

TECMA

by THETFORD

EasyFit Installation Guide

For Raw Water Pump or Fresh Water Solenoid installations

Parts List

Please begin by checking to see that all parts/accessories were included in your EasyFit package:

- 1 – Tecma EasyFit toilet (high/low, white/bone, 12V/24V)
- 1 – Wall switch and controller
- 1 – Black wall switch bezel
- 1 – Bone wall switch bezel
- 2 – 1/4 10 x 2.5" stainless steel lag screws
- 2 – 1/4" stainless steel washers
- 2 – Plastic mounting hole inserts
- 2 – Bolt caps
- 2 – Hose clamps – 1 9/16"-2 1/2", stainless
- 1 – Hose clamps (water supply)
- Water Supply Parts (determined when toilet is ordered), *either*:
– 12V or 24V Pump Kit (3.0 L/Min); Rubber isolators, Screws, Diagram

or

- 12V or 24V Solenoid Valve (connected to controller); Diagram, Bag
- 1 – Full Tank sensor
- 1 – Lower Discharge Check Valve
- 1 – Chemical and literature kit
- 1 – Installation Guide
- 1 – Owner's Manual
- 1 – Toilet Installation Template
- 1 – Wall Switch Template
- 1 – Water Pump Wiring Connection Kit

Required Tools, Supplies & Materials

Needed to complete toilet installation:

Plumbing Components

- In-line Strainer
- 3/4"-diameter minimum Vented Loop – if required
- 1-1/2"-diameter minimum Vented Loop – if required
- 3/4"-diameter Marine Water Supply Hose
- 1-1/2"-diameter Marine Discharge Hose
- 1-1/2" straight coupling (as needed)
- 1-1/2" 90° coupling (as needed)

Electrical Components

- Wiring to toilet system power
- Wiring to Full Tank Sensor
- Wiring to Optional Tank Mid-Level Sensor
- Wiring from electronic controller to water pump (raw water installations)
- Wiring Harness Connectors (see page 2 and wiring information diagrams)

Supplies

- Silicone caulk (white or clear)

Tools

- 1-1/4" hole saw
- 3-1/2" hole saw **or** saber saw
- 7/16" socket and ratchet **or** 7/16" wrench
- Electric Drill
- 1/8" drill bit

Questions?

If you have any questions or need assistance, please contact Tecma Service at 1-800-543-1219.

Wiring Harness Connectors Required But Not Included

Sensor Wiring Harness (Full Tank Sensor Only)

Manufacturer Connector	Item	Description	Quantity	
C	Deutsch	Socket Contact	0462-201-16141	2
		Plug	DT06-2S	1
		Wedge Lock	W2S	1
D	Deutsch	Pins	0460-202-16141	2
		Receptacle	DT04-2P	1
		Wedge Lock	W2P	1

Sensor Wiring Harness (Both Full & Mid-Level Tank Sensor)

C	Deutsch	Socket Contact	0462-201-16141	4
		Plug	DT06-2S	2
		Wedge Lock	W2S	2
D	Deutsch	Pins	0460-202-16141	4
		Receptacle	DT04-2P	2
		Wedge Lock	W2P	2

Power Harness

F	Deutsch	Pin Contact	0460-204-08141	1
		Receptacle	DTHD04-1-8P	1
G	Deutsch	Socket Contact	0462-203-08141	1
		Plug Housing	DTHD06-1-8S	1

Pump Harness (Raw Water Models)

Customer Specified Pump Connection	1
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WARNING!

THE WARNINGS BELOW MUST BE READ AND UNDERSTOOD BEFORE INSTALLATION, OPERATION, OR SERVICE OF UNIT BEGINS. ANY MODIFICATION OF THIS UNIT COULD RESULT IN PROPERTY DAMAGE, INJURY OR DEATH.

THETFORD CORPORATION ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR DAMAGE TO EQUIPMENT, INJURY OR DEATH THAT MAY RESULT FROM PRODUCT'S IMPROPER INSTALLATION, SERVICE OR OPERATION.

THETFORD CORPORATION RECOMMENDS THAT ONLY A TRAINED AND QUALIFIED MARINE TECHNICIAN OR ELECTRICIAN INSTALL OR SERVICE THIS PRODUCT.

