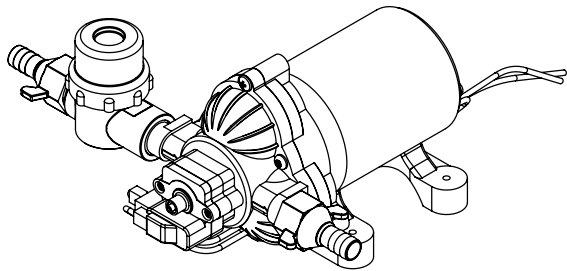
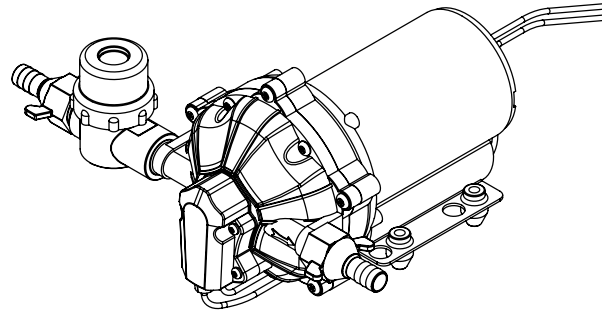




## Fresh Water Pump WP 8L, 13L, 20L



**WP1208**    **WP1213**  
**WP2408**    **WP2413**



**WP1220B**  
**WP2420B**

### 1 Introduction

The pump is intended to be used as a pressurized water system on yachts and small craft.

Possible other applications are pumping of fluids for cleaning purposes or water purification.

In a pressurized water system the pump will be switched on immediately after the pressure has dropped when water is tapped ensuring a continuous flow of tap water.

Following the recommendations below will result in a longer life and better performance of your water pressure pump.

- Ensure that the water supply tank is always full; although the pump can still run when dry, this will prevent unnecessary dry running.
- Check that the battery voltage is correct. Battery voltage loss can be reduced by using cables of sufficient cross sectional area.
- Ensure that the pressurized water system is properly prepared for winter before the temperature falls below zero. Otherwise, irreparable damage may be caused to the system.
- Carry out the maintenance described regularly.

### 2 Installation

#### 2.1 General

Always install the pump in accordance with the applicable regulations of the country concerned.

#### 2.2 Position

See 'Section 9 Installation recommendations'.

1. The pump may be positioned at the same level or lower or higher as the tank; the maximum priming height is 1.8 m (6 ft).
2. The maximum suction line length (horizontally) is 9 m (30 ft).
3. The pump can be mounted in any position. The pump head should be pointing downwards if mounted vertically.

The space in which the tank is placed should be dry and properly ventilated. The pump should be 1 cm (3/8") free all round from bulkheads or other equipment, to provide

ventilation. Do not locate the pump in a space less than 0.03 m<sup>3</sup> (30 dm<sup>3</sup>, 1 cubic foot) unless adequate ventilation is provided. In case of overheating the integrated thermal protection will interrupt operation. When cooled down sufficiently the pump will resume operation.

- Position the pump in such a way that it is readily accessible for inspection.
- There must be sufficient free space available to perform maintenance on the pump.
- Also ensure that there is sufficient free space for the hose connections. These must be easily accessible during installation.
- Make sure that the foundation for the pump is strong enough to secure it properly.
- Do not over tighten or use oversized screws to fit the pump to the foundation to minimize transfer of vibration and noise.

#### 2.3 Connections

- Install the strainer and the hose connectors to the pump, see 'Section 8 Connections'.

#### Warning

Never use Teflon tape or sealing compound on the thread.

#### Tip

The hose connectors provided are designed with a 'taper seal', creating a water tight seal when hand tightened.

- Connect the pump with at least 30 cm (1 ft) of a good quality reinforced flexible hose (12.7 mm, 1/2"). Avoid sharp bends and kinks or sagging in the hose.

The reinforced hose must be of quality suitable for drinking water and resistant to a temperature of at least 50 degrees C (122 degrees F) and a pressure of 5 bar (5 kgf/cm<sup>2</sup>, 70 psi).

