INSTALLATION INSTRUCTIONS

SERVICE KIT - FLOMATE MAINS BOOST EXTRA Part No. **28504**

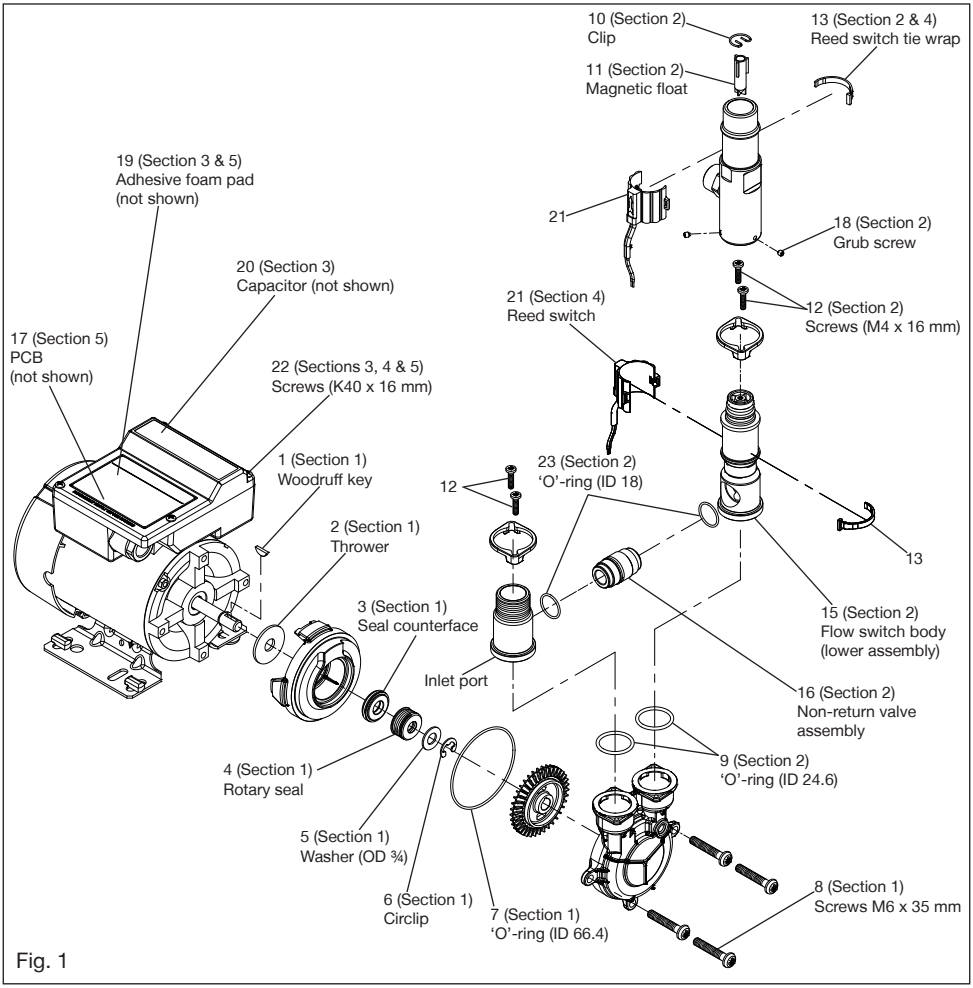


Fig. 1

Note: 1) Items 15 and 16 are pre-assembled parts, see relevant section for detailed instructions.
2) See relevant section for detailed instructions.

Cont ...

- **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	Woodruff Key	1	13	Reed Switch Tie Wrap	2
2	Thrower	1	14	Seal Applicator Tool	1
3	Seal Counterface	1	15	Flow Switch Body (Lower Assembly)	1
4	Rotary Seal	1	16	Non-Return Valve Assembly	1
5	Washer (ID 3/8 "x OD ¾ ")	1	17	PCB (not shown)	1
6	Circlip	1	18	Grub Screw	3
7	'O'-ring (ID 66.40, c/sec 1.78)	1	19	Adhesive Foam Pad (not shown)	1
8	Screws (M6 x 35 mm)	4	20	Capacitor (not shown)	1
9	'O'-ring (ID 24.6 mm)	2	21	Reed Switch	2
10	Clip	1	22	Screws (K40 x 16 mm)	4
11	Magnetic Float	1	23	'O'-ring (ID 18 mm)	2
12	Screws (M4 x 16)	4			

