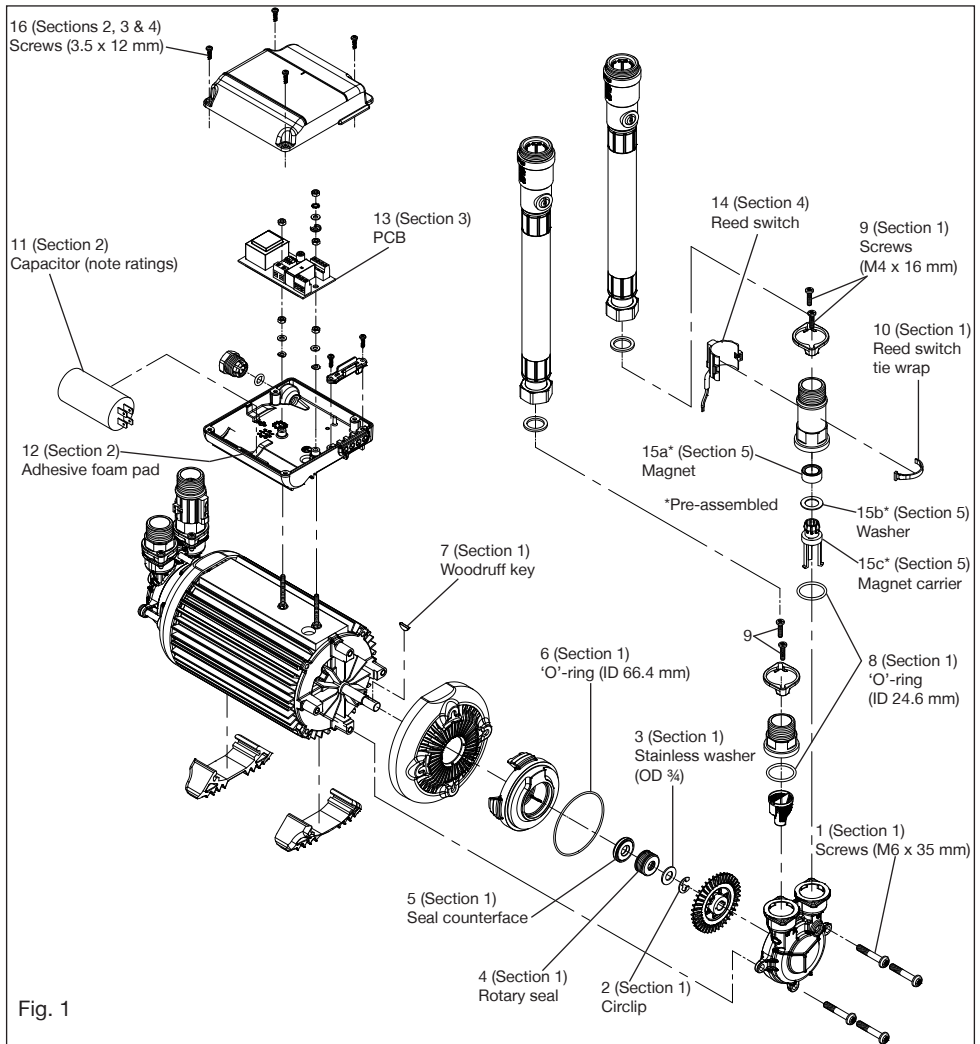


## INSTALLATION INSTRUCTIONS

### SERVICE KIT - MONSOON STANDARD Part No. 28452



Note: 1) Quantities are to cover a twin pump, singles use half.  
2) See relevant section for detailed instructions.

● **COMPLETE KIT CONTENTS**

This kit contains parts for a range of different pump types - please ensure you correctly identify the relevant parts for the pump being serviced before commencing. Also refer to the relevant section for detailed instructions for the correct installation of the parts.



**Fitting of incorrectly identified parts could lead to pump failure. If in doubt contact PumpAssist on +44 (0) 800 31 969 80.**

ITEM		QTY	ITEM		QTY
1	Screws (M6 x 35 mm)	8	10	Reed Switch Tie Wrap	2
2	Circlip	2	11	Capacitor (1 off each variant)	4
3	Stainless Washer (OD ¾)	2	12	Adhesive Foam Pad	1
4	Rotary Seal Assembly	2	13	PCB	1
5	Seal Counterface	2	14	Reed Switch	2
6	‘O’-Ring (ID 66.4 mm)	2	15	Magnetic Float Assembly	2
7	Woodruff Key	2	16	Screws (3.5 x 12 mm)	4
8	‘O’-Ring (ID 24.6 mm)	4	17	Seal Applicator Tool (not shown)	1
9	Screws (M4 x 16 mm)	8			

Check to see that you have all the above items and that they are not damaged. If any damage is found contact Stuart Turner Ltd within 24 hours of receipt.

● **PUMP PREPARATION**

To prepare the pump to accept the service kit parts, each pump part must be removed noting its exact position and sequence (Fig. 1).

Now clean all the individual parts. Before fitting the new service kit parts, the pump and seal type must be identified.

