

STUART

TURNER LTD



BOOSTAMATIC PUMPS

OPERATING INSTRUCTIONS

Please leave this instruction booklet with the pump as it contains maintenance and safety information.

BOOSTAMATIC MODELS

Surface Models			Submersible Models
330	Jet 40	Loddon LB5-4	Diver 3
500	Jet 90	Loddon LB6-4	Diver 4
600	Kennet KB6	Thame TB5-2	
		Thame TB7-2	

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IMPORTANT NOTES



- Please read these instructions fully before starting the installation:
- The installation must comply with the relevant water supply, electrical and building regulations and be installed by a competent person.
- If in doubt, consult Stuart Turner Ltd.

APPLICATION

The Boostamatic range is designed for pressure boosting applications in vented stored *hot or cold, clean fresh water systems, where under gravity, no flow is available. Other clean non aggressive, non explosive liquids with similar characteristics to water may be pumped, consult Stuart Turner for such applications.

* Certain models only.



WARNING AGAINST MISUSE

- 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 or used outside the conditions specified in the limits of application.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
Children should be supervised to ensure that they do not play with the appliance.

PRODUCT DESCRIPTION

Electric motor driven pump complete with automatic control module consisting of flow switch, pressure switch, pressure vessel and electronic control.

Motor

Diver Range: Class 'B' insulation, continuously rated and encapsulated with a (304) stainless steel casing.

Jet Range: Class 'B' insulation, totally enclosed fan ventilated cooling, continuously rated.

All Other Ranges: Class 'F' insulation, totally enclosed fan ventilated cooling, continuously rated (except 600, see technical section).

General: All motors are induction type, permanent capacitor, fitted with integral auto resetting thermal overload protection and comply with BS5000 or IEC 34-1. Enclosure ratings are given in the technical specification section.

Pump

All models are close coupled to motor.

330, 500 and 600 are of single stage, end suction, peripheral design.

Diver 3 and 4 Submersible pumps are of three and four stage, centrifugal design.

Jet 40 and 90 are of centrifugal, end suction design.

Kennet KB6 is of single stage, end suction, centrifugal design.

Loddon LB5-4 and LB6-4 are of 4 stage, end suction, centrifugal design.

Thame TB5-2 and Thame TB7-2 are of two stage, end suction, centrifugal design.

Standard pump materials of construction of major wetted parts are as follows:-

Model	Body	Impeller	Shaft	Mechanical Seal
330, 500, 600	Brass	Brass	Stainless Steel	Nitrile/Carbon Ceramic/Stainless Steel
Jet 40 & 90	Polypropylene	Noryl	Stainless Steel	Nitrile/Carbon Ceramic/Stainless Steel
Kennet KB 6	Brass	Acetal	Stainless Steel	Nitrile/Carbon Ceramic/Stainless Steel
Loddon LB5-4, LB6-4	Noryl Stainless Steel	Polycarbonate	Stainless Steel	Nitrile/Carbon Sil Carbide/Stainless Steel
Thame TB5-2, TB7-2	Noryl Stainless Steel	Polycarbonate	Stainless Steel	Nitrile/Carbon/Silicon Carbide/Stainless Steel
Diver 3 & 4	Polypropylene	Noryl	Stainless Steel & Ceramic Sleeve	Lip Seal

Control Module

All models use the solid state IP65 rated pressure control module, mounted remotely in the case of the Diver units. The wetted materials of construction are brass, rubber and nylon 66. All control modules (except Diver) are factory fitted with a mains supply cord.

LIMITS OF APPLICATION

Model	Supply (Note***)	Max. Liquid Temp. °C	Min. Liquid Temp. °C	Max. Suction Lift (m) (Note*)	Max. Immersion Depth (m)	Max. No. Starts/h	Cut In Pressure (bar)	Cut Out Flow (l/min)	Max. Working Pressure kPa (bar) (Note**)	Max. Inlet Head (m)	Max. Head (m) (pump closed valve)
330	230/1/50	65	4	4.6	N/A	60	1.4	0.5	600 (6)	14	27
330	110/1/50	65	4	4.6	N/A	60	1.4	0.5	600 (6)	14	30.5
500	230/1/50	65	4	4.6	N/A	60	1.4	0.5	600 (6)	14	39.1
500	110/1/50	65	4	4.6	N/A	60	1.4	0.5	600 (6)	14	40
500	110/1/60	65	4	4.6	N/A	60	1.4	0.5	600 (6)	14	40.5
600	230/1/50	65	4	4.6	N/A	60	1.4	0.5	700 (7)	14	49.9
Diver 3	230/1/50	35	4	N/A	7	30	1.4	0.5	600 (6)	N/A	34.8
Diver 4	230/1/50	35	4	N/A	7	30	1.4	0.5	600 (6)	N/A	42.2
Jet 40	230/1/50	35	4	7	N/A	30	1.4	0.5	600 (6)	5	36.5
Jet 90	230/1/50	35	4	7	N/A	30	1.4	0.5	600 (6)	5	51
KB6	230/1/50	65	4	1.0	N/A	60	0.8	0.5	600 (6)	8	13.5
LB5-4	230/1/50	65	4	4.6	N/A	60	1.4	0.5	700 (7)	14	47.5
LB6-4	230/1/50	65	4	4.6	N/A	60	1.4	0.5	700 (7)	14	49.3
TB5-2	230/1/50	65	4	4.6	N/A	60	1.4	0.5	400 (4)	10	30.4
TB7-2	230/1/50	65	4	4.6	N/A	60	1.4	0.5	400 (4)	7	33

Notes:

N/A Denotes not applicable.

Submersible pumps must be fully submerged.

Max. permitted viscosity: 9.5 centistokes (Redwood No 1 scale).

Max. permitted ambient air temp: 40°C.

* With footvalve fitted.

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

*** The supply voltage must not exceed $\pm 10\%$ of the above listed voltage.

eg. $230 \pm 10\%$ or $110 \pm 10\%$

Failure to adhere will damage the unit.



TECHNICAL SPECIFICATION

Model	Supply	Max. Watts consumed	Nominal Watts Output (Motor)	Full Load Current (AMPS)	Enc. Rating	Duty Rating	Dims (mm)			Gross Weight (packed) kg	No of Pump Stages
							L	W	H		
330	230/1/50	340	180	1.6	IP44	Continuous (S1)	251	199	337	7.0	1
330	110/1/50	440	370	4.3	IP44	Continuous (S1)	280	199	337	7.0	1
500	230/1/50	540	370	2.4	IP44	Continuous (S1)	280	199	337	8.5	1
500	110/1/50	555	370	5.3	IP44	Continuous (S1)	280	199	337	8.5	1
500	110/1/60	664	370	5.9	IP44	Continuous (S1)	280	199	337	8.5	1
600	230/1/50	885	550	3.9	IP44	*	291	199	337	10.4	1
Diver 3	230/1/50	810	565	3.7	IP68	Continuous (S1)	149	149	376	10.6	3
Diver 4	230/1/50	960	670	4.2	IP68	Continuous (S1)	149	149	396	10.8	4
Jet 40	230/1/50	490	340	2.4	IP44	Continuous (S1)	358	209	410	9.6	1
Jet 90	230/1/50	1195	834	5.2	IP44	Continuous (S1)	400	230	419	14.0	1
KB6	230/1/50	425	250	1.9	IP55	Continuous (S1)	305	244	348	8.3	1
LB5-4	230/1/50	920	600	4.1	IP55	Continuous (S1)	401	215	405	12.2	4
LB6-4	230/1/50	1105	760	5.1	IP55	Continuous (S1)	425	215	405	13.1	4
TB5-2	230/1/50	850	530	3.7	IP55	Continuous (S1)	326	227	402	10.4	2
TB7-2	230/1/50	1150	800	5.3	IP55	Continuous (S1)	350	227	402	11.6	2

Note: *Model 600 Boostamatic duty rating is only continuous (S1) at 7 litres/min and above.

Note: For information on other voltages/frequencies which are not shown, consult any supplementary instruction sheet supplied, or the rating label attached to the pump.

