

UK

# Waste heat exchanger - CHRP-S

Read and save these instructions!

**exodraft**

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## Symbols

The following symbols show potential dangers and important information about the product.



### Danger

Shows a dangerous situation that can cause serious personal injuries or comprehensive damage of materials.



### Warning

Shows a dangerous situation that as a worst case scenario can cause serious personal injuries or comprehensive damage of materials.



### **PAY ATTENTION TO THE FOLLOWING TO AVOID DANGER OF FIRE, ELECTRICITY ACCIDENTS AND PERSON INJURIES:**

- Do only use the appliance for the intended purpose.
- Disable the power supply, disable the heat exchanger and let it cool down before service or cleaning! Make sure that the heat source cannot be enabled accidentally.
- Professionals only may perform mounting and installation of electric connections and heating connections.
- The instructions, the standards and the safety procedures of the manufacturer are to be respected.
- A high-and-low temperature protector (ST110) must be built in and be enabled to protect against overheating. The protector must comply with the standard of N14597.
- This manual does not describe accessories. We refer to the separate manuals for such components.

## 1. Product information

### 1.1 Operation

**Application area** The waste heat exchanger from **exodraft** CHRP-S (Compact-Heat-Recovery-Steam) can retract and use the condensation heat from a thermic cooling.

The waste heat exchanger CHRP-S is mainly used in industry and commercial systems with many operation hours and a high part of waste air. It is built into the smoke ventilation.

The waste heat exchanger CHRP-S uses a retractable plate heat exchanger that can be removed quickly for service and cleaning.

Typical application areas are bakeries, the food industry and engineering.

Use the retracted and preserved energy for water heating, heating etc.

**Restrictions** The appliance is not suitable for outdoor installation.

#### Warning



**Waste heat maximum temperature: 120 °C**  
**NOT suitable for exhaust**

### 1.2 Delivery

**Delivery** We deliver the waste heat exchanger CHRP-S packed on a pallet with the manual.

The delivery does not contain any loose parts.

**Packing list** The packing list shows other eventual components as separate parts.

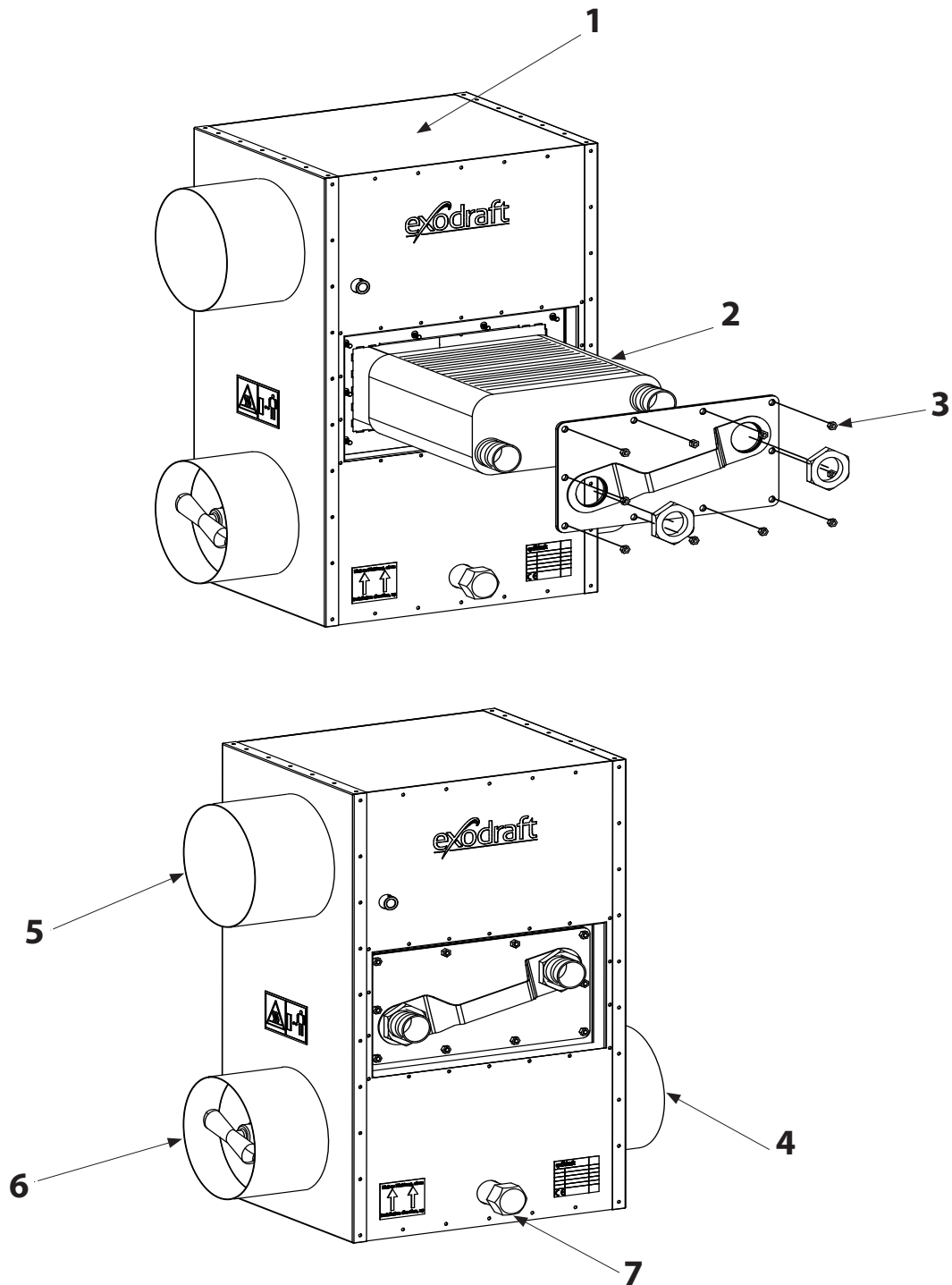
### 1.3 Warranty

Professionals only may install **exodraft**-products. At the instance of ignoring this, **exodraft a/s** reserves the right to void warranty completely or partially.

