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About Pumps

General Information



Liquid **flow rate** and **pressure** are the basic measures of pump performance.

Flow Rate is commonly measured in:

- *litres per second, per minute or per hour.*

or sometimes in

- *cubic metres per hour.*

1 litre of water weigh 1 kilogram.

1000 litres of water (1 cubic metre) weighs 1 tonne.

Pressure is commonly measured in:

- *bar* (1 bar is equal to standard atmospheric pressure at sea level, **or** 1 kg per square centimetre, **or** 14.6 lb per square inch (psi).

Head is sometimes used as a convenient alternative to **pressure**. Commonly expressed in *metres* or *feet*, **head** is the vertical height difference between the liquid supply and discharge levels. A vertical column of water 10 metres high has a pressure of 1 bar (above atmospheric pressure) at its base. A pump able to deliver water from ground level to an elevation of 10m is working against a 'static head' of 10m.

Water flowing through a pipe loses energy through friction at the pipe wall. The loss of energy appears as a pressure loss in the pipe. The pressure loss can be expressed as an equivalent head ('dynamic head').

For example: if water flowing through a pipe loses 0.5 bar pressure from one end of the pipe to the other, this is equivalent to:

$0.5 \times$ (*equivalent of 1 bar pressure expressed in metres of head*).

$= 0.5 \times 10$ (*see above*)

= 5 metres

In this instance, an extra ('dynamic') head of 5m would need to be added to the static head against which the pump must work.

Pipe friction losses may be negligible, or they may be substantial, depending on flow rate, pipe length and internal diameter (bore), and configuration. To minimise pipe friction losses, keep inlet and discharge pipework as short and straight as possible. Use the pump manufacturer's recommended pipe size. As a general rule, the pipework bore should be at least as large as the diameter of the ports on the pump. If the pipework is very long or convoluted, use pipe of larger bore.

Self-Priming Pumps

A self-priming pump is capable of exhausting the air from its inlet pipe, drawing water from a lower level up into its inlet when it is started. JABSCO flexible impeller pumps will self-prime rapidly from dry, so that they can be installed well above the level of the water source. For efficient self-priming, it is essential that the inlet pipework is fully airtight. Air flows easily through the smallest leak at a pipe joint. An air leak can slow down or prevent priming, with the risk of dry-running damage to the pump.

Atmospheric pressure limits the height to which any pump can self-prime. At sea level, atmospheric pressure is 1 bar, equivalent to a static head of 10m of water. If the pump could create a perfect vacuum at its inlet port, atmospheric pressure would push water 10m up a (vertical) inlet pipe into the pump - and no higher. In practice, even the best self-priming pumps are rarely able to lift water more than about 7m. For best results, keep the 'suction head' as low as possible.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point

Help with Searches

Enter a Jabsco part number or a short piece of descriptive text in the box.

Jabsco part numbers are typically 4 to 6 (alphanumeric) characters long followed by a dash (-), then up to 4 more characters. Examples 37010-1090 or SP2700-1027

Descriptive text might be a product type -for example, 'submersible pump' or 'bilge pump'. Or might describe a part - for example, 'impeller' or 'seal'.

The site will make suggestions as you type based on common searches that have been done but if these don't match what you want just click search to run your own search.

If the result is not what you or want, try changing your question.

Try entering just the first 4 characters of the part number. If the resulting list is then too long, try again, entering more characters this time.

General descriptions ('pump' for instance) may result in a long list of items. More precise descriptions ('12 volt submersible pump', for instance) will produce lists with fewer items.

About Bilge Pumps

Bilge Pumps



Wave splash, rain, deckwash, spillage, hull leakage - few bilges remain entirely dry for long. When the bilge is being pumped out routinely, the flow rate is not usually critical. The pump needs to be reliable, efficient and easy to use.



In an emergency, the bilge pump may be a lifesaver. A fast pumping rate can gain time for other emergency actions. Pump performance and reliability are vital. You should consider whether to install an electric pump, an engine-driven pump, a manually-operated pump, or - if appropriate - all three.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C(98°F)



About Blowers

Blowers are designed to transfer fresh air from outside the boat into poorly ventilated spaces, displacing fumes and odours from galleys and toilet compartments, and fuel vapours from engine compartments.

Blowers can also be used as extractor fans, drawing out fumes so that fresh air is drawn in. In either case, make sure that the space to be ventilated can 'breathe', or the blower will be ineffective.

