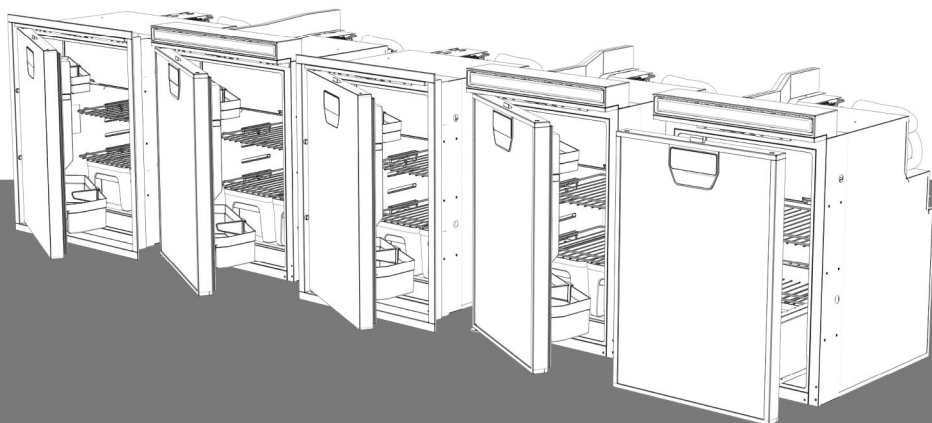




INSTALLATION MANUAL

REFRIGERATOR

TR1000 series

EN

Original Installation Manual

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1. Introduction

General

This is the installation manual for the Thetford TR1000 series refrigerator. The manual is meant for qualified installers who will install the refrigerator in a caravan or camper.

Read the information and instructions carefully and follow them strictly to install the refrigerator safely and correctly.

Also read the warnings in the user manual before testing the refrigerator after installation.

Our policy is one of continuous development and improvement. Specifications and illustrations may change subsequent to publication. This document is version 693750/0426-V01 of the installation manual.

Please visit **www.thetford.com** for the most recent version.

If the appliance is not installed in accordance with national and European regulations, rules and standards this will void the warranty.

Symbols

The following symbols may be used in this manual:



Warning. Risk of serious injury and/or damage.



Caution. Risk of moderate injury and/or damage.



Attention. Important information.



Note. Additional information.



Video. Additional instruction video available.

2. Safety

General



Risk of serious injury through burning, explosion, clamping, electrocution, suffocation and poisoning or damage to the product.



Risk of fire and explosion with flammable refrigerant R600a.



- Do not modify this appliance, unless the modification is authorised and carried out by the manufacturer or their agent.
- If the appliance is not installed in accordance with national and European law, regulations, rules and standards, this will void the warranty and may lead to criminal prosecution.
- Wear the correct Personal Protective Equipment during the installation. Also follow the applicable safety regulations.
- There are sharp edges and corners at the rear of the refrigerator and the installation frame. Always wear protection against cuts when installing the refrigerator.
- Only qualified and certified professionals are allowed to install the appliance and connect its electrical components.
- Never expose the appliance to water or moisture.
- Do not use the drawer as a step or ladder.
- Any error messages coming from the appliance and shown on the master display, should not disturb the driver. For example: lights and/or sounds coming from the master display while driving.

Installation



Risk of serious injury through burning, explosion, clamping, electrocution, suffocation and poisoning or damage to the product.

- Make sure the appliance is transported and handled in the upright position.
- The appliance can be transported on each side if needed, do not turn upside down.
- If the appliance has been transported and/or been laid on its side, let it stay upright for at least 2-3 hours before switching on.
- To avoid a hazard due to instability of the appliance, it must be fixed in accordance with the instructions.
- The refrigerator must be installed in a way that allows easy access for maintenance and repairs.
- Do not install the refrigerator directly on carpet. Put the refrigerator on a metal or wood panel that extends the full width and depth of the refrigerator.
- Do not drill, cut or use excessive force on the refrigerator walls, except for screwing predefined positions. This may, if installed, damage the vacuum insulation panels that have been foamed in.
- Do not screw into the refrigerator cabinet.
- Make sure that no sawdust, insulation, or other construction debris is on the refrigerator or in the enclosure. Debris can cause a combustion hazard and prevent the refrigerator from operating correctly.
- When installing the appliance, ensure cables are not trapped or damaged.
- Install the electrical connections in such a way that wires can't come into contact with hot or sharp parts.
- Route the cables away from the appliance and other heat sources.
- Never reposition or change the electronic components unless stated otherwise in this manual.
- The performance of the cooling system may be affected by adjacent heat sources such as an oven or stove. Protect the cooling system against any heat sources by fitting insulation.



