STUART TURNER

MAINSBOOST

Mainsboost Charger Installation, Operation & Maintenance Instructions

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

Read this manual carefully before commencing installation.
This manual covers all Mainsboost steel vessels for vertical and horizontal units.

Mainsboost Charger Pump MJ3 – Vessel Mounted
Previously named Mainsboost Plus (both vertical & horizontal variants)

WRAS APPROVED PRODUCT

5 YEAR WARRANTY

CE compliant product

PRODUCT DESCRIPTION

Mainsboost Charger MJ3 consists of three key assemblies, the Mainsboost vessel, Charger MJ3 pump and upstream line-in kit.

APPLICATION

Mainsboost Charger MJ3 is designed to offer stored clean, potable cold water under pressure for all domestic or small commercial applications where mains water is insufficient to offer consistent and reliable water services.
Installation parameters 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

WARNINGS:

- **Mainsboost Charger MJ3 system must not be used for any other application without the written consent of Stuart Turner Limited.**
- **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.**
- **Maximum head (closed valve) 43 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.**

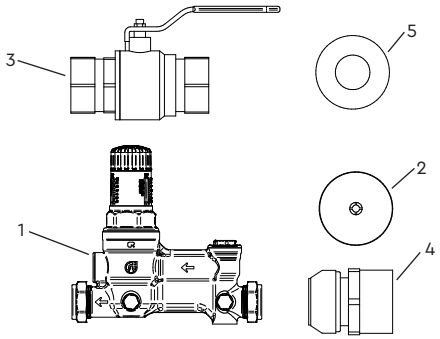
- **This appliance must be earthed via the supply cord, which must be correctly connected to the earth point located in the terminal box.**
- **The supply cord and internal wiring within the terminal box are routed and secured to ensure compliance with the electrical standard EN 60335–1. It is essential 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. These instructions must be left with the product.

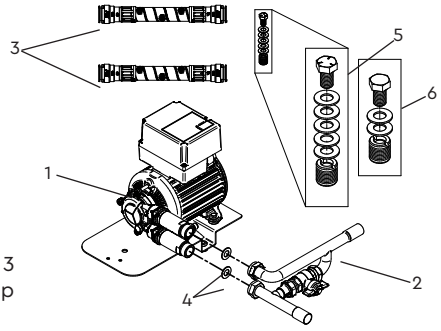
CHECKLIST

IMPORTANT: Your Mainsboost Charger MJ3 system will be delivered in a minimum of three boxes on one pallet. Please check the contents within 24 hours of receipt and if any component is damaged, please contact Stuart Turner Ltd immediately.

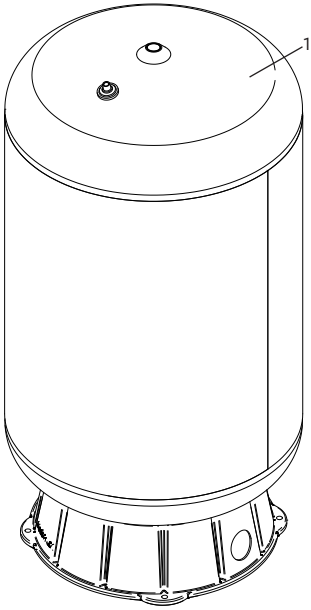
Mainsboost Charger MJ3 (Vertical) + Mainsboost Monobloc 22/28mm ULK



Package 1a
Monobloc 22/28mm Upstream line-in kit
Fig1a



Package 3
MJ3 pump
Fig. 2



Package 2
Mainsboost vessel
Fig. 3

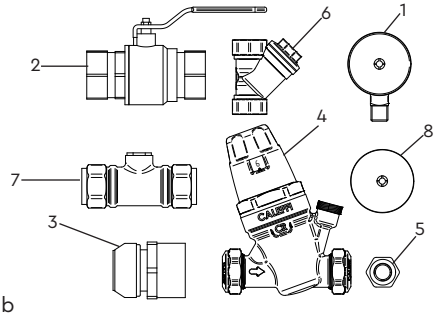
Item		Description	Qty	Item		Description	Qty
Package 1a	1	Monobloc unit	1	Package 2	1	Mainsboost vessel	1
	2	¼ " BSP Pressure gauge	2	Package 3	1	Pump	1
	3	Lever isolating ball valve	1		2	Manifold Assy	1
	4	Mainsboost vessel connector fitting	1		3	Hose	2
	5	22/28mm compression adaptor	2		4	Sealing washer	2
					5	Pump mounting bolt assemby	1 set
					6	Pump mounting bolt assembly	1 set

Your product may vary slightly from the illustrations above.

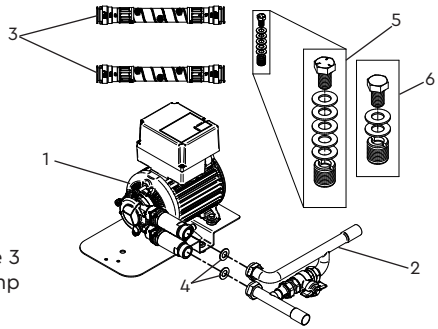
CHECKLIST

IMPORTANT: Your Mainsboost Charger MJ3 system will be delivered in a minimum of three boxes on one pallet. Please check the contents within 24 hours of receipt and if any component is damaged, please contact Stuart Turner Ltd immediately.

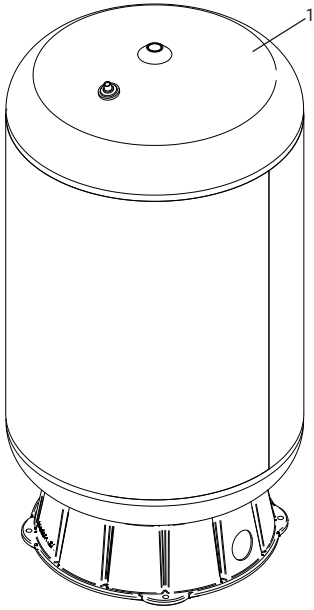
Mainsboost Charger MJ3 (Vertical) + 35/42/54mm ULK



Package 1b
Upstream line-in kit 35/42/54mm
Fig. 1b



Package 3
MJ3 pump
Fig. 2



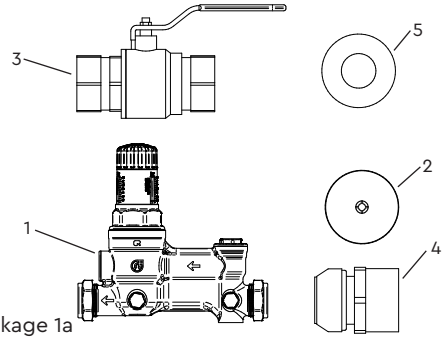
Package 2
Mainsboost vessel
Fig. 3

Item		Description	Qty	Item		Description	Qty
Package 1b	1	¼ " BSP pressure gauge	1	Package 2	1	Mainsboost vessel	1
	2	Lever isolating ball valve	1	Package 3	1	Pump	1
	3	Mainsboost vessel connector fitting	1		2	Manifold Assy	1
	4	6 bar pressure regulating valve	1		3	Hose	2
	5	¼ x ½ " BSP Brass bush	1		4	Sealing washer	2
	6	Y pattern inline strainer	1		5	Pump mounting bolt assy	1 set
	7	Double check valve	1		6	Pump mounting bolt assy	1 set
	8	¼ " BSP Pressure gauge	1				

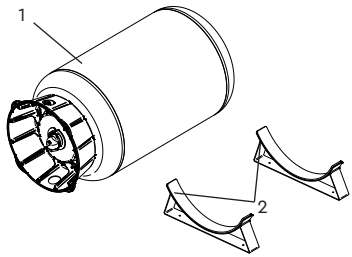
Your product may vary slightly from the illustrations above.

