

**THETFORD**



# **Cassette Toilet C220 Series**

**Installation Manual**

# EN

## Original Installation Manual

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## 1. Introduction

This is the installation manual for the Thetford C223-S, C223-CS and C224-CW toilet. The manual is meant for those installing the toilet in a mobile leisure vehicle. Read the information and instructions carefully and follow them strictly to install the toilet safely and correctly.

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

Our policy is one of continuous development and improvement. Specifications and illustrations may change subsequent to publication.

For the latest version of this manual, please visit [www.thetford.com](http://www.thetford.com).



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

## 2. Symbols

Key to symbols:



**Warning.** Risk of injury and/or damage.



**Attention.** Important information.



**Note.** Additional information.

### 3. Regulations and standards



Do not modify this appliance, unless the modification is authorised and carried out by the manufacturer or their agent.



Use only genuine and approved parts and materials.



Wear the correct Personal Protective Equipment during the installation. Also follow the applicable safety regulations.

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### 4. Serviceability

The installer of Thetford products is responsible for proper installation to ensure the correct functionality and serviceability of the appliance. In terms of serviceability, this means that a dealer or an authorised Thetford service partner must be able to de-install and re-install the Thetford products 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 period of 3 years after purchase date. In case of any queries on this subject, please contact the Thetford local service representative before installing the product.

### 5. Before installation

Check the contents of the box:

- C223-S, C223-CS or C224-CW toilet
- 4 stainless steel screws (only for the C224-CW)
- Wall bracket (only for the C223-CS)
- Flow restrictor
- Template
- User manual
- Installation manual

Gather the required tools:

- Drill with 3 and 8mm drill bits
- Electric saw
- Philips screwdriver no.2
- Awl
- Protective tape
- Tape Measure
- Level
- Marker/pencil
- Butyl sealant
- Double-sided tape



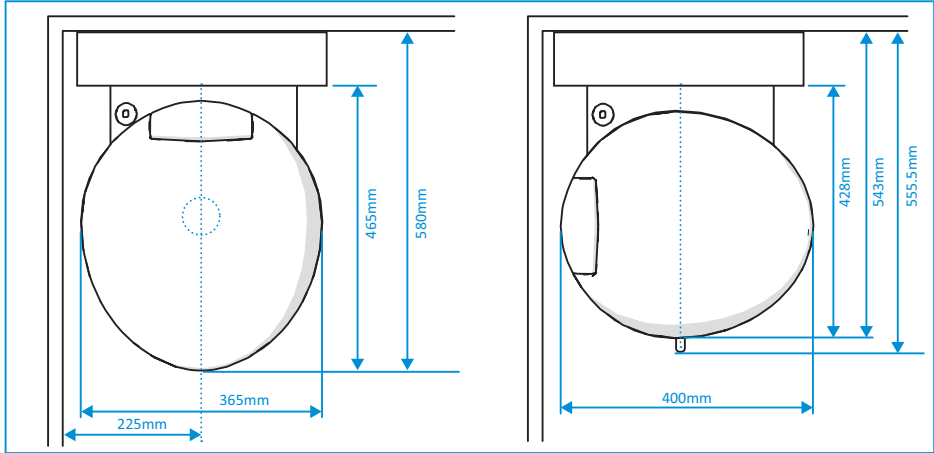
If something is missing from the box, please contact your dealer.



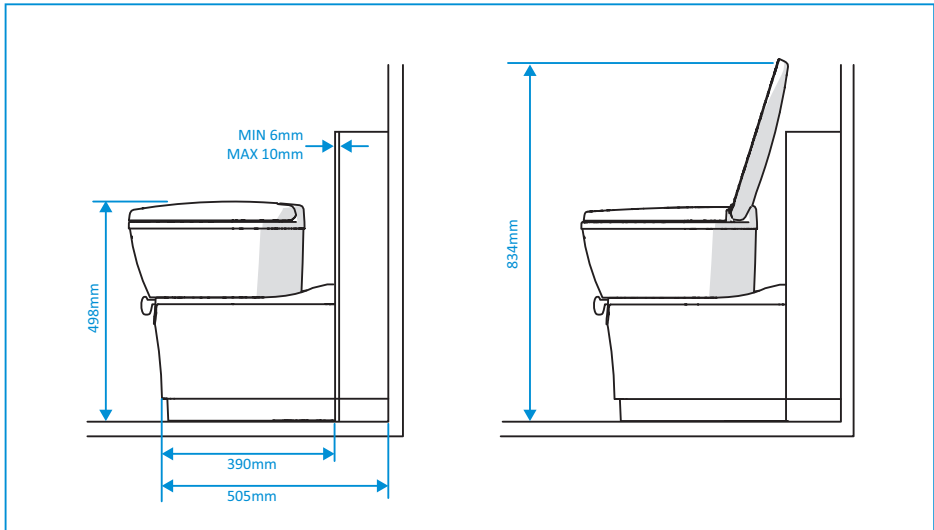
A service door is needed for the installation of this toilet. For installation of the C224-CW, a water fill door is also needed.