Adding insulation can cause condensation between the fridge, oven and furniture.

- Make sure no equipment that produces sparks or flames is installed close to the cooling system.
- Use only genuine and approved parts and materials.
- In order to prevent the risk of fire in the event of uncontrolled leakage of the refrigerant system, make sure that the refrigerant charge per net room volume does not exceed 8 g/m^3 . Net room volume is defined as the gross room volume minus the volume of any product, equipment, or objects located in the living area. The refrigerant charge amount can be found on the serial label.
- Ensure that vent openings are not obstructed (e.g. by opening a door) and are able to vent freely.



Never open or damage the cooling system at the back or on the inside of the cooling system. The cooling system is pressurised and contains flammable substances.



Electrical



Risk of serious injury through burning, explosion, clamping, electrocution, suffocation and poisoning or damage to the product.

- The electronic connections must be installed in accordance with the latest technical regulations.
- The electrical connections have to comply with EN60335.
- Electrical installation shall comply with the local authority requirements.
- Do not locate multiple portable socket-outlets or portable power supplies at the rear of the appliance.
- Route the cables away from the appliance and other heat sources.
- There is no load dump protection circuit present on the CI-bus refrigerator electronics. Thetford requires that a load dump circuit (which complies with the relevant regulations) is installed on the CI-bus master if the refrigerator is connected to the CI-bus.
- The ground on the CI-bus connector should not be connected. Ensure that the cooling system is using the same power supply ground as the CI-bus master unit. The ground on the CI-bus connector is only needed when using, for example, an external CI-bus service tool.

Commissioning



Do not switch on the appliance without first carrying out the visual and functional checks.

Service



Risk of serious injury through burns, explosion, suffocation, electrocution, fire and poisoning or damage to the appliance.

- This appliance should only be serviced by a qualified and certified professionals.

3. Serviceability

The installer of Thetford products is responsible for correct installation according to the Thetford installation instructions to ensure the functionality and serviceability of the product.

In terms of serviceability, this means that a dealer or authorised Thetford service partner must be able to remove and re-install the Thetford product within the time that is allowed according to the Thetford time-list, using standard tools and equipment.

This is to claim any warranty during the warranty period after the purchase date.

In case of any queries on this subject, a Thetford local service representative can be contacted for additional support related to the installation of the product.

4. Designation codes, drawings and models

Each product has a specific identification code, the designation code. The designation code can be found on the data badge. See Service & questions for the location of the data badge. The different positions of the code stand for different variations of the refrigerator. In these instructions, the designation will be used as reference.

Table 1: Designation example

T1050	P	- N	307	AH	322	R	60	CI
-------	---	-----	-----	----	-----	---	----	----

T1050	Refrigerator model	322	Type of door
P	Refrigerator version	R	Hinge position
-N	Market	60	Type of control panel
307	Type of foamed cabinet	CI	Type of communication
AH	Type of cooling unit		

Table 2: Available drawings and models

Model	2D drawings	3D files	Door panels
TR1050P - Swing Door	LE1638	LE1639	LE1654
TR1050P - Drawer	LE1646	LE1647	LE1654
TR1050M - Swing Door	LE1640	L1641	n.a.
TR1065P - Swing Door	LE1642	LE1643	LE1655
TR1065M - Swing Door	LE1644	LE1645	n.a.
Top vent TR1050(M/P)	LE1617	LE1618	n.a.
Top vent TR1065(M/P)	LE1630	LE1631	n.a.
Side vent (Dimensions and placement)	LE1632	LE1633	n.a.
Cosmetic Frame 50L	LE1634	LE1635	n.a.
Cosmetic Frame 65L	LE1636	LE1637	n.a.

The 2D drawings and door panels drawings are available upon request, 3D files are only available for the professional builder.



"P" refrigerator versions are fitted with a metal doorpanel, which can be replaced with another door panel.

