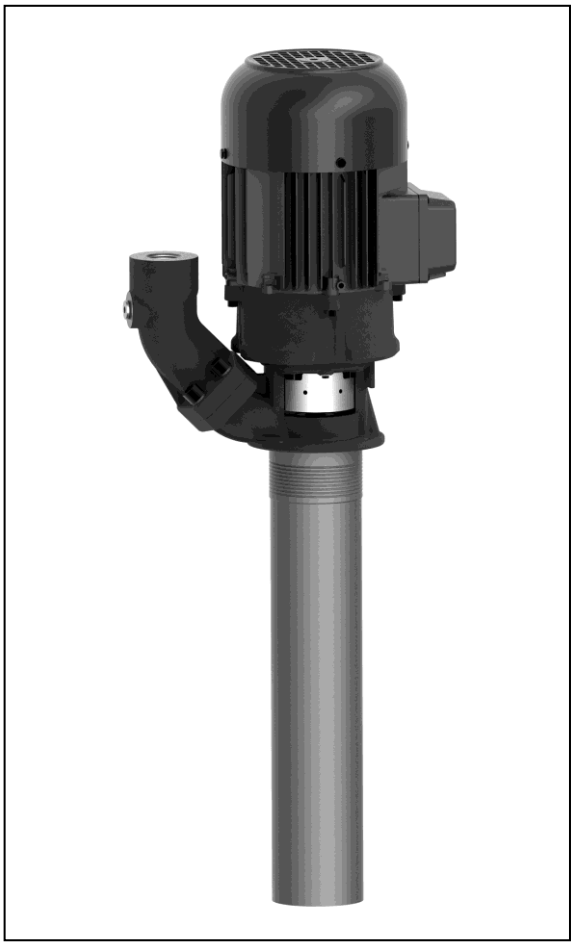
BE3700 Operating Instructions

(Translation of original)

BRINKMANN Immersion Pumps

(S)TC25…(S)TC160



Brinkmann Pumpen
K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2 D-58791 Werdohl
Tel.: +49-2392 / 5006-0
Fax.: +49-2392 / 5006-180
www.brinkmannpumps.de
sales@brinkmannpumps.de

Subject to change without prior notice.

Order - No. : BE3700 ENGLISH

Brinkmann Immersions pumps of the series (S)TC25 ... (S)TC160

Contents

1. Indication to the manual

This operating manual gives basic instructions which are to be observed during installation, operation and maintenance of the pump. It is therefore imperative that this manual be read by the responsible personnel and operator prior to assembly and commissioning. It is always to be kept available at the installation site.

1.1. Identification of safety instructions in the operating manual

Safety instructions given in this manual non-compliance with which would affect **safety** are identified by the following symbol

Safety sign according with ISO 3864 – B.3.1

or where **electrical safety** is involved, with:

Safety sign according with ISO 3864 – B.3.6

Where non-compliance with the safety instructions may cause a risk to the machine and it's function the word

ATTENTION

is inserted.

2. Description of product

2.1. General description of the pump

Pumps of this type are multi-stage rotary pumps. The immersed parts of the pump are of plastic PBTP. Series (S)TC use closed impellers in order to minimizing power consumption and to optimize hydraulic pump efficiencies.

The pump shaft and the motor shaft are connected by a coupling. The pump shaft is sealed by a rotating mechanical seal. The pump is protected again impurity by a filter. Pump and motor form a compact and space-saving unit.

Vertically mounted pumps are equipped with a mounting flange. The pump end immerses into the tank and the motor extends vertically above the tank.

2.2. Intended use

The immersion pumps of the series (S)TC have been especially developed to supply internally cooled tools with coolant fluid within the limiting application in accordance with table 1.

Limit of Application (Table 1)

Type	(S)TC25...40	(S)TC63…160
Mediums	Industry water, cooling emulsions, cooling- and cutting-oils	
Kinetic viscosity of the medium	...25 mm^2/s	...45 mm^2/s
Temperature of medium	0 ... 60 °C	0 ... 60 °C
Particle-size in the medium	1 mm	1 mm
max. operation pressure	21 bar	
min. delivery volume	1% of Q max.	
Dry running	The pumps are not suitable for dry running.	
Switching-on frequency per hour	Motors less 3 kW max. 200	
Ambient temperature	40 °C	
Set-up altitude	1000 m	

ATTENTION

The pumps are to be operated within their design limits. Applications outside of these limits are not approved. The manufacturer is not responsible for any damages resulting from use of the pumps in such applications.

