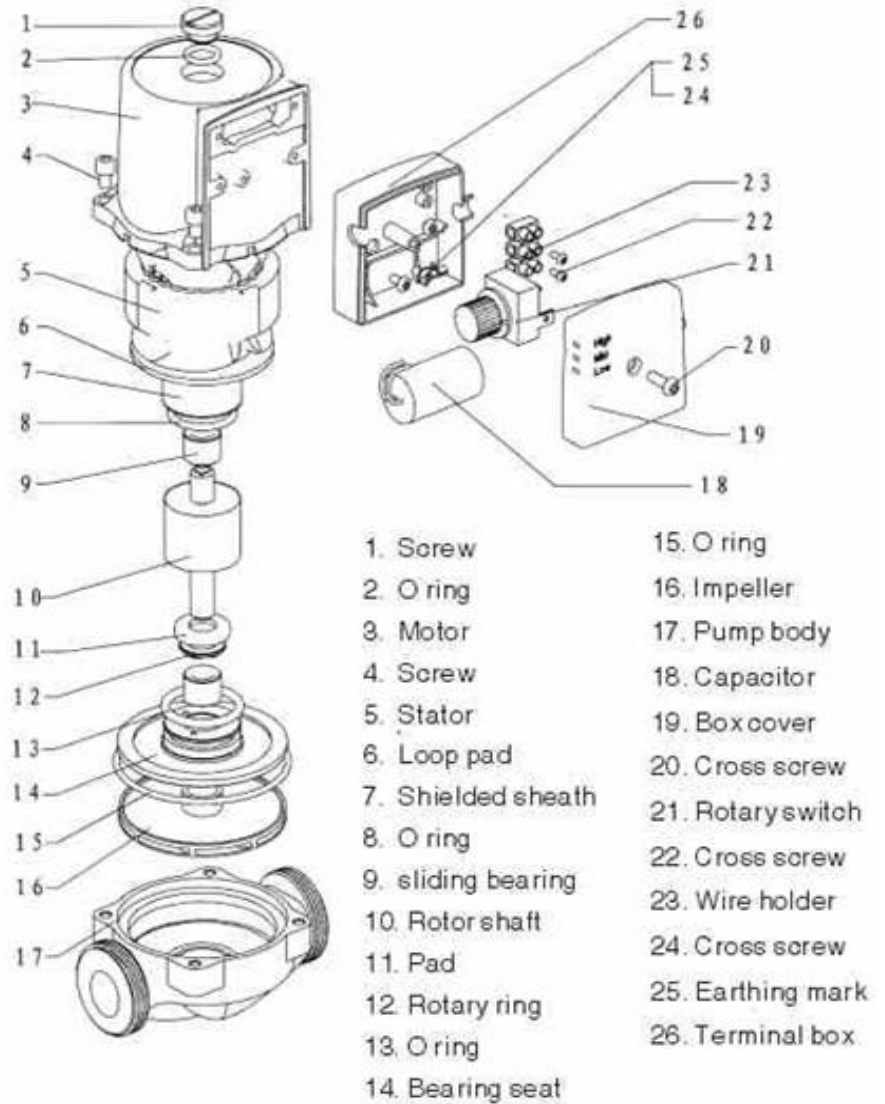


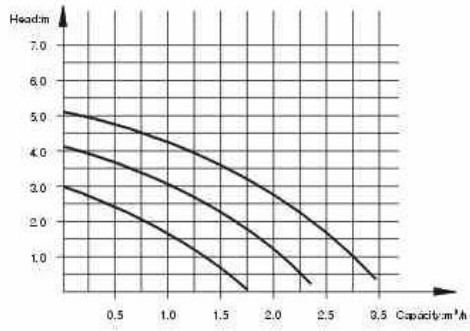


Three speed Pipe pump spare parts

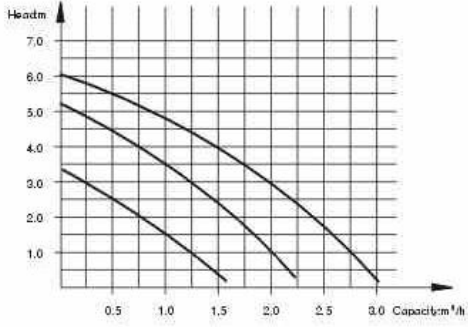


# Installation

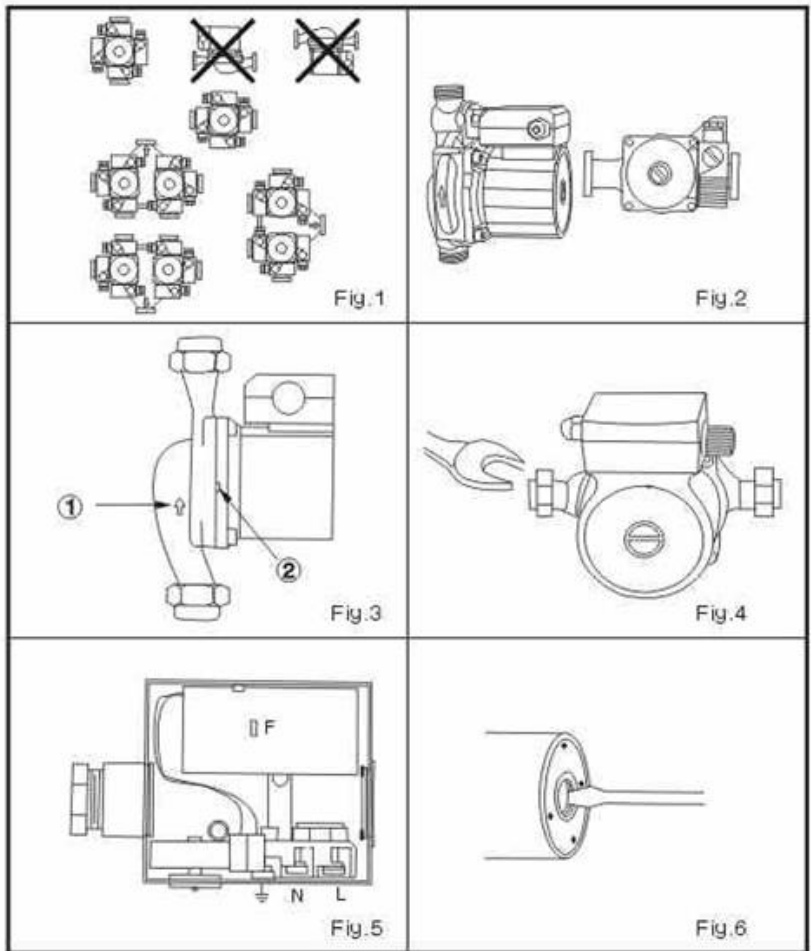
## Performance curves:



LRS25/5



LRS25/6



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## Basic instruction

Dear customer!

In this chapter entitled "Safety precautions for the operator" we would like to explain the functions and the operation of the fully installed unit. Reading the operating instructions will make it easier for you to understand the different functions of the circulating pump and how to operate them.

We would also like to remind you to read the Safety precautions in the installation and Operating Instructions carefully.

Repairs to the unit should only be carried out by trained professionals or **ITS** Customer Services.

How the pump works.

Should the room in which the pump is situated not be heated sufficiently, the speed of the pump will be too low. In this case it is necessary to switch to a higher speed. On the other hand, should the speed of the pump be set too high, unpleasant flowing noises will occur in the pipes and the throttled thermostatic valves. These noises can be eliminated by switching to a lower speed.

Operating the unit

The pump contains the following operating features:

Speed setting

The speed of the unit can be set using the rotary switch in the terminal box.

Auto setting

The auto function of the unit can be set using the rotary switch in the terminal box.