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

PUMP CONNECTIONS

Models	Inlet (Pump)	Outlet (Control Module)
Loddon Range	G1½ Female	G1 Male
Jet 40	G1 Male	G1 Male
Surface Models	G1 Female	G1 Male
Submersible Models	G1 Female	G1 Male

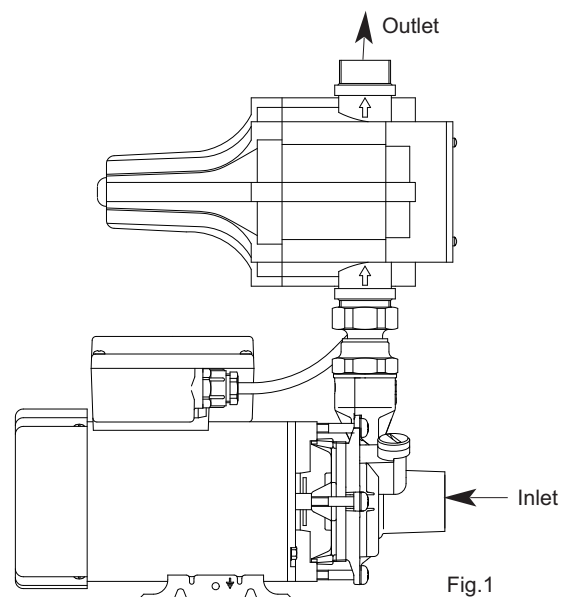
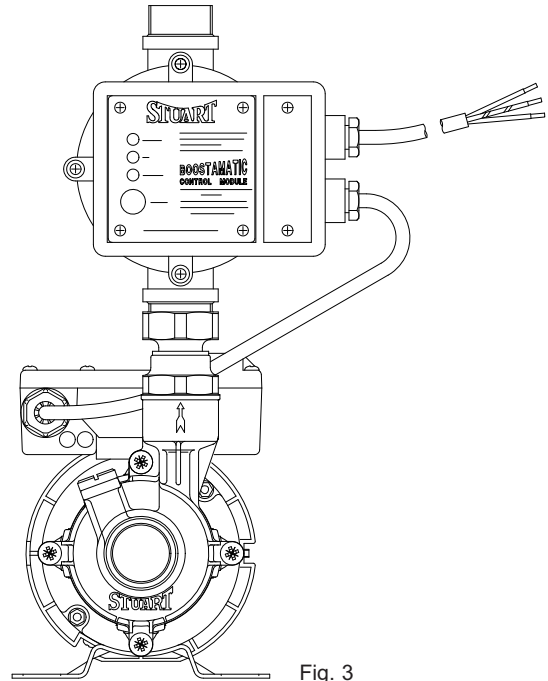
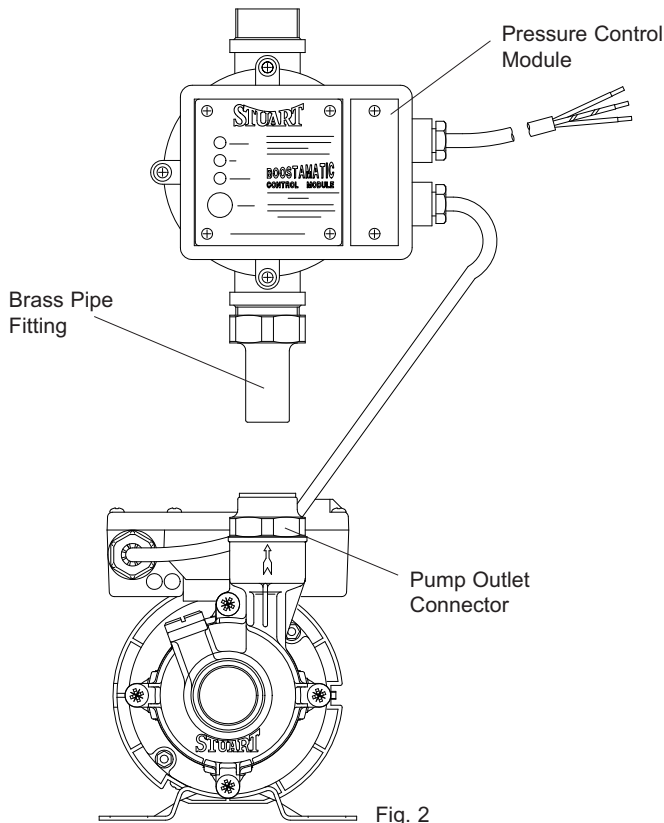


Fig.1

PRE-INSTALLATION ASSEMBLY



Assembly of pressure control module to pump

Some models are despatched with the pressure control module detached from the pump. To assemble, the brass pipe fitting attached to the control module must be inserted into the pump outlet connector (Fig. 2). The control module and pipe fitting must be pushed firmly down into the outlet connector a distance of 35 mm, until the end stop resistance is felt (Fig. 3).

SITING OF THE PUMP/PIPEWORK (Surface Models)

WARNINGS:



- **Pump Location**
If possible site the pump in a location where in the unlikely event of a liquid leak, any spillage is contained or routed to avoid electrics or areas sensitive to liquid damage.
- **Care should be taken to protect pump from frost and freezing.**
- **Ensure pipework to and from pump is independently supported to prevent forces being transferred to inlet and outlet branches of pump.**
- **Do not introduce solder flux to pumps or pump parts manufactured from plastics. All solder joints should be completed and flux residues removed prior to pump connection.**
- **Do not allow plastic pump parts to come into contact with oil or cellulose based paints, paint thinners or strippers, acid based descalents or aggressive cleaning agents.**
- **The motor casing can become very hot under normal operating conditions, care should be taken to ensure it cannot be touched during operation.**



- Do not allow scale or debris to enter pump. Fit inline strainers to eliminate the problem in systems at risk.
- Always install isolating valves to both suction and delivery pipework.
- **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 tanks at all time.** Exceptions can be made in the case of suction lift installations when a footvalve is required, although under these conditions it is recommended a suitable pressure relief valve is fitted in the discharge (outlet) pipework from the pump.

General

Locate the pump complete with pressure control module, in a frost free horizontal position where it cannot be sprayed with water and as close to the liquid source as possible.

The pump enclosure must be ventilated and there should be a minimum clearance of 80 mm between the pump and housing on all sides.

Care must be taken when mounting the pump that any noise is not amplified through loose panels, pipework or other mounting medium. Noise transmission in pipework can be reduced by fitting flexible hoses to pump inlet and outlet ports and by placing the pump on anti-vibration mounting feet. Resilient mounting feet and flexible hoses are available separately as optional extras, contact Stuart Turner for further details.

Ensure the liquid flow is in the direction of the arrows that are moulded onto the pressure control module (vertically upwards).

The control module must be mounted in the vertical position in the discharge pipework and must not be mounted in any other way (on its side for instance).

To prevent loss of pressure through pipework, use pipe size to match pump whenever possible, minimising 90° bends.

It must be ensured that storage capacity of the liquid supply is adequate for the flow rates required by the pump.

The pipework feeds to the storage tank should be of adequate size to ensure replenishment rate of tanks is sufficient to meet the needs of the pump.

Isolating valves should be fitted in suction and delivery pipework to enable easy isolation and access to the pump.

When the pump is to be installed in areas where there is a risk of debris or scale build up within the system, it is recommended that the inlet pipework is fitted with an inline strainer.

Cont....

Pump Mounted Below Liquid Source (Flooded Suction Installation)

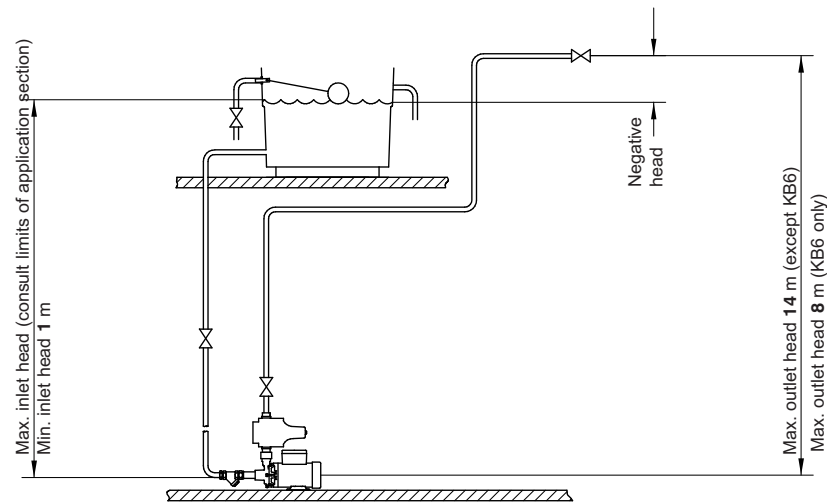


Diagram showing typical Boostamatic installation with flooded suction and pressure control module mounted directly onto pump.