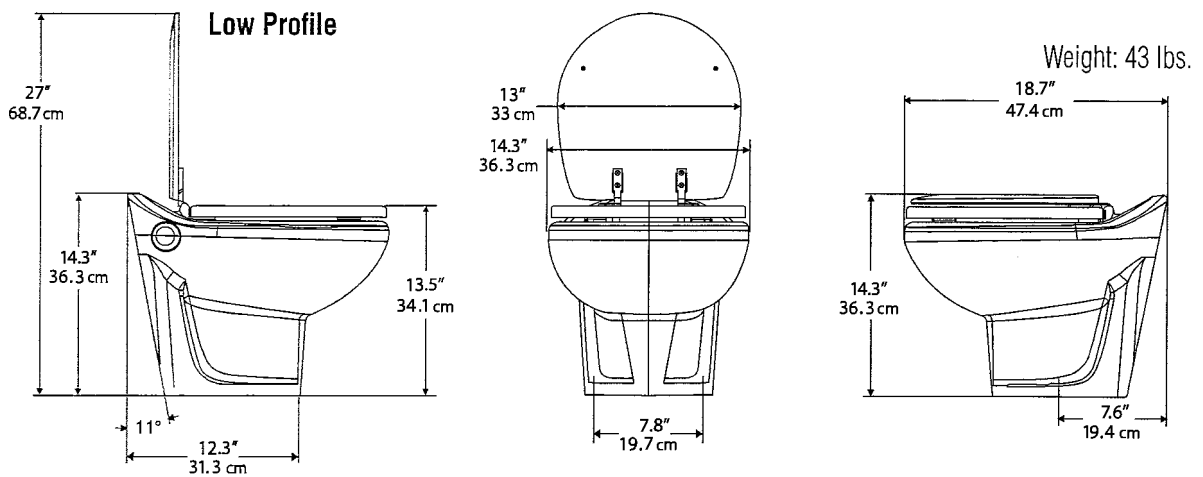
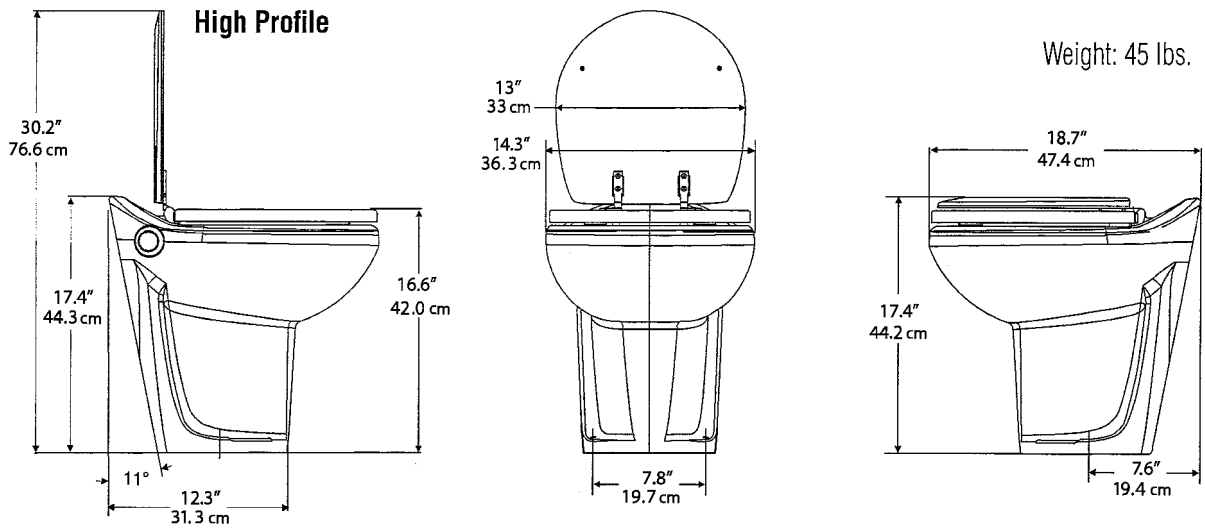
Danger of Electric Shock, Fire and Flooding

Failure to heed these warnings can result in loss of property, injury and death.

- Always use **ABYC-RECOMMENDED CIRCUIT BREAKER/FUSE AND WIRE GAUGE.**
- Always be sure unit's **ELECTRICAL POWER** is **TURNED OFF** and that **SEACOCKS** are **CLOSED** or in the "OFF" position before beginning work.
- If Toilet is connected to any through-hull fittings, **ALWAYS CLOSE or TURN OFF ALL SEACOCKS** when **BOAT IS UNATTENDED** – even if only for a minimal time.
- For units using fresh water that are (at any time) connected to shoreside municipal water supply systems, **SHORESIDE SYSTEM** must be **DISCONNECTED IF BOAT IS LEFT UNATTENDED** – even if only for a minimal time.

- If unit is connected to any through-hull fittings, **ALL** flexible tubing connected directly or indirectly between toilet and **ANY** through-hull fitting must be of marine quality and must be connected to each fitting with **TWO (2) STAINLESS STEEL WORM DRIVE HOSE CLAMPS.** These **HOSE CLAMPS** must be **INSPECTED FREQUENTLY TO ENSURE TIGHTNESS,** thereby preventing leaks.
- If unit is connected to any through-hull fittings, **PROPERLY INSTALLED SEACOCKS MUST BE INSTALLED** to these lines. All seacocks (or secondary valves fitted in connecting, intermediate tubing) **MUST BE FULL-BORE VALVES** and **READILY ACCESSIBLE** to all toilet users. Use lever-actuated, full-bore, marine quality seacocks and valves. Screw-down gate valves are not recommended.
- **IF WATER DOES NOT FLOW INTO TOILET DURING THE FIRST TWO OR THREE FLUSH CYCLES,** it has been improperly installed or has malfunctioned. Discontinue use of toilet until installation has been corrected or repairs are made. Please review this manual's Installation section or refer to the Troubleshooting section.
- Use **ONLY STAINLESS STEEL** mounting hardware. **DO NOT INSTALL WITHOUT PLASTIC MOUNTING HOLE INSERTS IN PLACE.** Failure to properly mount toilet may result in toilet becoming loose or damaged.
- Only human waste and toilet paper should be put into the toilet. Never flush **FOREIGN MATERIALS** (e.g. paper towels, pre-moistened wipes, condoms, feminine hygiene products, dental floss, household garbage, etc.).

