

# Lovibond® Water Testing

Tintometer® Group



## Labor-Kühlschränke EX-Serie

Kühlschrank mit Innenraum Ex-geschützt

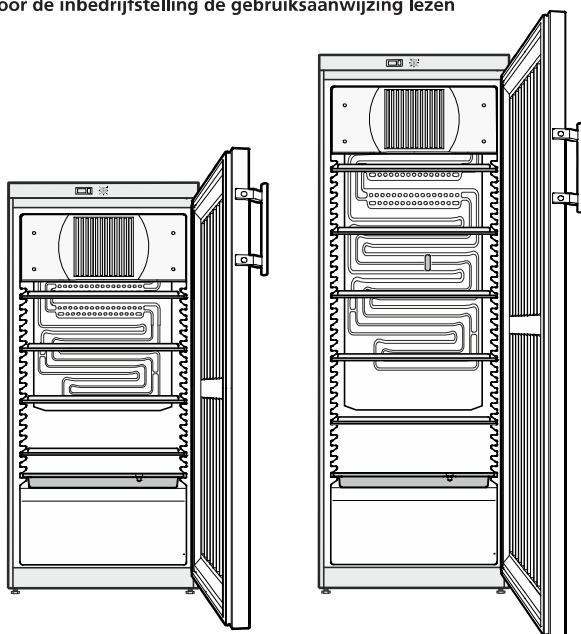
**Vor Inbetriebnahme die Gebrauchsanweisung lesen**

Refrigerator with explosion-proof interior container

**Read the operating instructions before switching on for the first time**

Koelkast met explosieveilige binnenkuip

**Voor de inbedrijfstelling de gebruiksaanwijzing lezen**



Réfrigérateur avec cuve intérieure antidéflagrante

**Lire le mode d'emploi avant la mise en service**

Frigorifero con vano interno a prova di esplosione

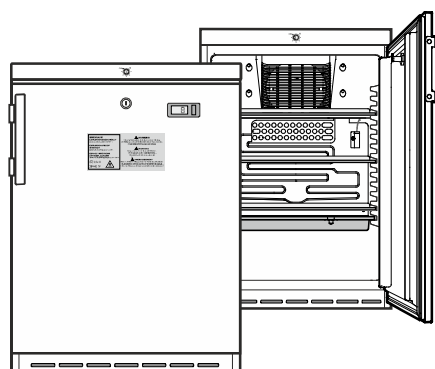
**Prima di mettere in funzione l'apparecchio leggere le istruzioni d'uso**

Frigorífico con espacio interior a prueba de explosión

**Leer las instrucciones de manejo antes de la puesta en servicio**

Frigorífico com compartimento interior à prova de explosão

**Antes da colocação em funcionamento, ler o manual de utilização**



**EX 160 / EX 220 / EX 300 / EX 490**

**(DE) Bedienungsanleitung**

Seite 2

**(GB) Instruction Manual**

Page 10

**(NL) Gebruiksaanwijzing**

Pagina 18

**(FR) Mode d'emploi**

Page 26

**(IT) Istruzione d'uso**

Pagina 34

**(ES) Instrucciones**

Página 42

**(PT) Manual de instruções**

Página 50

## Disposal notes

The appliance contains reusable materials and should be disposed of properly - not simply with unsorted household refuse. Appliances which are no longer needed must be disposed of in a professional and appropriate way, in accordance with the current local regulations and laws.



When disposing of the appliance, ensure that the refrigerant circuit is not damaged to prevent uncontrolled escape of the refrigerant it contains (data on type plate) and oil.

- Disable the appliance.
- Pull out the mains plug.
- Cut through the connection cable.

## ! WARNING

Danger of suffocation due to packing material and plastic film!

Do not allow children to play with packaging material.

Take the packaging material to an official collection point.

## Noise emissions from the appliance

The noise level while the appliance is operating is below 70 dB(A) (relative noise level 1 pW).

## ! WARNING

Danger of sparks produced by friction due to dust on the fan blades.

Do not store dusty objects in the appliance.

Clean the ventilation slots on the re-circulated air fan every month using a vacuum cleaner.

## Range of appliance use

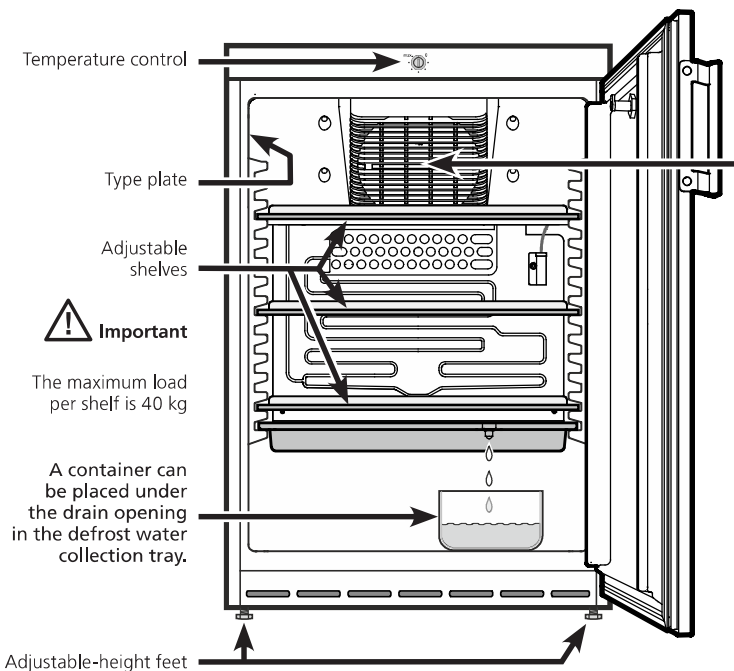
The interior, which is free from sources of ignition, is used for storing flammable substances in closed containers and is therefore classified as a Zone 2 hazardous area.

