



**H U N T E R**<sup>®</sup>  
MARINE CORPORATION

**We Go The Distance**

*Chapter 9*

# ***Water Systems***

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***H41***



## Hunter 41 • Water Systems

The fresh and raw water systems consist of the following components:

- Dockside Water Supply
- Fresh Water Tanks and Fills
- Fresh Water Pump
- A/C Cooling Pump
- Raw Water Pick-up and Strainer
- A/C Pick-up and Strainer
- Generator Cooling Pick-up and Strainer
- Engine Seacocks and Strainers
- Fixtures and Valves
- Water Heater

### 9.1 Dockside Water Supply

When you are docked, you can connect a pressurized dock water supply to your boat. A dockside water supply will pressurize the boat's water system without using the water pumps. The dockside system is connected after the water pump which then will act as the check valve.

The dockside water inlet is standard on the transom. Connecting a portable (drinking) water hose from a local water source to this inlet provides water under pressure to the fresh water system without using the pumps.

Dockside water often comes from a municipal water supply or similar sources which supplies water at a higher pressure than the boat's onboard system pressure. The pressure regulator on the water inlet reduces the pressure of the dockside supply to match the boat system's lower pressure which is normally around 35 psi.

This dockside water does not fill the water tanks.

*Important: Always disconnect the dockside water supply when you leave your boat unattended. A major leak or break in the system could flood your boat. Excess water in the bilge may sink your boat or flood the batteries and engine. Your warranty does not cover this damage.*

*Note: Before you connect your boat's water system to the dockside water supply, make sure the dockside water supply is suitable for drinking. Check with the dockmaster to be sure.*

**9.1.1 To connect the potable water inlet to your boat's water system:**

1. Connect a drinking water hose to the potable water supply.
2. Connect the other end of the hose to the potable water

spigot.

3. Open the cold water faucet closest to the potable water inlet on the boat.

4. Open the potable water supply spigot. As soon as a steady stream of water comes out of the faucet on the boat. Close the spigot.

5. Check the boat's water system for leaks. This inspection is particularly important when you use the potable water hookup the first time.

The fresh water system is now ready for use.

### 9.2 Water Tanks (on board water supply)

The fresh water system on your boat has two water tanks totaling 100 gallons (379L) and three fresh water fills (Fig. 9.1) located on the port and starboard sides. The vent for each tank is located on the side of the hull, at each fill. There is an isolator valve which allows you to select which tank is supplying water. See the arrangement drawing at the end of this chapter for locations.



Fig. 9.1

*Note: Whenever servicing the fresh water pumps, shut off the DC breaker for the water system.*

**9.2.1 To fill the fresh water tank:**

1. Make sure the potable water supply is suitable for drinking. Not all potable water is drinking water. Check with the dockmaster if necessary.
2. Open the water tank fill fitting. Fig. 9.1
3. Using the hose from the potable water supply, fill the tank until water starts flowing through the vent.



### 9.3 Pumps

On board your boat there are both fresh water and raw water pumps that control the flow of water to the related components. These are electrically powered pumps. Some of the features of these pumps are:

- Smooth Flow
- Self-Priming up to 10 feet (3m)
- Dry running capability
- Soft noise absorbing mounts
- Snap-fit port fittings
- Built-in bypass — less pulsation
- Reduces need for accumulator tank
- Corrosion resistant materials

*Remember to read your OEM manuals for complete information, as well as safety warnings, or notices.*

#### 9.3.1 Fresh Water Pump

The fresh water pump supplies water to the system under pressure when the potable water supply is not connected.

The FRESH WATER PUMP breaker switch is on the DC side of the MDP. When the breaker is switched to ON, the pumps will run until the hot and cold water systems are pressurized. An automatic pressure switch shuts the pumps off until the pressure drops to a preset level (for example, a pressure drop caused by opening a faucet). The pumps will then run again until the system is pressurized and turn itself off. The pumps have a built-in check valve to prevent backflow through the pumps.



The fresh water washdown connection is located on the transom.