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**

The pump might need to be disassembled, in this case:

1. Turn off and isolate power supply.
2. Isolate the pump unlocking it from the copper pipe and loosening it from the pump stand and drain down pump of water.
3. To prepare the pump to accept the service kit parts, each pump part must be removed noting its exact position and sequence (Fig. 1).
4. Clean all the components not replaced by the service kit.
5. Before fitting the new service kit parts, the pump and seal type must be identified.

- **CONTENTS** **PAGE**

Cont ...

SECTION 1 - MECHANICAL SEAL REPLACEMENT

The parts required to replace the seal are:

ITEM		QTY	ITEM		QTY
1	Woodruff Key	1	6	Circlip	1
2	Thrower	1	7	'O'-ring (ID 66.40, c/sec 1.78)	1
3	Seal Counterface	1	8	Screws (M6 x 35 mm)	4
4	Rotary Seal	1	14	Seal Applicator Tool (not shown)	1
5	Washer (ID 3/8 "x OD ¾ ")	1			

Note: Difficulties may be experienced in the removal of the impeller. To overcome this, 2 screwdrivers can be used to prize the impeller from the shaft as shown; ensuring equal pressure is applied to each side of the impeller to avoid shaft bending.

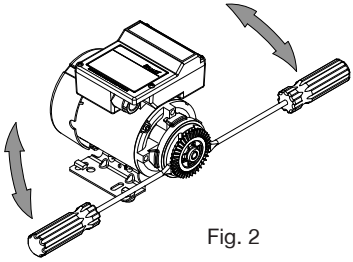


Fig. 2

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

- **SEAL IDENTIFICATION**
  The seal as supplied is shown in order of assembly in Fig. 3.

A Seal seat complete with rubber cup washer.
B Rotary seal assembly.
C Stainless steel washer.
D Seal retaining clip.

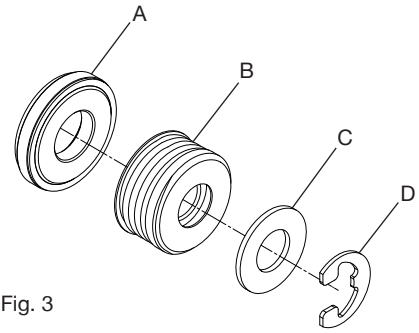


Fig. 3

Cont ...

- **MAINTENANCE AND CARE UPON ASSEMBLY**

  To allow ease of assembly along with correct functioning of the pump, the following points on assembly are necessary.
  - All pump parts must be free from debris and assembled correctly.
  - The seal must always be replaced as a complete unit using the seal applicator tool as provided.
  - The seal faces must not be handled or damaged.
  - The impeller must be a slide fit on the shaft.

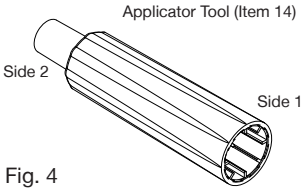


Fig. 4

Fig. 5

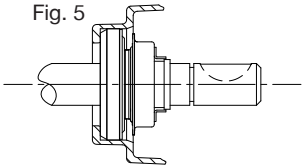


Fig. 6

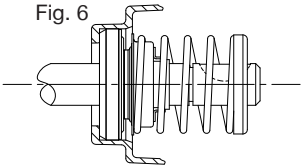
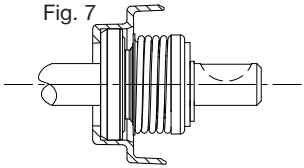


Fig. 7



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

1 Use Side 1 of the Applicator Tool to push the seal seat (item A) firmly into the housing ensuring it is located flat against back of housing, water should be used to lubricate the counterface for fitting.

2 Now use Side 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 seat (Fig. 5). 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 rotary seal assembly (Fig. 6).

