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.

Jet 55-45
Pt. No. 46587

Jet 80-45
Pt. No. 46588

PRODUCT DESCRIPTION

Electric motor driven, close coupled, single stage, end suction configuration and of centrifugal design with integral Jet injector.

APPLICATION

The Jet Pump range is designed to pump clean fresh water.

The pumps can be used for applications such as water transfer and distribution, pressure boosting and irrigation. The pump can be used for portable applications and is also suitable for self-priming (after initial priming) installations using the optional suction hose/ footvalve assembly.

- **This pump set must not be used for any other application without the written consent of Stuart Turner Limited.**
- **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.**

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.

CONTENTS

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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.

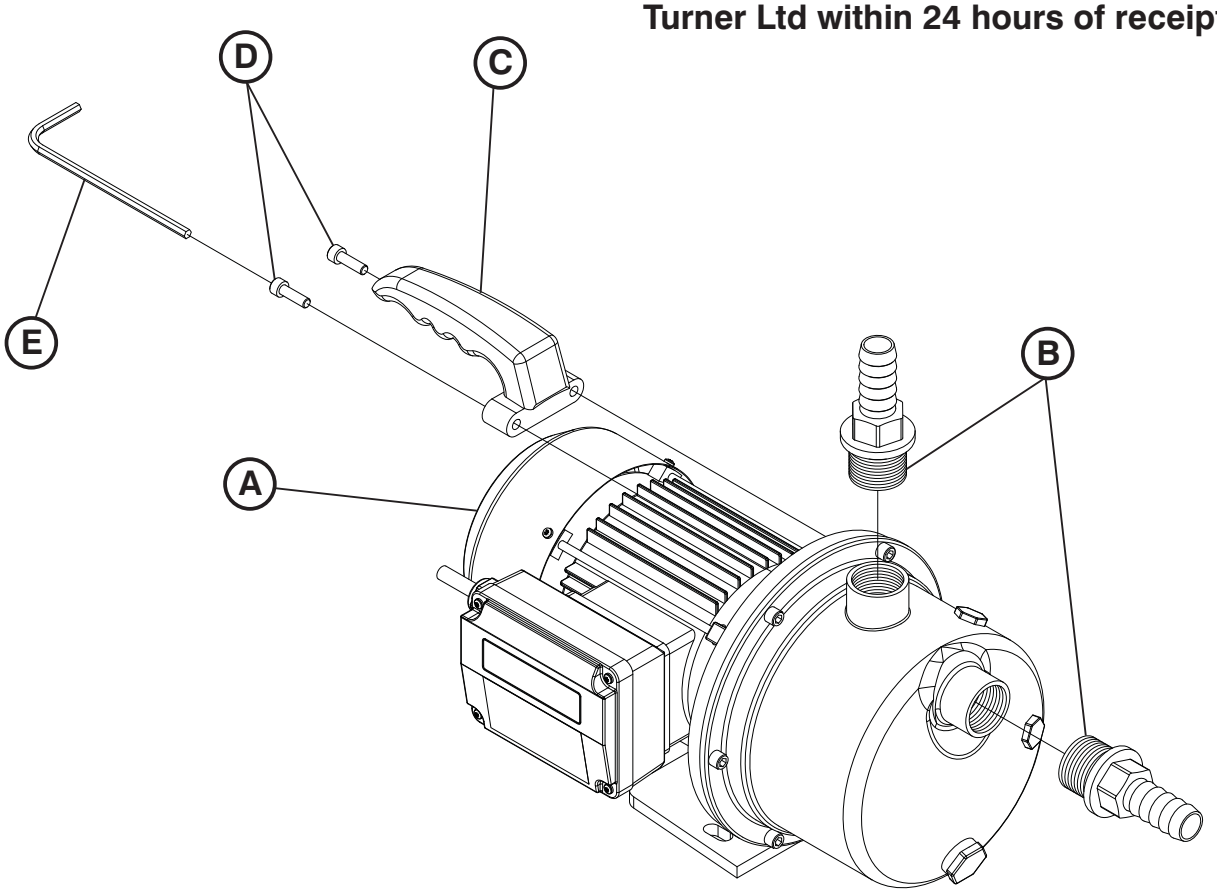

Fig. 1

Item	Description	Qty	Item	Description	Qty
A	Pump	1	D	Handle screws	2
B	19 mm x G 1 Hose union	2	E	5 mm Allen key	1
C	Handle	1			

Your product may vary slightly from the picture above.

