SEMPOMP®

TKF-KE

Series

Self-Priming Pumps

CE

ENGLISH INTRODUCTION AND USER MANUAL

TABLE OF CONTENTS

GENERAL WARNINGS ABOUT USER MANUAL

Aim of this user manual is;

- To convey instructions about installation, maintenance and repair of pump, and to explain start, operation and stop methods of pump.

-. Absolutely keep this manual in a secured place to be accessed easily by official who is responsible for safe operation and maintenance of pump.

- Pump should not be operated under conditions which are not mentioned in purchase order. Because, operational conditions which are given in purchase order are considered at material selection and trial.

SEMPOMP , does not accept any warranty conditions for all kind of changes and repair operations which are performed by user and unauthorized people.

- Instructions in this manual should carefully be examined and applied in every installation and operation process of pump for preventing misuse.

- Responsible Personnel should be experienced and have knowledge about related standards.

- If it is necessary to operate pump under conditions out of the ones those are mentioned in purchase order, please contact with SEMPOMP authorized service. SEMPOMP shall not be liable for damages which may occur because of operation under conditions out of mentioned ones without written permission of service.

- If carried pumps shall not be installed immediately, it should be kept in an environment where temperature and humidity does not change so frequently. If appropriate precautions are not taken, very high temperatures and low temperatures and humidity may severely damage pump.

- User is responsible for control and installation to be performed by authorized personnel who have read and examined this user manual.

This user manual does not cover safety rules to be applied in usage area.

Usage tine for pumps which is determined and announced by Ministry is **5(five)** years.

SAFETY INSTRUCTIONS

- You should absolutely obey the following safety instructions.

- Never touch the pump and pipes having temperature more than 80 ºC. Necessary precautions should be taken for warning users. (E.g Warning signs and signboards)

- Never operate pump in reverse direction.

- Do not walk over pump or pipes which are connected to pump.

- Any operation which will be done in pump should be performed by at least two staffs.

- No works should certainly be done over without stopping pump group.

- Power coming to pumps should be off and you should be sure that it will not operate again before you make any work

- Absolutely install the safety guards which were dismounted before after work in pump has finished.

- Tensions and cricks in pipe system absolutely should not reach to pump.

- Do not make any operation while pump and pipes which are connected to pump are under pressure.

- Cloths of personnel who will work over should be suitable and/or they should use safety equipments.

- Never do any operations when pump is still hot.

- Electrical connection related with pump and auxiliary equipments should be suitable with local rules and made by authorized personnel.

- Operate pump with only specified conditions.

- Do not insert your hand and fingers into holes and spaces over pump body.

- Be always careful while working with pumps discharging hazardous liquids.

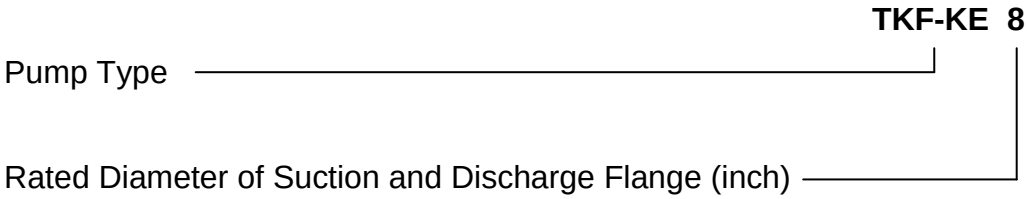
GENERAL

Usage Areas of Self Priming Pump

TKF-KE series pumps are self-priming water pumps.

- Factory Waste Water Systems
- Sewer Purification Systems
- Domestic and Industrial Raw Sewer System
- Pumping Fluids Which Contain

Explanation of Pump Codes



Technical information

Speed	: 650-2900 rpm
Suction Flange	: 2”-10
Discharge Flange	: 2”-10”
Capacity	: 50-730
Head	: 4-40 mSS
Operational Temperature	: 80ºC
Ambient Temperature (Maximum)	: +40ºC
Body Pressure	: 16 bar
Isolation Class	: F
Protection Class	: IP55
Motor Connection	: 3 Phase=380V-50Hz
Motor Options (Optional)	: Special Voltage Special Frequency

Warranty Conditions

The entire products in our selling program are warranted by SEMPA LTD. ŞTİ.

Warranty period is 24 months after delivery.

The warranty conditions will only be valid when all the instructions about installation and start-up operations of the pump unit are taken into account.

Pressure Limit

System pressure must not exceed 1.5 times the pressure that is determined from the performance curve.

TECHNICAL INFORMATION

Desing

TKF-KE series of pumps is very easy to use because they are self-priming. The maintenance and the cleaning of the pump is quite easy. It can be operated by diesel or electrical motor drives.

Impeller

The impellers are designed such that they have 2 blades. They are used pumping of 60-100 mm diameter solid particles.

Bearing and Lubrication

TKF-KE series pumps have bearings; they located pump and motor side. These bearings lubricated during installation in the factory.

Seal

TKF-KE series pumps, silicon carbide (SiC) surface mechanical seal are used. There is liquid oil in seal region.

SHIPPING of PUMPS

- Check whether all materials in delivery list are sent.

- If there is damage during shipping please notify SEMPOMP Shipping Department and Transportation company.

- If there are missing materials, immediately inform SEMPOMP Shipping Department.

-. Check whether packaging is damaged during transportation.

- Please carefully take out packaged pump and accessories (if any). Check whether they are damaged during transportation.

CARRYING

General Warnings

Absolutely obey the following rules during transportation.

- Use proper wooden crane, forklift, or hoisting mechanisms for unloading or loading wooden cases, packages, boxes and palettes depending on their weight and volume.

- Wear gloves, hard tip shoes and helmet during carrying works.