3 The washer (item C) can then be placed on the shaft and the whole assembly held into position by locating the E clip (item D) in the groove and pushing it into position (Fig. 7).
WARNING:- Do not install E Clip onto full shaft diameter.

- **INITIAL OPERATING INSTRUCTIONS**
  - Insert screwdriver into motor shaft slot located at fan cowl end of motor, rotate shaft by hand to ensure free rotation of pump.
  - Do not run pump dry. Allow the liquid 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 2 - VALVE REPLACEMENT

The parts required to replace the valve are:

ITEM		QTY	ITEM		QTY
9	'O'-ring, ID 24.60, c/sec 2.40	2	16	Non-Return Valve Assembly	1
12	Screw, M4 x 16 mm	4	18	Grub Screws	3
13	Reed Clamp Tie	2	23	'O'-ring, ID 18, c/sec 1.5	2
15	Flow Switch Body (lower assembly)	1			

- **DISASSEMBLY** (Reference Fig.1)
  - Remove the existing reed switches by cutting the securing tie wraps (Item 13).
  - Remove four screws (Item 12) and carefully remove assembly from pump.
  - Remove three grub screws (Item 18) and carefully remove upper flow switch assembly.

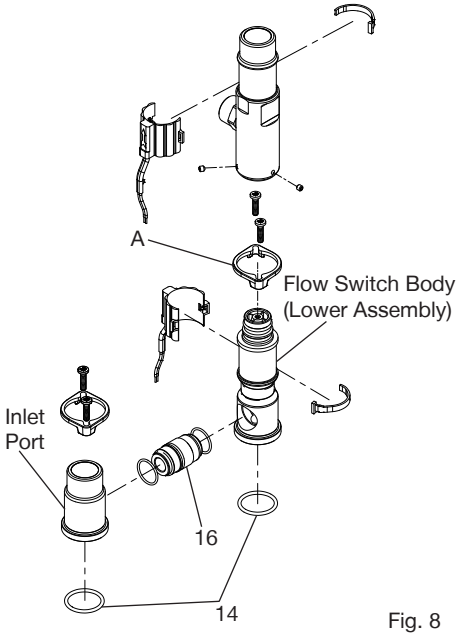


Fig. 8

- Carefully dismantle the lower flow switch assembly, inlet port, NRV assembly (Item 16) and manifold clamps (Item A), replace the old lower flow switch and non-return valve assemblies with the new ones and non-return valve assembly see Fig. 8.

Cont ...

- **REASSEMBLY**
  - Reassembly is the reverse of the disassembly instructions with the new replacement parts fitted as required.
  - Parts can be lubricated with clean water to aid assembly.
  - Secure manifold clamp screws, to a torque of 1.5 Nm. (Item 12).

Note – Ensure the manifold clamps (item A) are placed over the flow switch assembly and inlet port **BEFORE** assembling them onto the NRV assembly (item 16), see Fig. 8.

Note - For the correct operation of the NRV assembly (Item 16), the 'O'-rings (item 23) must be sat into the inlet port and lower flow switch assembly holes before fitting the NRV assembly as shown in Fig. 9.

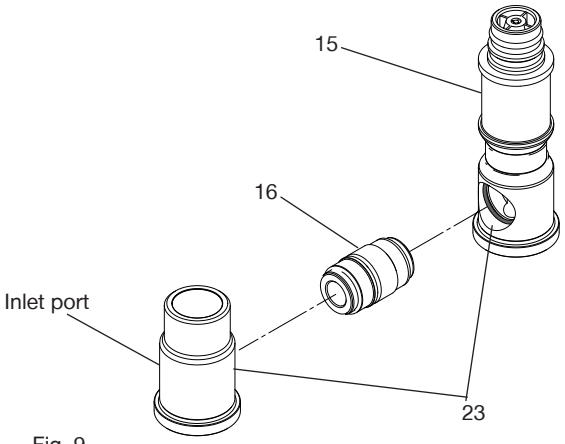


Fig. 9

Note – For correct operation the NRV assembly (item 16) must be fitted with the orientation groove to the left (inlet port side) as shown in Fig. 10.