1 READ BEFORE COMMENCING PUMP INSTALLATION

A. **Water storage capacity**.

1.11 The cold 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 35 ^{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 pump assist 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. Exceptions can be made in the case of suction lift installations when a footvalve is required.

1.22 **DO NOT** bend the flexible hoses beyond 30^{o}. They must be installed as straight as possible.

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

D. **Plumbing & Electrical Installation Regulations**

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

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

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

1.27 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 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 **Static inlet pressure:** Before deciding where to locate the pump check to ensure the static inlet head (Fig. 2) meets the minimum requirement of 1 metre and does not exceed the maximum requirement of 5 metres.

2.17 **Ambient temperature:** The pump must be sited in a location where the maximum ambient temperature does not exceed 40 ^{o}C.

2.18 **Pipework:** For optimum performance pipework 28 mm should be used. 22 mm is acceptable, however, any pipe size reduction will reduce the pumps performance.

2.19 **Do not run against a closed valve for periods longer than 5 minutes.**

2.20 **Portable:** The pump is suitable for use as a portable unit and is provided with a carrying handle for this purpose.

2.21 **Pipe size:** To prevent loss of pressure through pipework, use pipe size to match pump (19 mm internal diameter) whenever possible, minimising 90° bends (sweeping bends).

2.22 **Isolating valves:** If permanently installed, isolating valves should be fitted in suction and delivery pipework to enable easy isolation and access to the pump.

2.23 **Inline strainer:** When pump is to be installed in areas where there is risk of debris or scale build up within the system, you **MUST** ensure the inlet pipework is fitted with an inline strainer.

2.24 **Suction lift:** This pump is capable of a maximum suction lift of 5 m in this case only, an NRV in the footvalve is permissible (Fig. 3).

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2 LOCATION - PUMP MOUNTED BELOW WATER SOURCE

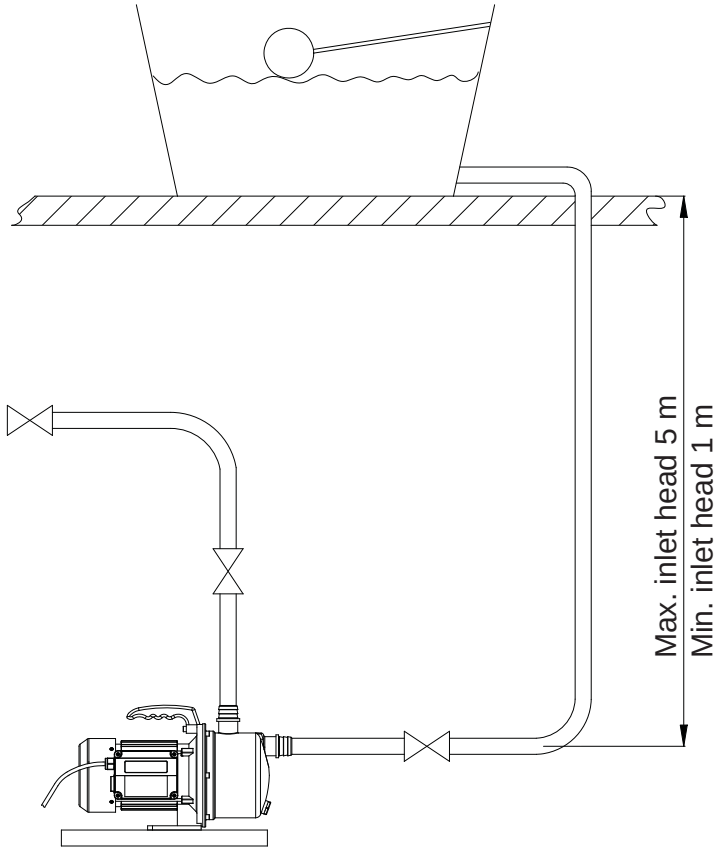

Fig. 2

2.25 **Water supply:** Must be made via a tank connector offering a dedicated supply direct to the pump.