2.3. Technical data

Type	Max. del. pressure bar / spec. weight 1	Max. del. volume l/min	Height [1] **H** mm	Pipe connection [1] TC STC **G**	Depth of immersion [1] **h** mm	Weight [2] TC kg	Power 50 / 60 Hz kW	Noise level [3] dBA / 50 Hz
(S)TC25 / 260	3.0	43	276	G ¾ G 1	260	11	0.48 / 0.55	58
(S)TC25 / 340	4.8	45	276		335	12	0.48 / 0.55	58
(S)TC25 / 430	6.9	46	317		430	14	0.63/ 0.725	58
(S)TC25 / 550	9.1	47	345		565	16.5	1.1 / 1.27	58
(S)TC25 / 805	12.0	48	345		810	18.5	1.1 / 1.27	58
(S)TC25 / 810	15.6	48	367		810	25.0	1.5 / 1.75	63
(S)TC40 / 260	3.4	62	276	G ¾ G 1	260	11.5	0.48 / 0.55	58
(S)TC40 / 340	5.2	62	317		335	13.5	0.63/ 0.725	58
(S)TC40 / 430	7.2	66	318		430	15	0.85 / 0.98	58
(S)TC40 / 550	9.5	67	345		550	16.5	1.1 / 1.27	58
(S)TC40 / 715	11.8	68	367		720	24	1.5 / 1.75	63
(S)TC40 / 720	14.4	68	393		720	26.5	1.7 / 1.95	63
(S)TC63 / 270	3.2	108	318	G ¾ G 1	275	13.5	0.75 / 0.86	58
(S)TC63 / 350	4.6	110	318		340	15	0.92 / 1.06	58
(S)TC63 / 440	6.3	112	367		440	22	1.3 / 1.49	63
(S)TC63 / 560	9.0	114	425		565	28	1.9 / 2.18	63
(S)TC63 / 745	11.0	116	425		755	30	2.2 / 2.55	63
(S)TC63 / 750	12.8	116	425		755	31	2.6 / 294	63
(S)TC160/ 330	2.5	260	345	G 1 ¼	325	15	1.1 / 1.27	58
(S)TC160/ 430	4.1	265	393		425	23	1.7 / 1.95	63
(S)TC160/ 580	6.0	270	425		580	29	2.2 / 2.55	63
(S)TC160/ 740	8.4	270	425		735	30	2.6 / 2.94	63

1) Dimensions in accordance with page 5

2) Weight STC = Weight TC + 2 kg

3) Noise emissions measured in accordance with DIN 45635 at a distance of 1 m

The motor is surface-cooled and compliant with DIN IEC 34 and EN 60034 (protection degree IP 55).

3. Safety instructions

When operating the pump, the safety instructions contained in this manual, the relevant national accident prevention regulations and any other service and safety instructions issued by the plant operator are to be observed.

3.1. Hazards in the event of non-compliance with the safety instructions

Non-compliance with the safety instructions may produce a risk to the personnel as well as to the environment and the machine and results in a loss of any right to claim damages.
For example, non-compliance may involve the following hazards:

- Failure of important functions of the machines/plant
- Failure of specified procedures of maintenance and repair
- Exposure of people to electrical. mechanical and chemical hazards
- Endangering the environment due to hazardous substances being released

3.2. Unauthorized modes of operation

- Pump may not be used in potentially explosive environments**!**
- Pump and discharge piping are not designed to hold any weight and may not be used as a step ladder.

3.3. Remaining Risk

Risk of Injury!
Risk of squeezing or crushing body parts when installing or removing the pump exists. Proper and secured lifting tools must be used.

Risk of burns!
The pump must have cooled down sufficiently prior to commencing any repair. maintenance or installation.