Vetus supplies a hose suitable for tap water. It is tasteless, non-poisonous, resistant to temperatures from -5 to +65 degrees C (+23 to +149 degrees F). Article Code: DWHOSE12A, drinking water hose, 12.7 mm (1/2") internal diameter

- Fit every hose connection with a good stainless steel





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hose clip.

### **Warning**

Never connect the pump directly to rigid tubing.

### **Note**

If the system is installed using stainless steel or copper piping, the pump must still be connected using short sections of hose.

### **Caution!**

Care should be used when applying sealers (sealing compound or Teflon tape) in the tubing from tank to pump. Sealers may enter the pump valves, causing no prime or no shut-off. Failures due to foreign debris are not covered under the warranty.

#### 2.4 Electrical installation

- Check that the voltage stated on the identification plate is the same as the battery voltage (12 or 24 V).
- Consult the wiring diagrams when connecting the pump. Extend the connector wires if required. Use good quality wire connectors together with the right wiring pliers! Make sure that all electrical connections remain dry under normal conditions in order to prevent electrolysis and corrosion.
- The minimum cross-section for the connection wires is 2.5 mm<sup>2</sup> (AWG 14). The voltage drop between battery and pump should not exceed 10% of the supply voltage.
- Use a relay to operate pump model WP1220B; see 'electrical diagram'.
- A main switch\* and a fuse\*\* must be incorporated in the positive cable.
- Connect '+' and '-' as shown in the diagram.

\* The switch must be rated for 15 Amps.

\*\* Consult the wiring diagrams for the correct value of the fuse.

## 3 Use and Maintenance

The pump is designed for intermittent use only, eg. for supplying water to a household tap or shower.

### 3.1 Disinfecting

#### *When using for the first time:*

Disinfect the tank by filling it with a solution of bleach in water (1 : 1000). Circulate this disinfecting mixture through the drinking water system. Remove the solution and rinse the tank with clean drinking water.

Calculation of the amount of common household bleach needed to disinfect the tank:

Use 1 millilitre of bleach for each litre tank capacity.

Or use 0.13 ounces (oz) of bleach for each US gallon of tank capacity.

#### *At the beginning of the sailing season:*

Disinfect the tank and prevent the growth of algae at the same time by filling the tank with a solution of clear vinegar in water (1 : 20). Leave the vinegar solution in the tank for at least 24 hours, the longer the better. Remove the vinegar solution and rinse the tank several times with clean tap water.

## 4 Winter preparation

The pressurized water system as part of the whole drinking water system should always be drained.

- Drain the water tank.
  - Use the drain valve of the tank.
  - Open a tap so that the pump will run; let the pump continue to run for about 30 seconds after the tank is empty.
- or
- Use the pump to drain the tank, open the tap(s) fully and let the pump run (15 min. ON / 15 min. OFF) until the tank is empty; let the pump continue to run for about 30 seconds after the tank is empty.
- Remove the plumbing from the inlet and outlet connection of the pump. Switch the pump ON, allowing it to operate until the water is expelled. Switch off the pump.
- Disconnect the power connections to the pump.
- Do not reconnect the plumbing. Make a note at the tank filler as a reminder. 'Plumbing is Disconnected'.

### Anti-freeze

Never fill the drinking water system with antifreeze to protect it against freezing unless a safe non-toxic anti-freeze for potable water is available. Most anti-freezes are very poisonous!

Flush the drinking water system thoroughly at the start of the summer season, if a non-toxic anti-freeze for potable water has been used to protect the system during the winter.





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### 5 Trouble shooting

#### Warning

Disconnect the power and drain the system before beginning work on the pump!

