5.7 Devo installare una condotta di ventilazione per la valvola di ventilazione integrata?

Non è necessario effettuare la canalizzazione della valvola di ventilazione integrata nel manicotto scarico della toilette.

E' comunque possibile effettuarla seguendo le normali accortezze da adottare per i condotti di ventilazione.

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Via Flaminia | Loc. Castello delle Formiche
05030 Otricoli (TR)
ITALY

T +39 0744 709071
F +39 0744 719833
info@tecma.eu
www.thetfordmarine.com

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ENGLISH INDEX

INSTRUCTIONS FOR INSTALLATION AND USE

Rev. V03

GENERAL WARNINGS TO THE USER

⚠️ **WARNING:** Read and understand the warnings listed in this document before installing, using, or servicing the system. Failure to comply with these warnings may cause malfunctions, injuries, damage, loss of the property, and electrocution. Any modification applied to Tecma's product may result in loss of the property, injuries, or electrocution.

⚠️ **WARNING:** Children should not play with the equipment. This equipment can be used by children aged 8 and up if under surveillance, or if they have received the instructions regarding use of the device safely and if they understand dangers involved. Cleaning and maintenance by the user should not be performed by children unless they are older than 8 years and operate under surveillance. Keep any power cable out of reach of children under the age of 8 years.

⚠️ **WARNING:** The equipment can be used by people with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have supervision or if they have received instructions regarding the use in safety of the device and understand dangers involved.

⚠️ **WARNING:** Follow the legal and environmental protection in the selection and use of cleaning products.

1. TECMA SANITARY SYSTEM

Tecma marine sanitary systems are made in Italy. The entire production is made in the district of Civita Castellana, which is well known for manufacturing top-quality ceramic sanitary ware.

The Tecma Research and Development department has, over the years, developed a series of solutions featuring different shapes and sizes. This wide range of solutions allows you to install a Tecma toilet wherever there are space, style and weight constraints.

Tecma toilets can be requested with integrated or separate bidet with the same geometry. The Tecma system is based on the combined action of a macerator pump to discharge blackwater, and an inlet pump or solenoid valve for the clean water inlet.

All the ceramic toilets have an in-built macerator pump, which pushes blackwater to the blackwater tanks. Shredding occurs in a specific cavity equipped with steel blades positioned before the pump impeller.

The flushing cycle is activated from different models of control panels. There are specific options available according to the control panel model, such as blackwater tank monitoring, adjustment of the water used during the flushing cycle, etc.

This product is characterised by its pump power, and for its reliable and simple mechanism. A global service network is always available to provide assistance and spare parts.

1.1 Warranty

- The warranty covers all TECMA products for 2 years from boat registration date.

- The warranty covers TECMA spare parts for 2 years from the date of purchase

- The warranty does not cover damage resulting from negligence of the user and use and installation that fails to comply with the instructions provided. Moreover, accidental damage, tampering with or modifying the product will make the warranty null and void.

- The warranty applies only to the product. The costs of repairs carried out by unauthorized personnel and / or express deliveries and / or collateral damage are not subject to reimbursement as a guarantee.

REQUEST OF SPARE PARTS UNDER WARRANTY

- Any request under warranty must be submitted to TECMA authorised assistance centres:

    a) Copy of the boat registration certificate or of the product invoice.

    b) Brief description of the failure or problem detected.

- Download the list of TECMA authorised assistance centres from our website www.thetfordmarine.com or request it from our customer services:

R.O.W.(rest of the world): info@tecma.eu / Tel. **+39 0744 70 90 71**- U.S.A.: **1-800-543-1219**

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Tecma S.r.l.
Via Flaminia | Loc. Castello delle Formiche
05030 Otricoli (TR)
ITALY

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F +39 0744 719833
info@tecma.eu
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1.2 Cleaning

Ceramic is particularly suitable for toilets, as it guarantees hygiene and it is resistant against any cleaning product. Do not use acetone- or trichlorethylene-based products, or any product that may irreversibly damage the rubber components of the pump/macerator/check valves. We recommend using Thetford products, as they are specifically tested for this type of systems. Do not use aggressive products or abrasive sponges on carbon or coloured products (other than white or pergamon). We recommend applying a small amount of product to the rear of the toilet first to check its suitability.

WARNING: Comply with the environmental protection standards in force when choosing and using cleaning products.

1.3 Winterising

TECMA products do not need special maintenance or winterisation.
It is however suggested periodically and in preparation for the winter of:

- Perform maintenance of the solenoid valve and / or intake pump filters.
- Perform rinsing cycles with clean water.
- Completely empty all the systems to prevent the pipes from freezing or use a specific antifreeze product.

Do not use automotive antifreeze products or products used in the windscreen washer solvent tank.

Comply with the environmental protection standards in force when choosing and using these products.

1.4 Toilet seat cover

The Flexi and Design range include different seat cover configurations. Respectively, Thermosetting and polyester both with and without Soft Closing. Do not accelerate the normal excursion of the hinges in the configuration with Soft Closing in order not to affect the operation.

1.5 Choosing the type of toilet paper

Only use toilet paper. The system is designed to dispose of toilet paper effectively. Do not use paper towels or similar products.
Tecma recommends using Thetford Aqua-Soft.

2. OPERATING THE SYSTEM

2.1 All-in-one control panel

2.1.1 *One button*

Press the "FLUSH" button to start the automatic flush cycle, after which the toilet will be refilled with a small amount of water, ready for the next use.
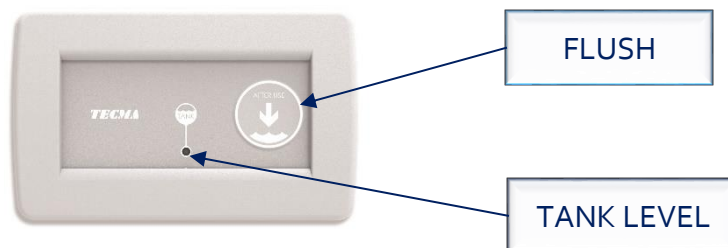
| FLUSH |
| TANK LEVEL |

2.1.2 *Two buttons*

Press the "BEFORE USE" button before using the toilet. This will fill the toilet with a small amount of water. Press the "AFTER USE" button after using the toilet. This will start the automatic flush cycle, which will empty the toilet.

| BEFORE USE | | AFTER USE |
| TANK LEVEL |

NOTE: The All-in-one control panel allows you to adjust the amount of water used during the flushing cycle. A regulator placed at the back of the panel increases the amount of water if turned clockwise or decreases it if turned anticlockwise. The recommended water level is 1 cm above the ceramic outlet.

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ITALY

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F +39 0744 719833
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2.2   Multiframe control panel

2.2.1   *Function*

Press the "BEFORE USE" button before using the toilet. This will fill the toilet with a small amount of water. Press the "AFTER USE" button after using the toilet. This will start the automatic flush cycle, which will empty the toilet.

BEFORE USE

AFTER USE

TANK LEVEL
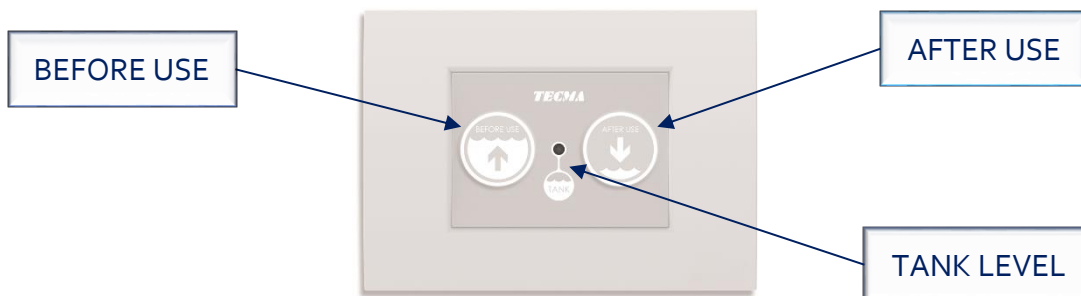
NOTE: It is also possible to adjust the amount of water used during every flushing cycle directly from the Multiframe wall switch. A specific regulator placed on its rear increases the amount of water if turned clockwise or decreases it if turned anticlockwise. The recommended water level is 1 cm above the ceramic outlet.

WARNING: The tank level LED is only an indicator. Do not use the system if the LED is red.

