

Pump installation and warranty guide for the FORCE range of pumps

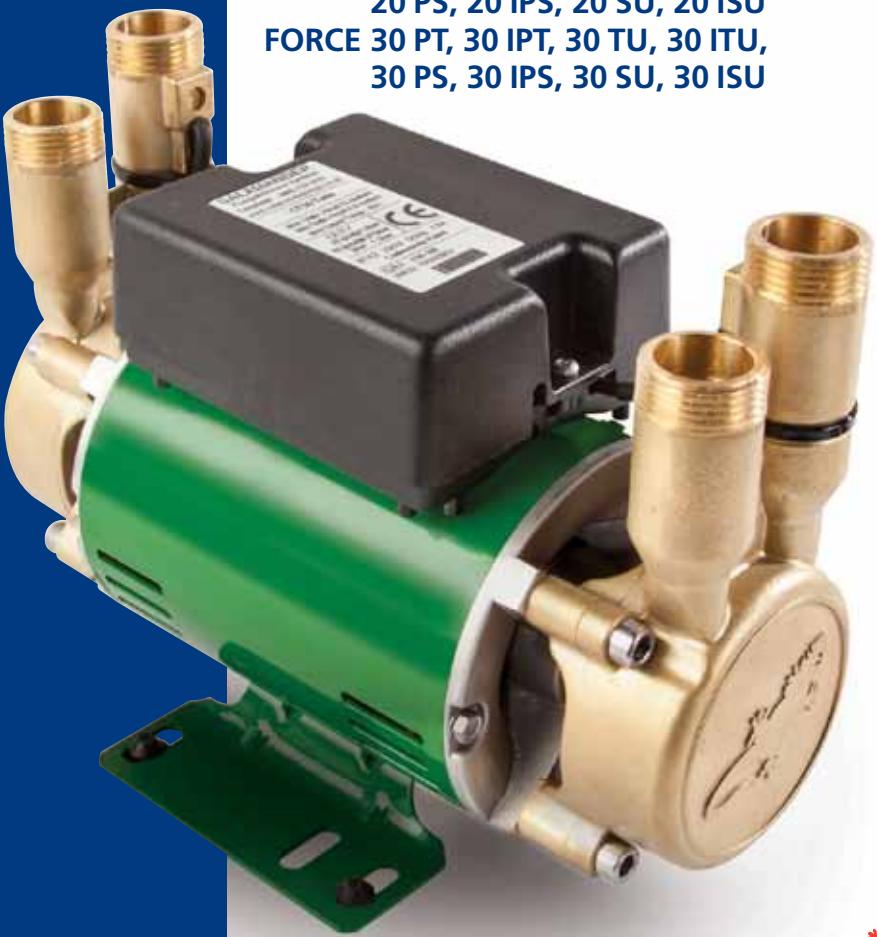
FORCE 15 PT, 15 IPT, 15 TU, 15 ITU

FORCE 20 PT, 20 IPT, 20 TU, 20 ITU,

20 PS, 20 IPS, 20 SU, 20 ISU

FORCE 30 PT, 30 IPT, 30 TU, 30 ITU,

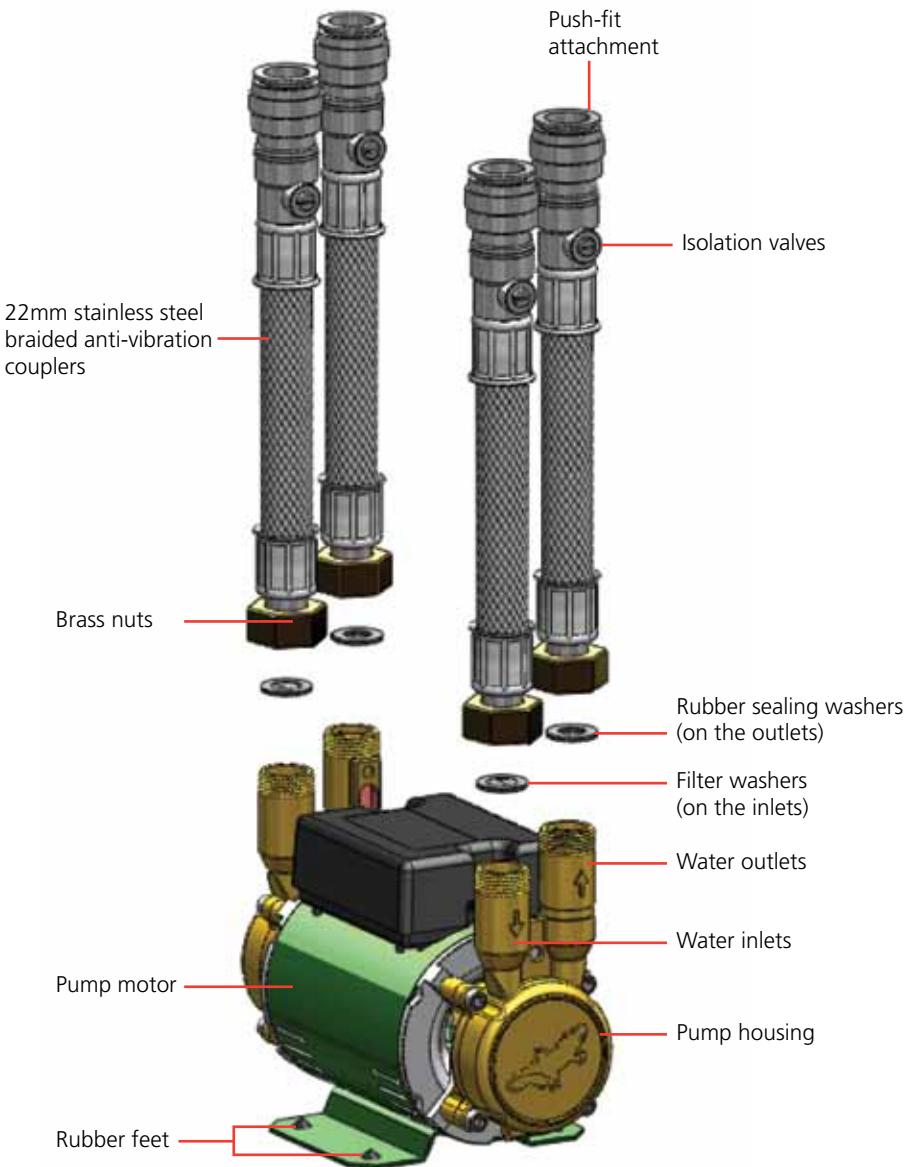
30 PS, 30 IPS, 30 SU, 30 ISU



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Salamander Pumps 

Quality | Technology | Performance | Value



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FORCE 30 PT, 30 IPT, 30 TU, 30 ITU, 30 PS, 30 IPS, 30 SU, 30 ISU



Important – read this first!

Correct installation is the guarantee of safety and a trouble free system. It is therefore important to read these instructions thoroughly and ensure you comply with them. Incorrect fitting can invalidate the warranty.

If your installation is complicated or you have any questions please CONSULT THE PUMPWISE HELPLINE IMMEDIATELY. If you are calling from site and need urgent technical guidance, say so – and we will prioritise a return call.

We encourage installers to consult Salamander's PumpWise helpline, where our engineers can give you first-rate advice regarding installation. Consulting the helpline will entitle your customer to an additional two years warranty FREE (UK only) – all you have to do is to implement our engineer's recommendations for your installation situation and ask your customer to register.

When the job is finished tear off the final page of this instruction manual and hand it to the householder. This page explains the warranty provisions and provides a pre-paid warranty card. Don't forget that if you have called our helpline you should also complete the comments section of the card to say how you rate the service you received.

Please leave this instruction booklet with the customer for reference to maintenance and safety information.

*Thank you for choosing
Salamander Pumps.*

The Salamander FORCE Range



FORCE 15

A range of brass ended 1.5 bar shower pumps
– ideal for boosting shower performance

FORCE 15 PT, FORCE 15 IPT

1.5 bar twin brass ended positive head shower pump

FORCE 15 TU, FORCE 15 ITU

1.5 bar twin brass ended positive and negative head universal shower pump

FORCE 20

A range of brass ended 2.0 bar shower pumps
– ideal for providing powerful shower performance