**exodraft** reserves the right to change these instructions without prior notice.

## 1.4 Components

Standard components.



1. Housing
2. Compact-plate heat exchanger with cover
3. Screw nut
4. Exit for waste heat and service opening
5. Entry for waste heat
6. Exit for waste heat and service opening
7. Drainage

**Optional components**  
**Accessory required by law**

Control unit EHC20  
 ST110 safety thermostat

## 1.5 Range

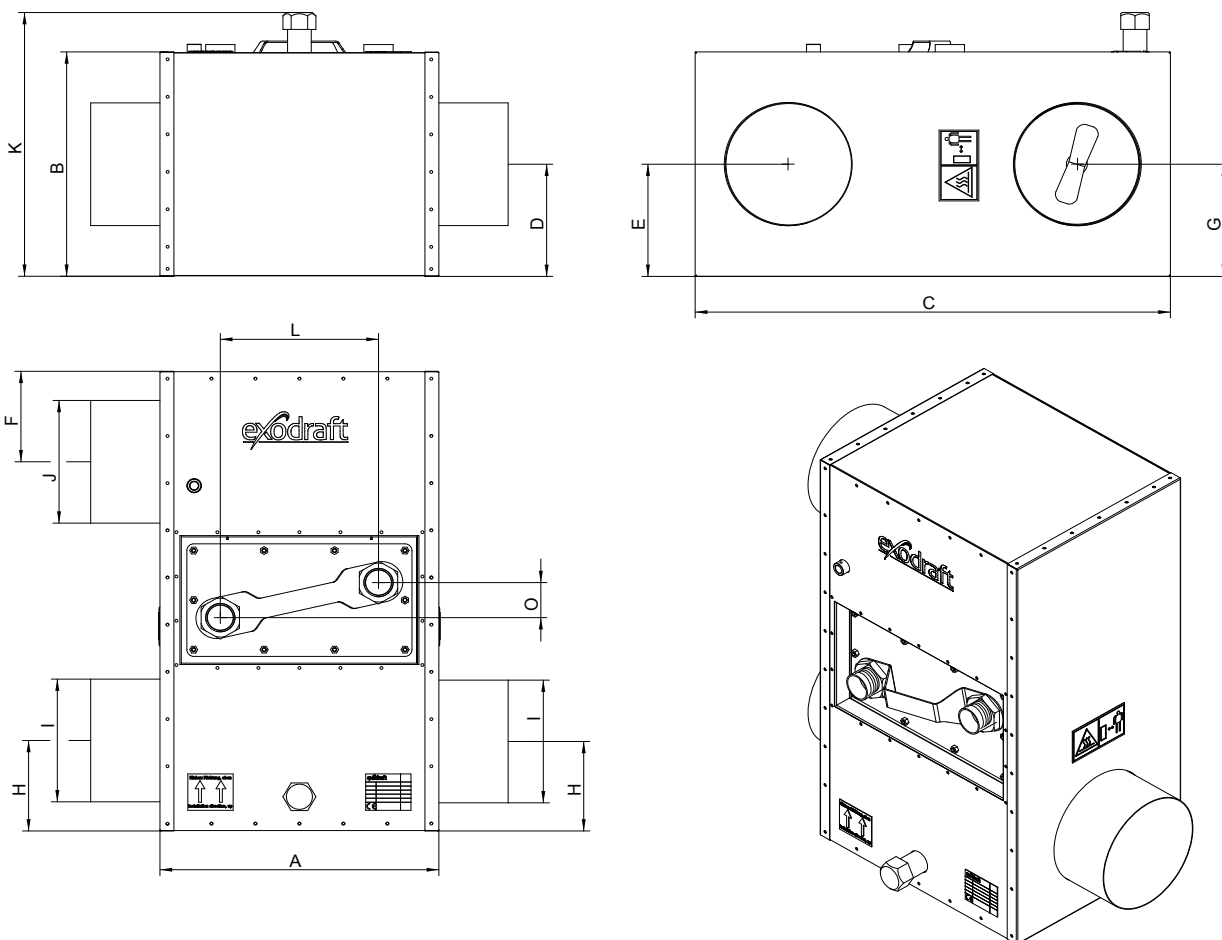
<b>exodraft waste heat exchanger</b> <b>Product number</b>
CHRP-S60-1-150I
CHRP-S80-1-180I
CHRP-S120-1-225I
CHRP-S140-1-250I
CHRP-S100-2-250I
CHRP-S120-2-300I
CHRP-S140-2-350I
CHRP-S120-4-400I
CHRP-S140-4-500I



