

**AQUA GROUP**



SUBMERSIBLE DEWATERING PUMP

***ADP SERIES***

OPERATION MANUAL



**AQUASUB ENGINEERING**

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## CONGRATULATIONS

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Thank you for your purchase of 'TEXMO' Submersible Dewatering pump. You are proud owner of new generation Dewatering pump. It is designed and manufactured with stringent quality control to give trouble free service for years. Please follow the instructions given in this manual to install and maintain 'TEXMO' Submersible Dewatering Pump to get the best possible and highly reliable operation. Utilise the services of a qualified technician for installation.

Please inform the name plate details i.e. serial number of the pump, type of pump etc. when you order for spare parts in the future.

After reading this operation manual, keep it safe and easily accessible, so that it can be referred to whenever information is needed while operating the equipment.

### **APPLICATION**

'TEXMO' Submersible Dewatering pumps are designed for pumping waste water from multi-storey, residential apartments, hotels and restaurants. And also for dewatering of waste water from waste water treatment plants, Pumping rain water from basement of buildings etc.

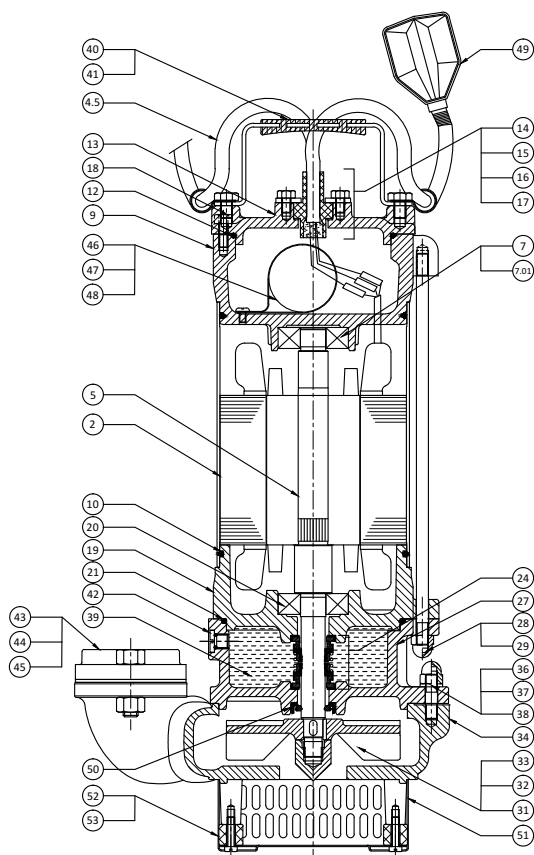
### **SPECIFICATION**

⊙ Phase and Power range.....	Single phase 0.5 HP - 3.0 HP Three phase 0.5 HP - 3.0 HP
⊙ Speed.....	2850 rpm
⊙ Voltage.....	Single phase 220 V Three phase 380 V
⊙ Frequency.....	AC 50Hz
⊙ Motor type.....	Dry
⊙ Starting method.....	Single phase Capacitor run Three phase DOL
⊙ Insulation class.....	"F" Class
⊙ Duty.....	S1 Continuous
⊙ Cable.....	3 or 4 Core Double sheath round PVC cable
⊙ Impeller type.....	Open Non Clog Impeller
⊙ Maximum fluid temperature.....	40°C

# CUT SECTION VIEW AND SPARE PARTS LIST

## SINGLE PHASE MODELS

- ⊙ ADP 03SF                      0.5 HP
- ⊙ ADP 07SF                      1.0 HP
- ⊙ ADP 11SF                      1.5 HP



