

Operating Instructions

Brinkmann Immersions pumps of the series TA/TAL302 ... 306

Contents

1 General.....	7	6 Start up / Shut down	9
2 Safety	8	7 Servicing and Maintenance	9
3 Transport and storage	8	8 Trouble shooter's guide	9
4 Description of product and accessories	8	9 Spare parts	10
5 Installation	8		

1 General

These operating instructions apply to the pumps of the series TA/TAL302 ... 306 with different depths of immersion and specifications. The immersion pumps are suitable for handling contaminated coolants, (and extremely inflated fluids / TAL construction).

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	Type	Max. del. pressure bar / spec. weight 1	Max. del. volume l/min	Depth of immersion / TA h mm	Weight / TA g kg	Power kW
TA302 / 170 / 250 / 320 / 400 / 490 / 600	TAL302 / 190 / 270 / 340 / 420 / 510 / 620	2,2	235	170 250 320 400 490 600	15,5 16,5 17,5 18,5 19,5 20,5	1,1
TA303 / 220 / 300 / 370 / 450 / 540 / 650	TAL303 / 240 / 320 / 390 / 470 / 560 / 670	3,4	240	220 300 370 450 540 650	27 28 29 30 31 32	1,5
TA304 / 270 / 350 / 420 / 500 / 590 / 700	TAL304 / 290 / 370 / 440 / 520 / 610 / 720	4,5	245	270 350 420 500 590 700	33 34 35 36 37 38	1,9
TA305 / 320 / 400 / 470 / 550 / 640 / 750	TAL305 / 340 / 420 / 490 / 570 / 660 / 770	5,6	250	320 400 470 550 640 750	36 37 38 39 40 41	2,2
TA306 / 370 / 450 / 520 / 600 / 690	TAL306 / 390 / 470 / 540 / 620 / 710	6,9	255	370 450 520 600 690	42 43 44 45 47	2,6

Depth of immersion TAL = h + 20 mm
Weight TAL = g + 1 kg

Mediums	Water, cooling emulsions, cooling- and cutting-oils	
Kinetic viscosity of the medium	1 90 mm ² /s	
Temperature of medium	0 80 °C200 °C as special make	
Noise level / 50 Hz	TA302 TA303 ... TA306	60 dBA 66 dBA
Measuring of noise level to DIN 45635 at distance of 1 m.		

2 Safety

See appendix A.

3 Transport and storage

Protect the pump against damage when transporting.

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

4 Description of product and accessories

Pumps of the series TA/TAL302 ... 306 are multi-stage rotary pumps of simple construction. The impellers are fixed on the driving shaft extension. Pump and motor form a compact and space-saving unit. Pumps of this type are fitted out with semi-open impellers, (and a suction screw / TAL construction).

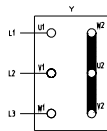
The motor is surface cooled and complies with the DIN IEC 34 resp. EN 60034 (IP 55).

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 adjusted to correspond with the motor rated current.

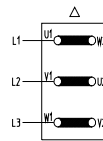
Special electrical or mechanical versions are described in appendix B (separate sheet)!



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 minimal liquid level for the TA pump is 55 mm before starting up the motor, for the TAL pump the suction hole of the pump body must be covered with liquid.

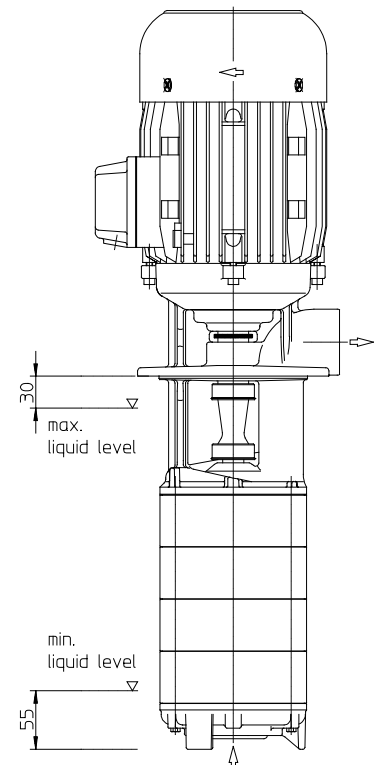
The inlet is at the bottom of the immersed pump body. The distance between the inlet and the tank bottom must be so large that the inlet can not be blocked by deposits during longer shutdowns.

To obtain the full flow rate it is recommended to choose for the pipework the nominal bore diameter of the pumps 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 that 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 mains.