Fig. 4

Before deciding where to locate the unit, check to ensure the static inlet head (Fig. 4) meets the minimum requirement of 1 metre and does not exceed the maximum given in the limits of application section.

The static outlet head (Fig. 4) must also be within the maximum requirement of 8 metres for the KB6 model and 14 metres for all other models.

If the static outlet head exceeds the maximum permissible, the control module must be re-located and consideration must be given to the maximum permitted distance the control module can be moved (Fig. 5). No draw offs should be fitted between the control module and the pump.

For details of removing the pressure control module from the pump and re-wiring, consult the push-in fittings and electrical installation sections.

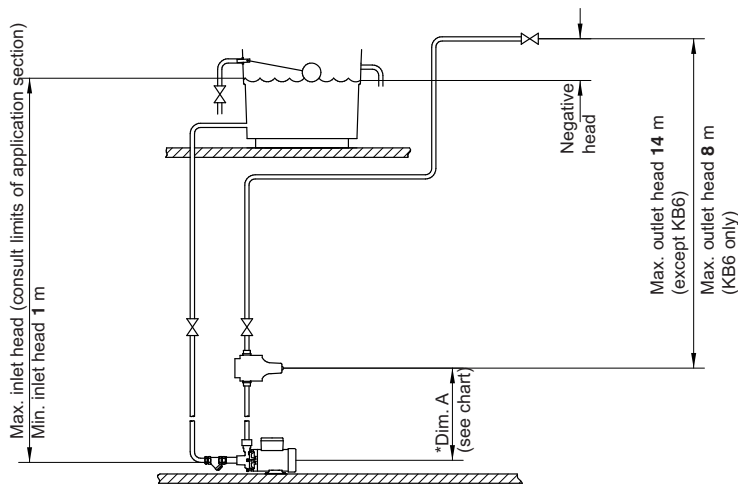


Diagram showing typical Boostamatic installation with flooded suction and remote mounting of pressure control module.

Fig. 5

Model	Dim. 'A' (m)	Model	Dim. 'A' (m)
KB6	3	Jet 40	18
330	8	Jet 90	32
500	20	Loddon	29
600	31	Thame	12

*Dimension 'A' (given above) is the maximum distance the control module can be repositioned when the static inlet head is at the 1 metre minimum requirement.

However dimension 'A' can be increased to correspond with any increase in the static inlet head eg:

Model	Inlet Head (m)	Dim. 'A' (m)
500	1	20
500	5	24

Pump Mounted Above Liquid Source (Suction Lift Installation)

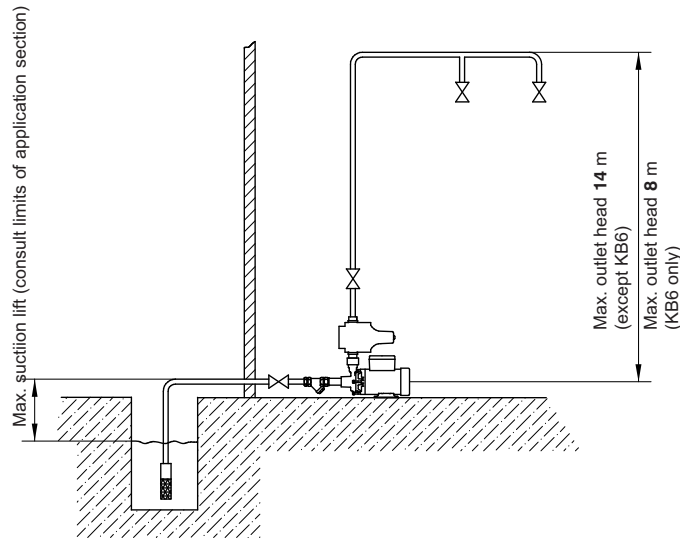


Diagram showing typical Boostamatic installation with suction lift and pressure control module mounted directly onto pump. Fig. 6

The pumps can be used in a suction lift installation providing the height of lift is within the limits specified in the limits of application section and the liquid to be pumped is cold water (for applications other than cold water contact Stuart Turner).

Before deciding where to locate the unit, check to ensure the static outlet head (Fig. 6) does not exceed the maximum requirements of 8 metres for the KB6 model and 14 metres for all other models.

If the static outlet head does exceed the maximum permissible, the control module must be re-located and consideration must be given to the maximum permitted distance the control module can be moved (Fig. 7). No draw offs should be fitted between the control module and the pump.

For details of removing the pressure control module from the pump and re-wiring, consult the push-in fittings and electrical installation sections.

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 in the suction pipework, it is recommended that suitable pressure relief valve be fitted in the discharge (outlet) pipework from the pump.

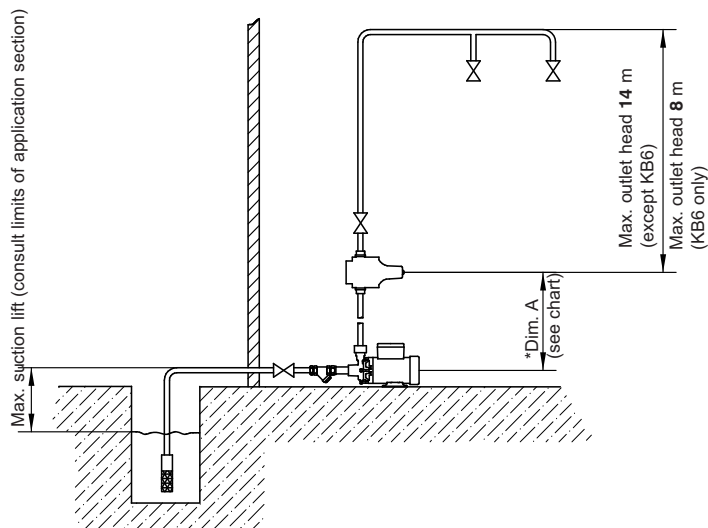


Diagram showing typical Boostamatic installation with suction lift and remote mounting of pressure control module.

Fig. 7

Model	Dim. 'A' (m)	Model	Dim. 'A' (m)
KB6	0	Jet 40	9
330	2	Jet 90	23
500	14	Loddon	22
600	25	Thame	5

*Dimension 'A' (given above) is the maximum distance the control module can be re-positioned when the suction lift distance is the maximum permissible (see limits of application section). However dimension 'A' can be increased to correspond with any decrease in the suction lift eg:

Model	Suction Lift (m)	Dim. 'A' (m)
500	4.6	14
500	2.6	16

Jet 40/90 pumps

The Jet 40 and 90 pumps are self priming up to a suction lift of 7 metres. A discharge hose elbow fitting and suction hose fitting, complete with hose and footvalve/strainer suitable for this kind of installation are available as optional extras. Part Nos. as follows:-

Hose assy 7m inclusive footvalve/strainer 26880

G1 discharge hose elbow assy 26881

It is important that the optional suction hose assembly is always used on suction lift installations.

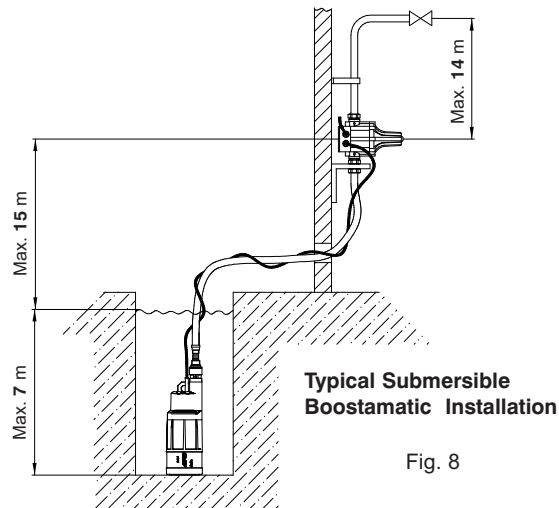
When Jet pumps are used in a suction lift installation, delivery pipework should be a minimum of 25 mm dia and any fittings connected directly to the pump should be plastic.