"M" refrigerator versions are fitted with an integrated brushed metal doorpanel, which cannot be replaced.

5. Technical specifications

Refrigerator specifications

Table 3: Technical specifications

Model	TR1050	TR1065
Display	Internal control LED panel	
Total volume (L)	52	67
Volume frozen food comp. (L)	4.9	6.7
Energy consumption (kWh/24h)*	0.30	
Average Ah usage/24h	25	
Climate class mode	SN-T (10-43°C)	
Noise level (dB(A))	TBD	TBD
Refrigerant	R600a	

* Energy consumption measured according to IEC62552.

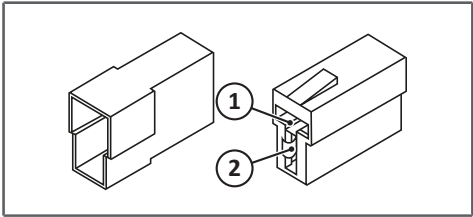
Table 4: Dimensions & weight

Model	TR1050 Door	TR1050 Drawer	TR1065 Door
Dimensions (WxHxD)(mm)	380 x 533 x 505		450 x 533 x 525
Dimensions (WxHxD) incl. top vent (mm)	380 x 575 x 505		450 x 575 x 525
Weight (kg) Door panel model	16.7	20.5	19.0
Weight (kg) Brushed metal model	17.2	n/a	19.2
Max. door panel thickness	2.5 mm		

Table 5: Electrical specifications

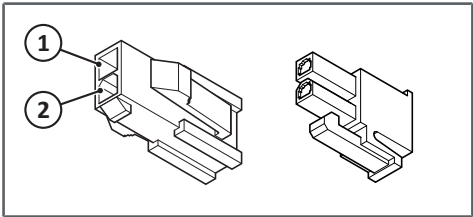
Power requirement	■ 12V DC 10.4-16.0V DC (at the refrigerator) ■ 24V DC 22.8-31.5V DC (at the refrigerator)
Fuse	■ 15A for 12VDC ■ 7.5A for 24V DC Close to power supply system and at input cable (fuse and fuse holder supplied)
Cable dimensions (Cable thickness vs cable length)	■ 2.5mm² = < 2.5m ■ 4mm² = < 4m ■ 6mm² = < 6m
DC power connectors	Refrigerator: Stocko VV 2041.100#G or equivalent Supply cable counterpart: Stocko VV 2041.200#G or equivalent
CI-bus connectors	Refrigerator: Molex 39012020 Supply cable counterpart: Molex 39012021

Layout of the DC power connectors



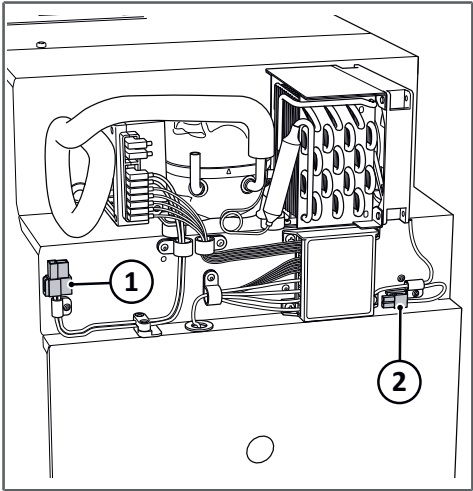
- 1. + (Red)
- 2. - (White)

Layout of the CI-bus connectors



- 1. Data (White)
- 2. Mass (White-Blue)

Position of the connectors



- 1. DC connection
- 2. CI-bus connection

6. Before installation

Content of the box

For the single-piece packaged appliance, check the content:

- TR1000 series appliance
- Spare hinge(s) for right-handed opening of the door(s)
- Screws and caps
- Ventilation lock
- User manual
- Installation manual (this manual)



If something is missing, please contact your dealer.



Read the applicable instructions in chapter **Safety** first.

Installation dimensions

- Use the mounting dimensions in mm as shown below.