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Via Flaminia | Loc. Castello delle Formiche
05030 Otricoli (TR)
ITALY

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F +39 0744 719833
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2.3   Touch SFT control panel

2.3.1   *Function*
The Touch SFT control panel can work both in Navigation mode and in Mooring mode.
The Navigation mode cycle eliminates the water inside the bowl at the end of use, preventing the possible leakage of water due to the movements of the boat.
The mooring mode cycle works like domestic toilets: just the activation of the "AFTER USE" button is enough to activate the cycle in its entirety. In Mooring mode there is always a quantity of water inside the bowl to create a hydraulic cap.
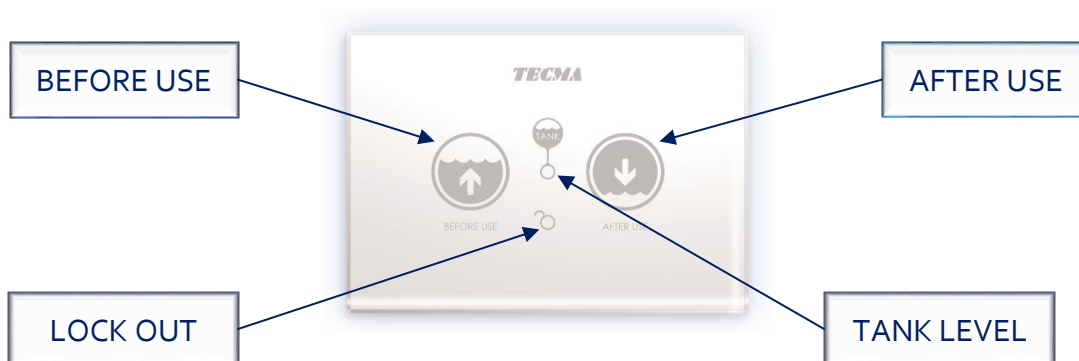
To switch from mooring mode to navigation mode see par. 2.3.3.

NOTE: If desired, the amount of water that is used during each drain cycle can be adjusted directly on the back of the Touch panel. In fact, in the rear part of the latter there is a special regulator that can be operated by turning it clockwise to increase the amount of water or counterclockwise to decrease it. The recommended water level is 1 cm above the exhaust outlet.

2.3.2   *Sailing or Mooring mode*
Set the system to sailing mode if you plan on sailing often. The toilet will remain empty after use. Only a small amount of water will be added to create a water trap. This will avoid accidental water spilling caused by motion of the vessel during navigation.

SAILING MODE: the toilet bowl remains **empty** at the end of the flush cycle

1. The bowl is empty.

2. Press the "**BEFORE USE**" button before using the toilet. The solenoid valve will let in the desired amount of water for max 12 seconds.

3. Press the "**AFTER USE**" button after using the toilet.
A combined action of the solenoid valve and macerator pump will clean and rinse the bowl. A small water trap is created and the toilet bowl will remain empty.
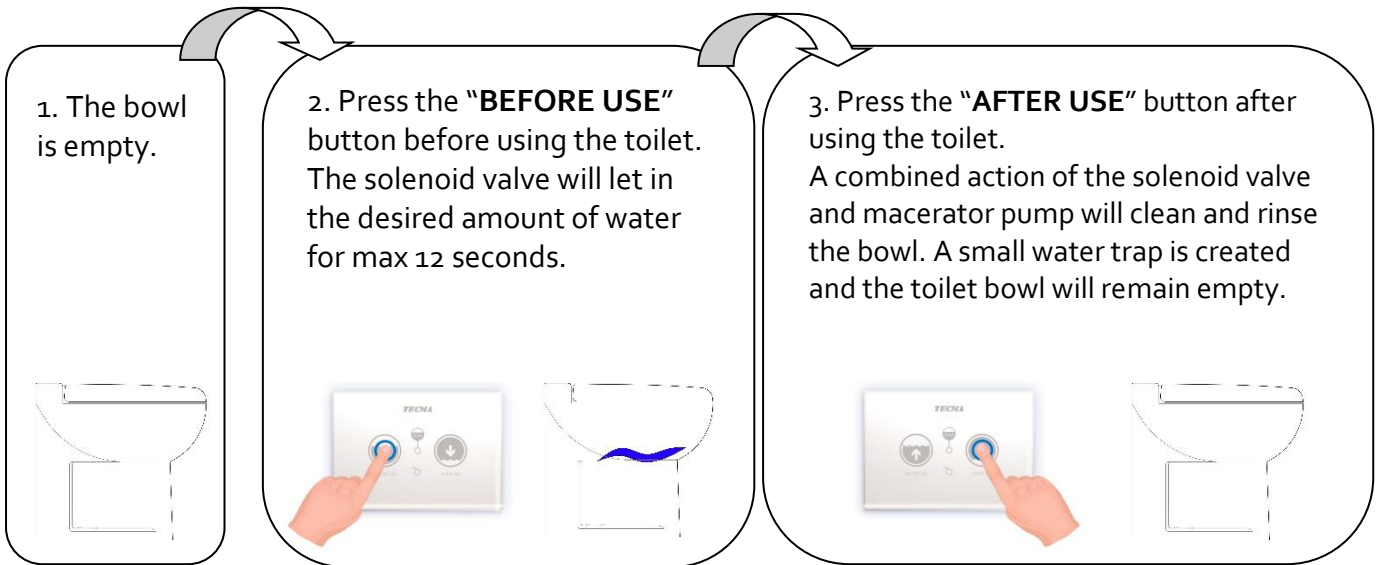
Set the system to mooring mode if you plan on docking for a long period of time. Water will remain in the toilet after use allowing you to flush by pressing a single button.

MOORING MODE: water remains in the toilet, **ready for the next use.**

1. Some water remains in the bowl (same as a residential toilet).

2. Using the toilet

3. Press the "**AFTER USE"** button after using the toilet.
The combined action of the solenoid valve and macerator pump cleans and rinses the bowl, leaving a small amount of clean water ready for the next use.

4. Some water remains in the bowl ready for the next use
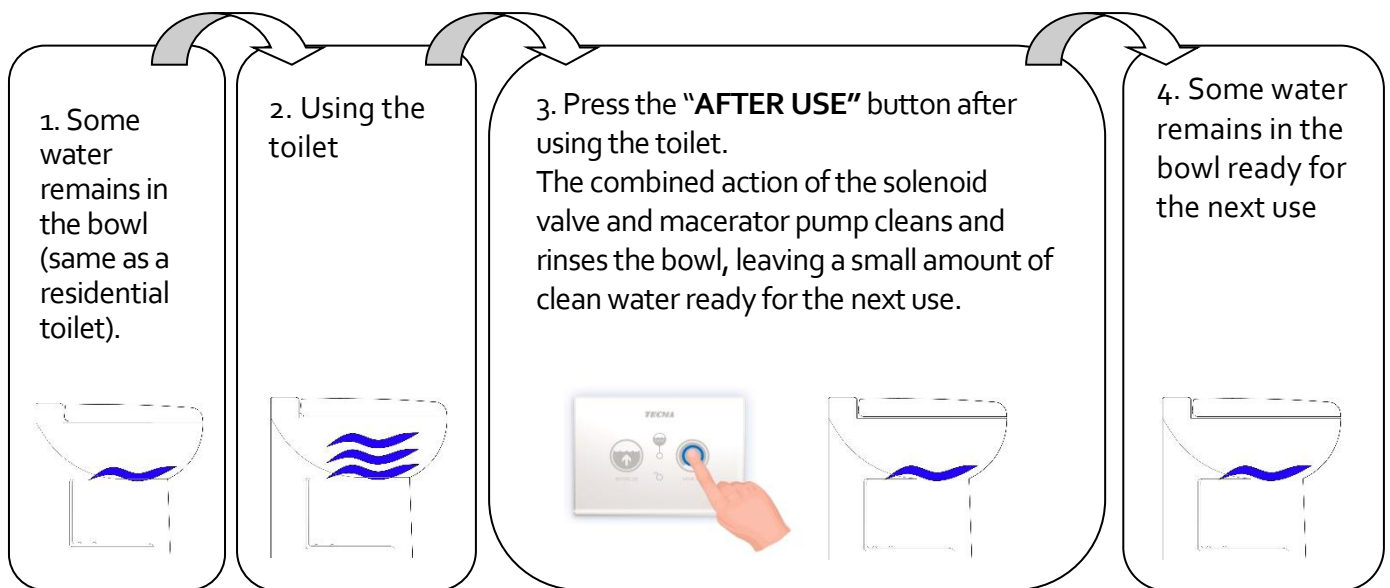
2.3.3 *Changing flushing mode*

The system is set on sailing mode by default. To switch from one mode to another:

1) Press and hold the BEFORE USE and AFTER USE buttons simultaneously

2) After 3 seconds, the sensor LED will flash: keep pressing.

3) After 5 seconds, the perimeter LED will flash: release the buttons.

4) The toilet will automatically do:

   a. If you are setting from Sailing mode to Mooring mode: water inlet.

   b. If you are setting from Mooring mode to Sailing mode: pump activation.

5) Repeat the procedure to change mode again.

