

# Operating Instructions

## Immersion pumps of the series TL142

### Contents

1 General.....	1	6 Start up / Shut down .....	2
2 Safety.....	1	7 Servicing and Maintenance.....	2
3 Transport and storage .....	1	8 Troubleshooting's guide .....	2
4 Description of product and accessories.....	1	9 Spare parts .....	3
5 Installation.....	2		

### 1 General

These operating instructions apply to the pumps of the series TL142 with different depths of immersion. The immersion pumps are suitable for handling contaminated coolants and extremely inflated fluids.

These operating instructions contain basic information and instructions which must be observed when the pump is being installed, operated or repaired. Therefore it is important that these operating instructions are read by the fitter, the operator and relevant technical personnel before installation and start-up, and they are available at all times at the place where the unit/system is being operated.

### Specifications

Type	Max. del. pressure bar / spec. weight 1	Max. del. volume l/min	Depth of immer- sion mm	Weight kg	Power kW
TL142 / 330	2,7	170	330	18	1,1
610			610	21	

Mediums

Water, coolant, cooling- and cutting-oils

Kinetic viscosity of the medium

1 .... 90 mm<sup>2</sup>/s

Temperature of medium

0 .... 80 °C

### 2 Safety

See appendix A.

### 3 Transport and storage

Protect the pump against damage during transportation.

Store pump in dry and protected areas and protect it against penetration of foreign bodies.

### 4 Description of the product and accessories

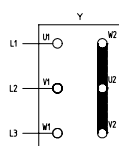
Pumps of the series TL142 are two-stage rotary pumps. The impellers are fixed on the driving shaft extension. Pump and motor form a compact and space-saving unit. Pumps of this type are designed with semi-open impellers and a suction screw.

The motor is surface cooled and complies with the DIN IEC 34 resp. EN 60034 (IP 55).

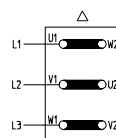
Tension voltage and frequency must correspond with the shown specification on the nameplate. The terminal links of the motor are delivered in star connection from the plant. A circuit breaker or overload trip must be provided and the tripping current must be adjusted to correspond with the motor rated current.



**Check the terminal links according to the following wiring diagram.**



**Star connection**  
3 x 400 V, 50 Hz  
resp. 380-420 V, 50 Hz



**Delta connection**  
3 x 230 V, 50 Hz  
resp. 220-240 V, 50 Hz



**Work on the electrical equipment must only be carried out by a qualified electrician.**

**The motor must be isolated before any work is carried out.**

## 5 Installation

The pumps are mounted on the top of the coolant tank with the pump body being immersed in the coolant. Pumps must be mounted securely. The pipework must be installed so that no distortion of the pump can occur.

According to the drawing shown on the right, the maximum liquid level must stay about 30 mm below the mounting flange. Also ensure that the suction hole of the pump body is covered with liquid (min. liquid level) before starting up the motor.

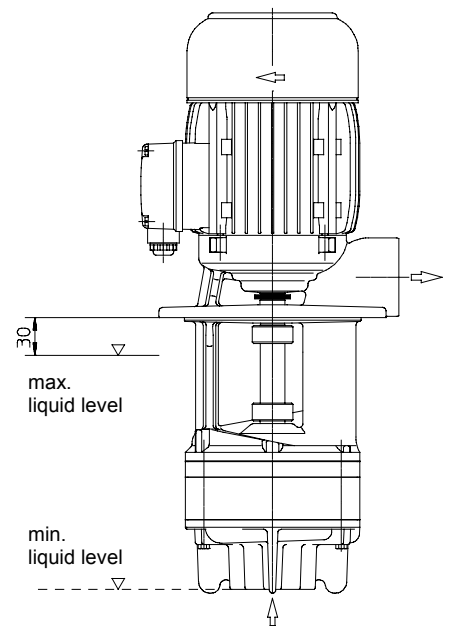
The inlet is at the bottom of the immersed pump body. The distance between the inlet and the tank bottom must be so large that the inlet can not be blocked by deposits during longer shutdowns.

To obtain the full flow rate it is recommended to choose for the pipework the nominal bore diameter of the pump's cross section for connection. Therefore pipe bends should be used, not pipe angles!

The pipework must be qualified for occurring hydraulic pressure!



**The pump must be mounted in such a way that rotating parts under the cover of the coolant tank can not be touched!**



## 6 Start up / Shut down

### Start up

Switch off at the main fuse.

After connection of the terminals close the terminal box.

Briefly start the motor and check the rotation according to the arrow on the top of the motor. **Looking through the fan cover of the motor, the fan has to turn clockwise.**

If the direction is incorrect change over two of the power leads.

### Shut down

Switch off at the main fuse.

Open terminal box and disconnect the power leads

Empty out the pump.



