



# USER MANUAL

OPERATION AND SERVİS

MANUAL FOR

SLG / SN TYPE

CENTRIFUGAL PUMPS



## LOGIN INFORMATION

ÖZKAN POMPA SANAYİ  
İKİTELLİ ORGANİZE SANAYİ BÖLGESİ  
TORMAK SANAYİSİTESİ 104 SOKAK  
"C" BLOK NO-13  
BAŞAKŞEHİR - İSTANBUL  
Tel. 0212 486 17 76  
Fax. 0212 486 17 90  
[http:// www.ozkanpompa.com.tr](http://www.ozkanpompa.com.tr)  
E-mail: info@ozkanpompa.com.tr

## Manufacturer and seller Liaison Offices

Özkan pompa sanayi  
İKİTELLİ OSB  
Tormak sanayi sitesi 104 sokak  
"G" blok No 13  
Başakşehir - İstanbul

## PRODUCTION DURING THE APPLICABLE STANDARDS

EN ISO 12100-1:2003; EN ISO 12100-2 :2003;EN 294:1992;  
EN 349:1993; EN 1050: 1996; EN 60204-1:1997; EN 201:2005;  
TS ISO 7005-2 ;DIN 2533 / Pn 16 ;EN ISO 3746



- A special stop button should be installed close to the pump in case of any emergencies.
- To be protected from the moving parts, enclosures have been produced according to the standard.
- No change is allowed without the written consent of the producer.
- Before being assembled, running the pump is strictly prohibited. If run, the producer can not be held responsible.

Due to the repair and maintenance activities, the protective measures are as follows:

- There should be a “ ATTENTION: UNDER CONSTRUCTION” signboard on the panel and the feeding cable ends are dismantled.
- Protective equipments should be used. The clothing and equipments should be prepared according to the standard.

## 2. PUMP TECHNICAL SPECIFICATIONS

Speed: 1400 - 2900 rpm

Force flange: DN-32.

Lift and force flanges: TS ISO 7005-2 DİN 2533/ PN 16

Suction head: 6m

Total head: 14-55 m.

Capacity: 3-130 m<sup>3</sup>/hour

Sealing: soft type

Working temperature: -3 C to 110 C

Environment temperature: 40 C

Body pressure: 16 Bar.

The liquid that is pumped: please refer to the application sections

Engine options: Depends on demand

The pump body, turbine, fans are made up of cast iron. The shaft and connection parts are produced from C1050 steel for the pumps used on normal usage.

For the dangerous liquids transportation, parts of the pumps are made up of AISI 304 or AISI 316 depending on properties of the liquid.

Customer should report the conditions of running and the type of the liquid to the producer who can not be held responsible for any discrepancies.

## 3. CARRYING

### General Attentions:

- You should obey the rules in your company.
- When carrying, you should be using suitable handglove, shoes and helmet.
- You should use forklift, crane or hoisting rope depends on volume, weight of the pump.



**ATTENTION:** While carrying the pump group as a whole, you should not use hoisting rope.

## 4. PUMP ASSEMBLY AND START-UP

- The pump should be assembled according to the EN60204 standards.
- The pump should be assembled by the authorized persons.
- Incorrect assembly may cause breakdowns and degeneracy and it is certainly not under warranty.
- Before assembly, lift and force flanges should be cleaned thoroughly.
- Pumps should be mounted to a place where there should not be any risk of explosion and/or freezing.
- There should be enough space around the pumps to enable the maintenance and repair activities.
- The suction pipe of the pump should be as short as possible.