SITING OF THE PUMP/PIPEWORK (Submersible Models)

WARNINGS:



- Ensure pipework from pump is independently supported to prevent forces being transferred to outlet branch.
- Do not under any circumstances use the cable fitted as a means to carry or lower the pump into position on installation. Attach a rope sling to the lifting eye.
- Ensure the pump cannot be subjected to freezing conditions as damage may result.
- Never run pump whilst sucking air/liquid as the motor will overheat. To prevent this from happening always install pump in the vertical position and ensure fully submerged.



The pumps are supplied with a non-return valve which should be screwed directly into the pump outlet port. The purpose of the valve is to limit back flow and pressure on the pump and ensure discharge pipework is always primed with water. The pumps are also supplied with an outlet adaptor which allows for a range of different pipework connections as follows: G1 - G $\frac{3}{4}$ male thread or 25/22 mm diameter bore hose. For best flow use the largest pipe possible, small sizes will reduce performance. The pump should be installed vertically and should be submerged at all times to avoid overheating of the motor. When siting the pump ensure its base is raised slightly from the base of the sump reducing the possibility of blocking the pump inlet filter with debris. The discharge pipework must be independently supported to prevent forces being transferred to pump outlet branch.

If the pump is not to sit on the bottom of the sump or it is too deep, then it should be suspended by a rope attached to the lifting eye located on top of the pump.

The pressure control module is supplied loose with the Diver pumps. The control module is to be mounted remotely from the pump in a dry frost free enclosure or building (Fig. 8). Ensure the water flow is in the direction of the arrows that are moulded onto the pressure control module (vertically upwards).

The control module must be mounted in the vertical position and not mounted in any other way (on its side for instance).

The pump must be wired to the control module as detailed in wiring diagram section.

RELEASE AND CONNECTION OF PUSH-IN FITTINGS (Surface Pumps only)

WARNINGS: (Push-In Connectors)



- **Do not use stainless steel, chrome or nickel plated pipe with Stuart Turner push-in plumbing connections.**
- **Do not introduce solder flux into the joint or surrounding area as connectors will be attacked and may fail.**
All solder joints should be completed and flux residues removed before final connection to push-in connections, either on flexible hose or pump head.
- **Do not allow contact with oil or cellulose based paints, paint thinners or strippers, acid based descalents or aggressive cleaning agents.**

All surface pumps use a 22 mm quick release connector to attach the pressure control module to the pump. This is to assist in the task of relocating the control module if required to do so.

The push-in connector allows the control module to be rotated into a position that suits the installation whilst still remaining pressure tight.

Disconnection

To break the joint, push the control module firmly into fitting, hold collet down (Fig. 10) and gently remove module. If the system has been filled with water care should be taken to isolate the pump and towels used to absorb spilled liquid.

Connection

1. Stuart Turner recommend only the use of their 22 mm flexible hoses.

The hose and pump are fitted with plastic push-in connectors, which **must** only be connected with the following:

- a) 22 mm diameter copper pipe to BS EN 1057 - R250 (half hard) - Table 3.
- b) 22 mm plastic pipe to BS 7291 part 1 and part 2 (Table 1), or part 3 (Table 1) plus internal support sleeve*.

* The internal bore of the plastic pipe must be supported against collapse with the pipe manufacturers recommended support sleeve (pipe insert).

- c) Appropriate plumbing fittings from the John Guest 'speedfit' push-in plumbing fitting range.

Other manufacturers fittings are not necessarily compatible and may not provide a water tight connection.

Ensure the pipe is free from all score marks and deformities in the area of the insertion depth (Fig. 9) and cut the pipe square removing all burrs and sharp edges to prevent damage to the sealing 'O'-ring.

2. Prior to inserting pipe into fitting mark the insertion depth on the wall of the pipe with a soft pencil at a distance of 35 mm from the end to be inserted.

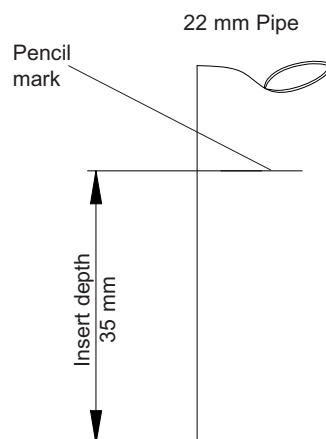
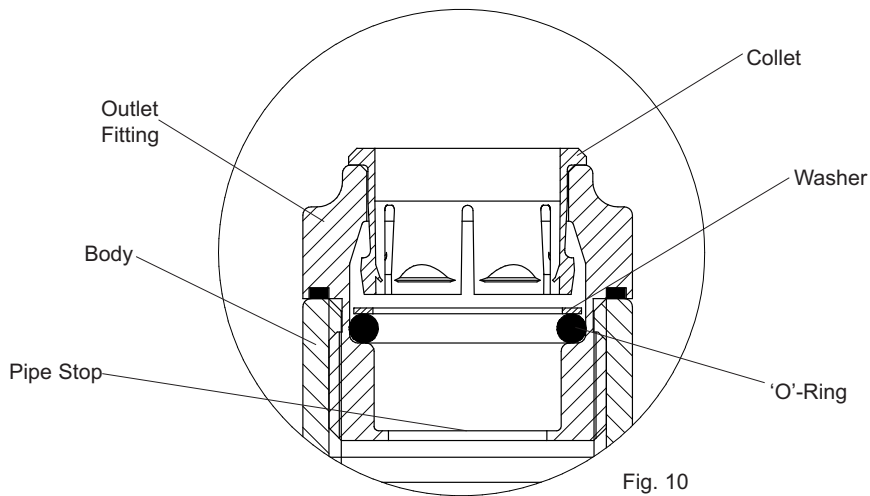


Fig. 9

3. Check in the mouth of the fitting that 'O'-ring, nylon washer and collet are in position.



4. Push pipe firmly into the fitting, until pencil mark is level with the top of the collet and the pipe stop resistance is felt. Pull on pipe to check it is secure and correctly fitted.

If you have any concern either about using push-in fittings or should the joint leak on final test isolate the water supplies and contact Pump Assist on 0844 98 000 97.

ELECTRICAL INSTALLATION

WARNINGS:



- The electrical installation must be carried out in accordance with the current national electrical regulations and installed by a competent person.
- In the interests of electrical safety a 30 mA residual current device (R.C.D.) should be installed in the supply circuit. This may be part of a consumer unit or a separate unit. For submersible pump installations this device **MUST** be installed.
- Before starting work on the electrical installation ensure the power supply is isolated.
- This appliance must be earthed.
- The motor and wiring must not be exposed to water.
- 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.

The standard pumps are suitable for a supply of 230V, 1 Phase, 50Hz. Other voltages (110V) and frequencies (60Hz) are available on certain models and it is therefore very important to ensure the voltage and frequency on the pump rating plate matches the supply.

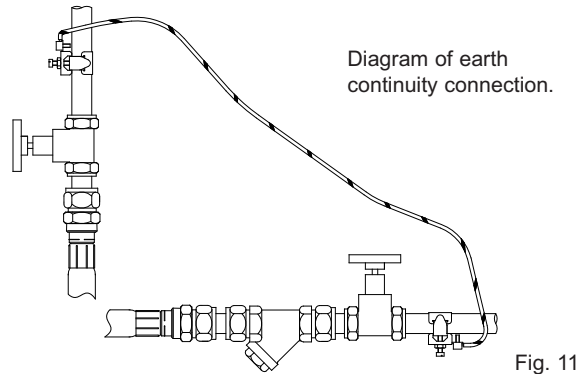
When installing a 110V, 1 phase pump, it must be in accordance with the current electrical regulations that apply to the installation.

The pumps are rated for continuous use with the exception of the 600 Boostamatic (see technical specification for rating details).

Earthing

This appliance must be earthed via the supply cord.