3.4. Qualification and training of operating personnel

The personnel responsible for operation, maintenance, inspection and assembly must be adequately qualified. Scope of responsibility and supervision of the personnel must be exactly defined by the plant operator. If the staff does not have the necessary knowledge, they must be trained and instructed, which may be performed by the machine manufacturer or supplier on behalf of the plant operator. Moreover, the plant operator is to make sure that the contents of the operating manual are fully understood by the personnel.

3.5. Safety instructions relevant for operation

- If hot or cold machine components involve hazards. they must be guarded against accidental contact.
- Guards for moving parts (e.g. coupling) must not be removed from the machine while in operation.
- Any leakage of hazardous (e.g. explosive, toxic, hot) fluids (e.g. from the shaft seal) must be drained away so as to prevent any risk to persons or the environment. Statutory regulations are to be complied with.
- Hazards resulting from electricity are to be prevented (see for example, the VDE Specifications and the bye-laws of the local power supply utilities).
- The pumps' stability against falling over is not ensured unless it is properly mounted onto the tank.
- The female threads on the motor MUST NOT be used to lift the entire pump and motor assembly.

3.6. Safety instructions relevant for maintenance, inspection and assembly work

Any work on the machine shall only be performed when it is at a standstill, it being imperative that the procedure for shutting down the machine described in this manual be followed.
Pumps and pump units which convey hazardous media must be decontaminated.
On completion of work all safety and protective facilities must be re-installed and made operative again.
Prior to restarting the machine, the instructions listed under "Start up" are to be observed.

3.7. Signs on the pump

It is imperative that signs affixed to the machine, e.g.:

- arrow indicating the direction of rotation
- symbols indicating fluid connections

be observed and kept legible.

3.8. Unauthorized alterations and production of spare parts

Any modification may be made to the machine only after consultation with the manufacturer. Using spare parts and accessories authorized by the manufacturer is in the interest of safety. Use of other parts may exempt the manufacturer from any liability.

4. Transport and storage

Protect the pump against damage when transporting.
The pumps may only be transported in a horizontal position and hooks or straps must be attached on the motor and pump end.
Do not use the pump shaft for connecting any transportation aids such as hooks or straps.
Pumps must be drained prior to their storage.
Store pump in dry and protected areas and protect it against penetration of foreign bodies.
Always store pump above the freezing point!

5. Installation and Connection

5.1. Mechanical installation

During any assembly or disassembly process the pumps must be secured against tipping trough ropes for example at all times.

Pumps must be mounted securely. Piping, tank and pumps must be mounted without any tension.

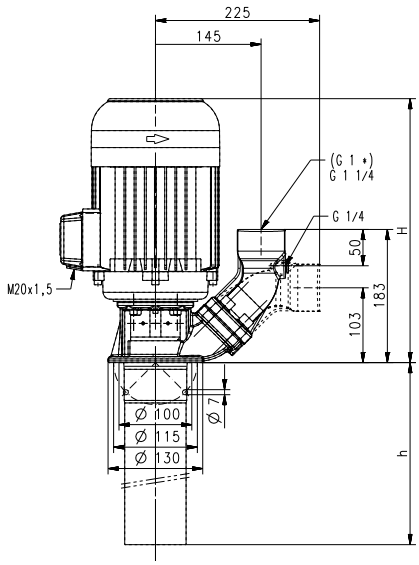
The inlet is at the bottom of the immersed pump body. The distance between the inlet and the tank bottom must be so large that the inlet can not be blocked by deposits during longer shutdowns.

The leakage is collected in a leakage chamber and drained off by the leakage hole into the tank. During the assembling of the pump, be sure that the leakage hole is free.

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!

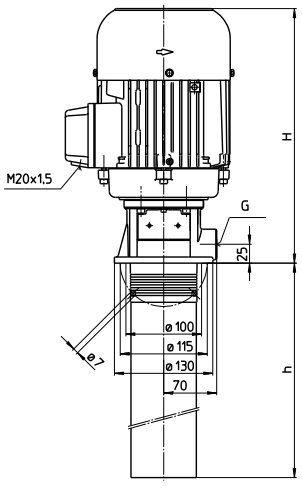
The pipework must be qualified for occuring hydraulic pressure.