- Never stay under hoisting mechanism while loading or unloading pumps.

Pump and Motor Group Loading/Unloading

Before loading/unloading pump group please determined the following properties.

- Please find the lifting points.

- Please consider total weight and centre of gravity.

- Please consider the packaging external dimensions

- During loading/unloading make accelerating and braking operations as it shall not cause any damage for working personnel.

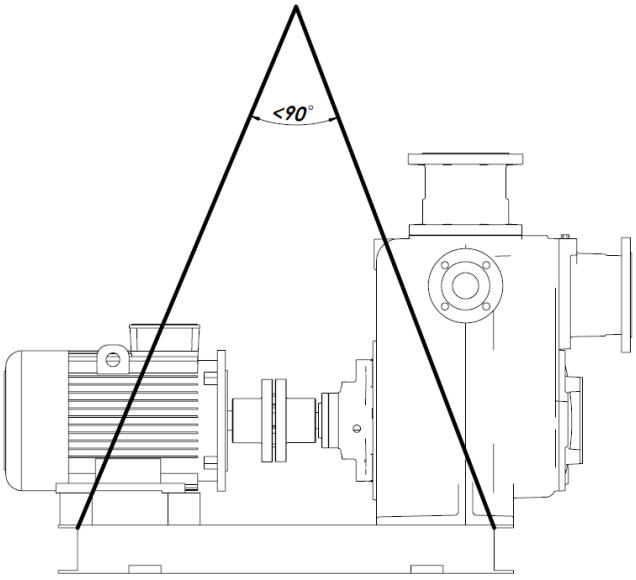
- Load lifting capacity should be suitable with pump and pump group weight.

- You should never stay under or near lifted load.

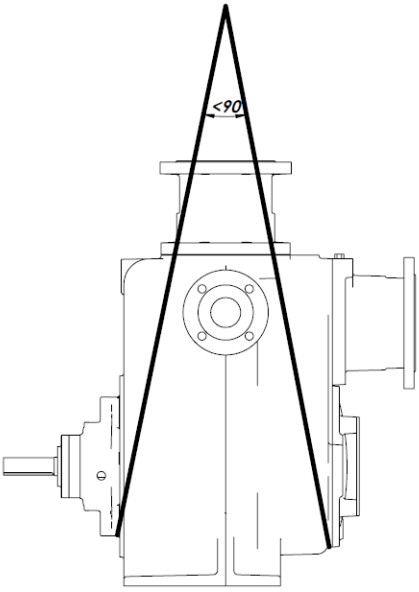
- Pump should be hoisted as it is indicated in ***Figure 1-1 and Figure 1-2*** for not causing any damage in pumps. Motor hanging ring should absolutely not be used while lifting complete group.

- Load should be kept in lifted position more than required time.

- Pump and pump group should always be lifted and carried in horizontal position.



(Figure 1-1)



(Figure 1-2)

STORAGE

- If pump group is not immediately installed, it should be stored in a place which is clean dry and does not include freezing and explosion risk.

- If pump bearing are type which should be greased, they should be extra greased for preventing entry of moisture to bearings around shaft

- Pump should be protected from moisture, dust, dirt and foreign objects by covering with suitable material.

- Pump shaft should be rotated a few turns (e.g once a week) for preventing pitting around pump bearing surfaces and jamming of shaft.

INSTALLATION

Installation of pump to its place and connection setup should only be done by expert personnel. Failed installation and pump ground may cause failures.

These situations are not covered with warranty.

- If pump is purchased as single pump (without motor and chassis); a proper frame should be constructing for putting this group over it. Frame to be constructed should have dimensions and robustness which will not permit vibration and shape defects.

- If pump is supplied without motor (Pump + frame), proper motor should be selected prior start to installation of group.

Following properties should be considered during motor selection.

- Maximum power of pump (in all operation ranges)

- Operational revolution of pump shaft

- Necessary power supply

- Motor Type

- Motor connection type (footed, flanged, horizontal, vertical etc.)

Coupling (clutch) setup is obtained by pump and motor having identical axis. All parts of pumps mainly pump and motor bearings may have damage because of vibration caused by unadjusted coupling.

Before start to pump installation

- Protecting parts in discharge and suction flanges should be removed and cleaned well.

- Pump should be installed in a place which does not have freezing or explosion risk and have well air conditioning.

- There should be enough space around pump for accessing pump easily and for maintenance operations and there should be sufficient height and space for lifting pump if necessary.

- Pump suction pipe should be as short as possible.

- You should be carefully work at pump installation ground preparation and installation of pump group into its place. Incorrect and careless installation causes early wearing of pump parts and failures.

- Pump ground should be so heavy to absorb vibrations and sturdy to prevent bends and adjustments defects. Ground concrete should completely be solidified, completed its plug time and proper stud bolts are placed in pump frame fixing holes and proper fixing lugs should be placed for using in making connections with welding. Concrete and plate upper surface should be horizontal and very smooth.

Installation

Installation of pump group to ground by anchoring stud bolts:

- Pump group is placed to center the stud bolt slots which are opened in ground concrete.

- Anchoring stud bolts are inserted through fixing holes over pump frame fixing holes and places into their slots.

- Pump group is placed over base concrete. Water balance is placed over pump discharge flange and horizontality of pump is controlled. If there is a horizontal imbalance in pumps position, steel wedges are put under frame and balance of pump group is obtained.

- Nuts of anchoring stud bolts are installed.

- Anchoring stud bolt holes are filled with concrete grout.

- Anchoring stud bolts are reciprocally tightened.

- Coupling setup is controlled in this situation.

- Concrete is poured into pump frame. Joining of poured concrete and ground concrete is cared.

- Complete binding of concrete is controlled and anchoring stud bolts are reciprocally tightened.