Fig.1: from Sailing to Mooring

SAILING MODE	1. **Press and hold** the BEFORE USE and AFTER USE buttons **simultaneously**
	2. After 3 seconds, the sensor LED will flash. **Hold down**.
	3. After 5 seconds, the backlight LED will flash. **Release the buttons.**
MOORING MODE	4. The toilet will automatically inlet water

Tecma S.r.l.
Via Flaminia | Loc. Castello delle Formiche
05030 Otricoli (TR)
ITALY

T +39 0744 709071
F +39 0744 719833
info@tecma.eu
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Fig.2: from Mooring to Sailing

| MOORING MODE | 1. **Press and hold** the BEFORE USE and AFTER USE buttons **simultaneously** | | |

2. After 3 seconds, the sensor LED will flash.
Hold down.

3. After 5 seconds, the backlight LED will flash
Release the buttons.

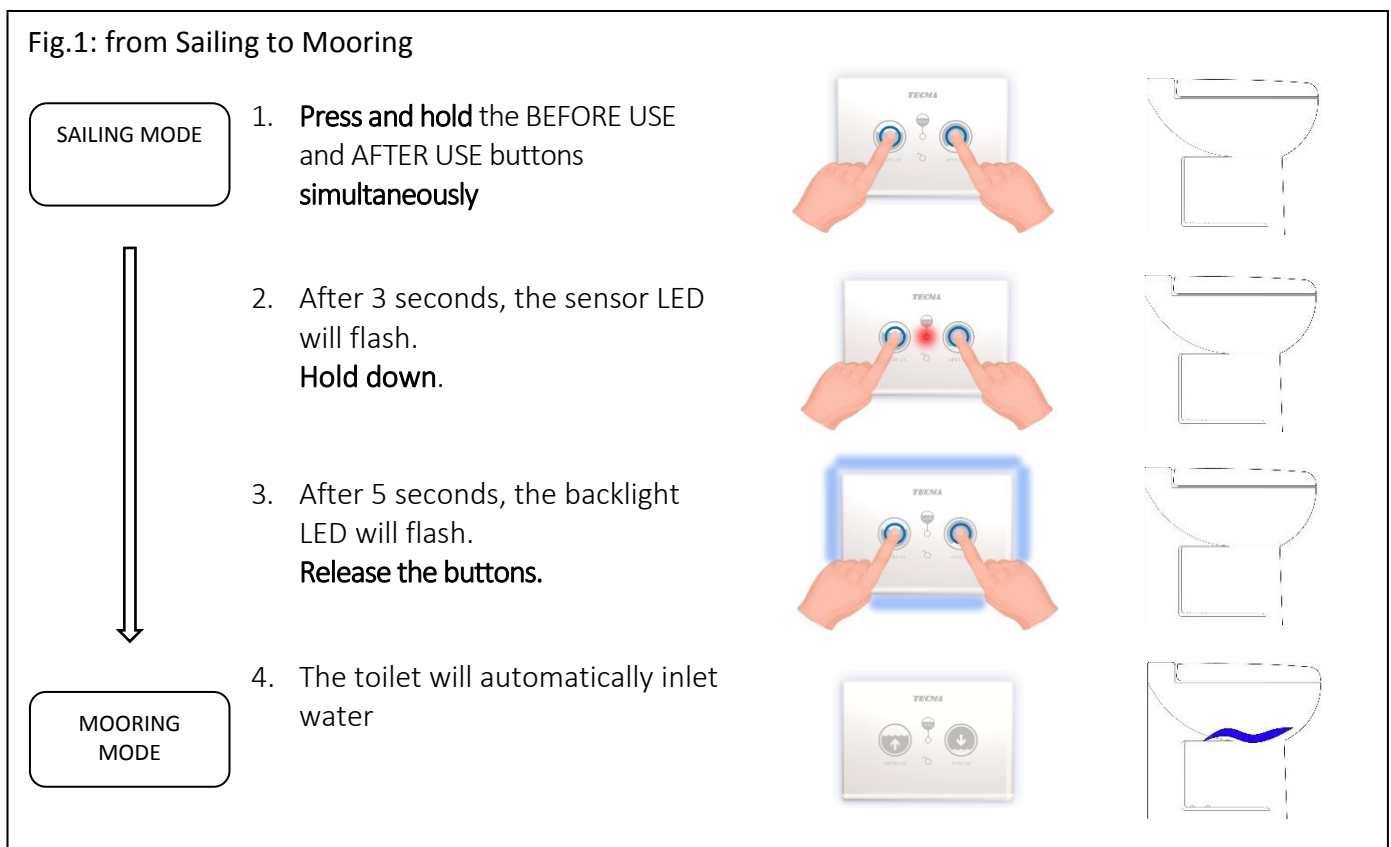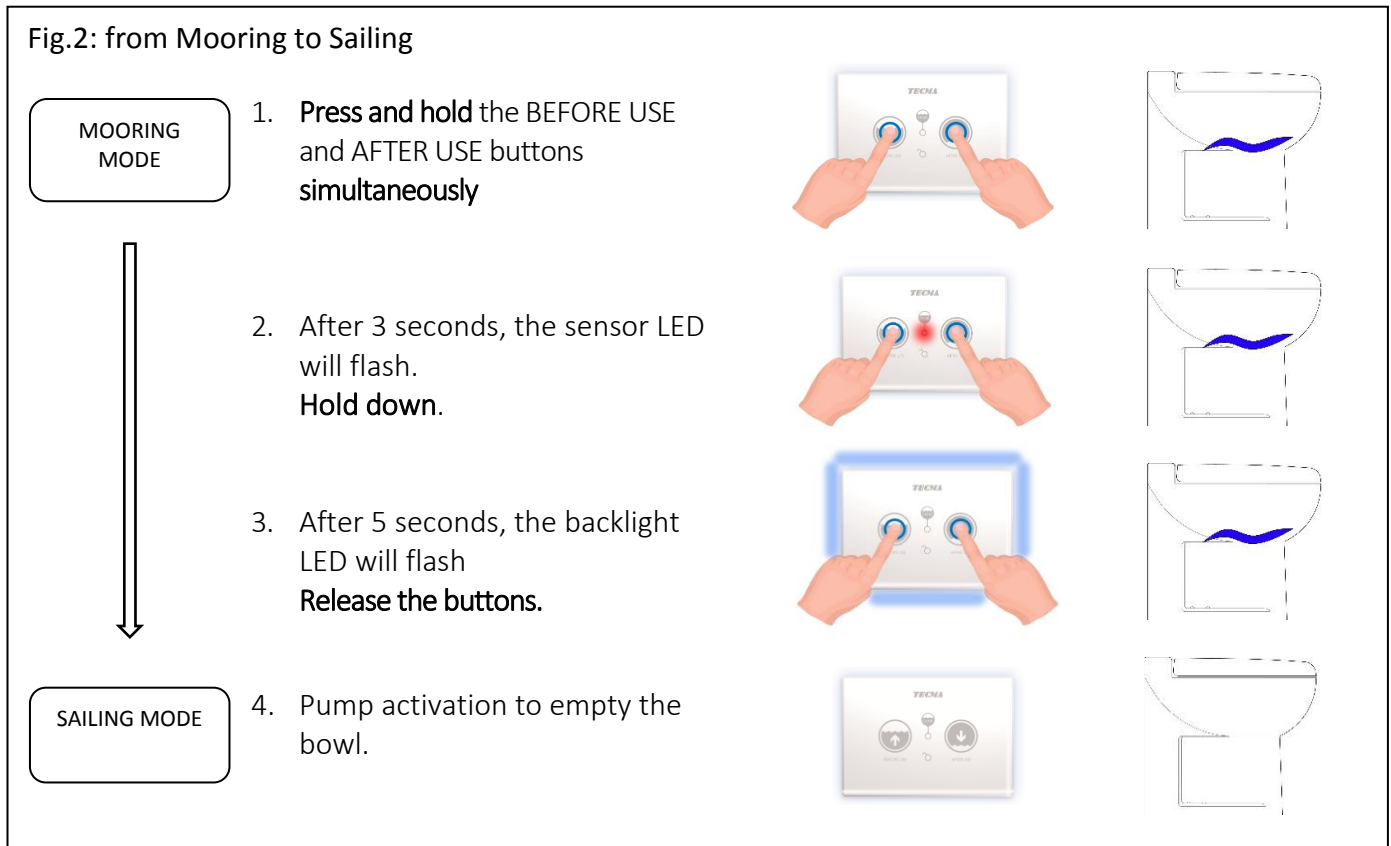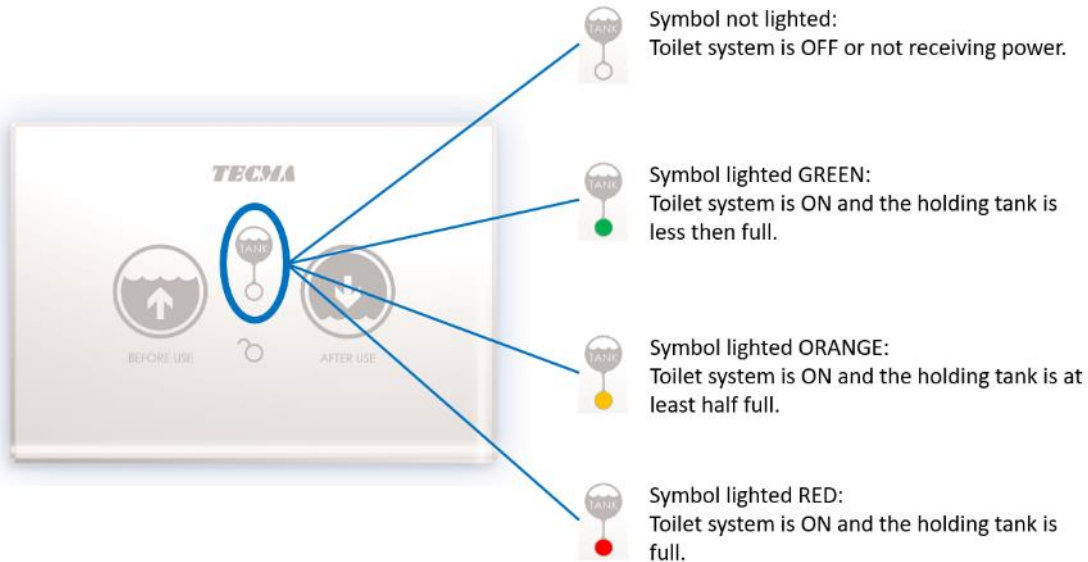| SAILING MODE | 4. Pump activation to empty the bowl. |