The appliance is not suitable for storing and cooling medicines, blood plasma, laboratory preparations or similar substances and products covered by the 2007/47/EC Medical Devices Directive. Any misuse of the appliance may result in damage to or spoilage of stored goods.

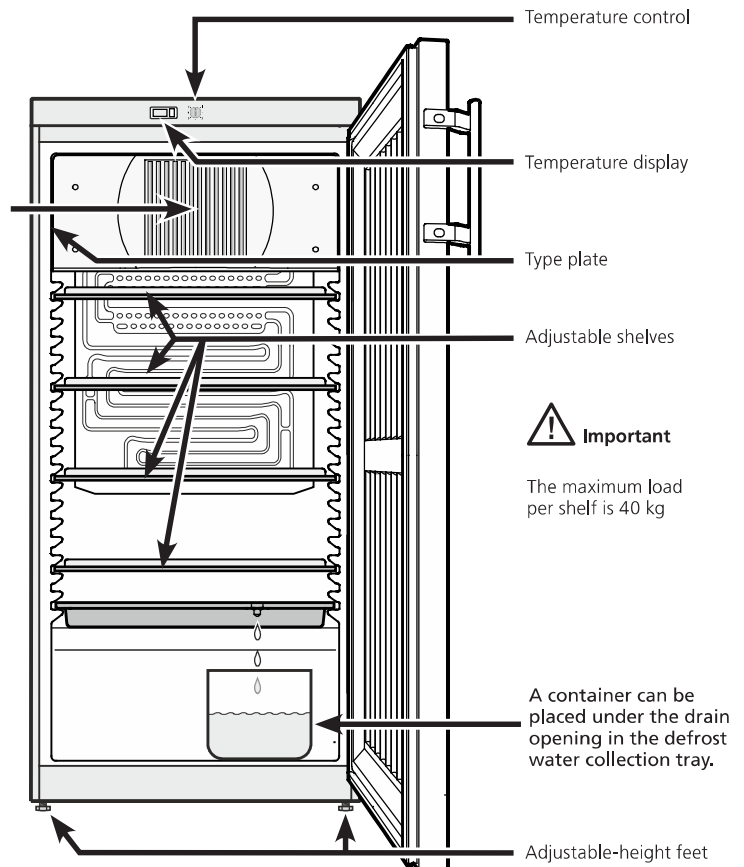
Furthermore, the appliance is not suitable for operation in potentially explosive atmospheres.

<p><b>INNENRAUM EXPLOSIONSGESCHÜTZT</b> Innentemperaturbereich: +1 bis +15 °C</p> <p><b>EXPLOSION-PROOF INTERIOR</b> Interior temperature range: +1 to +15 °C</p> <p><b>ESPACE INTÉRIEUR ANTIDÉFLAGRANT</b> Gamme de températures intérieures : +1 à +15 °C</p> <p>Ex II 3/-G</p> <p>IIB+H2 T6</p>	<p><b>! WARNING</b> Gefahr der Funkenbildung durch elektrostatische Aufladung. Zur Reinigung von Kunststoffteilen kein trockenes Tuch verwenden. Kunststoffteile nur mit feuchtem Tuch reinigen!</p> <p><b>! WARNING</b> Danger of sparks due to electrostatic discharge. Do not use a dry cloth to clean plastic parts. Clean plastic parts with a damp cloth only!</p> <p><b>! AVERTISSEMENT</b> Risque de formation d'étincelles dues à des décharges électrostatiques. Ne pas utiliser de chiffon sec pour nettoyer les éléments en plastique. Nettoyer les éléments en plastique avec un chiffon humide uniquement !</p>
--	---

### EX 160



### EX 220 / EX 300 / EX 490

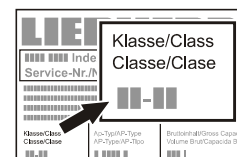


## Safety instructions and warnings

- To prevent injury or damage to the unit, the appliance should be unpacked and set up by two people.
- In the event that the appliance is damaged on delivery, contact the supplier immediately before connecting to the mains.
- To guarantee safe operation, ensure that the appliance is set up and connected as described in these operating instructions.
- Disconnect the appliance from the mains if any fault occurs. Pull out the plug, switch off or remove the fuse.
- When disconnecting the appliance, pull on the plug, not on the cable.
- Any repairs and work on the appliance should only be carried out by the customer service department, as unauthorised work could prove highly dangerous for the user. The same applies to changing the mains power cable.
- Do not allow naked flames or ignition sources to enter the appliance. When transporting and cleaning the appliance, ensure that the refrigerant circuit is not damaged. In the event of damage, make sure that there are no ignition sources nearby and keep the room well ventilated.
- Do not stand on the plinth, drawers or doors or use them to support anything else.
- This appliance can be used by children of 8 years old and over, and also by persons with restricted physical, sensory or mental capacity or lack of experience and knowledge, if they are supervised or have been instructed on safe use of the appliance and understand the resulting risks. Children must not be allowed to play with the appliance. Cleaning and user maintenance must not be carried out by children without supervision.
- Avoid prolonged skin contact with cold surfaces or chilled/frozen food. This could cause pain, numbness and frostbite. In the case of prolonged skin contact, protective measures should be taken, e.g. gloves should be worn.
- Do not use electrical appliances inside the appliance.
- If you have a lockable appliance, do not keep the key near the appliance or within reach of children.
- The appliance is designed for use in enclosed areas. Do not operate the appliance outdoors or in areas where it is exposed to splash water or damp conditions.
- The appliance is **not** suitable for storing drugs pursuant to DIN 58345.
- The appliance is **not** suitable for storing blood bottles pursuant to DIN 58371.