## 2. Technical data

### 2.1 Dimensions

CHRP-S appliance with one pcs. compact-plate heat exchanger

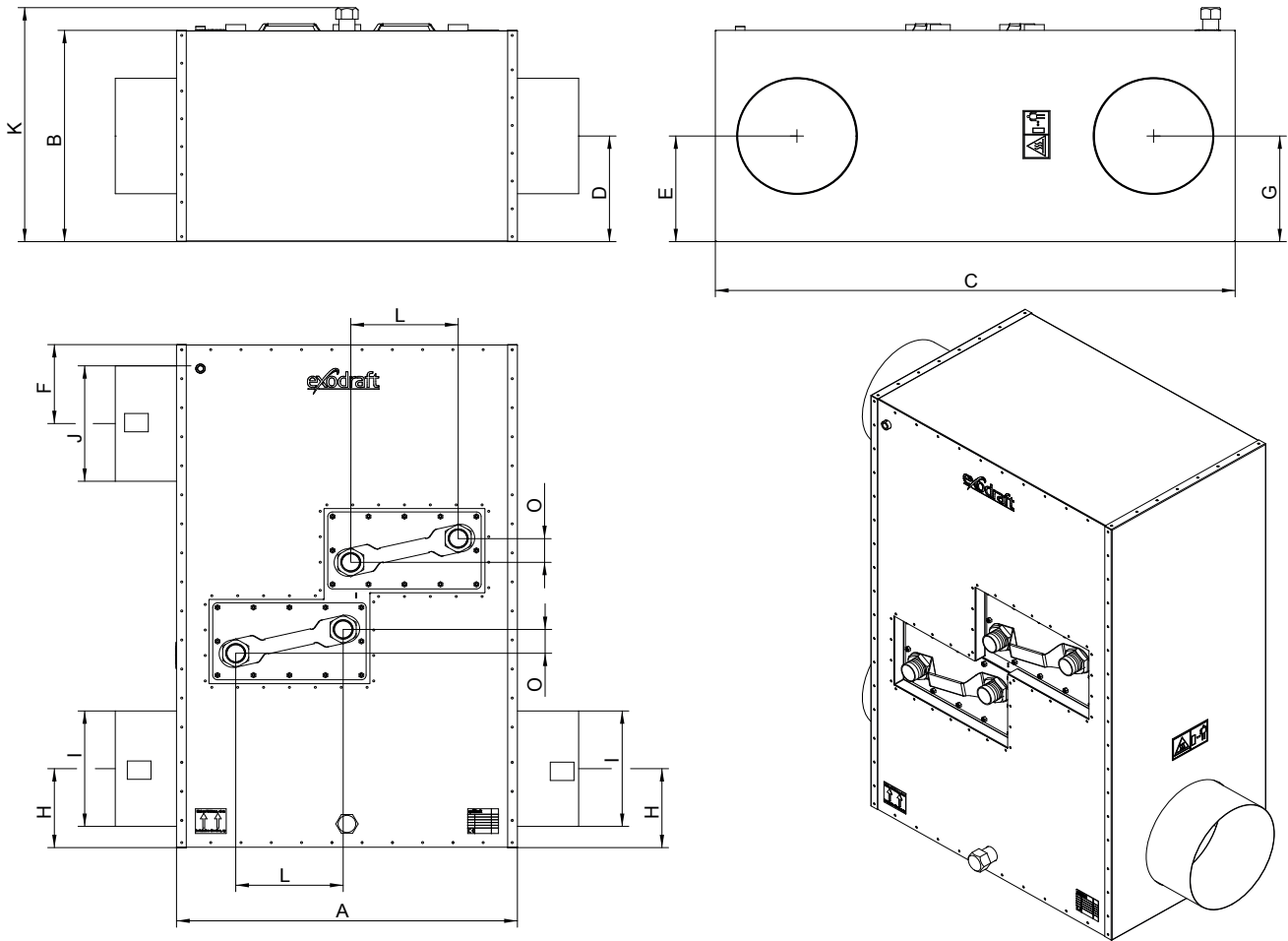


"I" and "J" are the inner measures of the screw nuts

Dimensions Type	A	B	C	D	E	F	G	H	Ø I	Ø J	K	L	O	kg
<b>CHRP-S60-1-150I</b>	400	268	622	134	134	119	134	119	150	150	327	227	52	29
<b>CHRP-S80-1-180I</b>	400	333	682	166	166	134	166	134	180	180	391	227	52	36
<b>CHRP-S120-1-225I</b>	400	463	772	231	231	157	231	157	225	225	521	227	52	48
<b>CHRP-S140-1-250I</b>	400	528	822	264	264	169	264	169	250	250	586	227	52	55



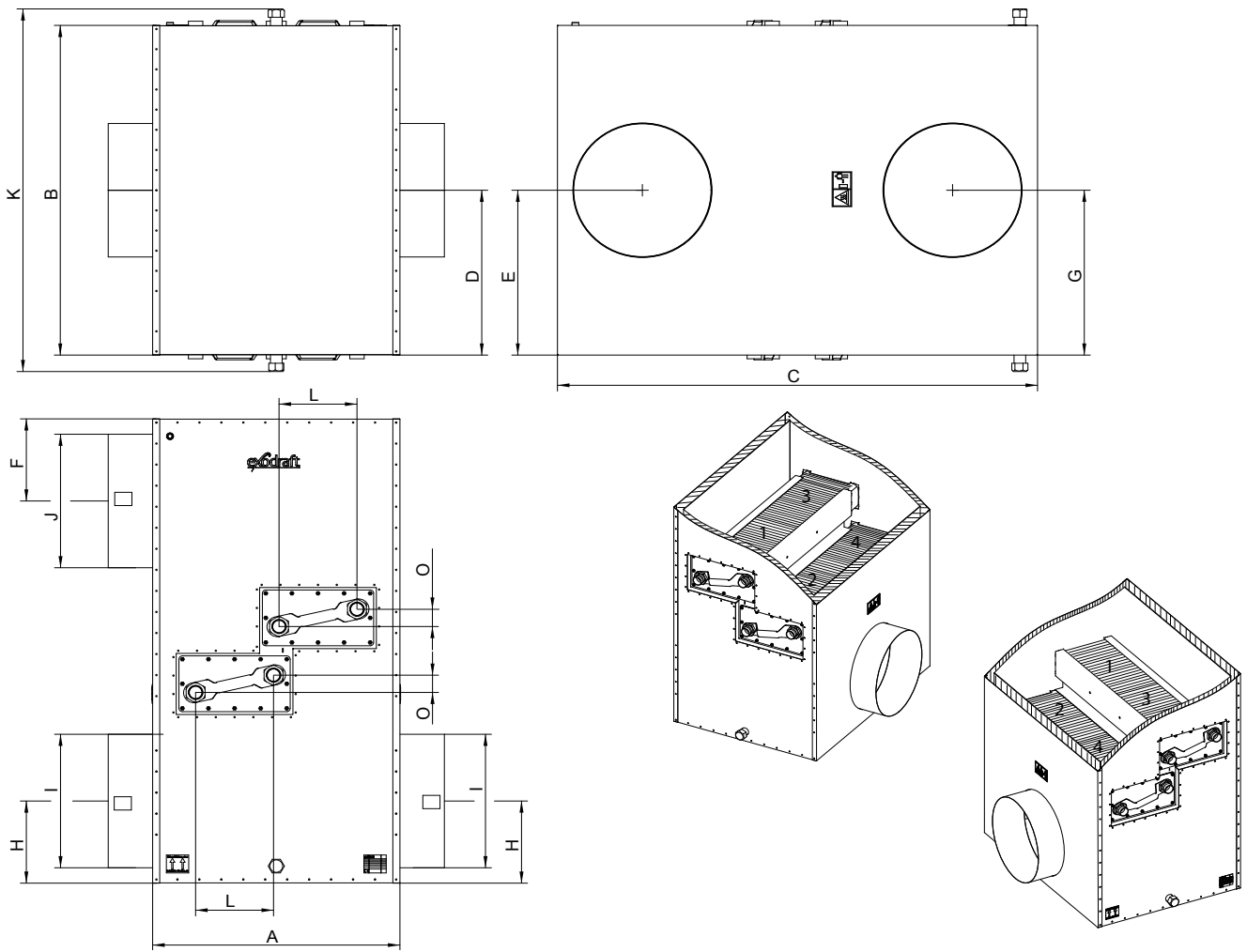
CHR-P-S appliance with two pcs. compact-plate heat exchanger



