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 suitable for 230/1/50 supply:

PH 35 TS
Pt. No. 46496

PH 45 TS
Pt. No. 46504

PH 35 TS
Pt. No. 46445

PH 45 TS
Pt. No. 46448

PH 35 ES
Pt. No. 46563

PH 45 ES
Pt. No. 46564

PH 35 ES
Pt. No. 46451

PH 45 ES
Pt. No. 46454

FOR POSITIVE HEAD APPLICATIONS ONLY

50 Hz

CE compliant product

2 YEAR GUARANTEE

PRODUCT DESCRIPTION

Electric motor driven peripheral pump.

APPLICATION

The PH range of peripheral pumps are designed for pressure boosting applications in vented stored, hot or cold, clean water systems.
Inlet pressures to the pump and ambient temperatures must not exceed the values given in the technical specifications.

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

Cont ...

WARNINGS:

- **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 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 must not play with the appliance.**
- **Cleaning and user maintenance shall not be made by children without supervision.**
- **Maximum head (closed valve) PH 35 TS-30 metres, PH 45 TS-42 metres, PH 35 ES-30 metres, PH 45 ES-42 metres.**
- **The motor casing can become very hot under normal operating conditions. Care must be taken to ensure it cannot be touched during operation.**

- **The electrical installation must be carried out in accordance with the current national electrical regulations.**
- **The electrical installation must be installed by a qualified person.**
- **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.**
- **Before starting work on the electrical supply ensure power supply is isolated.**
- **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.**

Cont ...

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

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.

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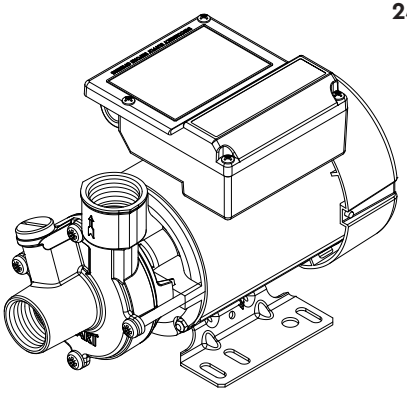
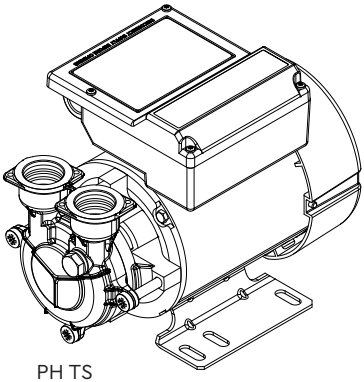
CHECKLIST

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.



PH ES



PH TS

Fig. 1

Your product may vary slightly from the picture above.

1 IMPORTANT FACTS: 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. **DO NOT RUN PUMP DRY.**

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 – Plumbing.

B **Water temperature**

THE WATER ENTERING THE PUMP MUST BE CONTROLLED AS FOLLOWS:

1.13 The maximum allowable water temperature is 80 °C.

1.14 The minimum allowable water temperature is 4 °C.

1.15 **Ambient temperature:** The pump must be sited in a location where the maximum ambient temperature should not exceed 40 °C continuous or 50 °C intermittent (ES models only).

1.16 **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 TechAssist team on +44 (0) 800 31 969 80.

C **Pipework – general**

1.17 **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° bends.

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

D **Plumbing installation regulations**

1.19 The plumbing installation must be installed by a qualified person and in accordance with local regulations.

E **Electrical/installation regulations**

1.20 Check the mains voltage and frequency corresponds to the values on the pump rating plate.

Cont ...

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.

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:** This pump is fitted with steel feet. If there is a requirement to secure the pump via the feet, the following points should be noted.

The pump should be mounted only in the horizontal position.