## 5. PIPE LINE ASSEMBLY



**ATTENTION:** The pump is not support or carrier for the pipe line.

- The pipe line should be supported and installed close to the pump.
- It should be double checked that stress and tension on the pipe line as well as the weight of the pipe line do not affect the activity of the pump. After assembly, please check the pump.
- The nominal diameters of the lift and force flanges of the pumps are certainly not an indicator of the pipe diameters of the lift and force of the pipe line.
- The nominal diameters of the pipe and accessories (filter, check valve or strainer) should be at least equal or larger than the pump nozzle diameter.
- Speed of the flow should not exceed the 2 meter/second on the absorption pipe and 3 meter/second on forced pipe. Occurrence of excess causes rapid pressure drops, which in return leads to the friction losses on the pressure pipes.
- The connections of the pipe connections should be made with the flanges. The flange gaskets should be carefully centered and then placed between the flange bolts.
- For the systems working with abnormal vibration and hot liquids, compensators should be used to be avoided from the effects of temperature related expansion.
- The welding burr, metal pieces, sand and oakum etc. occurring during the production of pipeline installation, may stay inside the pump and cause damages. Please use bolts without holes.
- In pursuit of the assembly, all parts should be installed after being taken off, properly cleaned and dyed.
- If a filter is used, after running for a couple of days, it should be cleaned thoroughly.

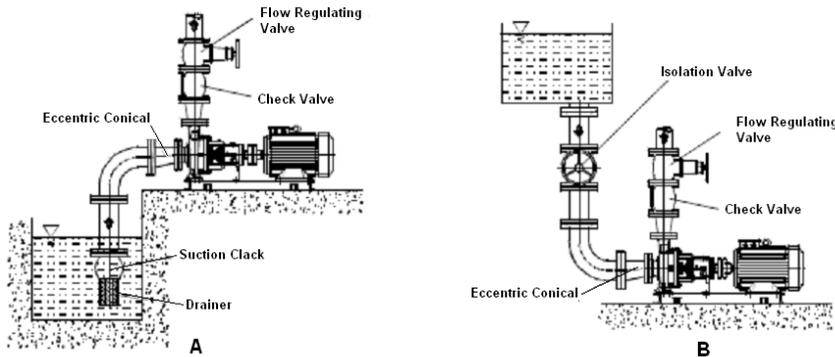
### 6. SUCTION PIPE

- Do not use sharp crooks in order to avoid the frictions. Rapid direction and section displacements should be avoided. Suction pipe should be kept as short as possible.
- If a replacement of horizontal suction pipe is required, use the exentric and conical part of which the flat side is on top.
- There should be a valve with horizontal axis if the pump is fed by a depo which is higher than the pump itself. While the pump is running the valve should be fully open and it should not be used for debility setting.

**ATTENTION:** Throttlng of the valve can cause the pump to run with cavitation.

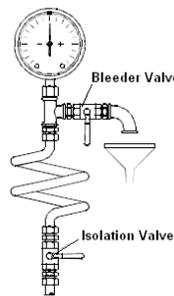
### 7. PUMPING PIPE

- To set the pumping height and pressure, a control valve should be connected to the pump as close as possible.
- If the pushing height is more than 10 meters or pumping happens in a long line, an isolation valve should be installed and connected for protection from the beats and for avoiding the reverse flow.



### 8. NANOMETER CONNECTION

- Pressure or vacuum meters should be connected to the measuring points ( should be very close to the flanges) with spirally curved 8-diametered-pipes in order to prevent pressure fluctuations.
- Air valves should be used in order to isolate and not to make errors in measurements.



### 9. MINIMUM FLOW

Pumps that has a chance to run with zero debility and/ or almost closed valves, a minimum flow valve should be utilized in order to avoid the overheating of water and resulting malfunctions.

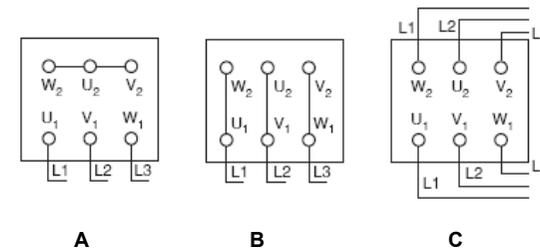
### 10. ELECTRICAL CONNECTIONS



Electrical engines should be produced in accordance with the EN60034 –1 standards