## 6. Position and placement (C223-S)

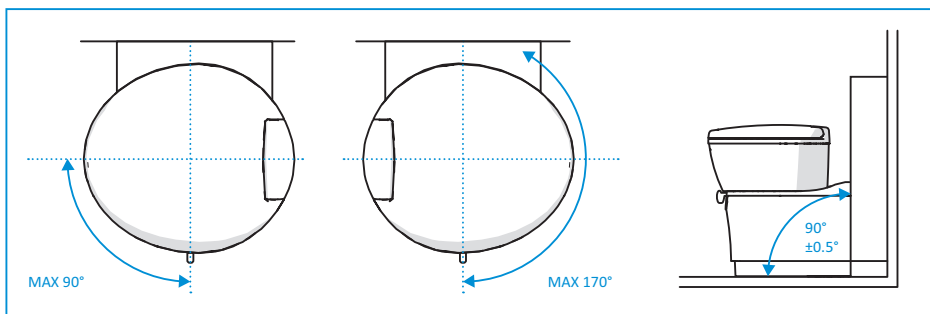
- The main bathroom dimensions:



- The other dimensions:



- The bowl rotation and the floor-wall angle:



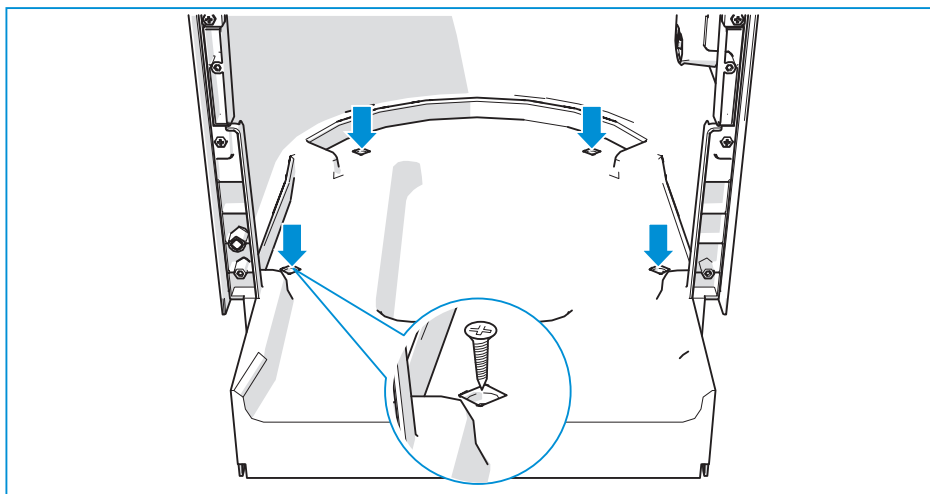
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- Place template D1 on the inner vehicle wall, using the bottom of the template as a reference.
- Position template A (for the service door) horizontally or vertically, using the right reference holes, marked on the template with  $\oplus_{B/C/D}$ .
- Check if the service door fits on the outside wall of the vehicle.
- Drill the two reference holes in the wall.
- Install the service door according to the instructions of the door.



The wall thickness needs to be between 23mm and 39mm for a service door. Contact Thetford if the vehicle wall thickness is outside this range.

- Create the inside wall.
- Place template D1 on the inside wall, using the bottom of the template as a reference.
- Mark the 3 holes marked with  $\diamond_D$  on the wall with an awl.
- Drill the holes in the wall.
- Saw the cut-out in the inside wall, using template D2.
- Mount the toilet to the floor with four screws.