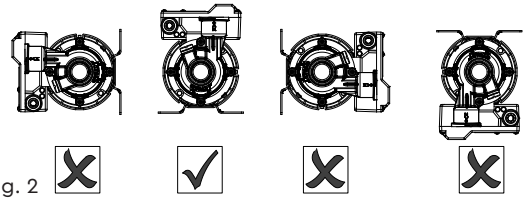


Fig. 2

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 (not supplied).

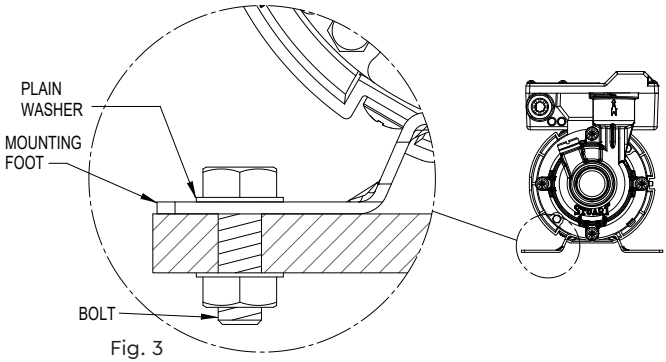


Fig. 3

Cont ...

3 ELECTRICAL INSTALLATION / EARTHING

3.11 **Regulations:** The electrical installation must be carried out in accordance with the current local regulations 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 **Connections:** The pump must be permanently connected to the fixed wiring of the mains supply using the factory fitted supply cord, via a dedicated double pole switched fused spur off the ring main.

3.17 **Wiring of connection unit:**

WARNING: This appliance must be earthed.

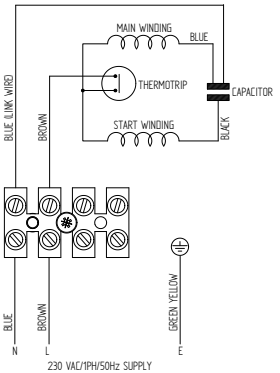
The wires in the mains lead (supply cord) are coloured in accordance with the following code:

Green and Yellow: Earth
Blue: Neutral
Brown: Live

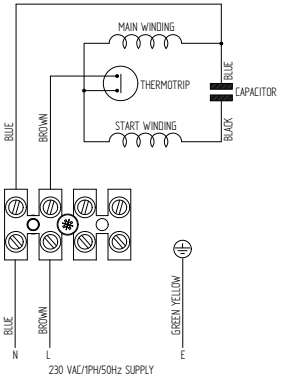
As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your connection unit proceed as follows:

- 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.

3.18 **Wiring diagrams:**



PH 35 variants
Fig. 4



PH 45 variants
Fig. 5

3.19 **Fuse:** All models should use 5 Amp fuse.

3.20 **Supply cord replacement:**

The internal wiring within the terminal box is 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.

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

4 PLUMBING

4.11 **Pipework:** For optimum performance pipework use 22 mm dia., 15 mm can be used but will result in reduced pump performance.

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

4.13 Although this pump is not self priming, once fitted with a footvalve and strainer it can be used to draw water from a storage tank below the pump position, or without a footvalve and stainer, from a tank above the pump position.

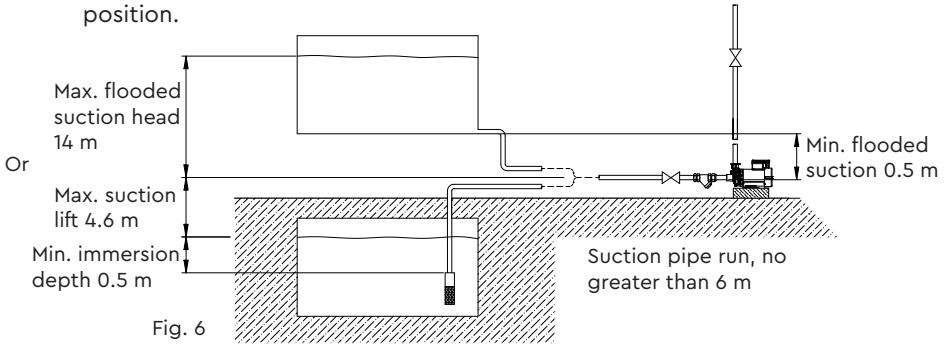


Fig. 6

4.14 **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.