FORCE 20 PT, FORCE 20 IPT

2.0 bar twin brass ended positive head shower pump

FORCE 20 TU, FORCE 20 ITU

2.0 bar twin brass ended positive and negative head universal shower pump

FORCE 20 PS, FORCE 20 IPS

2.0 bar single brass ended positive head shower pump

FORCE 20 SU, FORCE 20 ISU

2.0 bar single brass ended positive and negative head universal shower pump



FORCE 30

A range of brass ended 3.0 bar shower pumps
– ideal for powerful showering and multi outlet applications

FORCE 30 PT, FORCE 30 IPT

3.0 bar twin brass ended positive head shower pump

FORCE 30 TU, FORCE 30 ITU

3.0 bar twin brass ended positive and negative head universal shower pump

FORCE 30 PS, FORCE 30 IPS

3.0 bar single brass ended positive head shower pump

FORCE 30 SU, FORCE 30 ISU

3.0 bar single brass ended positive and negative head universal shower pump

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Product description

Salamander pumps are suitable for pressure boosting vented stored water systems to the whole house but please note that inlet pressures to the pump and water temperatures must not exceed values stated in the technical specifications.

Installation instructions

Please follow these installation instructions carefully. Failure to install your pump in accordance with these instructions will invalidate your warranty.

Do not use Salamander pumps for applications other than those stated within the pump description, or connect the pump directly to the cold mains. To do so invalidates the warranty.

Salamander pumps should be installed by appropriately qualified and/or experienced people and supervision in their use should be given to children or anyone with impaired physical or mental capabilities.

Please note that:

- FORCE 15 PT, 15 IPT,
FORCE 20 PT, 20 IPT, 20 PS, 20 IPS,
FORCE 30 PT, 30 IPT, 30 PS and 30 IPS
are shower specific pumps.
- FORCE 15 TU, 15 ITU,
FORCE 20 TU, 20 ITU, 20 SU, 20 ISU,
FORCE 30 TU, 30 ITU, 30 SU and 30 ISU
are universal pumps.
- Inlets and outlets are vertical.

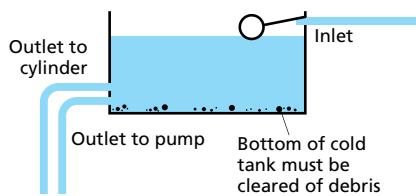
It is essential to ensure that:

The cold stored water capacity is adequate for the entire household requirements (minimum 50 gallons per bathroom, 80 gallons for one bathroom plus an en suite shower room).

There is a maximum static head of 15 metres.

Cold supplies to the cylinder and the pump are taken from the opposite side of the cold water storage tank to the cold mains inlet. The bottom of the cold water storage tank must also be checked and cleared of debris.

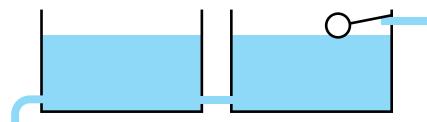
Figure 1: Tank inlet and outlet position



In systems with more than two bathrooms, the cold water supply to the cylinder must be in 28mm pipework.

Multiple cold water storage tanks must be linked in 28mm pipework with the bottoms of the tanks level.

Figure 2: Linked cold water tanks

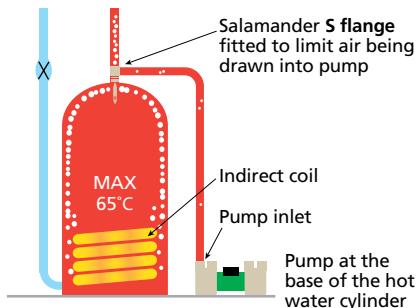


Never put a non-return valve, inverted loop, restricted balofix or an air vent on the supply pipework to the pump.

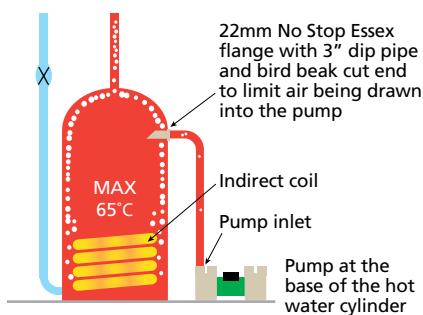
The stored hot water temperature must not exceed 65°C.

Ensure that the hot supply to the pump is via a Salamander approved method.

Figure 3: Hot water supply method



Or alternatively



Jointing compounds (boss white, hemp and steel wool) must not be used. Solder fluxes must not come into contact with the pump or anti-vibration hoses.