STC



*) STC 25…63

TC



ATTENTION

Pay attention of the max. tightening torque for piping connection

Type	Pipe connection	Cast iron	Brass	CrNi-steel
TC25...63	G ¾	80 Nm	40 Nm	160 Nm
STC25...63	G 1	90 Nm		
TC160	G 1 ¼	120 Nm	60 Nm	240 Nm
STC160	G 1 ¼	120 Nm		

When installed the space around the pump must be large enough to provide sufficient cooling of the motor.

Do not prop up the pressure line via the joining socket.

5.2. Electric wiring

All service work must be carried out by qualified service personnel. Pump must be disconnected from the power source and all rotating parts must stand still. Reassure that pump is disconnected from power source and cannot be switched on. Verify that there is no voltage at the terminal board!

According to the European Standard EN809 a motor overload must be installed and properly set to the full load amps stated on the pump name plate.

It is the responsibility of the machine operator to decide whether or not an additional emergency switch must be installed.

Danger!

Risk of electric shock

Our asynchronous motors can optionally be fitted with temperature sensors in the form of triplet PTC thermistors, which are used for thermal monitoring of the motor windings. Please note that the temperature sensors meet the insulation requirements of basic insulation. The improper connection of the triplet PTC thermistors to evaluation units that do not have a protective function against overvoltage in the event of a fault can lead to voltages dangerous to the touch and electric shock.

Please check whether the evaluation units you intend to use are permissible for the electrical connection of the temperature sensors.

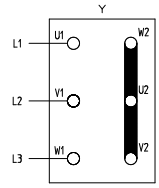
5.2.1 Circuit

Tension voltage and frequency must correspond with the shown specification on the nameplate.

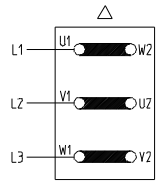
The pump must be wired so that a solid long term electrical connection is ensured. Establish a solid ground connection.

The electrical wiring must be performed according to the wiring diagram shown inside the terminal box cover. (Please see above sample wiring diagrams)

Wiring diagram e.g.



Star connection
3 x 400 V, 50 Hz
resp. 380-415 V, 50 Hz



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

There may be no foreign objects such as dirt, particles or humidity inside the terminal board.

Mount terminal board cover to motor tight against dust and humidity and close up all unused wiring ports.

ATTENTION

When Variable Frequency Drives are used interfering signals might occur.
Non-sinus shaped supply voltage from a variable frequency drive might result in elevated motor temperatures.

6. Start up / Shut down

6.1. Start up

ATTENTION

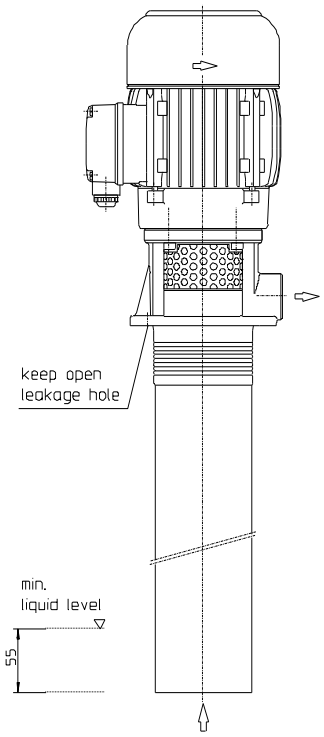
Switch off at the mains.
After connection the electrical wires, close the terminal box. Briefly start the motor (max. 30 sec.) and check the rotation according to the arrow on the top of the motor.
If the direction is incorrect change over two of the power leads.

6.2. Shut down

All service work must be carried out by qualified service personnel. Pump must be disconnected from the power source and all rotating parts must stand still. Reassure that pump is disconnected from power source and cannot be switched on. Verify that there is no voltage at the terminal board!
Open terminal box and disconnect the power leads.
Empty out the pump.

7. Operation

Liquid level
Be sure that the suction hole of the pump body is immersed about 55 mm in the liquid (min. liquid level) before starting up the motor.



If the pump should lock up and cease, shut pump down (see 6.2) and disconnect from power supply. Pump must be uninstalled and removed from the system prior to its repair.