Flexmount Blower (below) uses a mounting bracket

Flangemount blower (below) mounts from a flange on the discharge port

In-line blower (below) is mounted directly into the air conduit, with no change of direction



JABSCO Blower model	Blower Type	D.C. Voltage	Maximum recommended engine compartment volume, cubic metres. (Check blower characteristics prior to selection)
35115-0020	Flangemount	12	2
35515-0010	Flexmount	12	2
140	In-line	12	2.6
140-24	In-line	24	2.6
34739-0010	Flangemount	12	2.8
34739-0020	Flangemount	24	2.8
36740-0000	Flexmount	12	2.8
36740-0000	Flexmount	24	2.8
240	In-line	12	7.4
240-24	In-line	24	7.4
35400-0000	Flangemount	12	8.2
35400-0010	Flangemount	24	8.2
35440-0000	Flexmount	12	8.2
35440-0010	Flexmount	24	8.2

About Bronze Engine Cooling Pumps

Direct Cooling

Raw water (river water or seawater) is pumped directly through the cylinder block, exhaust manifold, exhaust silencer (if fitted) and exhaust pipe.

Manufacturers of direct-cooled marine engines design them carefully to minimise corrosion in the cooling passages in the engine block. It is possible to convert ('marinise') a standard car engine using direct cooling, and many small craft owners do it successfully.

To keep the engine running efficiently at its optimum temperature, the rate of water flow through the cylinder block is regulated manually or automatically.



Manual Temperature Control

In the discharge line from the raw water pump, fit a branch, controlled by a hand valve, to allow some of the cooling water to by-pass the engine. Start the engine with the by-pass valve open, then close it gradually as the engine warms up, until the optimum temperature is maintained.

IMPORTANT

Do not regulate the pump flow by recycling water from the pump discharge back into the inlet line, or by restricting either the pump discharge or suction pipes.

Automatic Temperature Control

Fit a marine thermostat in the discharge line from the cylinder block. When the engine is cold, the thermostat restricts the flow of cooling water through the engine, diverting most of it to the exhaust via a spring-loaded valve. As the engine temperature increases, the thermostat automatically increases the flow of cooling water through the engine, diverting less through the valve, until the required operating temperature is maintained.

Indirect Cooling via a Heat Exchanger

A pump recirculates fresh water in a closed circuit (the Primary Cooling Circuit) through the cylinder block via a thermostat and a heat exchanger. A second pump delivers river water or seawater ('raw water') to the heat exchanger, maintaining the water in the primary circuit at about 80-90°C.

Keel Cooling

Keel cooling is a form of indirect cooling with part of the closed primary cooling circuit in the form of pipes, or sometimes a double skin, in the boat's bottom. The heat generated by the engine is dissipated directly to the river water or sea water flowing around the hull. Manual or automatic temperature control is achieved with a suitable by-pass and valve. In principle a single pump can recirculate the coolant, though in practice an additional pump is often required to maintain an adequate flow rate against the extra resistance of the extended pipework.

Raw Water Cooling Pumps

A raw water cooling pump must self-prime reliably at a wide range of engine speeds, tolerating sandy or silty water without loss of flow, and without needing frequent maintenance. JABSCO flexible impeller pumps do the job, often for years at a time, with little maintenance. This is why JABSCO pumps are fitted as standard by marine engine manufacturers worldwide.



What cooling water flow rate does an engine need?

On average, petrol engines and fast-running diesel engines with direct cooling require a raw water flow of about 36-39 litres (8 - 8.5 gallons) per minute for each 75kW (100 bhp) of engine power. Engines with indirect cooling require more flow: about 65-70 litres (14.5 - 15.5 gallons) per minute for each 75kW (100bhp) of engine power.

Pipework for engine cooling

To provide reliable performance under seagoing conditions, a raw water cooling pump must operate in a correctly-designed cooling system. It is essential that cooling water should reach the pump without having to overcome excessive resistance or restrictions.

The following general rules are given for guidance:

Suction pipe bore must not be smaller than the pump inlet port. If the suction pipe exceeds 3 metres in length, its bore should be one size larger – particularly if the pump is operated at high speeds. Use pipe of the same bore throughout. Avoid sudden changes in pipe bore. Use long, tapered sections of pipe at any change in pipe bore.

The suction pipe run should be as straight as possible – avoid unnecessary bends. Do not use square or standard elbows, but fit long swept bends.