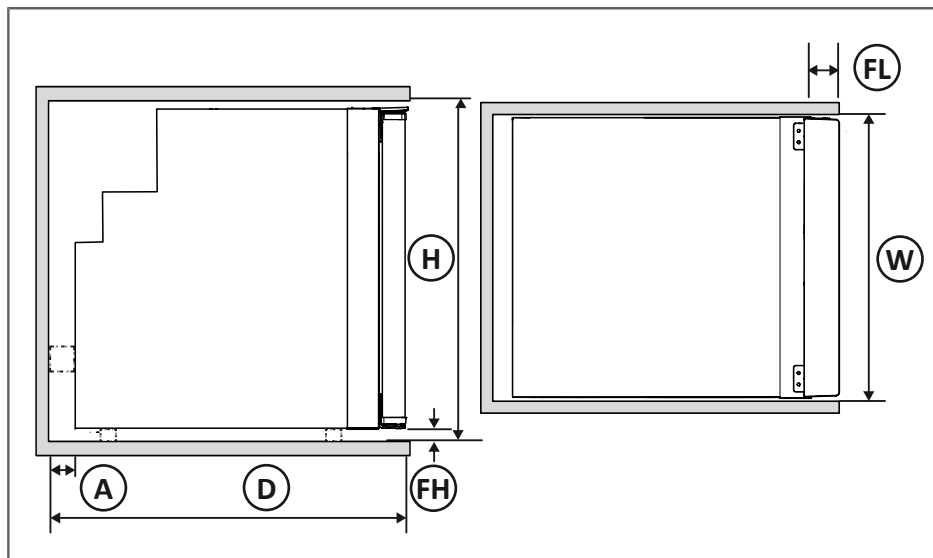


Table 6: TR1050 & TR1065

Model	H	W	D	FL	FH	A
TR1050	535	383	507	46	5	5
TR1065	535	453	527	46	5	5

Table 7: TR1050 & TR1065 with top vent

Model	H	W	D	FL	FH	A
TR1050	577	383	507	46	5	5
TR1065	577	453	527	46	5	5

Table 8: TR1050 & TR1065 with cosmetic frame

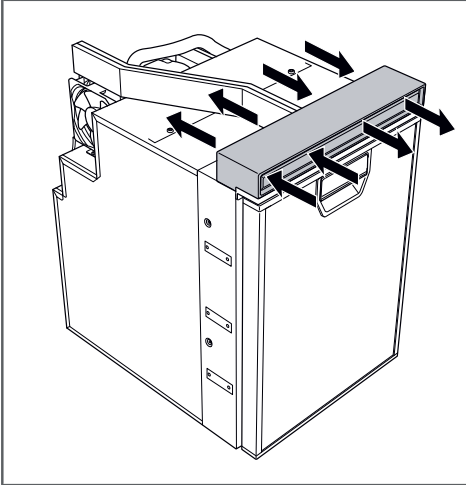
Model	H	W	D	FL	FH	A
TR1050	536	403	507	46	5	5
TR1065	536	473	527	46	5	5

Preparations TR1050 and TR1065

Ventilation

The performance and lifetime of the refrigerator depends on good ventilation. When the refrigerator is built in an enclosure, there are 2 recommended ways to arrange this: top venting and side venting.

Top venting

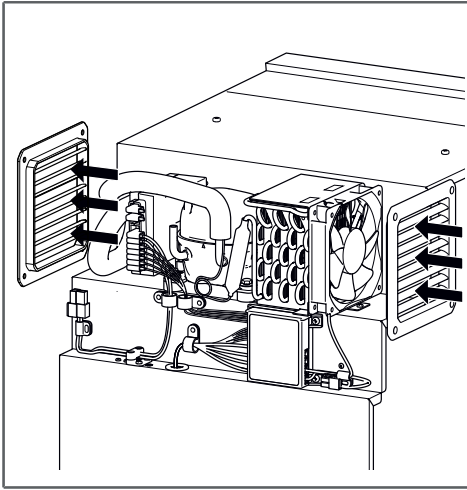


- Ventilation takes place through the front vent openings in the refrigerator
- Ambient air enters through the top left front area and is forced through the cooling system
- Heated air is pushed away via the top right area



Top ventilation system is sold separately.

Side venting



- Ambient air enters through the side near the ventilator and is forced through the cooling system
- Heated air is pushed away via the other side



Side ventilation grilles are sold separately



Thet ventilation grilles are **NOT** suitable for ventilation openings to the outside. they are only suitable for indoor use.