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2 LOCATION - PUMP MOUNTED ABOVE WATER SOURCE (SUCTION LIFT INSTALLATION)

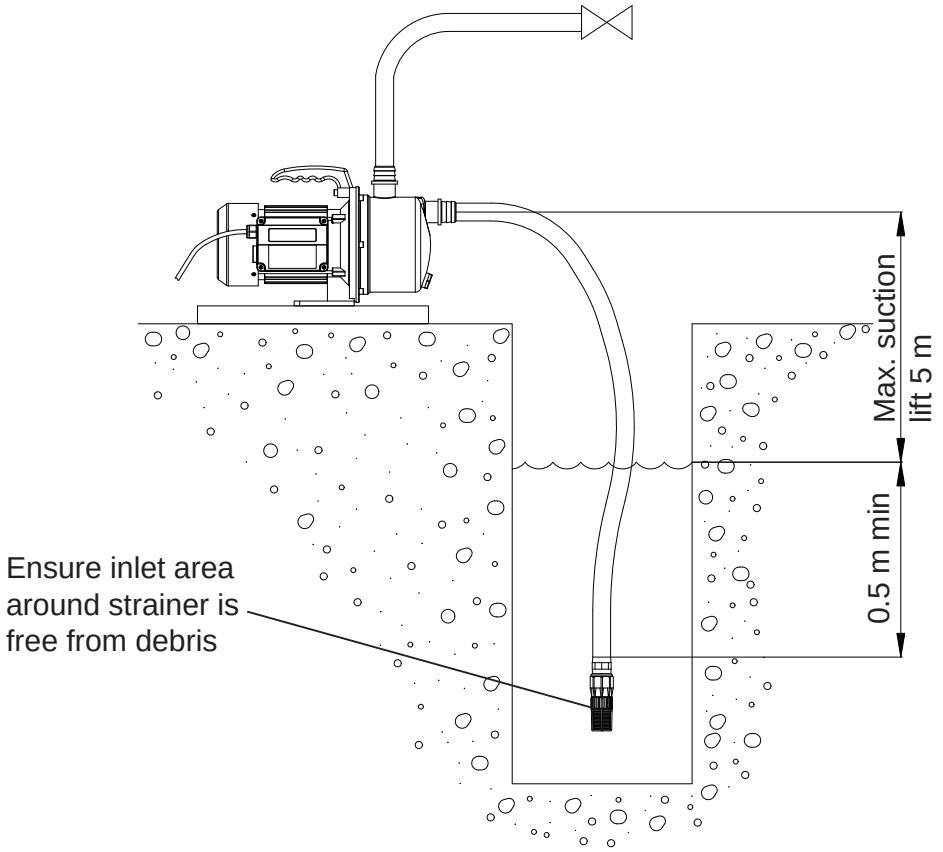

Fig. 3

2.26 **Self Priming:** Jet 55-45 and 80-45 pumps are capable of self priming the suction hose assembly, providing a footvalve and strainer (not supplied) is always used for this type of installation. The Jet pump can be used in a suction lift installation providing the height of lift is no greater than maximum permitted (Fig. 3).

2.27 **Footvalve/strainer:** It is important that the optional footvalve and strainer is always used for suction lift installations.

2.28 **Suction pipe:** Lay the suction piping over the shortest possible distance and ensure there is a constant rise from the water source to the pump. Any high spots will cause air pockets to form reducing system efficiency. The suction hose must be a minimum of 25 mm to ensure the pump is not starved of water and must be reinforced to prevent it collapsing.

2.29 **Connections:** Ensure all joints in suction pipework are completely airtight. Failure to comply will result in loss of prime.

2.30 **Position:** The intake of the footvalve/strainer should be positioned so that it cannot be blocked with debris or silt that are frequently found in the bottom of sumps and wells.

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

3.16 **Electrical Connection:** The pump is provided with a factory fitted supply cord and plug. This must be connected to the mains supply via a 13 Amp double pole switched, socket outlet in compliance with BS 1363-2. The socket outlet should be mounted in an easily accessible position and should be labelled if confusion is possible, to allow easy identification of the pump isolating switch.

3.17 **Wiring of connection unit:**

WARNING: A plug with bared flexible cords is hazardous if engaged in a live socket outlet.

The moulded plug fitted to this appliance is not waterproof - keep dry.
The supply cord is factory fitted with a moulded plug incorporating a fuse, the value of which is indicated on the pin face of the plug. Should the fuse need to be replaced, an ASTA approved BS 1362 fuse must be used of the same rating, marked thus, 

. If the fuse cover is detachable, never use the plug with the cover omitted. If a replacement fuse cover is required, ensure it is of the same colour as that visible on the pin face of the plug (i.e. red or orange).