Required torque:  $1.2 \pm 0.3\text{Nm}$  for a Plywood floor.

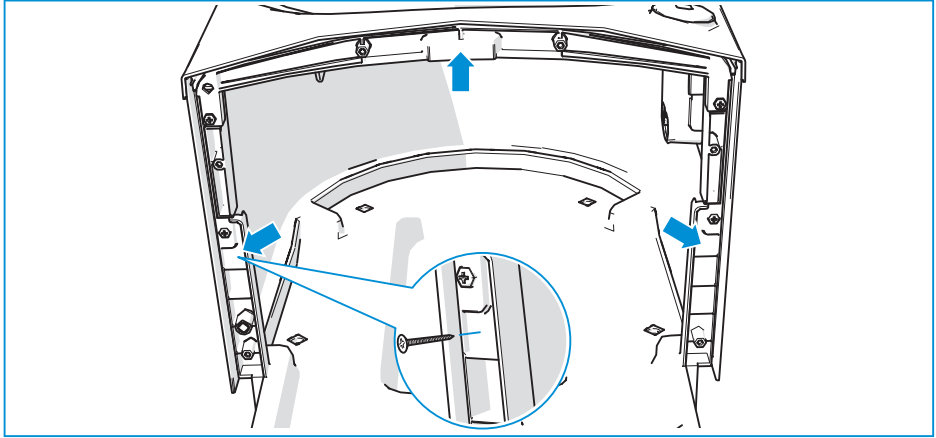


Screws are supplied by Thetford. If these are not used, use stainless steel screws.



Torque may differ if the floor is made from a different material.

- Connect the toilet to the inside wall with three screws.

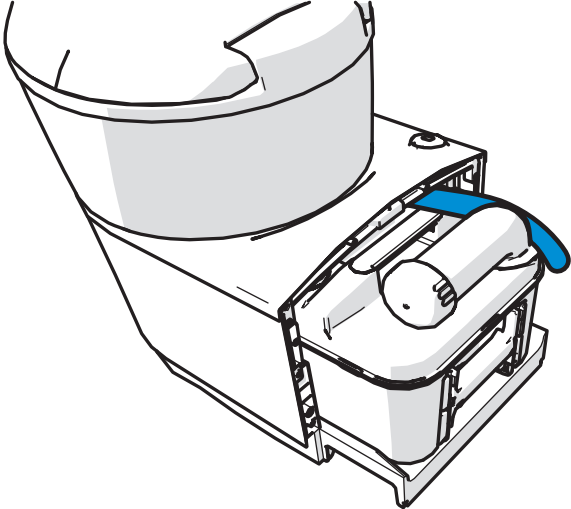


Required torque:  $0.9\text{Nm}$ .



Use stainless steel screws.

- Connect the water hose.

Diameter	Inside: 10mm Outside: 16mm
Length and position	105mm from the last fixed point on the toilet 
Required pressure remote pump at the toilet inlet	Min. 0.35bar at 4.2L/min Max. 0.70bar at 7.1L/min
Maximum allowable pressure on hose	Europe: 4bar AUS/China/US: 8bar

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Make sure that after routing the water hose, the waste-holding tank can still be removed from the toilet.



Meet the required pressure for the remote pump at the toilet inlet to ensure correct flush. If the pressure is too high, install a flow reducer.

- Use template F1 to check the necessary free space for the control panel.
- Saw the cut out for the control panel using template F2.
- Install the control panel at the desired location.



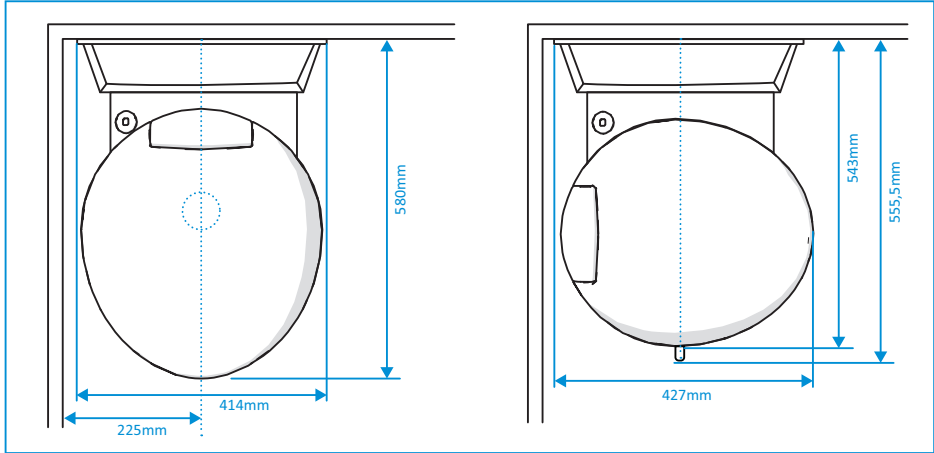
Do not install the control panel in the shower area unless a watertight connection between the control panel and wall can be guaranteed.



