

# **Vetus**<sup>®</sup>

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***Flexibele vuilwatertanks voor grijswater en zwartwater***

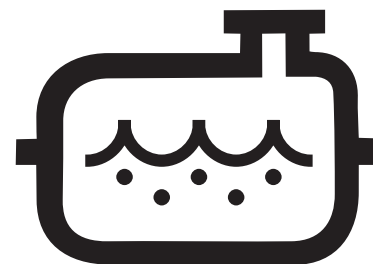
***Flexible waste water tanks for grey water and black water***

***Flexible Schmutzwassertanks und Fäkalientanks***

***Réservoirs souples pour eaux usées 'grises' et 'noires'***

***Tanques flexibles de aguas sucias para aguas grises y aguas  
negras***

***Serbatoi flessibili per acque grigie e nere***



**55 - 160 l**

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## Inleiding

Deze handleiding geldt voor de Vetus flexibele kunststof vuilwatertanks voor **grijswater** en **zwartwater**.

### Grijswatertank

Een **grijswatertank** dient alleen voor de opvang van water uit gootsteen, douche, wasbak, airconditioning e.d.; niet voor toiletafval.

De inhoud van een vuilwatertank kan nooit te groot zijn.

Stem de inhoud af op beschikbare hoeveelheid zoetwater, de inhoud van de watertank(s).

Voorzie de gootsteen, douche, wasbak e.d. van een afvoer met een zeef, zodat grof afval zoals haren e.d. zo min mogelijk in de grijswatertank terecht komen.

### Zwartwatertank

Een **zwartwatertank** dient uitsluitend voor de opvang van toiletafval.

Een **zwartwatertank** dient te worden ingebouwd volgens de Europese Richtlijn Pleziervaartuigen (ERP), norm ISO 8099.

De inhoud van een vuilwatertank kan nooit te groot zijn.

De inhoud dient te worden afgestemd op de hoeveelheid spoelwater (buitenwater) van het toilet, reken op 7 tot 14 liter zwartwater per persoon per dag.

Gebruik uitsluitend in water oplosbaar toiletpapier om onnodige verstoppingen te voorkomen. N.B. Verbandmiddelen in toilet en zwartwatertank leiden onherroepelijk tot verstoppingen!

*Het verhelpen van verstoppingen is een vervelend karwei; zorg er voor een paar rubber werkhandschoenen of chirurgen handschoenen aan boord te hebben.*

### Stank

#### Grijswatertank

In iedere grijswatertank worden onaangename geuren geproduceerd. Voorzie de gootsteen, douche, wasbak e.d. van een siphon (stankafsluiter) en een plug.

#### Zwartwatertank

In iedere zwartwatertank worden door de faecaliën onaangename geuren geproduceerd. Door gebruik van **zoutwater** om het toilet te spoelen neemt de stankvorming nog toe. De in het zoute water aanwezige alg produceert n.l. ook onaangename geuren.

Eventueel kunnen aan een vuilwatertank speciale middelen worden toegevoegd om de stank te verminderen, z.g. tankdeodorants. Een eenvoudig middel om de stank te verminderen is soda, dat zowel reinigt als ontsmet.

Lekkende slangen, slangfittingen, tanks, tankdeksel e.d. kunnen ook voor stankoverlast zorgen. Voor dus een regelmatige controle uit van het volledige systeem.

Voor afmetingen zie tekeningen op blz. 25.

## Gebruik

### Ledigen

Naarmate het verontreinigde water zich langer in de tank bevindt zal het risico van stankoverlast toenemen.

Laat een vuilwatertank daarom niet onnodig lang gevuld, maar pomp de tank één keer per week, of telkens als het mogelijk is, weer leeg of laat deze leegpompen.

Het leegpompen van de tank kan op twee manieren geschieden:

- Op de dekdop wordt een, op de wal staand, zogenaamd 'pump-out' systeem aangesloten. Deze zuigt de tank leeg.
- Een in het schip aanwezige pomp, pompt het afvalwater via de dekdop en een daarop aangesloten slang weg. Deze pomp moet een doorlaat van minimaal  $\varnothing$  38 mm hebben.

### Tijdens uw afwezigheid

Wanneer er langdurig geen gebruik wordt gemaakt van wasbakken, douchebakken e.d. kan het water in de siphon's, welke als stankafsluiter in de afvoerleidingen zijn geplaatst, verdampen. Dit leidt tot stankoverlast. Plaats daarom in alle afvoeren pluggen wanneer het schip voor langere tijd onbemand is.

