

## Appendix 3.0

### SEWAGE HOLDING TANK SYSTEMS (VOLUNTARY)

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**Where it is intended to install a Sewage Holding Tank System in a Pleasure Craft, the following guidelines (reproduced courtesy of ABYC) are recommended to be followed. Additional provincial and local design requirements may apply.**

### A3.1 System Design

#### What Are Some System Design Alternatives?

First, we'll look at some of the advantages and disadvantages of portable toilets and holding tanks in general. Later, we'll examine holding tank systems and their plumbing arrangements in greater detail.

### A3.2 Portable Toilets

#### Advantages

- Requires minimal space.
- Low cost.
- Simplicity.
- Reliability.
- Can be emptied via suction wand at a pump-out facility.
- Can be emptied ashore if pump-out facility is not available.

#### Disadvantages

- Limited capacity.

### A3.3 Holding Tank Systems

Holding Tank Systems vary in complexity depending on what they are designed to do. There are four basic arrangements.

#### 1. Deck Pump out Only

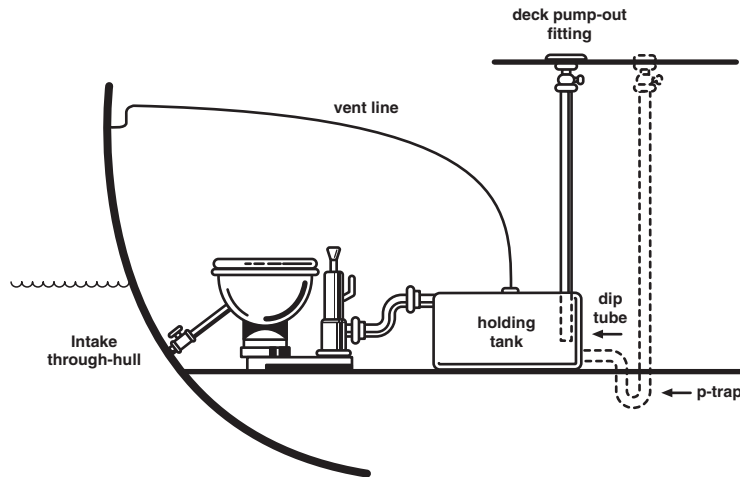
The holding tank is installed in line between the toilet and the deck pump-out fitting.

#### Advantages

- Allows use of existing toilet.
- Sewage goes directly into the tank.
- Simple to install.
- Minimal equipment requirements.
- Does not require a through hull for discharge.

#### Disadvantages

- External pump required to evacuate tank.

**Figure A3-1 Deck Pump Out Only**

## 2. Overboard Discharge Option After the Holding Tank

A diverter “Y” valve is installed in the line between the holding tank and deck pump-out fitting to allow the tank’s contents to be pumped overboard. The “Y” valve must be secured to prevent overboard accidental discharge.

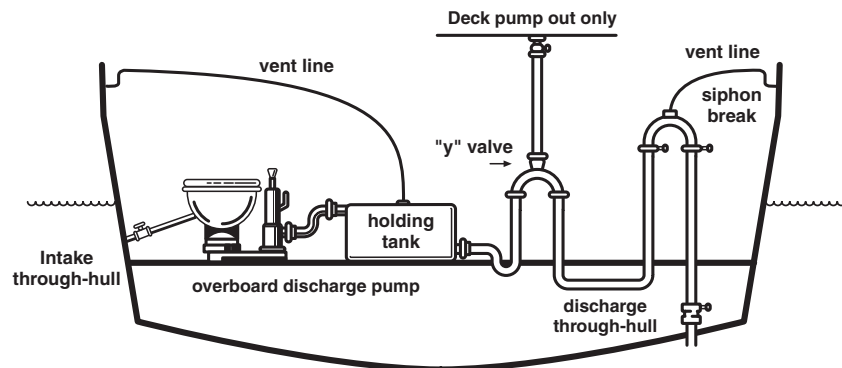
### Advantage

- All sewage is pumped into the holding tank.
- Vessels will use pump-out facility in port.