DO NOT fit gearbox or engine oil coolers in the pump suction system. Always install them after the pump.

Seacocks should be of the ball or plug type and of the same nominal bore as the suction pipework, giving full through-bore in the open position. The handle position should clearly indicate whether the seacock is open or closed.

Seawater inlet strainers should have a hole or mesh size no smaller than 3mm in diameter – or 4-5mm for larger pumps. The hole or mesh size should always be smaller than the heat exchanger tube bore.

Check frequently that the inlet strainer is not clogged. If in doubt, clean it thoroughly.

Fast boats (over 12-15 knots) and planing craft must be fitted with inlet scoops positioned in a permanently-wetted area of the boat's hull, to create sufficient inlet pressure at high boat speed. Flush inlet fittings are not suitable for fast boats.

About Bronze Engine Driven Clutch Pumps



Diesel engines need no electric supply to keep going, and usually have ample power to drive a substantial bilge pump as well as propelling the boat.

Usually, there is no need to run the bilge pump continuously, so the pump is driven via an integral clutch, which allows the pulley on the pump to rotate without turning the pump itself. Fitted with a manual clutch, the pump is engaged by an attached lever. With an electromagnetic clutch using the boat's 12 or 24 volt D.C. electric supply, the pump can be operated remotely, usually from the helm.



JABSCO manual and electromagnetic clutch pumps are powerful engine-driven units. These tough and fully-serviceable belt-driven pumps will self-prime rapidly and work continuously over a wide engine speed range. Installed in innumerable fishing boats and other workboats of all kinds, JABSCO clutch pumps are also popular in larger leisure vessels.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C(98°F)

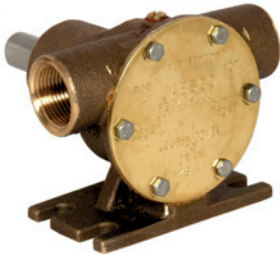
About Bronze Pumps

Bronze (an alloy of tin with copper and other elements) resists corrosion in fresh water and salt water. Iron- and steel-bodied pumps start to rust and rot as soon as they are wetted, but bronze-bodied pumps can provide reliable service for many years.

Jabsco offers a range of bronze-bodied self-priming pumps for circulation, transfer and cooling duties. Simple, rugged and easily serviced, they can generate pressures up to 2 bar (30 psi), equivalent to a 60-foot head of water. They will self-prime rapidly from dry, so that the liquid starts moving within seconds. (Self-priming centrifugal pumps can take minutes to get going). Jabsco bronze pumps are available in the configurations shown here:



Pump heads with mounting brackets, to suit standard IEC frame electric motors (B34, with C-face flange & feet)



Foot-mounted pumps with bare shaft (i.e. no motor, coupling or adapter); suitable for direct drive via a flexible coupling, or belt drive via a pulley.

About Circulation Pumps



For cooling water circulation on refrigerators and air conditioners, and for wet central heating systems

Circulation pumps are designed to create a flow of liquid against low resistance. Because the liquid returns to its starting point, the net static head is zero, and the only resistance to flow is the friction offered by the pipe walls, bends, elbows and other fittings in the

circuit.

Use pipework with a bore at least as large as the nominal bore of the pump ports.

For best results:

Keep pipework as short and straight as possible.

Use swept bends in preference to sharp elbows.

Avoid narrow-bore fittings or other restrictions.

Pumps of this type usually run continuously so they need to be quiet and efficient, with minimal drain on the battery. The limited shaft seal life of a conventional centrifugal pump is overcome by the seal-less magnetic drive in JABSCO's [59520-series](#) pump.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C (98°F)

About D.C. Diaphragm Pumps

Self-priming, dry running



Multiple diaphragm PAR-MAX pumps from JABSCO are compact, quiet and durable. Self-priming is rapid, the bilge can be pumped virtually dry, and the pump is not harmed by dry running.

Discharge heads should not exceed 3-4 metres for any of these pumps. They are supplied with an inlet strainer to keep out solids big enough to interfere with the pump's valves.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C(98°F)

About D.C. Diesel Refuelling Pumps



JABSCO D.C. sliding-vane pumps are purpose-designed to handle diesel fuel, gas oil, kerosene and paraffin rapidly and efficiently, delivering high flow rates with minimal battery drain. Positive sliding-vane action ensures quick self-priming from dry.

