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Installation Instructions

Patent Pending GB2445790A

We have the pleasure of introducing a completely new self-calibrating pressure switch designed to control the submersible water pumps fitted to most caravans and some motor homes.

The new unit is an in line adaptive system which measures the performance of the pump and constantly adjusts the start and stop pressures to suit the pump and battery voltage. Furthermore if the water container runs dry the pump is stopped after a short time, and the unit locks out to prevent damage to the pump until the water is refilled. There are no adjustments to be made.

All the old problems of existing pressure switches have been overcome and there are no cases of “pump chatter” or “pump run on” due to incorrect adjustment or low voltage. The unit switches the pump on and off without fuss and almost silently.

Electrical connections need to be made to the +ve 12 volt pump feed and –. If the unit is to be fitted to an inboard tank installation, a non-return valve must be fitted between the unit and the tank.

Where the caravan is fitted with a Whale Watermaster system (identified by the pressure adjustment being on the rear of the pump attachment housing) a different wiring loom is required so please contact us to send the correct loom and instructions to you.



Units are normally supplied with 12 mm push in pipe fittings plus 12 mm hose tails for use where flexible hoses are to be used. 15 mm push in pipe fittings can be supplied as an alternative but hose tails of this size must be purchased separately if required.

Installation.

Replacement of an existing pressure switch of the inline type.

Switch off power to the water pump, drain the water system then remove the existing pressure switch from the water pipes. If plumbed in 12 mm semi rigid piping do this by pressing in the release rings of the two straight connectors (which are part of the fittings where the plastic pipe enters them) and pulling the pipes out. Also carefully remove the two female connectors connecting the wires to the micro switch from the tabs on the micro switch (if two wires are joined by plug together connectors remove them as a pair and do not separate). Now push the pipe ends into the “T” piece which is part of the new unit, making sure the pipes are pushed fully home.(The pipe should push approximately 24mm into the `T`) If flexible pipes have been used, push the plain end of the supplied hose tails fully home into the “T” then attach the hoses as before. The flow direction does not matter. If possible stand the unit approximately upright as in the picture on page 1. using the pipe clip provided

NOTE

As with all plumbing products water must not remain in the unit at temperatures below freezing. Depending on pipe runs, experience has shown that water sometimes becomes trapped when the system is drained, so we would always recommend that the product is removed to a warm place for winter storage. If it is not possible to stand up as in the picture on page 1 operation will not be affected but water **WILL** enter the sensor and may freeze in winter causing damage. In this case it is therefore imperative that the unit is removed for winter storage.

Electrical Installation

Pump housings

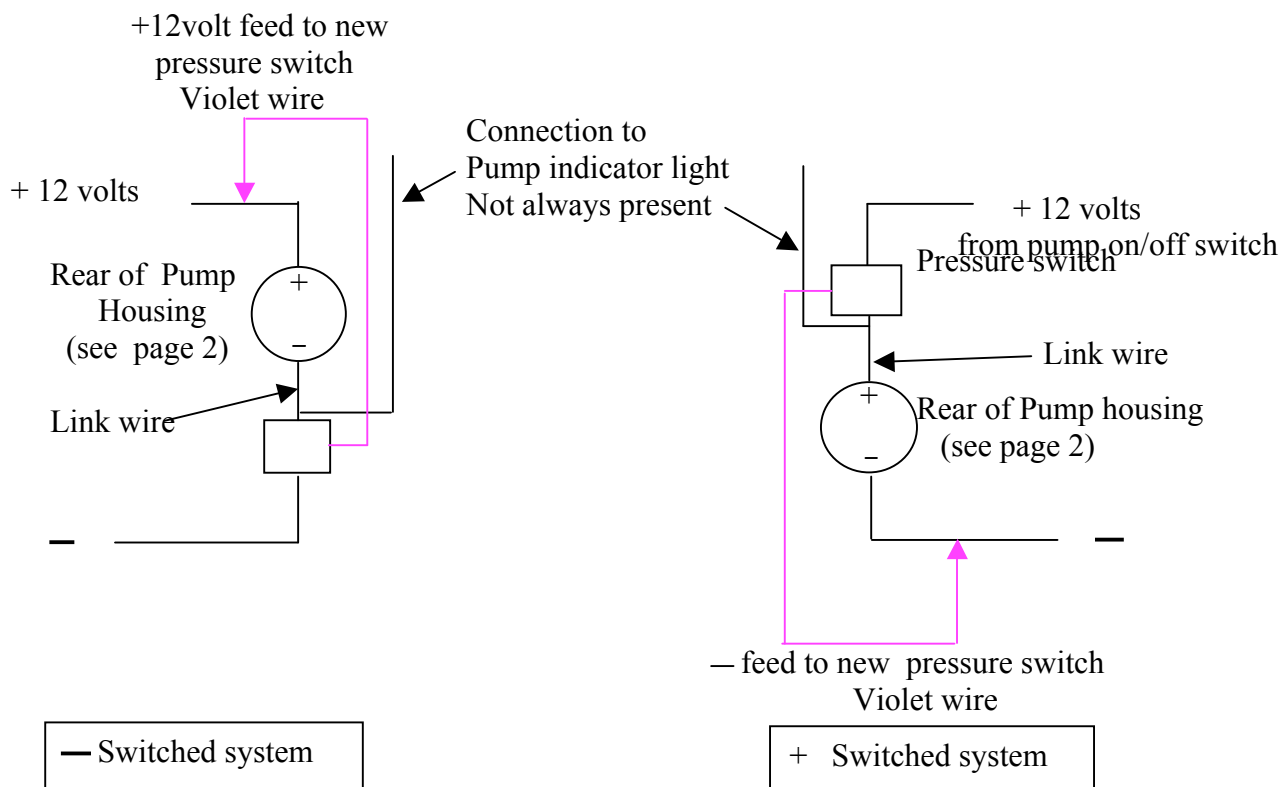


Pump housings viewed from inside caravan

The first job is to identify the type of housing fitted to the caravan. The important thing is to note the + & - symbols marked in the plastic. These have been marked on the photos above for clarity.