Copper or metallic pipework must have supplementary earth bonding where the continuity has been broken by flexible hoses or plastic components. Adjacent suction and delivery pipes should be fitted with earthing clamps to BS 951 and connected with earthing wire size 4 mm² (Fig. 11). A standard kit is available from Stuart Turner (Part No. 17044).



Certain installations may require additional earthing requirements such as supplementary equipotential bonding. Reference should be made to the relevant regulations concerning this subject to ensure compliance.

Electrical Connection (Surface models except Jet range)

The pressure control module fitted to this product range is provided with a factory fitted supply cord. This must be permanently connected to the fixed wiring of the mains supply. Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

A suitable method of connection would be via a double pole switched, fused connection unit complying with BS 1363-4, protected with a fuse (see fuse section).

The connection unit 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.

Electrical Connection (Jet range)

The pressure control module fitted to the Jet range 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.

Electrical Connection (Submersible range)

The pressure control module provided with the submersible range is supplied loose for remote mounting. This must be permanently connected to the fixed wiring and is provided with a set of terminals located in the control module which allow the connection of a flexible supply cord. Means for disconnection must be incorporated in the fixed wiring according to the wiring rules.

A suitable method of connection would be via a double pole switched, fused connection unit complying with BS 1363-4.

The connection unit 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.

WARNINGS:



- A residual current device having rated current not exceeding 30 mA **MUST** be installed in the supply circuit.
- Isolate power supply before putting your hands in the liquid.
- The pressure control module must be protected from the elements.

Wiring (Surface models except Jet range)


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 colours of the core in the new mains lead 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 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 marked with the letter 'N' or coloured black.

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

Wiring (Jet range)

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).

If the plug supplied is not suitable for your socket outlet, it should be cut off and destroyed.



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

The end of the flexible cord should be suitably prepared and correct plug fitted, as follows:


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

Green & Yellow: Earth

Blue: Neutral

Brown: Live

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured green and yellow must be connected to the terminal in the plug 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.

Wiring (Submersible range)

The supply cord that connects the remotely mounted pressure control module to the mains supply is not provided. This cord must be sourced and provided by the installer. Cord selection should be chosen in accordance with the current involved/surrounding conditions and the fuse size required to protect the factory fitted pump supply cord (see fuse section).

The pump must also be connected to the pressure control module using the factory fitted pump supply cord which is provided with ends bared.

For information on cable fitting and connection, consult the wiring diagram and cable gland fitting instructions for the control module.



WARNING: The supply cord of this pump cannot be replaced. If the cord is damaged, the pump should be scrapped.

Wiring Diagrams



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.

Cont....

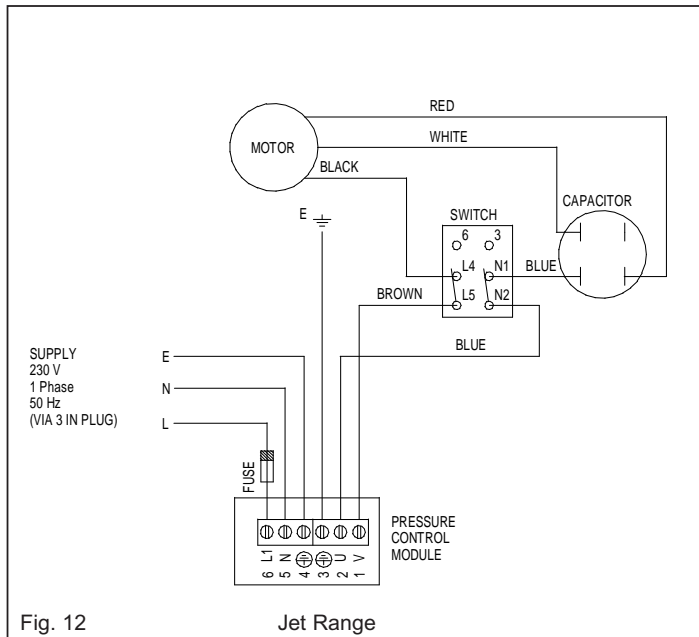


Fig. 12

Jet Range

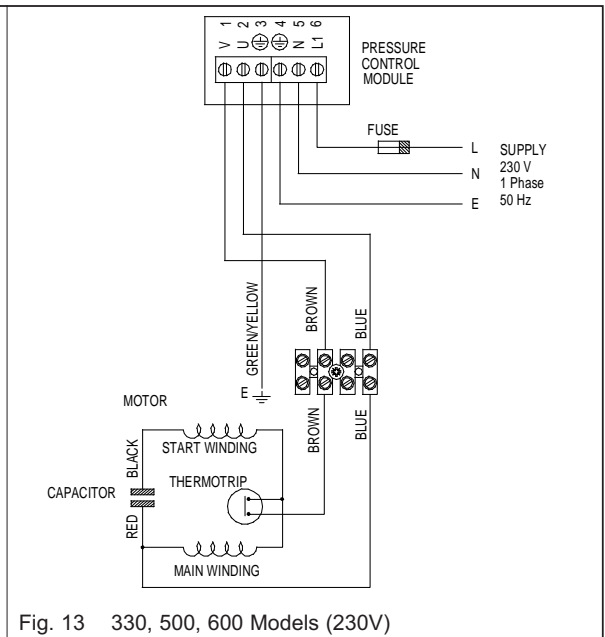


Fig. 13 330, 500, 600 Models (230V)

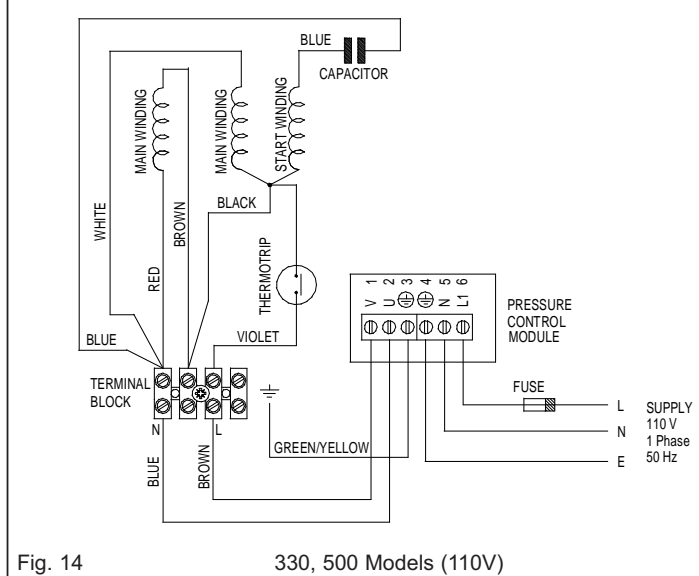


Fig. 14

330, 500 Models (110V)