8. Servicing and Maintenance

ATTENTION

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

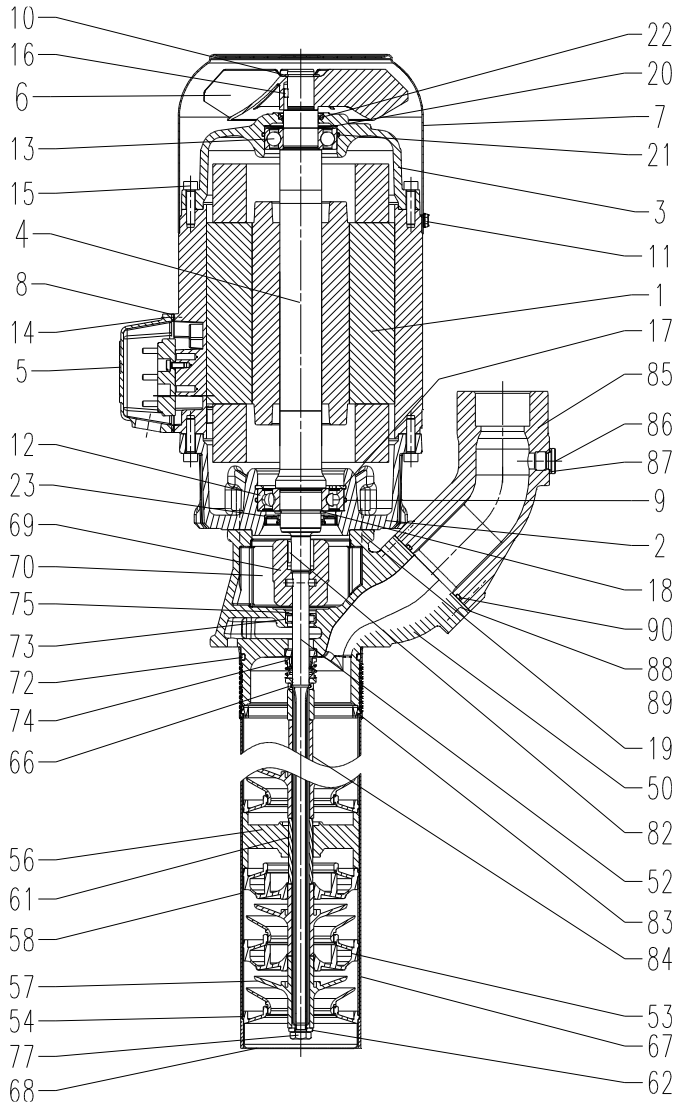
The motor shaft is spinning in permanently greased ball bearings (with special grease and increased bearing play) and does not require any special maintenance.

9. Trouble shooter's guide

Fault	Cause	Remedy
Motor does not start, no motor noise	At least two of the power supply leads have failed Overload has tripped	Check fuses. terminals and supply leads. Inspect overload
Motor does not start. humming noise	One of the supply leads has failed Impeller faulty Motor bearing faulty	See above Replace impeller Replace bearing
Overload trips	Pump locked up mechanically High on/of cycling frequency	Inspect pump hydraulics Check application
Power consumption is too high	Wrong direction of rotation of impeller Lime or other deposits mechanical friction	See above Clean pump mechanism repair pump
Motor overheats	High on/off cycling frequency Wrong power supply (voltage or cycles) Insufficient cooling	See above Power supply must correspond with name plate rating Check air flow at motor fan
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
Incorrect flow or pressure	Wrong power supply (voltage or cycles)	Power supply must correspond with name plate rating
Running noise/Vibration	Foreign objects in pump end Impeller damaged Bearing/Bushing broken	Remove foreign objects Replace impeller Replace bearing/bushing

