STUART TURNER
ENGINEERED TO EXCEL

stuart

Installation, Operation & Maintenance Instructions

Please leave this instruction booklet with the owner as it contains important guarantee, maintenance and safety information

Read this manual carefully before commencing installation.

This manual covers the following products.

Multistage xxx-30 Series

Multistage xxx-40 Series

Multistage xxx-50 Series

Multistage xxx-60 Series

CE compliant product

1 year guarantee

UKAS QUALITY MANAGEMENT 001

PRODUCT DESCRIPTION

Electric motor driven centrifugal pump.

APPLICATION

This range of centrifugal pumps is designed to pump clean fresh water.
The pumps can be used for pressure boosting, fluid transfer and distribution. They are suitable for flooded suction applications. Alternatively a maximum suction lift of 4.6 metres is permitted when using a Stuart footvalve/strainer (Fig. 4).
Inlet pressures to the pump and ambient temperatures must not exceed the values given in the technical specifications.

- **This pump set must not be used for any other application without the written consent of Stuart Turner Limited and in particular must not be connected directly to the mains water supply.**
- **This pump must not be connected directly to the mains water supply.**
- **This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.**
- **Children should be supervised to ensure that they do not play with the appliance.**
- **This product should not be used for the supply of water to more than one dwelling (house, apartment, flat).**

Please read installation details carefully as they are intended to ensure this product provides long, trouble free service. Failure to install the unit in accordance with the installation instructions will lead to invalidation of the warranty.

STORAGE

If this product is not to be installed immediately on receipt, ensure that it is stored in a dry, frost and vibration free location in its original packaging.

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CHECKLIST

IMPORTANT: With the pump removed from its packaging check for any damage prior to installation. If any damage is found contact Stuart Turner Ltd within 24 hours of receipt.

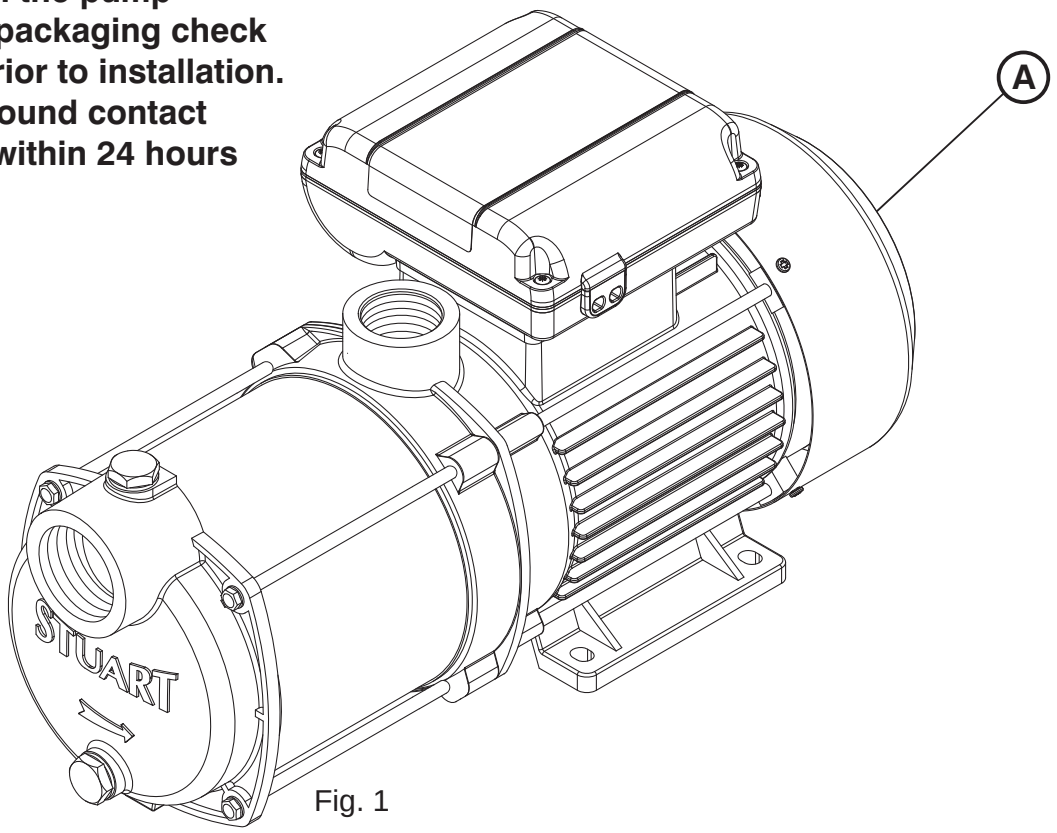

Fig. 1

Item	Description	Qty	Item	Description	Qty
(A)	Pump	1			

Your product may vary slightly from the picture above.