Problem	Possible cause	Solution
Motor runs but there is no flow of water.	Empty water tank	Fill the tank or disconnect the power to the pump.
	Inlet / outlet tube restriction.	Remove restriction.
	Strainer clogged with debris.	Clean strainer.
	Leak in the suction pipe.	Tighten the hose clamps and check the fittings.
Motor does not run	No power on pump circuit.	Check wiring, fuse or circuit breaker.
	Loose or corroded electrical connections.	Check the electrical connections.
	Short circuit in wiring.	Check condition of wires.
	Thermal protection of motor has been activated (motor is too hot).	Wait until there is an automatic reset.
	Faulty motor.	Replace pump.
	Faulty pressure switch.	Replace pressure switch assembly.
Pump continues to run after all taps have been closed.	Locked drive.	Replace pump.
	Empty water tank	Refill.
Pump cycles while tap is closed.	Leak in the system.	Tighten leaking hose clamps / fittings.
	Faulty pressure switch.	Replace pressure switch assembly.
	Incorrect voltage.	Check voltage ( $\pm 10\%$ ).
	Air trapped in system.	Open a tap as close to the pump as possible.
	Leak in outlet tubing.	Check plumbing for leakage.
Low pump capacity or pressure.	Dirt in inlet filter.	Remove cover and clean filter.
	Worn wobble plate.	Replace pump.
	Worn diaphragm.	Replace pump.
	Inlet / outlet tube restriction.	Remove restriction.
	Inlet air leak.	Tighten fittings / Replace cracked fittings.
	Faulty pressure switch.	Replace pressure switch assembly.
	Incorrect voltage.	Check voltage ( $\pm 10\%$ )
Pump leaks.	Loose fasteners.	Tighten fasteners.
	Pump seals degraded.	Replace pump.
	Leak in diaphragm.	Replace pump.