Unlike a centrifugal pump, the JABSCO sliding-vane pump clears most of the residual fuel from the hose when the supply vessel is empty. It is suitable for use over a wide temperature range, and is not

at risk from winter anti-waxing compounds added to diesel fuel.

JABSCO diesel transfer pumps are designed to handle free-flowing diesel and similar oils. To handle hydraulic oils, which are more viscous than diesel oil, JABSCO manufacture the [23590-series](#) pump.

IMPORTANT NOTE: always use the recommended size of hose, for maximum flow, and to avoid the risk of motor overload.

For transferring engine lubricating oils, a JABSCO sliding-vane pump is not recommended. Use instead a [JABSCO Utility Pump](#), or contact JABSCOshop for a recommendation.

Draining lubricating oil out of a marine engine via the dipstick hole requires a slow pumping rate through small-bore tubing. Contact JABSCOshop for a recommendation.

For pumps for gear oils and other heavy grades, contact us for a recommendation.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C (98°F)

About D.C. Flexible Impeller Pumps

For a really dry bilge



JABSCO flexible impeller pumps self-prime rapidly from dry, can handle moderate amounts of suspended solid matter, and will maintain their flow rate against discharge heads of several metres. While they are not as quiet as submersibles, taking more current for less flow at low heads, they are robust, fully serviceable, and, unlike submersibles, able to pump the bilge dry almost to the last drop.

Recent Jabsco impeller pump models have built-in dry running protection (pictured above). For details key 'Utility' in the search box at the top of this page.

Even without built-in protection in the pump itself, extended protection against dry-running damage to the impeller can be secured by attention to the configuration of the discharge pipe from the pump. For technical assistance [contact us](#) with details of your proposed installation.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C (98°F)

About D.C. Industrial Diaphragm Pumps

Self-priming, dry running



Multiple diaphragm pumps from JABSCO are compact, quiet and durable. Self-priming is rapid, there are no rotating shaft seals and most designs have no metallic parts in contact with the pumped liquid.

Diaphragm pumps can be run dry for extended periods without damage. They have a wide application scope. For a recommendation contact us.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C(98°F)

About Deck & Anchor Wash Pumps



Too much pressure can damage paintwork and other surfaces; too little pressure won't shift the dirt. JABSCO pressure-controlled deck wash pumps generate a vigorous jet of water to wash away mud and slime without damage to the surface underneath. The pump stops and starts automatically at the touch of a trigger, giving you full control over the flow and direction of the jet.

Non-pressure-controlled pumps generate lower pressures. A thumb on the end of the hose will create a jet of water, but the flow should not be permanently restricted or stopped completely. JABSCO pumps without pressure control are not suitable for use with trigger nozzles.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C(98°F)

About Diesel & Oil Transfer Pumps



JABSCO D.C. sliding-vane pumps are purpose-designed to handle diesel fuel, gas oil, kerosene and paraffin rapidly and efficiently, delivering high flow rates with minimal battery drain. Positive sliding-vane action ensures quick self-priming from dry.

Unlike a centrifugal pump, the JABSCO sliding-vane pump clears most of the residual fuel from the hose when the supply vessel is empty. It is suitable for use over a wide temperature range, and is not at risk from winter anti-waxing compounds added to diesel fuel.

JABSCO diesel transfer pumps are designed to handle free-flowing diesel and similar oils. To handle hydraulic oils, which are more viscous than diesel oil, JABSCO manufacture the [23590-series](#) pump.

IMPORTANT NOTE: always use the recommended size of hose, for maximum flow, and to avoid the risk of motor overload.

For transferring engine lubricating oils, a JABSCO sliding-vane pump is not recommended. Use instead a [JABSCO Utility Pump](#), or contact JABSCOshop for a recommendation.

Draining lubricating oil out of a marine engine via the dipstick hole requires a slow pumping rate through small-bore tubing. Contact JABSCOshop for a recommendation.

For pumps for gear oils and other heavy grades, contact us for a recommendation.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C(98°F)

About Drum Emptying Pumps

Self-priming, dry running



The easiest, most reliable and economical way to transfer or sample liquids from drums, vats and carboys. Jabsco's Drum pumps offer tube materials to handle a wide range of liquids. Motors and tubes are sold separately, this allows a single motor to be used with different tubes for different applications.

The pump is supplied in two parts: the motor (electric or compressed air-driven), and the tubeset. The tubeset, which houses the pump itself, is immersed in the liquid by inserting it through the bung hole of the drum.