*Important: Operate the fresh water pumps only when there is water in the tank. Running the pumps dry will damage the diaphragm.*

*Note: If the pumps run from time to time even though no water is being used, a leak in a water line is a likely cause. Check all lines for leaks and repair immediately.*

#### 9.3.2 A/C Cooling Pump

Your boat may be equipped with the optional air conditioner reverse cycle unit. This type of unit can heat or cool your boat.

The Air Conditioning system is made up of a pickup valve (or thru hull) (See Underwater Gear for its location), a sea strainer, an A/C cooling pump, and the major compressors and air handlers.

To find the A/C cooling pumps' location refer to the arrangement illustration at the end of this chapter or the Mechanical Arrangement at the end of the Boating Safety Chapter.

The A/C cooling pump receives sea water from the pickup strainer and pumps it through the A/C compressor to cool the compressor.

See the AC Electric Section for an explanation of the electrical controls of this system.

##### 9.3.4.1 To operate the air conditioner:

1. Open the air conditioner seacock. The valve is open when its handle is in line with the hose. The seacock is located to the port side of the Lazarette area, aft of the A/C pump, in the bilge.
2. Check the strainer. Clean if necessary to assure a steady flow of water to the unit.
3. Set the thermostat to the temperature desired.

*Important: Be sure to close air conditioner seacock when the air conditioner is not in use. Refer to the manufacturer's owner's manual furnished with the air conditioner for more information regarding its operation.*

#### 9.3.3 Toilet water supply

The toilet aboard your boat is supplied with flushing water from the fresh water system (Electric toilet option only). Standard toilet use raw water.

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More information concerning the operation and maintenance of this system can be found in the Waste and Sanitation chapter, Chapter 10 of your Operator's Manual.

### 9.4 Pickups and Strainers

There are various pickups and strainers installed aboard your boat. Here we will discuss the pick-ups and strainers associated with the water systems.

#### 9.4.1 Pick-ups

Pick-ups, or through hulls are placed in various locations in the hull of your boat. The intakes usually have a ball type valve which controls the flow of raw sea water to the specific component, or system associated with the pick-up.

#### **CAUTION**

It is very important that you ensure that the intake valve is open before using a raw water supplied system. Failure to do so could damage or break down a system or component.

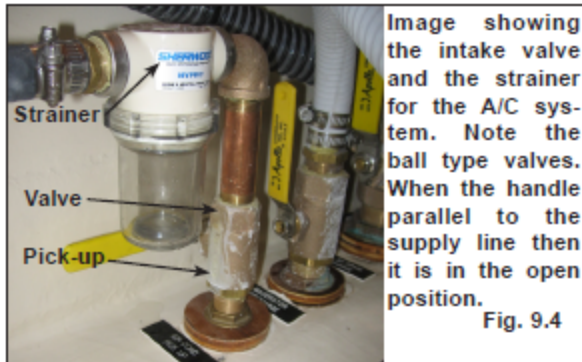


Image showing the intake valve and the strainer for the A/C system. Note the ball type valves. When the handle parallel to the supply line then it is in the open position.

Fig. 9.4

#### 9.4.2 Strainers

Your boat is equipped with strainers that strain the raw water taken in the thru hulls or pickups for objects that could damage the impeller or pump equipment. Strainers are equipped with a screen or a filter inside that collect objects taken in. They must be cleaned as part of routine maintenance.

To clean a strainer, first, make sure that the supply valve is in the Off or closed position. Failure to close the intake

or seacock could result in a flooded boat. Next, remove the "collector" or glass encasement that houses the screen. Remove any objects collected inside and wash the screen.

#### 9.4.3 A/C Pickup and Strainer (Air Conditioning Option)

At the end of this section, you will find an illustration of the A/C cooling water arrangement. It is important to always ensure that the intake valve (see mechanical arrangement in the Boating Safety Chapter, as well) is always open before using the A/C System. In the pumps subsection of this chapter you will see the image of these components. Fig. 9.2.

If you purchased your boat with the air conditioning option, you will find the documentation for the operation of this system in the owner's packet of the manufacturer's owner's/operator's manuals.