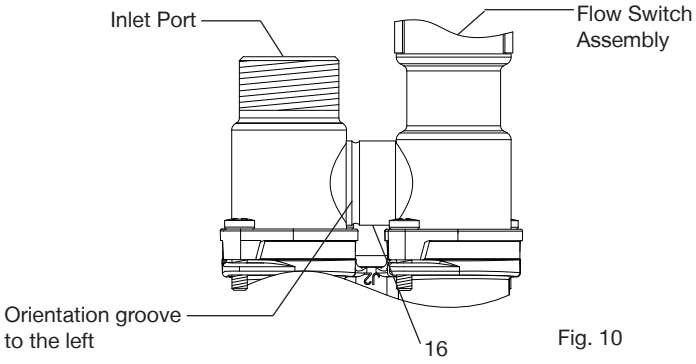


Fig. 10

Cont ...

For correct operation of the flow switch, the reed must be secured to the body as detailed below.
Firstly feed the tie warp through the retainer on the reed switch, ensuring that the tie wrap serrations are facing outwards (see Fig. 11).

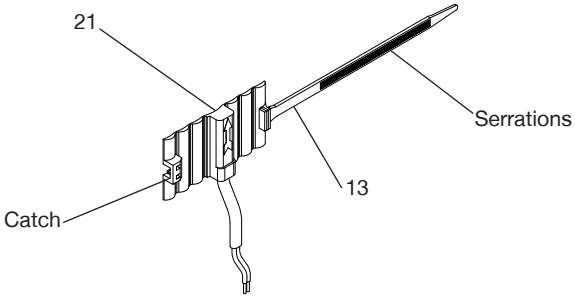


Fig. 11

Now locate the reed switch within the body groove as highlighted X-X in Fig. 12 below, make sure that they are located as shown in Fig. 14 and the upper reed switch goes into the right grommet and the lower into the left one.
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 as shown in Fig. 13.

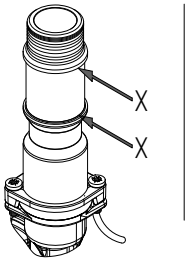


Fig. 12

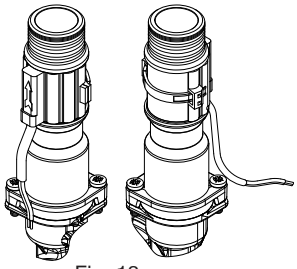


Fig. 13

Flomate Mains Boost Extra 60
Flomate Mains Boost Extra 80

Flomate Mains Boost Extra 100
Flomate Mains Boost Extra 200
Flomate Mains Boost Extra 300

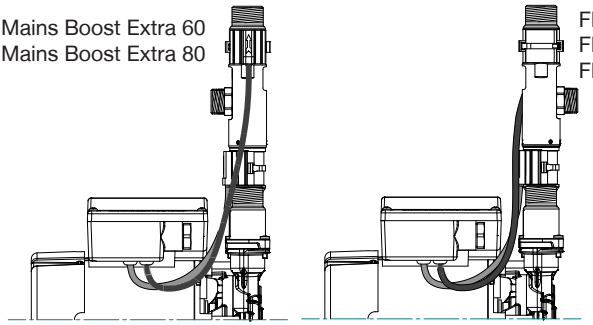


Fig. 14

- **INITIAL OPERATING 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 3 - MAGNET REPLACEMENT

The parts required to replace the magnet are:

ITEM		QTY	ITEM		QTY
10	Clip	1	11	Magnet Float	1

- **DISASSEMBLY**
  - Remove the circlip (item 10) from flow switch assembly using fine point pliers (Fig. 15)
  - Remove the magnet float (item 11) from the flow switch.

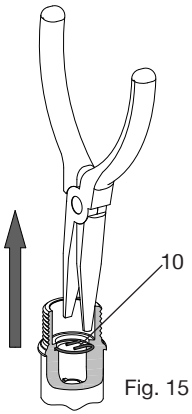


Fig. 15

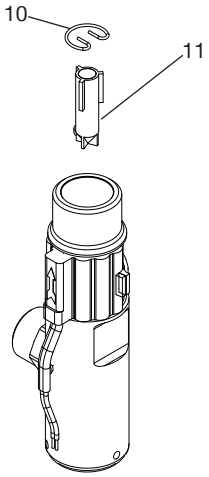


Fig. 16

- **REASSEMBLY**
  - 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.