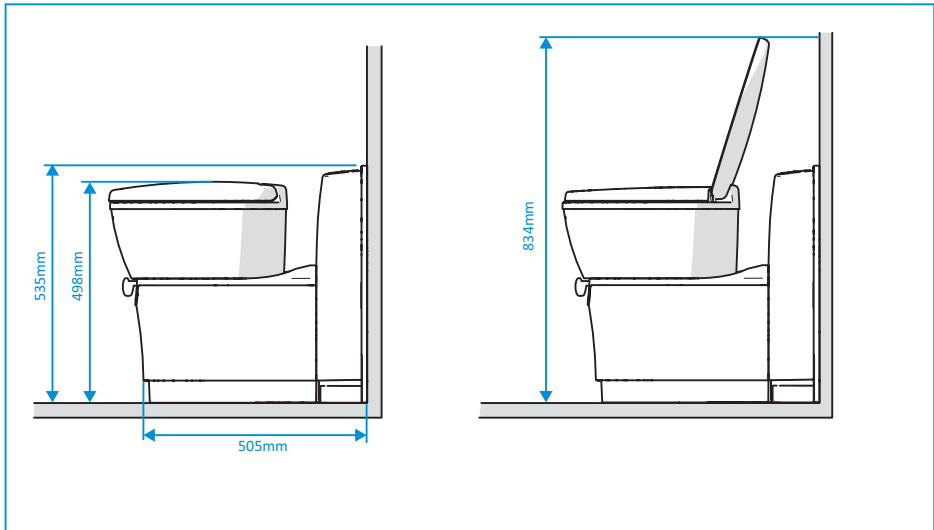
See Connecting electricity [C223-S / C223-CS] for more information about the control panel, including maximum cable lengths.

## 7. Position and placement [C223-CS]

- The main bathroom dimensions:

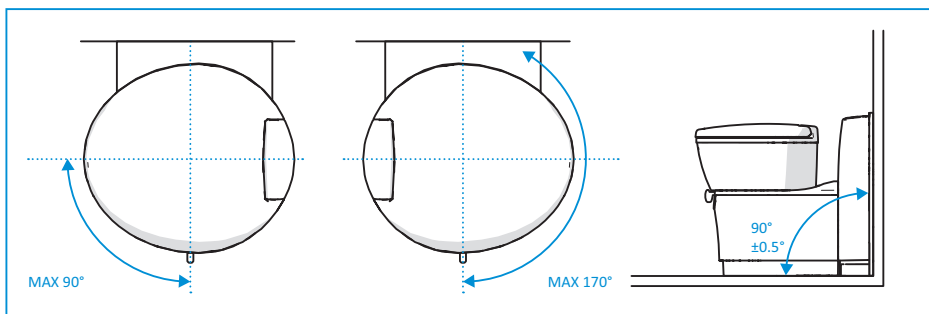


- The other dimensions:





- The bowl rotation and the floor-wall angle:



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- Place template C on the inner vehicle wall, using the bottom of the template as a reference.
- Position template A (for the service door) horizontally or vertically, using the right reference holes, marked on the template with  $\oplus_{B/C/D}$ .
- Check if the service door fits on the outside wall of the vehicle.
- Drill the two reference holes in the wall.
- Install the service door according to the instructions of the door.