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1 READ BEFORE COMMENCING PUMP INSTALLATION

A. **Water storage capacity**.

1.11 The water storage capacity must be sufficient to meet the flow rates required by the pumped equipment and any other water using fittings and appliances, which may be operated simultaneously.

1.12 Ensure the pump is primed as described in the priming section before starting, damage to the shaft seal will result otherwise. See Section 4 - Commissioning.

B. **Water temperature**

The water entering the pump must be controlled as follows:

1.13 The maximum allowable water temperature is 65 ^{o}C.

1.14 The minimum allowable water temperature is 4 ^{o}C.

1.15 **DO NOT** fit a pump if the hot water is heated via a method whereby the water temperature cannot be controlled, such as solar or solid fuel you must consult the PumpAssist team at Stuart Turner Ltd.

C. **Pipework - General**

1.16 **Secure pipework:** Ensure pipework to and from pump is independently supported & clipped to prevent forces being transferred to inlet and outlet branches of pump.

1.17 **Flux:** Solder joints must be completed and flux residues removed prior to pump installation **(flux damage will void any warranty)**.

1.18 **Pipework design:** Care should be taken in the design of pipework runs to minimize the risk of air locks e.g. use drawn bends rather than 90^{o} bends.

1.19 **DO NOT** introduce solder flux to flexible hoses, pumps or pump parts manufactured from plastic.

1.20 **DO NOT** allow contact with oil or cellulose based paints, paint thinners or strippers, acid based descalents or aggressive cleaning agents.

1.21 **DO NOT** install a non-return valve, or devices which contain non-return valves, in the suction (inlet) pipework to the pump. The pump must be free to vent to the supply tank at all times.

1.22 **DO NOT** connect this pump to the mains water supply.

D. **Plumbing & Electrical Installation Regulations**

1.23 The plumbing installation must comply with “The Water Supply (Water Fittings) Regulations 1999” and “BS 6700” building regulations.

1.24 The plumbing installation must be installed by a qualified person.

1.25 The electrical installation must be carried out in accordance with the current national electrical regulations.

1.26 The electrical installation must be installed by a qualified person.

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2 LOCATION - GENERAL

2.11 **Access:** For emergencies and maintenance the pump must be easily accessible.

2.12 **Protection:** The pump must be located in a dry position, frost free and protected from freezing, particularly when installed in a loft (not recommended).

2.13 **Ventilation:** Ensure an adequate air flow to cool the pump. Separate the pump from other appliances that generate heat. An 80 mm (3 “) air gap must be maintained around the pump.

2.14 **Safety:** The motor casing can become very hot under normal operating conditions. Care must be taken to ensure it cannot be touched during operation.

2.15 **Water retention:** Site the pump in a location where in the unlikely event of a water leak, any spillage is contained or routed to avoid electrics or areas sensitive to water damage.

2.16 **Pump position:** The pump must be positioned on its mounting feet and as close to the water source as possible.

2.17 **Mounting Foot Securing:** The pumps within the range are fitted with cast iron mounting plates. If there is a requirement to secure the pump via the mounting plates, the following points should be noted.
The pump should be mounted only in the horizontal position.
Floor mounting is the preferred orientation but wall mounting is possible providing all fixing holes provided are used.

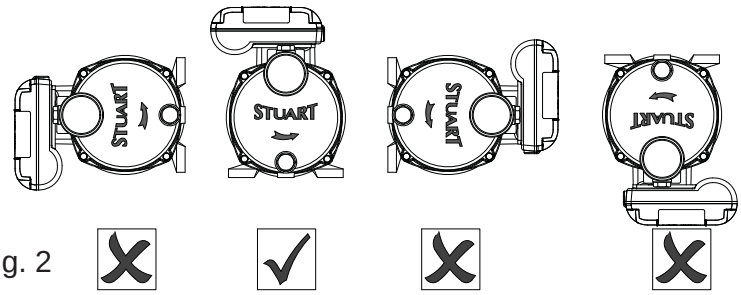

Fig. 2

The mounting bolts used to secure the pump must be fitted with a plain washer to distribute clamping load evenly across load bearing face of foot.