NOTE: at the end of the cycle, the toilet remains empty if the system is set in "*Sailing mode*". Alternatively, a small amount of water remains in the toilet if the system is set in "*Mooring mode*".

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Via Flaminia | Loc. Castello delle Formiche
05030 Otricoli (TR)
ITALY

T +39 0744 709071
F +39 0744 719833
info@tecma.eu
www.thetfordmarine.com
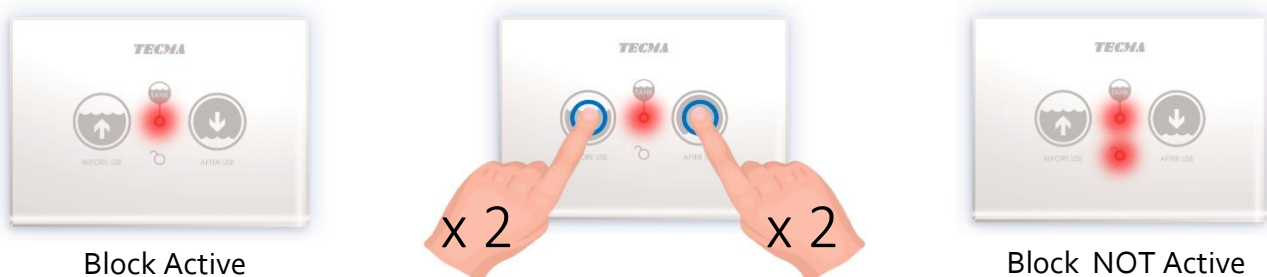
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2.3.4   Tank level LED – Block function

The control panel is equipped with a 3-colour LED, which indicates the blackwater tank level. As soon as the maximum level is reached, the sensor disables the inlet of water inside the bowl. Only the macerator pump will stay active.

Symbol not lighted:
Toilet system is OFF or not receiving power.

Symbol lighted GREEN:
Toilet system is ON and the holding tank is less then full.

Symbol lighted ORANGE:
Toilet system is ON and the holding tank is at least half full.

Symbol lighted RED:
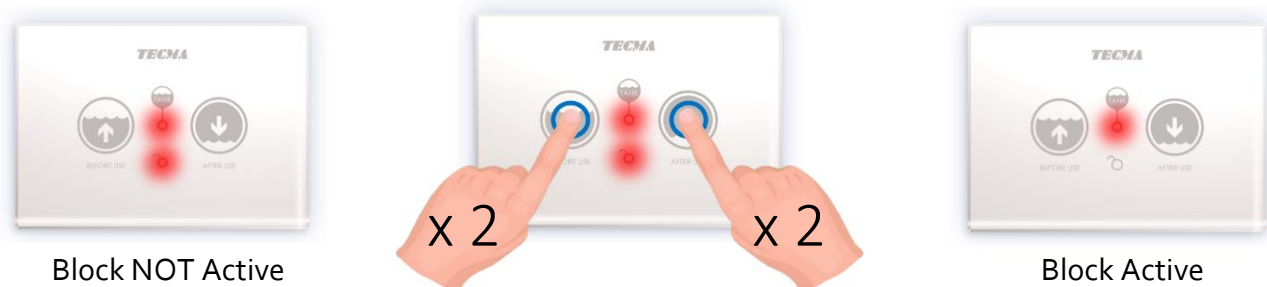Toilet system is ON and the holding tank is full.

2.3.5   Lockout

If for any reason you intend to bypass the block function connected to the level of the black water tank, and reactivate the inlet of water, press both buttons simultaneously two times, with an interval of about 1 sec.

The "LOCK OUT" LED will come on to indicate that the panel is in lockout mode (block NOT active). The button LEDs will turn off during programming. When restarted, the control unit can be used.

x 2   x 2

Block Active   Block NOT Active

To disable the lockout function, repeat the procedure:

x 2   x 2

Block NOT Active   Block Active

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2.3.6   *Disabling the toilet for cleaning operations.*
Temporarily disable the buttons in order to clean the Touch control panel.

1. Place your hand on the panel for 15 seconds without touch it.
2. The backlight starts blinking for 3 sec.
3. **Take your hand away.**
4. Clean the panel with a cloth.
5. The buttons will be automatically enabled again after **15 seconds**.

2.3.7   *Disabling the toilet for a shower*
Nel caso in cui il pannello Touch fosse all'interno della doccia, per evitare attivazioni involontarie legate agli schizzi d'acqua, è possibile disabilitare temporaneamente i pulsanti.

1. Place your hand on the panel for 15 seconds without touch it.
2. The backlight starts blinking for 3 sec.
3. **Press the central area at the tank LED.**
4. All LEDs will flash to confirm command.
5. The backlight will start to blink slowly.
6. The buttons will be automatically enabled again after **15 minutes.**

2.3.8   *Programming the backlight*

You can program the Touch panel to have the backlight:

  a. Always on
  b. Always off
  c. Activated with a proximity sensor (default)

Instructions to switch from one program to another:

  1. Press and release the LED at the centre (Tank level LED)
  2. Press and release simultaneously the BEFORE USE and AFTER USE buttons.
  3. Wait 2/3 seconds before performing other operations.

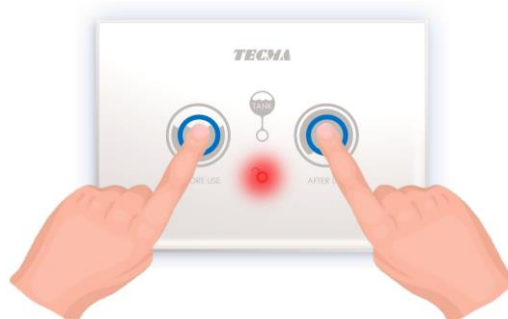 This way, you will switch from one program to another simultaneously
  → ALWAYS OFF → PROXIMITY→ ALWAYS ON→

2.3.9   *Pump manual activation*

In caso di necessità, è possibile effettuare un ciclo con la sola attivazione della pompa maceratrice.

Press simultaneously both buttons for 3 seconds until the Lock LED flash and release.

2.3.10 *Anti overflow function*

To avoid possible overflows related to excessive consecutive inlet of water with the "BEFORE USE" button, an automatic block is enabled which does not allow more than two consecutive inlets.
The lock is disabled the next time the macerating pump is activated.

NOTE: effectiveness is not guaranteed if the water inlet level has not been appropriately set.

The "After Use" cycle will in any case introduce a quantity of water.
If only pump activation is required, see function *2.3.9 Manual pump activation.*

2.3.11 *Reset*

If it is necessary, it is possible to activate the system reset function.

      a.   Press and hold the LED at the centre (Tank level LED) for 10 seconds.
      b.   All the LEDs will flash as reset confirmation.

⚠ **WARNING**: do not to exceed the tank maximum level when the "Tank Level" LED is red (lockout mode).

⚠ **WARNING**: If the toilet is connected to a seacock, make sure that its safety ball valve is always closed when the boat is unattended, even for a short time.

⚠ **WARNING**: For toilets that use fresh water systems connected (even temporarily) to the port water mains, make sure that the valve in the quay connection point is always closed when the boat is unattended, even for a short time.

⚠ **WARNING**: do not force the cover to close if the toilet is equipped with a soft closing system. The system is designed to close automatically and applying external force may irreversibly damage the mechanism.

⚠ **WARNING**: if the toilet is equipped with a bidet function, make sure not to exceed the toilet maximum level, as there is no overflow drain. Enable the macerator pump ("AFTER USE") to empty the toilet.

⚠ **WARNING**: In case of accidental overflow (bidet), you can use the *"Manual Activation"* function (see 2.3.9).