Reinig en ontsmet de tank en de leidingen tenminste eenmaal per jaar bij voorkeur aan het einde van het vaarseizoen.

### Reinigen

#### Grijswatertank

Reinig de binnenzijde van de tank met water en een goed ontvettend huishoudreinigingsmiddel. Spoel de tank met schoon leidingwater.

#### Zwartwatertank

Reinig de binnenzijde van de tank met water en een goed toiletreinigingsmiddel, pas schoonmaakazijn toe indien er kalkaanslag aanwezig is. Spoel de tank met schoon leidingwater.

### Ontsmetten

Ontsmet de tank door deze te vullen met een oplossing van bleekwater in water (1 : 1000). Laat dit ontsmettende mengsel door het afvalwatersysteem ciculeren.

Verwijder de oplossing en spoel de tank met schoon leidingwater.

## Introduction

These instructions apply to the Vetus flexible plastic waste water tanks for **grey water** and **black water**.

### Grey water tank

A **grey water tank** should only be used for collecting water from the sink, shower, wash basin, air conditioning, etc..

The capacity of a waste water tank can never be too large.

Match the capacity to the amount of fresh water available; the capacity of the water tank(s).

Fit sink, shower, wash basin, etc. with a drain with sieve, so that coarse waste, such as hair etc., will be less likely to enter the grey water tank.

### Black water tank

A **black water tank** is used only for collecting toilet waste.

A **black water tank** should be installed in accordance with the European Guidelines for Pleasure Boats (EGPB), ISO 8099 Standard.

The capacity of a waste water tank can never be too great.

The capacity should be calculated using the amount of flushing water (outside water) used by the toilet. Reckon on 7 to 14 litres of black water per person per day.

Use only water-soluble toilet paper to prevent unnecessary blockages.

N.B: Sanitary towels and tampons in the toilet and black water tank will certainly cause blockages.

*Clearing a blockage is an unpleasant job, make sure you have a pair of rubber gloves on board.*

## Smell

### Grey water tank

Unpleasant odours will be produced in every grey water tank.

Fit the sink, shower, wash basin, etc., with an S-bend (siphon or stink trap) and a plug.

### Black water tank

Unpleasant smells caused by faeces will be produced in every black water tank. The use of sea water for flushing will increase the smell. The algae in sea water also produce unpleasant smells.

It is possible to add special additives to waste water tanks to reduce the smell, called tank deodorants. A simple way of reducing the smell is by using washing soda, which cleans and sterilizes.

Leaking hoses, hose fittings, tanks, tank covers, etc., can also cause a smell nuisance. So carry out a regular check of the whole system.

For dimensions, see drawing on page 25.

## Use

### Emptying

The longer waste water remains in the tank, the greater the risk of smell. So do not leave a waste water tank full unnecessarily. Pump the tank empty once a week, or whenever possible.

The tank can be pumped empty in two ways:

- A 'pump-out' system on the jetty is connected to the tank cap. This will empty the tank out.
- A pump on board the ship pumps the waste water out via the deck cap and a hose connected to it. This pump should have a passage of at least 38 mm. diameter.

### During your absence

When sinks, wash basins, showers, etc. are not used for a long time, the water in the S-bends, fitted as a smell trap in the drain pipes, will evaporate. This will lead to a smell nuisance. So put plugs in all drains when the ship is not manned for a long time.

Clean and sterilize the tank and pipes at least once a year, preferably at the end of the season.

## Cleaning

### Grey water tank

Clean the inside of the tank with water and a good degreasing household cleaner. Rinse the tank with clean tap water.

### Black water tank

Clean the inside of the tank with water and a good toilet cleaner, use household vinegar when there are scale deposits. Rinse the tank with clean tap water.

## Sterilizing

Sterilize the tank by filling with a solution of chlorine bleach in water (1 : 1000). Allow this solution to circulate through the waste water system. Remove the solution and rinse tank with clean tap water.

# Installation

## General

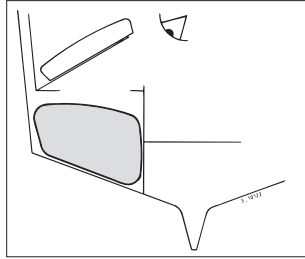
When choosing a place for the tank and for the deck filler cap, take the following into account:

The suction hose should be as short as possible, must go directly down to the tank and be as straight as possible.