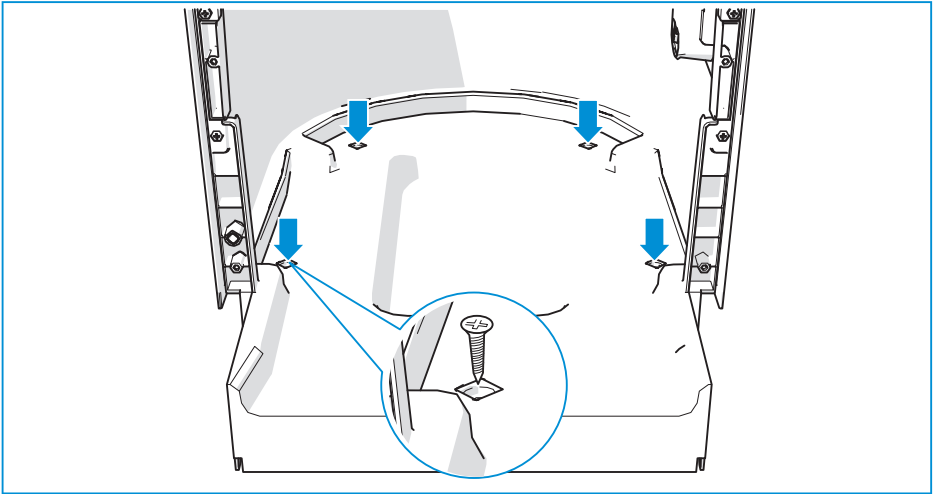


The wall thickness needs to be between 23mm and 39mm for a service door. Contact Thetford if the vehicle wall thickness is outside this range.

- Place template C on the inner vehicle wall, using the bottom of the template as a reference.
- Mark the 3 holes marked with  $\diamond_c$  on the wall with an awl.
- Drill the holes in the wall.
- Mount the wall bracket to the inner vehicle wall with three screws.
- Connect the toilet to the wall bracket.



- Mount the toilet to the floor with four screws.



Required torque:  $1.2 \pm 0.3\text{Nm}$  for a Plywood floor.

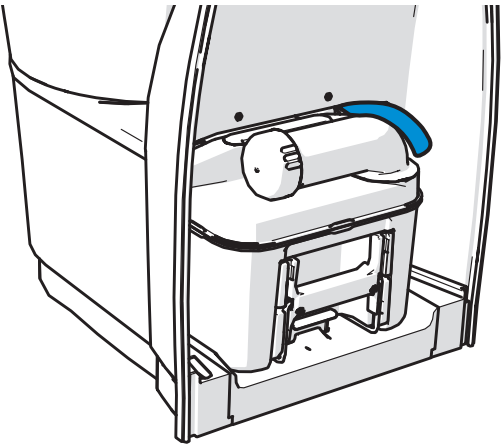


Screws are supplied by Thetford. If these are not used, use stainless steel screws.



Torque may differ if the floor is made from a different material.

- Connect the water hose.

Diameter	Inside: 10mm Outside: 16mm
Length and position	105mm from the last fixed point on the toilet 
Required pressure remote pump at the toilet inlet	Min. 0.35bar at 4.2L/min Max. 0.70bar at 7.1L/min
Maximum allowable pressure on hose	Europe: 4bar AUS/China/US: 8bar

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Make sure that after routing the water hose, the waste-holding tank can still be removed from the toilet.

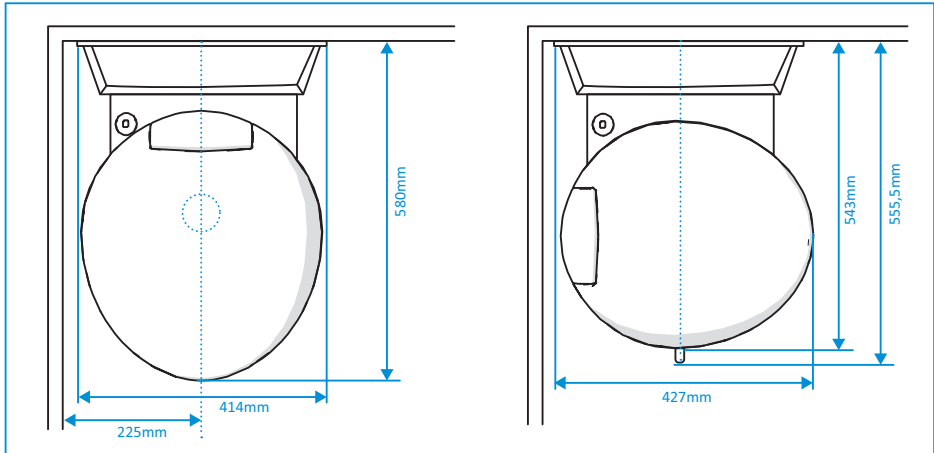


Meet the required pressure for the remote pump at the toilet inlet to ensure correct flush. If the pressure is too high, install a flow reducer.