Motors and tubesets are sold separately, permitting tubesets of several materials and lengths to be used with the same motor. For details, key in the product description 'drum' in the search box on the right of this page.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C (98°F)

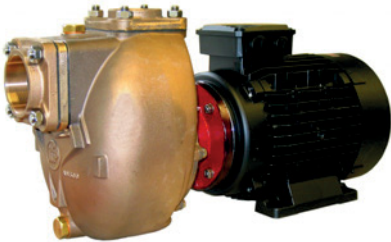
About Fire Pumps

In most situations on small vessels a standard small fire extinguisher, a diverted bilge or deck wash pump will be all that's needed. However on commercial or larger leisure boats there are often laws and regulation to comply with necessitating specific fire pumps to be installed with more specific performance criteria.

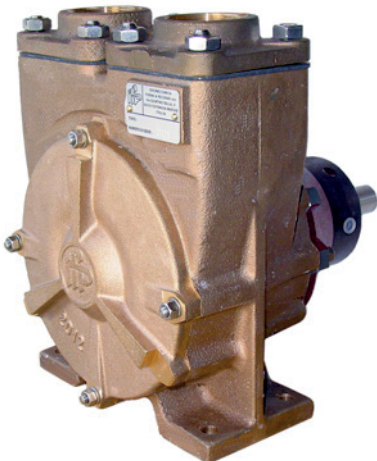
In simple terms the requirement of a fire pump is to be able to control and possibly extinguish a fire from a safe distance. A minimal discharge pressure is required from the pump to overcome the safety distance, after that it is a question of approach. Volume of water can be applied as one approach, pressure is the alternative. Pumps will produce higher flow rates at low pressure (head), as pressure increases flow will decrease.



Flexible Impeller Pumps give high volume flow at low pressure, require full bore, unrestricted discharge.



Centrifugal Pumps give high volume flow at low pressure. Flow/pressure can be balanced with a nozzle.



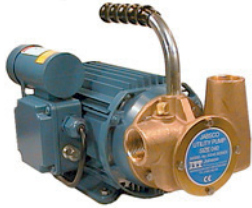
Turbine or Regenerative Pumps give lower flow but at higher pressures. Flow/pressure can be balanced with a nozzle.

About Manually Operated Pumps



JABSCO hand operated pumps are simple, reliable and inexpensive. The larger models may surprise you with their pumping power - and yours! A JABSCO hand pump may well be all you need... or in an emergency, it could be all you've got. Think carefully before you decide to do without a hand pump, whatever other bilge pumps you may have on board.

About General Purpose Utility Pumps



One answer to a lot of pumping problems

Available in a range of AC and DC voltages, JABSCO Utility Pumps combine the advantages of rapid self-priming, the ability to handle water containing solid matter, and built-in protection against dry-running.

Many pumps besides JABSCO offer one or other of these advantages - but very few offer all three, and none of them at a comparable price.

You can tell we trust them - we use them ourselves! The JABSCO Utility Pump is light, tough, versatile, simple to use, easy to maintain, and remarkably inexpensive.

With its corrosion-resistant bronze body, and the standard oil-resistant impeller, the JABSCO Utility Pump will handle clean, dirty or oily seawater. Able to handle up to 90% entrained air as it sucks up the last drop of a spillage or flood, empties a container, or transfers dirty engine oil into a collection barrel, the pump can continue running for a while without damage after the liquid supply has run out. The larger Utility Pump models can safely run dry for as long as half an hour, thanks to an ingenious design of pump head that retains liquid while still pumping air.



WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C (98°F)

About Jabsco Hygienic Pumps



Jabsco Flexible Impeller Pumps are compact, easy to use and maintain. They handle low and high-viscosity liquids, gels and pastes and can pass suspended soft and hard solids. The smooth pulsation-free flow and gentle pumping action will not break down shear-sensitive or fragile liquids.

Jabsco hygienic flexible impeller pumps are simple machines with few moving parts. They are exceptionally easy to disassemble and reassemble, with polished stainless steel surfaces that are easy to clean, without crevices or 'dead areas' where micro-organisms can hide during cleaning.

About Lights



JABSCO **searchlights** typically have a spot spread of about seven degrees for long penetration.

Searchlight performance is quoted in *candlepower* (light output) and *lux* (intensity of illumination at a given range). One *lux* allows a reasonable level of detail to be distinguished at the quoted range.