### Disadvantages

- None.

**Note:** A “Y” valve is not required in this option. The deck pump-out fitting and the overboard through-hull valve are normally pressure tight and will function alternatively as selected. Use of a “Y” valve, however, will keep unused sections of the hose or pipe from being unnecessarily “wet” (filled with sewage) and provide an additional safeguard against accidental overboard discharge.

**Figure A3-2 Overboard Discharge After Holding Tank**

### 3. Overboard Discharge Options Both Before and After the Holding Tank

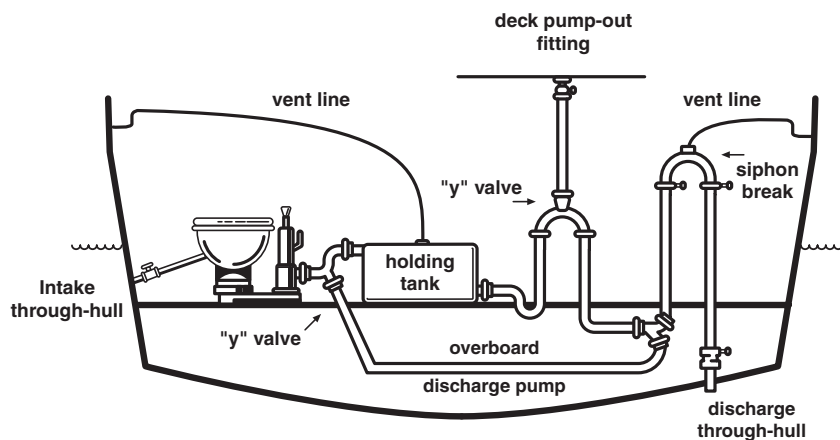
“Y” valves are installed in line between the toilet and holding tank and between the holding tank and deck pump-out fitting.

#### Advantages

- Flexibility in discharge options. “Y” valves must be secured to prevent accidental discharge of untreated sewage.

#### Disadvantages

- Flexibility is offset by complexity.

**Figure A3-3 Overboard Discharge Before and After Holding Tank**

#### 4. Overboard Discharge Option Before the Holding Tank

You should install a holding tank for use when boating in environmentally sensitive areas or when moored or dockside. A “Y” valve is installed in line between the treatment system and holding tank.

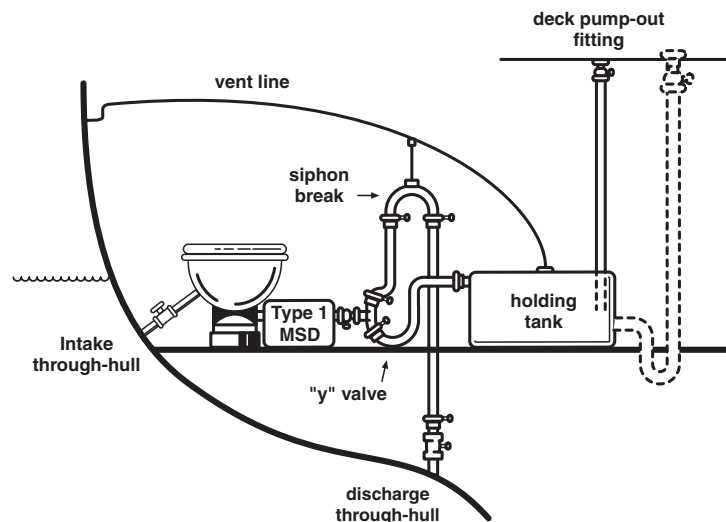
##### Advantage

- If a Type I or II treatment system is installed between the toilet and the “Y” valve, treated sewage can be pumped directly overboard, unless the vessel is in “No Discharge” waters.

##### Disadvantages

- “Y” valve must be secured to prevent accidental illegal discharge.
- External pump is required to empty holding tank.

**Figure A3-4 Overboard Discharge Before Holding Tank**



These four basic arrangements can be adapted depending on the number and type of toilets installed and whether inline waste treatment is desired.