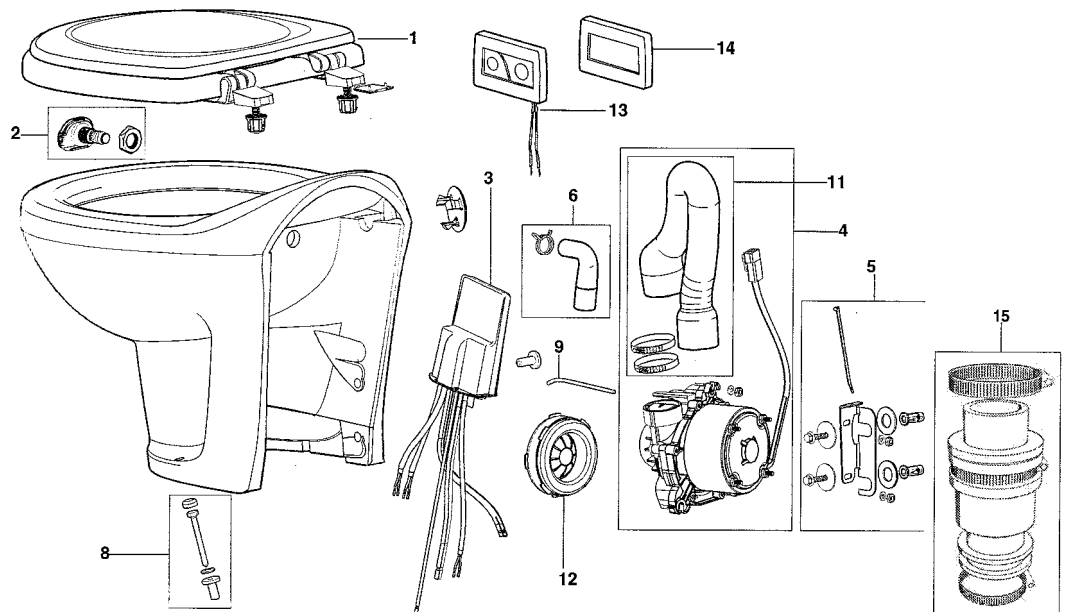
Tecma EasyFit Dimensions



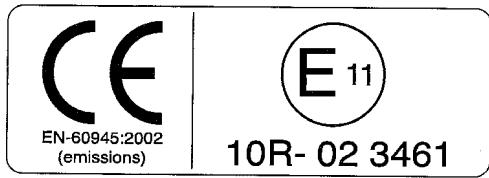
Note: China base dimensions are variable due to process variations

EasyFit Parts

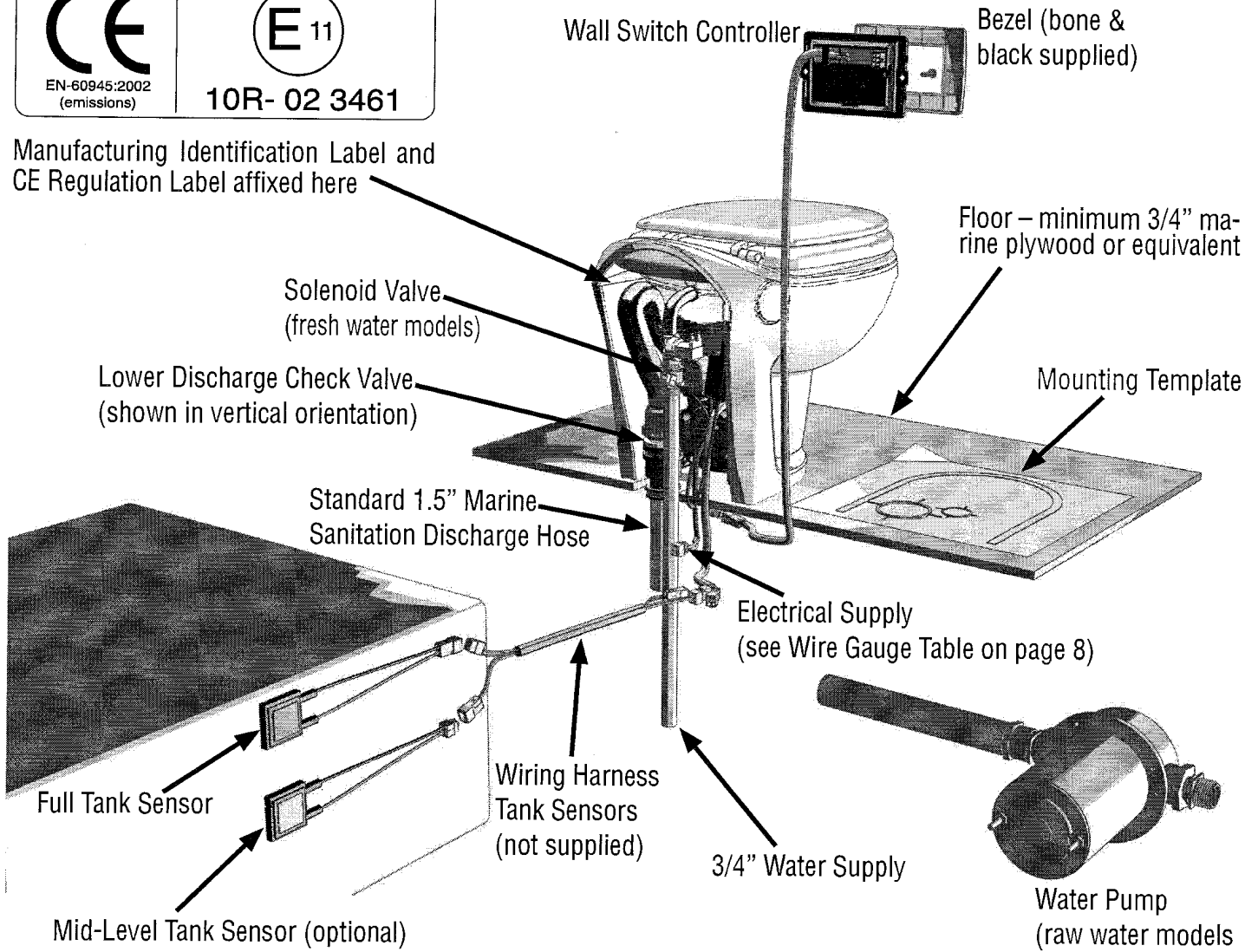
1. Seat & Cover
2. Nozzle
3. Controller
4. Pump & Discharge Tube
5. Motor Bracket
6. Water Inlet
8. Floor Mount Hardware
9. J-Bolt
11. Discharge Tube
12. Grommet
13. Wall Switch
14. Bezel
15. Lower Discharge Check Valve