CHECKLIST

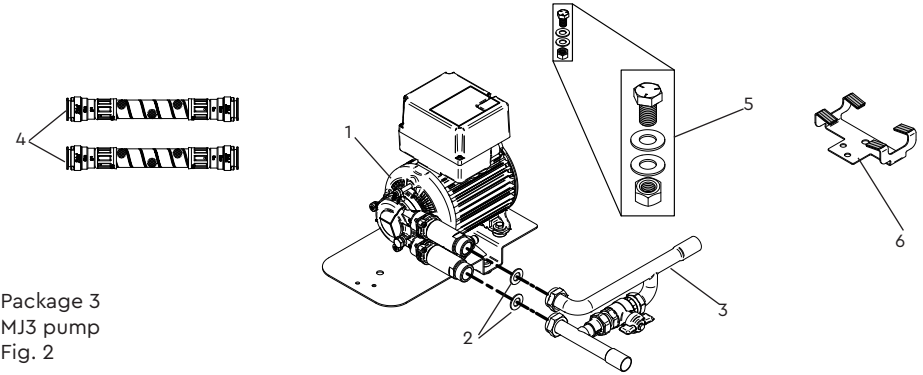
Mainsboost Charger MJ3 (Horizontal) + Mainsboost Monobloc 22/28mm ULK
(compatible with MB 200SH and MB 250SH vessels only)



Package 1a
Monobloc 22/28mm Upstream line-in kit
Fig1a



Package 2
Vessel/Mounting Cradle
Fig. 3



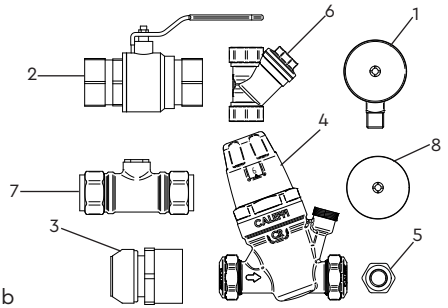
Package 3
MJ3 pump
Fig. 2

Item		Description	Qty	Item		Description	Qty
Package 1a	1	Monobloc unit	1	Package 2	1	Mainsboost vessel	1
	2	¼ " BSP Pressure gauge	2		2	Mounting cradle	2
	3	Lever isolating ball valve	1	Package 3	1	Pump	1
	4	Mainsboost vessel connector fitting	1		2	Sealing washers	2
	5	22/28mm compression adaptor	2		3	Manifold assembly	1
					4	Hoses	2
					5	Pump mounting bolt assy	1 set
					6	MJ3 HM mounting bracket	1

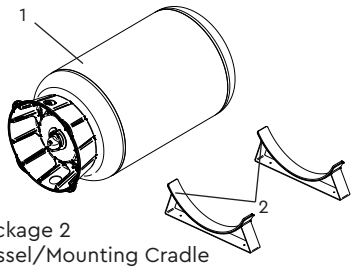
Your product may vary slightly from the illustrations above.

CHECKLIST

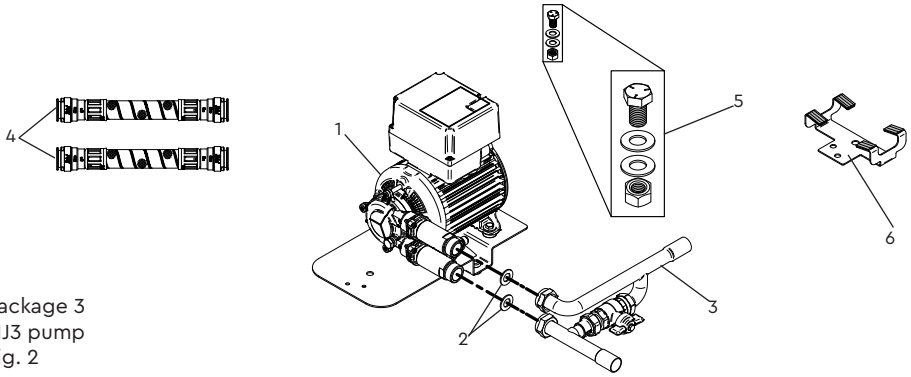
Mainsboost Charger MJ3 (Horizontal) + 35/42/54mm ULK
(compatible with MB 200SH and MB 250SH vessels only)



Package 1b
Upstream line-in kit 35/42/54mm
Fig. 1b



Package 2
Vessel/Mounting Cradle
Fig. 3



Package 3
MJ3 pump
Fig. 2

Item		Description	Qty	Item		Description	Qty
Package 1b	1	¼ " BSP pressure gauge	1	Package 2	1	Mainsboost vessel	1
	2	Lever isolating ball valve	1		2	Mounting cradle	2
	3	Mainsboost vessel connector fitting	1	Package 3	1	Pump	1
	4	6 bar pressure regulating valve	1		2	Sealing washers	2
	5	¼ x ½ " BSP Brass bush	1		3	Manifold assembly	1
	6	Y pattern inline strainer	1		4	Hoses	2
	7	Double check valve	1		5	Pump mounting bolt assy	1 set
	8	¼ " BSP Pressure gauge	1		6	MJ3 HM mounting bracket	1

Your product may vary slightly from the illustrations above.

1 INTRODUCTION

1.1 Congratulations on buying a Mainsboost Charger MJ3 system, designed to offer consistent and reliable water services throughout the property.

1.2 **Patents, Trademarks & Trade Names:**
'Mainsboost' 'Mainsboost Plus' and 'Mainsboost Charger' are registered Trademarks of Stuart Turner Ltd.

1.3 **How the Mainsboost Charger MJ3 System works:**
The Mainsboost Charger MJ3 vessel stores water from the rising main in a sealed water chamber, separated from the air space by a rubber diaphragm and pressurised to an optimum setting. When water is drawn off by downstream services, the water from the mains is supplemented by the water from the Mainsboost Charger MJ3 unit to provide a balanced supply at consistent pressure to downstream services.
The Mainsboost Charger MJ3 pipework manifold incorporates a unique 'green energy' bypass. If the incoming mains water supply delivers more than 12 l/min this bypass should be left open to allow any additional flow rate to pass directly into the Mainsboost vessel via the integral non-return valve.
If the incoming flow rate is less that 12 l/min the bypass valve should be left closed in order to ensure optimum efficiency of the Charger MJ3 pump.

2 IMPORTANT FACTS READ BEFORE COMMENCING INSTALLATION

A **Commissioning**

2.11 Ensure the pump is primed as described in the priming section before starting, damage to the shaft seal will result otherwise. See Section 8.16 – Commissioning.

B **Water temperature**

This unit is designed for cold water applications only which should not exceed the following values:

2.12 The maximum allowable water temperature is 35 °C.

2.13 The minimum allowable water temperature is 4 °C.

C **Pipework – General**

2.14 **Secure pipework:** Ensure pipework to and from the Mainsboost Charger MJ3 is independently supported & clipped to prevent forces being transferred to inlet and outlet branches of pump. Flexible hoses supplied must be used.

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

2.16 **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.

D **Plumbing Installation Regulations**

2.17 The plumbing installation must comply with the current water and building regulations.

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

E **Mainsboost vessel**

2.19 Ensure the Mainsboost vessel is installed correctly before operating the unit, to avoid damage to the pumps/controls.