10. Spare part

10.1. Spare part list for the immersion pumps of the series (S)TC25 ... (S)TC160



Item	Description		
1	Stator with terminal board		
2	Motor flange		
3	End shield		
4	Motor shaft with rotor		
5	Terminal box		
6	Fan		
7	Fan cover		
8	Gasket		
9	O-ring		
10	Retaining ring up to 1.1 kW		
10	Retaining ring from 1.3 kW and over	DIN	471
11	Lens head screw from 1.3 kW and over	DIN	7985
12	Ball bearing	DIN	625
13	Ball bearing	DIN	625
14	Slotted cheese head screw	DIN	84
15	Stud bolt with bond up to 1.1 kW		
15	Hexagon socket head cap screw from 1.3 kW and over	DIN	912
16	Parallel pin	DIN	7
17	Retaining ring	DIN	472
18	Retaining ring	DIN	471
19	Socket head cap screw	DIN	912
20	Compensation disk from 1.3 kW and over		
21	O-ring from 1.3 kW and over		
22	Shaft seal from 0.85 kW and over		
23	Shaft seal from 0.85 kW and over		
50	Pump body		
52	Pump shaft		
53	Diffusor		
54	Diffusor cover		
56	Bearing stage		
57	Impeller		
58	Distance collar (Diffusor)		
61	Running sleeve		
62	Supporting ring		
66	Supporting ring		
67	Pump casing		
68	Sieve		
69	Clamp coupling		
70	Coupling shield wit M5 screw		
72	O-ring		
73	Rotary shaft seal		
74	Mechanical seal		
75	Retaining ring		
77	Hexagon head cap screw	DIN	933
82	Woodruff key	DIN	6888
83	Ring for empty stage only for special depth of immersion		
84	Sleeve for empty stage only for special depth of immersion		
85	Joining socket STC		
86	Screw plug STC	DIN	908
87	Sealing ring STC	DIN	7603
88	Socket head cap screw STC	DIN	912
89	Spring washer STC	DIN	7980
90	O-ring STC		

10.2. Indications to the spare part order

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. TC40 / 430
2. **Pump No.**
   e.g. 06243700
   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. Impeller item No. 57

11. Repair

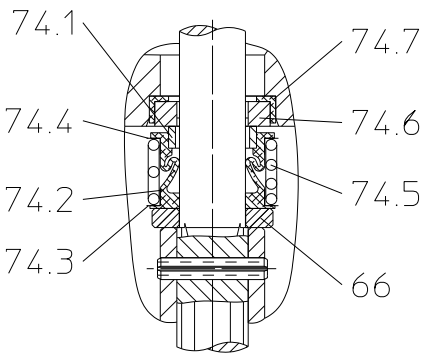
Exchange the rotary mechanical seal:

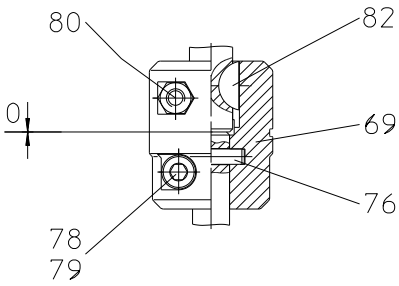
1) Disconnect the pump from the power supply.
2) Loosen the M5 screws and pull out coupling shield (70). Remove clamp coupling (69.1, 69.2) and parallel pin (76).
3) Loosen and pull off the pump casing (67) from the pump unit. **Lefthand thread!**
4) Remove the lower diffuser cover (54) out off the pump casing (67) and remove pump unit with pump shaft (52) from the pump body (50).
5) Take off rotating axial face seal unit (74.1-74.5) and the support ring (66) from the shaft (52) and clean the shaft. Pay attention to the drilled hole for the parallel pin (76) that it is without any bur. Check the sliding surface for the rotary shaft seal (73) for any damage.
6) Remove complete seal (74.6. 74.7) from the pump body (50) and clean the seat!
7) Mounting of the new axial face seal :
   Ensure that the sliding surfaces of the ring and the rotating axial face seal unit are free from grease and dirt.
   Moisten the angle-sleeve of the counter ring lightly with rinse water / (water with washing-up liquid) and push the unit into the seat of the pump body (50).
   Slide the support ring (66) first and then the axial face seal (74.1-74.5) onto the pump shaft (52).
8) Lubricate lightly the lip of the rotary shaft seal (73) and push it into the pump body (50). Then insert the pump shaft (52) with the pump unit through the rotary shaft seal (73).
9) Fit the coupling clamp (69.1) with the parallel pin (76) and the coupling clamp (69.2) together around the shafts. Tighten the hexagon socket head cap screws (78) with the locking washer (79) lightly.
   Be sure that the key of the motor shaft (4) coincides with the key groove of the coupling clamp (69.1).
   Press the pump shaft (52) toward the motor and tighten the screws. The distance between the two shaft ends **must be zero.**
10) Put on the diffusor cover (54) onto the end of the pump unit. Lubricate the O-ring seal (72) of the pump body (50) and screw on the pump casing (67) **anticlockwise**.
11) **Fit the coupling shield (70) into the pump body (50) and screw on the M5 screws.**
12) Reconnect pump to the power supply.