- The protective cover of the engine body and the control system should be produced at least in accordance with EN 60529- IP 22
- Along with this, please take into account the environmental and working conditions at the time of the determination of electrical engines and/ or protective systems.
- Electrical connections should only be made by the electricians.
- The prevailing standards as well as the engine producer's instructions should be implemented.
- The precautions defined in the "Security Instructions" sections should be implemented.
- Energy cables should be furnished through special channels or should not touch the pipe system, pump and engines. The values of voltage, frequency and phase should be compared with the default values.
- Electrical engines should be protected by circuit breakers and/ or fuses, which should be chosen according to the gross flow.
- Pump spindles should be checked by twirling before the electrical connections are made.
- Grounding should not be forgotten
- The connection diagram should be present at the terminal pack or in the user's manual.
- Engines motor connection type, power of the engines and power supply changes according to the connection type.

Running Style	Engine Power Pn ≤ 4 kw	Engine Power Pn ≥ 4 kw
	Power Supply 3 phase 400v	Power Supply 3 phase 400v
Direct	star connection (B)	triangle connection(A)
Star /triangle-start	impossible	ake off the bridges(C)





Engines with Star Triangle connection the process of transition should be as short as possible. The longer time span can lead to damages.

Motor Power	Star setting Time
≤ 30 kw	< 3 second
>30 kw	<5 second

### 11. LAST CONTROL

- After you have done as above checkpoints, check the shaft of the rotor and you should be sure to rotating the shaft.
- You should be sure to assemble the all of the safety panels.
- The producers can not be held responsible, if above conditions are not satisfied.

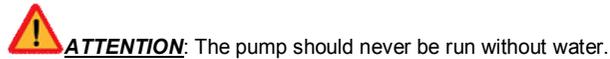
### 12. OIL CONTROL

- You do not need oil control because the bearings of the pump engine is life time greased
- Check the oil level in the oil case.
- Use the EP90 gear box oil.

### 13. SEAL CONTROL

- Normally there is not water leakage from seal of the pump.
- Check the sela of the cord packing pumps, if need, you should tightening.
- Replace the seals every mouth. You should choose the sela due to liquid.

Clean Water	temperature: 3-20 C	cord packing
Hot Water	temperature: 20-110 C	graphit seal
Acidic Water	waste water	teflon seal



### 14. ROTATING DIRECTION CONTROL

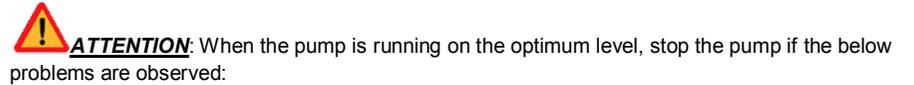
- Shafts of all the centrifuge pumps rotate clockwise when looking from the engine to the pump.
- This has been emphasized with an arrow sign. Check the rotation direction, if the direction is false, correct it accordingly.
- After direction check, assemble the safety panel.

### 15. SUCKING THE LIQUID AND DRAINING THE PUMP AIR

- You should ensure that the pump and the sucking pipe is filled with water. If base valve exists in the deep pumps, then, one of the valves of the pump flanges is opened and filled with water.

### 16. RUNNING THE PUMP

- Sucking valve should be on the open position while, the pumping valve should be closed.
- The engine RPM should reach to the optimum level.
- While checking the ampermeter on the panel, open the pumping valve slowly. If the pumping pipe is empty at the first start-up, then open the valve by checking.
- After totally opening the valve, check the manometer value. It should be the default running value.



No water is pumped

Not enough water is pumped

Decreasing debility

Not enough pumping pressure

Engine is overloaded

Vibration in the pump

Noisy operation of the pump

Overheated bearings

### 17. STOPPING THE PUMP

You need stop the pump, you should follow as follows:

- Close the forced valve slowly.
- If the the pump has water hammer, you can stop the pump directly.
- If the pump is going to be stopped for a while, close the sucking valve and sub-circuits.
- If freezing danger is an issue or the pump is not going to be used for a while than drain the water inside the pump or take the necessary precautions against freezing.

## 18. CONTROLS OF OPERATIONS

- The pump should run silently without any vibration.
- The pump should never run without water.
- Bearing temperature should never be more than 50 C.
- Check the seals.
- Check the motor current. If the current is high, stop the pump and check all mechanical and electrical parts.