Do not attempt to dismantle the Mainsboost vessel

The Mainsboost vessel is pressurised to a pre-set level at the factory.
See Section 8.12 – Commissioning for details.

3 LOCATION – GENERAL

3.11 **Access:** For emergencies and maintenance the Mainsboost Charger MJ3 must be easily accessible.

3.12 **Protection:** The system must be located in a dry position, and protected from freezing. Avoid environments which have a high ambient temperature, high humidity or excessive condensation and salt damage, etc.

3.13 **Ventilation:** Ensure an adequate air flow to cool the pump. Separate the pump from other appliances that generate heat.

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

3.15 **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.

3.16 **Static inlet pressure:** Ensure the static inlet head at the pump does not exceed the values shown in the table under point 8.14.

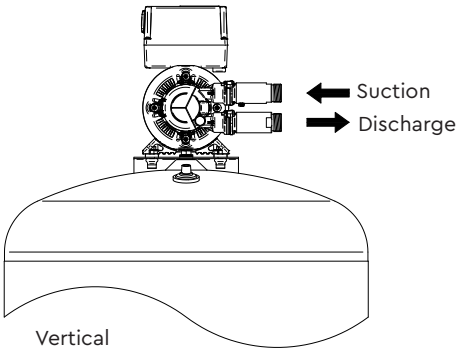
3.17 **Incoming mains water pressure:** The incoming water pressure of at least 0.1 bar is required.

3.18 Ensure that location of the unit allows adequate space to give reasonable access to all parts to accommodate service/commissioning.

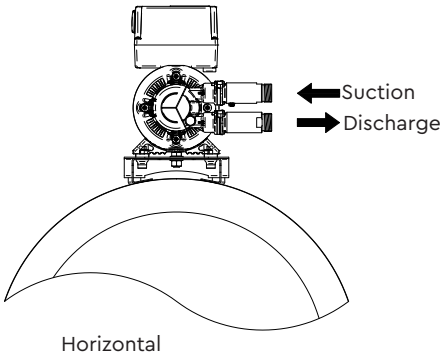
3.19 **Ambient temperature:** The pump must be sited in a location where the maximum ambient temperature does not exceed 40 °C.

3.20 **Pipework:** Pipework should be sized to ensure optimum performance of the system.

3.21 **Direction of flow:** See Fig. 4 (vertical), Fig. 5 (horizontal) to identify the suction and discharge connections.



Vertical
Fig. 4



Horizontal
Fig. 5

4 TERMINOLOGY

4.11 Upstream Line-in Kits (ULK)

Monobloc upstream line-in kit:
The Mainsboost Monobloc is a patent pending mains regulating device and should be installed on the rising main between the stopcock and the Mainsboost vessel. The Monobloc unit is used on 22mm or 28mm upstream line in kits.
Upstream line-in kits:
Upstream line-in kits for 35mm, 42mm & 54mm installations use separate regulating components and should be installed on the rising main between the stopcock and the Mainsboost vessel.

4.12 System Designation

It is important to understand what upstream and downstream refers to before starting the installation.

Upstream
The term 'Upstream' refers to the system configuration from the consumer's stopcock to the point where the supply reaches the inlet port of the Mainsboost vessel.
Downstream
The term 'Downstream' refers to the system configuration from the outlet tapping on the Mainsboost vessel, along the distribution header (if configured in this way) and into the distribution pipework and outlets. This includes hot and cold services where both are present (see Fig. 6).

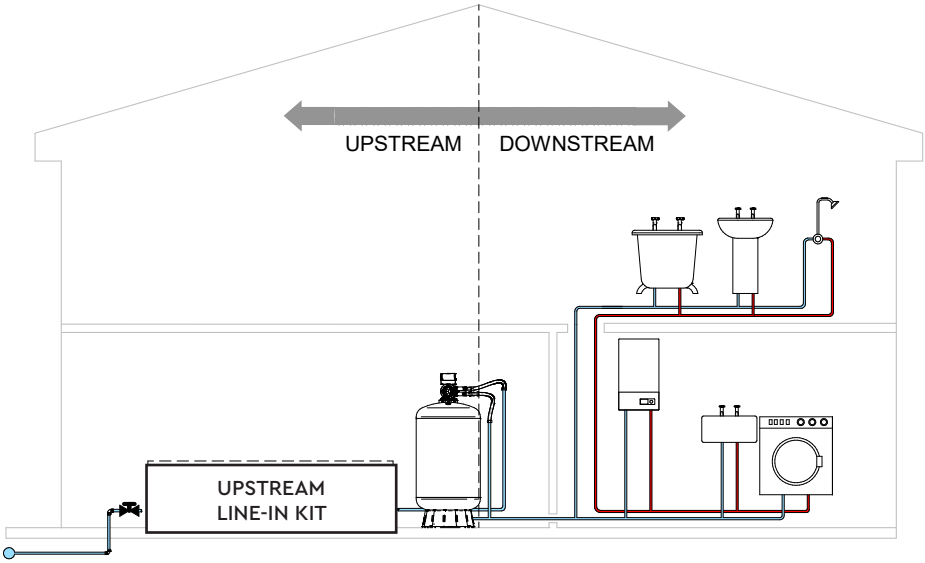


Fig. 6 System designation

5 CONFIGURATION

5.11 Mainsboost Charger MJ3 is a very flexible solution, offering a packaged system to suit any type or size of building no matter how large or small the demand is. The following illustrations depict just some of the most typical installations.

5.12 **Single occupancy application:**
Use of Mainsboost Charger MJ3 in a house offers water on demand whilst giving maximum flexibility. As can be seen the upstream line-in kit has to be fitted on to the rising main but the vessel/pump can be fitted wherever there is a space, for example; utility, kitchen, upstairs cupboard or loft, providing adequate provisions are taken for the weight, frost protection etc (see Fig 7).
Where height restrictions exist the MJ3 HM pump can be supplied along with a MB 200SH or MB 250SH vessel for horizontal installation.

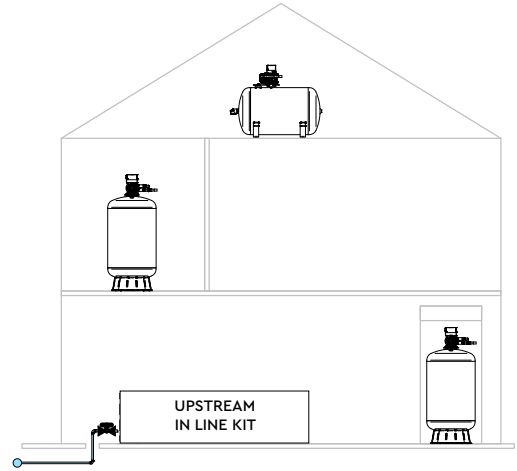


Fig. 7

5.13 **Multiple occupancy application:**
Often affected by poor water supplies Mainsboost Charger MJ3 offers the perfect solution.
For multiple occupancy buildings again the upstream line-in kit is located next to the rising main and sized to meet the demand of the entire building. Each apartment then has its own vessel and pump located within the property, sized to meet the apartments own demand (see Fig. 8).

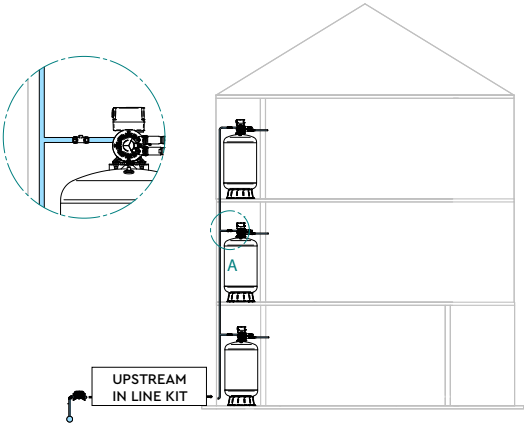


Fig. 8

5.14 **High demand single occupancy application:**
Where single properties have a much highter demand, it may be necessary to use additional Mainsboost vessels connected in parallel to ensure sufficient water is on tap to meet the much higher demand. Fig. 9 shows all vessels being located in the same place.