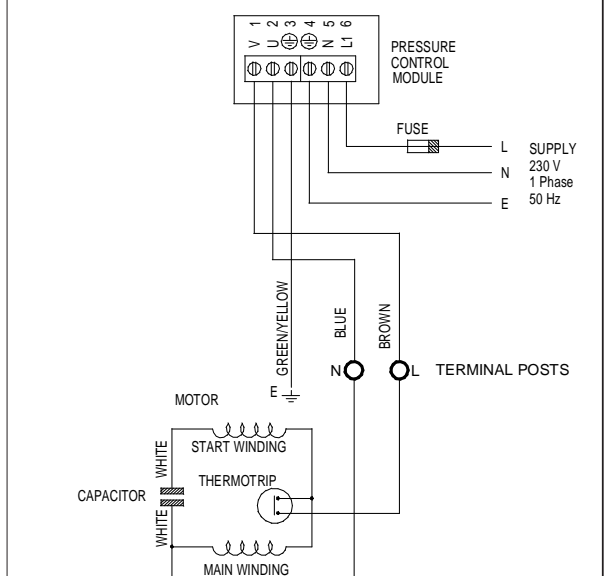


Fig. 15

Kennet Range

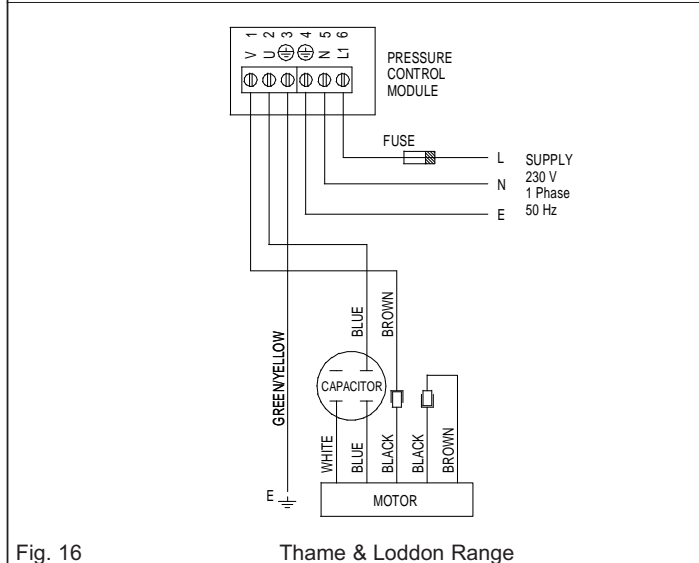


Fig. 16

Thame & Loddon Range

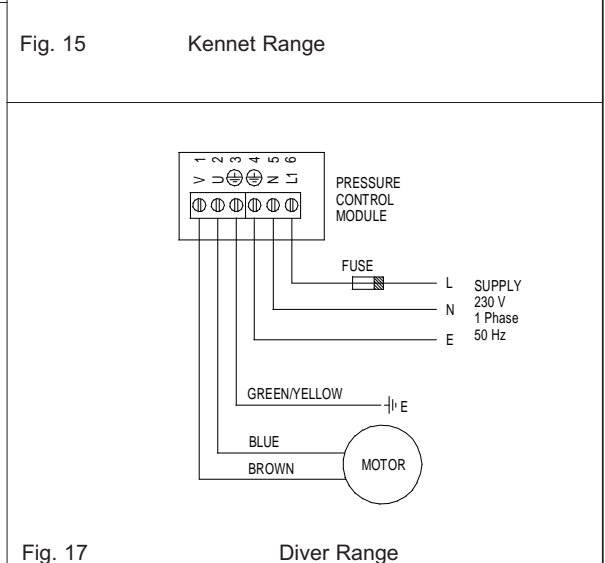


Fig. 17

Diver Range

Fuses

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

Model	Fuse Size (Amps)
Diver range	13
Jet range	13
Thame range	13
Loddon range	13
110 Volt models	13
All other models	5

Supply Cord Replacement

If the supply cord needs to be replaced, cord selection should be chosen in accordance with the current involved, surrounding conditions and recommended fuse size. For information on cable fitting and connection, consult the wiring diagram and cable gland fitting instructions.

Intermediate Connecting Cord Replacement (Surface Models)

If the intermediate connecting cord between the control module and the pump 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 intermediate cords retention and routing systems and reassemble to the same pattern.

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

Intermediate Connecting Cord Replacement (Submersible Models)

The intermediate connecting cord (pump supply cord) which connects the pump to the control module **cannot** be replaced. If the cord is damaged the pump should be scrapped.

Cable Gland Fitting Instructions (Pressure Control Module)

The cable gland assembly (Fig. 18 items 1 & 2) provides the necessary protection against ingress of solid objects and moisture.

The cable retention system is provided by the cable strap assembly (Fig.18 items 3 & 4) located inside the control module terminal box.

Assembly instructions are as follows:

1. Ensure selected cable sheath diameter is within the permitted range (6 to 9 mm).
2. Strip and prepare cable sheath and insulators as shown in Fig. 19.
3. Disassemble cable gland and strap assemblies and insert cable into position as shown (Fig. 18) ensuring rubber collar (item 2) is placed over cable before the clamp nut (item 1) is tightened.
4. Consolidate the stranded conductor ends by twisting, insert and secure in appropriate terminals - ensuring **all** conductor strands are clamped.

5. Assemble and secure terminal box cover.

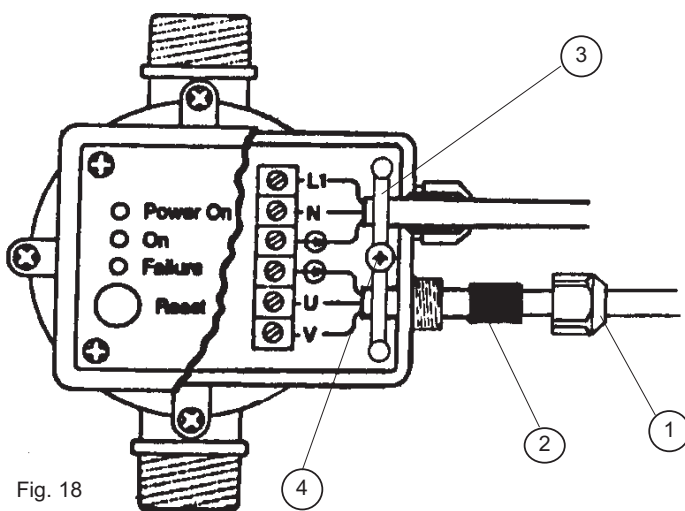


Fig. 18

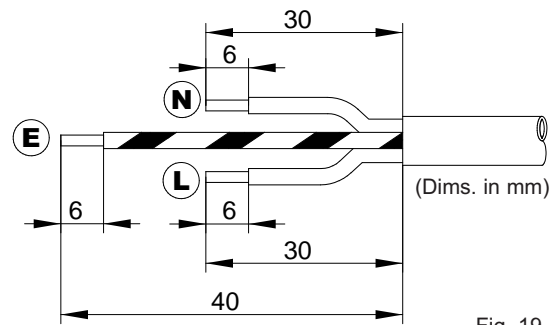


Fig. 19

Cable Gland Fitting Instructions (Motor Terminal Box)

(Applicable to 330, 500, 600 and Kennet KB6 models)

To enable correct assembly of the cable gland, the 'O'-ring (Fig. 20 item 1) must be placed over the cable before the clamping insert (Fig. 20 item 2) can be tightened as shown.

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

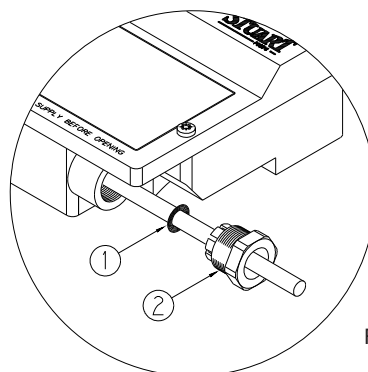


Fig. 20

Supply Cord Extension (Models 330, 500, 600, Kennet, Loddon and Thame Range)

This range of pumps are fitted with a supply cord to the following specifications:-

330, 500 (230V), 600 & Kennet range:-HO5VV-F3 G 0.75 mm² - 6 Amp rating.

500 (110V):-HO5VV-F3 G 1.0 mm² - 10 Amp rating.

Thame and Loddon range:-HO7RN-F3 G 1.0 mm² - 10 Amp rating.

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.

Supply Cord Extension (Models Jet 40 and 90)

This range of pumps is fitted with a supply cord suitable for outdoor use. Cord specification is as follows:-

HO7RN-F3 G 1.0 mm² - 10 Amp rating.

If the power cord is to be extended, a cord of the same specification should be used. If the installation is outdoors then any connectors or junction boxes must be specifically suited for outdoor use and installed in accordance with the manufacturers instructions. Any cable routed underground must be protected to local standards.

Intermediate Connecting Cord Extension (Models Diver 3 and 4)

The intermediate connecting cord which connects the pump to the control module is of a type suitable for outdoor use. Cord specification is as follows:

H07RN-F3 G 1.0 mm² - 10 amp rating.

If an extension cord is necessary a cord of the proper type and rating must be used.

In general for 230 volt pumps on distances up to 40 metres (inclusive of original cord length) the same specification cord as fitted to the pump can be used. For distances above 40 metres a larger cord size may be required due to voltage drop and advice must be obtained based upon installation details.

Any connectors or junction boxes must be specifically suited for outdoor use and installed in accordance with manufacturers instructions.

Any cable routed underground must be protected to local standards.

NOISE

The equivalent continuous A-weighted sound pressure level at a distance of 1 metre from the pumpset does not exceed

70 dB(A) for all models except Jet range.