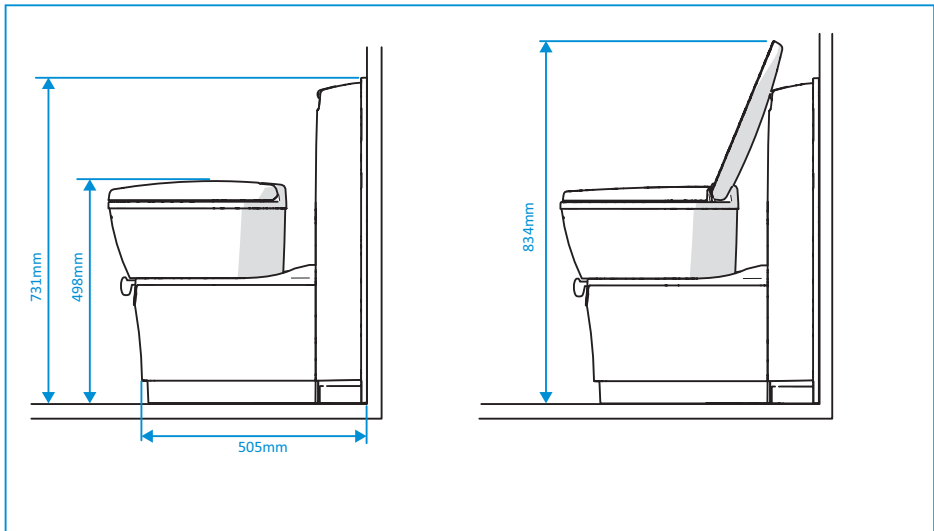
- Place the splashguards.

## 8. Position and placement (C224-CW)

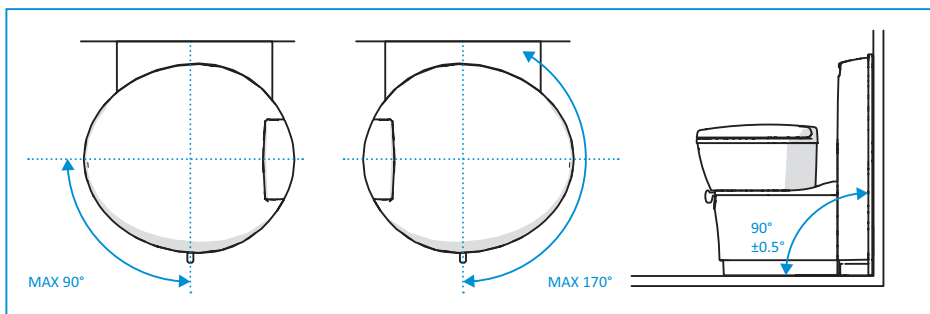
- The main bathroom dimensions:



- The other dimensions:



- The bowl rotation and the floor-wall angle:



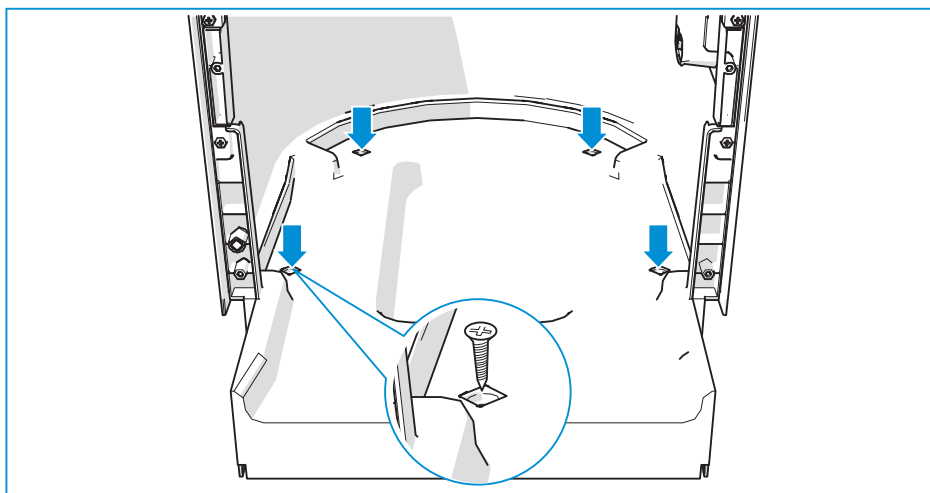
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- Place template B on the inner vehicle wall, using the bottom of the template as a reference.
- Position template A (for the service door) horizontally or vertically, using the right reference holes, marked on the template with  $\oplus_{B/C/D}$ .
- Check if the service door fits on the outside wall of the vehicle.
- Drill the two reference holes in the wall.
- Install the service door according to the instructions of the door.