- Coupling adjustment is again controlled with template. If there is maladjustment, coupling adjustment is made again.

- Discharge and suction flange fixings of pump are controlled again. If there are unnecessary strains and cricks they are eliminated.

- Coupling guards are placed after coupling adjustment.

Installation of pump group with concrete fixing plug :

- Pump is placed into ground concrete or the ground to be installed carefully.

- Pump group frame fixing holes are marked to concrete. Pump group lifted again.

- Marked places where fixing plugs will be placed are drilled carefully according to standards.

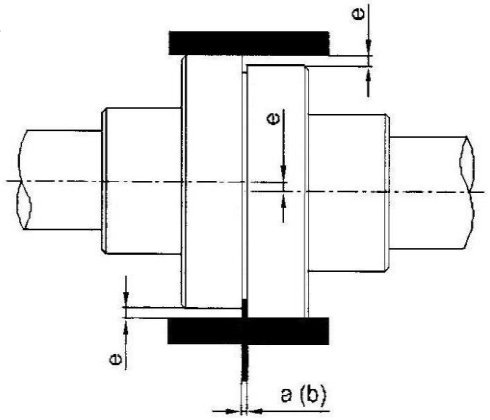
- Fixing plugs are carefully placed into drilled places.

- Steps for installation with anchoring stud bold are made here with same order.

Clutch Adjustment

- Most important factor in operation of pump group without problem is the correct adjustment of clutch setup. Basic reason for many problems such as vibration, noise, bearing warming is lack of adjustment or not proper adjusted clutch. Therefore clutch setup should be done well and frequently controlled.

- Making clutch with flexible materials does not mean that it is a part which will correct a bad adjustment



(Figure 2) Clutch Adjustment

- Clutch Setup is to provide motor and pump rotational axis over in straight line If TKF-KE type motors are ordered with motor and frame, necessary clutch adjustments are made in our factory. However, adjustment can have failure during carrying, storage and installation. Make a clutch adjustment discarding the adjustment made in our factory.

- Two pieces of suitable length of smooth sided template, or steel ruler and a precise caliper is necessary for clutch setup. (More precise tools should be used for more precise adjustment)

- Two types of failure may occur during adjustment

a) Angular Failure

b) Parallel Shifting failure

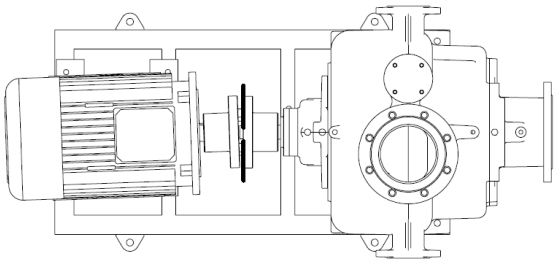
- Distance between two parts of clutch are mutually measured in vertical and horizontal plane

- Distance which was measured between those four points should be equal.

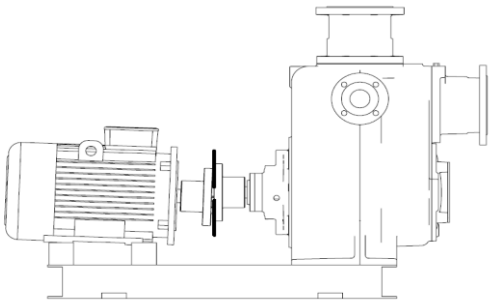
- A smooth edged template is pressed parallel with one part of clutch and position of template with respect to other part is observed. Template should contact with both parts same time and with whole edge.

ATTENTION!

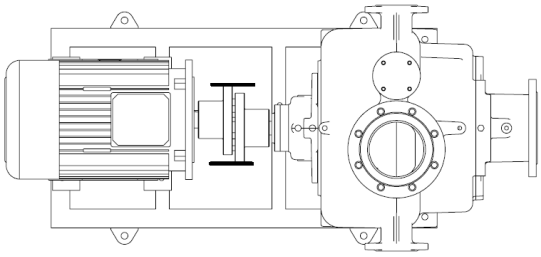
Adjustments should be checked after changes. Because an adjustment which is made in one direction may make other adjustment in other direction faulty.



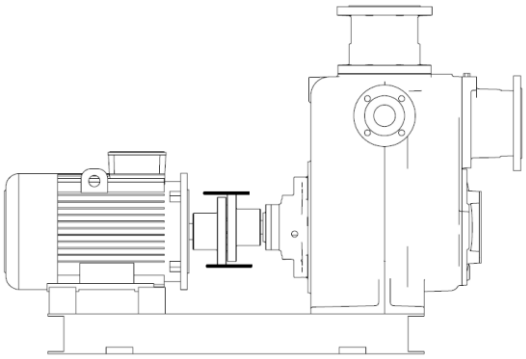
(Figure 3-1) Angle Error in Horizontal Plane



(Figure 3-2) Angle Error in Vertical Plane



(Figure 3-3) Parallel Sliding Error in Horizontal Plane



(Figure 3-4) Parallel Sliding Error in Vertical Plane

This operation should be performed in reciprocal two places in horizontal and vertical plane. Adjustment errors can be in horizontal and vertical plane. Errors in vertical plane are eliminated by putting thin steel sheets under feet of pump or motor, errors in horizontal plane are eliminated by making adjustments in spaces of fixing holes or sliding motor in horizontal plane.

- Form and order of clutch adjustment are displayed in ***Figures 3-1,3-2,3-3 and 3-4.***

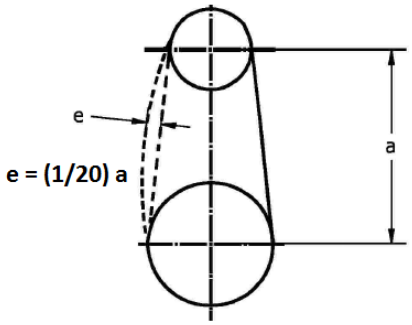
V-Belt Tension Alignment

V-belts must be placed properly inside pulley grooves.