## Climate rating

The climate rating indicates the room temperature at which the appliance may be operated in order to achieve full refrigeration performance.



The climate rating is indicated on the type plate.

The position of the type plate is shown in the section entitled **Description of the appliance**.

Climate rating	Room temperature
4 (SN)	+10°C to +32°C
4 (N)	+16°C to +32°C
4+ (ST)	+16°C to +38°C
4+ (SN-ST)	+10°C to +38°C
5 (T)	+16°C to +43°C
5 (SN-T)	+10°C to +43°C

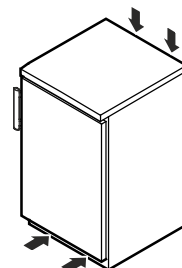
**Do not operate the appliance outside the specified room temperature range.**

## Setting up EX 160

- Do not place the appliance in direct sunlight or near cookers, radiators and similar sources of heat.

- The floor on which the appliance stands should be horizontal and level. Compensate for uneven floors with the adjustable feet.

- Do not cover ventilation openings or grille. →



- Standard EN 378 specifies that the room in which you install your appliance must have a volume of 1 m<sup>3</sup> per 8 g of R 600a refrigerant used in the appliance, so as to avoid the formation of inflammable gas/air mixtures in the room where the appliance is located in the event of a leak in the refrigerant circuit. The quantity of refrigerant used in your appliance is indicated on the type plate on the inside of the appliance.

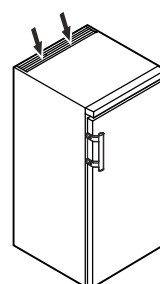
- Always install the appliance directly against the wall.

## Setting up EX 220 / EX 300 / EX 490

- Do not place the appliance in direct sunlight or near cookers, radiators and similar sources of heat.

- The floor on which the appliance stands should be horizontal and level. Compensate for uneven floors with the adjustable feet.

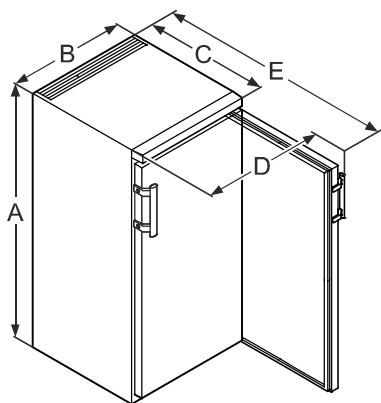
- Do not cover ventilation openings or grille. →



- Standard EN 378 specifies that the room in which you install your appliance must have a volume of 1 m<sup>3</sup> per 8 g of R 600a refrigerant used in the appliance, so as to avoid the formation of inflammable gas/air mixtures in the room where the appliance is located in the event of a leak in the refrigerant circuit. The quantity of refrigerant used in your appliance is indicated on the type plate on the inside of the appliance.

- Always install the appliance directly against the wall.

## Appliance dimensions (mm)



	A	B	C	D	E
<b>EX 160</b>	860	600	600	648	1151
<b>EX 220</b>	1250	600	610	650	1180
<b>EX 300</b>	1640	600	610	650	1180
<b>EX 490</b>	1640	750	730	850	1410

## Electrical connection

Only operate the appliance with **alternating current (AC)**.

The permissible voltage and frequency are indicated on the type plate. The position of the type plate is shown in the section entitled **Description of the appliance**.

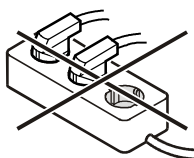
The socket must be properly earthed and protected by a fuse.

The tripping current of the fuse must be between 10 A and 16 A.

The socket must not be situated behind the appliance and must be easily accessible.

Do not connect the appliance using an extension cable or extension socket.

Do not use stand-alone inverters (conversion of direct current to alternating current/three-phase current) or energy-saving plugs. Risk of damage to the electronic control system!



## Switching the appliance on and off

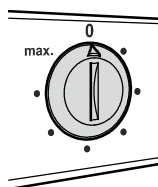
You are recommended to clean the interior of the appliance before switching it on for the first time (see **Cleaning**).

### Switching the appliance on

Connect the appliance to the mains - the appliance is switched on.

### Switching the appliance off

Pull out the mains plug or set the temperature control to **0**.



### Important

**When the temperature control is turned to "0", the refrigeration system is switched off, but the appliance is not completely disconnected from the mains.**

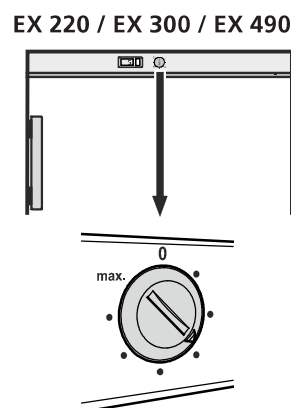
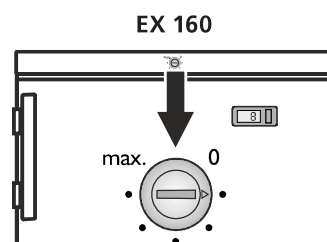
**Before cleaning, always disconnect the appliance from the mains. Remove the plug.**

## Setting the temperature

Set the temperature inside the appliance using the temperature control.