4.15 **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.

4.16 **Flooded suction conditions:**

Turn on the isolating valves.

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

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

4.17 **Suction lift conditions:**

Turn on isolating valves

(a) Loosen vent plug.

(b) Fill the pump head and suction pipe with water from the discharge port until filled with water.

(c) Re-seal vent plug.

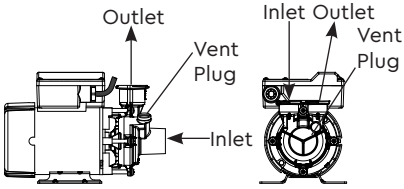


Fig. 7

4.18 **Maintenance:**

This product is maintenance free for its life, however it is a mechanical product and will eventually show signs of wear. Spare parts are available, for more information phone the Stuart Turner TechAssist team on +44 (0) 800 31 969 80.

5 TECHNICAL SPECIFICATION

Pump Model		PH 35 TS 50 Hz 46496	PH 35 TS 50 Hz 46445	PH 45 TS 50 Hz 46504	PH 45 TS 50 Hz 46448
General	Guarantee	2 years			
	WRAS approval	Approved materials			
	Approvals	CE			
Features	Pump type	Peripheral			
	Priming vent plug	✓	✓	✓	✓
	Typical noise	56 dB(A)			
Materials	Pump body	Brass			
	Impeller	Brass			
	Mechanical seal	EPDM / PTFE / Al. Oxide	Viton / Carbon / Silicon Carbide	EPDM / PTFE / Al. Oxide	Viton / Carbon / Silicon Carbide
Performance	Maximum head – closed valve	3.0 bar / 30 metres		4.2 bar / 42 metres	
	Performance @ 9 l/min	2.3 bar / 23 metres		3.3 bar / 33 metres	
	Performance @ 18 l/min	1.4 bar / 14 metres		2.4 bar / 24 metres	
	Maximum flow	34 l/min		44 l/min	
	Minimum static inlet pressure	0.05 bar (0.5 metres)			
	Maximum static inlet pressure	1.4 bar (14 metres)			
	Maximum working pressure*	600 kPa (6 bar)			
	Maximum viscosity	50 secs redwood no. 1 9.5 centistokes			
	Maximum ambient air temperature	40 °C			
	Min / Max water temperature	Min 4 °C / Max 80 °C			
	Maximum suction lift**	4.6 metres			
Connections	Pump connections	G ¾ female			
Motor	Type	Induction, auto-reset thermal trip			
	Duty rating	Continuous (S1) @ 2.5 l/min and above			
Electrical	Power supply (Vac/Ph/Hz)	230 V a.c. / 1 / 50 Hz			
	Power consumption – P1	410 Watts		600 Watts	
	Current – full load	1.8 Amps		2.6 Amps	
	Fuse rating	5 Amps			
	Power cable length	1.5 metres (pre-wired)			
Physical	Enclosure protection	IP44			
	Length	209 mm		225 mm	
	Width	132 mm			
	Height – excluding hoses	169 mm			
	Weight – including fittings	4.4 Kg		6.0 Kg	

Cont ...