- The tension alignment of belts are made by moving the pulley centers until the correct belt tension is obtained.

-Belt tension is checked by pushing on it by hand. A belt with normal tension may deflect 1/20 of the distance between the axis. If it deflects more than this amount, the belt is considered loose, otherwise it is too tigh

-During operation; in a couple of days, the belts are going to be fully placed inside pulley grooves. It may be necessary to align the belt while it is slightly curved on one side.



(Figure 4)

Installation of Pipe Equipment

Never use the pump as an anchorage point or as a carrier for the piping.

-The pipelines should be supported very near the pump. It must be checked that any weight, stress or strains on the piping system should not be transmitted to the pump. Therefore after completing the piping installation, the bolt and connection on the suction and discharge nozzles must be loosened to ensure that there is not any stress on the piping system transmitted to the pump.
-The nominal sizes of the pump suction and discharge nozzles are no guide to the corrects sizes of the suction and discharge piping. The nominal bores of the pipes should be same as or greater than those of the pump nozzles. Never use pipes or accessories which have smaller bore than the pump nozzles.
-Pipe joints should be by means of flanges with flange gaskets of proper size and material. Flange gasket must be centered between the flange bolts in a such way that there is no interference with the flow of the water.
-The suction piping must not present any features likely to promote the formation of air pockets. Therefore the suction piping should have a slight downward slope towards the pump

Suction Line

-The diameter of the suction pipe must be the same as the one of suction flange. It must be as short as possible and must contain minimum amount of elbows and fittings. If the design point falls to the right hand side of the maximum efficiency point on the performance curve, one size bigger suction pipe must be used.
-An concentric reduction must be fitted to the flat part of the suction pipe. The flat part of the reduction must be connected looking upward in order to prevent the formation of air bubbles.
-Make sure that all the flanges are tightly connected to each other with gaskets. The gaskets must be in accordance with the working fluid.
-Suction pipe must be far away from either the bottom part of the drainage well or the side wall 11/2 times the diameter of the pipe.

Valves

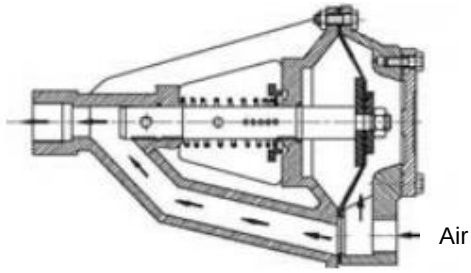
In order to prevent the occurrence of return flow or shock conditions when the pump is shut down, it is recommended to put check valve or butterfly valve on the discharge oar of the pump. An air cock must also be placed in between the check valve and the pump in order to maintain suction

Discharge line

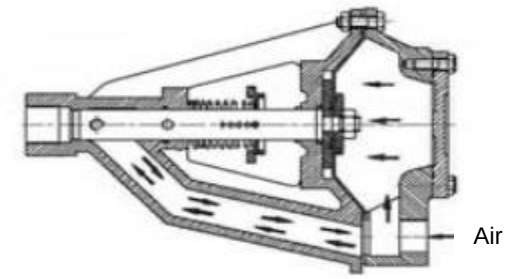
The altitude of the disharge pipes must always be higher than the level of the pumping fluid.

Automatic Air-Venting Valve

Automatic air-venting valve allows the air in (pump suction line) to escape through the pump.Put this in the suction system.



Automatic Air-Venting Valve is Open



Automatic Air-Venting Valve is Close

By-Pass Valve Connection

- A by-pass valve should be places over discharge pipe just after pump and before adjustment valve or outlet flange of pump if there is a case that pump will operate in conditions that pump discharge valve is completely closed(that is with zero flow rate) or almost closed (that is with very small flow rate). If such valve is not used and pumps operates with closed valve for a long time, power which is provided by motor will completely transform into heat energy and pass into discharged liquid. This may cause over heating and abnormal failures in pump.

ELECTRICAL CONNECTIONS

- Electrical connections should be done by authorized electricians National instructions, regulations and instructions of motor manufacturers should be obeyed.

- Power cables should absolutely be installed as not having contact with pipe installation, pump and motor body.

- Motor shaft should be rotated by hand before making electrical conditions to control whether it rotates easily.

- It is recommended to use PTC(Passive Thermal Control-Thermistor) in motors. However usage of those depends on customer. If PTC is used ends of those should be connected to motor terminal box and later should be connected to PTC control device in motor control panel.

- Electrical motors should be protected against overloading by circuit breakers and/or fuses. Circuit breakers and/or fuses should be selected with respect to full load values those are written in nameplate on motor.

- Compare and control voltage, ampere and frequency values which are given in motor nameplate with line values.

- Motor connection scheme can be found in motor terminal box or in handbook.

- Motor electrical connections should be done according to local Electrical Regulations and grounding connection should absolutely be done.

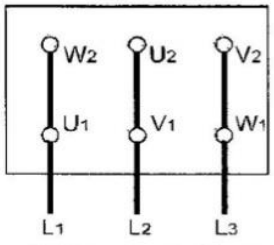
- Protection class of motor body and control system cases in pump should be at least EN 60029 IP 22. In addition to this, protection class of motor bodies and control systems in pump group should be determined according to operational and environmental conditions.

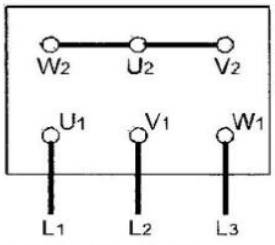
- Safety precautions which are determined in "Safety Instructions" should be applied. All power connections should be disconnected before starting to any work.