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SECTION 4 - CAPACITOR REPLACEMENT

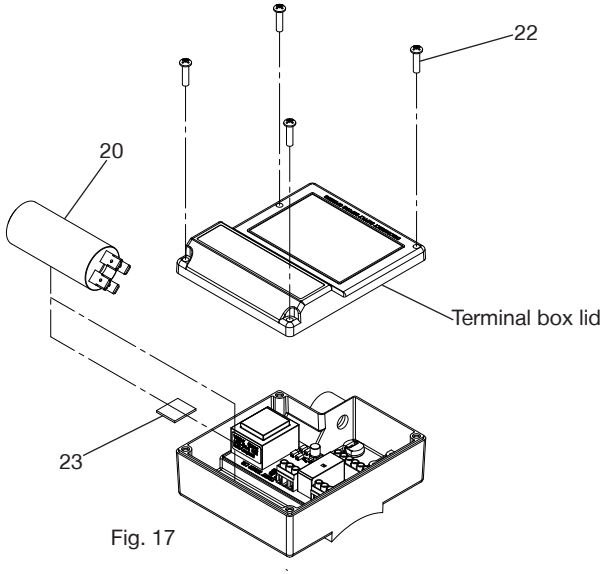


Fig. 17

The parts required to replace the capacitor are:

ITEM		QTY	ITEM		QTY
19	Adhesive Foam Pad	1	22	Screws (K40 x 16 mm)	4
20	Capacitor	1			

- **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.**

Reference Fig 17:

- Remove 4 screws (item 22), and carefully remove terminal box lid.
- **IMPORTANT:** Take note of capacitor wiring connection and colours before removal. Disconnect and remove capacitor (item 20) and foam securing pad (item 23), make note of pad fitted position.

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

Cont ...

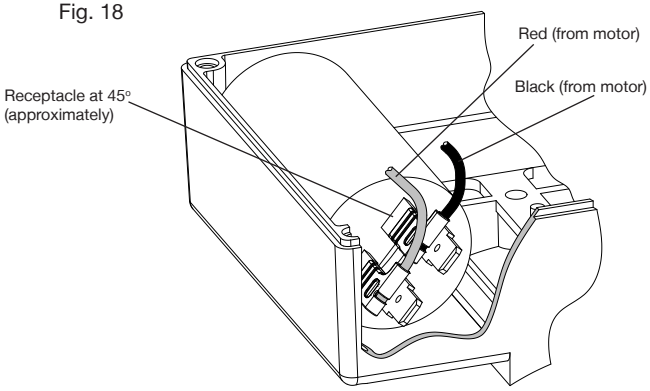
- **REASSEMBLY**

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

  Note: For correct installation the capacitor must be connected, secured and positioned as detailed (Fig. 18).

  Secure terminal box lid screws to a torque of 0.8 Nm (item 22).

Fig. 18



- **INITIAL OPERATING INSTRUCTIONS**
  - Consult instruction manual for commissiong 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 5 - REED SWITCH REPLACEMENT

The parts required to replace the reed switch are:

ITEM		QTY	ITEM		QTY
13	Reed Switch Tie Wrap	1	22	Screws (K40 x 16 mm)	4
21	Reed Switch	1			

- **WIRING DIAGRAMS**

Fig.	Pump	UK	Eire
19	Flomate Mains Boost	✓	✓
	Flomate Mains Boost Extra 60	✓	✓
	Flomate Mains Boost Extra 80	✓	✓
	Flomate Mains Boost Extra 100	✓	✓
	Flomate Mains Boost Extra 200	✓	✓
	Flomate Mains Boost Extra 300	✓	✓