Because manufacturers of caravans wire pumps differently and with different coloured wire we will now identify whether the existing pressure switch switches the + or – to the pump.

New wire shown in **VIOLET**



The purpose of the above drawings is as an aid and there is no need to fully understand them.

The important thing is to find the Link Wire. This runs between the pressure switch and the pump housing. It can be found by checking the colour of the four connections (two at the pump housing and the two female connectors that have previously been removed from the old pressure switch). The same colour will be present at one of the pump connections and one of the female connectors showing that it is the same piece of wire. Colour could be anything. This is the link wire. It is likely that another wire will also be terminated with the link wire at one end but ignore this. Connect the two female connectors previously removed from the old pressure switch to the two male spades on the new unit which presently have no connections, either way round is OK. See diagram on page 4.

+ switched system

At the pump housing end, if the Link wire is connected to the + terminal (see picture of your housing.) the violet wire from the new unit must be connected to the wire going to the - terminal of the **pump housing** using the Scotch connector supplied.

ALTERNATIVELY

- switched system

At the pump housing end, if the link wire is connected to the - terminal (see picture of your housing.) the violet wire from the new unit must be connected to the wire going to the + terminal of the **pump housing** using the Scotch connector supplied.

Plan B

If the link wire can't be identified don't worry. Simply make sure the water pump is fitted to the housing, then power the system up by turning on the pump switch and touch the violet wire on to, first the - terminal then the + terminal of the pump housing (try both). With no connection and in one position the relay in the unit and the pump will probably vibrate and in the other position the pump will run faster and with more power, this is the correct terminal. Now turn off the power and connect the violet wire to the wire going to this correct terminal using the Scotch connector. It is not possible to cause damage by incorrect connection for a short time.

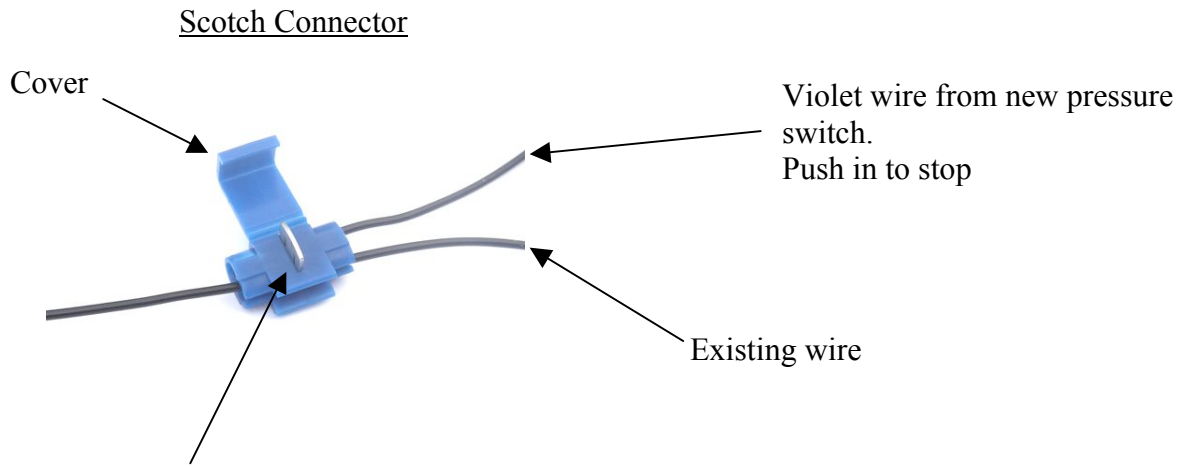
Commissioning

Now this is the easy bit. Fit the pump to the pump housing, switch the water pump on then prime the system as usual by opening the hot water tap until all the air is expelled. Now close the tap and leave the unit to adjust itself to your water system. The pump should not run for more than a further 10 seconds but probably less. In normal use the pump will run for approximately seven seconds after the tap is shut. If it takes more time than this repeatedly after all air has been expelled, the violet wire is not connected correctly and should then be connected to the other terminal of the **pump housing** and tested again. Finally if the pump starts and stops repeatedly it is probably due to a leak, or a faulty non-return valve on the inlet housing. If the latter the valve should be cleaned and if necessary the “O” ring can be changed if the inlet housing is made by Truma or Carver .

Should the unit lock out due to running out of water, refill the Aquaroll, then using the pump switch break power to the pump for approximately three seconds before switching on again

PLEASE NOTE

The dry run protection (water container empty) only becomes operative three minutes after the unit has been switched on so please ensure the Aquaroll contains water before switching on or resetting the system. From then on the pump will be stopped if pressure is too low for a period of ten seconds. If the supply voltage to the unit falls suddenly (for example if the mains charger is disconnected) the pump may run for thirty seconds after running a tap before adjusting to the new lower pressure.



After inserting wires, press metal tab down until flush with the plastic using pliers then close cover.