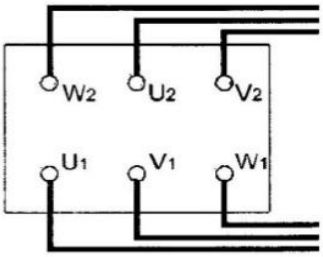
- Motor connection type changes according to motor mains power and connection type. Necessary connection types of jumpers in terminal box are displayed in ***Table 1***

Electricity	Motor	
U (Volt)	230/400 V	400 V
3 x 230 V	Delta	-
3 x 400 V	Star	Delta

Table 1







Scheme 1a ***Scheme 1b*** ***Scheme 1c***

Attention! *Transition time from star to delta should be short in star-delta connected motors. In case that it is long damages may occur in pump and motors.*

- After all abovementioned operations are completed, pump rotor should be rotated a few turns for being sure that it rotates easily.

- All safety guards should be installed into their places. Pump should absolutely be not operated after this operation is made. This is a safety and occupational safety rule which should absolutely be obeyed.

FIRST START

Controls Before Operation

- If there is bottom back flow water valve in pump with depth suction; they are filled with water from filling hole in highest point and its air is taken.

- This case does not cause problem in force feed pumps. Suction valve is opened if any. Air plugs are loosened and discharge of air and completely filling of pump is provided.

- If system includes vacuum pump, rise of water in suction pump by means of vacuum pump and filling pump is provided. When water reaches the highest level pump is started.

- Pump bearings are shipped from the factory as being filled with grease which will be enough for one year.

- Before first start of pump, bearings should be checked whether there dirt has entered into it during shipment and installation. If bearings are dirt they should be completely be cleaned and greased again.

- If pump has waited before installation for a long time (more than 6 months), new grease should be inserted into bearings.

-Be sure that there is water in water tank and/or water source

- Be sure that pump and suction pipe is completely filled with water.

ATTENTION!

Never let pump run in dry conditions.

Determination of Rotation Direction

- TKF-KE type pumps rotates in clockwise direction when you look from clutch towards pump. This direction is shown with an arrow in pump body. Pump is operated for a short while and checked whether it rotates in correct direction. If protection guard is uninstalled during this operation, it should immediately be installed after this operation.

Starting Pump

- Check that suction valve is open and discharge valve is closed.

- Close the circuit breaker and start the motor.

- Wait motor to reach full speed. (Wait motor to pass delta in motors operation with star-delta)

- Observe the ammeter in panel and slowly open discharge valve. (If discharge pipe is empty in first start, do not open discharge valve completely and open in controlled way by controlling that value in ammeter is lower than motor rated values.)

-After valve is completely opened control the value which is read from ammeter whether it is same with the value at operational point. If the ammeter value is less than operational value adjust it by closing the valve. If it is greater check the installation and static height.

ATTENTION: If any of following problems occur while pump operates in nominal speed; pump should immediately be stopped and trouble should be eliminated.

1) Pump operates with over vibration.

2) Pump and motor connection bearings have over temperature.

3) Pressure is not enough.

4) Pump discharges no water.

5) Flow rate continuously decreases.

6) Motor operates overloaded

7) Pump operates with very much noise.

8) Pump does not discharge sufficient water.

Stopping the Pump

- Slowly close the discharge pump.

- If there is water impulse prevention equipment in Discharge line and if the impulse which may occur is not in dangerous levels, you can stop the pump without closing the valve.

- Stop the motor. Watch that pump group has stopped calm and regular way.

- If there is external feed to seal, close this for decreasing the pressure in seal.

- If pump will be out of service for a long time close suction valve and auxiliary circuits if any.

- If there is frost danger and /or it will not be used for a long time, completely discharge water inside pump by means of discharging plug over pump body. Take necessary precautions against freezing risk.

Controls to be Made While Pump is Running

- Since pumps have mechanical seal it does not need any maintenance. A few amount of water may leak from mechanical seal but it is so small that it can not be noticed. If the amount of water coming from mechanical seal this means that seal surface is abraded and needs to be replaced. Lifetime of mechanical seal is mainly depends on cleanness of discharged water.

- Motor current should sometimes be controlled from ammeter over electrical panel which controls the motor. If current values are more than motor nameplate values there may be friction or squeezing in pump. Pump should immediately be stopped and mechanical and electrical controls should be done.

- If there are spare pumps in system, this type of pumps should be run for a short while at least once a week and controlled whether read for operation. Control with auxiliary elements if any.

- Pump should absolutely be run in closed valve condition (zero flow rate) for a long time.

- Pump should operate silent and without operation.

- Bearing temperatures should never exceed ambient temperature (more than 50ºC).

- Never operate pump without water.

LUBRICATION

Bearings in SEMPOMP pumps are designed to be lubricated with grease or liquid oil and having an easy maintenance.

OIL CONTROL

- If pump has waited before installation for a long time (more than 3 months), bearings should be greased. If liquid oil is used in bearings, old oil should be removed and filled with new oil.

- Before running the pump, pump bearings should be checked whether dirt has entered inside it. If there is dirt inside bearings they should completely be cleaned and new liquid oil or grease should be filled.

-Oil filling or adding operations should be determined by enterprise according to conditions in workplace and operation. This method is efficient.

-Pumps which are lubricated with liquid oil are shipped without oil. This type of pumps should be filled with oil up to indicator level before starting to operation.

SAFETY CONDITIONS

- Works should be done by obeying workplace occupational safety rules.

- Inside of pumps should be cleaned after fluid has been discharged from pump.

- Reliability of explosive, poisonous, hot and substances in crystal structure with respect to environment and human health should be assured.