● **CONTENTS**

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Section 1    Mechanical seal replacement .....	3
Section 2    Capacitor replacement. ....	7
Section 3    Printed circuit board replacement .....	10
Section 4    Reed switch replacement .....	14
Section 5    Magnetic float assembly replacement .....	17

# SECTION 1 - MECHANICAL SEAL REPLACEMENT

The parts required to replace the seal are:

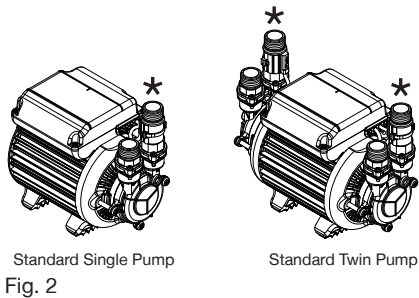
ITEM		QTY	ITEM		QTY
1	Screws (M6 x 35 mm)	4	7	Woodruff Key	1
2	Circlip	1	8	'O'-Ring (ID 24.6 mm x 2.4 mm c/sec)	2
3	Stainless Washer (OD ¾)	1	9	Screws (M4 x 16 mm)	2
4	Rotary Seal Assembly	1	10	Reed Switch Tie Wrap	2
5	Seal Counterface	1	17	Seal Applicator Tool (not shown)	1
6	'O'-Ring (ID 66.4 mm x 1.78 mm c/sec)	1			

- DISASSEMBLY**

To access the mechanical seal assembly the flow switch assemblies must first be removed (Fig. 2).

Flow Switch Assemblies:-

★Flow switch body assembly



To identify which components are required, the following exploded view details the pump components along with the serviceable parts.

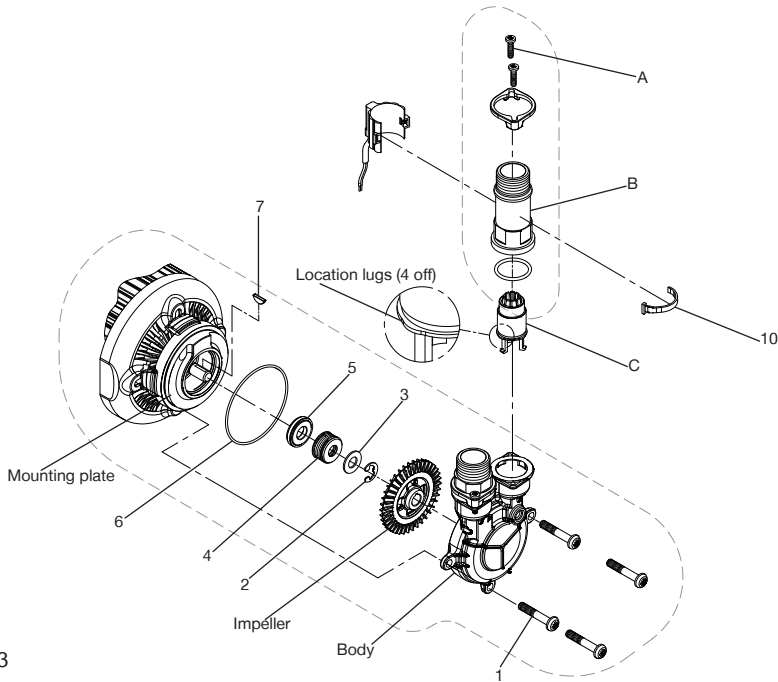


Fig. 3

To disassemble the pump, the following items are required to be removed in the sequence detailed (Fig. 3).

- Remove screws (A) and lift flow switch body complete with reed switch (B) away and position next to pump ensuring no stress is placed on the cable.
- Magnet carrier and flow switch adaptor (C) may separate from flow switch body (B) during disassembly as shown.
- Remove 4 screws (item 1) and gently prise off the pump body – note 'O'-ring (item 6) between pump body and mounting plate.
- Slide impeller away from shaft and remove woodruff key (item 7) – (see note: Fig. 4).
- Remove circlip (item 2) and mechanical seal parts. (items 3 & 4).
- Gently prise off mounting plate.
- Remove Counterface (item 5) from its mounting plate location.
- Note: Other parts are supplied in this kit and can be used as shown in Fig. 3 if replacement required.

**Note:**

Difficulties may be experienced in the removal of the impeller. To overcome this, two screwdrivers can be used to gently lever the impeller away from the shaft as detailed (Fig. 4), ensuring equal pressure is applied to each side of the component to avoid bending the shaft.

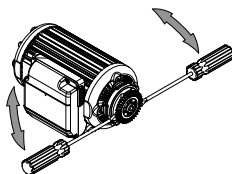


Fig. 4

**NOTE: DO NOT USE EXCESSIVE FORCE, AS THIS MAY DAMAGE THE COMPONENTS**

Cont ...

## ● MAINTENANCE & CARE BEFORE REASSEMBLY

To allow ease of reassembly, along with correct functioning of the pump, the following points on reassembly are necessary:

- All pump parts must be free from debris and assembled in the correct order.
- The impeller must be a slide fit on the shaft.
- The seal must always be replaced as a complete unit.

## ● SEAL IDENTIFICATION & ASSEMBLY

The seal is shown in order of identification in Fig 5.

A Seal Counterface complete with rubber cup washer.

B Rotary seal assembly.

C Stainless steel Washer.

D Seal retaining clip.

