROST PLANE D-I FrP, CIB=CRUSHED ICE BASIN D-I CIB, N=NEUTRAL UNIT N, SB=SERVING COUNTER SB

Valmistajan nimi / Tillverkarens namn / Manufacturer's name:

METOS OY AB

Osoite / Adress / Address

04220 KERAVA  
FINLAND

Vakuuttaa, että seuraava tuote / Försäkrar att följande produkt / Declare that the following product

Nimi, tyyppi tai malli / Namn, typ eller modell / Name, type or model

**Drop-in** kylmä- ja lämminlaitteet / varm och kall enheter / heated and cold units  
Drop-in tekniikkaan perustuvat **Nova ja Corona** yksiköt / **Nova och Corona** enheter som byggs av  
drop-in teknik / **Nova and Corona** units based on drop-in technology

on seuraavien direktiivien asiaankuuluvien säännösten mukainen / överensstämmer med tillämpliga bestämmelser  
i följande direktiv / is in conformity with the relevant provisions of the following directives

MD 2006/95/EC, LVD 2006/95/EC, EMC 2004/108/EC, RoHS 2002/95/EC, WEEE 2002/96/EC

ja lisäksi vakuuttaa, että seuraavia yhdenmukaistettuja standardeja (tai niiden osia/kohtia) on sovellettu / och  
försäkrar dessutom att följande harmoniserade standarder (eller delar/paragrafer) har använts / and furthermore  
declares that the following harmonised standards (or parts/clauses) have been used

SFS-EN 61000-6-3: 2002  
SFS-EN 61000-6-1: 2002  
SFS-EN ISO 12100-1: 2003  
SFS-EN ISO 12100-2: 2003

ja lisäksi vakuuttaa, että seuraavia muita standardeja (tai niiden osia/kohtia) on sovellettu / och försäkrar dessutom  
att följande andra standarder (eller delar/paragrafer) har använts / and furthermore we declare that the following  
other standards (or parts/clauses) have been used

SFS-EN 60335-1: 2002  
SFS-EN 60204-1: 2006

Tuotteen suunnitelmatarkastustodistus ja laatujärjestelmää vaivova ilmoitettu laitos (vain painelaitteet)  
Produktens konstruktionskontrollcertifikat och anmält organ, som övervakar kvalitetssystemet (endast tryckkarl)  
Product design examination certificate and the notified body supervising the quality system (only pressure vessels)

Alla mainittu henkilö on valtuutettu kokoamaan teknisen tiedoston / Nedan nämnda person är bemyndigad att  
sammanställa den tekniska dokumentfilen / The person mentioned below is authorized to compile the technical file

Antti Myllys Metos Oy Ab, Ahjonkaarre, 04220 Kerava, Finland

Antopaikka ja päivä / Utsäntad på ort och datum / Place and date of issue

KERAVA 15.6.2010

Valtuutetun henkilön nimi ja asema / Bemyndigad persons namn och befattning / Name and title of authorized person



Pekka Mönkkönen – Director of Business Unit



Jani Paatola - Manager