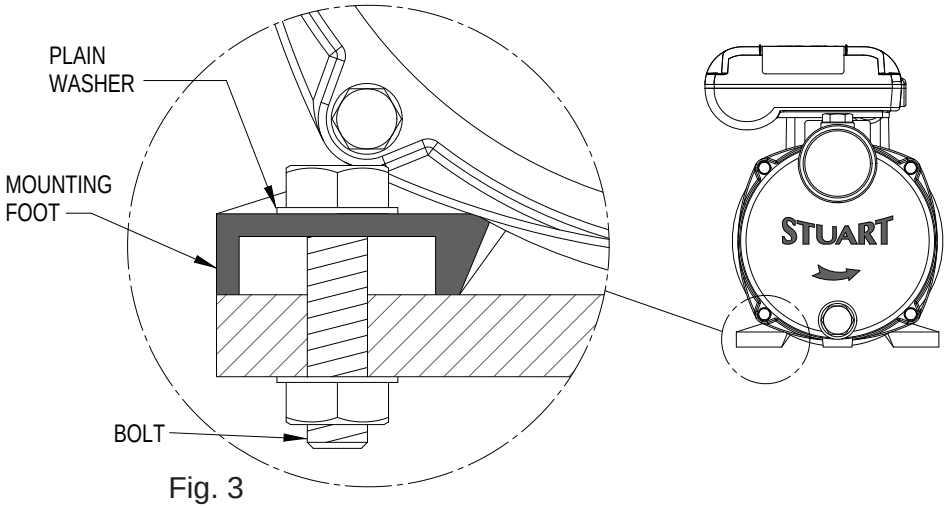

Fig. 3

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2.18 **Ambient temperature:** The pump must be sited in a location where the maximum ambient temperature does not exceed 50 °C.

2.19 **Pipework:** For optimum performance pipework use 28 mm dia., 22 mm can be used but will result in reduced pump performance.
Pipework should only reduce to 15 mm when entering terminal fitting.

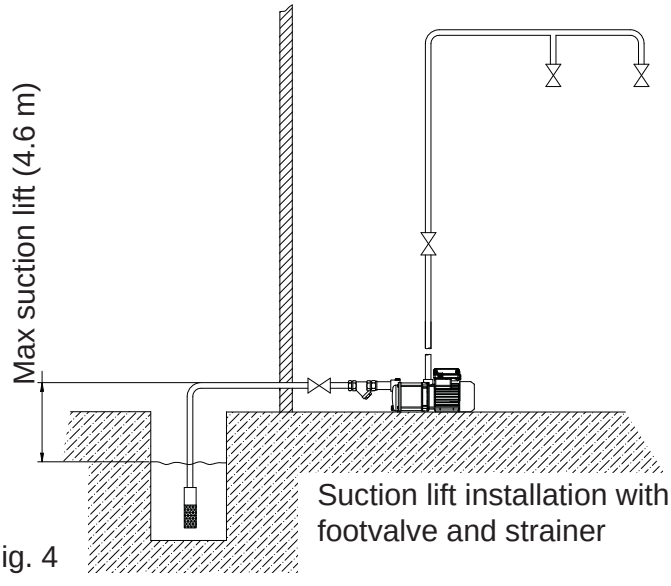
2.20 **Direction of flow:** Ensure the water flow is in the direction of the arrow marked on the flow switch reed clamp (vertically upwards).

2.21 **Isolating valves:** Separate isolating valves (non restrictive) must be fitted to allow easy pump service.

2.22 **Preferred pump location:** The preferred pump location is below the water supply that feeds the pump. The pump location is also dependent on limitations of the static inlet and outlet heads of the installation.

- Inlet head must be at least 1 metre (unless a suction lift is required then see Fig. 4).
- Maximum inlet should not exceed 10 metres.
- Outlet head should not exceed 12 metres.

2.23 **Pump Mounted Above Liquid Source (Suction Lift):** This pump can be used in a suction lift installation providing the height of lift is within the limits specified in the limits of application section (Fig. 4).
A footvalve and strainer must always be used and the suction pipework size must match the pump.
Lay the suction piping over the shortest possible distance and ensure there is a constant rise from the liquid source to the pump. Any high spots will cause air pockets to form, reducing system efficiency.
Ensure all joints in suction pipework are completely airtight. Failure to comply will result in loss of prime.
The intake of the footvalve/strainer should be positioned such that it cannot be blocked with debris or silt that are frequently found in the bottom of sumps and wells.
When a footvalve is installed on installations that incorporate automatic pump control, it is recommended that a suitable pressure relief valve be fitted in the discharge (outlet) pipework from the pump.