"I" and "J" are the inner measures of the screw nuts

Dimensions Type	A	B	C	D	E	F	G	H	Ø I	Ø J	K	L	O	kg
<b>CHR-P-S100-2-250I</b>	720	396	1098	199	199	172	199	172	250	250	446	227	52	78
<b>CHR-P-S120-2-300I</b>	720	461	1198	231	231	197	231	178	300	300	511	227	52	92
<b>CHR-P-S140-2-350I</b>	720	526	1298	263	263	222	263	222	350	350	576	227	52	140

CHRP-S appliance with four pcs. compact-plate heat exchanger



"I" and "J" are the inner measures of the screw nuts

Dimensioner Type	A	B	C	D	E	F	G	H	Ø I	Ø J	K	L	O	kg
CHRP-S120-4-400I	720	863	1398	431	431	247	431	247	400	400	962	227	52	185
CHRP-S140-4-500I	720	993	1598	496	496	297	496	297	500	500	1092	227	52	207





### 3. Mechanical installation

#### 3.1 General



##### Warning

Installation, service and/or operation of the CHRP-S waste heat exchanger that does not comply with the instructions from the manufacturer, can cause personal injuries or damage of material.

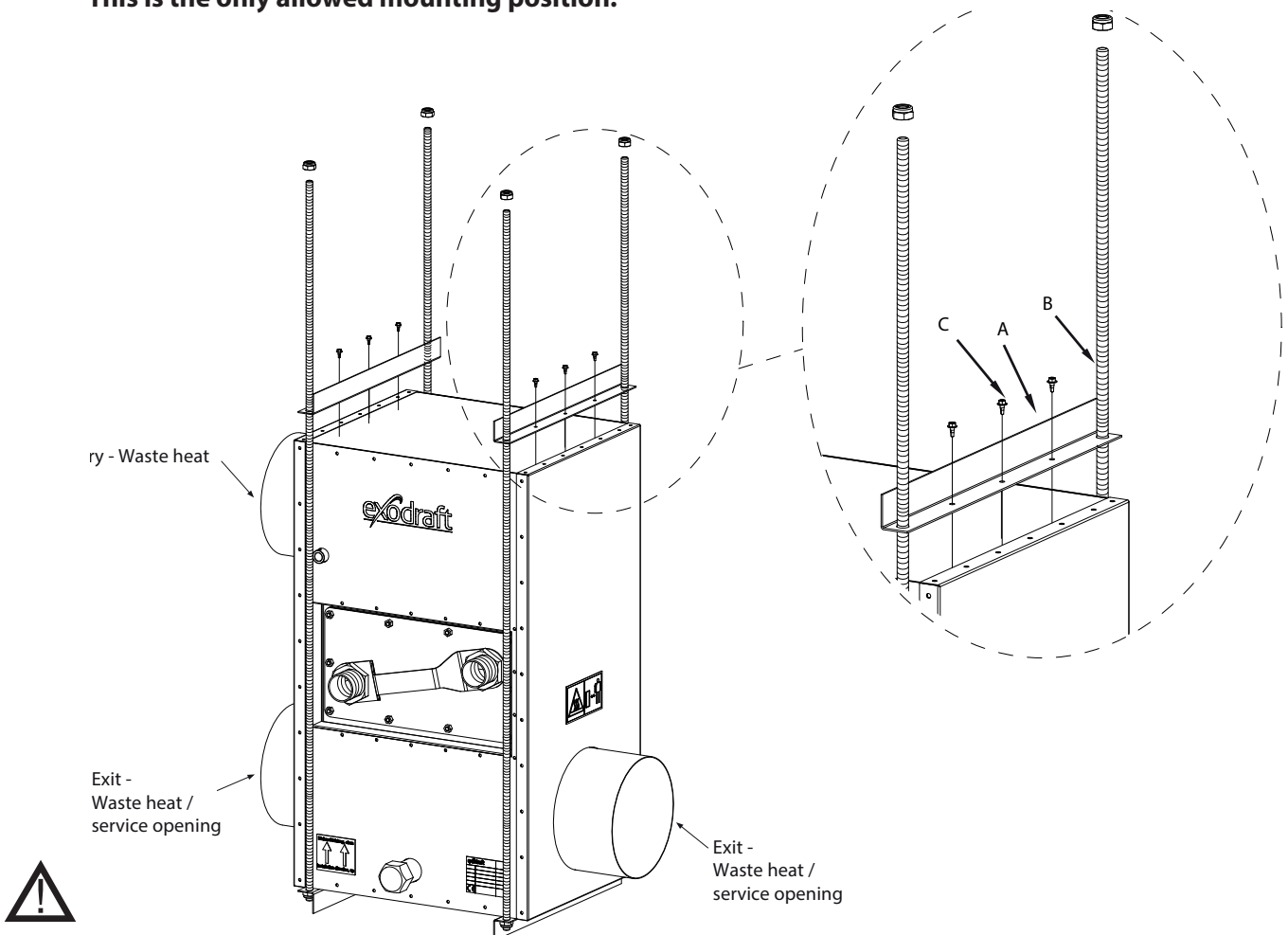
The installation of the CHRP-S waste heat exchanger must comply with this manual and the local regulations. Only qualified professionals may perform the installation.