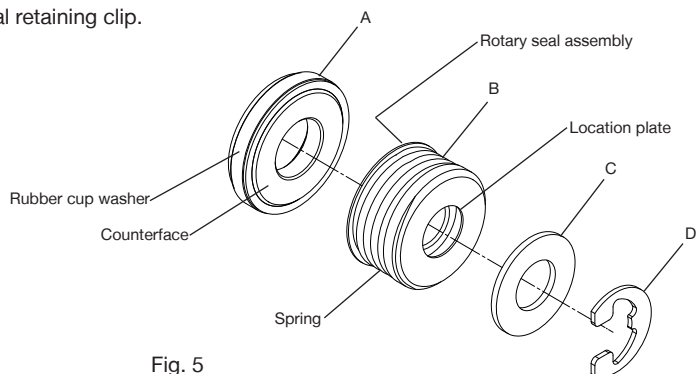


Fig. 5

To assemble the seal correctly, the shaft must be clean and the following steps carried out.

1. Use End 1 of the applicator tool to push the seal counterface (item A) firmly into the housing, ensuring it is located flat against the back of the mounting plate housing.
2. Now use End 2 of the applicator tool to push the rotary section of the seal assembly (item B) onto the motor shaft until it is flat against the seal counterface (Fig. 6). The shaft may be lubricated with clean water to assist assembly.

Assemble the spring and location plate onto the shaft so as to complete the seal bellows assembly (Fig. 7)

3. The washer (item C) can then be placed on the shaft and the whole assembly held into position by locating the Circlip (item D) in the groove and pushing it into position (Fig. 8)

**WARNING:** Do not install the circlip onto full shaft diameter, it must only be located in the groove.

Fig. 6

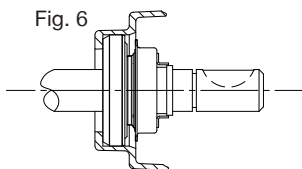


Fig. 7

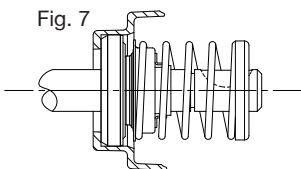


Fig. 8

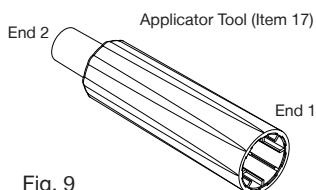
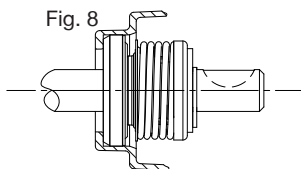


Fig. 9

Cont ...

- **REASSEMBLY**

- Upon reassembly ensure the locating 'lugs' of the magnet, carrier assembly (C) locate accordingly with the corresponding location slots in the pump body. Re-fix flow switch assembly (B) and secure screws (A) to a torque of 1.5 Nm.
- Reassembly of the remaining pump parts is the reverse of disassembly instructions, ensuring all re-used parts are clean, and new replacement parts fitted as required.
- Secure pump body screws to a torque of 2.6 Nm (item 1).

- **INITIAL OPERATING INSTRUCTIONS**

- Consult instruction manual for commissioning instructions.
- Do not run pump dry. Allow the water to be pumped to enter the pump body thus ensuring the seal is lubricated before switching the pump on. Failure to do this will damage the seal.
- Carefully check pump and pipework for leaks whilst pump running and stationary before leaving the installation unattended.

# SECTION 2 - CAPACITOR REPLACEMENT

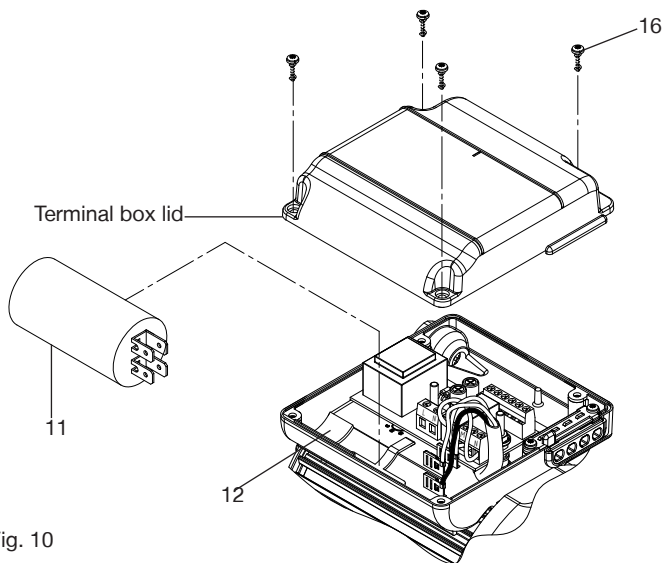


Fig. 10

The parts required to replace the capacitor are:

ITEM		QTY	ITEM	QTY
11	Capacitor	1	16	Screws (3.5 x 12 mm)
12	Adhesive Foam Pad	1		4

## ● CAPACITOR - USED ON MONSOON STANDARD PUMPS

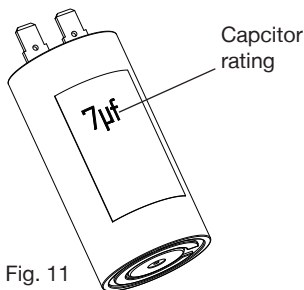


Fig. 11

5 µf	-	S2.0 / S3.0 bar Single
7 µf	-	S1.5 bar Twins – S4.5 bar Singles
10 µf	-	S4.0 bar Twin
12 µf	-	S4.5 bar Twin

## ● DISASSEMBLY



- Isolate electrical supply before fitting replacement part.
- Replacing the capacitor, should only be carried out by a competent person.
- The supply cord and internal wiring within the terminal box are routed and secured to ensure compliance with the electrical standard EN 60335-1. It is essential that prior to any disturbance of this internal wiring, all cable routing and securing details are carefully noted to ensure reassembly to the same factory pattern is always maintained.