Suction lift installation with footvalve and strainer

Fig. 4

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3 ELECTRICAL INSTALLATION / EARTHING

3.11 **Regulations:** The electrical installation must be carried out in accordance with the current national electrical regulations and installed by a qualified person.

3.12 **Safety:** In the interests of electrical safety a 30 mA residual current device (**R.C.D. not supplied**) should be installed in the supply circuit. This may be part of a consumer unit or a separate unit.

3.13 Before starting work on the electrical supply ensure power supply is isolated.

3.14 **DO NOT** allow the supply cord to contact hot surfaces, including the motor shell, pump body or pipework. The cord should be safely routed and secured by cable clips.

3.15 **Adjacent pipes:** Adjacent suction and delivery pipes should be fitted with earthing clamps to BS 951 in accordance with current regulations (Fig. 5).

Diagram of earth continuity connections

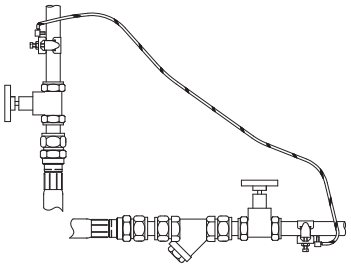


Fig. 5

3.16 **Earthing:** This appliance must be earthed via the supply cord, which must be correctly connected to the earth point located in the terminal box.

3.17 **Pipework:** Copper or metallic pipework must have supplementary earth bonding where the continuity has been broken by flexible hoses or plastic components (not supplied).

3.18 **Additional earthing:** Certain installations may require additional earthing arrangements such as equipotential bonding. Reference should be made to the relevant regulations concerning this subject to ensure compliance.

3.19 **Connections:** The pump must be permanently connected to the fixed wiring of the mains supply using the factory fitted supply cord, via a double pole switched fused spur off the ring main and **NOT** connected to the boiler or the immersion heater circuits.

3.20 **Wiring of connection unit:**

WARNING: This appliance must be earthed.

The wires in the mains lead are coloured in accordance with the following code:

Green and Yellow: Earth Blue: Neutral Brown: Live

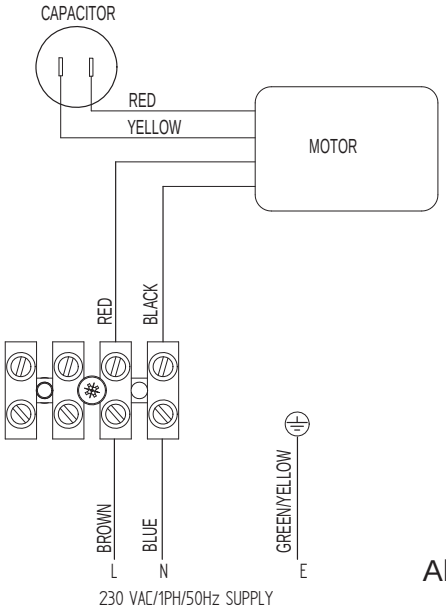
As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your connection unit proceed as follows:

The wire which is coloured green and yellow must be connected to the terminal in the connection unit which is marked with the letter E or by the earth symbol: ⏚ or coloured green or green and yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

3.21 **Wiring Diagram:**



All models Fig. 6

3.22 **Fuses:** The following fuse size should be used with the appropriate pump:

Model	Fuse Size (AMPS)
All Models	13

3.23 **Supply Cord Replacement:**

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 re-assembly to the same factory pattern is always maintained.

If the supply cord is to be changed or is damaged, it must be replaced with a special cord assembly available from Stuart Turner or one of their approved repairers.

On disassembly note the cord retention and routing system. Re-assemble to the same pattern.

For information on cable connection consult the wiring diagram and cable gland fitting instructions.

3.24 **Cable Gland Fitting Instructions:**

To enable correct assembly of the cable gland the 'O'-ring (Fig. 7 item 1) must be placed over the cable before the clamping insert (Fig. 7 item 2) can be tightened.

Note: Cable diameter range:- 6.5 mm to 9.5 mm.

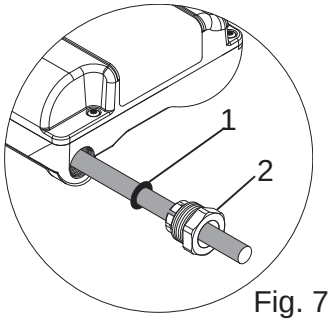


Fig. 7

3.25 **Supply Cord Extension:**

The pumps are fitted with a supply cord to the following specification:-

All models . . . . . HO5VV-F3 G 0.75 mm² - 6 Amp rated cable.