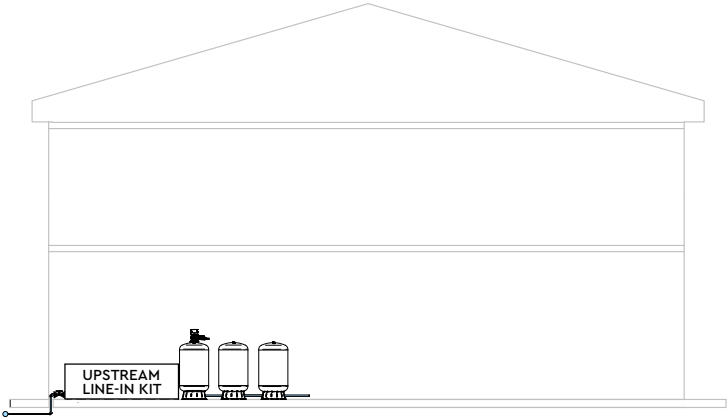


Fig. 9

5.15 **Water softener:**
NOTE: If high pressure is also required to the drinking tap fit a Stuart Water Conditioner, available from Stuart Turner, rather than a water softener.

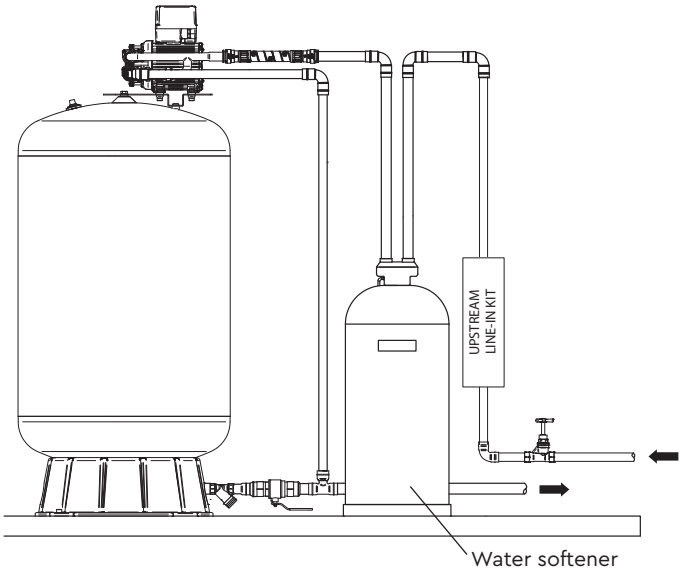


Fig. 10

6 INSTALLATION

Vertical Step 1:

a) Remove the Mainsboost vessel from its packaging and check to ensure it is not damaged.

b) Carefully turn the vessel on its side using the discarded packaging to protect it.

WARNING: depending on cylinder size this may require two people to complete safely.

c) Once on its side screw the Mainsboost vessel connector provided in the upsteam line-in kit into the tank elbow at the base using suitable thread seal such as PTFE tape or liquid thread lock (see Fig. 11).

d) Cut a copper tail to the following minimum length, ensuring clearance of the base, and push into vessel connector.
Pipe length:

MB 100SV = 210 mm	MB 200SV = 270 mm	MB 300SV = 270 mm
MB 130SV = 210 mm	MB 250SV = 270 mm	MB 450SV = 340 mm

Then re-erect the cylinder.

e) Fit the isolating valve provided to the tail now protruding from the base of the vessel.

NOTE: It is good practice to install a drain port between the isolation valve and the vessel.

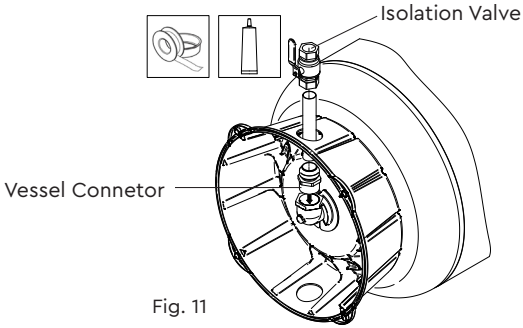
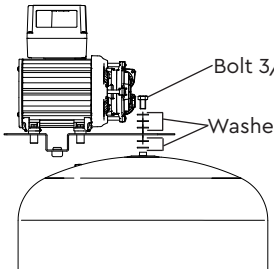
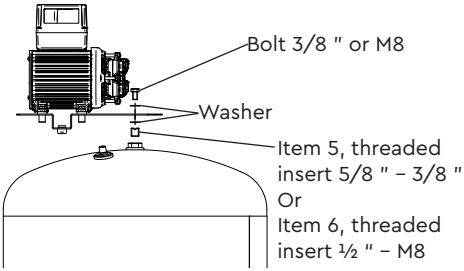


Fig. 11

f) Remove the pump and mounting plate from its packaging and position it on the Mainsboost vessel, fixing in place using the correct size screw and washers provided (see Figs. 12 & 13).



Pump mounting for 100, 130 litre vessels Fig. 12



Pump mounting for 200, 250, 300 & 450 litre vessels. Fig. 13

g) Ensure the floor is sufficiently strong enough to take the total weight of the unit when full of water (see Technical Specification section). Take care when manoeuvring the unit so as not to damage it.

NOTE: **Do not** forget if a water softener is to be installed this has to be included in this pipe run, and additional space must be allocated for this.

Do not fit smaller pipework than the upstream line-in kit accepts as this will impair performance.

h) Fix the Mainsboost vessel securely to the floor using appropriately selected and sized fixings.

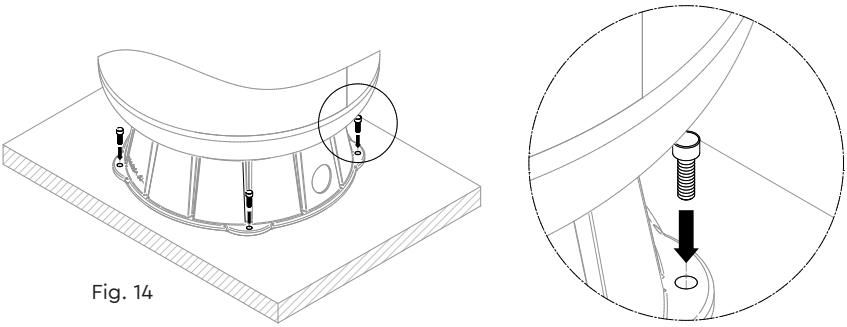
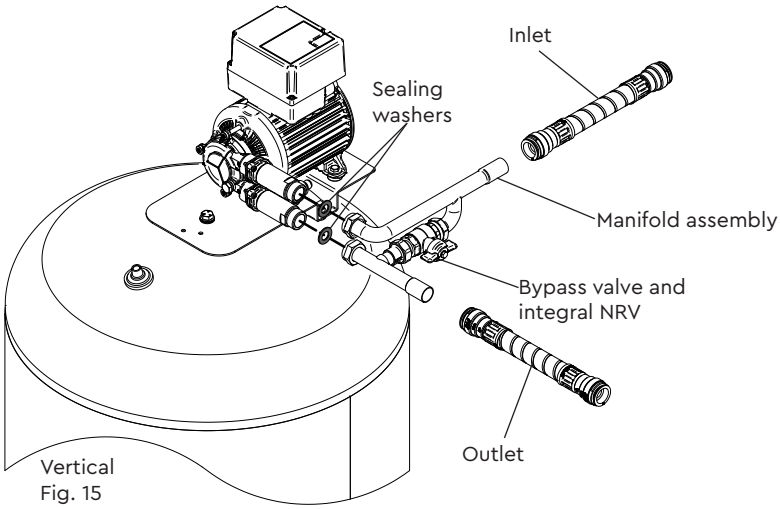


Fig. 14

Pump manifold assembly:

Vertical variant: Remove the pump manifold assembly from the packaging and connect it to the pump assembly using the two fibre washers provided.