Cont ...

Reference Fig 10:

- Remove 4 screws (item 16), and carefully remove terminal box lid.
- **IMPORTANT:** Take note of capacitor wiring connection and colours before removal.  
Disconnect and remove capacitor (item 11) and foam securing pad (item 12), make note of pad fitted position.



**Damaged components must be replaced. Contact Stuart Turner for advice on replacements not supplied with kit.**

- **REASSEMBLY**

Reassembly is the reverse of the disassembly instructions, with new replacement parts fitted as required.

Note: For correct installation the capacitor must be connected, secured and positioned as detailed (Figs. 12, 13 & 14).

Secure terminal box lid screws to a torque of 0.8 Nm (item 16).

**IMPORTANT NOTE:** For correct pump rotation, ensure both blue wires are connected to the linked capacitor terminals as shown.

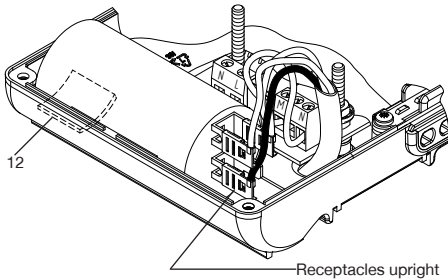


Fig. 12

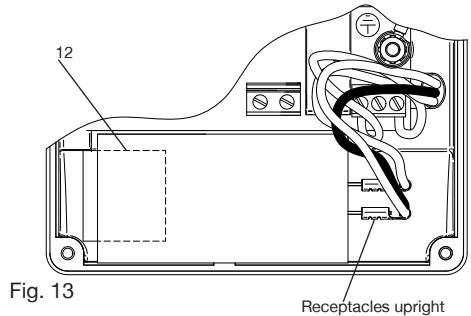


Fig. 13

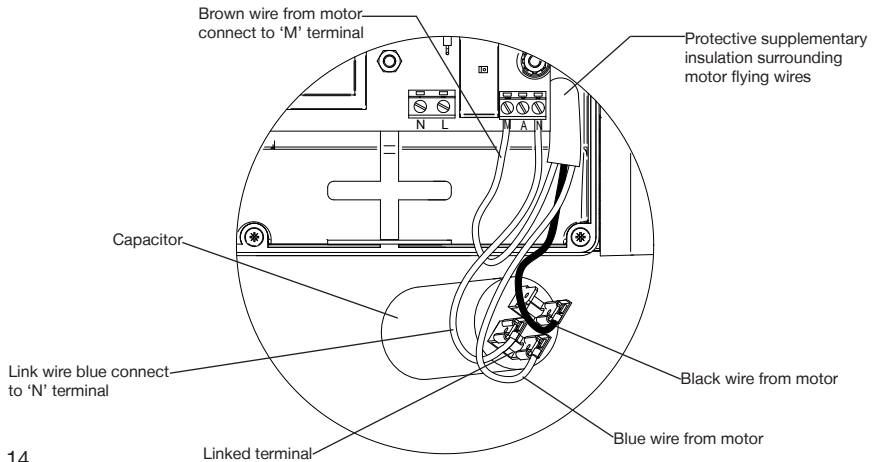


Fig. 14

Cont ...



- **INITIAL OPERATING INSTRUCTIONS**

- Consult instruction manual for commissioning instructions.
- Do not run pump dry. Allow the water to be pumped to enter the pump body thus ensuring the seal is lubricated before switching the pump on. Failure to do this will damage the seal.
- Carefully check pump and pipework for leaks whilst pump running and stationary before leaving the installation unattended.

# SECTION 3 - PRINTED CIRCUIT BOARD REPLACEMENT

The parts required to replace the PCB are:

ITEM		QTY	ITEM		QTY
12	Adhesive Foam Pad	1	16	Screws (3.5 x 12 mm)	4
13	Printed Circuit Board	1			

● **Fault Finding**

The PCB is also fitted with a “power on” indicator light. This will remain illuminated when mains power is supplied to the board.

The indicator light is located on the PCB within the terminal box.



**This operation should only be carried out by a competent person**

To view the light the following procedure must be followed:-

- Isolate the mains electrical power supply from the pump.
- Remove the four screws (item 16) retaining the terminal box lid (Fig. 15).
- Lift the terminal box lid off.
- **IMPORTANT** – Ensure there is no contact with any of the internal parts of the terminal box.
- Briefly reconnect the mains power supply to the pump – the indicator light should illuminate if the pump has been correctly wired.
- Isolate the mains electrical power supply from the pump.
- Re fit the terminal box lid ensuring no cables are trapped.
- Re fit the four terminal box lid retaining screws, tighten to 0.8 Nm.