If the supply cord is to be extended, a cord of the same specification should be used. Any connections or junction boxes used should be specifically suited for the application and installed in accordance with the manufacturers instructions.

4 COMMISSIONING

4.11 **System Flushing:** The pipework system should be flushed out prior to the pump being connected to ensure any contaminants/ chemical residues and foreign bodies are removed from elsewhere in the system.

4.12 **Water Supply:** Always ensure that water storage capacity is adequate to meet the demand. Ensure the pump chamber is full of water before starting the pump. Failure to do this could result in seal damage. To ensure dry running does not occur the pump must be primed as described in priming section below.
Do not run pump dry.

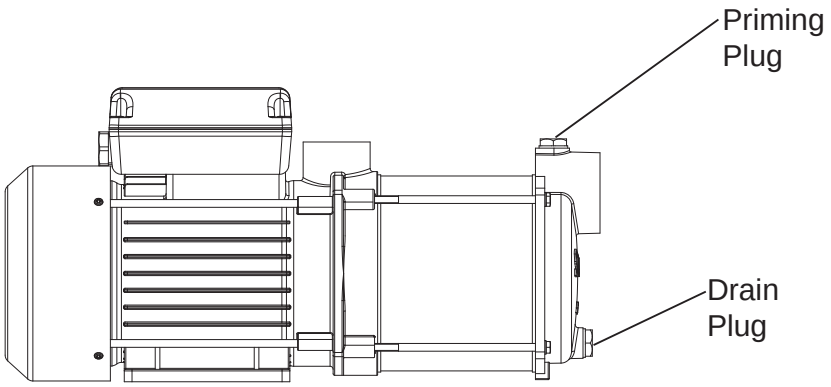
4.13 **Priming:**

Never operate pump with inlet and/or outlet isolating valves in the closed position. Damage will occur!

The pump must be primed (filled with water) before starting.
Turn on the service valves and vent/prime pump head.

(a) Loosen priming plug and allow an even flow of water this may take a few seconds.

(b) Re-seal draining plug, nipping tight. The pump is now ready to start.



All models Fig. 8

4.14 **For Further Technical Support:** Phone the Stuart Turner PumpAssist team on 0844 98 000 97. Our staff are trained to help and advise you over the phone.

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5 MAINTENANCE

5.11 **Cleaners, Disinfectants and Descalents:**

Acid based descalents and aggressive cleaning agents must not come into contact with the pump. The pump must be removed from the system prior to the use of these products. The system should be flushed to remove all chemicals before the pump is re-connected. If in any doubt as to the suitability of the chemical solutions, please contact our PumpAssist helpline on 0844 98 000 97.

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6 TECHNICAL SPECIFICATION

Model		xxx-30 Series	xxx-40 Series	xxx-50 Series	xxx-60 Series
Electrical	Power supply Volts/phase frequency	230/1/50	230/1/50	230/1/50	230/1/50
	Enclosure	IPX5	IPX5	IPX5	IPX5
	Type of motor	Induction	Induction	Induction	Induction
	Power consumption	850 Watts	1182 Watts	1648 Watts	1969 Watts
	Full load current	3.8 Amps	5.3 Amps	7.4 Amps	8.8 Amps
	Rating	Continuous (S1)	Continuous (S1)	Continuous (S1)	Continuous (S1)
	Max. No Starts per hour	60	60	60	60
Mechanical	Min inlet head	1 metres	1 metres	1 metres	1 metres
	Max inlet head	10 metres	10 metres	10 metres	10 metres
	Max head (closed valve)	25 metres	36 metres	50 metres	61 metres
	Max working pressure*	600 kPa (6.0 bar)	900 kPa (9.0 bar)	900 kPa (9.0 bar)	900 kPa (9.0 bar)
	Max ambient air temperature	50 °C	50 °C	50 °C	50 °C
	Max water temperature**	65 °C	65 °C	65 °C	65 °C
	Min water temperature	4 °C	4 °C	4 °C	4 °C
Pump Dimensions	Length (max)	360 mm	384 mm	431 mm	456 mm
	Width (max)	155 mm	155 mm	187 mm	187 mm
	Height (excluding flexible hoses)	190 mm	190 mm	210 mm	210 mm
	Gross Weight (including accessories)	11.1 Kg	12.9 Kg	16.8 Kg	19.3 Kg
	Pump Connections: Inlet	G 1¼ Female	G 1¼ Female	G 1¼ Female	G 1¼ Female
	Outlet	G 1 Female	G 1 Female	G 1 Female	G 1 Female
Materials	Body	Brass/St St	Brass/St St	Brass/St St	Brass/St St
	Shaft	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
	Mechanical Seal	EPDM/car/cer	EPDM/car/cer	EPDM/car/cer	EPDM/car/cer
	Pump Parts Diffuser Impeller	GEPPO Stainless Steel	GEPPO Stainless Steel	GEPPO Stainless Steel	GEPPO Stainless Steel