#### 9.4.4 Generator Cooling Pickup and Strainer (Generator Option)

The generator is an engine and, just like the main engines, requires cooling water. Water is supplied to the generator through the intake and strainer located just aft of the generator. Raw water is taken in via the raw water intake and then passes through the strainer and is discharged through the exhaust of the generator. Consult the DC Electric Chapter (Chapter 7) of this manual for more information about your generator option.

#### 9.4.5 Engine Seacocks and Strainers

It is a very important function for your main engines to remain a specific temperature when operating. This is done with the aid of raw water from the main engine seacocks. Heat from the closed cooling system on the engines is transferred to the cooler seawater through heat exchangers inside the engine. The raw water is then discharged through the exhaust.

To clean your main engine strainer, first close the main engine seacock, remove the top cover on the strainer remove the screen and clean.

#### **CAUTION**

Always ensure engine, or generator seacocks, or intakes are open before starting. Failure to do so could overheat and a damage these components.

Before re-installing the cap onto the strainer, check the 'o' ring that is the seal on the cap. Check for wear, or leakage. Replace if needed (Contact your dealer for replacement).

**⚠ WARNING ⚠**

Hot coolant under pressure may boil or explode and cause burns or other personal injury when the pressure cap is removed. Allow the engine to cool, then open the cap slowly to allow any pressure to vent before completely removing the cap.

**⚠ CAUTION ⚠**

Before using any system that requires raw cooling water, ensure that the intake valve is opened and the strainers are not clogged. Section 9.4.6 illustrates the procedure for cleaning your strainers.

**9.4.6 Water Heater**

The fresh water pump supplies water to the water heater from the water tanks. A breaker on the AC side of the MDP, and a rocker switch on the control panel controls power to the heater.

Follow these procedures when using the water heater:

1. Make sure the water heater is full of water. Open a hot water faucet and allow a steady stream of water to flow out of the faucet to remove all air from the hot water circuit.
2. With the generator running or shore power connected to your boat, switch on the WATER HEATER circuit breaker at the AC side of the MDP.
3. Wait for the water in the tank to heat up, then use as you would at home.

**⚠ WARNING ⚠**

**IMPORTANT!**

Water temperatures in excess 110°F (43°C) are dangerous and may cause scalding, severe injury or death

**9.4.6.1 Water Heater Temperature Adjustment (Thermostatic Mixing Valve)**

1. Let the water flow for at least 2 minutes to allow supply

temperature to stabilize.

2. Calibrate the mixed water outlet temperature by placing a thermometer in the mixed water stream.
3. To adjust the setting of the valve, loosen locking cap with hex wrench, see figure 9.5.0. Cap must be lifted 1/4" to adjust temperature. To increase the temperature, turn counterclockwise. To decrease temperature, turn clockwise
4. Lower handle and tighten screw.
5. Check outlet temperature.

NOTE: Refer to User's manual in OEM Packet.

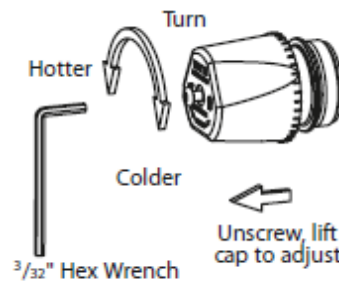


Figure 9.5.0 - Temperature Adjustment

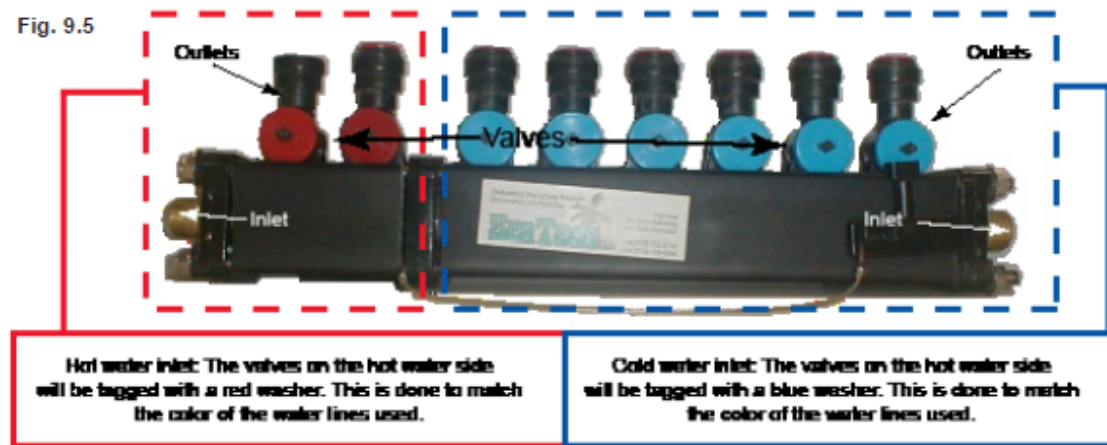
Table 1. Scald Time (Hot Water), References Only  
Temperature Max duration until injury