Ventilation considerations

Alternatively, proper ventilation can be arranged in various other ways as long as the following guidelines are followed:

- Define a dedicated inlet and outlet of air.
- Hot air will rise, therefore it is better to keep the outlet higher than the inlet.
- Keep a minimum of 80cm² of free air for the inlet and outlet.
- Keep the inlet near the ventilator area.
- Keep the outlet near the compressor controller.
- Avoid obstructions which can block the airflow.
- Avoid air recirculation within the cooling unit area.

If in doubt, professional installers can contact Thetford for support.

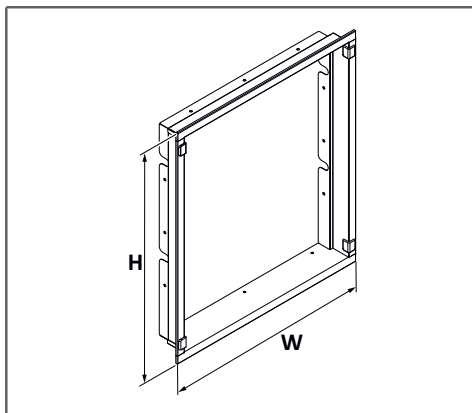


When installed free standing (without enclosure), no additional ventilation is required. Keep the refrigerator out of direct sunlight.

Cosmetic frame

A cosmetic frame is available and sold separately. It consists of 4 pcs which are screwed to the cabinet. The frame can be positioned proud or flush. 2 rubber stops can be mounted on the frame to prevent damage to the door.

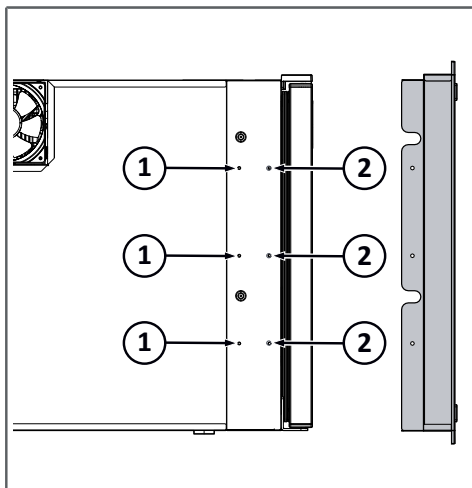
Cosmetic frame



Cosmetic frame outer dimensions:

- TR1050
 - 436 mm W
 - 568 mm H
- TR1065
 - 506 mm W
 - 568 mm H

Cosmetic frame mounting holes



1. Protruding mount
2. Flush mount
3. Cosmetic frame

Changing the door panel

To match the refrigerator with the vehicle interior, a door panel can be installed as shown below.



If the refrigerator is stored or placed on its side, it must not be switched on before standing in an upright position for at least 2-3 hours.

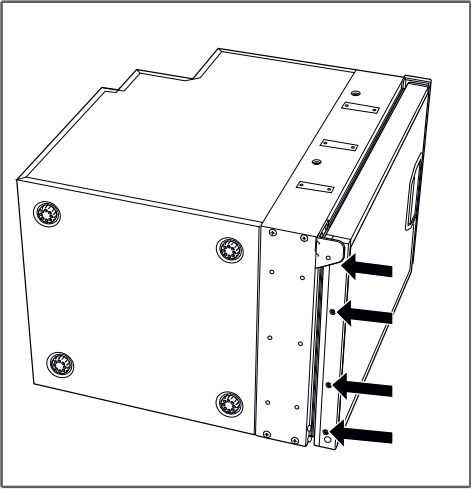


Never lift or handle a refrigerator at the power supply cables.



The door panel for the door should be fitted before installing the refrigerator.

Door panel screw locations



- Place the refrigerator on its side
- Remove the door panel cover, by removing the 4 screws
- Slide the new panel in position
- Place the cover back and fasten the 4 screws