Vertical
Fig. 15

Vertical Step 2:
The vessel assembly should then be positioned and checked to ensure there is sufficient space to install the upstream line-in kit between the stopcock and pressure vessel inlet.

Monobloc 22/28mm Upstream line-in kit
The Monobloc upstream line-in kit includes:
1 – Monobloc unit
2 – Pressure gauge (upstream)
3 – Pressure gauge (downstream)
4 – Mainsboost vessel connector (see step 1)
5 – Isolation valve (See step 1)
NOTE: the Monobloc can be installed either horizontally or vertically but not upside down. There are pressure gauge ports on both sides of the Monobloc to allow the pressure gauges to be visable in any orientation. Follow the directional flow arrows on the Monobloc to ensure correct installation.

Pipe Size	Minimum pipe length required to install the Monobloc upstream in line kit (mm) (A)
22 mm	203 mm
28 mm	203 mm

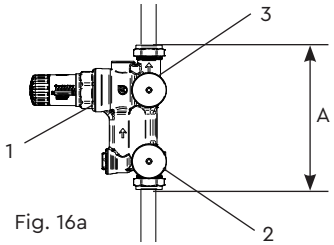


Fig. 16a

Upstream line-in kit 35/42/54mm
The upstream line-in kit includes:
1 – inline strainer
2 – pressure gauge (upstream)
3 – double check valve
4 – pressure reducing valve
5 – pressure gauge
(fitted to pressure reducing valve)
6 – Mainsboost vessel connector (see step 1)
7 – Isolation valve (See step 1)

Pipe Size	Minimum pipe length required to install the upstream line-in kit (mm) (A)
22 mm	480 mm
28 mm	580 mm
35 mm	630 mm
42 mm	735 mm
54 mm	820 mm

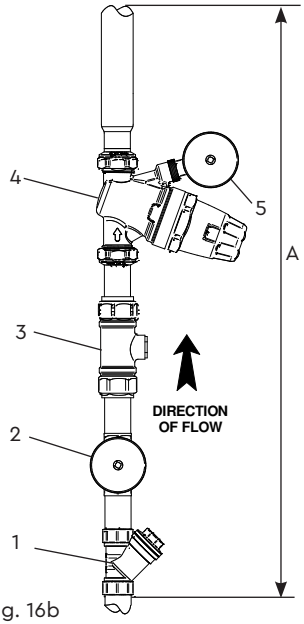


Fig. 16b

Vertical vessel

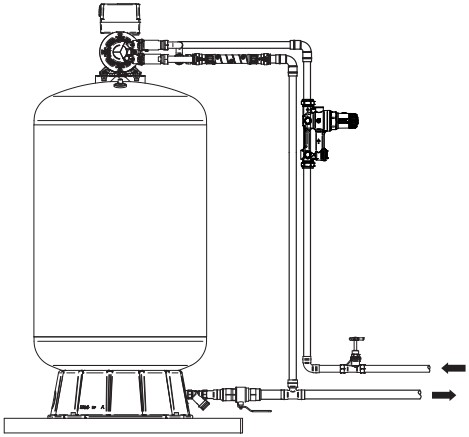


Fig. 17a Monobloc 22/28mm ULK

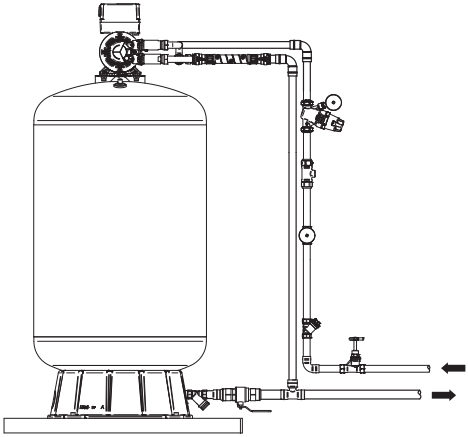


Fig. 17b 35/42/54mm ULK

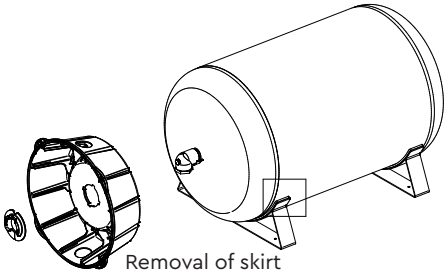
Horizontal Step 1:

a) Remove the Mainsboost vessel from its packaging and check to ensure it is not damaged.

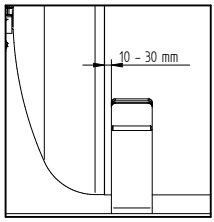
b) Carefully place the vessel on the mounting cradles. For stability, ensure the mounting cradles are as far apart as possible but within the weld seams Fig. 18b.

WARNING: depending on cylinder size this may require two people to complete safely.

Remove the skirt by splitting open the clip as shown in Fig. 18a.

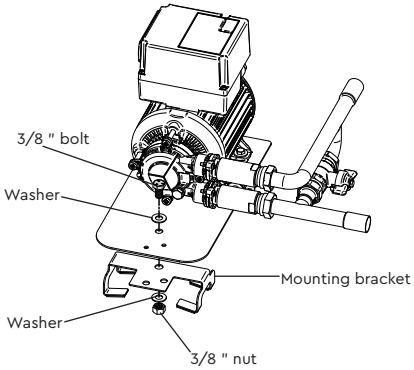


Removal of skirt
Fig. 18a

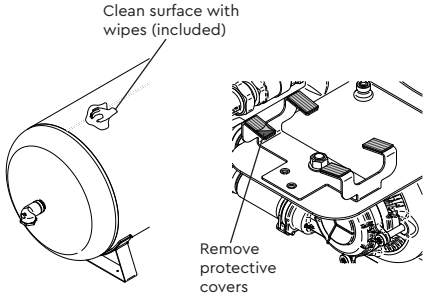


Mounting cradle
placement Fig. 18b

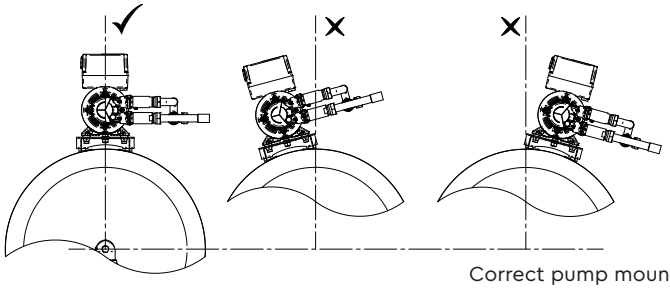
c) Remove the pump and mounting bracket from its packaging and assemble as shown in Figs. 19, 20 & 21.