- Considering that used cleaner and protector solvent wastes may give harm to environment and human health; precautions should be taken for preventing dissipation to environment and mixing to suction pool. Accumulation and putting the used waste solvents in disposal area should be cared.

- Working area where dismounting and installation works are performed should be clean.

- Pump should be free of all dangerous materials and be clean during return back.

- Lifting tools and equipments which are suitable with objective and occupational safety should be used in dismounting and installation operations.

DISMOUNTING OF PUMP AND REPAIR

ATTENTION! - Before starting to any operation over pump always disconnect the electrical connections and be sure that it will not run mistakenly. Certainly obey the instructions which are given in "Safety Instructions".

Dismounting of Pump

- Open the fuses of electricity line fuses coming to motor as they will not carry current and remove control cable coming to motor from motor terminal box.

- Open the discharge plug under the scroll case and discharge the water inside pump.

- If the water inside pump is special, discharge it after taking necessary safety precautions.

- In water pumps, open discharge plug in bearing bed and discharge the oil.

- Remove coupling and other safety guards.

- Remove pump suction and discharge flanges and auxiliary pipe connections and disconnect pump from pipe system. There is no need in pumps where intermediate partial clutches are used. In pumps where such kind of clutches are used rotor can be taken out without separating scroll case from pipe system.

- Separate motor from pump, (not necessary in pumps with coupling)disconnect pump from frame and take outside.

-Uninstall the bolts which connect roller bearing bed to scroll case.

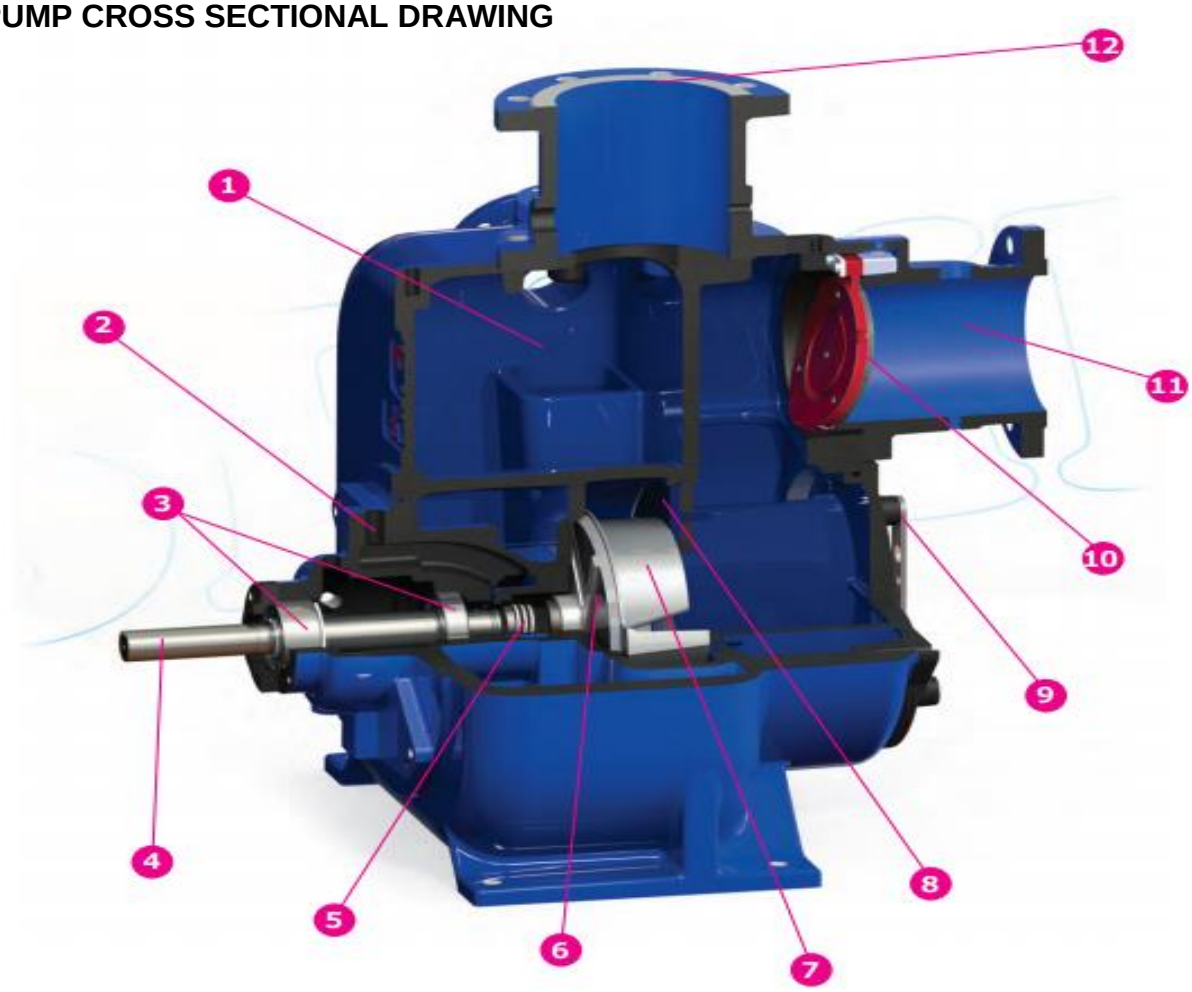
-Uninstall the bolts which connect seal box to scroll case

- Remove the clutch intermediate part in pumps having coupling. Use the occurred space and take the bearing group and rotor outside.

- Remove the clutch part over pump shaft by means of puller. Remove clutch wedge.

- Uninstall the impeller nut and remove clutch wedge. Use rust solvent if necessary.