JABSCO **floodlights** have a spread of about forty degrees for maximum coverage.

Model Series	Candlepower	Lux at 100m	Range, metres at 1 lux
60010			
255 SL	200,000	10	315
RC			
60020			
135 SL	100,000	7	262
RC			
60080			
146 SL	175,000	15	386
RC			
62026			
130 RC	72,000	9	300
62040			
200 RC	200,000	18	418

About Marine Toilets



JABSCO marine toilets are well designed, well made, well tried and tested, and hugely popular worldwide. But they are only as good as the installation allows them to be. Get the installation right, and save yourself potential trouble of the most unwelcome kind. Further advice on toilet systems can be found at '[About Toilets](#)' on the Marine Toilets Page of this website.

Before you set sail in a boat with an on-board toilet system, it is well worth understanding a few principles. These principles are a mixture of technical know-how, environmental responsibility and common sense. They apply to boats fitted with every degree of sanitary sophistication, from a primitive bucket to the latest designer-style toilets and

automatic waste-handling systems.

Before you design a new toilet system for your boat, or set about refurbishing an old one, it's worth reading '**Get Rid of Boat Odors: a Boat Owner's guide to Marine Sanitation Systems and other sources of Aggravation and Odor**', by Peggie Hall. Published by Seaworthy Publications Inc (ISBN 1892399156), and obtainable from www.amazon.co.uk, it is an expanded version of the author's article, 'Marine Sanitation - Fact vs. Folklore' which could be found until recently on a popular American boating website. At zero cost, the website article was too good to last. We paid £11.75 plus P&P for our copy of the book: excellent value.

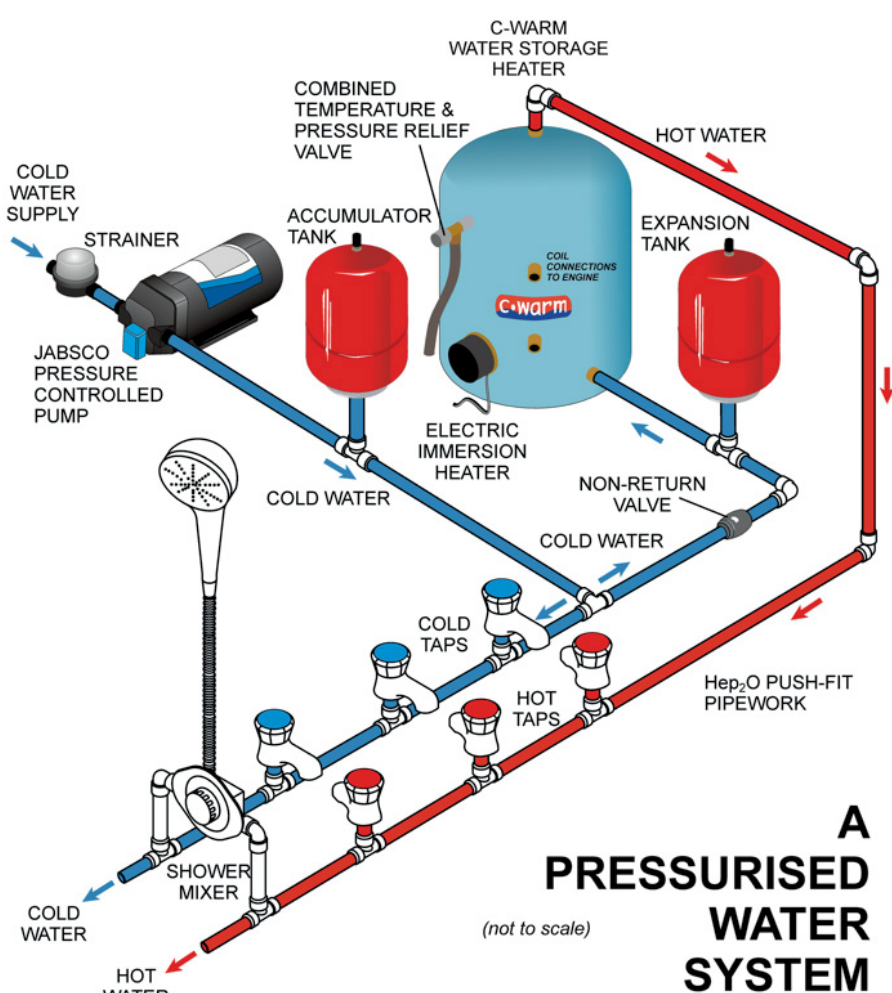
The book is written by an American for the US market, but the principles it describes and explains are the same for marine toilet systems anywhere. Peggie Hall is one of the USA's acknowledged experts (there aren't many!) on marine sanitation. She writes in a clear, direct style on the principles that govern the behaviour of microbes in dark, wet places, and how to keep them under control. In brief outline, Peggie Hall's book says:

1. **Know the law.** Toilet waste discharge is illegal in US (and UK) inland and coastal waters. Ask your harbourmaster, marina manager, cruising association, sailing club or river authority about the regulations. (The leading UK boating magazines have databases on boating matters of every kind, and will often help if you ask nicely).
2. Make sure that your toilet system can stand up to the **movement and shocks** of marine use. Every part of the system needs to be **accessible** for maintenance and repair.
3. The way to avoid **foul smells** is to design the toilet system so that **air** can circulate through it.
4. Train yourself and your crew to **flush the toilet** efficiently.
5. **Cleaning substances** made and sold specifically for marine toilets can be useful in a well-designed system. See 3 above. To clean your toilet we recommend '[Toilet Fresh Clean and Condition](#)'
6. **Prevention is better than cure.** Change the rubber parts in the toilet at least every two years.

About Pressurised Fresh Water Pumps



The size and shape of your vessel or vehicle, and the number of water outlets you require, will determine the size of the pump and the other system components, and how much pipework you will need. This schematic diagram depicts a typical system, and shows how the components are linked.



For installations with up to 6 outlets



JABSCO 'Par Max' multi-diaphragm pumps are light, compact, quiet and efficient. They maintain the high reputation of the earlier PAR diaphragm pump range for reliability.

The flow of water from a JABSCO 'PAR-MAX' multi-diaphragm pump appears smooth, but actually pulsates rapidly. The pump may be noisy if mounted on a light, unsupported surface - particularly if metallic pipework is used. A solid, non-resonant mounting surface, and the use of plastic pipework, will suppress the noise.

Pump model	Output, litres/minute (imperial gall/minute)	Recommended for:
Par Max 2.9	up to 11 litres/minute (2.4 gallons/minute) open flow	galley & toilet with small diameter shower
Par Max 3.5	up to 13 litres/minute (2.9 gallons/minute) open flow	galley & toilet with standard domestic shower
Par Max 4	up to 16 litres/minute (3.5 gallons/minute) open flow	galley & 2 toilets with standard domestic shower
VFlo	up to 19 litres/minute (4.2 gallons/minute) open flow	Jabsco's latest microchip controlled pump adjusts its speed automatically to meet demand, while maintaining a constant output pressure. It doesn't need an accumulator tank (see below), but note that systems with water storage heaters will still need an expansion tank.

Accumulator

An accumulator tank is an important part of any pressure-controlled water system. Fitted close to the pump discharge, it acts as a pressure buffer, absorbing flow from the pump when demand is low, and smoothing the outlet pressure. By removing the need for the pump to run immediately an outlet is opened, it extends pump life and reduces battery drain. The larger the accumulator tank, the less often the pump has to start.

The larger tanks have an appreciable water storage capacity - approximately half the nominal tank volume. The larger your pressurised system, or the higher the demand for water, the larger the accumulator tank should be. For minimum wear and tear on your pump, fit the largest accumulator tank you can.

Accumulator tanks are also used as expansion vessels in conjunction with water storage heaters.

Water Storage Heaters

Even the smallest water-cooled marine engine discharges large amounts of 'waste' heat. This rejected energy won't help to propel your boat, but it's ideal for heating your domestic fresh water supply, and far too useful to be dumped straight overboard. Why waste it? With a fully-insulated C-WARM water storage heater, you can heat a full tank of water (small or large) within half an hour, and keep it usefully warm for many hours after you have stopped the engine. Visit Cleghorn Waring for more information.

Pipework and Fittings

The best plastic pipework is flexible, non-toxic, resistant to algal growth, immune from electrolysis, frost-resistant, noise-suppressing, and remarkably easy to fit, extend, alter or dismantle.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C(98°F)

About Sink & Shower Drain Pumps



Sink and shower waste is tough on pumps! Abrasive grit, soft solids with a tendency to clog, hair that can wrap itself around shafts and interfere with seals... choose a quality pump that will last the course. Protect the pump with a suitable inlet strainer, use a hair-and-grit-tolerant pump - or fit a JABSCO shower sump pump kit with an integral strainer.