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

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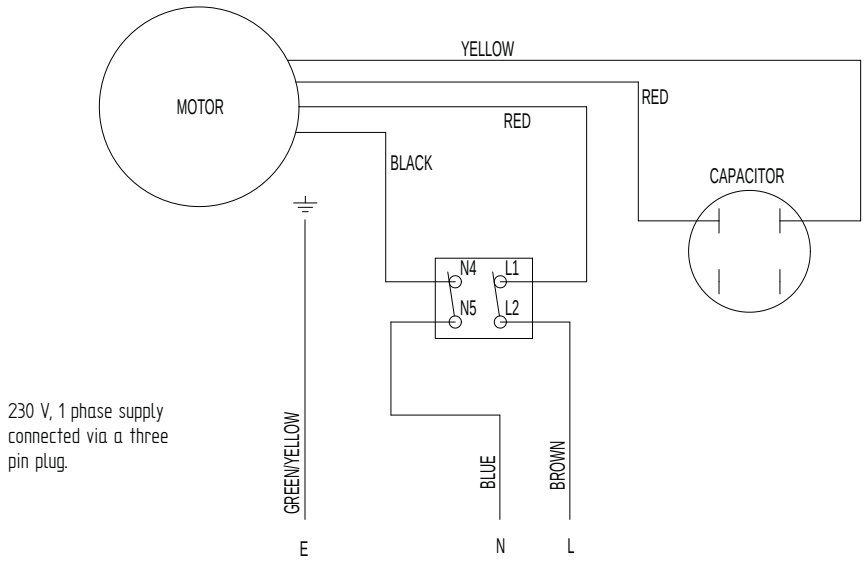
3.18 **Wiring Diagram:**

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 any disturbance of this internal wiring is avoided and the factory routing and securing of all internal wiring is always maintained.



Jet 55-45 and Jet 80-45
Fig. 4

3.19 **Fuse:** The following fuse size should be used with the appropriate pump:

Model	**Fuse Size (AMPS)**
All Models	13

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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:** Prior to switching the pump on and connecting the outlet hoses to the system pipework the pump chamber must be primed. The pump must be primed (filled with water) before starting. Turn on water supply, prime and vent the pump by unscrewing the priming plug (Fig. 5) slowly until all air escapes and water emerges. Re-tighten the plug.

4.14 **Suction lift installation:** Self priming of suction hose.
First ensure both suction and delivery hose connections are airtight. Remove the priming plug (Fig. 5) and slowly fill the pump body with water, whilst allowing the air to escape. Replace the plug.

4.15 **Suction hose:** Ensure the suction hose end is fully submerged in the water source and the delivery hose is open to enable the pump to vent air.

4.16 **Starting The Pump:** Turn on the electrical supply to the pump which will now be operational.
Note: There is an integral on/off switch mounted on the pump (Fig. 5) which must be turned to the on position.

a) The pump will start and begin to prime the suction pipework.
b) The priming procedure may need to be repeated if pump does not prime within 5 minutes of starting.
Note: The amount of time required for priming will vary dependent on the height of the suction lift.
c) Carefully check pump and pipework for leaks whilst pump running and stationary before leaving the installation unattended.

- **The pump chamber must be full of water at all times. Seal damage will result if the pump runs dry.**

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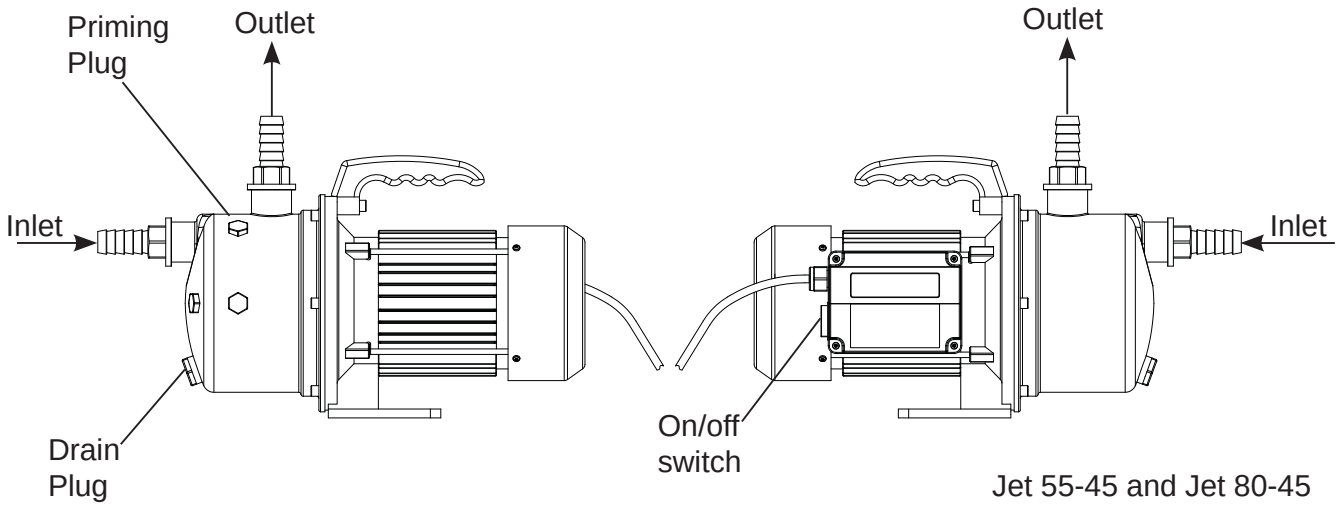