Venting the pump

Should the heaters remain cold despite the fact that the heaters and the circulating pump are running, then it is necessary to vent the pump. When the dry well is filled with air, the pump cannot transport any water. The pump normally vents itself automatically once it has been running for a time. However, should direct manual venting be necessary, please follow the instructions in chapter 6.1, Filling and Venting, carefully.

Problems

If the fault cannot be remedied, please contact your plumbing and heating specialist or your nearest **ITS** customer services or representative.



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# 1 .General

Installation and service by qualified personnel only

## 1.1 Field of Application

The pump is used for forced circulation of liquids in pipe systems.

The main fields of application are:

- Hot water heating systems,
- closed industrial circulating systems,
- series GRS & LPA only: specially suited for automatic venting of pressurized systems with high air infusion rates,



The pump must not be used for handling drinking water or food related liquids.

## 1.2 Product data

### 1.2.1 Series specifications

Heating circulating pumps , wet runner motors

LRS-Compression fitting pump

LRS=Air venting pump

LRS=Double pump

Nominal width of the pipe connection 25[mm]

Maximum lift [m]at Q=0 m<sup>3</sup>/h

LRS 25 / 6

### 1.2.2 Connection and output data

Voltage:	~220V,+6%/- 10%,50Hz
Maximum power consumption PI:	see rating plate
Maximum motor speed:	see rating plate
System of protection:	see rating plate
Speed setting:	manual in 3 stages
Switch gear S2R3D for time-controlled main/reserve or addition/peak load operation:	for double pumps not necessary
Motor protection:	not necessary
Nominal width DN(pipe connection):	15mm(1/2") 25(1") 40(1 1/2")
Fitting length:	130mm 180mm
Max,permissible working pressure:	10 bar



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Minimum input pressure at the air intake	
at temperatures +50°C:	0.05bar
at temperatures +95°C:	0.3bar
at temperatures +110°C:	1.0bar
Permissible temperature range:	-10°C to +110°C
Maximum permissible ambient temperature:	+40°C

\* These values are valid up to 300m above sea levels

For higher elevations add:0.01 bar/100m.

The minimum inlet pressure must be maintained in order to avoid cavitation noise.

Permissible fluids:

- Heating water to VDI 2035.
- Water and water/glycol mixtures up to a ration of 1:1 ,Glycol mixtures require a re-assessment of pump hydraulic data in line with the increased viscosity and depending on mixing ratios. Only approved makes of additives with corrosion inhibitors must be used in strict compliance with manufacturers' instructions.
- For use of other kinds of fluids consult ITS first.

## 2. Safety Rules

These instructions contains basic reference which must be strictly adhered to. It is therefore imperative for the installer and the Operator to carefully read these instructions prior to installation and commissioning.

Please observe, not only safety directions under the main heading ITS RULES, but also those added and specially marked under the ensuing headers.

### 2.1 Safety Marks contained in these Instructions

Safety rules contained herein which, if not complied with, may be dangerous to persons are specially highlighted by the following danger symbols:

Danger from general causes:



Danger from electrical causes:



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Safety references which, if not complied with, may cause damage to the pump or impair its function are highlighted by the word:

**ATTENTION!**

## 2.2 Trade Qualifications

Only suitably qualified personnel may work on this equipment.

## 2.3 Dangers from Non - Observance of safety Rules

Non-observance of safety reference may cause bodily harm to persons or damage to the plant. Failure to comply with safety references could invalidate warranty and/or damage claims. In detail, non - compliance may, for example, cause the following dangerous situations:

- Failure of vital plant functions or damage to plant,
- causing personal injury due to electrical and/or mechanical causes.

## 2.4 Safety Rules For The Operator

Local regulations for the prevention of accidents must be observed.

Danger from electrical energy must be excluded (conforming to local or general regulations such as ICE, VDE, etc.)

## 2.5 Safety Rules for Inspections and Installation Work

It is the Operator's responsibility to ensure that inspections and installation work are carried out by authorized and qualified personnel only, having themselves made fully conversant with these instructions.

Work must principally be carried out only with the plant switched off and at complete standstill.