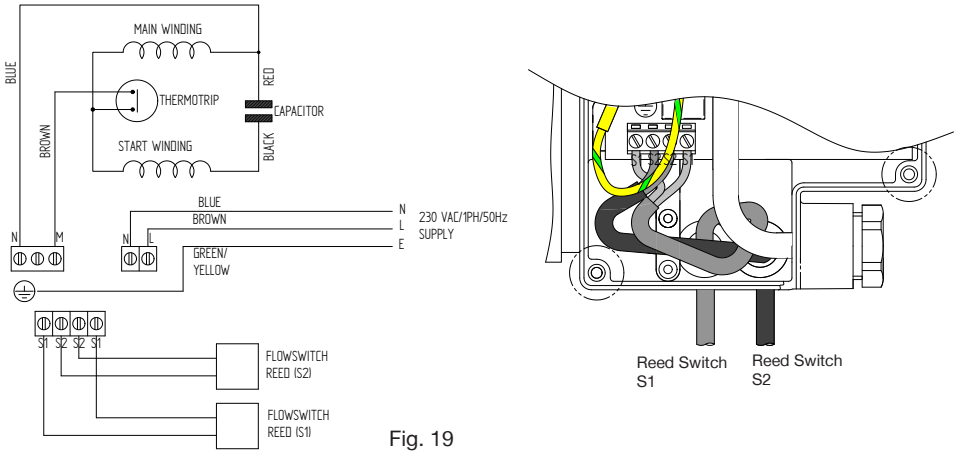


Fig. 19

- **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.**
- Remove four screws and carefully remove terminal box lid (item 22).
- Note the cable routing within the terminal box (Fig. 20).
- Slacken the two screws retaining the reed switch wires on the PCB and remove the reed switch cable from the grommet, pulling downwards from the terminal box.
- Remove the existing reed switch by cutting the securing tie wrap and pulling away from the flow switch body.

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

Cont ...

- **REASSEMBLY**
  - Push the cable into the base of the terminal box ensuring the upper reed switch (S2) goes in the right grommet and the lower reed switch (S1) in the left one (Fig. 20).

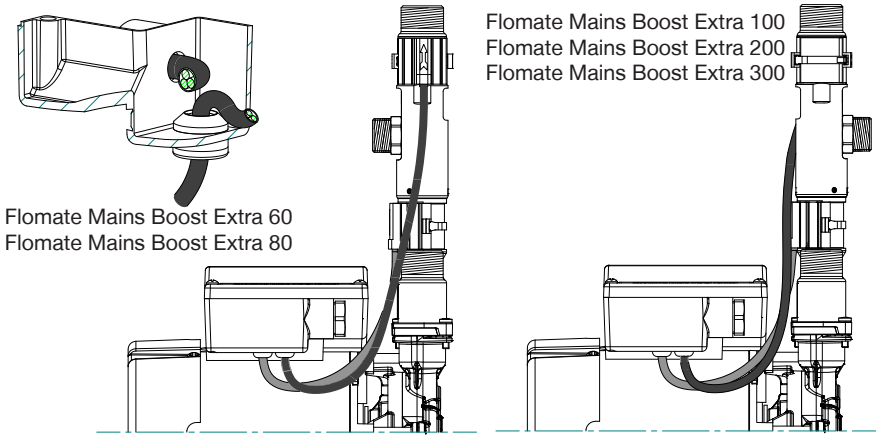


Fig. 20

  - Connect the two reed switch wires to the PCB (Fig. 19).
  - For correct operation of the flow switch, the reed must be secured to the body as explained below.
  - Firstly feed the tie wrap (item 13) through the retainer on the reed switch, ensuring that the tie wrap serrations are facing outwards (Fig. 21).

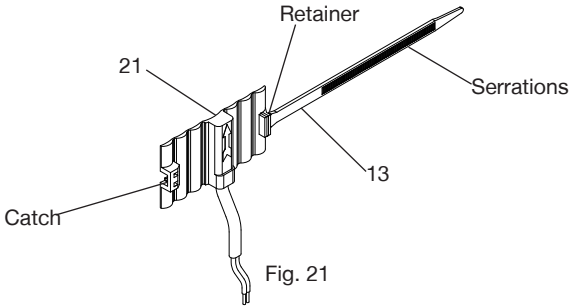


Fig. 21

  - Locate the reed switch within the body groove as highlighted X-X (Fig. 22), and maintain the reed switches positioned as shown in Fig. 20. Feed the tie wrap through the second catch.
  - The tie wrap can now be pulled tight to secure the reed and excess cut to length as shown (Fig. 23)