76 dB(A) for Jet 40

81 dB(A) for Jet 90

COMMISSIONING

WARNINGS:



- **The motor casing can become very hot under normal operating conditions, care should be taken to ensure it cannot be touched during operation.**
- **Do not run pump without guards and terminal box lids correctly fitted.**
- **Care should be taken to protect the pump from freezing.**
- **The pump chamber must be full of liquid at all times. Seal damage will result if the pump runs dry.**



1. System Flushing

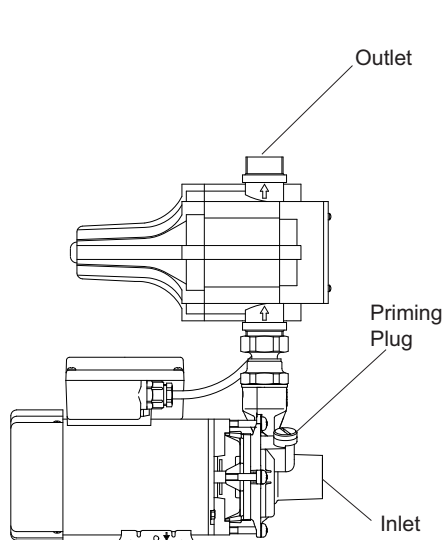
This pump-set incorporates push-in connectors and plastic components that must not come into contact with solder flux, acid-based descalents or aggressive cleaning agents. The pipework system should be flushed out prior to the pump being connected to ensure any contaminants/chemical residues and foreign bodies are removed from elsewhere in the system.



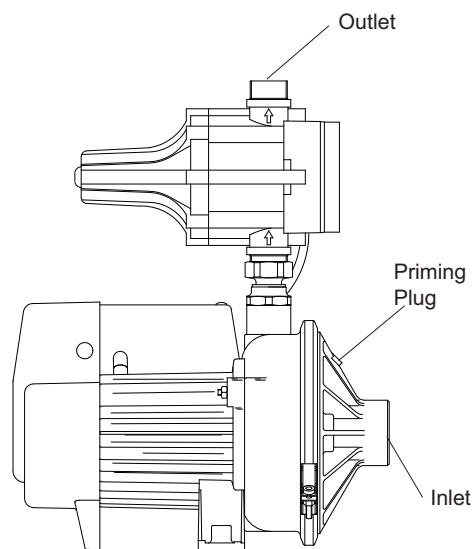
2. Liquid Supply

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

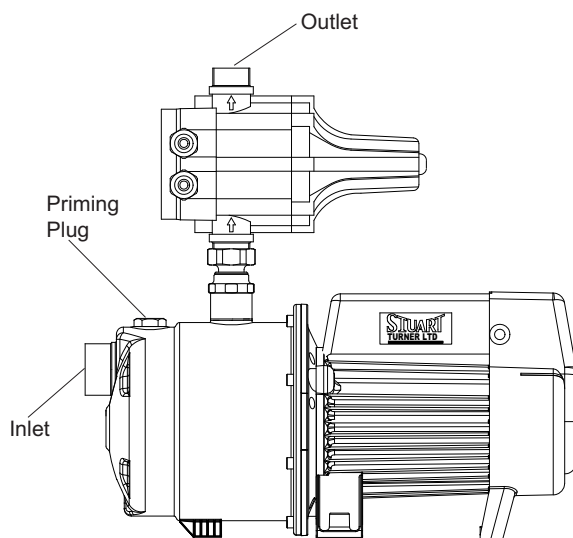
3. Ensure electrical supply is compatible with the details that are stated on the pump rating plate. (The wrong voltage or frequency can be dangerous and may damage the pump.)
4. Priming (330, 500, 600, Kennet, Loddon and Thame Range)
 - a) Flooded suction installation
 The pump must be primed (filled with liquid) before starting. Turn on liquid supply, prime and vent the pump by unscrewing the priming plug (Figs. 21-25) slowly until all air escapes and liquid emerges. Re-tighten plug.
 - b) Suction lift installation
 A footvalve and strainer must be fitted to the end of the inlet pipework. Prime the suction pipework by filling before connecting to the pump. Prime the pump by filling via the priming plug (Figs. 21-25).



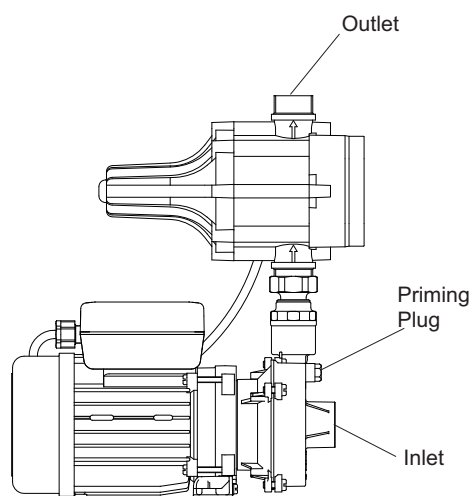
330/500/600
Boostamatic
Fig. 21



Thame Boostamatic
Fig. 22



Loddon Boostamatic
Fig. 23



Kennet Boostamatic
Fig. 24

Priming (Jet 40 and 90 Range)

Flooded suction installations see (4a).

Suction lift installations with footvalve and strainer see (4b).

Suction lift installation, self priming of suction hose.

This pump is capable of self priming the suction hose with liquid on installation. It is recommended that the optional suction hose assembly is always used for this application. First ensure both suction and delivery hose connections are airtight. Remove the priming plug (Fig. 25) and fill the pump body with liquid, slowly allowing the air to escape. Replace the plug.

Ensure the suction hose is fully submerged in the liquid source and the delivery hose is open to enable the pump to vent air. Turn on the switch located on the pump (Fig. 26) and turn on electricity supply. The pump will start and begin to prime the suction pipework. If the (red) L.E.D failure light on the control module illuminates, this indicates that the pump is out of liquid or priming has not been completed. Turn off power, check liquid supply level in pump is still full, if OK, turn on power and keep the control module RESTART button depressed until priming complete. 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.

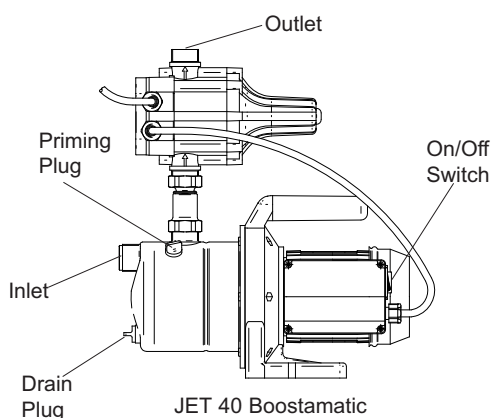
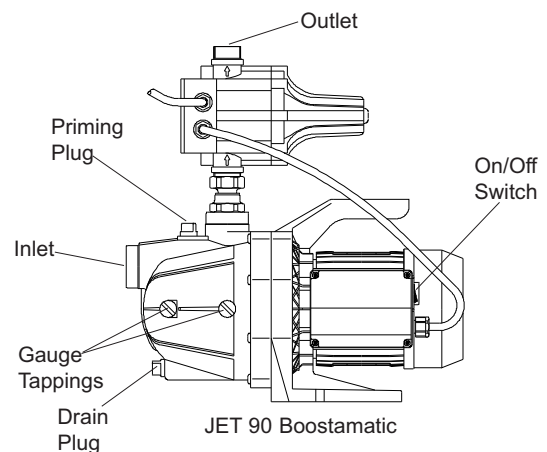


Fig. 25



Priming (Diver 3 and 4 Range)

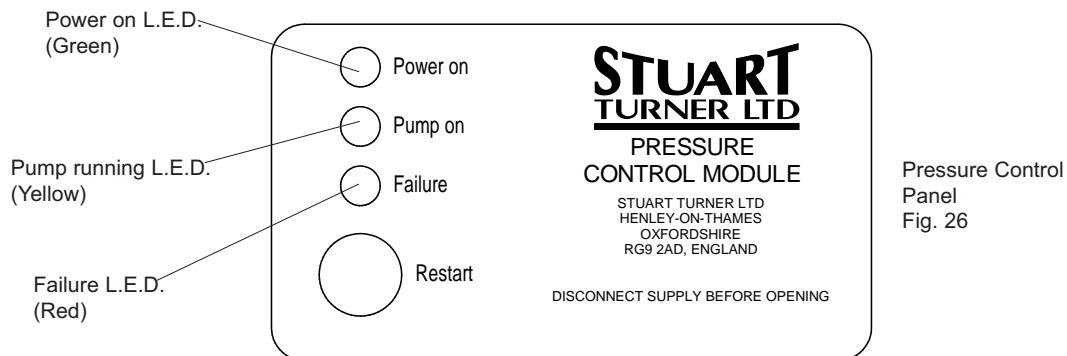
The pump should be fully submerged before starting, take care when submerging the pump to ensure all air is purged from the casing. This is done by slowly submerging the pump and gently agitating whilst doing so.