Whichever pump you choose, the key to trouble-free operation is regular inspection of the pump and/or the strainer, and cleaning it as

often as necessary.

About Stainless Steel & Epoxy Pumps



Jabsco flexible impeller pumps for industrial duties are available with stainless steel and epoxy bodies. Stainless steel is recommended for hygienic duties such as transferring foodstuffs, pharmaceuticals and drinking water.

Epoxy-bodied pumps resist corrosion by many acids, alkalis and salts. [Ask us](#) for a recommendation before you specify a Jabsco flexible impeller pump for a chemical handling duty.

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About Toilets



For the 'Smallest Cabin'...

There is a JABSCO marine toilet to suit every boat and budget. The JABSCO manual toilet is the world's best seller: clean to use, with a china bowl that won't scratch or discolour; designed for ease of service in restricted spaces, with all the fastenings facing the front or the top.

Upgrade your manual toilet to electric operation with the JABSCO electric conversion, retaining the manual pump for refitting if the power supply fails. Or choose from JABSCO's 'Quiet Flush' electric range, with options for fresh or raw water flush. These options are also incorporated in to JABSCO's elegant designer-style DS14 and DS17 models.



About Toilet Waste Pumps



"Why do I need a macerator pump?"

Because a uniform slurry is more easily pumped than raw toilet waste.

Whether discharge is overboard (at sea), or from a holding tank to a shore pump-out station, waste that has been macerated is pumped faster, with less risk of annoying and unpleasant blockages, and with less load on the pump.

JABSCO macerator pumps have 38mm (1½") bore inlet ports for efficient handling of solids. The pump takes in raw waste, and grinds it to a consistency that can be safely discharged via 25mm (1") bore pipework.

IMPORTANT NOTE:

JABSCO macerator pumps are designed to handle normal toilet waste and easily-disintegrated toilet tissues. They will not handle high wet-strength tissues, sanitary towels, napkins, diapers, rags or hard objects.



Pumping out the toilet waste holding tank

Never the most welcome of tasks, emptying the toilet waste holding tank requires a robust reliable pump that will do the job with the minimum of fuss.

If a shore pump-out station can do the job for you - no problem!

But for the times when you need your own pump on board, choose a JABSCO electric or manually-operated pump designed for the purpose - simple, efficient and fully serviceable.

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About Rule Submersible Pumps & Accessories



With high flow rates and low battery drain DC submersible pumps transfer water quietly and efficiently against low heads. Flow rate falls rapidly as the discharge head rises. Use the recommended hose size: undersized hose won't harm the pump but you will get significantly less flow. A good choice for light, intermittent duties handling cleanish bilge water. Large submersibles can shift water at an impressive rate without making a heavy demand on the battery. Not for continuous bilge pumping, for water with a lot of suspended solid matter, or for permanently submerged duties.

WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C (98°F)

About Jabsco & Rule Marine Products

General Information



Jabsco's & Rule's constantly evolving and expanding product ranges are specified by many of the world's best known marine engine manufacturers and boatbuilders for both leisure and commercial use.

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About Versatile 'Utility' Pumps



One answer to a lot of pumping problems

Available in a range of AC and DC voltages, JABSCO Utility Pumps combine the advantages of rapid self-priming, the ability to handle water containing solid matter, and built-in protection against dry-running.

Many pumps besides JABSCO offer one or other of these advantages - but very few offer all three, and none of them at a comparable price.

You can tell we trust them - we use them ourselves!

The JABSCO Utility Pump is light, tough, versatile, simple to use, easy to maintain, and remarkably inexpensive.

With its corrosion-resistant bronze body, and the standard oil-resistant impeller, the JABSCO Utility Pump will handle clean, dirty or oily seawater. Able to handle up to 90% entrained air as it sucks up the last drop of a spillage or flood, empties a container, or transfers dirty engine oil into a collection barrel, the pump can continue running for a while without damage after the liquid supply has run out. The larger Utility Pump models can safely run dry for as long as half an hour, thanks to an ingenious design of pump head that retains liquid while still pumping air.



WARNING!

No Jabsco pump should be used for petrol, solvents or any liquid with a flash point below 37°C (98°F)

If you're looking for quality boat pumps & plumbing, visit our website.