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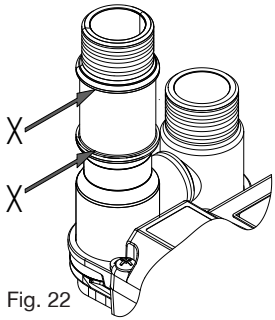


Fig. 22

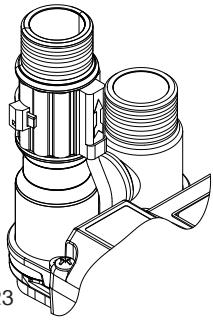


Fig. 23

- **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 6 - PRINTED CIRCUIT BOARD REPLACEMENT

The parts required to replace the printed circuit board are:

ITEM		QTY	ITEM		QTY
17	Printed Circuit Board	1	22	Screws (K40 x 16 mm)	4
19	Adhesive Foam Pad	1			

- **WIRING DIAGRAM**

Fig.	Pump	UK	Eire
24	Flomate Mains Boost	✓	✓
	Flomate Mains Boost Extra 60	✓	✓
	Flomate Mains Boost Extra 80	✓	✓
	Flomate Mains Boost Extra 100	✓	✓
	Flomate Mains Boost Extra 200	✓	✓
	Flomate Mains Boost Extra 300	✓	✓

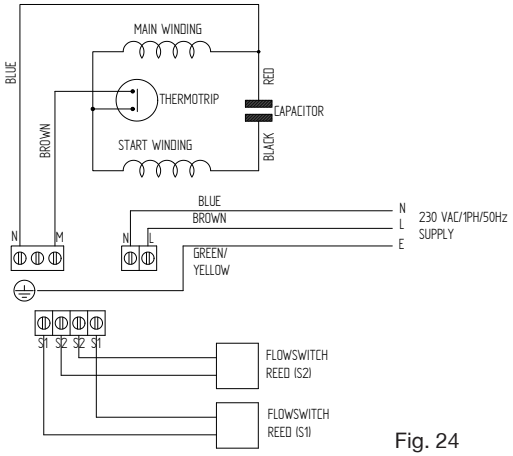
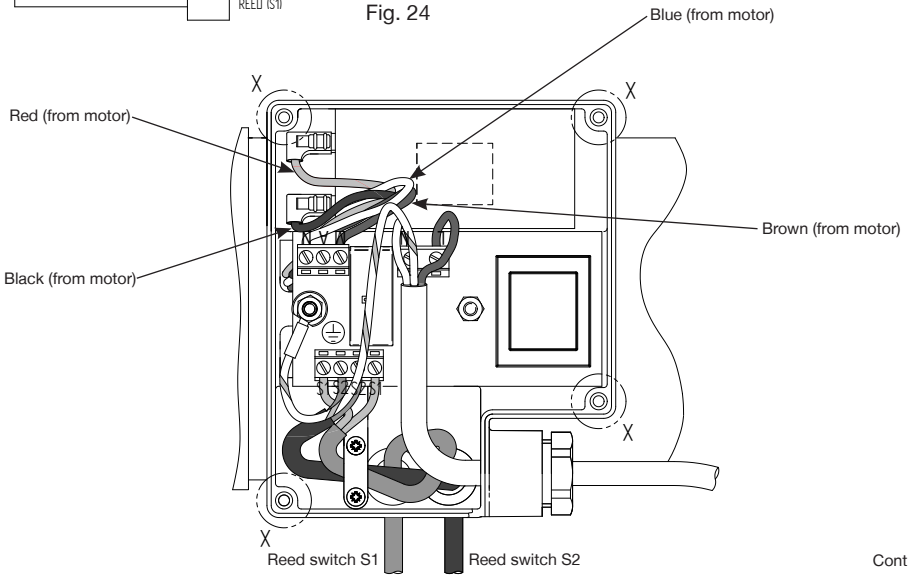