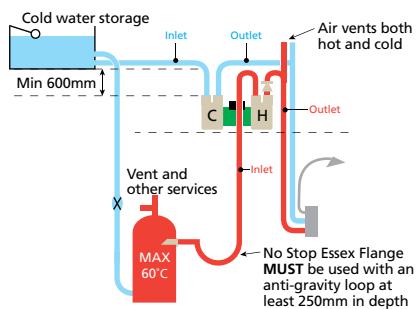
The anti-vibration hoses must not be twisted or bent.

Higher rated fuses must not be used.

Step 1: Pump location

- Site the pump in a location where it will not freeze or be exposed to frost during cold weather.
- Ensure adequate air flow to cool the motor. Separate the pump from other appliances that generate heat. Install the pump in a clear space allowing 100mm at each side, end and top.
- If possible, site the pump in a location where leaks can be contained and would cause minimal damage.
- Avoid locating the pump close to electrics.
- Avoid situations that may create an excess of static pressure on the pump.
- Ensure the pump is as close to the water supply as possible.
- Mount the pump upright (shaft horizontal, not screwed down).
- Do not install the pump in a bathroom unless it is enclosed within a space that is accessible only with the use of a tool.
- An anti-gravity loop (Figure 4) off a no stop Essex flange must be fitted to all systems where the pump is mounted above the hot outlet from the cylinder. In such systems, hot water temperature must not exceed 65°C.

Figure 4. Anti-gravity loop



- 10 Check the marker arrows on the pump to ensure correct direction of water flow. Either end of the pump is suitable for hot or cold water.
- 11 Check the static inlet and outlet heads of water above the pump to ensure maximum limits are not exceeded.
- 12 The hot supply pipework to the pump should be a maximum of 5 metres in 22mm pipe (hot and cold supplies should be no more than 2 metres in 15mm pipe). Exclusive hot and cold supplies to the pump with the hot from a Salamander approved cylinder flange. Exceptions are:
 - hot supply – from the vent angled at 45°, vertically down the hot connection at the vent, at least 1.5 metres below the base of the cold water storage tank (Figure 5).
 - alternatively, the hot and cold supplies to the pump can be teed off other 22/28mm supplies (Figure 6) provided that:
 - the tee off to the pump is first call.
 - the cold supply to the pump is not shared with the cold feed to the cylinder.

Figure 5. Exclusive hot and cold supply

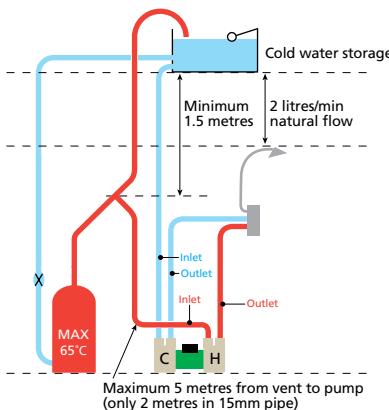
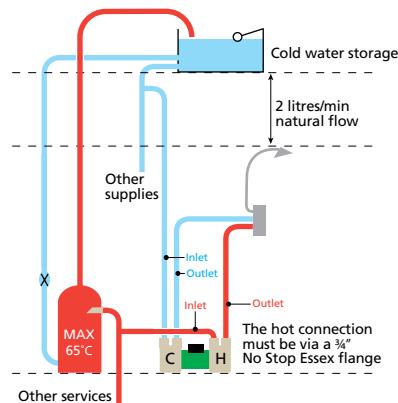


Figure 6. Tee off other supply



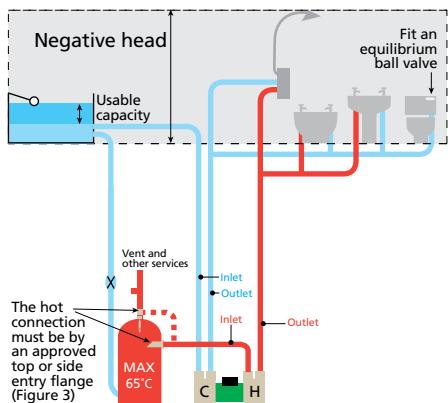
- 13 The best hot connection from the cylinder (Figure 3) is either with:
 - a 3/4 inch no stop Essex flange, or
 - a Salamander S flange or other approved top entry flange.
- 14 Never fit to top entry flange if the pump is fitted above the cylinder.
- 15 Check that water storage capacity meets required flow rates, particularly at peak demand (i.e. appliances in simultaneous use).
- 16 All up and over pipework must be vented at the highest point on the outlet of the pump.
- 17 Ensure pipe runs minimise airlocks.
- 18 In positive head systems, allow for increased resistance of long pipe runs with multiple bends. The natural flow from the shower head or other outlets must be at least 1 litre in 30 seconds or 2 litres in 30 seconds mixed.