3. INSTALLATION AND SERVICE

⚠️ **WARNING**: Read and understand the warnings listed in this document before installing, using, or servicing the system. Failure to comply with these warnings may cause injuries, damage, loss of the property, and electrocution.
Any modification applied to Tecma's product may result in loss of the property, injuries, or electrocution.

⚠️ **TECMA SRL is not liable for damage, injuries, or death resulting from improper installation, operations, or interventions.**

⚠️ **TECMA SRL recommends entrusting qualified personnel with installing the hydraulic and electrical systems.**

⚠️ **Comply with the system standards in force.**

⚠️ **WARNING**: **Danger of electric shock, fire, or flooding. Failure to comply with these warnings may result in loss of property, injury, or death.**

Recommendations:

- Always use a fuse sized according to the electric circuits.

- Before starting any maintenance operation, make sure that the power supply is disconnected and that the seacocks are in the OFF position (closed).

- If the toilet is connected to a seacock, make sure that its safety valve is always closed when the boat is unattended, even for a short time.

- For toilets that use fresh water systems connected (even temporarily) to the port water mains, make sure that the valve in the quay connection point is always closed when the boat is unattended, even for a short time.

- If the Toilet is connected to a seacock, only use marine-type fittings, which must be secured to every connection with two (2) stainless steel straps. Inspect these straps frequently to check the seal and, thus, prevent any leaks.

- If the Toilet is connected to a seacock, install a marine ball safety valve (activated by a lever) in correspondence of the sea cock.

- If water fails to flow after the first two/three flushes, there may be an assembly problem or malfunction. In this case, do not use the toilet and refer to the "Troubleshooting" section.

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Tecma S.r.l.
Via Flaminia | Loc. Castello delle Formiche
05030 Otricoli (TR)
ITALY

T +39 0744 709071
F +39 0744 719833
info@tecma.eu
www.thetfordmarine.com

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- Only use stainless steel hardware. Always use the supplied ceramic-protection rubber inserts. Any toilet assembly errors may result in improper movements, which may damage objects or injure persons.

- The toilet is designed to dispose of human waste and toilet paper. Never flush other materials types (e.g. paper towel, wet wipes, condoms, sanitary pads, dental floss, etc.)

- Always use the screw caps, ceramic-protection rubber inserts, and connectors supplied with the toilet.

- If in doubt, please refer to your TECMA distributor.

WARNING: Flush toilet paper only.
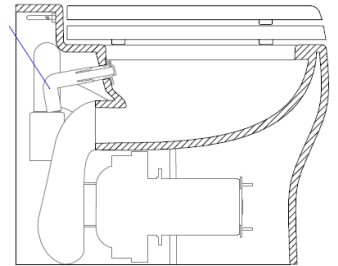
3.1   Installation site

Tecma toilets are designed for installation against the wall. This is to ensure the toilet stability, optimize space and bathroom design. For hygiene purposes, it is recommended to use sealant around the toilet base.

Before starting installation:

- make sure that the blackwater tank is in a suitable position and can be reached from the toilet installation site

- make sure that the toilet configuration corresponds to the hydraulic and electric system of the boat.

- make sure that the chosen model is suitable for the installation into, taking into consideration:

  · the foot overall dimensions

  · correct seat cover opening

- there is sufficient space to fit all the pipes without damaging or bending them inappropriately.

- the floor plate can withstand the weight of the toilet and of a potential user, even during sailing, when these loads may be greater due to the pitching and rolling of the boat.

- If recommended, there is any space to install a separate ventilated siphon sufficiently above the toilet. This installation is recommended in the cases

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Tecma S.r.l.
Via Flaminia | Loc. Castello delle Formiche
05030 Otricoli (TR)
ITALY

T +39 0744 709071
F +39 0744 719833
info@tecma.eu
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described in section 3.8 "System" The Flexi 2G and Design line integrates an air admittance valve already in the discharge internal hose.

- In the case of non-centralized systems (sea water) with toilet installed below the waterline, make sure the space to install the safety valve ventilation necessary authorization and discharge at a sufficiently higher proportion to it.

- all the **FLEXI LINE 2G SHORT SHALLOW BOWL** versions self-contain all components internally. It is no longer required to verify the space under the usual installation step.

- The **SHORT DEEP BOWL** versions must have enough room for the motor, which extends 100 mm below the bowl.
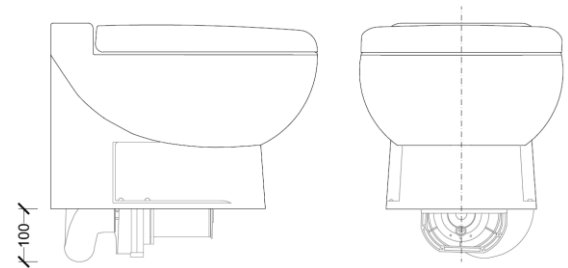
- The **EVOLUTION** model installation requires to install a vertical fixing plate (not provided) or to suitably secure the load on the bulkhead.

3.2 Floor fixation

The floor fixation of each head of Flexi Line and Design is using nylon brackets with side screws and floor anchors (excluding Xlight and Evolution with special mounting kit).

Each toilet is provided with a template with the measures for drilling to the floor. In the specific case of the new Flexi 2G line (excluding Elegance CUT), the template reverse side is a scaled template to easily locate the exact location for drilling to the floor.

The installation of the Flexi 2G line is completed in a few steps as described below:
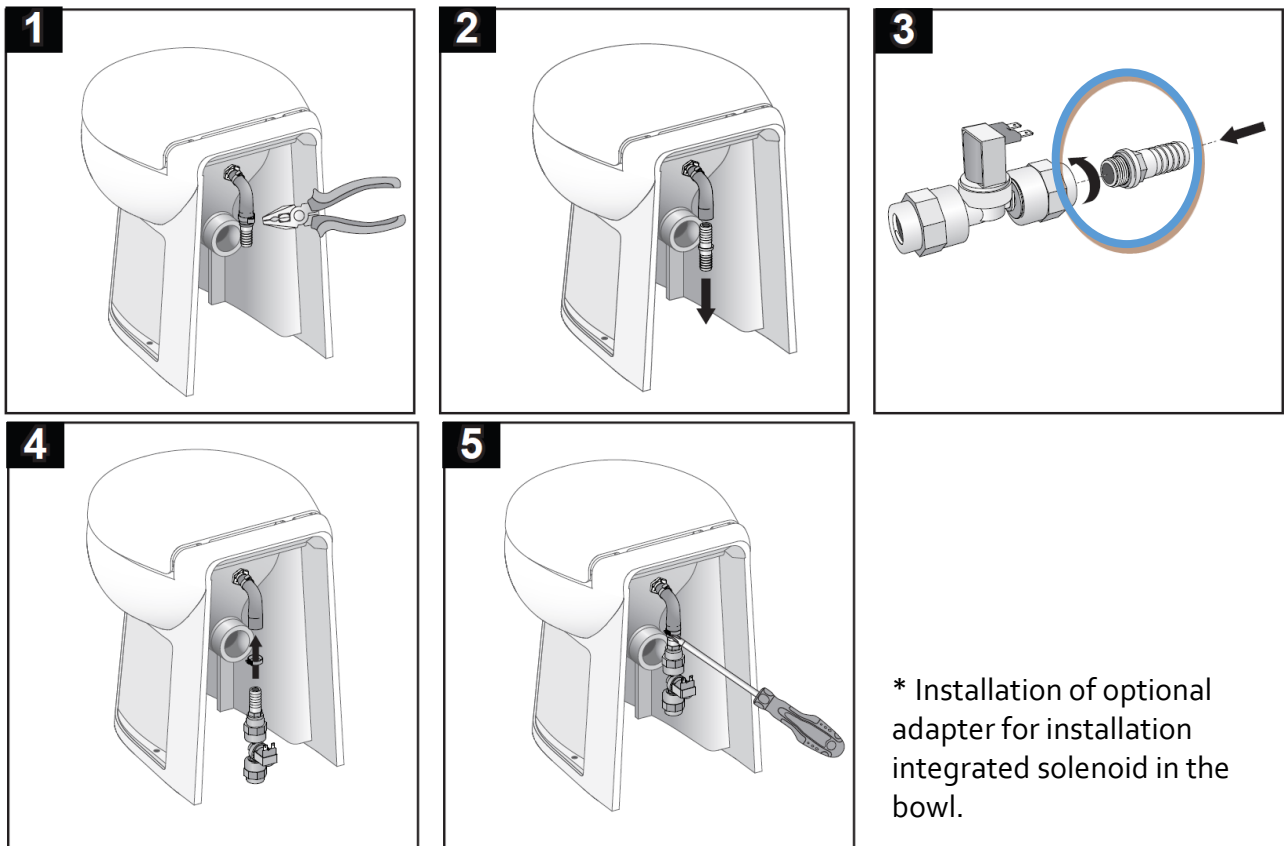
• Place the template against the wall in a central position to the final position of the WC

• Drill the floor in the drilling points scored in scale on the template for all Flexi 2G models (except Elegance CUT)

• Fasten the screws to the brackets and place the toilet.