The nearer the temperature control is to the **max.** setting, the colder the interior temperature.

Set the control between "**0**" and "**max.**" as required.



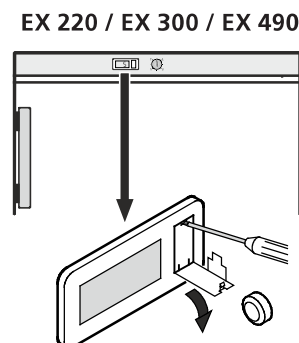
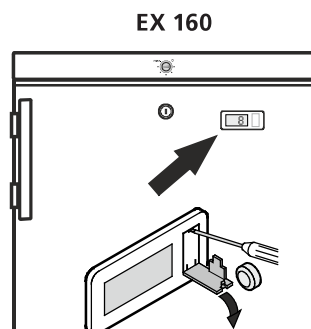
## Temperature display

The temperature display is powered by a battery which is available from your specialist dealer.

### Changing the battery

- Open the battery compartment using a small screwdriver.
- Replace the battery.
- Close the battery compartment.

If **Er** or **HH** appears in the display, the appliance has a fault. Consult the customer service department indicating the fault number displayed.



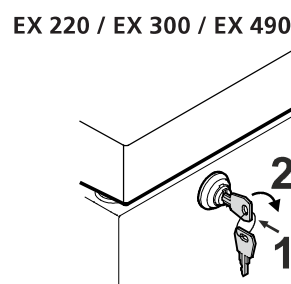
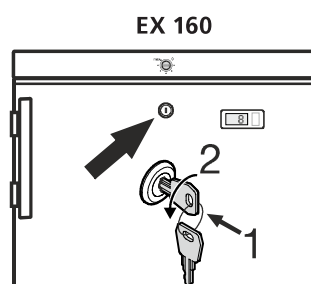
## Safety lock

The lock in the appliance door is equipped with a safety mechanism.

### Locking the appliance

- Insert the key as shown by arrow **1**.
- Turn the key 90°.

To unlock the appliance, the same procedure must be repeated in the same order.

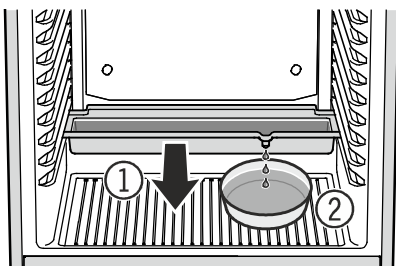


## Defrosting

The refrigerator compartment defrosts automatically.

- ① The defrost water drains into a tray situated below the evaporator. This tray must be emptied from time to time.

Pull the tray out towards you and empty.



- ② To avoid having to empty the defrost water collection tray frequently, you can place a container under the drain opening in the tray.

When operating at a very cold thermostat setting, the interior rear wall may ice up.

In this case, the appliance must be defrosted manually.

### • Pull out the mains plug!

- Transfer items to other appliances.
- Leave the door of the appliance open while defrosting. After defrosting mop up the remaining water and clean the appliance.

**Do not use any mechanical devices or other artificial aids for defrosting other than those recommended by the manufacturer.**

## Cleaning

Clean the appliance at least twice per year.

**Before cleaning always switch off the appliance. Pull out the mains plug or switch off or unscrew the fuse.**

- Clean the inside, equipment and outer walls with lukewarm water and a little detergent. Do not use abrasive or acid cleaners or chemical solvents.
- Ensure that no cleaning water penetrates into the electrical components or ventilation grille.
- The dust should be removed from the refrigeration unit and heat exchanger - metal grid at the back of the appliance - once a year.
- Do not damage or remove the type plate on the inside of the appliance. It is very important for servicing purposes.

## ⚠ WARNING

**Only clean plastic parts with a damp cloth!**  
**Risk of electrostatic discharge.**

**Do not use steam cleaners because of the risk of injury and damage.**

## Malfunctions

If a malfunction occurs during operation, check whether it is due to an operating error.

**You may be able to rectify the following faults yourself:**

### • Appliance does not function:

- Is the appliance switched on?
- Is the plug correctly fitted in the mains socket?
- Is the fuse intact?

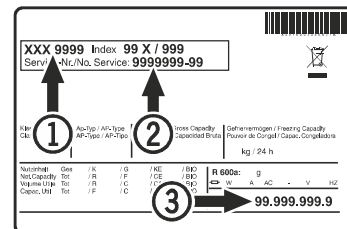
### • Loud running noise:

- Is the appliance set up firmly on the floor?
- Does the appliance cause nearby items of furniture or objects to vibrate? Please note that noises caused by the refrigerant circuit cannot be avoided.

### • The temperature is not low enough:

- Is the temperature setting correct (see "Setting the temperature")?
- Does the separately installed thermometer show the correct reading?
- Is the ventilation system working properly?
- Is the appliance set up too close to a heat source?

If none of the above causes apply and you cannot rectify the fault yourself, contact the nearest customer service department stating the type designation ①, service number ② and appliance number ③ as indicated on the type plate.