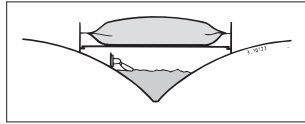
## Position

Although the tank will change its shape to fit the space where it is installed, the tank should preferably be installed in a compartment taking the following into account:

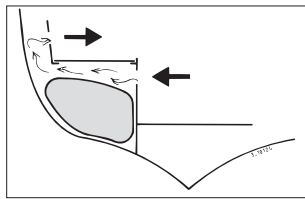
The tank must be easily accessible for inspection.



The tank should always be installed above the maximum bilge water level.

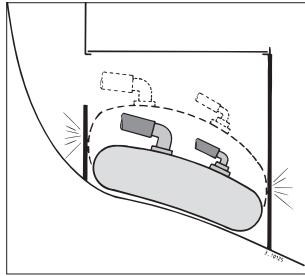


The compartment must be properly ventilated.

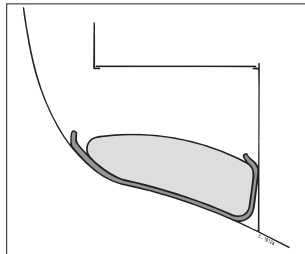


The compartment dimensions should relate to the tank dimensions.

When filled, the tank should find sufficient support at the sides with enough free space at the top. With reference to the height, do not forget to take into account the hose connectors and hoses.

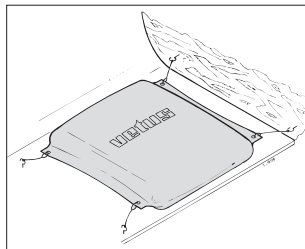


The hull and sides must be smooth. If not, then cover them with felt or foam.



Instal fixing points to secure the tank in the compartment.

Choose a position for the deck filler cap so that the filler hose can be as short as possible, going straight from the filler cap to the tank and as short as possible.



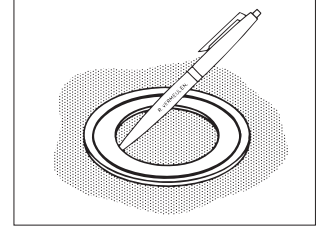
## Connector Nipples

Both connector nipples must be fitted in the top of the tank, the 38 mm (1½") outlet nipple should be fitted as low as possible. One connector nipple -16 mm (5/8")- is already fitted in the tank. Choose a suitable position for the other two connector nipples. The holes required for both connector nipples (16 and 35 mm. diameter) are the same. If necessary, the nipples can be changed over.

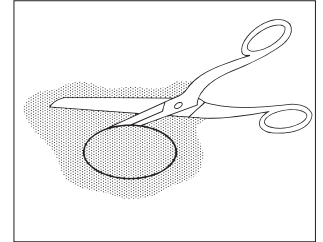
Fit the nipples as follows:

Draw the hole with a ball-point pen, use the ring as stencil.

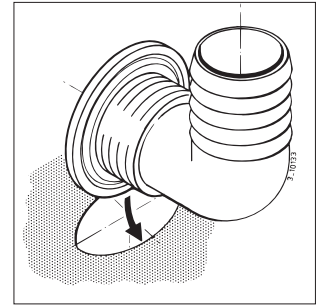
**The diameter is 42 mm (1 5/8"), do not make the hole too large!**



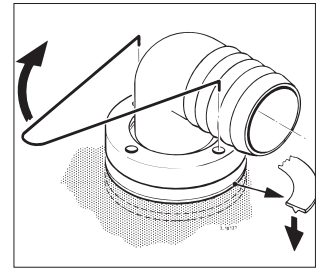
Use scissors to cut the hole in the tank. **Do not cut into the opposite tank wall!**



Fit the connector nipple into the tank.



Fit the ring and nut. Tighten the nut with the wrench, never use water pump pliers. Do not tighten too hard.



Check after 2 days if the nuts are still properly secured; tighten the nuts if required.

Repeat this after 4 days.

**Tank Connections**

Connect the tank up with good quality reinforced hose. Avoid sharp kinks and sags in the hose. Bracket the hose at not too far apart, regular points, to prevent the hose sagging. Deposits will collect in these sags, causing a blockage after time.

The reinforced hose should be an odour-proof waste water hose and resistant to a limited under- and over-pressure of 0.3 bar (0.3 kgf/cm<sup>2</sup>, 4 psi).

Vetus supplies a hose suitable for waste water.