The wall thickness needs to be between 23mm and 39mm for a service door. Contact Thetford if the vehicle wall thickness is outside this range.

- Place template B on the inner vehicle wall, using the bottom of the template as a reference.
- Mark the 2 holes marked with  $\ominus_B$  on the wall with an awl.
- Position template E1 (for the waterfill door), using the right reference holes.
- Check if the waterfill door fits on the outside wall of the vehicle.
- Drill the holes in the wall.
- Saw the cut-out, using template E2.
- Mount the toilet to the floor with four screws.





Required torque:  $1.2 \pm 0.3\text{Nm}$  for a Plywood floor.

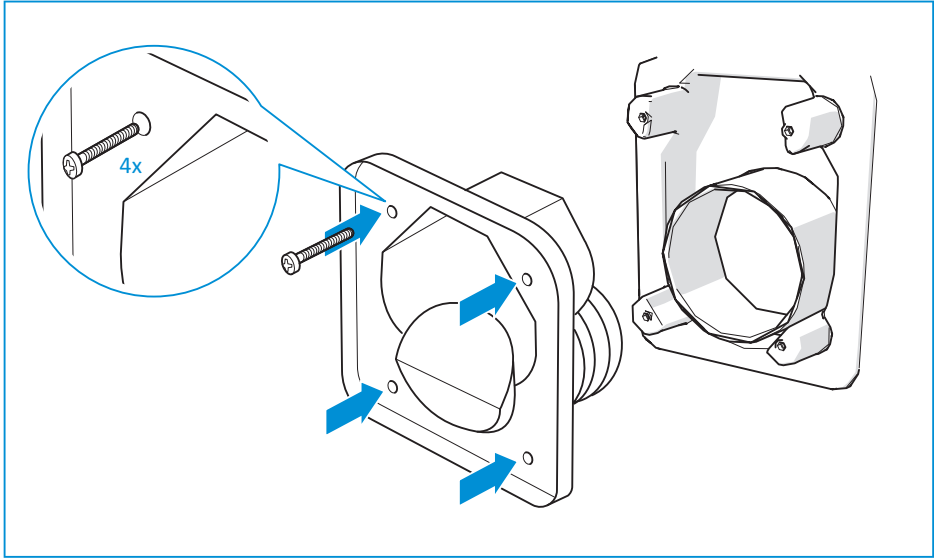


Screws are supplied by Thetford. If these are not used, use stainless steel screws.



Torque may differ if the floor is made from a different material.

- Install the waterfill door with four screws.



The required torque depends on parameters such as wall thickness, sealant, material and tools used. Therefore Thetford can only provide guidelines for the torque value.

Torque (Nm)	Wall thickness (mm)		
	26	32	36
0.75	✗	✗	✓
0.90	✗	✓	✓
1.00	✓	✓	✓
1.10	✓	✓	✗
1.25	✓	✗	✗



The above values are an indication based on extensive tests carried out at Thetford.

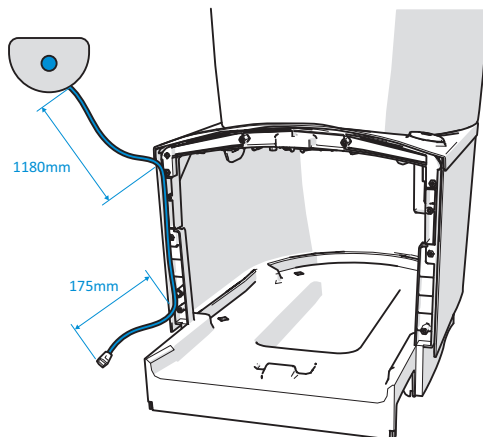


Screws are supplied by Thetford. If these are not used, use stainless steel screws, 4.5 x 54mm flange head PH2.