The position of the type plate is shown in the section entitled **Description of the appliance.**

## Shutting your appliance down

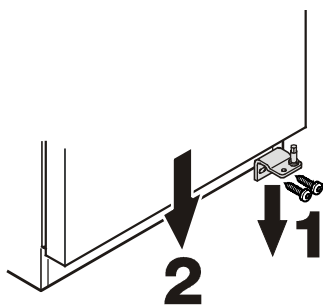
If your appliance is to be shut down for any length of time, switch it off and disconnect the plug or switch off or unscrew the fuse.

Clean the appliance and leave the door open in order to prevent unpleasant smells.

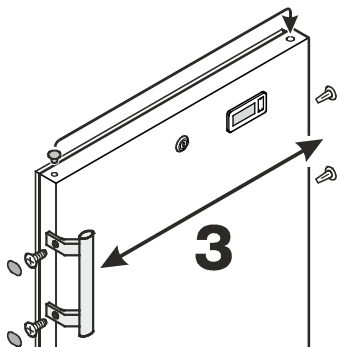
The appliance complies with the relevant safety regulations and EC Directives 2004/108/EC, 2006/95/EC and ATEX 94/9/EC (EN/IEC 60079-15, IEC 60079-0, EN 1127-1).

## Changing over door hinges EX 160

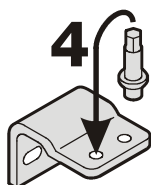
1. Unscrew the hinge bracket.
2. Pull the door out at the bottom and lift off.



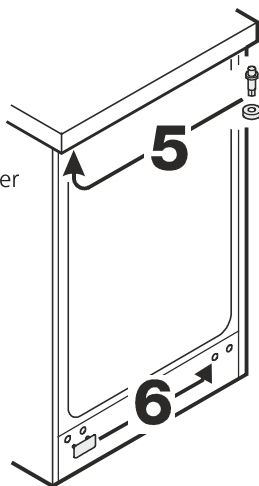
3. Transfer handle and plugs to the opposite side of the door.



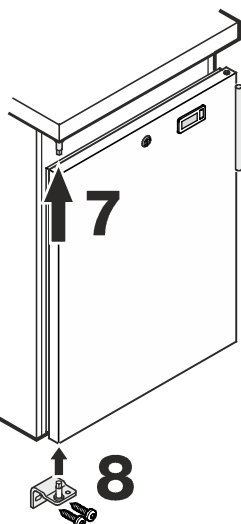
4. Transfer pin on hinge bracket to the opposite side.



5. Move the pin at the top to the other side.



6. Transfer cover plate to the opposite side.



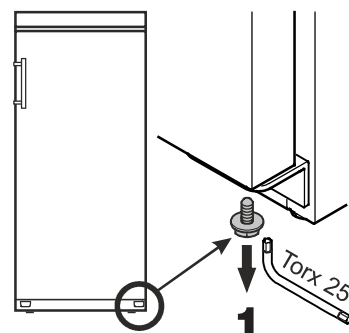
7. Mount door on hinge pin and close.

8. Insert hinge bracket in lower door mounting and screw into place.

## Changing over door hinges EX 220 / EX 300 / EX 490

Door hinges should only be changed by a trained expert.  
Changing the door hinges must be done by two people.

1. Remove screw from lower hinge bracket.



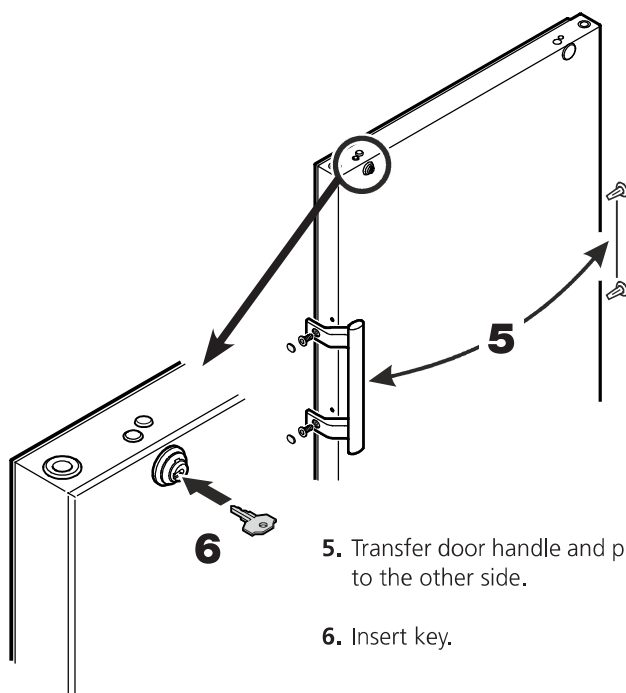
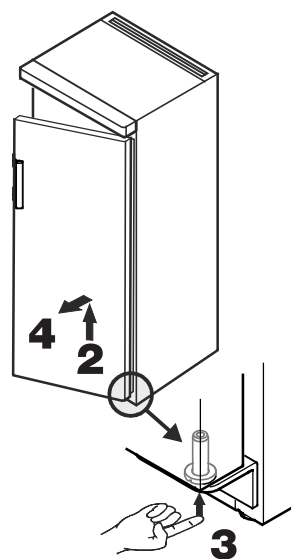
2. Open the door approx. 45° and lift upwards.

### Important

As a result of its heavy weight, the door must be held secure by one person.