155F (68.3C)	1 second
145F (62.9C)	3 seconds
135F (57.2C)	10 seconds
130F (54.4C)	30 seconds
125F (51.6C)	2 minutes
120F (48.8C)	5 minutes

**⚠ WARNING ⚠**

Hydrogen gas may form in water heater if not used. Open valves. Do not smoke or use electrical appliances for several minutes before use.

Fig. 9.5



*Note: Actual water manifolds may vary in detail from the one pictured above. The manifold is based upon the amount of components, or systems being fed from the manifold.*

Note that the manifold is made up of an Inlet, an outlet and valves located on each outlet. As noted the valve is tagged with a color coded washer to allow you to determine if the line is a "Hot" water line or a "Cold water line."

A key is attached to the manifold via a lanyard that fits each valve and allows you to turn on or off the system. To use the key simply insert the end of the key into the slot on the side of the valve and turn. The valve will turn on, or off the water to the system based on the position as shown in Fig. 9.7, and 9.8. These two figures show the valves open and closed.

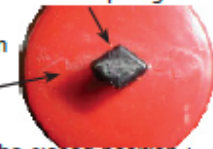
**⚠ DANGER ⚠**

You should always be aware if the valve to the water heater is opened or closed. This should never be closed if there is a possibility of the water heater being energized. This could cause damage to your water heater.

**⚠ WARNING ⚠**

Leaving your boat unattended with the systems on water manifold on can sink your boat. If a leak developed while attached to a water source, or dockside supply. This could sink your boat! Always close all valves when leaving your boat attached to a dockside water supply while unattended!

As mentioned shows the valve in the open position. Notice that the long side of the diamond shaped guide indicates the position of the valve gate. There is also an image of an arrow on each valve washer that indicates the position.



(Shown is the hot water valve in the closed position.)

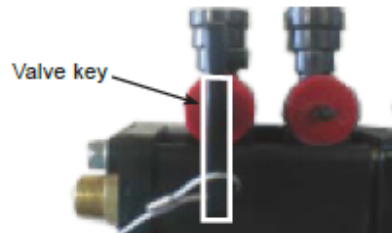


Fig. 9.6

Shows the valve opened, notice the key is perpendicular to the line.