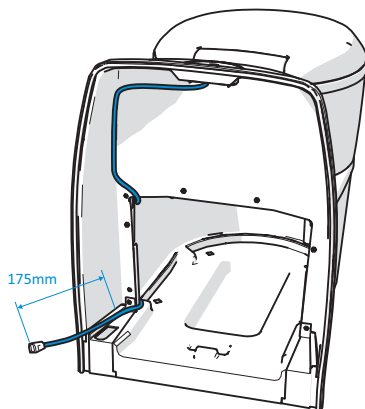
## 9. Connecting electricity [C223-S / C223-CS]

- Connect the cable.

C223-S

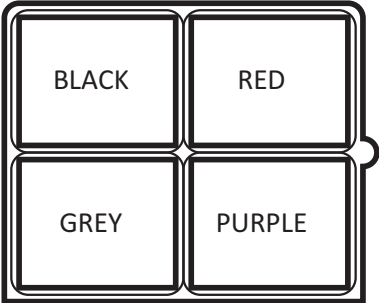


C223-CS

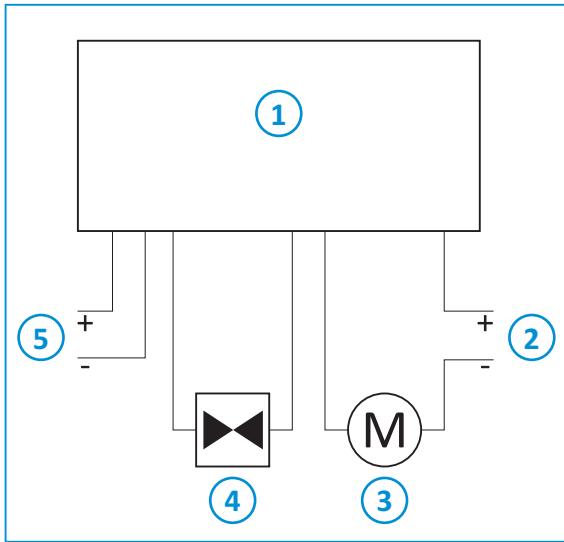


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- Use the following values to connect the power supply.

Remote pump	Grey and purple are used for remote pump relays. Minimum voltage and wattage as indicated on the pump must be respected.
Connection	4 pole tab housing
Position wiring in tab housing	
4 pole connector on toilet	TYCO/AMP 180901
4 pole connector counter part	TYCO/AMP 180900
Thickness	Black/red: 0.5mm <sup>2</sup> Grey/purple: 0.75mm <sup>2</sup>

- Wiring diagram:



- Control PCBA
- 12V DC power supply
- External flush pump (OEM)
- Internal flush valve
- 12V DC power supply



## 10. After installation

- Ensure that all packaging materials have been removed.
- Check if the toilet flushes correctly.
- Check if the level indication works.
- Test all piping and connections and make sure they do not leak.
- Make sure it is possible to drain the water system completely to prevent frost damage.
- Check if the waste-holding tank can be removed and placed back.
- Check if the doors open and close properly.
- Ensure the doors are waterproof after installation.

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## 11. Technical specifications

**Table 1: Dimensions and weight**

	C223-S toilet		
Dimensions	H	W	D
mm	495	365	580
Empty weight	6.8kg		
Capacity waste-holding tank	18L		

	C223-CS toilet		
Dimensions	H	W	D
mm	534	394	580
Empty weight	7.2kg		
Capacity waste-holding tank	18L		

	C224-CW toilet		
Dimensions	H	W	D
mm	727	394	580
Empty weight	8kg		
Capacity waste-holding tank	18L		
Capacity flush-water tank	9L		

## 12. Servicing

All servicing must be carried out by an approved competent person.

For service, please contact your authorised local Service Centre giving details of the model and serial number on the data badge plus date of purchase.

The data badge can be found on the base of the toilet.



## 13. Questions / customer service

- Visit [www.thetford.com](http://www.thetford.com).
- Contact Customer Service Thetford in your country. See the addresses on the back.