Negative head systems

Negative head systems are where no natural flow of water goes to the shower head because it is above the height of the base of the cold water tank. Most instances of negative head systems occur in loft conversions or where the cold water tank sits on the joists in the loft. If the distance between the bottom of the cold water tank and the shower head is 2 feet or less it is also possible that a negative head pump will be required. The negative head range of pumps activate the pump automatically even where no natural flow exists.

FORCE pumps suitable for negative head operation are the FORCE 15 TU, 15 ITU, 20 TU, 20 ITU, 20 SU, 20 ISU, 30 TU, 30 ITU, 30 SU and 30 ISU.

Figure 7. Negative head system



Step 2: Connecting the pump

Use only Salamander supplied hoses to connect the pump.

The in-line strainers must be fitted to the hot and cold inlet supplies to the pump.

It is critical to discharge water through the pump into a container before connecting the pump to outlet pipework in order to ensure the air has been discharged from inlet pipework and pump chambers. This will not happen if the outlet pipework is connected to the pump.

All associated pipework MUST be thoroughly flushed before making final connections to the pump. Fill the pump with water before connecting to the discharge pipework.

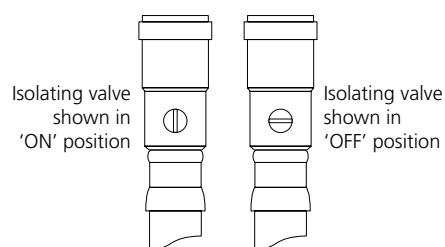
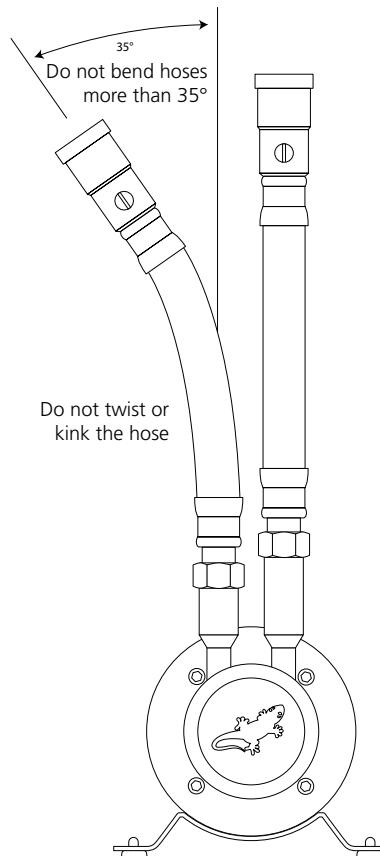
A Hose to pipework

All FORCE pumps are fitted with $\frac{3}{4}$ inch BSP x 22mm push fit connectors with built in isolating valves.

The anti-vibration coupler nuts need only be finger tight plus one quarter turn. Mechanical tools must not be used to tighten coupler nuts as this may cause damage which will invalidate the warranty.

B Hose to pump

Do not twist or bend anti-vibration hoses as this will invalidate the warranty.



Step 3: Electrical installation

! All electrical installations must be carried out in accordance with applicable regulations by a suitably qualified electrician. The pump must be connected to the electrical supply using the mains cable with the attached plug. This plug must be connected to an accessible socket that has been installed in compliance with BS7671 (I.E.E. Wiring Regulations). The plug must be accessible at all times.

General specifications

Applications

All Salamander pumps are designed to boost low pressure hot and cold supplies from tank-fed services. When supplies from a water heater or a combination boiler are to be boosted contact the Salamander PumpWise helpline 0191 516 2002 for guidance.

Voltage

230 volts 50 Hz.