3. Push the pin upwards using your fingertip.

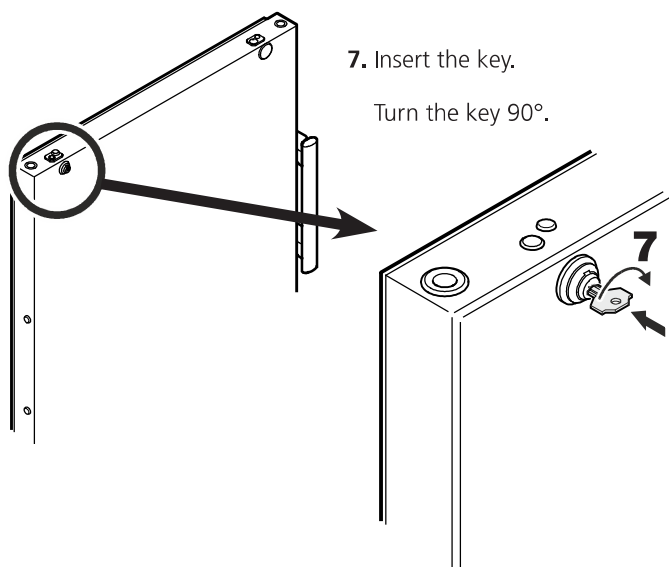
4. Pull the door to the front and remove it downwards.



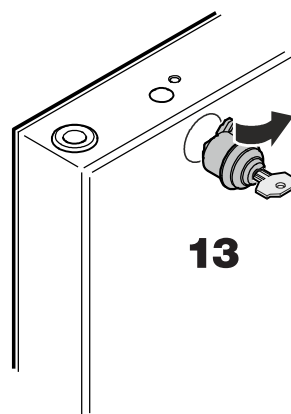
5. Transfer door handle and plugs to the other side.

6. Insert key.



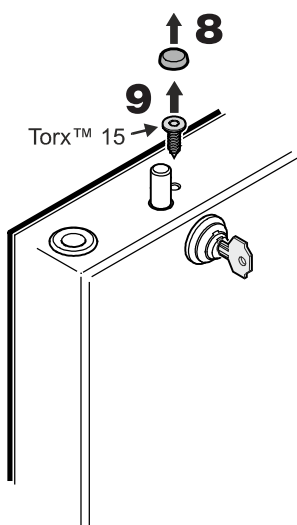


13. Remove lock.

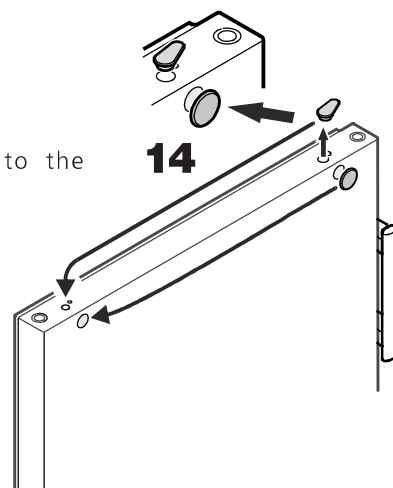


8. Remove cover.

9. Remove screw.

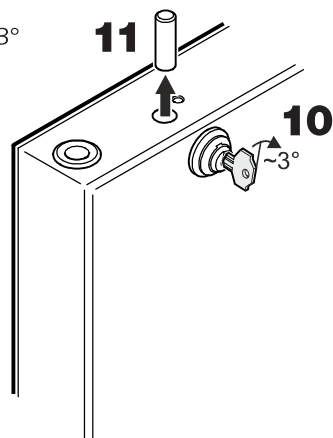


14. Transfer covers to the opposite side.

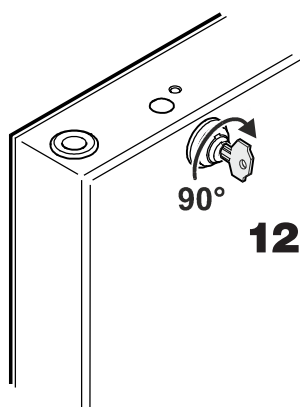


10. Turn the lock approx. 3° clockwise.

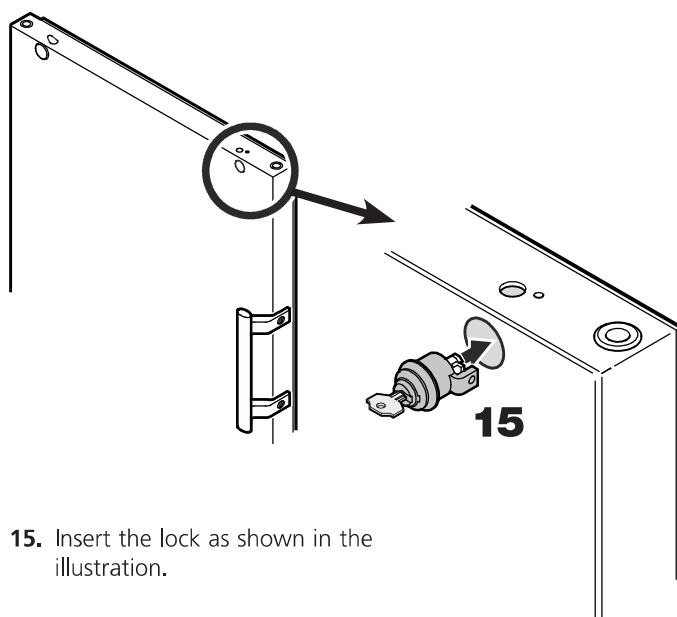
11. Remove pin.