Installation Schematic



Manufacturing Identification Label and CE Regulation Label affixed here

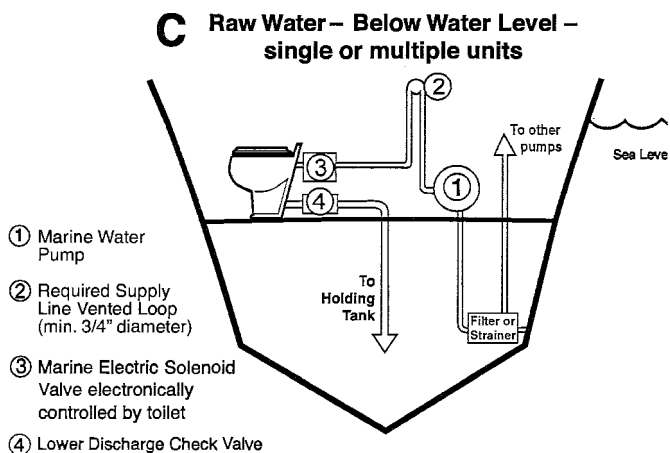
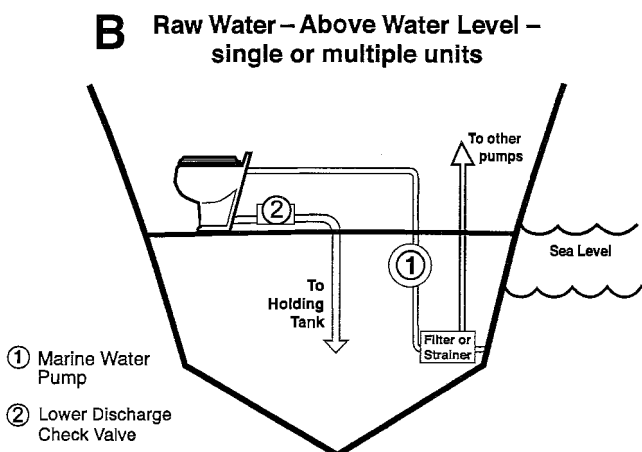
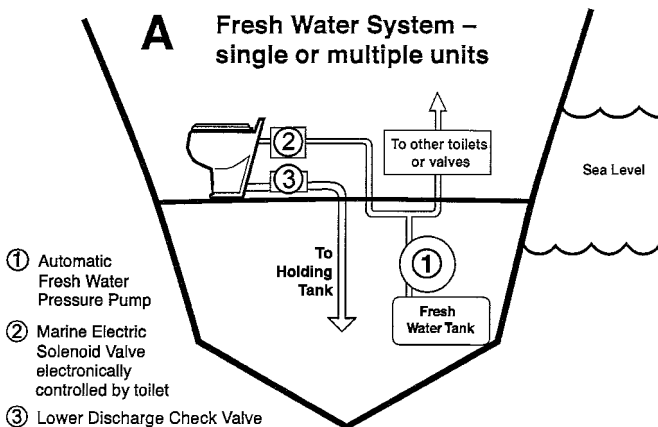


Tecma EasyFit Installation Instructions

Installation Overview

Before beginning installation:

1. Completely read and understand Installation Instructions.
2. Determine which configuration is to be installed – A, B or C – per Installation Schematics below.



Note: If required, a vented loop should be installed.

Toilet Mounting Location

Determine that:

1. The floor where toilet will be mounted is level and strong enough to support toilet and weight of any potential user.
2. Floor structure is strong enough to securely anchor toilet using supplied bolts.
3. Flooring is water-resistant so structure and anchoring integrity are maintained.

Bowl Location

1. Using toilet and supplied template, determine that sufficient clearance between toilet and nearby wall exists so that water supply hose and discharge hose are not kinked.
2. When a satisfactory toilet location is found, mark floor location of two through-holes in base of toilet and lightly trace the outlines of the bowl where it meets floor. Set toilet aside.
3. Using toilet outline, use the toilet base template (enclosed) to locate any required holes in the floor/chine.
4. Cut or drill holes called out in template.
5. Drill 1/8" pilot holes for lag screws. (Do not attach toilet.)

Holding Tank Location

Locate the holding tank in as low a position in boat as possible. However, the EasyFit is capable of operating to a maximum 6-foot rise.

Raw Water Pump for Raw Water Installation

The supplied Raw Water pump must be securely mounted in a dry, well-ventilated area. It should be mounted not more than 6 feet at any time above the heeled waterline.

Caution: The raw water pump must be powered by the toilet controller. (See diagram P.S.) Use of any pump that draws more than 15 amps requires installation of a pump contactor relay. Do not wire pump directly to a D.C. power source so that it is controlled by its pressure-activated switch. If a leak were to occur when wired directly, the pump would run continuously and create risk of sinking of the boat and loss of life.

Raw Water Strainer

Raw Water installation requires an in-line strainer to protect the system. Note: strainers are not provided. Failure to use an in-line strainer may void product warranty.

Raw Water Supply-Vented Loop

Siphoning can occur when toilet rim is below water level. Siphoning, where water flows into the toilet from outside, can lead to flooding and, consequently, loss of property and life.

If toilet rim will ever – under any circumstance and/or under any conditions of heel trim or load – be below the water level, a Vented Loop of proper diameter **MUST** be installed to prevent siphoning.

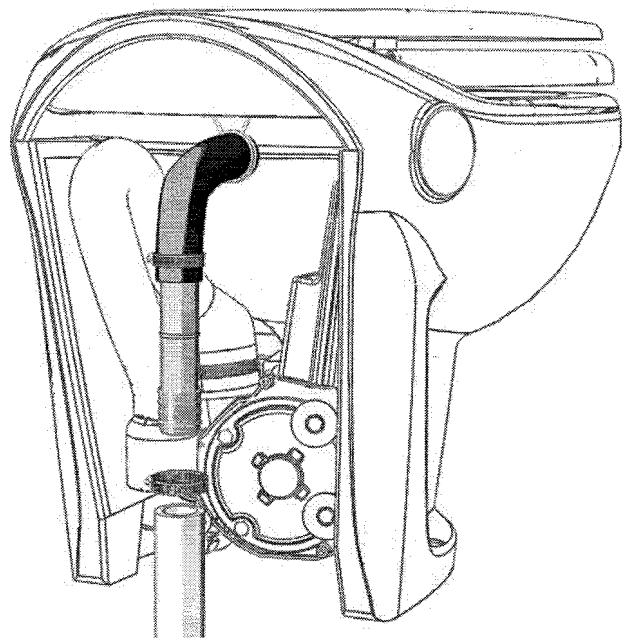
The Vented Loop must be at least 8" above the water line at all times and under any circumstances or under any conditions of load, heel, and/or trim.

To Connect To The Water Supply

Raw Water Models

Insert the 3/4" Barbed Fitting (supplied) into the end of Water Supply Line and secure with a Small Hose Clamp (supplied).