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 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 mains.

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 or 200 °C as special make !

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

The TA302 pumps are not suitable for dry running.

The particle-size in the medium is not allowed to be bigger than 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 is spinning in permanently greased ball bearings (with special grease and increased bearing play) and does not require any special maintenance. Spare parts are readily available from stock.

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	Change over 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

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:

1. Pumptype

e.g. TA304 / 590

2. Pump No.

e.g. 03022200

The date of the construction year is a component of the pumps type number.

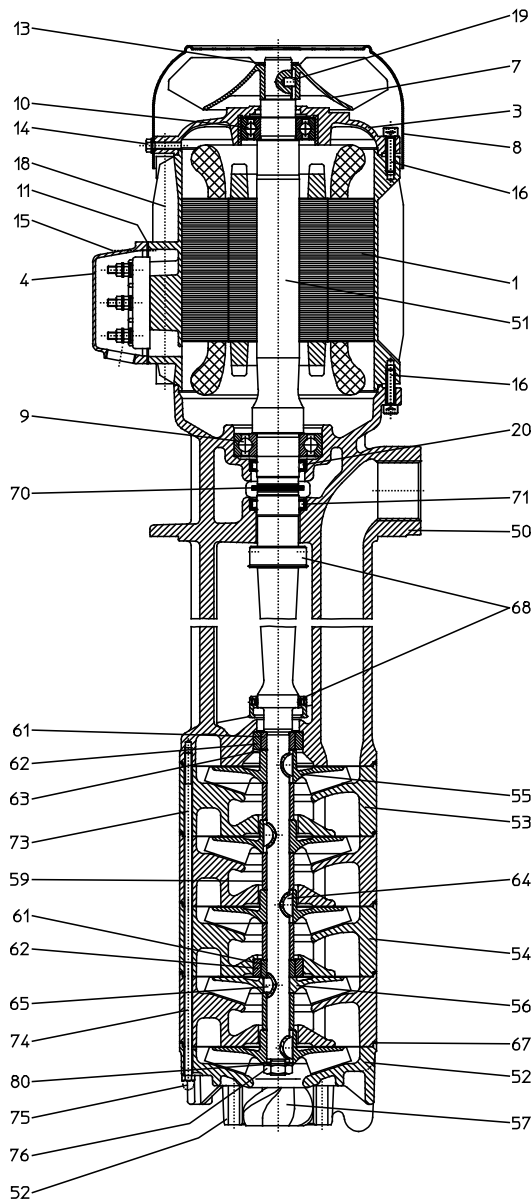
3. Voltage, Frequency and Power

Take item 1, 2 and 3 from the nameplate

4. Spare part with item No.

e.g. Intake cover item No. 52

9 Spare part list for the immersion pumps of the series TA/TAL302 ... 306



Item	Description	
1	Stator with terminal board	
3	End shield	
4	Terminal box	
7	Fan	
8	Fan cover	
9	Ball bearing	DIN 625
10	Ball bearing	DIN 625
11	Gasket	
13	Retaining ring	
14	Thread rolling screw from 1,5 kW and over	DIN 7500
15	Slotted cheese head screw	DIN 84
16	Socket head cap screw from 1,5 kW and over	DIN 912
18	Stud bolt with bond for TA/TAL302	
19	Parallel pin	DIN 7
20	Shaft seal TAL	
50	Pump body	
51	Shaft with rotor	
52	Inlet cover for TA	
52	Intake cover for TAL	
53	Pump plate	
54	Pump plate with bearing bush TA/TAL305...306	
55	Impeller	
56	Impeller - bearing stage TA/TAL305...306	
57	Suction screw only for TAL	
59	Distance liner	
61	Running sleeve	
62	Bearing bush	
63	Distance plate	
64	Woodruff key	DIN 6888
65	Woodruff key short TA/TAL305...306	
67	O-ring	
68	Splash ring	
70	Splash ring	
71	Shaft seal	
73	Hexagon head screw TA302...305	DIN 931
74	Stud bolt TA306	
75	Hexagon domed cap nut TA306	DIN 1587
76	Hexagon thin nut TA	DIN 439
80	Washer TA	

Tightening torques for screwed connections

Thread - Ø	M5		M6 / M8	M12
Strength classes	4.8	8.8	8.8	
Tightening torque (Nm)	2 Nm Item 18	2 Nm TA302 Item 73 4,5 Nm Item 73 Item 75	4,5 Nm Pos. 16	30 Nm