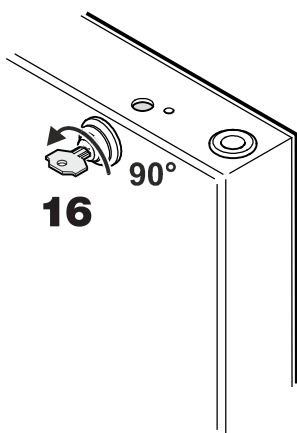
12. Turn the lock 90° clockwise.



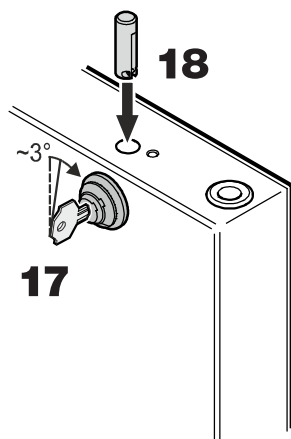
15. Insert the lock as shown in the illustration.



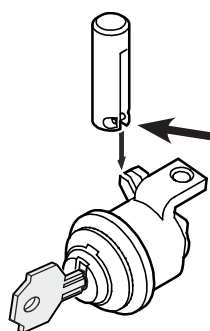
16. Turn back the lock 90° anticlockwise.



17. Turn the lock further - approx. 3° clockwise.



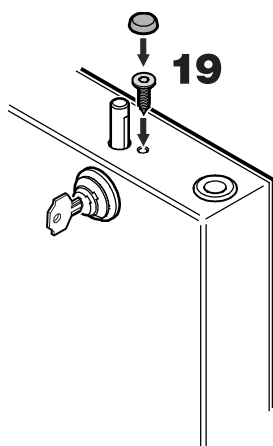
18. Insert pin.



**Note on point 18**

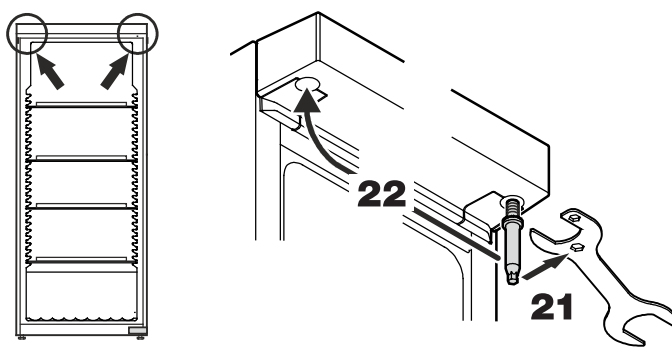
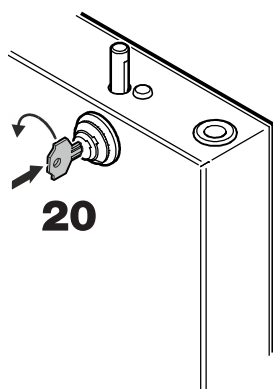
After insertion, the pin's cross pin must be engaged in the groove of the catch.

19. Screw in the screw and attach the cover cap.



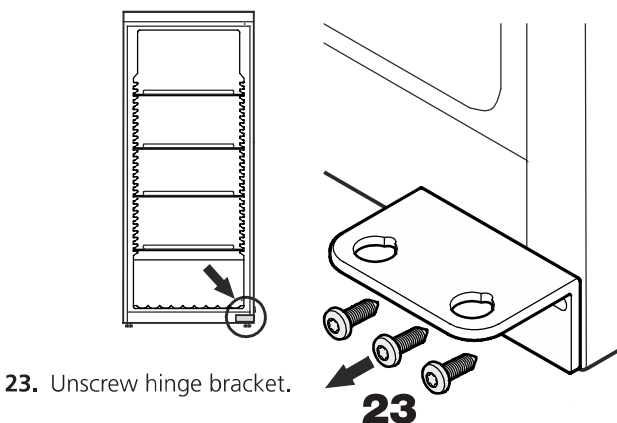
20. Insert the key.

Turn the key 90°.

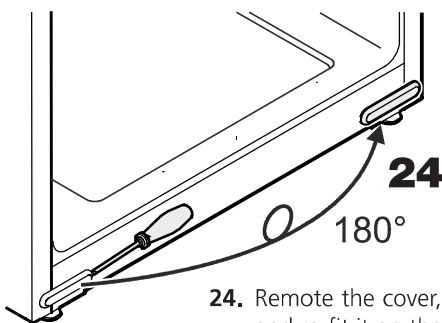


21. Unscrew the pin.  
Use the spanner provided.

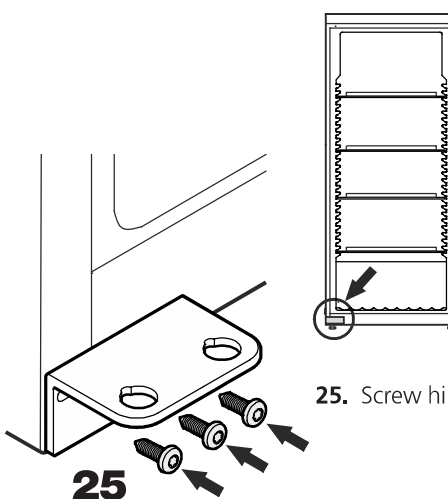
22. Screw in the pin on the opposite side.