The respective national laws regarding distance to flammable materials are to be respected.

#### 3.2 Positioning and mounting

**Important! The heat exchanger must always be built in vertical for operation complying with the regulations! Incorrect mounting limits the heat capacity and operation of the heat exchanger.**

**This is the only allowed mounting position.**



Hanging with threaded rods (B) on angle bars (A) over and under the appliance. We recommend to mount the angle bars with self-tapping screws (C) at the housing (only by insulated articles). The lengths of the screws are to be picked in a way that does not damage the inner housing.

**Mount the CHRP-S appliance in a way that makes the compact-plate heat exchanger easy accessible and always removable.**

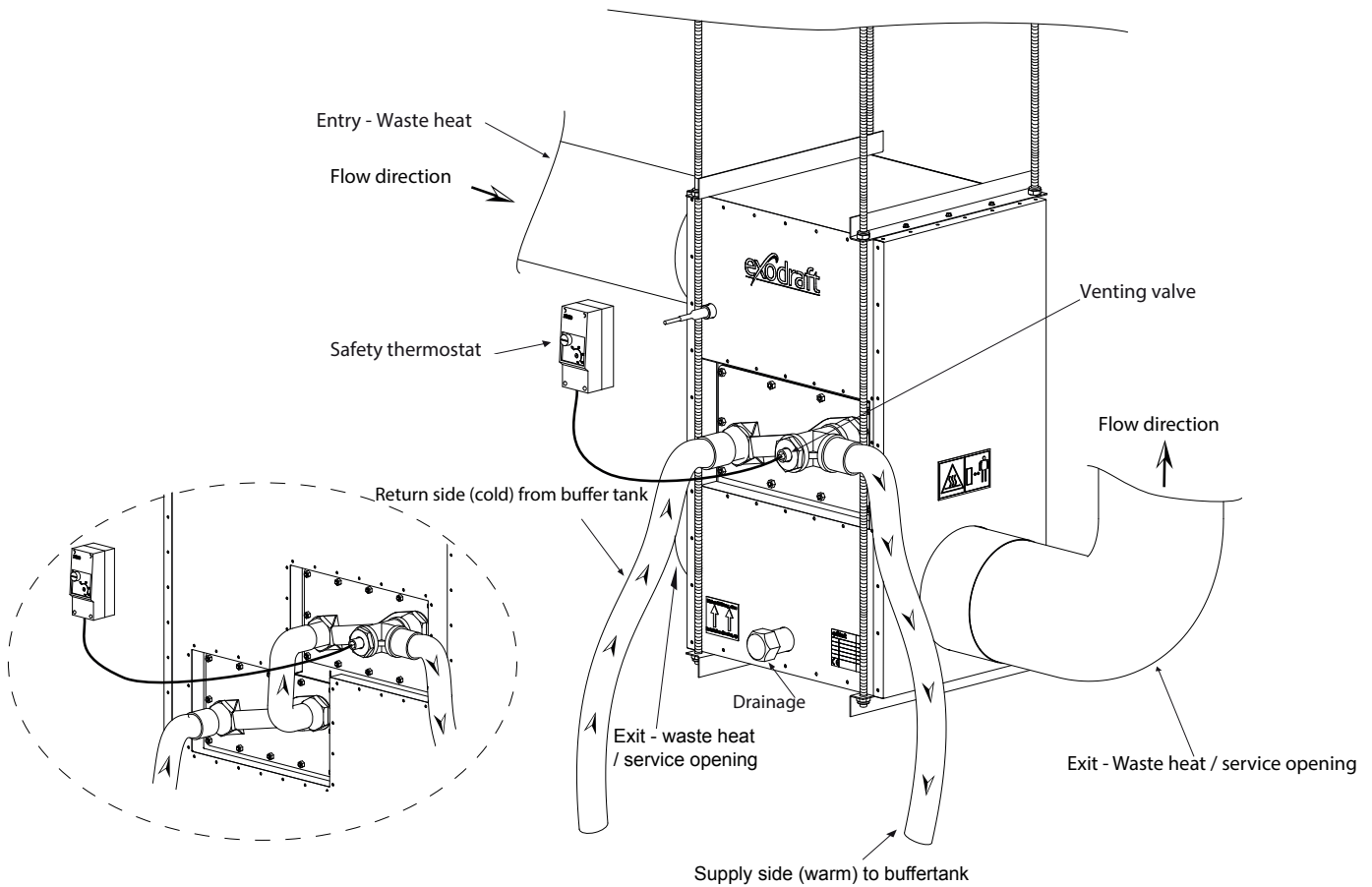


### 3.3 Connections

The thread gauges of the connections of the compact-plate heat exchanger (below) are 1 1/4" apart from CHRP-S60-1-150l, which is 1"

**Danger**

**According to DIN EN 12828 the waste heat exchanger is a slowly adjustable heat source, which must be equipped with a safety temperature limiter on the supply side. Furthermore, it must be guaranteed that at least 25l/kW water supply is at hand for cooling of the system and the buffer storage.**