Pump mounting bracket assembly
Fig. 19



Mounting pump onto the vessel
Fig. 20



Correct pump mount orientation
Fig. 21

d) Connect the supplied hoses, Fig. 22.

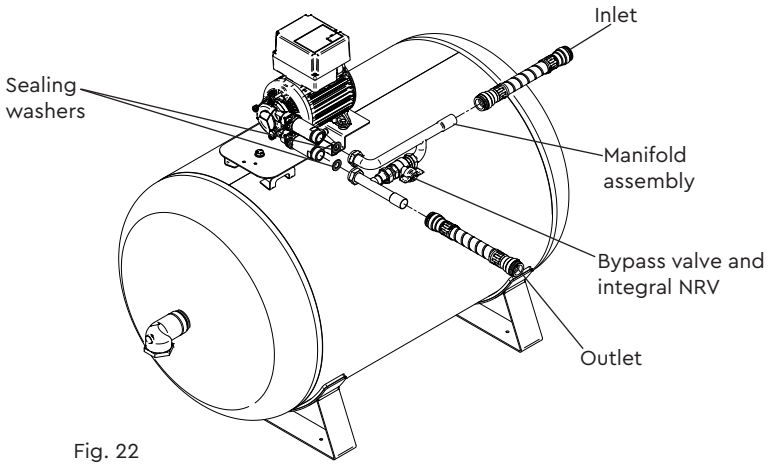


Fig. 22

Horizontal Step 2:
The vessel assembly should then be positioned and checked to ensure there is sufficient space to install the upstream line-in kit between the stopcock and pressure vessel inlet. Refer to the chart below as a guide.

Monobloc 22/28mm Upstream line-in kit
The Monobloc upstream line-in kit includes:
1 – Monobloc unit
2 – Pressure gauge (upstream)
3 – Pressure gauge (downstream)
4 – Vessel Connector (see step 1)
5 – Isolation Valve (see step 1)
NOTE: the Monobloc can be installed either horizontally or vertically but not upside down. There are pressure gauge ports on both sides of the Monobloc to allow the pressure gauges to be visable in any orientation. Follow the directional flow arrows on the Monobloc to ensure correct installation.
NOTE: It is good practice to install a drain port between the isolation valve and the vessel.

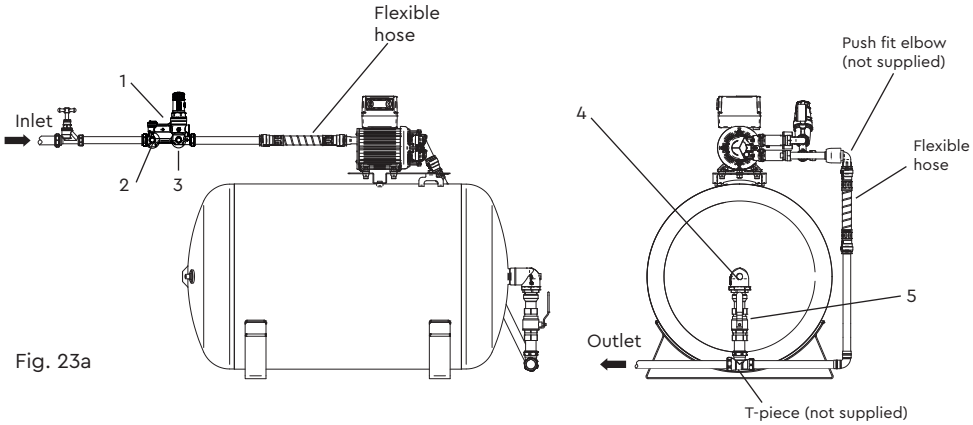


Fig. 23a

1	Monobloc unit
2	Pressure gauge (upstream)
3	Pressure gauge (downstream)
4	Mainsboost vessel connector
5	Lever isolating valve

Pipe Size	Minimum pipe length required to install the Monobloc upstream in line kit (mm) (A)
22 mm	203 mm
28 mm	203 mm

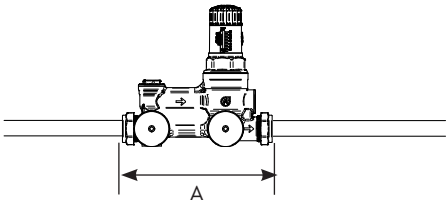


Fig. 24a

Upstream line-in kit 35/42/54mm

The upstream line-in kit includes:

1 – inline strainer
2 – pressure gauge (upstream)
3 – double check valve
4 – pressure reducing valve
5 – pressure gauge (fitted to pressure reducing valve)
6 – Mainsboost vessel connector (see step 1)
7 – Isolation Valve (see step 1)

The above components must be installed in the correct order to ensure safe and satisfactory system operation.

NOTE: It is good practice to install a drain port between the isolation valve and the vessel.

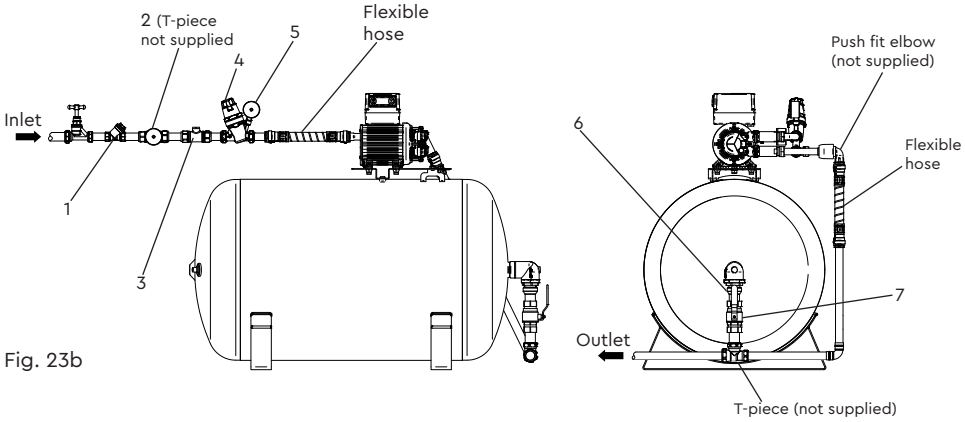


Fig. 23b

1	Inline strainer
2	Pressure gauge (upstream)
3	Double check valve
4	Pressure reducing valve
5	Pressure gauge
6	Mainsboost vessel connector
7	Lever isolating valve

Pipe Size	Minimum pipe length required to install the upstream line-in kit (mm) (A)
22 mm	480 mm
28 mm	580 mm
35 mm	630 mm
42 mm	735 mm
54 mm	820 mm

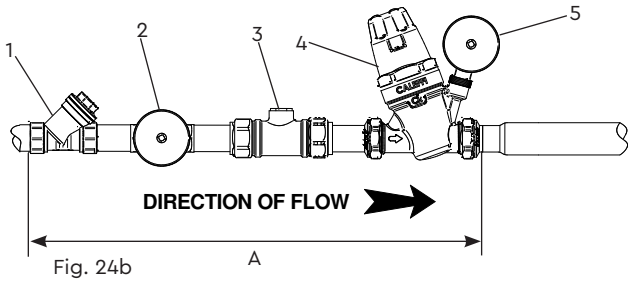
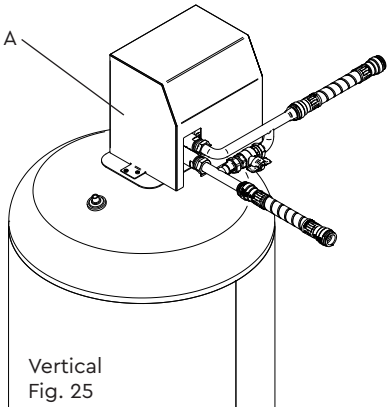
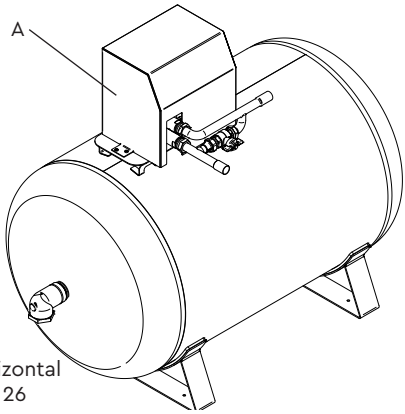


Fig. 24b



Vertical
Fig. 25



Horizontal
Fig. 26

Sound Attenuation Covers – Vertical & Horizontal
An attenuation cover (A) is available as an option should the unit need to be installed in a particularly noise sensitive area.