Noisy or rough operation.	Flexible mounting surface.	Mount pump on rigid surface.
	Loose pump head.	Tighten fasteners.
	Compressed base feet.	Decompress base feet.
	Rigid plumbing.	Plumb pump with flexible plumbing.





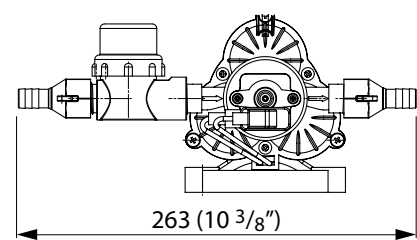
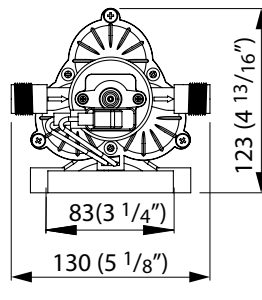
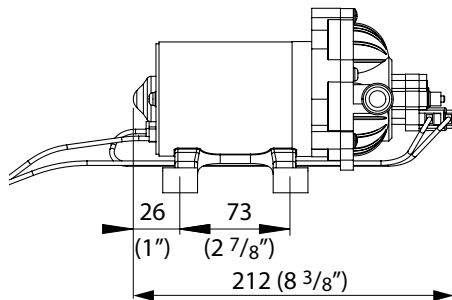
## Fresh Water Pump WP 8L, 13L, 20L

### 6 Technical data

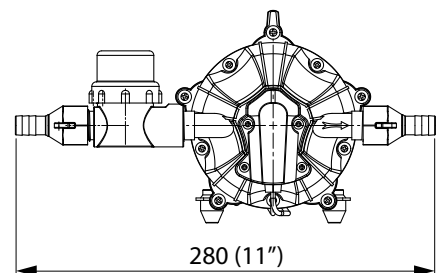
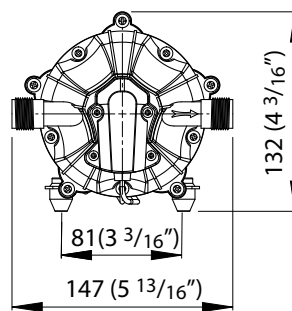
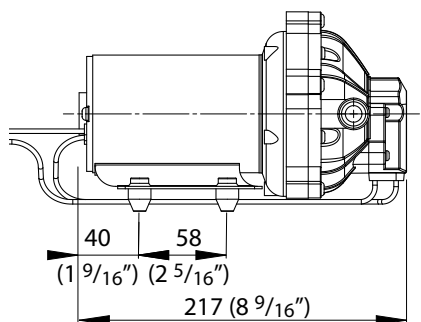
Type	: WP1208	WP2408	WP1213	WP2413	WP1220B	WP2420B
Electric motor, Type	: Permanent magnet DC motor					
Voltage	: 12 V DC	24 V DC	12 V DC	24 V DC	12 V DC	24 V DC
Current at max. pressure	: 5 A	3 A	7 A	4 A	15 A	8 A
Pump, Type	: Self-priming diaphragm pump					
Number of valves	: 3			: 4		
Capacity at max. pressure	: 7.6 l/min 1.7 Imp. GPM (2.0 US GPM)	: 13.2 l/min (2.9 Imp. GPM) (3.5 US GPM)		: 20 l/min (4.4 Imp. GPM) (5.3 US GPM)		
Max. pressure	: 2.1 bar (30 psi)	: 3.1 bar (45 psi)		: 4.2 bar (61 psi)		
Maximum riser height	: 1.8 m (6 ft)					
<b>Material</b>						
Pump head	: Polypropylene, Viton®, Stainless steel					
Diaphragm	: Santoprene®					
Valves	: Viton®, Polypropylene					
Filter type	: In-line					
Mesh size	: 50 Mesh					
<b>Pressure switch, Settings</b>						
Switch-on pressure	: 1.3 bar (20 psi)	: 1.9 bar (28 psi)		: 3.3 bar (48 psi)		
Switch-off pressure	: 2.1 bar (30 psi)	: 3.1 bar (45 psi)		: 4.2 bar (60 psi)		
Connections for hose	: 1/2" (12,7 mm)					
Water temperature	: 0 to 50 degrees C. (32 to 122 degrees F.)					
Weight	: 1.9 kg (4.2 lbs)			: 2.6 kg (5.7 lbs)		