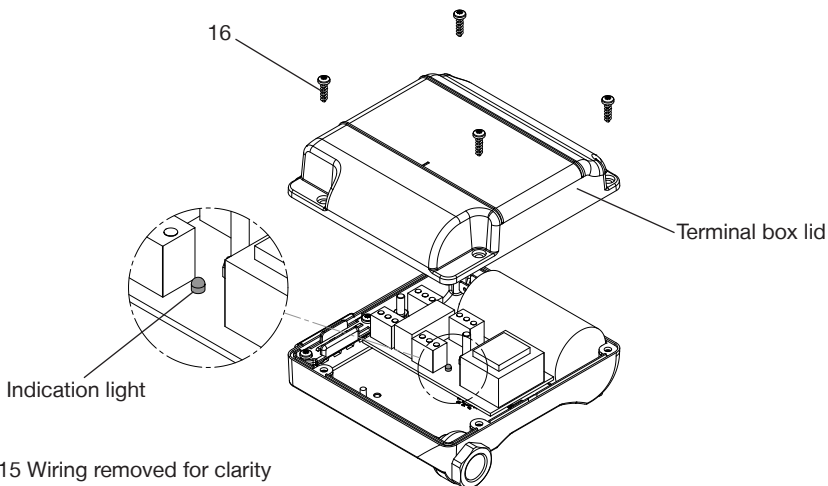


Fig. 15 Wiring removed for clarity

● **WIRING DIAGRAM**

Fig.	Pump	UK	Eire
16	Monsoon Standard 1.5 bar Twin	✓	-
	Monsoon Standard 2.5 bar Twin	✓	✓
	Monsoon Standard 3.5 bar Twin	✓	✓
	Monsoon Standard 4.1 bar Twin	✓	✓
	Monsoon S1.5 bar Twin	✓	✓
	Monsoon S2.0 bar Twin	✓	✓
	Monsoon S3.0 bar Twin	✓	✓
	Monsoon S4.0 bar Twin	✓	✓
	Monsoon S4.5 bar Twin	✓	✓
17	Monsoon Standard 1.5 bar Single	✓	✓
	Monsoon Standard 2.5 bar Single	✓	✓
	Monsoon Standard 3.5 bar Single	✓	✓
	Monsoon S2.0 bar Single	✓	✓
	Monsoon S3.0 bar Single	✓	✓
	Monsoon S4.5 bar Single	✓	✓

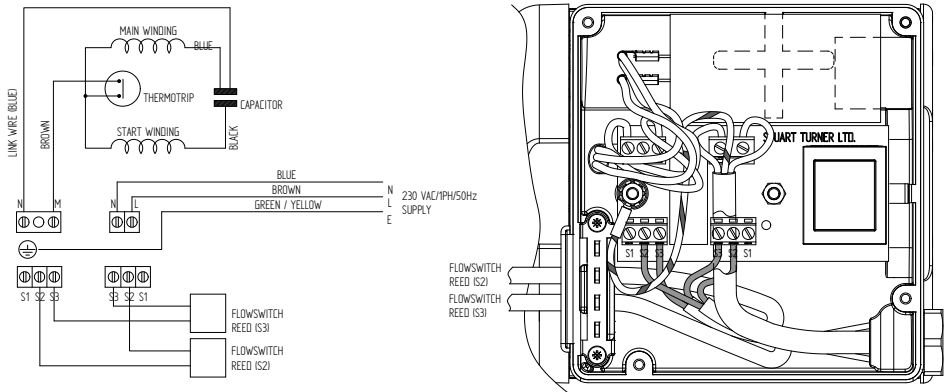


Fig. 16

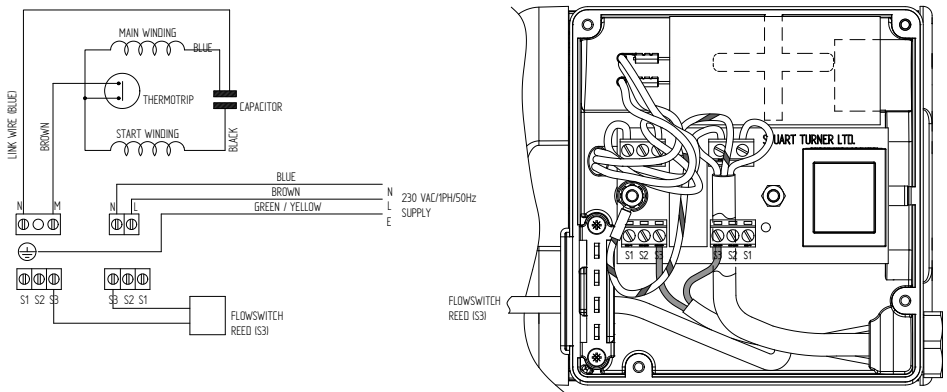


Fig. 17

Cont ...

## ● DISASSEMBLY



- Isolate electrical supply before fitting replacement part.
- Replacing the PCB should only be carried out by a competent person.
- The supply cord and internal wiring within the terminal box are routed and secured to ensure compliance with the electrical standard EN 60335-1. It is essential that prior to any disturbance of this internal wiring, all cable routing and securing details are carefully noted to ensure reassembly to the same factory pattern is always maintained.