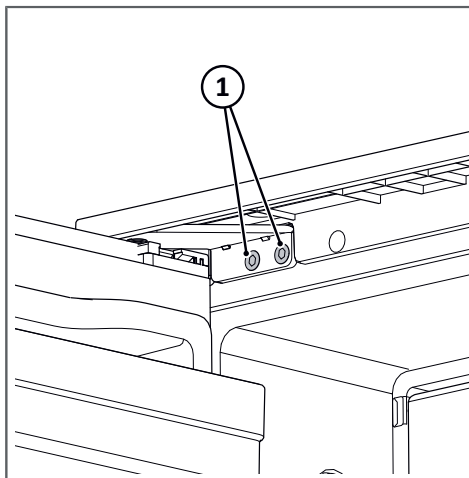
Table 9: Panel

Model	Panel size (mm)
TR1050	H 501 x W 365
TR1065	H 501 x W 435



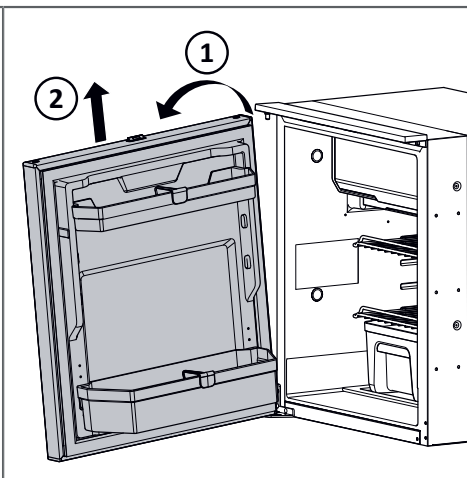
See chapter Designation codes, drawings and models for reference drawings.

Door conversion



To remove

- Open the door 90° or more
- Remove the top hinge by removing the 2 screws (1)
- Tilt the door slightly (2) and lift the door (3) out of the hinges
- Remove the bottom hinge
- Install the bottom hinge which is supplied with the refrigerator



To install

- Install the bottom hinge which is supplied with the refrigerator
- Install the door and top hinge at the same time:
 - With a slight tilt, hook the door in the lower hinge
 - Place the top hinge in the correct position at the top of the door
 - Tilt the door to the refrigerator, so that the top hinge holes line up with the screw holes
 - Fasten the screws to secure the door

7. Install the refrigerator



Read the applicable instructions in chapter **Safety** first.

Connect electrical supplies

Power supply



Connect the DC power supply according to the sticker on the refrigerator and the values mentioned in **Technical specifications** and use the correct fuse for 12V or 24V DC.

- Connect the appliance to an onboard 12/24V battery in the vehicle. This battery should be exclusively intended for powering on-board devices. Connecting to the engine battery is not advised.
- Fit a general main switch that enables all poles disconnection from the 12/24V power supply source to be able to delete the electrical standby consumption when vehicle is in storage. This to prevent for empty battery.
- Fit a battery discharge protection circuit to prevent damage to the 12/24V battery when it is at low charge.



For easy maintenance, leave sufficient over-length in the power supply cable so that the refrigerator can be moved at least 50 cm forward.

Central control panel

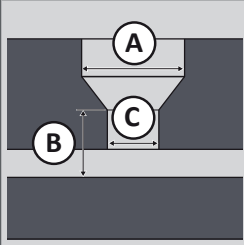
To connect the appliance to the compatible central control board of the vehicle, use the CI-bus protocol (refer to **www.civd.de**).

For location of the location of the CI-bus cables and connectors on the appliance refer to **Technical specifications**.

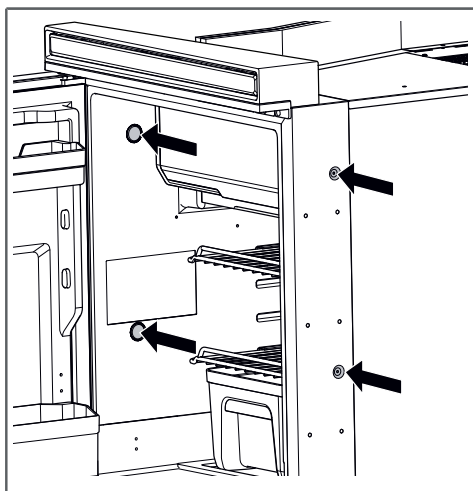
- Connect the appliance to the on board control panel using the CI-bus connectors.
- Fit a load dump protection circuit to the CI-bus master.
- Do not connect the ground of the CI-bus connector.
- Connect the ground of the appliance to the same supply as the CI-bus master unit.