23. Unscrew hinge bracket.

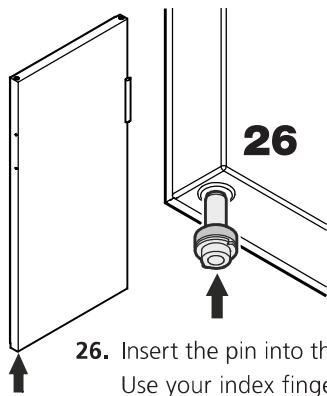


24. Remove the cover, turn it through 180° and re-fit it on the opposite side.



25. Screw hinge bracket into place.





- 26.** Insert the pin into the left-hand door mounting.  
Use your index finger to hold the pin while you are assembling the door.

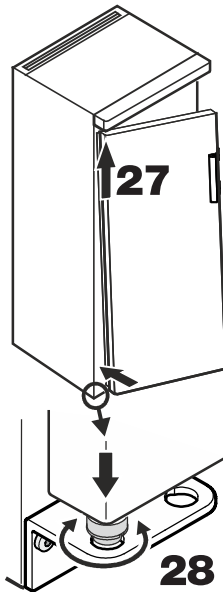
- 27.** Locate the door on the upper pin as shown in the illustration and guide it to the lower hinge bracket.

### Important

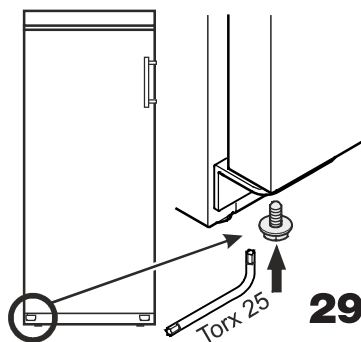
As a result of its heavy weight, the door must be held secure by one person.

- 28.** Lift the door upwards and turn the pin until it fits into the bore hole of the hinge bracket.

Slowly lower the door downwards. The lower part of the pin must be fully engaged in the bore hole of the hinge bracket.

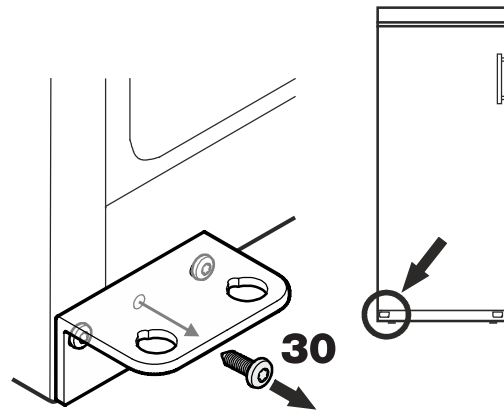


- 29.** Screw the screw into the pin again and tighten.



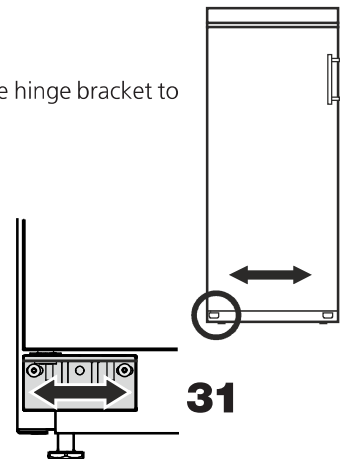
## Adjusting the lateral tilt of the door

If the door is at an angle, adjust the angle.



- 30.** Remove middle screw from hinge bracket.  
This screw is no longer needed.

- 31.** Undo screws and slide hinge bracket to the right or left.  
Tighten screws.



**Tintometer GmbH**

Lovibond® Water Testing  
Schleefstraße 8-12  
44287 Dortmund  
Tel.: +49 (0)231/94510-0  
Fax: +49 (0)231/94510-20  
sales@tintometer.de  
www.lovibond.com

Germany

**The Tintometer Limited**

Lovibond House / Solar Way  
Solstice Park / Amesbury, SP4 7SZ  
Tel.: +44 (0)1980 664800  
Fax: +44 (0)1980 625412  
water.sales@tintometer.com  
www.lovibond.com

UK

**Tintometer AG**

Hauptstraße 2  
5212 Hausen AG  
Tel.: +41 (0)56/4422829  
Fax: +41 (0)56/4424121  
info@tintometer.ch  
www.tintometer.ch

Switzerland

**Tintometer Inc.**

(dba Orbeco-Hellige Inc.)  
6456 Parkland Drive  
Sarasota, FL 34243  
Tel: 941.756.6410  
Fax: 941.727.9654  
service@orbeco.com  
www.orbeco.com

USA

**Tintometer China**

Room 1001, China Life Tower  
16 Chaoyangmenwai Avenue,  
Beijing, 100020  
Tel.: +86 10 85251111 App. 330  
Fax: +86 10 85251001

China

**Tintometer South East Asia**

Unit B-3-12, BBT One Boulevard,  
Lebuh Nilam 2, Bandar Bukit Tinggi,  
Klang, 41200, Selangor D.E  
Tel.: +60 (0)3 3325 2285/6  
Fax: +60 (0)3 3325 2287  
lovibond.asia@tintometer.com  
www.lovibond.com

Malaysia

Technical changes without notice  
Printed in Germany 03/14  
No.: 00 38 51 66-1

Lovibond® and Tintometer®  
are Trademarks of the  
Tintometer Group of Companies