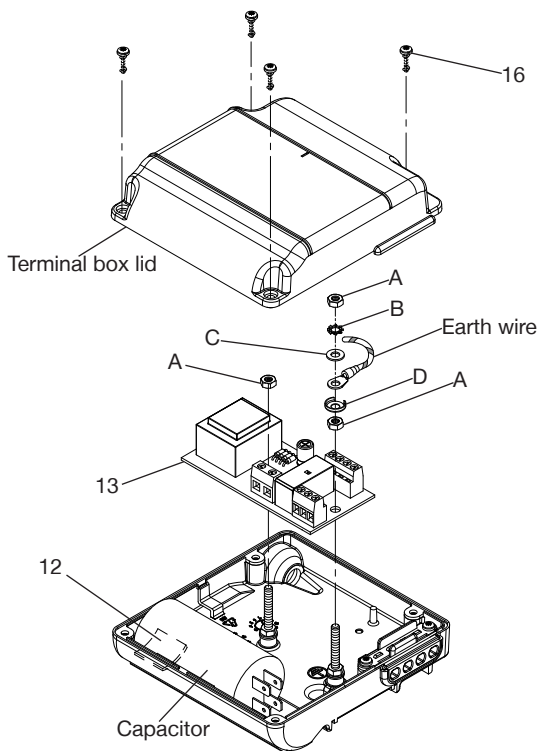


Fig. 18

Reference Fig 18.

- Remove four screws (Item 16) and carefully remove terminal box lid.
- **IMPORTANT:** Take note of capacitor wiring connection and colours **before removal**.
- Disconnect and remove capacitor, and foam securing pad (Item 12) make note of pad fitted position.
- Remove M4 nut (Item A) then M4 lock washer (Item B) and plain washer (Item C), this allows removal of earth wire and cup washer (Item D).
- Disconnect all wiring from terminal blocks on printed circuit board (PCB Item 13).
- Remove two M4 nuts (item A) and carefully lift PCB (Item 13) away from terminal box.



**Damaged components must be replaced. Contact Stuart Turner for advice on replacements not supplied with kit.**

Cont ...

## ● REASSEMBLY

Reassembly is the reverse of the disassembly instructions with the new replacement parts fitted as required.

Note: For correct installation the capacitor must be secured and positioned as detailed in Figs. 19 & 20.

Secure PCB nuts to a torque of 1.5 Nm (item A).

Secure terminal box lid screws to a torque of 0.8 Nm (item 16).

**IMPORTANT NOTE:** For correct pump rotation, ensure both blue wires are connected to the linked capacitor terminals as shown.

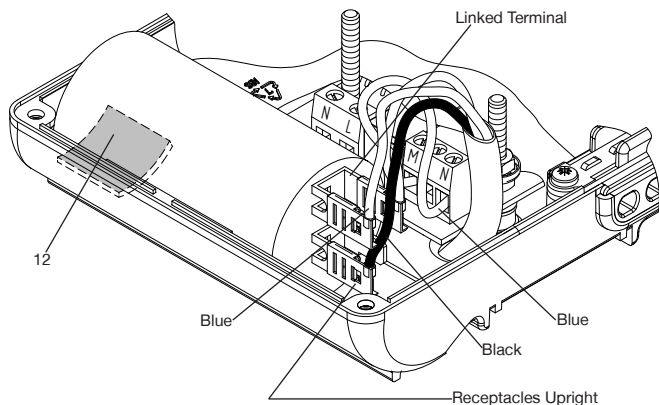


Fig. 19

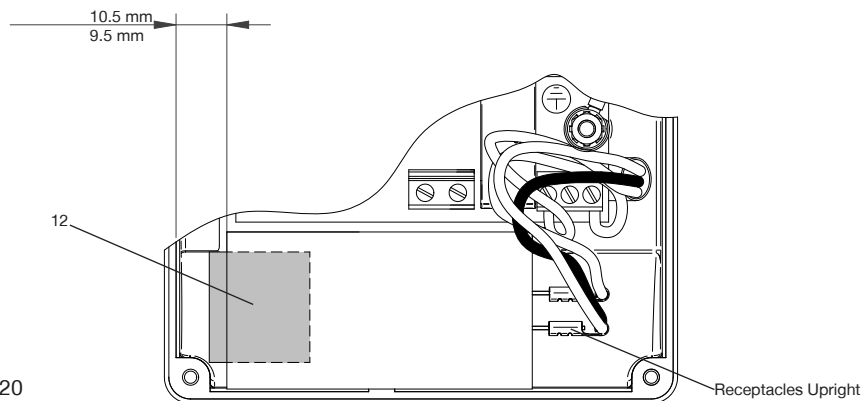


Fig. 20

## ● INITIAL OPERATING INSTRUCTIONS

- Consult instruction manual for commissioning instructions.
- Do not run pump dry. Allow the water to be pumped to enter the pump body thus ensuring the seal is lubricated before switching the pump on. Failure to do this will damage the seal.
- Carefully check pump and pipework for leaks whilst pump running and stationary before leaving the installation unattended.

Cont ...

# SECTION 4 - REED SWITCH REPLACEMENT

The parts required to replace the reed switch are:

ITEM		QTY	ITEM	QTY	
10	Reed Switch Tie Wrap	1	16	Screws (3.5 x 12 mm)	4
14	Reed Switch	1			
● <b>WIRING DIAGRAMS</b>					
Fig.	Pump	UK	Eire		
21	Monsoon Standard 1.5 bar Single	✓	✓		
	Monsoon Standard 2.5 bar Single	✓	-		
	Monsoon Standard 3.5 bar Single	✓	✓		
	Monsoon S2.0 bar Single	✓	✓	} Manufactured from October 2009	
	Monsoon S3.0 bar Single	✓	✓		
	Monsoon S4.5 bar Single	✓	✓		
<hr/>					
22	Monsoon Standard 1.5 bar Twin	✓	✓		
	Monsoon Standard 2.5 bar Twin	✓	✓		
	Monsoon Standard 3.5 bar Twin	✓	✓		
	Monsoon Standard 4.1 bar Twin	✓	✓		
	Monsoon S1.5 bar Twin	✓	✓	} Manufactured from October 2009	
	Monsoon S2.0 bar Twin	✓	✓		
	Monsoon S3.0 bar Twin	✓	✓		
	Monsoon S4.0 bar Twin	✓	✓		
	Monsoon S4.5 bar Twin	✓	✓		