• Secure with the side fastening screws. Horizontal screw tightening must be made with a maximum torque of 2.5 Nm.
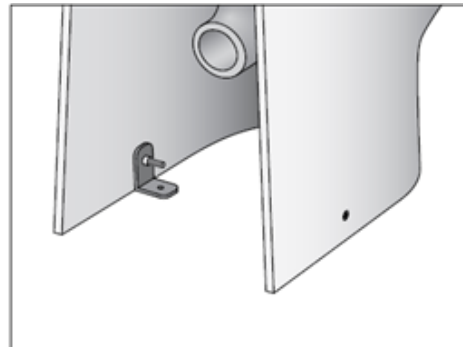
3.3   Solenoid valve

Before installing the solenoid valve, clean the pipes (brazing or welding residues, metal chips, seal material). A filter inside the solenoid valve prevents failures resulting from water impurities. We recommend cleaning the solenoid valve filter regularly. After service, screw both fitting back with the respective gaskets to the solenoid valve and tighten with a torque of 2 N/m. Do not force the solenoid valve when tightening it. Do not obstruct the pilot hole at the valve outlet. The entire piping section must be free from bottlenecks. Comply with the recommended pressure range (refer to section A.2).

The solenoid can be regularly installed on the fresh water supply line, or - alternatively - integrated in the WC through an optional hose connection that connects directly the water inlet tube as shown in the following sequence.

* Installation of optional adapter for installation integrated solenoid in the bowl.

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Via Flaminia | Loc. Castello delle Formiche
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ITALY

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F +39 0744 719833
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3.4   Inlet pump

Install the inlet pump in a dry, ventilated place. The pump can't be submerged or exposed to sprays.

Install a fuse in the power supply circuit.

The pump can be assembled horizontally as well as vertically (in this case, the pumping unit must face downwards).

Install the filter before the pump.

Install a vent valve to prevent siphoning phenomena, especially if the toilet is installed below the floating line

WARNING: The inlet pump must not be used as a check valve. Failure to use a vent valve may result in flooding, loss of the property, injuries, or even death.
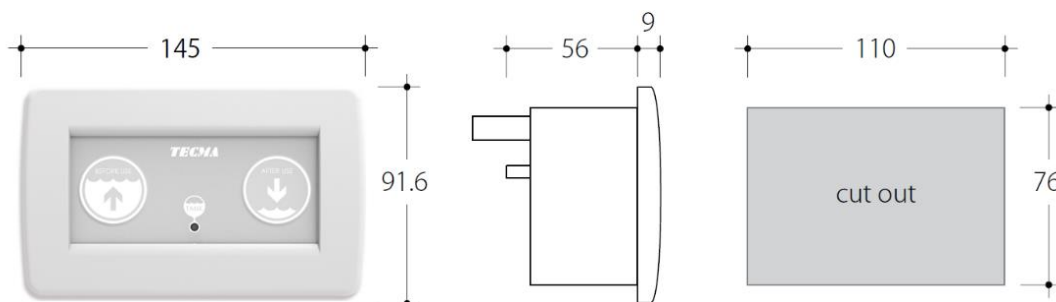
3.5   CUT-OUT control panels

Apart from the control panel "All in One" which integrates the controller in the wall interface, all panels are equipped with a control unit that can be installed either directly in the toilet or in a recess outside if more convenient. All control panels are fitted with specific electric connectors (refer to section A.2).
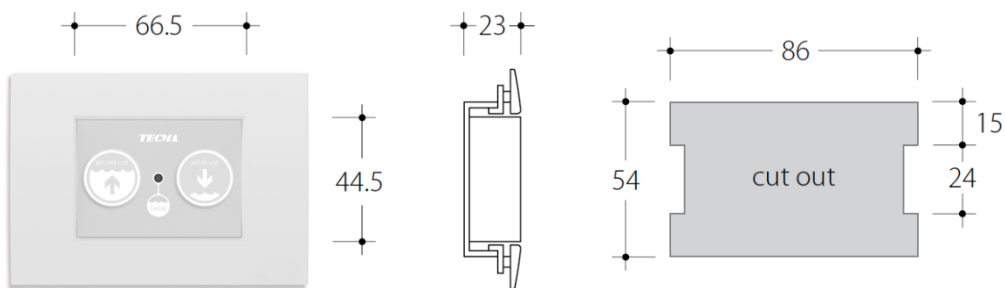
NOTE: For Multiframe and Touch models, install the control panel in an easily accessible room for easy inspection.

3.5.1   *Cut out for All-in-One control panel:*

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F +39 0744 719833
info@tecma.eu
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3.5.2 *Cut out for Multiframe control panel:*

NOTE: The Multiframe control unit is supplied as standard with the Bticino Living Light series frame. For compatibility of Multiframe with commercial frames, refer to the following table:

	Bticino					Vimar			Ave	ABB		Gewiss
	Living Light	Living Tech	Living Light	Axolute	Eikon	Eikon Evo	Plana	S44	Mylos	Chiara	Chorus
FRAME A	x	x	x	x	x	x	x	x	x	x		
FRAME B											x	x*

*To install the Chorus line (Gewiss) remove the fins from the *Frame B* (see the picture)
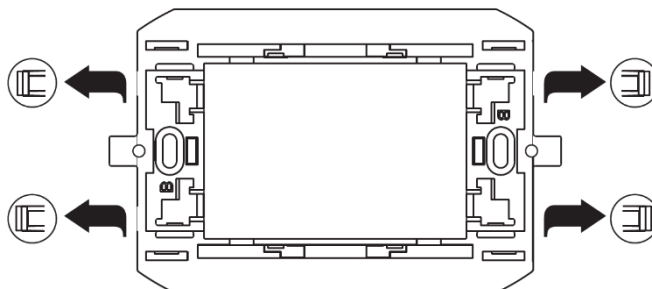
3.5.3 *Cut out for Touch SFT control panel:*
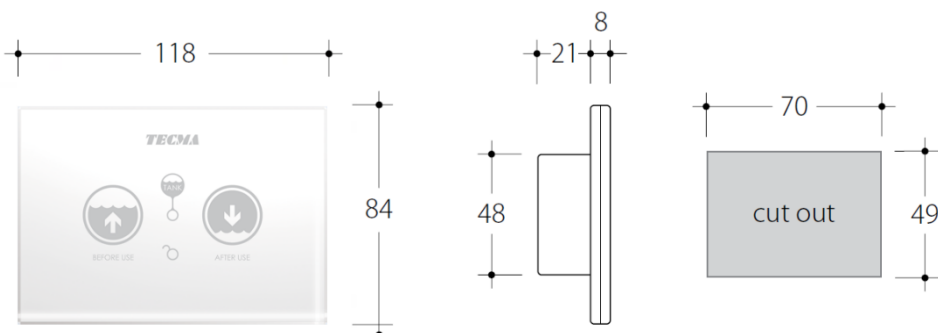
3.6   Tank sensors

The sensor wiring of the control units, both in the standard one-level version (grey / black), and in the two-level version for Touch (red / black and white / green) have a voltage of 7V.
You can connect:

- Sensors with clean contact (float, with pressure switch or similar) which close the contact between the two poles of the connector.
- Electronic sensors with the following specifications:
  - Power 7V.
  - Electrical absorption 12,75 mA +/-1 mA when the sensor is un-activated and 22,75 mA +/- 1 mA when activated.

WARNING: In any case, do not connect the sensor cable to any power source.

NOTE: For the compatibility of the control units with other types of sensors or for the use of connections other than those indicated in the wiring diagrams, contact the Tecma.

Tecma sensors can be of two types: - Pressure switch
                                             - Field-effect (Mirus cel)

For the installation guide see Appendix A3

3.6.1   *Pressure switch*

The pressure switch sensors can run with any panel. They are connected to the control unit with the grey/black wire (two-level version: red / black and white / green). In the presence of several control units on board, you must wire all the control units together before connecting the sensor. See fig. as example.
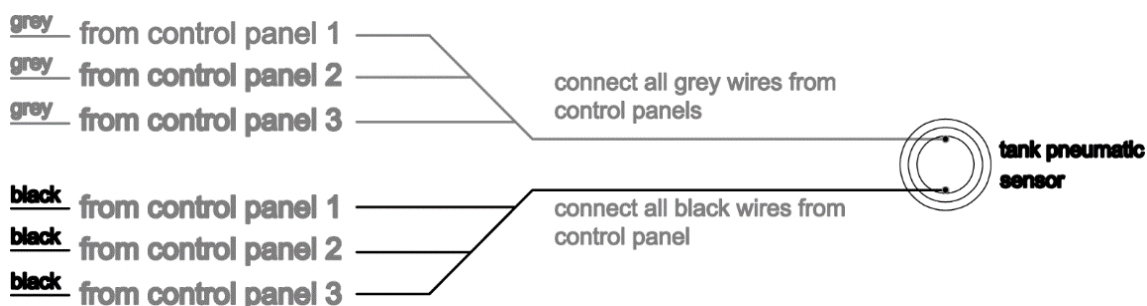
3.6.2   *Field-Effect*

These sensors can run with any panel. They can be attached outside of the blackwater tanks (max thickness of 10 mm).