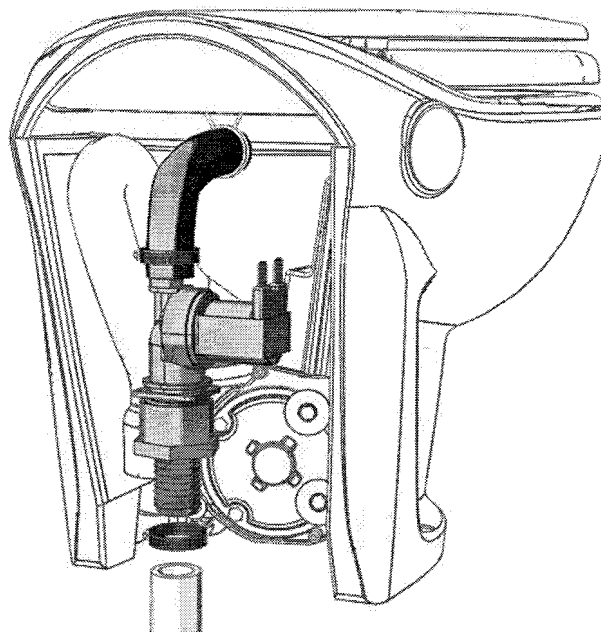
Confirm that all supply line connections are tight and do not leak. Check tightness frequently.



Fresh Water Models

Insert the 3/4" Threaded x 3/4" Barbed Fitting into the Water Supply Line and secure with a Small Hose Clamp (supplied).

Confirm that all supply line connections are tight and do not leak. Check tightness frequently.



To Connect To The Discharge Line

The Discharge line from the toilet can be routed either through the floor or above the floor. Regardless, the Lower Discharge Check Valve must be inserted into the Discharge Line – either with a vertical or a horizontal orientation, dependant upon the particular installation situation.

CAUTION

- **The Lower Discharge Check Valve is shipped separately but MUST be installed into the Discharge Line for EasyFit to operate properly.**
- **Make certain the Lower Discharge Check Valve is installed in the correct orientation – refer to diagrams that follow.**
- **Failure to orient the Lower Discharge Check Valve correctly will prevent toilet from operating.**

Discharge Line Through The Floor

Lower Discharge Check Valve – Vertical Orientation

The Lower Discharge Check Valve, Discharge Line and Clamps protrude below the lowest edge of the toilet base into the floor. To accommodate the Lower Discharge Check Valve, a 3 1/2" hole must be drilled into the floor/chine.

Use the Template provided to locate the position of this hole and either

drill or cut a 3 1/2" hole through the floor/chine.

The Lower Discharge Check Valve (rigid end) is connected to the EasyFit's Discharge Tube using a large hose clamp (supplied).

Insert a 1-1/2" Hose Coupling (not supplied) into the lower, rubber end of the Lower Discharge Check Valve and fully secure with a hose clamp.

When the discharge line from the holding tank has been routed through any holes to the toilet, slide a 2-1/2" hose clamp onto the hose. Connect the Discharge Line by sliding the hose over the 1-1/2" Hose Coupling at the bottom of the Check Valve and secure by tightening the hose clamp. To help ease hose over the Hose Coupler, it may be helpful to gently heat the end of the hose with a heat gun. Do not use soapy water or other lubricants. (Refer to the corresponding diagram that follows.)

Discharge Line Through The Floor

Lower Discharge Check Valve – Horizontal Orientation

Insert a 1-1/2" Hose Coupling (not supplied) into the lower, rubber end of the Lower Discharge Check Valve and fully secure with a hose clamp.

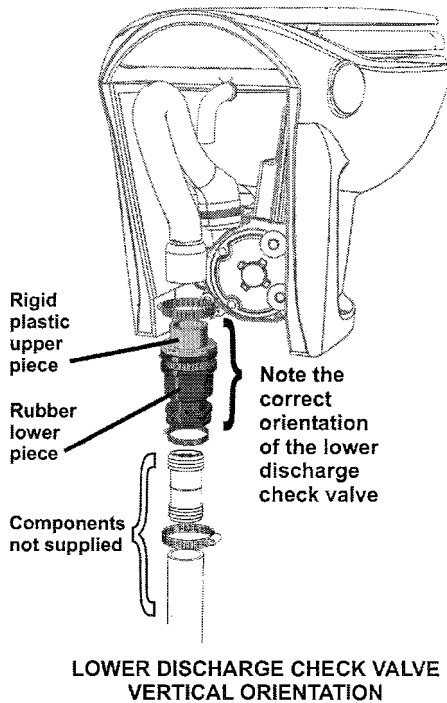
When the discharge line from the holding tank has been routed through any holes to the toilet, slide a 2-1/2" hose clamp onto the hose. Connect the Discharge Line by sliding the hose over the 1-1/2" Hose Coupling at the

bottom of the Check Valve and secure by tightening the hose clamp. To help ease hose over the Hose Coupler, it may be helpful to gently heat the end of the hose with a heat gun. Do not use soapy water or other lubricants.

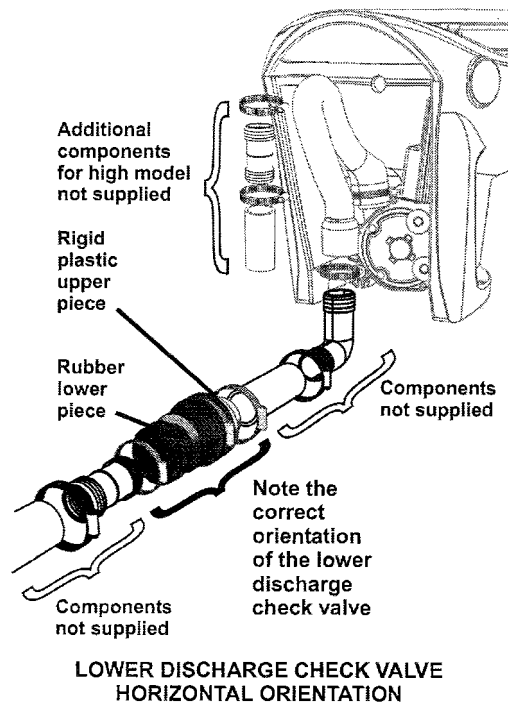
With the Lower discharge Check Valve in its correct, horizontal orienta-

tion, as close to the EasyFit as possible, connect its rigid, inlet end to the EasyFit's Discharge Tube using one or more 1-1/2" Hose Couplings (straight and 90°, not supplied) as the installation requires. (Refer to the corresponding diagram below.)