Installing

- Slide the refrigerator to the back of the furniture
- The bump stops on the back will stop the fridge at correct position
- Fix the refrigerator in place with screws, using the pre-drilled positions in the cabinet
- Use screws suitable for the given hole dimensions

		TR1000 side
A	Ø 9 mm	
B	8 mm	
C	Ø 4 mm	

Fixating points



- The refrigerator has 4 fixating points on the sides of the cabinet
- Use the white caps for finishing



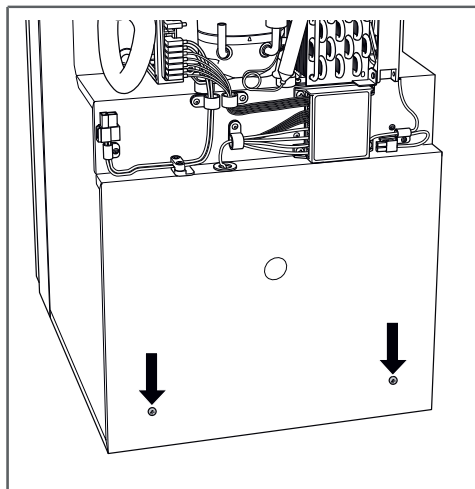
Do **NOT** screw into the refrigerator cabinet.



The drawer model will tend to tip forward when pulled out and not fixed to the furniture. Make sure the fridge is vertical before fixing to the furniture.



Ensure that the furniture panelling is able to handle the forces created by the connection.



- An additional 2 fixating points are available on the back side for free standing installations
- Bump stops are 5mm thick and removable
- 4mm bolts can be used. Maximum insert is 20mm
- Remove the bump stops to access the screw holes
- The holes are 50mm above the floor



Bump stops are required to prevent condensation when the refrigerator is positioned against an insulated wall.

8. After installation



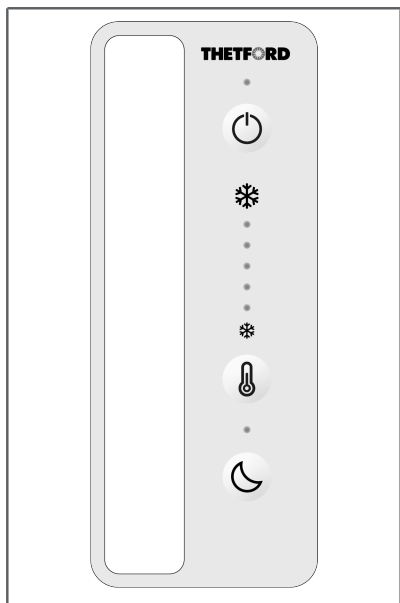
Read the applicable instructions in chapter **Safety** first.

Cut-in/cut-out voltage

The 12V factory setting for the cut-in/cut-out voltage is 10.4V (cut-out) and 11.7V (cut-in). For trailer applications without on-board battery, this setting can be changed to 11.3V (cut- out) and 12.5V (cut-in).

The 24V factory setting for the cut-in/cut-out voltage is 22.8V (cut-out) and 24.2V (cut-in). For trailer applications without on-board battery, this setting can be changed to 24.6V (cut- out) and 26.0V (cut-in).

To change the cut-in/cut-out settings



- Open the door
- Press and hold the night mode button for 10 seconds until the control panel blinks twice to be able to adjust the setting
- Then the setting can be changed via the temperature button

Normal setting (10.4V/22.8V)

- Led 1 and 5 will be lit

High setting (11.3V/24.2V)

- Led 2,3 and 4 will be lit



After a few seconds, the control panel will save the settings and go to the locked stand-by mode.

Visual checks

Check if:

- All packaging materials have been removed.
- Ventilation openings are not blocked.
- Electrical cables are not pinched or damaged.
- Electrical cables are not routed close to heat sources (such as hob, oven or heater) and ignition sources.
- Electrical connectors are seated correctly.

Functional checks

Check if:

- Appliance can be switched on/off.
- Refrigerator cools correctly, this means at 25°C ambient temperature the empty cooling cabinet should reach <5 °C in 4 hours.
- Light in the cooling compartment is working.
- Bins can be removed from the appliance.
- Door can be closed and opened correctly.

Service



Questions

If you contact an authorised local Service Centre in your country, provide the details of the model and serial number plus the date of purchase. You can find the information on the label attached to the appliance.

Warranty

Declaration of Conformity

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