### 7 Principal dimensions

WP1208 / WP2408 / WP1213 / WP2413



WP1220B / WP2420B



GENERAL  
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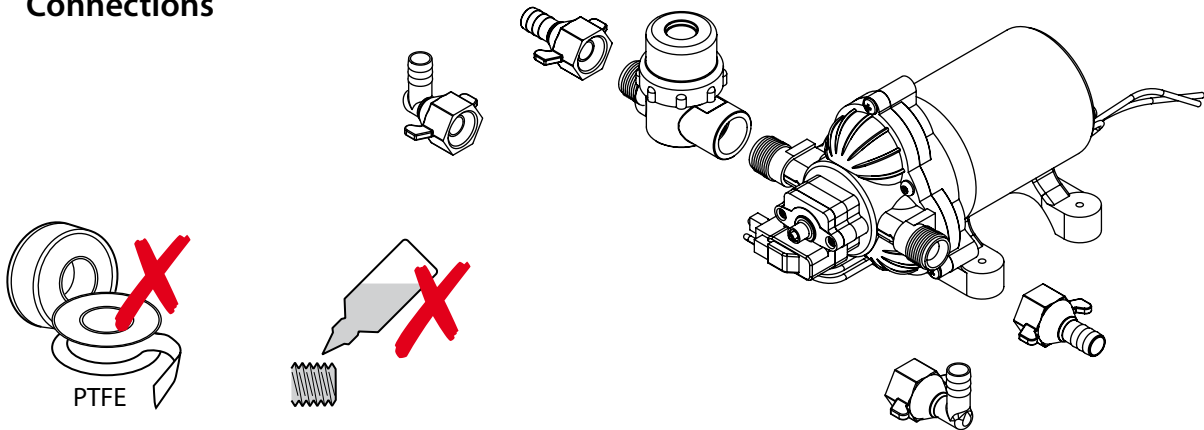
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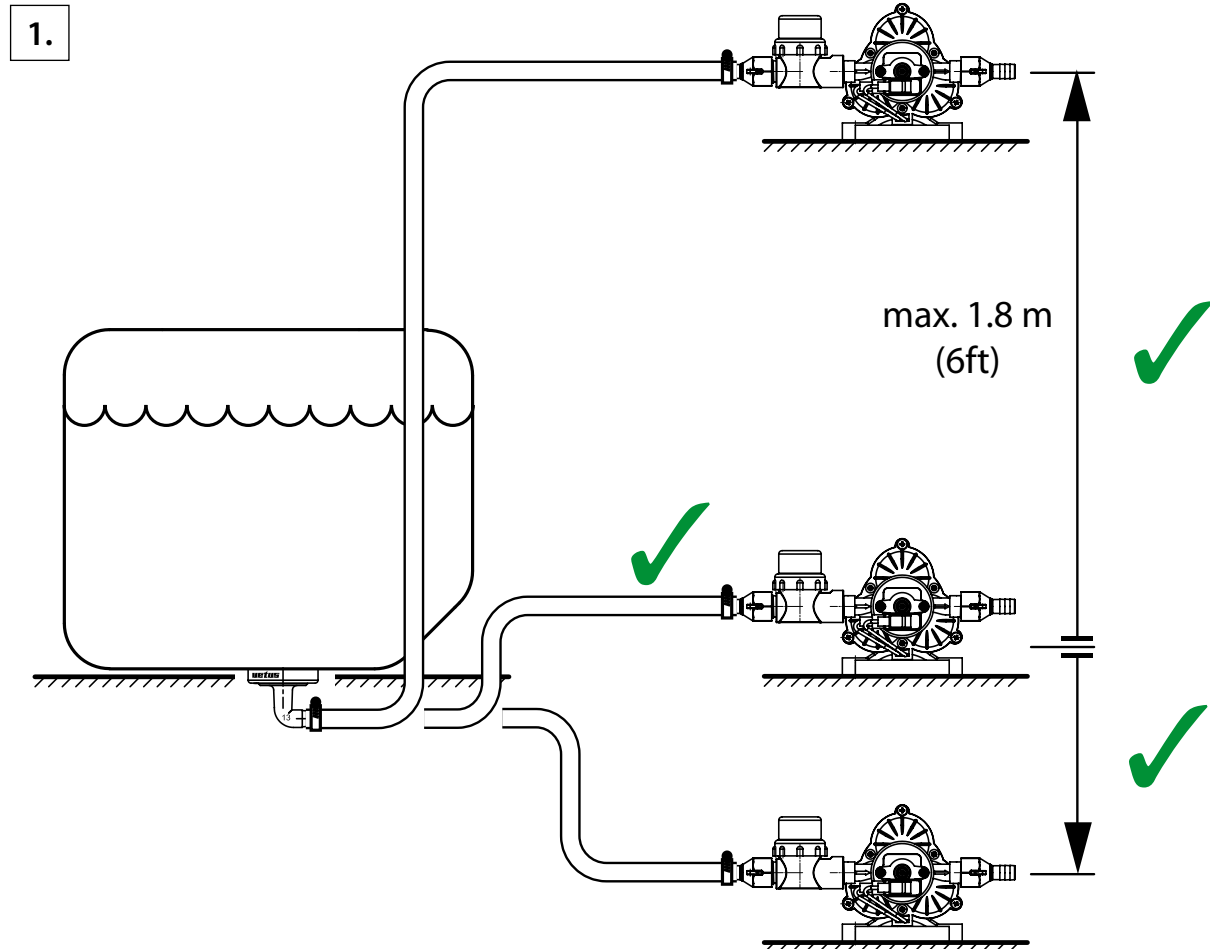