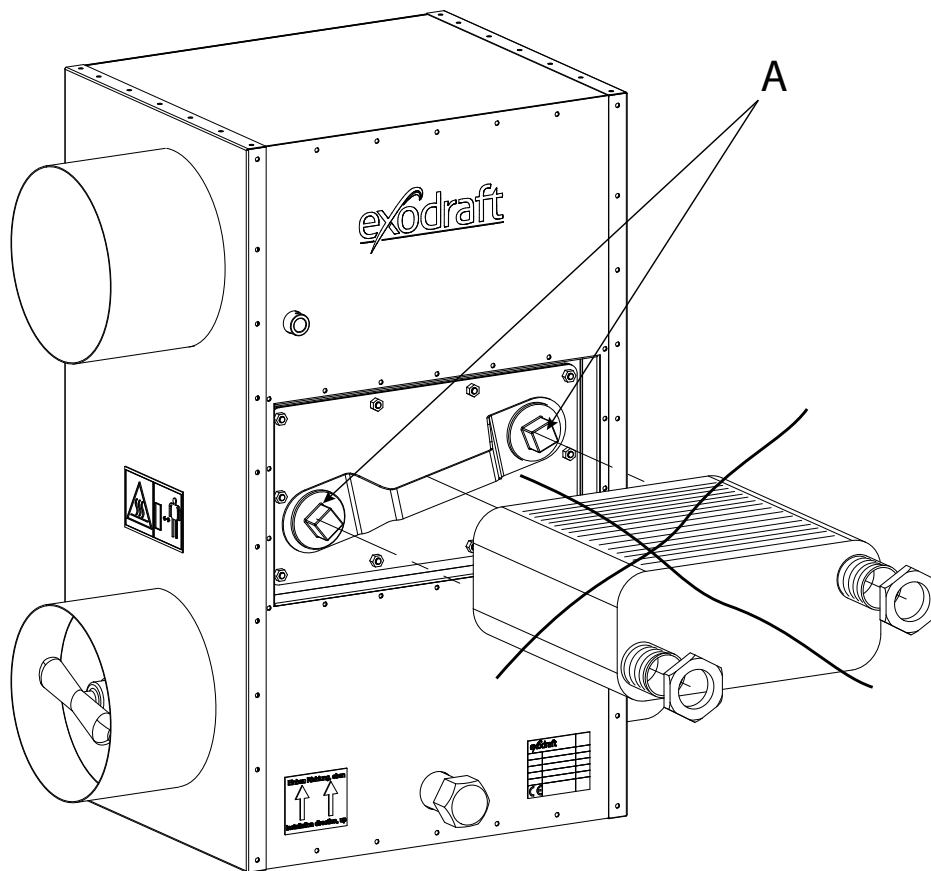


**ATTENTION: Water connections must be carried out using flexible hoses/connectors**



### 3.4 Installation without water supply

The connection in the cover plate must be tightly sealed when the CHR-P-S-appliance is mounted in the chimney without a compact-plate heat exchanger (as shown at "A" below).



#### Warning

Do not operate the CHR-P-S heat exchanger unless it is installed correctly and filled with water.

Otherwise, burns hazard could arise by contact with hot parts and damage can be inflicted to the plate heat exchanger.



## 4. Electrical installation

### 4.1 General



#### Danger

Disable the power supply before working at the appliance! Touching live, electric parts can cause deadly, electric shocks.



#### Warning

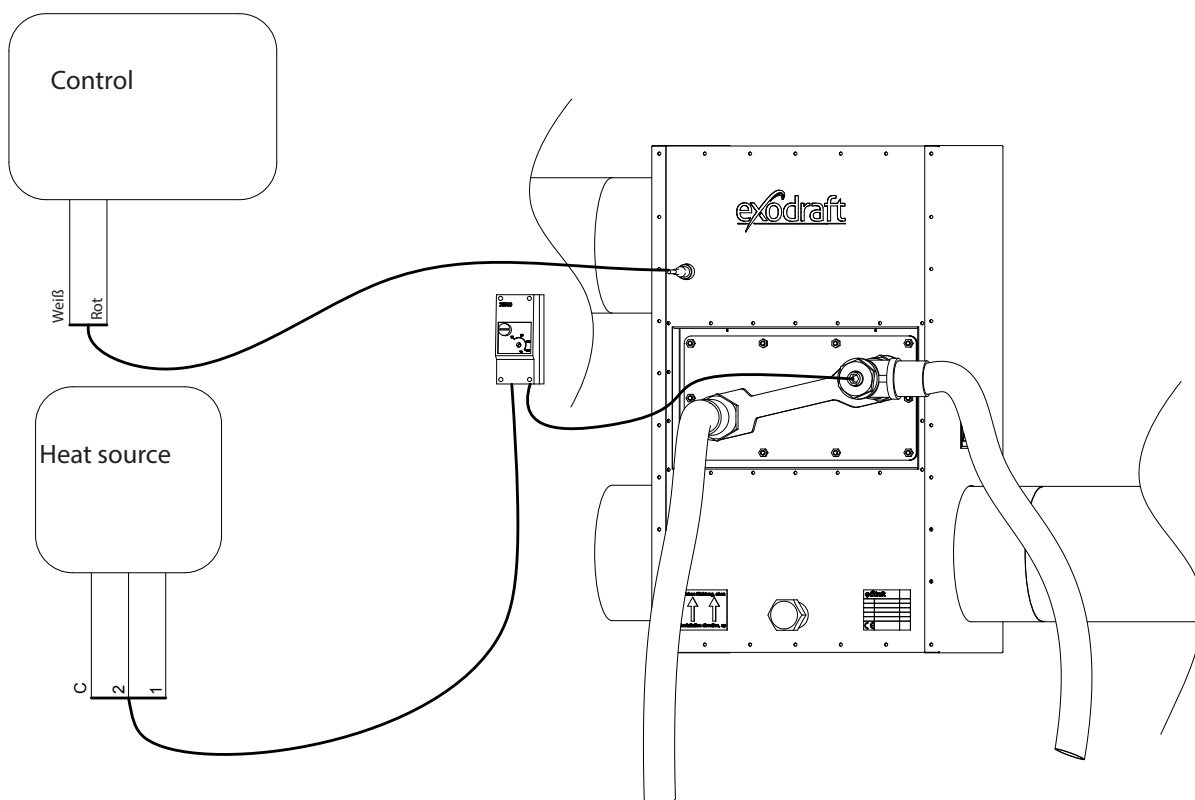
Should a change of the original cables included in the delivery be necessary, similar cables with the same temperature classification are to be used. Otherwise, the isolation could melt or erode and the cable itself would be exposed.