Motor type

Capacitor start and run induction type motor with stainless steel shaft and in-built resetting thermal protection (complies with BS5000 part 11).

Maximum head

All Salamander FORCE pumps – 15 metres.

Anti-vibration couplers

(do not bend)

FORCE are fitted with $\frac{3}{4}$ " BSP x 22mm Push Fit with built-in isolating valves.

Mechanical seals

Rotary mechanical face seals (carbon rotary element with ceramic counter face) are used. Scale deposits in water supplies can cause the mechanical seal to stick if left for long periods without use. Salamander recommends that the pump be run at least five minutes every four weeks to 'exercise' all working parts.

Connections

$\frac{3}{4}$ " BSP male.

Initiation

Fully automatic, flow switch operated, requiring 1ltr in 30 sec per side or 2ltr in 30 sec mixed. Only applies to positive head pumps.

Temperature

Maximum fluid temperature 65°C.

Technical specifications

Part No	Description	Specification		Performance			Connection Type			Pump Volumetrics			Packed Pump Volumetrics				
		Electrical Input	Pump Type	Pressure (bar) at 16ltr/min	Pressure (bar) at 8ltr/min	Max pressure (bar) closed head	Pump	Hoses	Isolators	Dimensions			Dimensions				
		230/1/50	Regenerative				BSP	Push fit	Isolators integrated into the hoses	Weight (kg)	Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Length (mm)	Width (mm)	Height (mm)
Positive Head																	
FORCE 15 TP FORCE 15 ITP	1.5 Bar Twin End Positive Head Shower Pump	✓	✓	1	1.3	1.5	¾"	22mm	✓	6.3	220	120	195	7.8	310	210	220
FORCE 20 TP FORCE 20 ITP	2.0 Bar Twin End Positive Head Shower Pump	✓	✓	1.3	1.7	2.0	¾"	22mm	✓	6.3	220	120	195	7.8	310	210	220
FORCE 30 TP FORCE 30 ITP	3.0 Bar Twin End Positive Head Shower Pump	✓	✓	2	2.5	3.0	¾"	22mm	✓	8.3	255	120	195	9.8	350	210	220
FORCE 20 SP FORCE 20 ISP	2.0 Bar Single End Positive Head Shower Pump	✓	✓	1.3	1.7	2.0	¾"	22mm	✓	5.2	200	120	195	6.7	310	210	220
FORCE 30 SP FORCE 30 ISP	3.0 Bar Single End Positive Head Shower Pump	✓	✓	2	2.5	3.0	¾"	22mm	✓	5.2	200	120	195	6.7	310	210	220
Positive or Negative Head																	
FORCE 15 TU FORCE 15 ITU	1.5 Bar Twin End Positive and Negative Head Shower Pump	✓	✓	1	1.3	1.5	¾"	22mm	✓	6.7	220	220	195	8.2	310	310	220
FORCE 20 TU FORCE 20 ITU	2.0 Bar Twin End Positive and Negative Head Shower Pump	✓	✓	1.3	1.7	2.0	¾"	22mm	✓	6.7	220	220	195	8.2	310	310	220
FORCE 30 TU FORCE 30 ITU	3.0 Bar Twin End Positive and Negative Head Shower Pump	✓	✓	2	2.5	3.0	¾"	22mm	✓	8.7	255	220	195	7.1	350	310	220
FORCE 20 SU FORCE 20 ISU	2.0 Bar Single End Positive and Negative Head Shower Pump	✓	✓	1.3	1.7	2.0	¾"	22mm	✓	5.6	200	220	195	7.1	310	310	220
FORCE 30 SU FORCE 30 ISU	3.0 Bar Single End Positive and Negative Head Shower Pump	✓	✓	2	2.5	3.0	¾"	22mm	✓	5.6	230	220	195	7.1	310	310	220