DISCHARGE ROUTED BELOW FLOOR



DISCHARGE ROUTED ABOVE OR BELOW FLOOR



IMPORTANT: All connections between the Discharge Hose, Lower Check Valve and plumbing must be fully tightened to prevent all waste leaks.

Discharge Vented Loop Requirements

A vented loop *must* be installed in the discharge piping if either or both of these conditions apply:

1. The toilet is connected to a through-the-hull fitting on the discharge side and the rim of the toilet is below the waterline under some circumstance or under some conditions of load, heel and/or trim.
2. Under some conditions of load, heel and/or trim, the top of the holding tank is above the rim of the toilet.

The Vented Loop must be at least 8" above the water line at all times and under any circumstances or under any conditions of load, heel, and/or trim.

Discharge Hoses

This toilet is designed to discharge waste into a 1.6" ID marine-grade sanitation hose/pipe.

Note: Use only marine-quality reinforced hoses during EasyFit installation. Rigid PVC pipe, which is virtually impervious to poor permeation, may also be used for the discharge line. If using flexible hoses, avoid sharp bends that may cause the hose to kink and restrict flow, and secure the hoses to prevent abrasion. Always inspect the final installation for leaks.

Final Installation Procedure

1. After making all plumbing and electrical connections, it is strongly recommended that the toilet operation be checked by flushing before permanently mounting it to the floor.
2. After a successful check, position toilet into its final location by using the pencil lines on the floor as a guide. **Make sure hoses are not kinked and wiring is not trapped between the china and the wall or floor.**
3. Insert the lag screws into the plastic isolators and then finger-tighten screws into the pilot holes.
4. Temporarily tip the toilet approximately 1" off the floor so a bead of silicon caulk can be applied just inside the penciled perimeter of the base.
5. Lower the toilet into its final position. Push it down and drive in lag screws until seated - then tighten additional 3/4 turn.
6. Smooth the excess silicon bead around the perimeter of toilet, adding more silicon around the perimeter if needed to create a uniform seal.
7. If the rear edge of the toilet is intended to fit tight against the sidewall of the vessel, run a bead of caulk around the rear edge of toilet so that water cannot get in behind toilet.
8. Verify that the toilet operates correctly.

Tecma EasyFit Electrical System

Wire Gauge Size Chart				
Wire Gauge for distance from source*	0-20 feet	20-32 feet	33-50 feet	Circuit Breaker
12 Volts	8 Gauge	8 Gauge	6 Gauge	30 amp
	0-20 feet	20-32 feet	33-50 feet	
24 Volts	10 Gauge	10 Gauge	8 Gauge	30 amp

Wiring to Tank Sensors: 18 gauge

* Distance measured assumes two wires, power and ground.

Boat or Vehicle Electrical Requirements

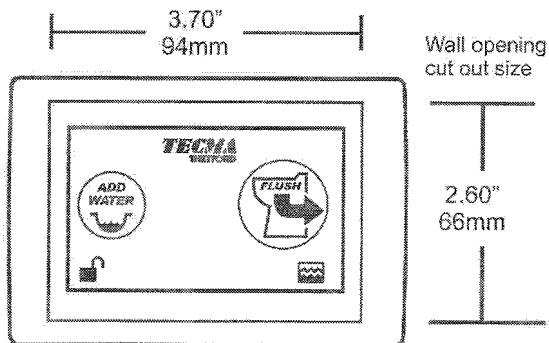
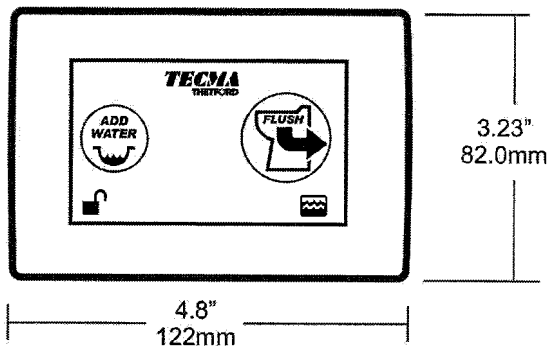
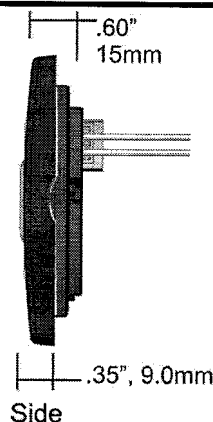
Installation requirements:

- All circuits must follow ABYC/ISO standards.
- Wire gauge sizes must follow Wire Gauge Size Chart.
- Every toilet must have its own circuit breaker or fuse.
- Always use crimp-style connectors with Sealing provisions to avoid corrosion.

WARNING! HAZARD OF FIRE
 Always use recommended circuit breakers or fuses. Failure to follow the recommendations can result in fire.

Wall Switch & Wiring

Select wall switch location convenient to toilet. Cut hole 2- 5/8" x 3-3/4" and drill holes for mounting screws.