7 ELECTRICAL

7.11 **Regulations:** The electrical installation must be carried out in accordance with the current local regulations by a qualified person.

7.12 **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.

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

7.14 **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.

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

7.16 **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.

7.17 

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.

7.18 **Wiring diagram:**

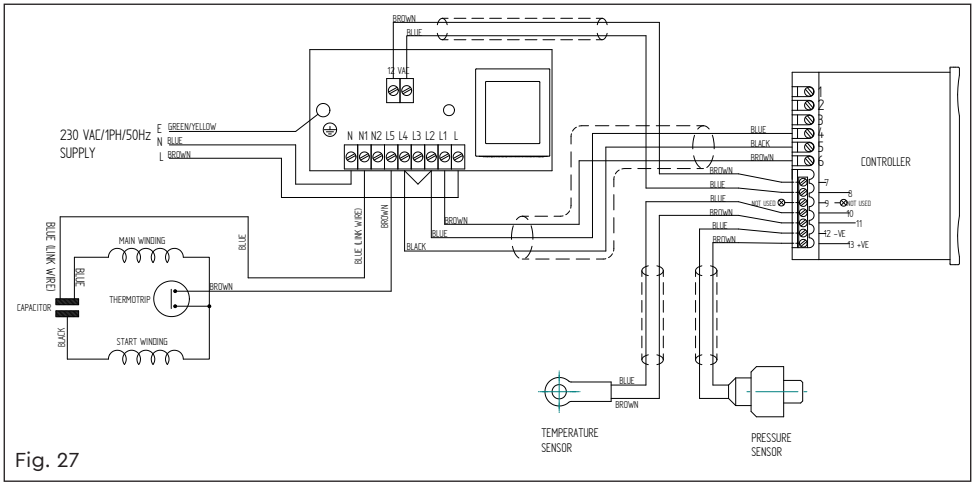


Fig. 27

7.19 **Fuse:** All models should be protected by a 3 Amp fuse.

7.20 **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.

7.21 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.

8 COMMISSIONING

8.11 **System check:** Ensure that the electrical supply to the pump is switched off before opening the mains water supply stopcock and checking for leaks.

8.12 **Check vessel pre-charge pressure:**
It is important to have the correct pre-charge pressure in the vessel for your site conditions to optimise performance. The vessel is supplied with a pre-charge pressure of approximately 1.4 bar, and should never have a preset pressure of less than 0.5 bar.
Checking and adjustment to the vessel pre-charge air pressure can only be carried out when the vessel is empty (contains no water).

8.13 **Check mains static pressure:**

- Now close outlets and check pressure gauge after 'Y' strainer – for static mains pressure and note it. This should be done at peak times of use.
- Turn stopcock off and leave outlet taps open.

8.14 Check the chart below for the correct vessel pressure against the static mains pressure recorded.

MJ3 pump max. set pressure	Static mains pressure	Set vessel pre-charge pressure to	Differential	Set PRV maximum setting to
	bar	bar	bar	bar
3 bar	1.0	1.2	1.8	1.0
3 bar	1.5	1.2	1.8	1.5
3 bar	2.0	1.2	1.8	2.0
3.5 bar	2.5	1.7	1.8	2.5
3.5 bar	3.0	1.7	1.8	2.5

Using a pressure gauge check the vessel and adjust to suit through the schrader valve.
Warning: NOTE PRV setting must not exceed 5.0 bar.

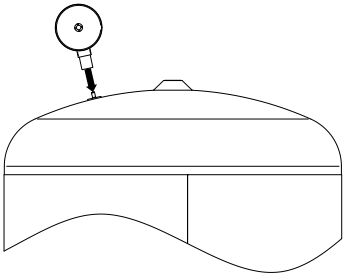


Fig. 28

8.15 **Control module:**

The control module has been factory pre-set to the following conditions.

Settings as per factory preset:	
Set point	SP: 3 bar
Diff pressure	DIFF: 0.5 bar
Low pressure	LPR: 0.2 bar
High pressure	HPR: 4.5 bar
Pump run timer	PRT: 180
Pump number	NPM: 2 (do not tamper)
CRE setting	0

Should the parameter need changing follow these steps.

- The pump parameters are displayed in the following sequence:
  Set point (SP),
  Differential (DIFF),
  Low pressure trip (LPR),
  High pressure trip (HPR),
  Pump run timer (PRT),
  Pump Number (NPM),
  Relay setting (CRE),
  Number of alarms (NAL1/NAL2),
  Hours run (HR1/HE2).
- Press and hold the set button for 5–7 seconds. (This gains access to the pump parameters).
- Press the up/down arrows to change the selected parameter(s) to the desired value.
- After changing the required parameter(s) press the set button twice in quick succession to lock the new value into the controller memory.
- It is possible to scroll through all the pump parameter values by simply pressing the set button once after each parameter value has been displayed.

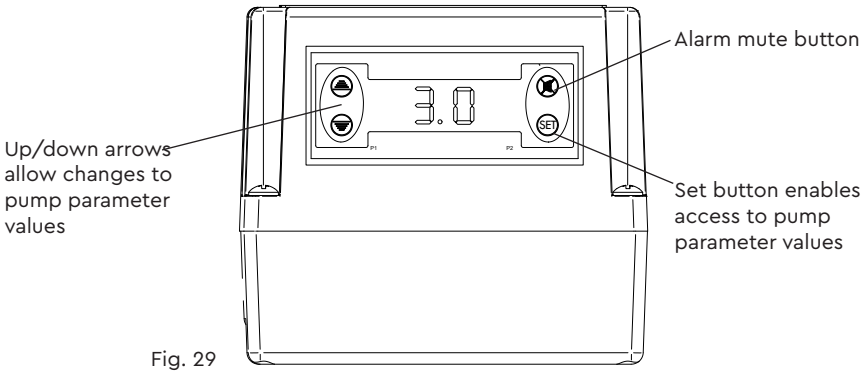


Fig. 29

8.16 On completion of the installation, follow the commissioning process below.

- **Leave** pump power switched off.
- **Leave** all outlet valves closed.
- Turn on stopcock and open inlet ballvalve, both pressure gauges on inlet and PRV will start to show movement as the mains pressure fills the system.
- Check for leaks on all joints made.
- Dependant on the incoming mains pressure the vessel will start to fill with water.
- Switch on the power to the pump, it will sense the pressure in the system and if less than 3 bar will start to assist filling of the system.
- Close Mainsboost vessel isolation valve
- Allow the pump to continue running until air has been completely purged from the system, all outlets will have to be opened and closed.
- All outlets have been closed, open the Mainsboost vessel isolation valve.
- The pump will continue to run to charge the system, this may take some time dependant on size and number of Mainsboost vessels fitted.