**The temperature of the medium is not allowed to be higher than 80 °C!**

**The pumps are not suitable for continuous running against a closed sliding valve ( plan bypass ).**

**The particle-size in the medium is not allowed to be bigger than 2,5 mm!**

## ATTENTION

**Switching-on frequency: Motors less 3 kW max. 200 times per hour.**

## 7 Servicing and Maintenance

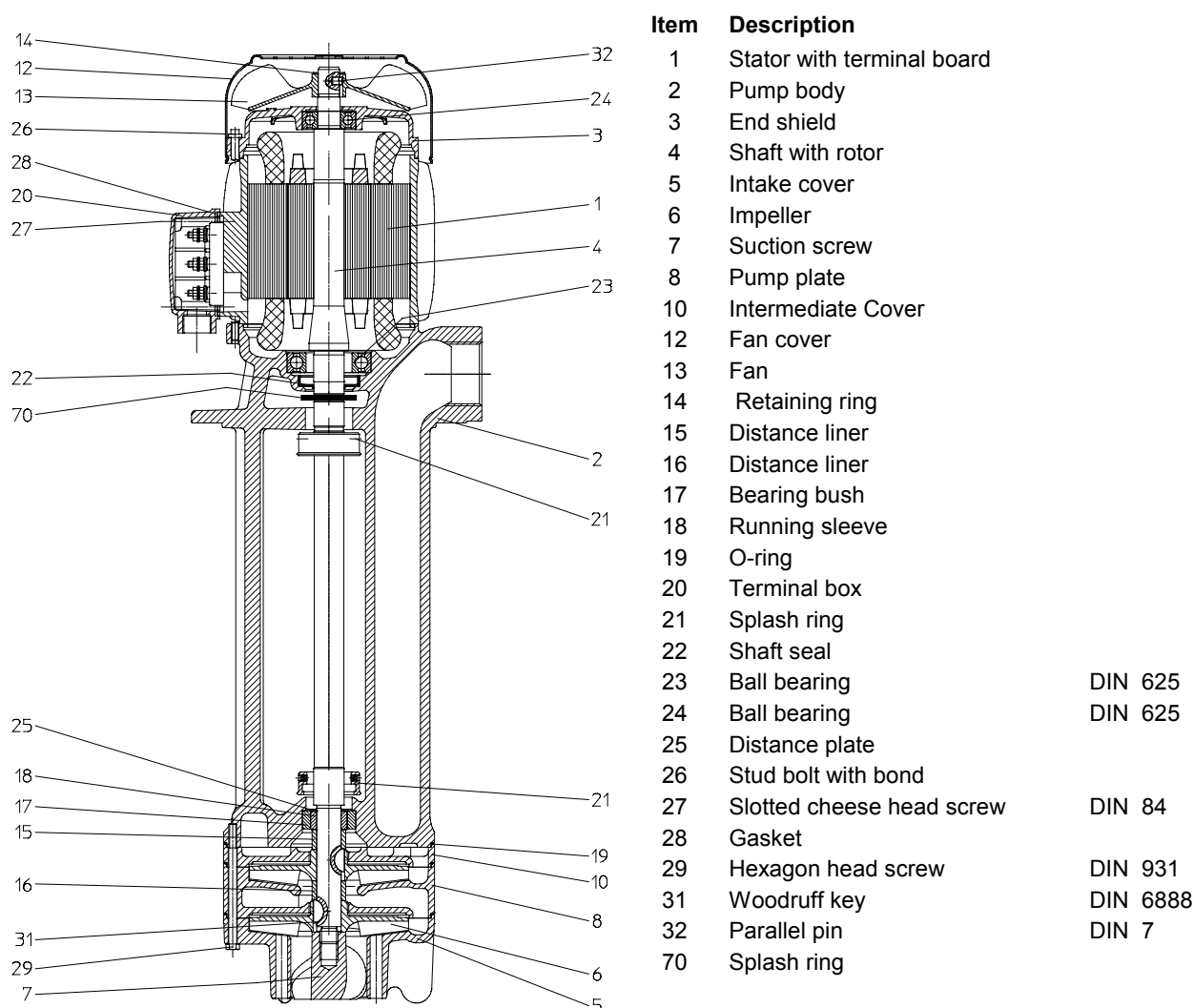
The surface of the motor must be kept free of dirt.

The motor shaft runs in permanently greased ball bearings and does not need any special service.

## 8 Trouble shooter's guide

Fault	Cause	Remedy
Motor does not start, no motor noise	At least two of the power supply leads have failed	Check fuses, terminals and supply leads
Motor does not start, humming noise	One of the supply leads has failed Impeller faulty Motor bearing faulty	See above Replace impeller Replace bearing
Pump does not pump	liquid level too low Pump mechanism faulty Pipe blocked	Fill up liquid Replace pump mechanism Clean pipe
Insufficient flow and pressure	Wrong direction of rotation of impeller Pump mechanism silted up Worn pump mechanism	Switch two power supply leads Clean pump mechanism Replace pump mechanism
Power consumption is too high	Wrong direction of rotation of impeller Lime or other deposits Mechanical friction	See above See above Repair pump

## 9 Spare part list for the immersion pumps of the series TL142



### Tightening torques for screwed connections

Thread - Ø	M4	M5		M6
Strength classes	4.8	4.8	8.8	8.8
Tightening torque in Nm	1 Nm	3 Nm Item 26	4.5 Nm Item 29	4.5 Nm

Spare parts are available from the supplier.  
Standard commercially available parts are to be purchased in accordance with the model type.  
The ordering of spare parts should contain the following details:

- Pumptype**  
e.g. TL142 / 330
- Pump No.**  
e.g. 04042540  
The date of the construction year is a component of the pump's type number.
- Voltage, Frequency and Power**  
Take item 1, 2 and 3 from the nameplate
- Spare part with item No.**  
e.g. Intake cover item No. 5

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Subject to change without prior notice.