## Fresh Water Pump WP 8L, 13L, 20L

### 8 Connections



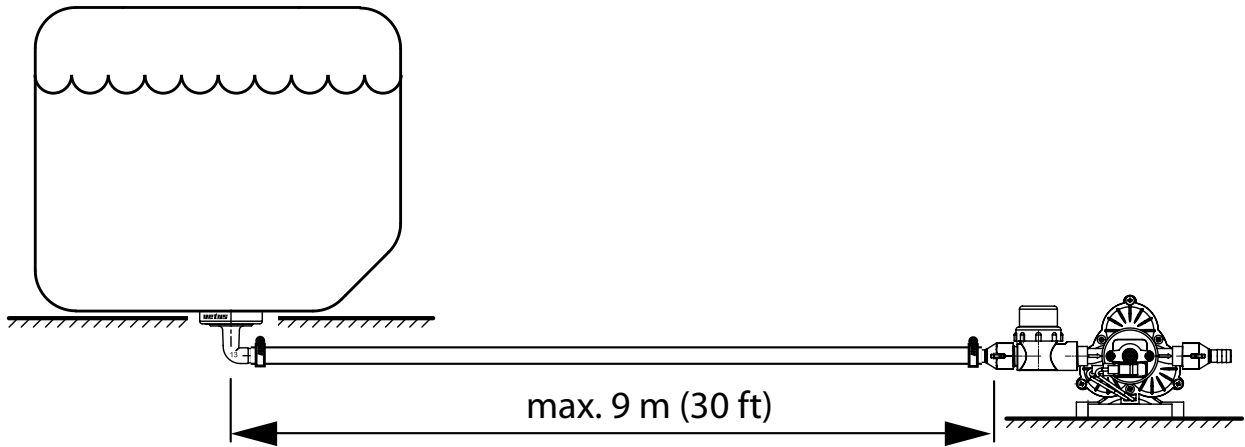
### 9 Installation recommendations



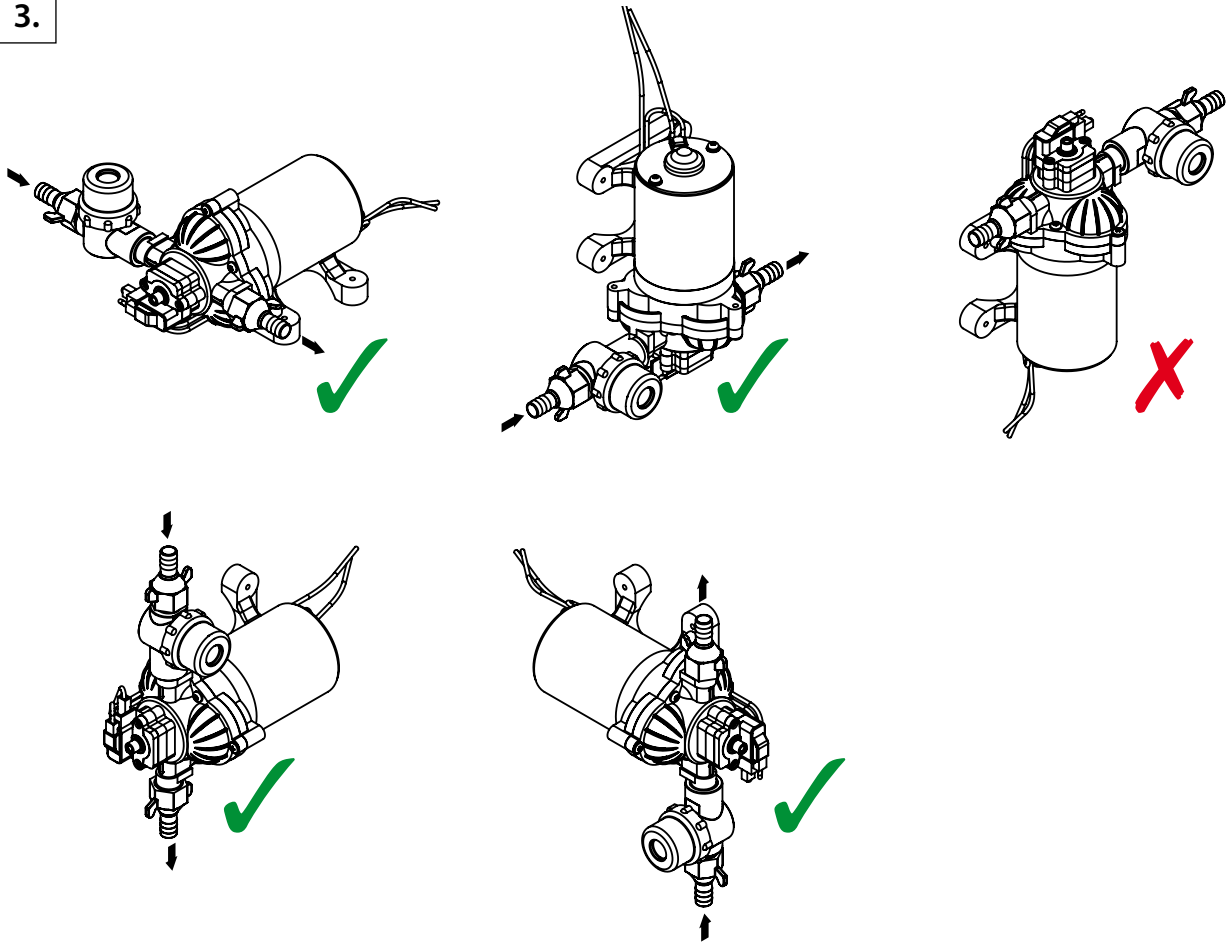


## Fresh Water Pump WP 8L, 13L, 20L

2.