Once the system is completely full the pump will stop and only start again if the Mainsboost vessel pressure drops below set point minus the differential of the pump control.

<u>Green Energy</u>

– Bypass

If the flowrate is greater than 12 l/min leave the isolation valve open.
If the flowrate is less than 12 l/min close the isolation valve.

9 TECHNICAL SPECIFICATION

		MJ3 VM 41712	MJ3 HM 41729
General	Warranty	5 years (fittings + ULK 2 years)	
	WRAS approval	1501305	
	Approvals	WRAS, CE	
	Typical noise	From 50 dB(A)	
Features	Bypass	22 mm	
	Mounting	Vertical vessel	Horizontal vessel
	Pump type	Peripheral	
	Flexible hoses	2	
	Dry run protection	✓	✓
Materials	Pump body	Brass	
	Impeller	Brass	
	Mechanical seal	EPDM / PTFE / Al. Oxide	
Performance	Maximum head – closed valve	4.3 bar (43 metres)	
	Maximum working pressure*	600 kPa (6 bar)	
	Maximum ambient air temperature	40 °C	
	Min / Max operating temperature	Min 4 °C / Max 35 °C	
Connections	Pump connections	G ¾ male	
Flexible hoses	Connections	22 mm push-in x 22 mm push-in x 240 mm long	
Motor	Type	Induction (auto-reset thermal trip)	
	Duty rating	Continuous (S1)	
Electrical	Power supply (Vac/Ph/Hz)	230 V a.c. / 1 / 50 Hz	
	Power consumption – P1	398 Watts	
	Current – full load	1.8 Amps	
	Fuse rating	3 Amps	
	Power cable length	1.5 metres (pre-wired)	
Physical	Enclosure protection	IPX4	
	Pump Length**	200 mm	
	Pump Width*	203 mm	
	Pump Height – excluding hoses and bracket**	216 mm	
	Weight – including fittings	8.0 Kg	8.1 Kg

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

** NOTE: See overleaf for overall system dimensions when the MJ3 pump is fitted to a vertical or horizontal Mainsboost pressure vessel.

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

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

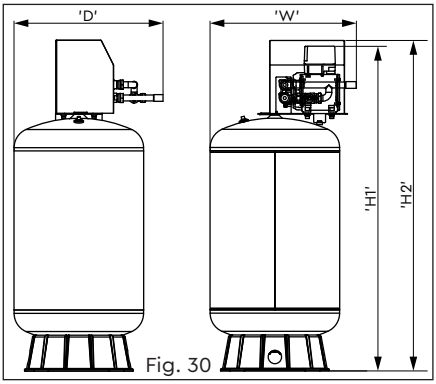


Fig. 30

Model Description	Dim. 'H1'	Dim. 'H2'	Dim. 'W'	Dim. 'D'
MB 100SV + MJ3 VM	1120 mm	1140 mm	440 mm	485 mm
MB 130SV + MJ3 VM	1335 mm	1355 mm	440 mm	485 mm

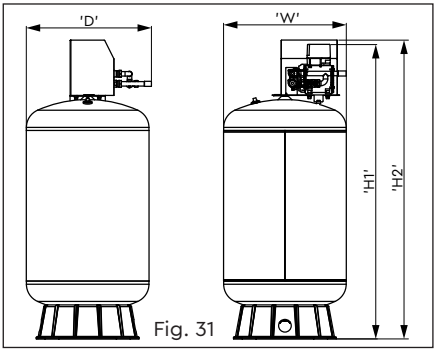


Fig. 31

Model Description	Dim. 'H1'	Dim. 'H2'	Dim. 'W'	Dim. 'D'
MB 200SV + MJ3 VM	1280 mm	1300 mm	535 mm	548 mm
MB 250SV + MJ3 VM	1455 mm	1475 mm	535 mm	548mm
MB 300SV + MJ3 VM	1740 mm	1760 mm	535 mm	548 mm
MB 450SV + MJ3 VM	1775 mm	1795 mm	660 mm	660 mm

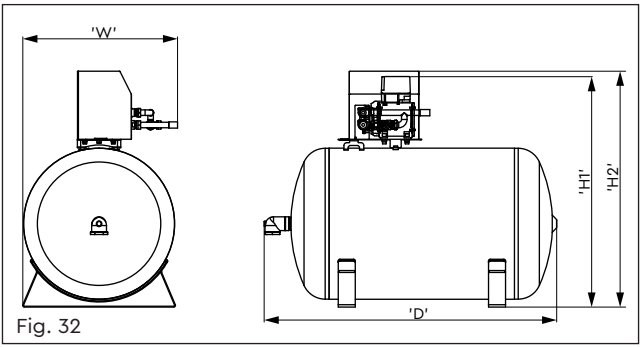


Fig. 32

Model Description	Dim. 'H1'	Dim. 'H2'	Dim. 'W'	Dim. 'D'
MB 200SH + MJ3 HM	815 mm	835 mm	550 mm	1026 mm
MB 250SH + MJ3 HM	815 mm	835 mm	550 mm	1206 mm

9.12 For applications where noise levels are a primary consideration, a sound attenuation cover is available as an optional extra which reduces sound levels by up to 15 dB(A) or the Mainsboost Charger™ WM should be considered.

10 TROUBLE SHOOTING GUIDE

10.11 **Alarm**

The Charger™ controller has an internal alarm buzzer.
When the alarm is triggered the buzzer will sound and a related failure message will appear on the display.
The alarm will sound when the following conditions occur – when alarm sounds investigate and rectify cause.
Then press alarm mute button, alarm will stop.

Remote alarm option
A remote alarm option is available, the Charger™ unit would need to be ordered in advance pre-wired for this option. Please consult Stuart Turner. Attempting to change the Charger™ MJ3 wiring will invalidate the guarantee.

	Displayed message	**Fault description**	**Action**
A	**Hnt** high temp cut out	Pump head overheating – head temperature has exceeded the set Hnt value	Allow pump to cool. Ensure the pump inlet check valve and by pass are clear of debris see Fig. 14.
B	**Hpr** Hi pressure cut out	The current pressure rises above the Hpr value	Investigate the cause, then turn power off and on to reset or allow self reset.
C	**Lpr** Low pressure cut out	The current pressure falls below the set Lpr value	Investigate the cause, then turn power off and on to reset or allow self reset.
D	**Prt** pump run time	The pump has run longer than the set Prt value	Investigate cause, then turn power off and on. Contact Stuart Turner if problem persists
E	**PF1**	Pump failure	Contact Stuart Turner.

10.12 **Alarm fault codes**

All alarms automatically reset except Prt and PF1.

11 YOUR WARRANTY

Congratulations on purchasing a Stuart Turner Mainsboost Charger MJ3 system.

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

The Mainboost Charger MJ3 pump and vessel are covered by a five year warranty. The Mainsboost Monobloc and other ULK components are warrantied for two years.

Within the warranty period we will repair, free of charge, any defects in the Mainsboost Charger MJ3 resulting from faults in material or workmanship, repairing or exchanging the part affected or whole unit as we may reasonably decide.

Not covered by this warranty: 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 unit.

Reasonable evidence must be supplied that the product has been purchased within the warranty term prior to the date of claim (such as proof of purchase or the product serial number).

This warranty 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'** customer support.

+44 (0) 800 31 969 80

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 reference.

MODEL NO.	SERIAL NO.	DATE PURCHASED

CE

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

STUART TURNER

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Issue No. 3620/02-01 **Pt. No. 20938**