Mount Tank Sensors

Full Tank Sensor – All models

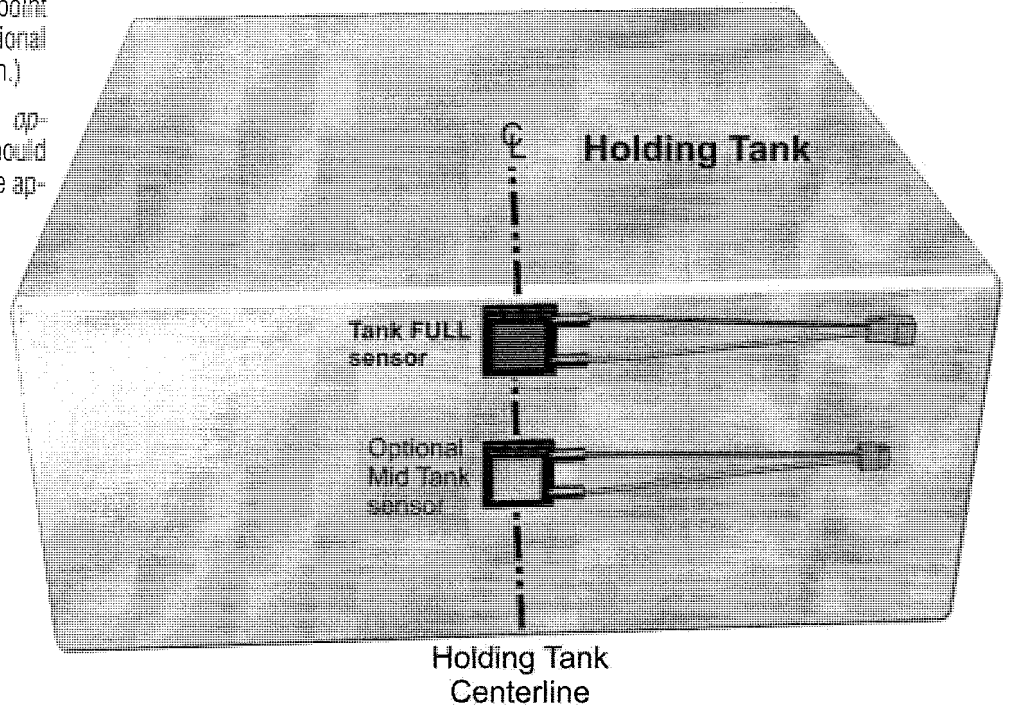
Half Tank Sensor – Optional

Clean the surface of the side of the tank at the top – approximately on the left-right centerline with isopropyl alcohol (not included) where the sensor will be mounted. When thoroughly clean and dry, firmly press the sensor in place. (Note: Wires can point in any direction – the sensors directional orientation does not affect its operation.)

Follow the same procedure for the optional Mid-Tank sensor, except it should be mounted on the left-right centerline approximately half way up the tank side.

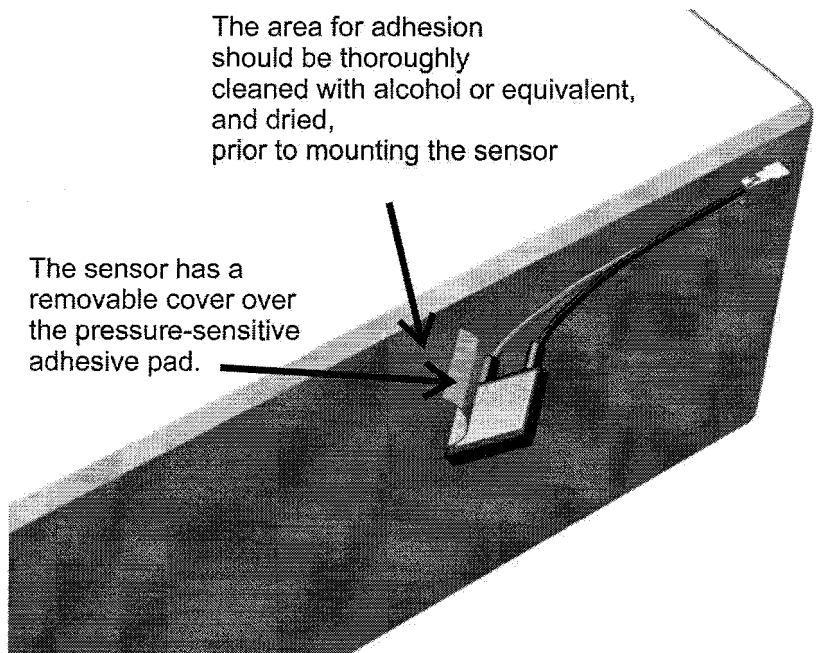
The Full Tank Sensor is mounted at the highest point on the tank for the tank's capacity, or where the installer wants the Tank Full indication to be.

The Tank Sensors should be mounted near the centerline of the tank.



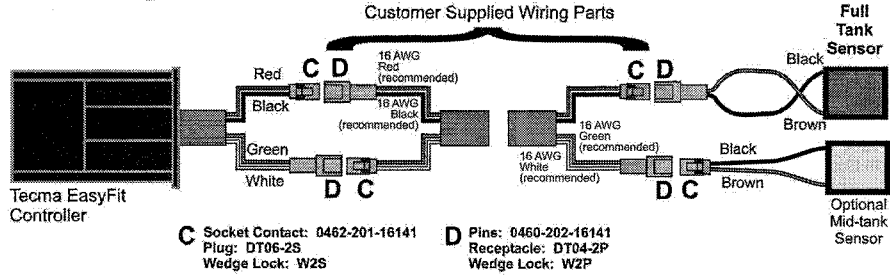
The area for adhesion should be thoroughly cleaned with alcohol or equivalent, and dried, prior to mounting the sensor

The sensor has a removable cover over the pressure-sensitive adhesive pad.