Trouble shooting

Fault	Probable cause	Recommended solution
Pump will not start	Insufficient gravity flow	Check that installation complies with Salamander instructions Check suitability of pump – is installation in negative head (see page 7) Check inlet filters are not blocked Check flow rate min of 2l/min required on both hot and cold
	Inlet/outlet connections incorrect	Check that connections are plumbed the correct way round and all valves are open
	Electrical	Check power supply Check fuse Check circuit breaker
	Debris under flow switch	Remove outlet hoses and check that flow switch sits in lowest position
	Float sticking in outlet	Ensure no debris is in outlet area
	Flow switch malfunction	Contact service
Reduced/intermittent flow	Incorrect or no anti-aeration flange fitted	Check that installation complies with Salamander instructions
	Insufficient gravity flow	See above
	Blocked inlet filters	Ensure that all filters and shower head are free from debris
	Couplers restricting flow	Ensure that all AV couplers are straight and not bent or distorted
	Air in system	Run system on full hot with pump switched off (ie gravity only) for several minutes Check cold water storage is correct for installation and pump is fitted to Salamander instructions Ensure cold water refill rate is adequate for installation Check that vents are fitted as described in instructions
	Wrong size pump for system	Ensure pump is sufficient to run the equipment
	Hot temp set too high	Reduce cylinder stat setting to 65% max or fit HWS/TMV
Pump starts with all outlets closed	Leak in system	Check for leaks
	Outlet open	Ensure all outlets are fully closed or capped - ie no dead legs in pipework
Pump is noisy	Air in system	See above
	Pump vibrating on surface	Ensure rubber feet are fitted to pump
	AV couplers causing vibration	Ensure that all AV couplers are straight and not bent or distorted
Pump is leaking	Pump exposed to mains water pressure	Check that installation complies with Salamander instructions
	Pump has suffered chemical damage	Ensure that the pump has not come into contact with chemical substance i.e. solder flux
	Pump exposed to excessive temperature	Is effective temp control fitted (cylinder stat or HWS/TMV valve)
	Pump appears to have leaked but not sure	Check leak is not from fitting in pipework above pump

Salamander PumpWise

Salamander PumpWise is your guarantee to:

- help you select the right pump for the job.
- avoid installation pitfalls.
- provide a further TWO YEARS WARRANTY FREE (UK only)

All you have to do is to implement the technical advice recommendations for any specific installation and register the pump when installation is complete.

PumpWise helpline 0191 516 2002

PumpWise from Salamander helps customers and provides a support service second to none. Installers and customers can be sure of a speedy response to requests for technical help guidance and advice.

Pump noise

Salamander has engineered this product range to be as quiet as possible, however no pump is completely silent. Correct installation (anti-vibration couplers straight, rubber feet fitted) will minimise noise, vibration and transmission noise.

Standards and approvals

Splash proof rating IPX2; complies with the requirements of current British and European safety standards for household and similar electrical appliances; meets with Compliance with European Community Directives (CE).

Due to continuous improvement and updating specifications may be altered without prior notice.

Safety in operation

These appliances are 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.

Warranty

Salamander FORCE pumps benefit from a full three years warranty. This is extended to five years when customers consult us through the PumpWise initiative and register the pump when installation is complete.



PLEASE NOTE: incorrect installation may invalidate the pump warranty

Salamander Pumps operates a policy of continuous development and reserves the right to change any of the specifications of its products without prior notice. All information data and illustrations given in this leaflet may be subject to variation.

Your showering sensation for life

In order to continue enjoying the showering sensation brought to you by your Salamander Pump:

- complete and return the attached Warranty card
- take care that the temperature of your stored water NEVER exceeds the recommended maximum of 65°C (a maximum of 60°C if the pump is positioned above the hot outlet from the cylinder)
- contact the PumpWise helpline at any sign of aeration or spluttering of the discharge water from the shower or other outlets

Our PumpWise commitment

We promise to help you select the right pump and eliminate the risk of incorrect installation. We strive to design and manufacture a robust quality product that will delight our customers. We assure you that should you experience a problem the

PumpWise helpline is there to help; our engineers will provide immediate advice and, if necessary, arrange to fix the problem on site.

Further technical assistance

For more details and further technical assistance consult PumpWise.

Telephone: 0191 516 2002

Faxsimile: 0191 548 4445

E-mail: tech@pumpwise.co.uk

To the installer

Please follow the guidelines for installation provided in this brochure and call the PumpWise helpline for installation advice. Once installation has been completed and the system has been tested to your satisfaction, please assist the customer in completing the prepaid Warranty Card.