5 TECHNICAL SPECIFICATION

Pump Model		PH 35 ES 50 Hz 46563	PH 35 ES 50 Hz 46451	PH 45 ES 50 Hz 46564	PH 45 ES 50 Hz 46454
General	Guarantee	2 years			
	WRAS approval	Approved materials			
	Approvals	CE			
Features	Pump type	Peripheral			
	Priming vent plug	✓	✓	✓	✓
	Typical noise	61 dB(A)		64 dB(A)	
Materials	Pump body	Brass			
	Impeller	Brass			
	Mechanical seal	EPDM / PTFE / Al. Oxide	Viton / Carbon / Silicon Carbide	EPDM / PTFE / Al. Oxide	Viton / Carbon / Silicon Carbide
Performance	Maximum head – closed valve	3.0 bar / 30 metres		4.2 bar / 42 metres	
	Performance @ 9 l/min	2.0 bar / 20 metres		3.2 bar / 32 metres	
	Performance @ 18 l/min	1.2 bar / 12 metres		2.3 bar / 23 metres	
	Maximum flow	32 l/min		40 l/min	
	Minimum static inlet pressure	0.05 bar (0.5 metres)			
	Maximum static inlet pressure	1.4 bar (14 metres)			
	Maximum working pressure*	600 kPa (6 bar)			
	Maximum viscosity	50 secs redwood no. 1 9.5 centistokes			
	Max. ambient air temperature (continuous)	40 °C	40 °C	40 °C	40 °C
	Max. ambient air temperature (intermittent)	50 °C	n/a	50 °C	n/a
	Min / Max water temperature	Min 4 °C / Max 80 °C			
	Maximum suction lift**	4.6 metres			
Connections	Pump connections	G 1 female			
Motor	Type	Induction, auto-reset thermal trip			
	Duty rating	Continuous (S1) @ 5 l/min and above			
Electrical	Power supply (Vac/Ph/Hz)	230 V a.c. / 1 / 50 Hz			
	Power consumption – P1	450 Watts		665 Watts	
	Current – full load	1.95 Amps		2.9 Amps	
	Fuse rating	5 Amps			
	Power cable length	1.5 metres (pre-wired)			
Physical	Enclosure protection	IP44			
	Length	241 mm		257 mm	
	Width	132 mm			
	Height – excluding hoses	169 mm			
	Weight – including fittings	4.6 Kg		6.2 Kg	

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

*Note: The maximum pressure that can be applied to the pump under any installation conditions.

**Note: With footvalve fitted.

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

6 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).
Pump runs, but no liquid.	Air locked	Bleed pipework and pump to clear air.
	No liquid supply.	Check the supply valves are turned on. Check outlet not restricted or blocked.
	Connections reversed.	Check liquid connections are on the right way round.
	No flooded suction.	Check the pump has a flooded suction and is primed.
		If a suction lift exists fit a Stuart footvalve/ strainer and ensure suction is airtight. Prime the pump and suction pipe (see plumbing section).

6.11 **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 2 YEAR GUARANTEE

Congratulations on purchasing a Stuart Turner pump.

We are confident this pump will provide many years of trouble free service as all our products are manufactured to the very highest standard.

All Stuart Pumps are guaranteed to be free from defects in materials or workmanship for 2 years from the date of purchase.

Within the guarantee period we will repair, free of charge, any defects in the pump resulting from faults in material or workmanship, repairing 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 product has been purchased within the guarantee term 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.

In the event of a claim please telephone **'TechAssist'** or return the pump and flexible hoses with the accessories removed e.g pipes etc. If you have any doubt about removing a pump, please consult a professional.

+44 (0) 800 31 969 80

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

You should obtain appropriate insurance cover for any loss or damage which is not covered by Stuart Turner Ltd in this provision.

Please record here for your records.

TYPE NO.	SERIAL NO.	DATE PURCHASED

NOTES

DECLARATION OF CONFORMITY

Machinery Directive – 2006/42/EC
BS EN 12100, BS EN 809
Low Voltage Directive – 2014/35/EU
BS EN 60335-1, BS EN 60335-2-41
EMC Directive – 2014/30/EU
BS EN 55014-1, BS EN 55014-2, 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
EMF Directive – 1999/519/EC
BS EN 62233
RoHs Directive – 2011/65/EU
WEEE Directive – 2012/19/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 ..... Engineering Manager

Stuart Turner are an approved company to BS EN ISO 9001:2015

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