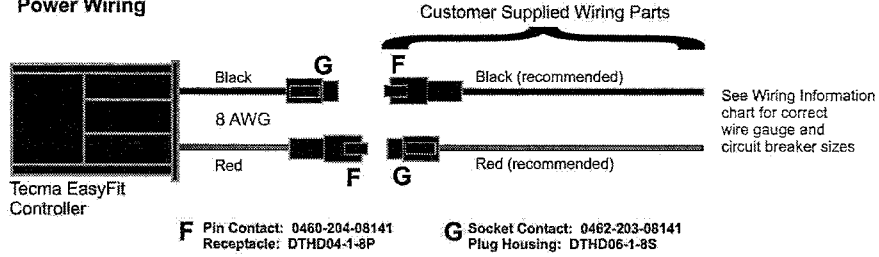


Wiring Information for Tecma EasyFit

Sensor Wiring

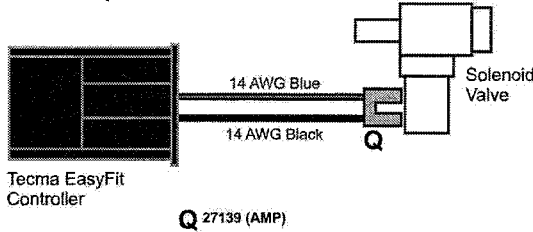


Power Wiring

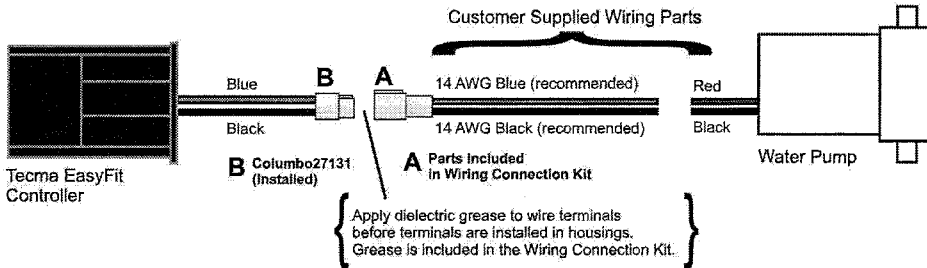


Wiring Information for Tecma EasyFit

Solenoid Valve (Factory Installed) non-water proof connection



Water Pump (Customer Installed) non-water proof connection



WARNING

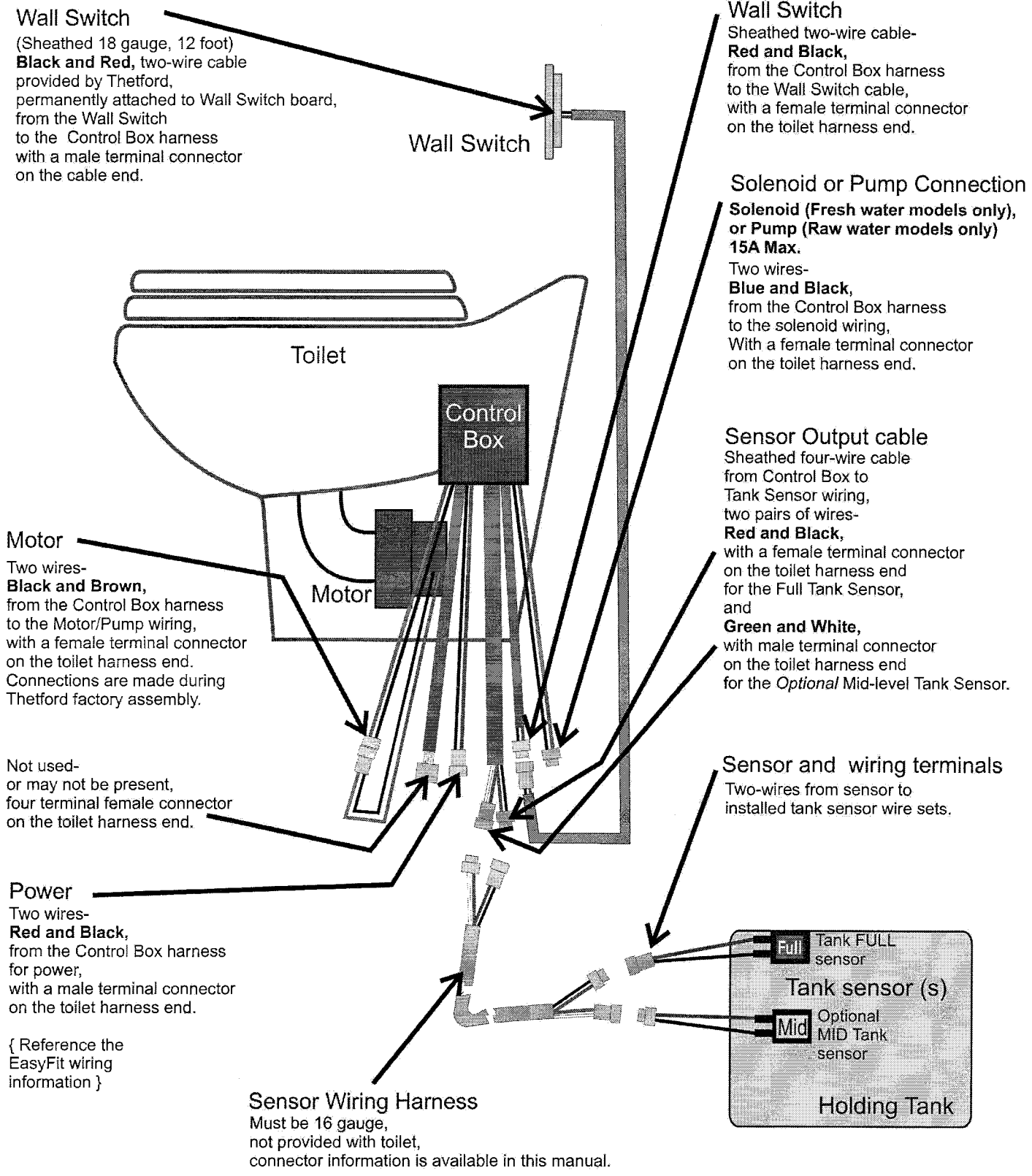
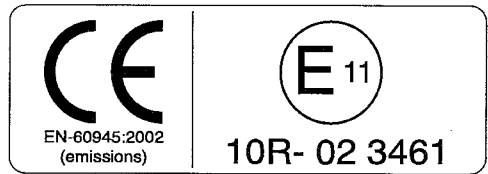
Water Pumps must be powered by toilet controller as shown above.
Do not wire pump directly to a power source so that it is controlled by its pressure-activated switch.
If a leak were to occur when wired directly, the pump would run continuously and create the risk of sinking the boat and loss of life.



CAUTION

Dielectric Grease is a possible eye irritant.
If contact occurs, rinse eyes with water for 15 minutes.
Keep out of reach of children

Electrical / Wiring Schematic



Electrical / Wiring Schematic