Check direction of rotation!

Tightening torques for screwed connections

Thread - ∅	**M4**	**M5**	**M6**		**M12**
Strength classes	4.8	4.8	8.8		8.8
Tightening torque (Nm)	**1** Nm	**2** Nm Item 14 **3** Nm Item 15	**4.5** Nm	**15** Nm Item 77 **20** Nm Clamp coupling	**30** Nm Item 88





12. Disposal

When disposing of the pump or the packaging materials the local and national regulation for proper disposal must be complied with.
Prior to its disposal, the pump must be completely drained and decontaminated if necessary.

13. Declarations of conformity

13.1. UK declaration of conformity

BRINKMANN PUMPS

UK declaration of conformity

Manufacturer
Brinkmann Pumpen, K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2
D-58791 Werdohl
Germany

This declaration of conformity is issued under the sole responsibility of Brinkmann Pumps and belongs to the following product.

Product name
Immersion pumps
Type (S)TC25 … (S)TC160

The named product described above complies with the following statutory requirements of United Kingdom:

UK SI 2008 No. 1597	**The Supply of Machinery (Safety) Regulations 2008**
UK SI 2016 No. 1091	**The Electromagnetic Compatibility Regulations 2016**
UK SI 2020 No. 1647	**The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2020**
	The following exceptions in accordance with table 1, "Table of exempted applications" are claimed: No.12 (6a), No.15 (6b), No. 18 (6c)

The following designated standards and technical specification have been applied:

EN 809:1998+A1:2009+AC:2010	**EN ISO 12100:2010**	**EN 60204-1:2018**
EN IEC 61000-3-2 :2019 +A1 :2021	**EN 61000-3-3 :2013+A1 :2019 +A2 :2021 +A2 :2021/AC :2022**	
EN IEC 61000-6-2 :2019	**EN IEC 61000-6-3 :2021**	**EN IEC 63000 :2018**

Additionally the following standard has been applied:

EN 60034-1 :2010/AC :2010

The instructions contained in the operating manual for installation and start up the pump have to be followed.

Brinkmann Pumpen, K. H. Brinkmann GmbH & Co. KG

Werdohl, 04.06.2024

.....
Dr.-Ing. Dirk Wenderott
Chief Product Officer (CPO)
Head of Engineering

Dr. H. Abou Dayé
K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2, D-58791 Werdohl
Representative of documentation

13.2. EC declaration of conformity

DEUTSCH / ENGLISH /FRANÇAIS / ESPAÑOL

EG-Konformitätserklärung
EC declaration of conformity / Déclaration de conformité CE / Declaración de conformidad CE

Hersteller / Manufacturer / Constructeur / Fabricante
Brinkmann Pumpen, K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2, D-58791 Werdohl

Produktbezeichnung / Product name / Désignation du produit / Designación del producto

Tauchpumpen / Immersion pumps / Pompes plongeantes / Bombas de inmersión

Typ / Type / Tipo (S)TC25 … (S)TC160

Das bezeichnete Produkt stimmt mit den folgenden Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EG-Mitgliedsstaaten überein:
The named product conforms to the following Council Directives on approximation of laws of the EEC Member States:
Le produit sus-mentionné est conforme aux Directives du Conseil concernant le rapprochement des législations des Etats membres CEE:
El producto designado cumple con las Directivas del Consejo relativas a la aproximación de las legislaciones de los Estados Miembros de la CEE:

2006/42/EG	Richtlinie für Maschinen
2006/42/EC	Council Directive for machinery
2006/42/CE	Directive du Conseil pour les machines
2006/42/CE	Directivas del Consejo para máquinas
2014/30/EU	Richtlinie für elektromagnetische Verträglichkeit
2014/30/EU	Council Directive for Electromagnetic compatibility
2014/30/UE	Directive du Conseil pour Compatibilité électromagnétique
2014/30/UE	Directivas del Consejo para Compatibilidad electromagnética
2011/65/EU und 2015/863/EU	RoHS Richtlinien
2011/65/EU and 2015/863/EU	RoHS Directives
2011/65/UE et 2015/863/UE	Directives RoHS
2011/65/UE y 2015/863/UE	RoHS Directivas

Folgende Ausnahmen gem. Anhang III RoHS (2011/65/EU) werden in Anspruch genommen: 6a, 6b, 6c.
The following exceptions in accordance with appendix III RoHS (2011/65/ EU) are claimed: 6a, 6b, 6c.
Les exceptions suivantes selon l'annexe III RoHS (2011 / 65 / UE) sont revendiquées : 6a, 6b, 6c.
Las siguientes excepciones conforme al apéndice III RoHS (2011/65 / UE) son requeridas: 6a, 6b, 6c.

Hinsichtlich der elektrischen Gefahren wurden gemäß Anhang I Nr. 1.5.1 der Maschinenrichtlinie 2006/42/EG die Schutzziele der Niederspannungsrichtlinie 2014/35/EU eingehalten.
With respect to potential electrical hazards as stated in appendix I No. 1.5.1 of the machine guide lines 2006/42/EC all safety protection goals are met according to the low voltage guide lines 2014/35/EU.
Conformément à l'annexe I N° 1.5.1 de la Directive "Machines" (2006/42/CE) les objectifs de sécurité relatifs au matériel électrique de la Directive "Basse Tension" 2014/35/UE ont été respectés.
Con respecto al potencial peligro eléctrico como se indica en el apéndice I No. 1.5.1 del manual de la máquina 2006/42/CE, todos los medios de protección de seguridad se encuentran según la guía de bajo voltaje 2014/35/UE.

Die Übereinstimmung mit den Vorschriften dieser Richtlinien wird nachgewiesen durch die vollständige Einhaltung folgender Normen:
Conformity with the requirements of this Directives is testified by complete adherence to the following standards:
La conformité aux prescriptions de ces Directives est démontrée par la conformité intégrale avec les normes suivantes:
La conformidad con las prescripciones de estas directivas queda justificada por haber cumplido totalmente las siguientes normas:

Harmonisierte Europ. Normen / Harmonised Europ. Standards / Normes europ. harmonisées / Normas europ. Armonizadas

EN 809 :1998+A1 :2009+AC :2010 EN ISO 12100 :2010 EN 60204-1 :2018 EN IEC 61000-3-2 :2019 +A1 :2021 EN 61000-3-3 :2013+A1 :2019 +A2 :2021 +A2 :2021/ZAC :2022 EN IEC 61000-6-2 :2019 EN IEC 61000-6-3 :2021 EN IEC 63000 :2018

Nationale Normen / National Standards / Normes nationales / Normas nacionales : **EN 60034-1 :2010/AC :2010**

Die Hinweise in der Betriebsanleitung für den Einbau und die Inbetriebnahme der Pumpe sind zu beachten.
The instructions contained in the operating manual for installation and start up the pump have to be followed.
Les indications d'installation / montage et de mise en service de la pompe prévues dans l'instruction d'emploi doivent être suivies.
Tenga en cuenta las instrucciones en el manual para la instalación y puesta en marcha de la bomba.

Brinkmann Pumpen, K. H. Brinkmann GmbH & Co. KG

Werdohl, 04.06.2024

.....
Dr.-Ing. Dirk Wenderott
Chief Product Officer (CPO)
Head of Engineering

Dr. H. Abou Dayé
K. H. Brinkmann GmbH & Co. KG
Friedrichstraße 2, D-58791 Werdohl
Dokumentationsbevollmächtigter / Representative of documentation/ Mandataire de documentation / Mandatario de documentación