- Full Tank Sensor
- Mid Tank Sensor – Optional

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Tecma S.r.l.
Via Flaminia | Loc. Castello delle Formiche
05030 Otricoli (TR)
ITALY

T +39 0744 709071
F +39 0744 719833
info@tecma.eu
www.thetfordmarine.com

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Use isopropyl alcohol (not included) to clean the side of the tank at the top - approximately on the left-right centreline where the sensor will be mounted. When thoroughly clean and dry, firmly press the sensor into place.
(Note: Wires can face any direction. The direction of the sensors does not affect its operation).

If available, follow the same procedure for the Mid-Tank sensor. However, keep in mind that it should be assembled on the left-right centreline, approximately half way up the side of the tank.

The Full Tank Sensor has to attached at the highest point on the tank for the tank's capacity, or where the installer wants the Tank Full level to be.
The sensor has a removable cover over the pressure-sensitive adhesive pad.

3.7   Equipment required
- Electric drill with insert or screwdriver for the stainless-steel straps.

- Electric drill or screwdriver to tighten the assembly screws

- Jig saw to make the control panel housing

- Adjustable wrench to tighten the solenoid valve

3.8   System
Power supply: *On the rear side of the product there is a label that specifies the power voltage value: 12v /24 v/110 v/230 v (refer to section 8 for electric wiring)*

Clean water supply*: TECMA toilets can be used with water coming from a single pump/autoclave (centralised systems) or from a single inlet pump connected to a sea cock (single systems).*

Blackwater discharge*: TECMA toilets have powerful macerator pumps, which push blackwater to the collection tanks.*

⚠️   **WARNING:** Toilet configuration (A). The toilet is installed below the floating line. Install a VENT VALVE at a height greater than the line. See fig. 1.

⚠️   **WARNING:** Toilet configuration (B). Toilet installed above the floating level. Install a VENT VALVE to prevent siphoning phenomena that may cause unpleasant odours. See fig. 1.
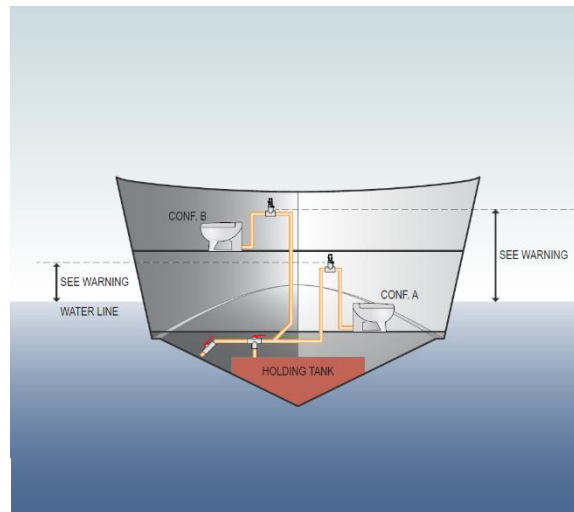
Fig. 1

⚠️ **WARNING:** The floating line must be calculated taking into consideration the various sailing trims. See fig. 2.
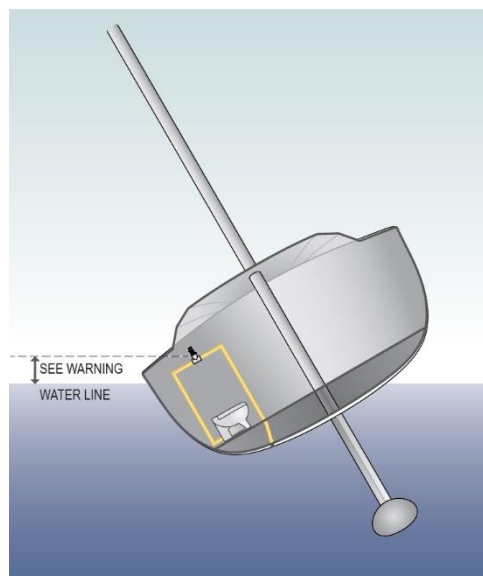

Fig. 2

⚠️ **WARNING:** Comply with the standards in force when designing and installing the blackwater systems and during the flushing procedures.

3.8.1   *Centralised System - Fresh Water*

3.8.1.1   *Hydraulic system*
The TECMA's toilet flushing cycles use the tank fresh water.

The solenoid valve can be integrated in the toilet, directly connected to the inlet/nozzle via the supplied black rubber pipe. Alternatively, it can be mounted in the fresh water system (the one that serves sinks, showers, and other utilities). When the toilet is used, the control panel opens the solenoid valve through the control unit. The water is supplied via the autoclave, which pressurises the entire hydraulic system on board. Diagram in section A.3.5.

⚠️   **WARNING:** The recommended system operating pressure is equal to 3 bar

⚠️   **WARNING:** Keep the filters of every solenoid valve clean.

⚠️   **NOTE**: For the installation of the solenoid valve integrated in the WC, it is necessary to cut 3 cm of black rubber hose connected to the nozzle (eliminating the hose connector).

3.8.1.2   *12V/24V Electrical system*
Diagrams in section A.3.6.1/2/3/4. Every control unit is wired by connecting

Black/brown   bowl motor

Black/Blue   solenoid valve

Black/Grey   Tank sensor

Black/Red   Power supply (with fuse on positive)

The autoclave is always live regardless of the sanitary system used. The « BEFORE USE » button opens the solenoid valve, whilst the « AFTER USE » button starts a program that opens the solenoid valve, then it activates the pump and lastly activates the solenoid valve again for the final rinse.

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Via Flaminia | Loc. Castello delle Formiche   F +39 0744 719833
05030 Otricoli (TR)   info@tecma.eu
ITALY   www.thetfordmarine.com

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3.8.1.3   110V/230V Electrical system
Tecma products with a 110V/230V motor have a plug, which must be connected to the power supply. Diagrams in section A.3.6.5/6.

Plug	Main power supply (motor and solenoid valve) - Shuko CEE/ US-Can
Black/Brown	transformer/control unit
Black/Blue	transformer/control unit
Black/Grey	Tank sensor/control unit
Black/Red	transformer/control unit

WARNING: electrical systems must be connected by qualified personnel. To choose the wire section, consider the length and power consumption. (see section 7.0). Use the connectors provided with the TECMA sanitary system.

NOTE: Install the transformer junction box in a dry and easily inspectable room.

3.8.2   Single and Multiple System - Salt Water

3.8.2.1   Hydraulic system
The flushing cycle of the TECMA marine toilet uses external water via a sea cock. Diagrams in section A.3.1/2.
When the flushing cycle is started, the control panel starts an inlet pump, which pushes the water by means of a specific system.

WARNING: The inlet pump is not used as a check valve. This way, water can flow even when the inlet pump is not running.

WARNING: If the toilet is below the floating line, install a vent valve on the inlet and flushing system. Consider the heeling in case of sailing boats.

WARNING: The inlet pump is not available for models with 110 V/230 Vac motors.

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Via Flaminia | Loc. Castello delle Formiche
05030 Otricoli (TR)
ITALY

T +39 0744 709071
F +39 0744 719833
info@tecma.eu
www.thetfordmarine.com

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3.8.2.2   Electrical system

Diagram in section A.3.3/4. Every control unit is wired by connecting

Black/brown   toilet motor

Black/Blue   Inlet pump

Black/Grey   Tank sensor

Black/Red   Power supply (with fuse on the red wire)

The « BEFORE USE » button starts the pump, whilst the « AFTER USE » pump starts a program, which activates the pump before starting the toilet motor.