Fig. 24



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.**

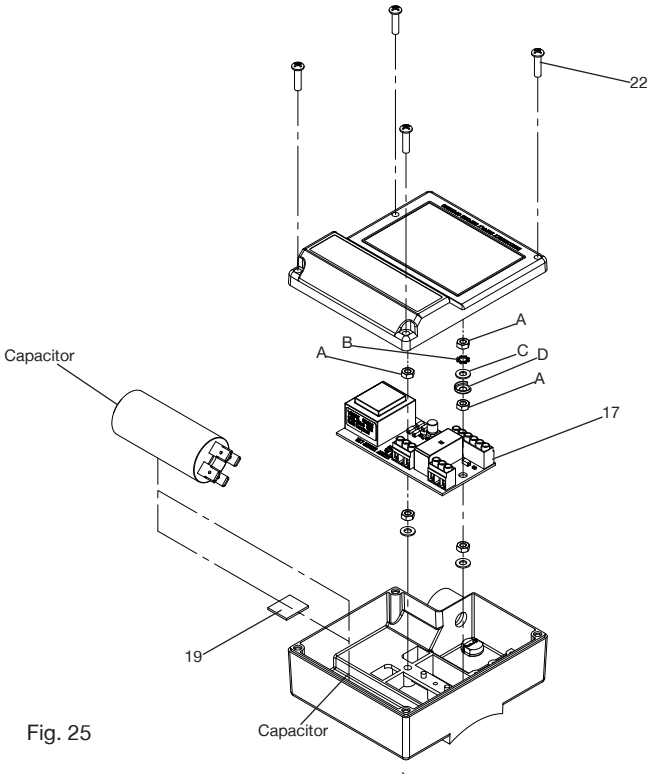


Fig. 25

Reference Fig 25.

- Remove four screws (Item 22) 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 19) 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 17).
- Remove two M4 nuts (item A) and carefully lift PCB (Item 17) 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. 26 & 27.

  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 22).

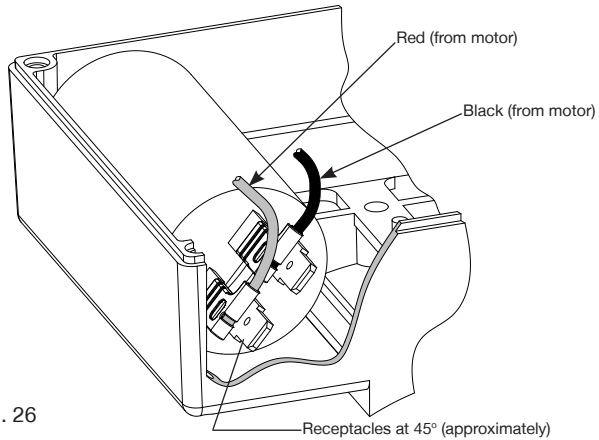


Fig. 26

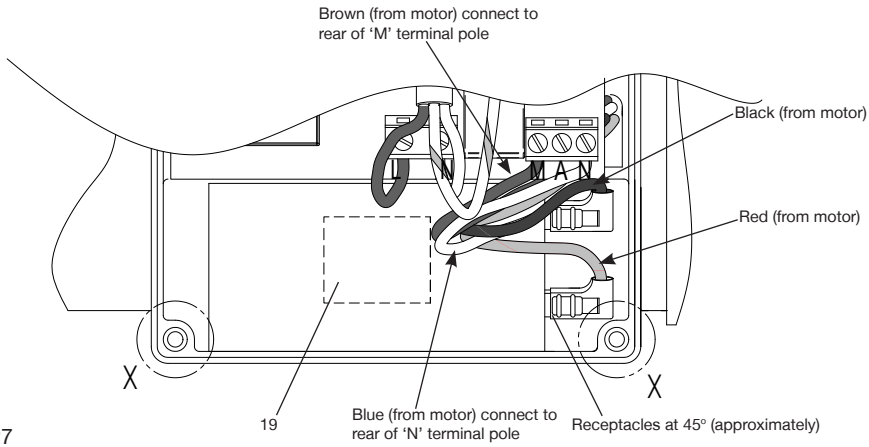


Fig. 27

- **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.

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Pt. No. 20064 **Issue No: 5015/1-01**