Stuart Turner reserve the right to amend the specification in line with its policy of continuous development of its products.

*Note: Max working pressure is the maximum pressure that can be applied to the pump internal casing under any installation conditions.

**Note: In normal circumstances the temperature of stored water should never exceed 65 °C. A stored water temperature of 60°C is considered sufficient to meet all normal requirements and will minimise deposition of scale in hard water areas.

6.11 **Noise:** The equivalent continuous A-weighted sound pressure level at a distance of 1 metre from the pump does not exceed 70 dB(A).

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7 TROUBLE SHOOTING GUIDE

Symptoms	Probable Cause	Recommended Action
Pump will not start.	Electrical supply.	Check power supply. Check fuse (see fuse section). Check circuit breaker is set. Check wiring connections.
	Pump Jammed.	If motor 'Buzzes' switch off power and contact Stuart Turner.
	Internal motor thermotrip activated.	Wait for thermotrip to auto-reset and check that duty point and run time is within specification (see technical specification).
Reduced/intermittent flow.	Incorrect pipe sizes.	Check for correct pipe sizing, see Page 7 - Section 2.19.

7.11 **Environment Protection:** Your appliance contains valuable materials which can be recovered or recycled.
At the end of the products' useful life, please leave it at an appropriate local civic waste collection point.

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8 YOUR 1 YEAR GUARANTEE

Stuart Pumps are guaranteed by Stuart Turner Limited to be free from defects in materials or workmanship and the guarantee period starts from the date of purchase or date of manufacture. Within the guarantee period we will repair, free of charge, any defects in the pump resulting from faults in material or workmanship, repairing, exchanging parts or exchanging the whole unit as we may reasonably decide.

Not covered by this guarantee: Damage arising from incorrect installation, improper use, unauthorised repair, normal wear and tear and defects which have a negligible effect on the value or operation of the pump.

Reasonable evidence must be supplied that the pump has been purchased within the applicable guarantee period prior to the date of claim (such as proof of purchase or the pump serial number).

This guarantee is in addition to your statutory rights as a consumer. If you are in any doubt as to these rights, please contact your local Trading Standards Department or Citizen's Advice Bureau.

In the event of a claim please telephone Stuart Turner Limited on 0844 980 0097 before taking any further action. If you have any doubt about removing a pump, please consult a professional.

Proof of purchase should accompany the returned pump to avoid delay in investigation and dealing with your claim.

Please record here for your records.

TYPE NO.	SERIAL NO.	DATE PURCHASED

NOTES

CE

DECLARATION OF CONFORMITY

2006/42/EC
BS EN ISO 12100-1, BS EN ISO 12100-2, BS EN 809
2006/95/EC
BS EN 60335-1, BS EN 60335-2-41
2004/108/EC
BS EN 55014-1, BS EN 55014-2, BS EN 55022, BS EN 61000-3-2, BS EN 61000-3-3, BS EN 61000-4-2, BS EN 61000-4-3, BS EN 61000-4-4, BS EN 61000-4-5, BS EN 61000-4-6, BS EN 61000-4-11
1999/519/EC
BS EN 62233
2011/65/EU

IT IS HEREBY CERTIFIED THAT THE STUART ELECTRIC MOTOR DRIVEN PUMP AS SERIAL NUMBER BELOW, COMPLIES WITH THE ESSENTIAL REQUIREMENTS OF THE ABOVE E.E.C. DIRECTIVES.

RESPONSIBLE PERSON
AND MANUFACTURER

STUART TURNER LIMITED
HENLEY-ON-THAMES, OXFORDSHIRE
RG9 2AD ENGLAND.

Signed. . . . . Business Development Director

Stuart Turner are an approved company to BS EN ISO 9001:2000

STUART TURNER
ENGINEERED TO EXCEL

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