PUMP CROSS SECTIONAL DRAWING



1 - Volute	Gövde	5 - Mechanical Seal	Mekanik Salmastra	9 - Handle	Kulp
2 - Oil Reservoir	Yağ Haznesi	6 - Balance Paddles	Denge Kanatları	10- Rubber	Lastik
3 - Bearing	Rulman	7 - Impeller	Çark	11- Suction	Emme
4 - Shaft	Mil	8 - Corrosion Plate	Aşınma Plakası	12- Discharge	Basma

SPARE PARTS

- SEMPOMP warrants to provide the spare parts for TKF-KE Series pumps for 5(five) years beginning from production date. You can always easily obtain the spare parts you need.

- In spare parts order, it will be sufficient for you to inform the following values which are written in pump nameplate.

Pump Type : TKF-KE 6

Motor Power (P) and Revolution (n): 30 kW - 1450 d/d

Production Year and Serial No : 04/2014 - 201404-001

Flow rate (Q) and Head (Hm) : 210 m³/h - 19 mSS

REASONS FOR FAILURES AND TROUBLE SHOOTING

In this chapter failures which can be seen in TKF-KE type pumps, reasons and solutions. (Table 2)

ATTENTION!

Control the accuracy of all measurement gauges before starting to eliminate the failure operation.

PROBLEM	REASONS	SOLUTION
Pump can't suck	1)There is no water in the pump casing. 2)Flange casing loose 3)Air cock is clogged 4)Flange casing gasket is worn out	1)Fill in the pump casing with water 2)Tighten the nuts 3)Clean the air discharge way 4)Tighten the plug
Pimp flow rate is decreasing in time	1)Suction pipe is clogged	1)Clean the suction line.
Low pump performance	1)Impeller, Seal and wearing plate is worn out 2)Motor does not rotate at the desired speed a)Low voltage b)Worn out bearing 3)There is too much gap between the impeller and the wearing plate	1)Use new impeller, seal and wearing plate. 2) a) Use thick cable b) Replace it 3)Adjust the gap to 0.5 mm - 0.8 mm
Oil and pumping fluid leakage from the seal	1)Worn out sea	1)Replace the seal

Pump does not pump water unless motor is stopped and restarted again	1)Suction pipe is folded.	1)Change the suction pipe
Pump does not continue to suck	1)Worn out check valve(91) 2)Suction cover is not screwed 3)Flange casing loose	1)Clean the check valve or replace it 2)Check the gasket. Replace it if necessary 3)Check the gasket . Replace it if necessary

Table 2

TIGHTENING MOMENT

SCREW DIAMETER	**MAXIMUM TIGHTENING MOMENT(Nm)**	
	CLASS PROPERTIES	
	8.8	**10.9**
M4	**3**	**4,4**
M5	**5,9**	**6,7**
M6	**10**	**15**
M8	**25**	**36**
M10	**49**	**72**
M12	**85**	**125**
M14	**135**	**200**
M16	**210**	**310**
M18	**300**	**430**
M20	**425**	**610**
M22	**580**	**820**
M24	**730**	**1050**
M27	**1100**	**1550**
M30	**1450**	**2100**
M33	**1970**	**2770**
M36	**2530**	**3560**

EXPECTED NOISE LEVELS

Motor Power	**Sound Pressure Level (dB)**	
PN	**Pump and Motor**	
(kW)	**1450 rpm**	**2900 rpm**
<0,55	**63**	**64**
0,75	**63**	**67**
1,1	**65**	**67**
1,5	**66**	**70**
2,2	**66**	**71**
3	**70**	**74**
4	**71**	**75**
5,5	**72**	**83**
7,5	**73**	**83**
11	**74**	**84**
15	**75**	**85**
18,5	**76**	**85**
22	**77**	**85**
30	**80**	**93**
37	**80**	**93**
45	**80**	**93**
55	**82**	**95**
75	**83**	**95**
90	**85**	**95**
110	**86**	**95**
132	**86**	**95**
160	**86**	**96**

***** It is the value which is measured from 1 m distance from the pump in a free area over the surface which reflects sound without having sound screen.

LIST DISPLAYING THE SERVICE STATIONS

MANUFACTURER COMOANY'S

Title : SEMPA ELK.MOT.SAT.POMPA İMLT.DEMİR TİC.İTH.İHRC.SAN.TİC.LTD.ŞTİ.

Address : Büsan Özel Organize San.Bölgesi 4.Sk. İlerisi No:43-45-47 Karatay / KONYA

Phone&Fax : 0 332 345 32 90 & 345 32 95

Service Scope: Pumps (Waste, clean, water, oil, fuel oil, Lpg, Cng)

NO	TITLE	ADDRESS	NAME OF OFFICIAL	TEL&FAX
1	SEMPA LTD.ŞTİ.	Büsan Org.San.Böl. 4.Sk. İlerisi No:43-45-47 Karatay / KONYA	SEYİT MEHMET FERAHKAYA	0 332 345 32 90 0 332 345 32 95

MANUFACTURER COMPANY

SEMPA ELK.MOT.SAT.POMPA İML.DEMİR TİC.İTH.İHRC.SAN.TİC.LTD.ŞTİ.

Factort :Büsan Org.San.Böl.4.Sk.İlerisi No:43-45-47 Karatay/KONYA/TÜRKİYE
Tel : +90 (332) 345 32 90 (4Hat) Fax: + 90 (332) 345 32 95
Store: Horozluhan Mah.Çakırlı Cad.No:23 Selçuklu / KONYA
Tel : +90 (332) 237 03 31 Fax: +90 332 235 43 64
Web :www.sempaltd.com
E-mail : bilgi@sempaltd.com

SEMPA

EC-Declaration of Incorporation
AT Üretici Beyanı

SEMPA Elektrik Motor Satışı Pompa İmalatı
Demir Ticareti İth. ve İhr. San.Ltd.Şti

Büsan Özel Org.San.Böl. 4.Sk
No:43-45-47 Karatay
42300 KONYA

We declare that all our devices
Aşağıdaki ürünlerimiz için beyan ediyoruz.