## 19. LUBRICATION

- The direct acouple pumps do not need lubrication.
- Check oil level every mounth on other pumps. If the oil level is decreased, add EP90 oil.
- Replace the oil yearly or 2500 running hours

## 20. DISASSEMBLE THE PUMP

If you need disassemble the pump, you should follow the below steps;

Close the valves on lift and forced line

Disassemble the safety panels

Disassemble the engine.

Remove the pump connections screws

Remove the turbine

Remove the seals

Remove the covers of the oil case and remove the coupling

Remove the shaft from body.



If the shaft is wearing out, replace the shaft with the new one.

If the impeller of turbine, replace the turbine with the new one.

Before the working, you should shut of the pump.

You shold obey the rules according to precautions on the safety section.

Do not use old the bearings.

## 21. DISCREPANCIES AND REASONS

1-Water is not pumped

- Air might have stuck inside the suction line
- Suction values are abnormally high
- The hight of pumping is not satisfactorily high.
- Pump is turning on the reverse side
- The speed is high
- Valves or teh filter is blocked.

Amendments

Fill the suction line with water and prepare the water way. If blockage is not the issue, then check the friction losses. If needed, use a larger suction line pipe. If the value of suction is high, try to provide solutions to decrease it. If the real pumping hight is unexpectedly high then it is beneficial to use a larger pipe. Check whether the valves are fully open or not. Check the speed of the motor and clean the turbine, check valves and filter.

2- Decreasing Debility

- Entry of air through gasket, suction pipe and/or connections.
- A hole might have occurred on the suction pipe.
- Pumping hight has increased
- Wheel and the filter has partially blocked.

Amendments

Check all connections on the suction pipe and the gaskets.

Check the depth of the clamps and if required increase the depth.

Check the gradient of the suction line and control the pipes whether they are suitable for the formation of holes. If they are then make the necessary repairments. Check whether the valves are fully open or not. Check whether a blokage is an issue. If that is so, clean the turbine, check valves and filter

3- Motor is overloaded

- Pump is working at a higher pumping hight.
- The speed is too much.
- Mechanical friction exists on the pumps.
- Motor error.

Amendments

Real pumping hight is unexpectedly high. Reducing the diameter of turbine by lathing according to the advice of the producers. If possible, decrease the pump speed. Check if a curving exists

on the rotor of the pump. Check the motor. The ventilation of the motor might not be working due to its position.

4- The beds warmed excessively

- Debility is lower than the minimum.

Amendments

Increase the debility, if necessary use bypass valve and/or line.

5- Vibration on the pump

- Propeller is partially blocked
- Broken down or worn turbine
- Spindle has been crooked.
- Instably turning parts
- Slipped center on the caplin connection.

Amendments

Clean the turbine or simply change it. Check the propeller and change if necessary. Check the stability of the spinning parts. Check whether the axis of the pump and motor caplin. If friction exists then replace the caplin or rubber.

6- Voice level is unexpectedly high

- Air exists inside the liquid
- Suction value is too much
- Anti-friction bearings engine or pumps are broken down

Amendments

Please check water level in the sucking pipe.

Increase depth of the base valve of the sucking line.

Check the valve on the sucking line.

Check the bearings.

Determined voice levels

Engine power

Voice pressure level

## **22. MAINTENANCE AND REPAIRING**

The pumps need maintenance periodically since the pumps work continuously. Consequently we should plan daily, weekly, monthly and yearly maintenance.

1-Daily Maintenance:

- The operator should make the daily maintenance before daily shift.
- Check water leakage on the seals.
- Check pump running pressure, amper, vibration and voice level.

2- Weekly Maintenance:

- Check oil level.
- You should run the auxiliary pump at least 10 minutes daily.

3- Monthly Maintenance:

- Replace the seal, if the seal is cord packing.
- Check oil level.
- Check connections, nuts, screws



**ATTENTION:**

During the replacement seal, oil or connections, you should stop the pump and the pump pressure should be zero.