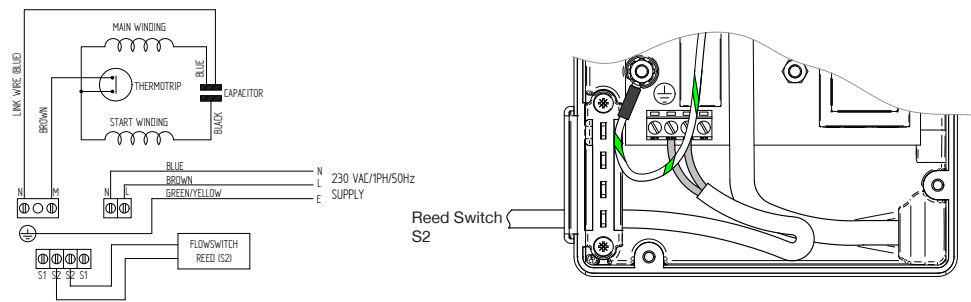


Fig. 21

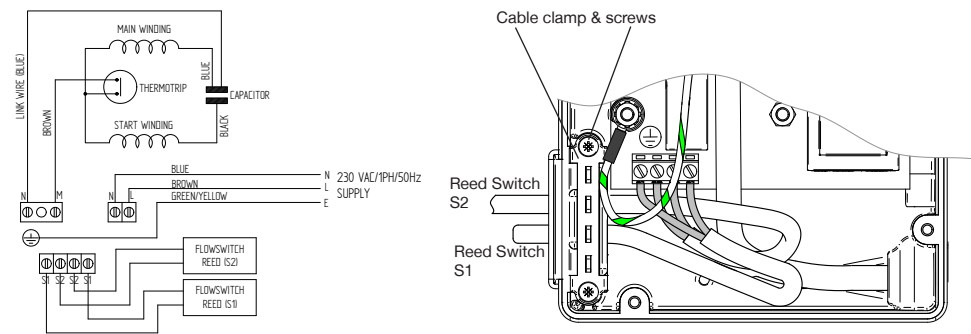


Fig. 22

Cont ...

## ● DISASSEMBLY



- Isolate electrical supply before fitting replacement part.
- Replacing the reed switch components should only be carried out by a competent person.
- The supply cord and internal wiring within the terminal box are routed and secured to ensure compliance with the electrical standard EN 60335-1. It is essential that prior to any disturbance of this internal wiring, all cable routing and securing details are carefully noted to ensure reassembly to the same factory pattern is always maintained.

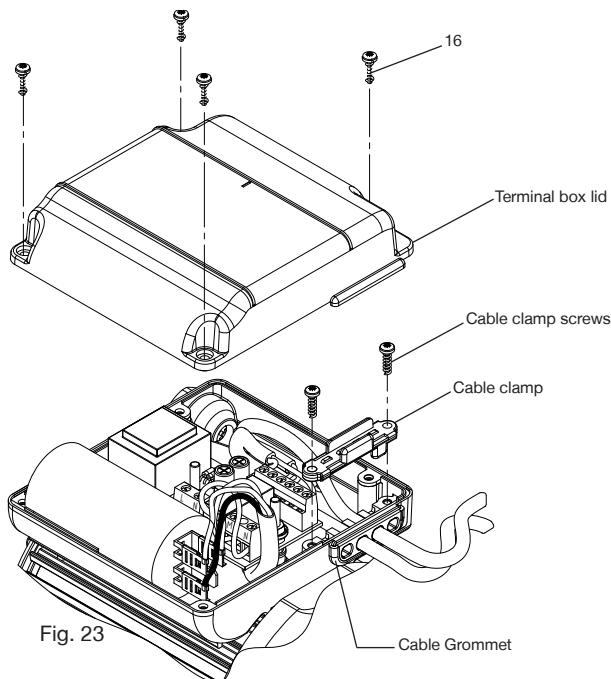


Fig. 23

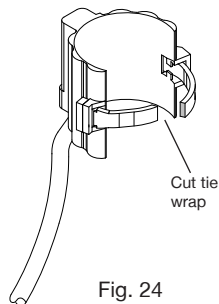


Fig. 24

- Remove four screws (item 16) and carefully remove terminal box lid (Fig. 23).
- Note the cable routing within the terminal box (Figs. 21 or 22).
- Identify, disconnect and remove the reed switch wiring from the terminal block (Figs. 21 or 22).
- **IMPORTANT** – take note of the cable clamp orientation before removal, as reassembly in the original factory orientation is essential. Remove two screws and cable clamp, this allows any reed or pressure switch cables to be removed from the terminal box (Fig. 23).
- Remove the reed switch cable from the terminal box by gently sliding the cable out through the grommet, ensuring no damage to the grommet sealing area (Figs. 21 or 22).
- Remove the existing reed switch by cutting the securing tie wrap and pulling away from the body Fig. 24.