Jet 55-45 and Jet 80-45
Fig. 5

4.17 **For Further Technical Support:** Phone the Stuart Turner Pump Assist 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 No routine maintenance is required but provision should be made for easy access to the pump to allow for repairs due to normal wear and tear.

5.12 Disconnect electrical supply before working on pump.

5.13 Turn off water supplies to the pump and release pressure by opening outlets before attempting maintenance.

5.14. If the installation is fitted with a footvalve and strainer or inline suction strainer, the strainer must be cleaned as necessary to ensure the pump has unrestricted flow.

5.15. After maintenance is completed, refer to commissioning section for instructions on restarting pump.

5.16 **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 Pump Assist helpline on 0844 98 000 97.

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6 TECHNICAL SPECIFICATION

	Model	Jet 55-45	Jet 80-45
Electrical	Power supply Volts/phase frequency	230/1/50	230/1/50
	Enclosure	IPX4	IPX4
	Type of motor	Induction	Induction
	Power consumption	650 Watts	900 Watts
	Full load current	2.9 Amps	4.1 Amps
	Rating	Continuous (S1)	Continuous (S1)
	Max. No Starts per hour	30	30
Mechanical	Min inlet head	1 metres	1 metres
	Max inlet head	5 metres	5 metres
	Max head (closed valve)	43 metres	45 metres
	Max working pressure*	480 kPa (4.8 bar)	500 kPa (5.0 bar)
	Max ambient air temperature	40 °C	40 °C
	Max water temperature**	35 °C	35 °C
	Min water temperature	4 °C	4 °C
	Max. suction lift	5 metres	5 metres
Pump Dimensions	Length (max)	341 mm	368 mm
	Width (max)	217 mm	224 mm
	Height (excluding flexible hoses)	238 mm	238 mm
	Gross Weight (including accessories)	6.78 Kg	8.96 Kg
	Pump Connections: Inlet	G 1 Female	G 1 Female
	Outlet	G 1 Female	G 1 Female
Materials	Body	Stainless Steel	Stainless Steel
	Shaft	Stainless Steel	Stainless Steel
	Mechanical Seal	EPDM/Carbon/ceramic	EPDM/Carbon/ceramic
	Pump Parts	GEPPO	GEPPO

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.

6.11 **Noise:** The equivalent continuous A-weighted sound pressure level at a distance of 1 metre from the pump does not exceed 73 dB(A) for Jet 55-45 or 76 dB(A) for Jet 80-45.

7 TROUBLE SHOOTING GUIDE

Symptoms	Probable Cause	Recommended Action
Pump will not start.	Electrical.	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.
	Integral 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 or no anti-aeration flange fitted.	Check that the installation complies with installation instructions.
	Incorrect pipe sizes.	Check for correct pipe sizing, see Page 5 - Section 2.18.
	Blocked inlet filters.	Clean inline strainer.
	Air in system.	Run system on full hot with pump switched off (ie. gravity only) for several minutes. Check that vents are fitted as detailed in instructions.
	Blocked shower head spray plate.	Clean in accordance with manufacturers instructions.

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

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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
Stuart Turner Ltd, Henley-on-Thames, Oxfordshire RG9 2AD ENGLAND
Tel: +44 (0) 1491 572655, Fax: +44 (0) 1491 573704
email: pumps@stuart-turner.co.uk web: www.stuart-turner.co.uk
V.A.T. REG. No. 199 0987 92. Registered in England No. 88368. Registered Office: Market Place, Henley-on-Thames

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