4- Weekly Maintenance:

- The pump should be disassembled annually and check all parts of the pump.
- Check the turbine of the pump. If the turbine is defected, replace the turbine with the new one.
- Replace the bearings.
- Replace the oil in the pump.
- Check the shaft.



**ATTENTION:**

The authorized person should make the maintenances.

The authorized person should wear the suitable clothes according to precautions on the safety section.

The producer can not be held responsible if above mentioned precautions are not satisfied.

Use the spare parts that have been recommended by the producer. It will be out of warranty, if otherwise.

### 23. QUALIFIED SERVICE AND SALES STORE



**Adrese** : İkitelli Organize Sanayi Bölgesi  
Tormak Sanayi Sitesi G Blok No:13  
Kucukcekmece - İSTANBUL - TURKEY

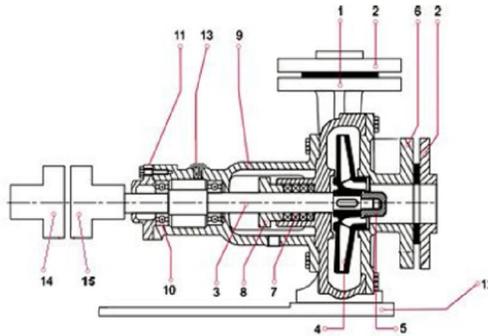
**Phone** : +90 (212) 486 17 76 (pbx)

**Fax** : +90 (212) 486 17 90

**E-Mail** : [info@ozkanpompa.com.tr](mailto:info@ozkanpompa.com.tr)

#### Part List

No.	Part List	Material Code	item
1	Supply Frame	GG25	1
2	Flange	GG25	2
3	Shaft	C 1050	1
4	Rotor	GG25	1
5	Shaft Nut	MS60	1
6	Exhaust Frame	GG25	1
7	Salmastra	YT 68-1012	4
8	Glen	GG25	1
9	Rulman Bearing	GG25	1
10	Ball Bearing	2RS C3	2
11	Rulman Cover	GG25	1
12	Chassis	GG25	1
13	Bung	MS60	1
14	Coupling-F	GG25	1
15	Coupling-M	GG25	1



### EC (Avrupa Birliği ) Uyumluluk Bildirisi

Biz;



İkitelli Organize Sanayi Bölgesi Tormak San. Sitesi  
104. Sk. G. Blok No.:13  
Başakşehir / İSTANBUL  
Tel: (0212) 486 17 76 (pbx) / Fax: (0212) 486 17 90  
[info@ozkanpompa.com.tr](mailto:info@ozkanpompa.com.tr)  
[www.ozkanpompa.com.tr](http://www.ozkanpompa.com.tr)



Aşağıda tarifi yapılan ve teslim ettiğimiz modeller içerisinde olan ürünlerin tasarım ve tip olarak, 2006/42/AT Makine güvenliği temel emniyet ve sağlık şartlarına uygun olduğunu beyan ediyoruz.  
Ürün üzerinde tarafımızca onaylanmamış herhangi bir değişiklik yapılması halinde bu beyan geçersiz olacaktır.

**Ürün Tanımı** : Santrifüj Pompa

**Ürün tipleri** :

**Seri No** :

**Uygulanan Direktifler** : EC 2006/42/AT Makine güvenliği yönetmeliği  
2006/95/AT Alçak Gerilim Cihazları Yönetmeliği

**Uygulanan Harmonize Standartlar** : TS EN ISO 9905, TS EN ISO 9908, EN 12100-1,  
EN 12100-2, EN 60204-1

**Tarih/ Yetkili İmza** :

**İmza Sahibi** : Genel Müdür

**Firma Kaşesi** :

**ÖZKAN POMPA SANAYİ**  
**Sengül ÖZKAN**  
İkitelli Org. San. Böl. Tormak Sanayi Sitesi  
104 Sk. G Blok No:13 Başakşehir / İST.  
Tel:0212 486 17 76 Fax:0212 486 17 90  
İkitelli Vergi Dairesi:362 717 76122