3.8.3   System with integrated Bidet

The integrated bidet option offers the possibility to use the toilet in a dual mode: toilet and bidet. The special spray nozzle has been designed to connect separately the fresh water for the toilet flush and the water for the bidet function mixed and controlled with an elegant handle also provided.
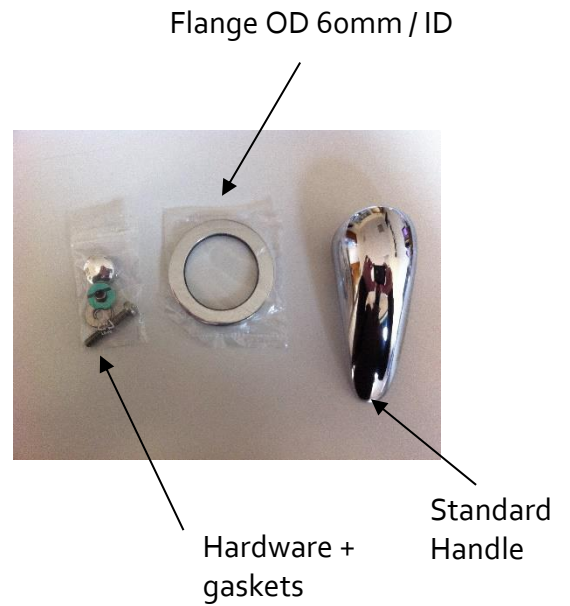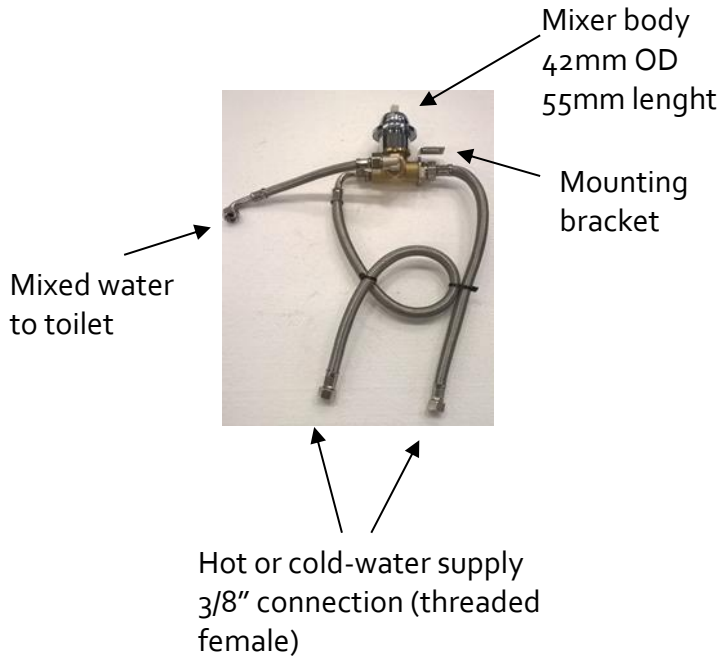
On most configurations, the mixer and the handle are integrated in the ceramic toilet body, while on the toilet design Privilege and Evolution they are installed remotely wall mounted. (see technical sheets to verify the type of integration possible for each model - integrated or wall mounted)

Connect hot and cold water from the fresh water system to the mixer.
Use the handle to adjust the flow and the temperature of the water.

Whereas integrated in the ceramic the mixer/handle is always positioned on the right-hand side. Whereas wall mounted (Privilege/Evolution) the default length of the hose is 60cm, while this can be elongated by the shipyard according to the specific needs
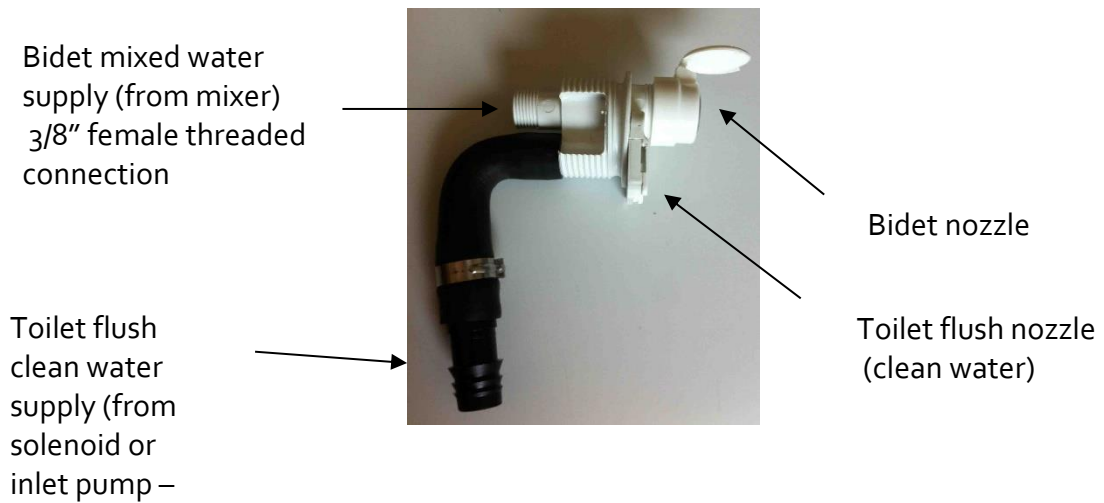
Mixer and handle technical specifications:

Hot water connection   3/8"
Cold water connection   3/8"
Mixed water to toilet nozzle   3/8"
Mixer body diameter   O.D. 42mm
Flange   O.D. 60mm
Handle   Standard
Hardware   Gaskets + mounting screws

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Mixer body
42mm OD
55mm lenght

Mounting
bracket

Mixed water
to toilet

Hot or cold-water supply
3/8" connection (threaded
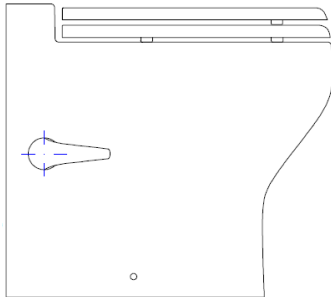female)

Flange OD 60mm / ID

Hardware +
gaskets

Standard
Handle

The nozzle

The nozzle is mounted directly on the toilet ceramic body.
Plug the hoses and the installation is done!

Bidet mixed water
supply (from mixer)
3/8" female threaded
connection

Bidet nozzle

Toilet flush
clean water
supply (from
solenoid or
inlet pump –

Toilet flush nozzle
(clean water)

Option 1: Mixer and handle integrated to the ceramic toilet *

profile view - bidet function

Water inlet nozzle

Hot or cold-water supply
3/8" connection

Option 2: Mixer and handle wall mounted (Privilege / Evolution) *
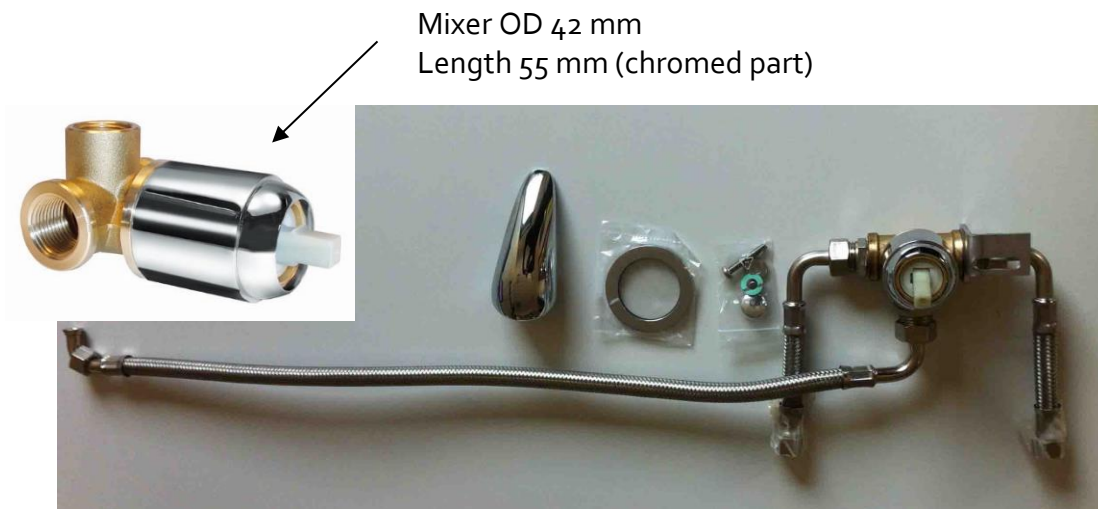
Water inlet nozzle

600mm

3/8" threaded connection

Hot or cold-water supply
3/8" connections

*refer to each model PIS to check if the bidet function is available with integrated or wall mounted mixer. Refer to each model technical drawing to check the exact position of the handle (always on the right-hand side)

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Via Flaminia | Loc. Castello delle Formiche
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ITALY

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info@tecma.eu
www.thetfordmarine.com

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Mixer OD 42 mm
Length 55 mm (chromed part)

Any other commercial handle/mixer can alternatively be used to mix the water
The customer is free to select a wall mounted mixer from the same collection of the bathroom and use it to control the bidet integrated in the toilet. In this case do not use the mixer provided and install the mixer/handle that you prefer. Make sure to do the plumbing right. In case of any doubt contact Tecma technicians.

4. TROUBLESHOOTING

Refer to the *Troubleshooting* available on the website:

www.thetfordmarine.com

5. F.A.Q.

5.1   Is it possible to connect several toilets to the same line?
Yes. In this case use "Y" connections instead of "T" connections. Always use vent valves. Fit a proper pipe system based on the number of toilets used.

5.2   What kind of maintenance is required?
TECMA products do not need special maintenance or winterisation.

It is however suggested periodically and in preparation for the winter of:
- Perform maintenance of the solenoid valve and / or intake pump filters.
- Perform rinsing cycles with clean water.
- Completely empty all the systems to prevent the pipes from freezing or use a specific antifreeze product.

Do not use automotive antifreeze products or products used in the windscreen washer solvent tank.