Article Code:

WWHOSE08, waste water hose, 8 mm (5/16") internal diameter

WWHOSE16, waste water hose, 16 mm (5/8") internal diameter

WWHOSE19, waste water hose, 19 mm (3/4") internal diameter

WWHOSE25, waste water hose, 25 mm (1") internal diameter

WWHOSE38, waste water hose, 38 mm (1 1/2") internal diameter

WWHOSE45, waste water hose, 45 mm (1 3/4") internal diameter

Specially for **black water tanks**:

SAHOSE25, odour-proof waste water hose, 25-mm (1") internal diameter

SAHOSE38, odour-proof waste water hose, 38-mm (1 1/2") internal diameter.

Fit every hose connection with a good stainless steel hose clip.

**Install pump '10' and hull outlet with valve '12'.**

**Install the suction hose '17' (38 mm (1 1/2") dia.)** such that neither the tank or pump are subject to any mechanical loads.

**Fit the air-relief nipple '14'** maximum 1.5 m above the level of the top of the tank. Choose a place for the nipple where rain or other outside water cannot enter.

If required, fit an odour filter '15' between the air-relief pipe and nipple.

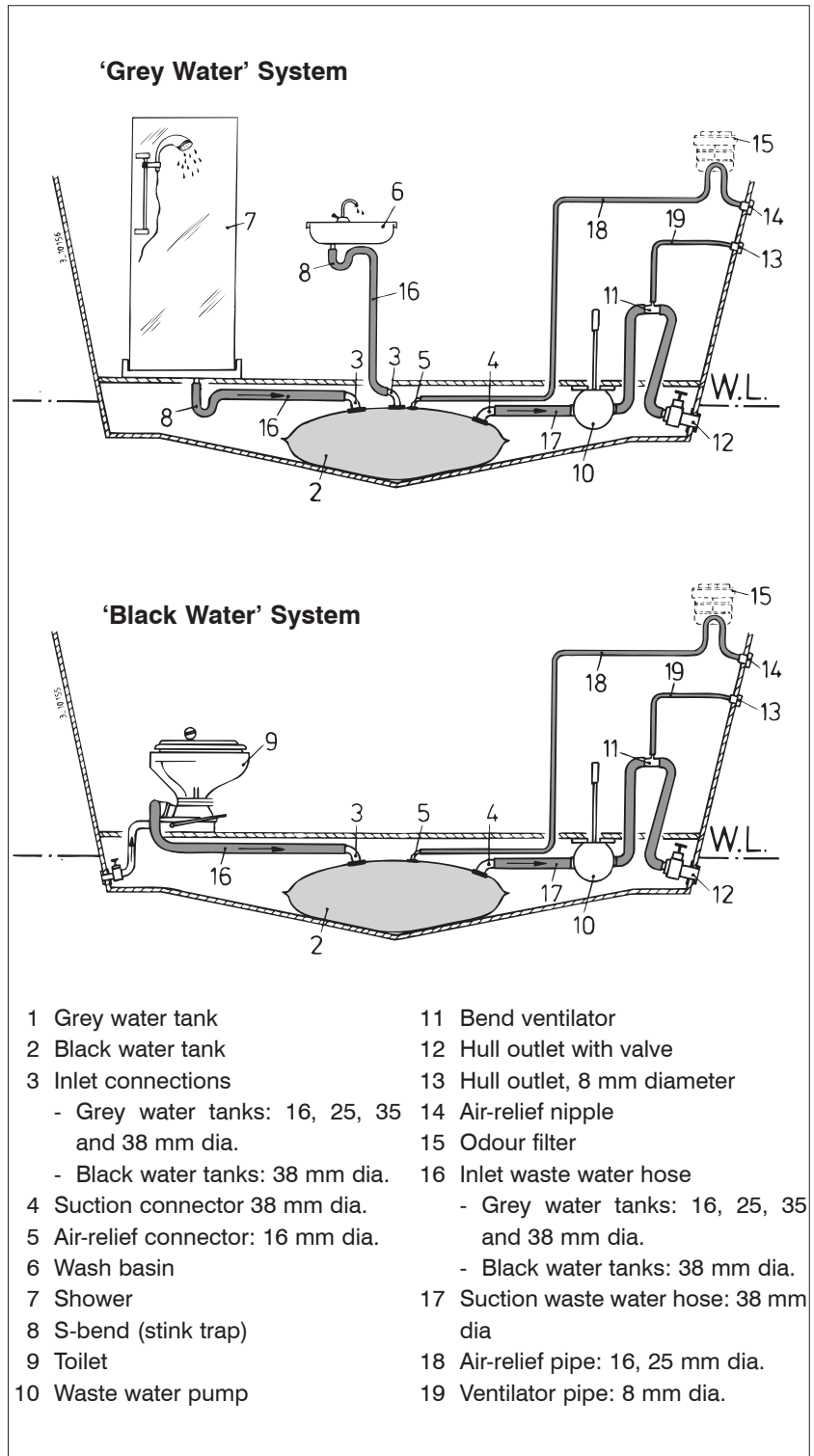
**Fit the air-relief pipe '18'**, internal diameter 16-mm (5/8"), between the air-relief nipple and the tank. When viewed from the tank, the air-relief pipe should run straight upwards.