**Damaged components must be replaced. Contact Stuart Turner for advice on replacements not supplied with kit.**

Cont ...

## ● REASSEMBLY

Reassembly is the reverse of the disassembly instructions with the new replacement parts fitted as required.

Secure cable clamp screws and terminal box lid, to a torque of 0.8 Nm.

Note: For correct operation of the flow switch, the reed must be secured to the body as detailed below.

Firstly feed the tie wrap through the retainer on the reed switch, ensuring that the tie wrap serrations are facing outward (Fig 25).

Now locate the reed switch within the body groove as highlighted X-X (Fig. 26), and feed the tie wrap through the second catch.

The tie wrap can now be pulled tight to secure the reed and the excess cut to length (Fig. 27).

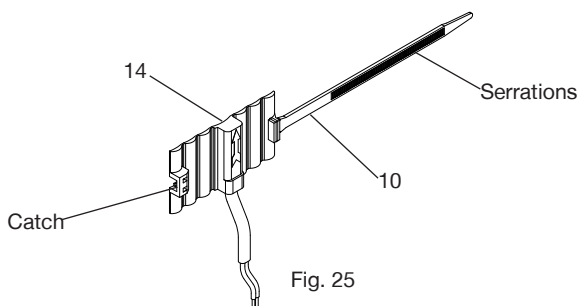


Fig. 25

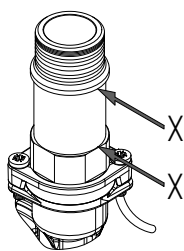


Fig. 26

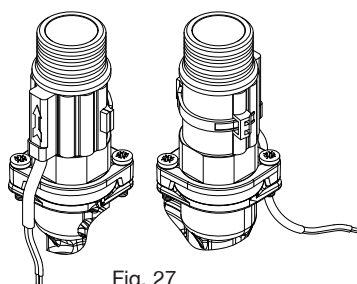


Fig. 27

## ● INITIAL OPERATING INSTRUCTIONS

- Consult instruction manual for commissioning instructions.
- Do not run pump dry. Allow the water to be pumped to enter the pump body thus ensuring the seal is lubricated before switching the pump on. Failure to do this will damage the seal.
- Carefully check pump and pipework for leaks whilst pump running and stationary before leaving the installation unattended.



# SECTION 5 - MAGNETIC FLOAT ASSEMBLY REPLACEMENT

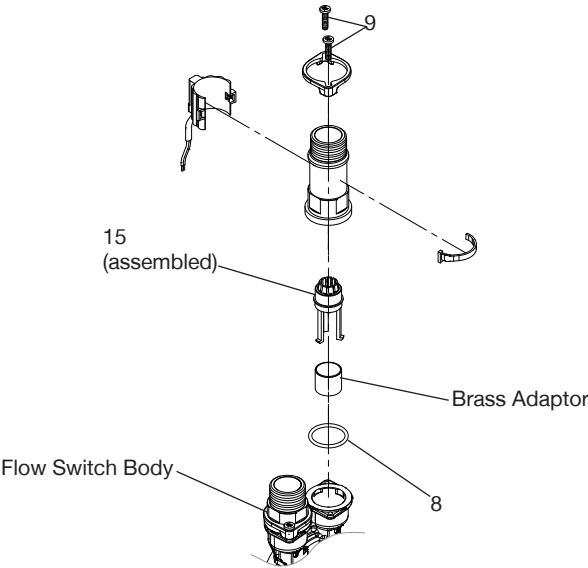


Fig. 28

The parts required to replace the magnetic float assembly are:

ITEM		QTY	ITEM		QTY
8	'O'-Ring (ID 24.6 mm)	1	15	Magnetic Float Assembly	1
9	Screws (M4 x 16 mm)	2			

● **DISASSEMBLY**



- **Isolate electrical supply before fitting replacement part.**

- Remove screws (item 9) and lift float switch body away from pump (Fig 28), note 'O'-ring (item 8).
- To remove magnetic float assembly pull the brass adaptor out from the flowswitch body (Fig. 29).
- Completely remove magnetic float assembly pushing the three legs in and moving the assembly up (Fig. 30).



**Damaged components must be replaced. Contact Stuart Turner for advice on replacements not supplied with kit.**

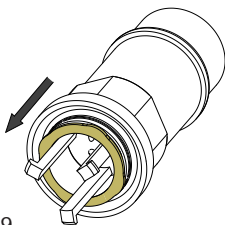


Fig. 29

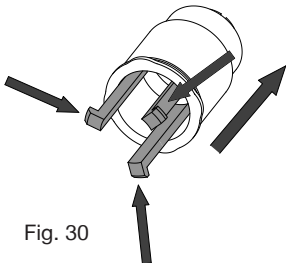


Fig. 30

Cont ...

- **REASSEMBLY**

- Before reassembly clean and remove limescale from the brass adaptor and the inside of the flowswitch body.
- Reassembly is the reverse of the disassembly instructions with the new replacement parts fitted as required.

- **INITIAL OPERATING INSTRUCTIONS**

- Consult instruction manual for commissioning instructions.
- Do not run pump dry. Allow the water to be pumped to enter the pump body thus ensuring the seal is lubricated before switching the pump on. Failure to do this will damage the seal.
- Carefully check pump and pipework for leaks whilst pump running and stationary before leaving the installation unattended.

Stuart Turner reserves the right to amend specifications without notice.





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