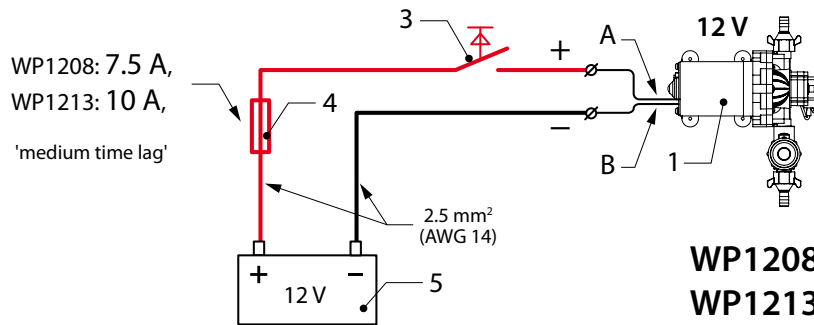
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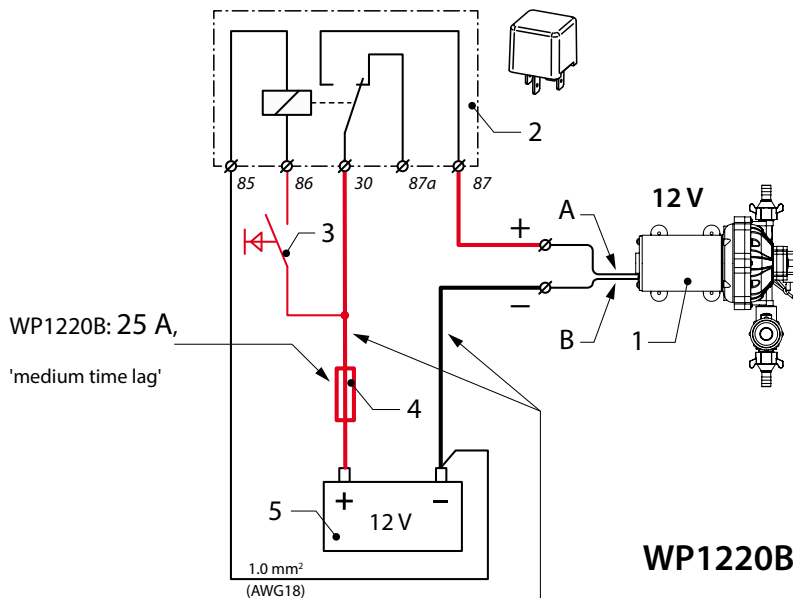
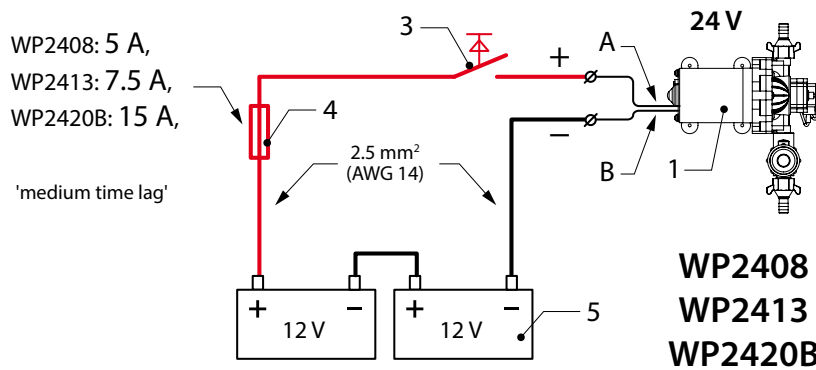
## Fresh Water Pump WP 8L, 13L, 20L