## 2.6 Arbitrary Alterations and Spare Parts Procurement

Any alterations to plant are only permitted in agreement with the manufacturers. Original spare part and authorized accessories serve safety and reliability. The use of unauthorized parts could invalidate any claims for consequential damages.

## 2.7 Abnormal Operating Conditions

Operational safety of the plant is only ensured if used in accordance with Chapter 1 of these instructions. The limits stated there must not be exceeded under any circumstances.



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### 3. Transport and Storage

**ATTENTION!**

Pumps/plug-in modules must be protected from moisture.  
-They must at no stage be subjected to temperatures outside the limits from -10°C to +50°C

### 4. Description of Product and Accessories

#### 4.1 Description of the Canned -Rotor Pumps

The pump is of the canned rotor type, all rotating parts are thus immersed in the fluid being handled. A shaft seal, being subject to wear and tear is not required. The fluid lubricates the shaft bearings and acts as coolant to bearings and rotor. The pump is completely maintenance - free.

Twin pumps contain two identically constructed pump heads in a common housing with integrated non - return flap. Each pump can operate independently or both pumps simultaneously in parallel. Standard operating modes are main/standby or base - /peak duty. The pump heads can be selected of different capacities. Twin pumps are suitable of adapting a pipe system to suit individual load characteristics. Automatic control of the different operating modes can be achieved in conjunction with the S2R3D control unit.

The GRS pump is an air venting pump. It is equipped with an air vent housing, suitable for use in conjunction with any commercially available automatic air vent. The housing can be rotated (by undoing the holding-down screws) to enable vertical mounting of the air vent at any pump position. Motor Overload protection is not required. The motor operates non - overloading.

#### Speed setting:

All pumps are equipped with a rotary switch in the terminal box to enable manual 3 - speed control. At minimum speed the maximum speed is reduced to approx 40 - 50%. The power input is reduced to approximately 50%.

#### 4.2 Scope of Supply

- Pump, complete.
- Installation and Operating Instructions.

#### 4.3 Accessories

- Accessories available on separate order:
- Union inserts for connection to pipe systems.
  - S2R3D control unit for twin pump.



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## 5. Sitting/Installation

### 5.1 Installation

- Install pump only after all welding/soldering on the pipe system is completed and the pipe system has been flushed out thoroughly to be clear of foreign matter and impurities as they may cause damage to the pump.
- Mount pump in an easily accessible position in order to facilitate later inspection and exchange.
- To avoid draining and re-filling the whole of the pipe system on exchange of pump it is recommended to provide and install isolating valves at suction and discharge ports of the pump, to be positioned in such a way to prevent leakage dripping on the pump motor or its terminal box.
- When installed into the flow pipe of an open-vented system, the open safety vent must be connected to the system on the inlet side of the pump.
- Pump to be mounted with the shaft in the horizontal plane in such a way that it is not stressed by the pipework. Observe mounting positions as shown in Figs. 1 and 2:  
Fig. 1 :Mounting positions for Series LRS  
Fig.2:Mounting positions for Series LRS. If an automatic air vent is used the vent housing must be rotated such to ensure its mounting vertically upwards(washers between motor/pump housing and pump housing/vent housing are identical). When mounted in a horizontally run pipe the air venting capacity at the nominal pump duty point is approx. 25% higher than when mounted in a vertical pipe run.
- Direction of fluid flow must correspond with the arrow on the pump housing.(fig.3, pos. 1 ).
- When connecting the pump to the conduit of pipes, the pump can be secured against twisting using a spanner on the key surfaces which have been created for this purpose(Fig.4).
- In order to attain the correct terminal box position, the motor housing must be turned once the Allen screws have been loosened.

**ATTENTION!** Take care not to damage the housing gasket(Size 86 OD x 76 ID x 2.0mm EP).

**ATTENTION!** For units which are to be insulated, only the pump housing may be insulated. The condensation water holes on the motor flange must remain open. The motor and the condensation vents must remain free from all blockages (Fig.3, pos.2)



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