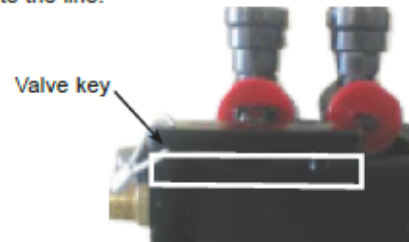


Fig. 9.7

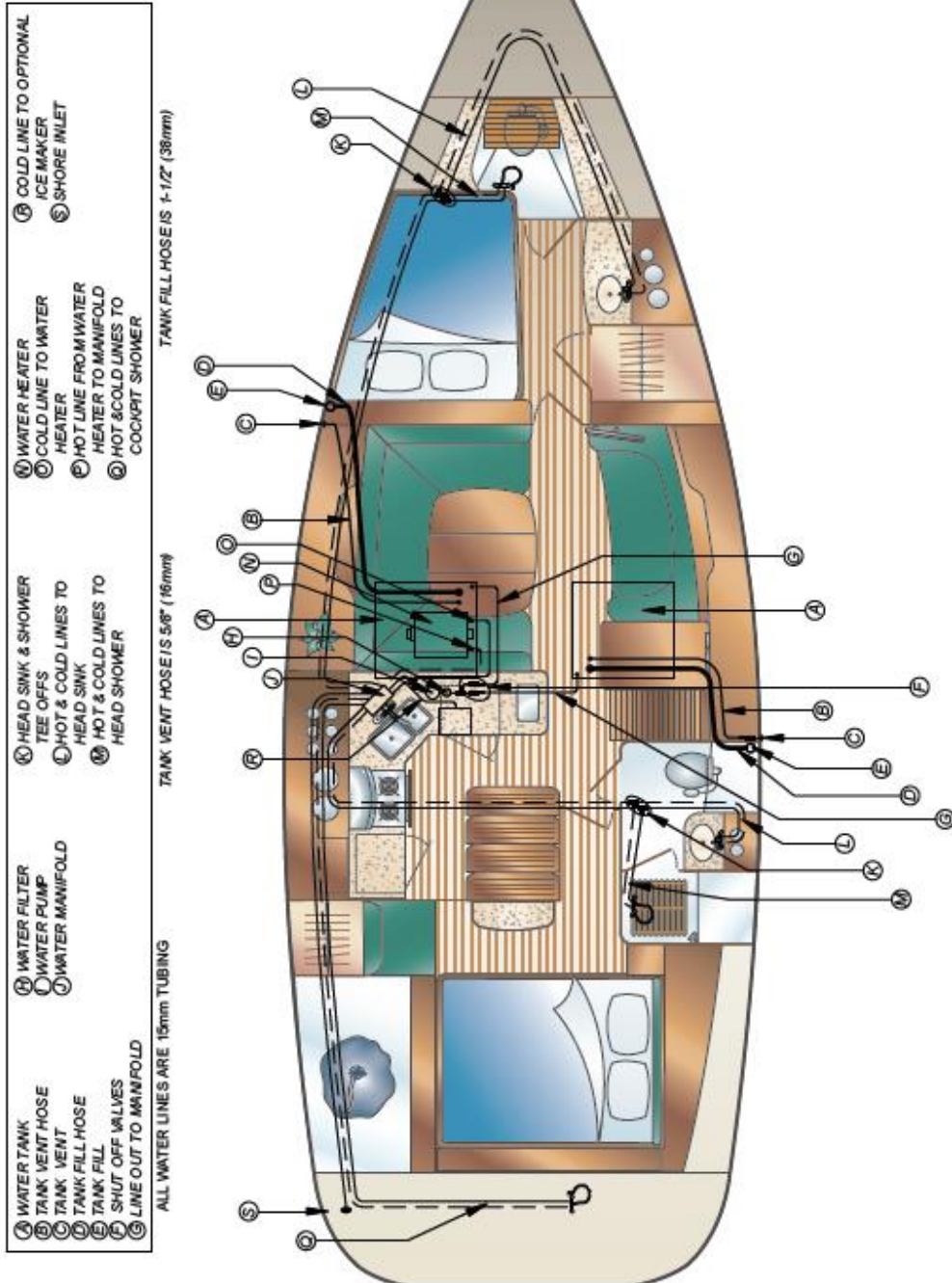
Shows the valve key horizontal to the line, or closed.

**⚠ WARNING ⚠**

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Troubleshooting		
Problem	Cause	Solution
Air in system	Tank empty	Fill all water tanks
Fresh water pumps cycle on and off	Tank empty Blocked or pinched water lines Loose electrical connections Defective pumps Leak in system	Refill Clear obstruction or straighten line Check connections. Tighten as needed See your dealer for service See your dealer for service See your dealer for service Repair leak. See your service dealer for repairs
Low water pressure at all sinks and showers	Defective pumps	See your dealer for service
Low water pressure at one sink	Pinched water line	Straighten line
No hot water (AC Power)	Water heater breaker OFF	Switch breaker to ON

Fresh Water Layout



**⚠ WARNING ⚠**

Allowing your boat to stay connected to dockside water supply while unattended, could result in a sunken boat.