### 10 Wiring diagrams



- 1 Pump
- 2 Relay
- 3 Switch
- 4 Fuse
- 5 Battery

A Red  
B Black



Total length of positive and negative cables < > Wire cross-section

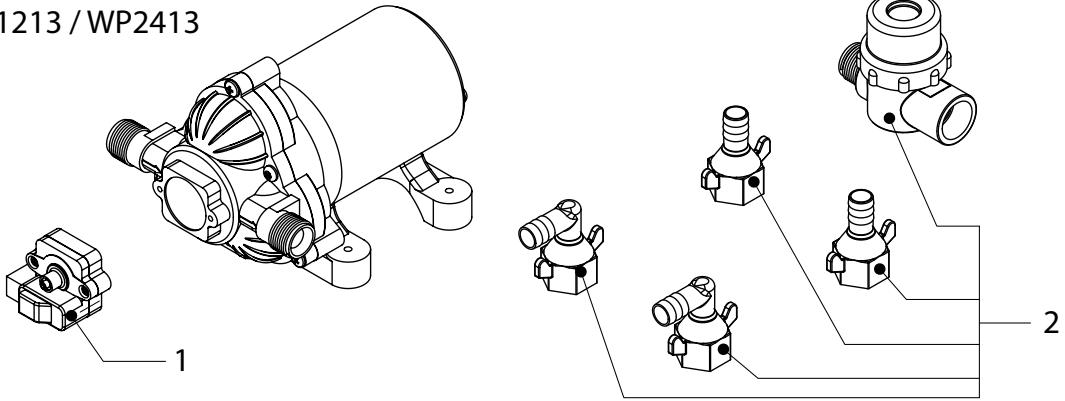
0 - 10 m	< - >	2.5 mm <sup>2</sup>	0 - 28 ft	< - >	AWG 14
10 - 16 m	< - >	4 mm <sup>2</sup>	28 - 44 ft	< - >	AWG 12



## Fresh Water Pump WP 8L, 13L, 20L

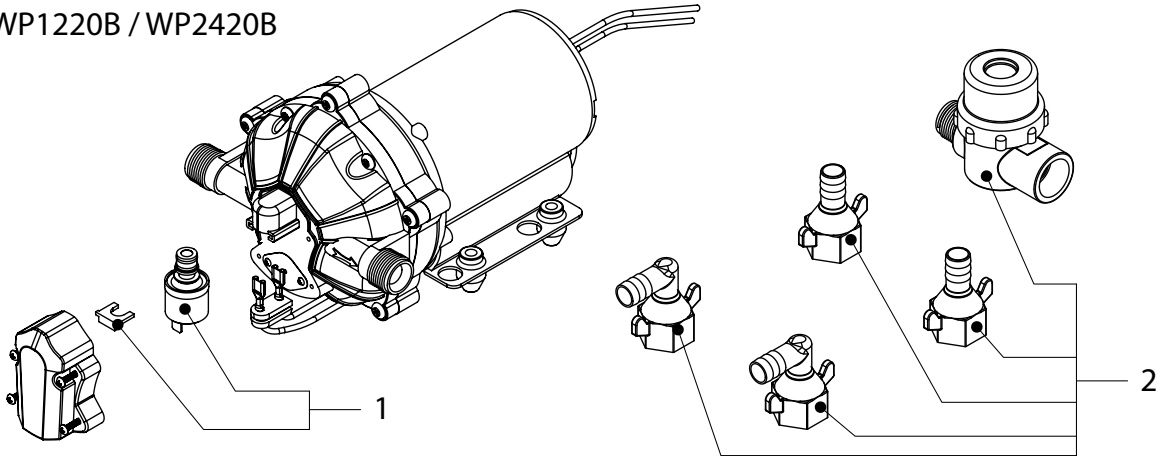
### 11 Service parts

WP1208 / WP2408  
WP1213 / WP2413



#	qty	part	description
1	1	WP2421	Pressure switch for WPXX08/WPXX13
2	1	WPSET	Set connection parts

WP1220B / WP2420B



#	qty	part	description
1	1	WP20PS	Pressure switch for WPXX20B
2	1	WPSET	Set connection parts

This product complies to the requirements of EC Directive: 2014/30/EU (EMC) (EN 55014, EN 61000)



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