1 The Scope of the Warranty

SALAMANDER PUMPED SHOWER SYSTEMS LTD ("the company") Warrants subject to the terms and conditions below for the Warranty period(s) specified in paragraph 3 that the Company shall:

Repair or replace free of charge the product(s) specified on the Warranty card or any component part thereof (together referred to as "the equipment") which shall in the opinion of the Company have proved defective by reason only of the Company's materials or workmanship providing always that the Company shall be under no obligation whatsoever under this Warranty to repair or replace equipment which shall have been misused modified altered or transformed in any way without the consent in writing of the Company or if any component or accessory shall have been replaced by a type not specified by the Company or if the equipment is incorrectly installed or operated or used other than as described in the instruction manual or if any servicing or repair of the equipment shall have been carried out otherwise than by an authorised Company dealer appointed by the Company ("dealer").

The Company's liability under this Warranty is limited to the said repairs or replacement and shall under no circumstances extend to any financial loss or damage including consequential losses alleged to have been suffered by the claimant.

Subject as provided in this warranty and except where the equipment is sold to a

person dealing as a consumer all warranties, conditions or other terms implied by law are excluded to the fullest extent permitted by law.

Nothing in this warranty shall exclude liability for death or personal injury caused by the Company's negligence.

2 Terms and conditions

This Warranty shall only be enforceable by you if the following terms and conditions have been complied with:

- a That the pump has been installed in accordance with the installation instructions, guidance and advice contained within the installation and warranty guide and/or provided by the Salamander help desk.
- b You are the original purchaser of the equipment from a dealer and not an assignee or subsequent purchaser of the equipment.
- c You must evidence the date of purchase by retaining the original invoice from the dealer. Without such evidence the Company reserves the right to reject any such claims under the terms of this Warranty.
- d Within 15 days of delivery of the equipment to you the Warranty card is accurately completed and returned to the Company.
- e Within thirty days of discovery of a defect giving rise to liability under paragraph 1 above you give notice thereof in writing to the Company.

3 The Warranty periods

The Warranty periods referred to in paragraph 1 above are as follows:

- a Products manufactured by the Company 2 years from date of purchase provided the warranty card is completed and returned to the Company within 15 days of purchase.
- b Products supplied by the Company, but not of the Company's manufacture 1 year from date of purchase.
- c The warranty period in respect of any product repaired or replaced under the warranty shall be part of the above period(s) which remain unexpired.
- d In the event of a claim for repairs or replacement being made under the terms of this Warranty in the circumstances where in the opinion of the Company the defect has not been caused by the Company's materials or workmanship then the Company reserves the right to charge the claimant at its current hourly rates and list prices in respect of any service engineer's time and any replacement of parts.
- e This Warranty is given in addition to and does not affect your statutory rights as a consumer.
- f This Warranty is valid and enforceable for equipment purchased and used exclusively in the UK and The Republic of Ireland only.
- g Where the Company makes a replacement the equipment replaced shall be returned to the Company forthwith and shall become the property of the Company.
- h No authority has been given to any person, firm or company to vary the terms of this Warranty.

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Freepost RLXE-JHHY-HLHJ
Salamander Pumps
Unit 2c Colima Avenue,
Sunderland, SR5 3XE



Salamander Pumps

Salamander Pumped Shower Systems Limited
Unit 2c Colima Avenue, Sunderland, SR5 3XE

Tel: 0191 516 2002
Fax: 0191 548 4445
Email: service@salamanderpumps.co.uk



Warranty card

Please supply the following information:

Date of purchase	Pump serial number	Model
Address		

1 User name

Address

6 What is the approximate distance in feet from the pump to the cylinder?

Horizontal

Vertical

- 25 40 50 70 100

2 Installer name

Address

7 What is the approximate cold water storage capacity in gallons?

Gas

Oil

Solid fuel

Aga

Electric

3 Supplier from whom system was purchased

Name

Address

8 How is the hot water heated?

Gas

Oil

Solid fuel

Aga

Electric

9 Does the DHWS cylinder have independent controls for:

Zone YES NO

Temperature YES NO

What is the cylinder-stat setting?

10 Who chose the pump?

Householder

Plumber

Showroom

Builder

11 Why did you choose a Salamander pump?

Postcode

4 What does your pump boost?

Shower Multiple showers

Whole house Other (please specify)

5 Where is the pump installed?

Loft airing cupboard

Under-bath Other (please specify)

I am interested in an extended warranty.

Please tick box

Comments

Please send details of the Extended Warranty Scheme and application form.