The cabling must comply with the respective national regulations.

### 4.2 Electrical diagram / electrical connections

Electrical diagram for connection of the temperature sensor and the connections between the safety temperature limiter and heat source.

See the manual of the control unit for further data about electrical connections.





## 5. Start-up and configuration

### 5.1 General

It is important to follow all steps in this manual when first starting up.

It is especially important to make sure that the heat exchanger is filled with water and vented before operating. At first, the complete heating system (pumps, mixing valves, regulation etc.) must be up and running.

### 5.2 System test



#### Warning

**Do not operate the CHRP-S heat exchanger unless it is installed correctly and filled with water. Otherwise, burns hazard could arise by contact with hot parts and damage can be inflicted to the plate heat exchanger.**

- Connect the heat supply and the ventilating system
- Fill the complete heating system with the heat exchanger
- Activate the circulating pump (not included in the **exodraft**-delivery) and make sure that it works correctly.

### 5.3 Testing the security system

#### Warning

**You must test to ensure that the safety thermostat disables the burner if the temperature rises too high.**

To avoid heat damaging the plate heat exchanger, make sure that enough water constantly flows through it.



## 6. Service and troubleshooting

### 6.1 Service and cleaning



Clean the CHRP-S heat exchanger at appropriate intervals - depending on the level of pollution in the waste air.

Test the appliance for leaks, wear and tear at least once a year.

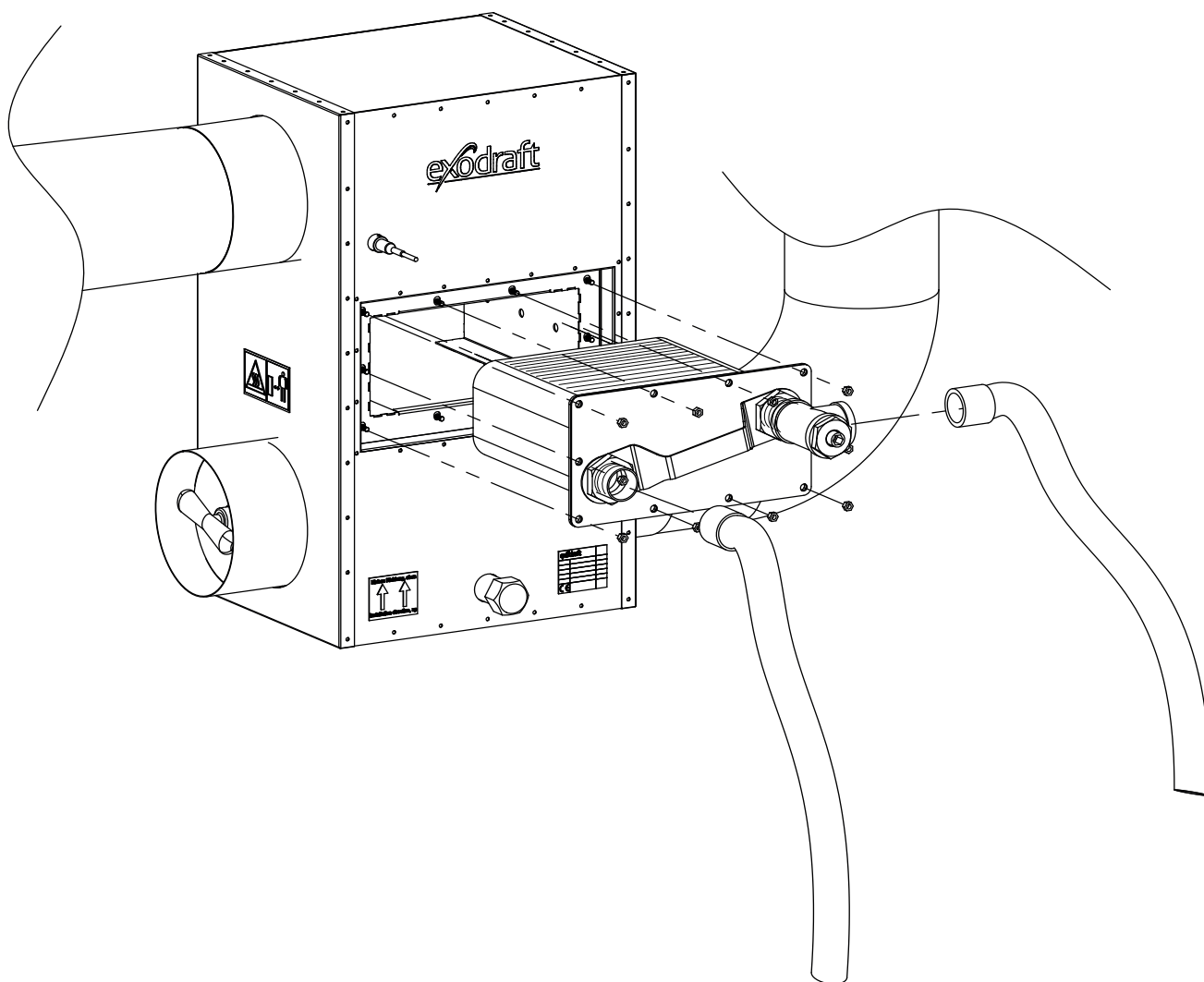


Let the connection pipes and the CHRP-S appliance cool down before service.