**Discharge pump '10'**

A non-priming waste water pump must be fitted lower than, or at the same height as the underside of the tank.

A self-priming pump can be mounted at any height in relation to the tank.

Install a bend ventilator '11' in the discharge pipe between pump and hull outlet when the waste water tank is below the water line and the hull outlet is also below the water line.



- |   |   |
|---|---|
| 1 Grey water tank                             | 11 Bend ventilator                            |
| 2 Black water tank                            | 12 Hull outlet with valve                     |
| 3 Inlet connections                           | 13 Hull outlet, 8 mm diameter                 |
| - Grey water tanks: 16, 25, 35 and 38 mm dia. | 14 Air-relief nipple                          |
| - Black water tanks: 38 mm dia.               | 15 Odour filter                               |
| 4 Suction connector 38 mm dia.                | 16 Inlet waste water hose                     |
| 5 Air-relief connector: 16 mm dia.            | - Grey water tanks: 16, 25, 35 and 38 mm dia. |
| 6 Wash basin                                  | - Black water tanks: 38 mm dia.               |
| 7 Shower                                      | 17 Suction waste water hose: 38 mm dia        |
| 8 S-bend (stink trap)                         | 18 Air-relief pipe: 16, 25 mm dia.            |
| 9 Toilet                                      | 19 Ventilator pipe: 8 mm dia.                 |
| 10 Waste water pump                           |   |

**Rinsing pipe**

In order to rinse out the tank easily with clean water, and extra fitting can be made in the deck connected to an extra deck cap. Clean water can be poured in through this pipe.

## Preparation for winter

The tank, pipes, pump, etc., should always be drained.

**Never add anti-freeze to the tank or other parts of the waste water system to protect against frost damage. Anti-freeze is very poisonous!**

Clean the tank according to the cleaning procedure.

## Maintenance

Regularly check the air-relief nipple and clean its sieve if necessary.

Regularly check the hoses and hose connections for possible leaks and fit new hoses and/or hose clips when necessary.

Also check the tank for damage caused by abrasion. Replace a damaged tank immediately.

At the end of the cruising season, carry out the cleaning and sterilizing procedures as described under "Use".

A tank and installation which is seriously polluted with algae can be cleaned by thoroughly rinsing out the tank, pump and pipes with chlorine

## Technical Data

Type	:	TANKV55	TANKV70	TANKV100	TANKV160	
Capacity	:	55	70	100	160	litres *)
		12.1	15.4	22	35.2	Imp. gal. *)
		14.5	18.5	26.4	42.3	US gal. *)
Dimensions	:	68 x 78	78 x 78	79 x 100	79 x 142	cms
		27 x 31	31 x 31	31 x 39	31 x 56	inches
Height, full	:	25	27	27	27	cms
		10	11	11	11	inches
Weight	:	1.8	2.0	2.5	3.3	kgs *)
		4	4.4	5.5	7.3	lbs *)
Max. Pressure	:	24 kPa	24 kPa	24 kPa	16 kPa	
		(0.24 bar, 3.5 psi)	(0.24 bar, 3.5 psi)	(0.24 bar, 3.5 psi)	(0.16 bar, 2.3 psi)	
Material	:	Woven Polyester coated both sides with 'Alcryn'.				

### Hose Fittings:

For filler hose	:	16 mm, 25 mm, 35 mm and 38 mm dia. $\frac{5}{8}$ ", 1", 1 $\frac{1}{8}$ " and 1 $\frac{1}{2}$ " dia.	25 mm, 35 mm and <b>38 mm dia.</b> 1", 1 $\frac{1}{8}$ " and 1 $\frac{1}{2}$ " dia.
For suction hose	:	38 mm (1 $\frac{1}{2}$ " dia.	38 mm (1 $\frac{1}{2}$ " dia.
For air-relief	:	16 mm ( $\frac{5}{8}$ " dia.	16 mm ( $\frac{5}{8}$ " dia.

\*) Nominal capacity and weight values are stated here. Slight deviations may occur.