A major leak or break in the system could flood the bilges, excess water in the bilges could, flood the batteries and result in your boat sinking.

Before connecting to a dockside water source, make certain the water is suitable for drinking. Water that may be of questionable quality could result in serious illness or death.

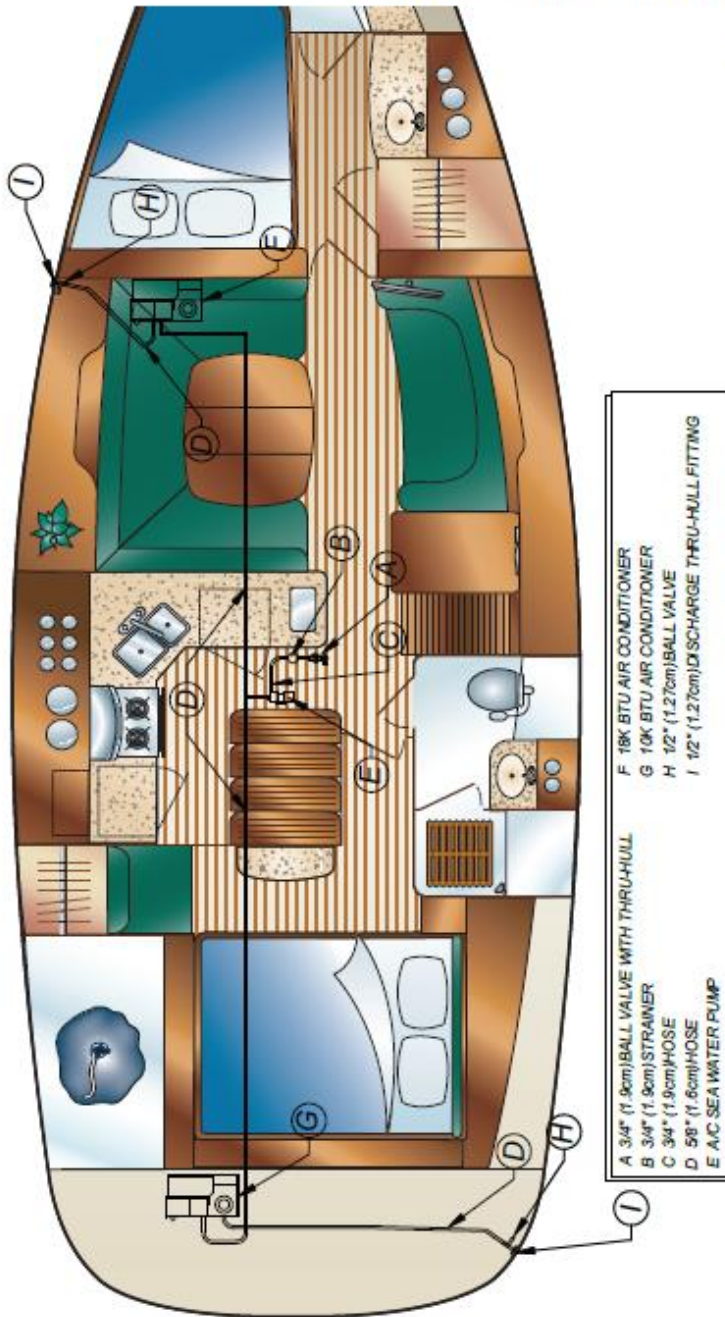
Hydrogen gas may form in a water heater if not used. You should always open the valves!

Do not smoke or use electrical appliances for several minutes before use.

**⚠ CAUTION ⚠**

Make sure that the water heater is full before energizing, bleed off any air by opening the hot water valve, close only when there is a steady flow of water, this will bleed the hot water system of air. Failure to follow these instructions could result in damage to the heating elements in your water heater.

### A/C System Cooling Water (Raw Water)



**CAUTION**

Always insure the intake valve for the AC pump is open before using the AC system

Never leave the intake valve open while the boat is unattended. A major leak or break in the system will flood your boat!

Make sure you are aware of the laws for dumping waste overboard.