5. Starting The Pump

Turn on the electrical supply and the green L.E.D. 'power on' lights up. The yellow L.E.D. lights up when the pump is running (Fig. 26). Note: On the Jet pump only, there is an integral on/off switch mounted on the pump (Fig. 25) which must be turned to the on position.

The pump will run until the system is completely charged and the maximum pressure reached. All taps or outlets on the system need to be operated starting with the highest outlet. This is to release air that may be trapped in the system. If the failure (red) L.E.D. lights up, this indicates that the pump is out of liquid or priming is incomplete. In the event of this happening, check liquid supply to pump. If all is in

order keep the RESTART button depressed with a tap open and wait until the red failure light goes out. When the button is released and the tap closed, the pressure control module will stop the pump at its maximum pressure. **Do not run against a closed valve for periods longer than 5 minutes.**



6. Functioning

Once the commissioning operation is completed, the module will perform all pump control operations automatically. Note: After closing any outlet there will be a small delay time before the pump stops operating, which is normal. When particular operational breakdowns occur, such as liquid failure, obstruction of the suction pipe, etc., the module recognises the breakdown and the red L.E.D. FAILURE light comes on. The pump stops operating to prevent damage caused by its working in the absence of liquid. After rectification of the failure, the system is restarted by depressing the restart button.

Carefully check pump and pipework for leaks whilst pump running and stationary before leaving the installation unattended.

For Further Technical Support

Note: When pumps are installed in OEM equipment, please contact the OEM manufacturer for advice.

Phone the Stuart Turner Pump Assist team on 0844 98 000 97. Our staff are trained to help and advise you over the phone or arrange for a service engineer to call.

MAINTENANCE

WARNINGS:



- **Care should be taken to protect pump from frost and freezing.**
- **If possible site the pump in a location where in the unlikely event of a liquid leak, any spillage is contained or routed to avoid electrics or areas sensitive to liquid damage.**

Cleaners, disinfectants and descalents



On installations where chemical disinfectants or descalents are periodically used, the compatibility of the chemical solution regarding the pump must be considered.

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 refer to Stuart Turner Ltd.

Surface Models



1. No routine maintenance is required, but provision should be made for easy access to the pump to allow repairs due to normal wear and tear.
2. Disconnect electrical supply before working on pump or pressure control module.
3. Turn off liquid supplies to the pump and release pressure by opening liquid outlets before attempting maintenance.
4. Inlet strainers and footvalve strainers when fitted may require periodical cleaning. The frequency of this operation is dependent upon installation conditions.
5. As water is heated scale deposits are released in areas of hard water (usually south of a line between the Wash and Bristol Channel), scale can cause the mechanical seal to stick if left without use for long periods. We recommend the pump is run for at least 5 minutes every four weeks to “exercise” all working parts. Run on cool water.
6. After maintenance is completed, refer to the starting and commissioning sections for instructions on re-starting pump.

Submersible Models



Provision should be made for easy access to the pump to allow for regular maintenance.

The integral filter and any additional pre-filters should be checked periodically and cleaned if required. It is important the filters are clean and free from debris which in turn ensures the pump will always run at maximum efficiency. A blocked filter can cause damage to the pump.

The pump must be cleaned as follows:-

1. Disconnect electrical supply before working on pump or pressure control module.
2. Release system pressure from pipework and remove pump from water using lifting eye and rope.
3. Clean inlet filter using water pressure from a hose pipe.
4. After maintenance is completed, refer to the starting and commissioning sections for instructions on re-starting pump.

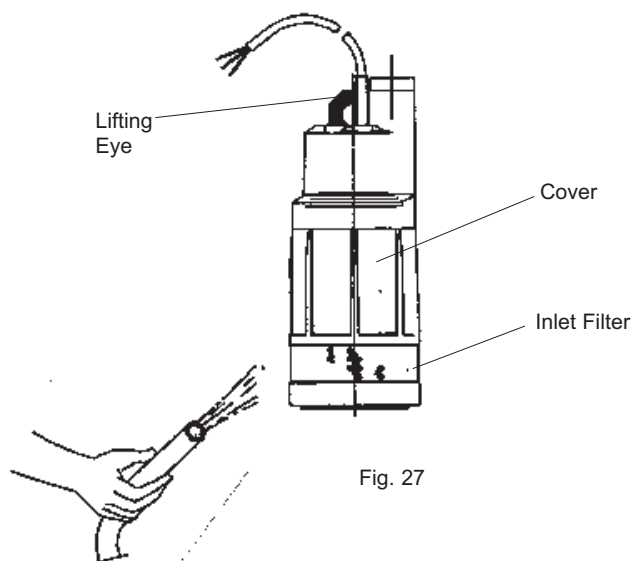


Fig. 27

STORAGE

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

TROUBLE SHOOTING GUIDE

Symptoms	Probable Cause	Recommended Action
Pump will not start. Control module failure light illuminated.	Liquid supply low. Inlet filter blocked (if fitted). Electrical supply. Static inlet or outlet head is greater than permitted.	Check liquid level in the supply tank and all stopcocks are open. Reset the control module by depressing the restart button. Remove and clean filter gauze. Reset control unit. Check all electrical switches are on. Is the correct fuse fitted? Is the circuit breaker set? Re-position control module. (See siting of the pump and limits of application section).
Pump will not start.	Integral motor thermotrip activated. Integral on/off switch in off position (Jet pump only).	Wait for thermotrip to cool and auto-reset. Investigate cause of problem Switch to on position.
The pump does not stop.	System leaks. Flow detector jammed. Control module has been remotely re-positioned incorrectly. Restart button is jammed.	Check system for leaks by closing isolating valve on pump outlet while pump is running. If pump stops it confirms there is a condition in the system calling for the pump to run. Re-open outlet isolating valve and investigate cause for demand and rectify. Contact Stuart Turner for test procedure. Re-position control module (see siting of pump section). Press button repeatedly to free. Turn power off and on to re-set control unit.
No hot water. (if applicable)	Air locked. Water feed. Boiler is switched off. Faulty thermostatic mixer valve.	Bleed hot water pump of air. Check cold feed to hot water cylinder. Check water level in the supply tank and all stopcocks are open. Check boiler is switched On. Check cylinder thermostat is set. Is immersion heater operating? Check temperature of cylinders. Consult makers instructions.
Pump surges.	Insufficient liquid supply to pump. Air is trapped in system. Blockage/restriction in pipework.	Check liquid level in supply tank and all stopcocks are open. Purge the system of air. Remove restriction.
Pump hunting (starting and stopping).	Failing non-return valve in control module.	Contact Stuart Turner for test procedure.

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.

NOTES



DECLARATION OF CONFORMITY

98/37/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, EN 50366

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

2000/14/EC

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

Customer Relationship Manager

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

YOUR 1 YEAR GUARANTEE

Stuart Boostamatic Pumps are guaranteed by Stuart Turner Limited to be free from defects in materials or workmanship for 1 year 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, exchanging parts or exchanging the whole unit as we may choose.

Not covered by this guarantee: Damage arising from 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 1 year prior to the date of claim.

This guarantee is in addition to the purchaser's rights under any legislation presently in force.

In the event of a claim please telephone Pump Assist on 0844 98 000 97 or return pump with accessories removed, pipes etc.

Proof of purchase should accompany the returned unit to avoid delay in action.

**STUART
TURNER LTD**

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