Centrifugal Pumps Series MKF, TKF,TKF-I, TAF, ABS,SCE
MKF, TKF,TKF-I, TAF, ABS,SCE *Serisi Santrifüj Pompalar*

comply with the following provisions applying to:
aşağıdaki direktiflerin temel gereklerini karşıladığını:

2006/42/EC	Safety of Machinery
2006/42/AT	Makine Emniyet Yönetmeliği

Applied harmonised standards of particular:
Uygulanan özel uyumlaştırılmış standartlar:

EN ISO 12100-1:2007	EN 60335-1
EN ISO 12100-2:2006	EN 14121-1/2008
EN 60034-1	

Applied national technical standards and specification in particular
Uygulanan özel ulusal standart ve şartnameler:

TS EN ISO 9908 /1.3.2004

By altering the device without approval the declaration would invalidate.
Onayımız alınmadan, cihaz üzerinde değişiklik yapıldığında bu beyan geçerli değildir.

We herby declare that our products described above is intended to be incorporated into other machinery and must not be put into service until the relevant machinery into which is to be incorporated has been declared in conformity whit the essential requirements of Council Directive 98/37/EC Safety of Machinery.

Beyanımızda sadece ürünümüzün montajı yapıldığı ve/veya birlikte kullanıldığı makinelerin 98/37/AT Makine Emniyet Yönetmeliği temel gereklerini yerine getirdiği tespit edildiği durumlarda geçerlidir.

KONYA, 15.12.2007

Seyit Mehmet Perakkaya
General Manager / Genel Müdür

WARRANTY CONDITIONS
1-) Warranty period starts with delivery of goods and it is for **2(two)** years.

2-) Complete of good including all parts under warranty of our company.
3-) In case that good had a failure within warranty period, duration which passes through warranty is added to warranty period. Repair time for good can not exceed 20 days. In case that there is not service station related with failure of good, this duration starts with the informing the seller, distributor, agency, importer, exporter or producer. It is possible for consumer to make failure notification by telephone, fax, e-mail, certified mail and similar ways. However proof liability belongs to consumer in dispute cases. If the failure of good can not be eliminated within **10** days; manufacturer, produces or importer is liable to deliver a similar product until repair has been completed.
4-) In case that product has failure because of labor or material failure, its repair will be performed without charging any amount regardless with labor costs, or replaced part prices.
5-) Although the repair right of product is used by consumer;
- Provided that remaining in defined warranty period after the date of delivery to consumer;
, , in case that maximum four times in a year or more than six time in warranty period defined by manufacturer-producer and/or importer it has a failure, and besides this if those failure prevents usage,
- exceeding the maximum time which is determined for repair;
- Provided that there is not any service station, by means of a report issued by seller, distributor, agency, representation, importer or manufacturer or produced indicating that repair is impossible; consumer may request the replacement free od charge, refunding or price deduction with same amount.
6-) Warranties which are caused by contrary usafe of product with user manual are not covered by warranty.
7-) Consumer may apply to **CUSTOMS AND COMMERCE MINISTRY PROTECTION OF CONSUMER AND MARKET SUPERVISION GENERAL DIRECTORATE for** the problems which may be related with warranty certificate.

MANUFACTURER COMPANY
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Tel : +90 (332) 345 32 90 (4Hat) Fax: + 90 (332) 345 32 95
e-mail:bilgi@sempaltd.com web:www.sempaltd.com

DISTRIBUTOR SEAL

In addition that this guarantee does not cover the failures which may be caused by abnormal usage of pump also is not valid for following cases.

- Changes and repairs which are made by unauthorized service.
- Damages and failures which may be caused by using contrary with aspects that are written in user manual
- Damages and failures which may be caused by faults in suction and discharge lines of pump
- Damages and failures which may be caused by improper pump selection.
- Damages and failures caused by abrasives which may be found in water
- Especially the damages and faults which may be caused by liquids having different properties which are mentioned in user manual.
- Damages and failures which occur after delivery of product to consumer in loading, unloading, carrying, transportation and storage conditions.
- Low or high voltage, erroneous electrical installation and control cabinet, wrong connection of cable ends, and usage of pump out of voltage values which are written in pump nameplate.
- Damages and failures which may be caused by using cables with cross sections which are not suitable with pump power.
- Damages and failures which may be caused by fire, lighting and freezing.

Failures which may occur because of abovementioned events are repaired in return of charge.

Responsibility of filling warranty certificate and delivery to customer belongs to seller, agency or distributor where product is purchased.

Warranty will be void in cases that alteration is made over warranty, original series number over product is removed or altered.

WARRATY CERTIFICATE

MANUFACTURER OF IMPORTER COMPANY
Title: SEMPA LTD
Address: Büsan Özel Org. San. 4.Sk. İlerisi
Elit San Sir. No:43-45-47
Tel: : 0 332 345 3290 (4 lines)
Fax: 0 332 345 32 95
Invoice Date:
Invoice No:
Certificate nı:108981
Company Official Signature and Seal

Products'
Type:
Trademark:
Model:
Serial No:

Delivery Date and Place
Seller Company

Title:
Address
Phone:
Invoice Date
Invoice No:
Sales Date
Seal Signature
This certificate is issued according to permission of Customs and Commerce Ministry Protection of Consumers and Market Supervision General Directorate

Customer
Name:
Address:
Phone
Fax:
Products'
Type:
Trademark:
Model:
Serial No:

Delivery Date and Place
Seller Company

Title:

Address
Phone:
Invoice Date
Invoice No:
Sales Date
Seal Signature
This part will be delivered to SEMPA LTD ŞTİ by agency, seller or distributor.