Make sure that unintended operation cannot happen during service.

### 6.2 Cleaning with the compact-plate heat exchanger removed

- Let out the water from the compact-plate heat exchangers
- Disconnect the connection tubes and pipes
- Remove the screw nuts and the cover
- Pull the compact-plate heat exchanger out
- Clean the heat exchanger with compressed air or a high pressure cleaner.



**Warning!**

The retractable heat exchangers are heavy. See table of weights page 15



The weight of the CHRP-S compact-plate heat exchanger without water appears from the table below.

exodraft product number	Compact-plate heat exchanger product number	Number of compact-plate heat exchangers	Weight per heat exchanger
CHRP-S60-1-150I	3200683	1	8,2 kg
CHRP-S80-1-180I	3200684	1	10,5 kg
CHRP-S120-1-225I	3200686	1	14,9 kg
CHRP-S140-1-250I	3200687	1	17,1 kg
CHRP-S100-2-250I	3200685	2	12,7 kg
CHRP-S120-2-300I	3200686	2	14,9 kg
CHRP-S140-2-350I	3200687	2	17,1 kg
CHRP-S120-4-400I	3200686	4	14,9 kg
CHRP-S140-4-500I	3200687	4	17,1 kg



### Warning


Do not open the housing without disabling the power supply to the CHRP-S heat exchanger.

## 6.3 Troubleshooting

Problem	Possible reason	Solution
The supply-side temperature is low and the difference in the temperature of the waste gases before and after the heat exchanger is too small.	<ul style="list-style-type: none"> <li>- Air in the water system</li> <li>- The circulating pump does not work properly</li> <li>- The water flow is too weak</li> <li>- The compact-plate heat exchanger is dirty</li> </ul>	<ul style="list-style-type: none"> <li>- Vent the system</li> <li>- Check the operation of the circulating pump</li> <li>- Check the operability of the control unit</li> <li>- Mount forward- and backward flow correctly</li> <li>- Clean the appliance and check the operability of the water discharge</li> </ul>
- The pump runs constantly at too high a temperature.	<ul style="list-style-type: none"> <li>- Air in the water system</li> <li>- The circulating pump does not work properly</li> <li>- Too high heat supply</li> </ul>	<ul style="list-style-type: none"> <li>- Vent the system</li> <li>- Check the operation of the circulating pump</li> <li>- Check the operability of the control unit</li> <li>- Check the voltage and the connection of the pump</li> <li>- A bigger CHRP-S appliance is necessary or the heat supply is to be reduced</li> </ul>



## 7. EU Declaration of Conformity

<b>DK: EU-Overensstemmelseerklæring</b> <b>GB: Declaration of Conformity</b> <b>DE: EU-Konformitätserklärung</b> <b>FR: Déclaration de conformité de l'Union Européenne</b> <b>NO: EU-Samsvarserklæring</b> <b>PL: EU Deklaracja zgodności</b>	<b>NL: EU-Conformiteits verklaring</b> <b>SE: EU-Överensstämmelsedeklaration</b> <b>FI: EU-Vaatimustenmukaisuusvakuutus</b> <b>IS: ESS-Samræmisstaðfesting</b> <b>IT: Dichiarazione di Conformità Unione Europea</b>
<b>exodraft a/s</b> <b>C.F. Tietgens Boulevard 41</b> <b>DK-5220 Odense SØ</b>	
-erklærer på eget ansvar, at følgende produkter: -hereby declares that the following products: -erklärt hierdurch auf eigene Verantwortung, daß folgende Produkte: -déclare, sous sa propre responsabilité, que les produits suivants: -erklærer på eget ansvar at følgende produkter: -niniejszym oświadczam, że następujące produkty:	-veklaart dat onderstaande producten: -deklarerar på eget ansvar, att följande produkter: -vastaa siltä, että seuraava tuote: -Staðfesti à eigin àbyrgð, að eftirfarandi vörur: -dichiara con la presente che i seguenti prodotti:
<b>CHRP-S / 60-1-150I / 80-1-180I / 120-1-225I / 140-1-250I / 100-2-150I / 120-2-300I / 140-2-350I / 120-4-400I / 140-4-400I</b>	
-som er omfattet af denne erklæring, er i overensstemmelse med følgende standarder: -were manufactured in conformity with the provisions of the following standards: -die von dieser Erklärung umfaßt sind, den folgenden Normen: -auxquels s'applique cette déclaration sont en conformité avec les normes ci-contre: -som er omfattet av denne erklæring, er i samsvar med følgende standarder: -zostały wyprodukowane zgodnie z warunkami określonymi w następujących normach:	-zijn vervaardigd in overeenstemming met de voorschriften uit de hieronder genoemde normen en standaards: -som omfattas av denna deklARATION, överensstämmer m ota täma selvitys koskee, on seuraavien standardien mukainen: -sem eru meðtalin i staðfestingu Pessari, eru i fullu samræmi við eftirtalda staðla: -sono stati fabbricati in conformità con le norme degli standard seguenti:
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-i.h.t bestemmelser i direktiv: -in accordance with -entsprechen gemäß den Bestimmungen der folgenden Richtlinien: -suivant les dispositions prévues aux directives: -i.h.t bestemmelser i direktiv: -zgodnie z:	-en voldoen aan de volgende richtlijnen: -enligt bestämmelserna i följande direktiv: -seuraavien direktiivien määräysten mukaan: -med tilvisun til ákvarðana eftirlits: -in conformità con le direttive:
-Maskindirektivet: -the Machinery Directive: -Richtlinie Maschinen: -Directive Machines: -Maskindirektivet: -Dyrektywą maszynową:	-de machinerichtlijn: -Maskindirektivet -Konedirektiivi: -Vèlaeftirlitið: -Direttiva Macchinari:
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