P.No	PART NAME	QTY
2	STATOR BODY ASSY	1
4.5	CABLE	1
5	ROTOR SHAFT ASSY	1
7	BALL BEARING	1
7.01	BRG.WASHER	1
9	TERMINAL COVER	1
10	O-RING	1
12	O-RING	1
13	CABLE COVER	1
14	CABLE BUSH	2
15	CABLE BUSH GLAND	2
16	HEX.BOLT	4
17	RESIN	-
18	HEX.BOLT (C.COVER)	3
19	BEARING HOUSING	1
20	BALL BEARING (BOT.)	1
21	O-RING	1
24	MECHANICAL SEAL	2
27	OIL CHAMBER	1
28	STUD	3
29	DOME CAP NUT	3
31	IMPELLER	1
32	KEY (IMPELLER)	1
33	LOCK NUT	1
34	CASING	1
36	SPRING WASHER	3
37	STUD (CASING)	3
38	DOME CAP NUT	3
39	OIL	-
40	HANDLE	1
41	HEX.BOLT (HANDLE)	2
42	DRAIN PLUG	1
43	DELIVERY FLANGE	1
44	HEX.BOLT (DELIVERY FLANGE)	2
45	HEX.NUT (DELIVERY FLANGE)	2
46	CAPACITOR	1
47	CAPACITOR CLAMP	1
48	CHEESE HEAD SCREW (CAPACITOR CLAMP)	1
49	FLOAT	1
50	LIP SEAL	1
51	STRAINER	1
52	SUPPORT BUSH	3
53	CHEESE HEAD SCREW (STRAINER)	3

# CUT SECTION VIEW AND SPARE PARTS LIST

## THREE PHASE MODELS

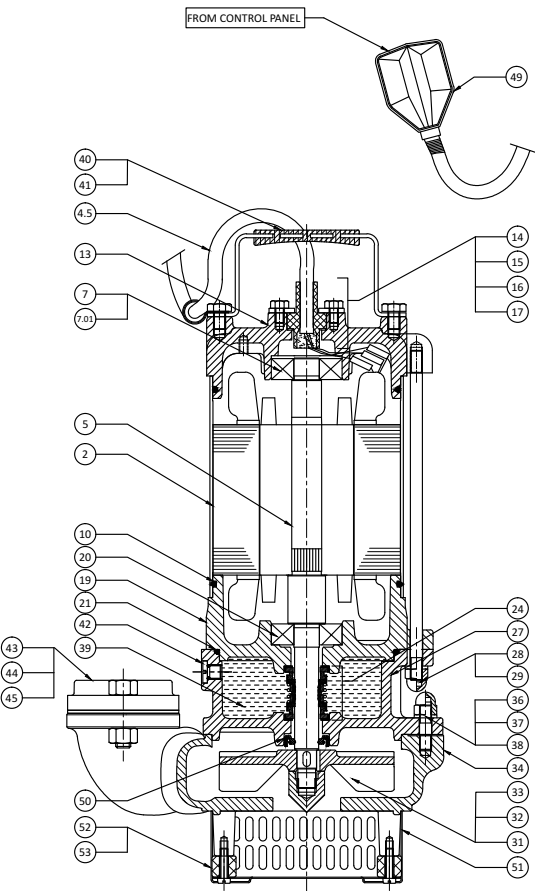
- ⊙ ADP 03T

⊙ ADP 07T

⊙ ADP 11T
- 0.5 HP

1.0 HP

1.5 HP



P.No	PART NAME	QTY
2	STATOR BODY ASSY	1
4.5	CABLE	1
5	ROTOR SHAFT ASSY	1
7	BALL BEARING	1
7.01	BRG.WASHER	1
10	O-RING	1
13	CABLE COVER	1
14	CABLE BUSH	2
15	CABLE BUSH GLAND	2
16	HEX BOLT	4
17	RESIN	-
19	BEARING HOUSING	1
20	BALL BEARING (BOT.)	1
21	O-RING	1
24	MECHANICAL SEAL	2
27	OIL CHAMBER	1
28	STUD	3
29	DOME CAP NUT	3
31	IMPELLER	1
32	KEY (IMPELLER)	1
33	LOCK NUT	1
34	CASING	1
36	SPRING WASHER	3
37	STUD (CASING)	3
38	DOME CAP NUT	3
39	OIL	-
40	HANDLE	1
41	HEX.BOLT (HANDLE)	2
42	DRAIN PLUG	1
43	DELIVERY FLANGE	1
44	HEX.BOLT (DELIVERY FLANGE)	2
45	HEX.NUT (DELIVERY FLANGE)	2
49	FLOAT	1
50	LIP SEAL	1
51	STRAINER	1
52	SUPPORT BUSH	3
53	CHEESE HEAD SCREW (STRAINER)	3

## **DISASSEMBLY OF PUMP**

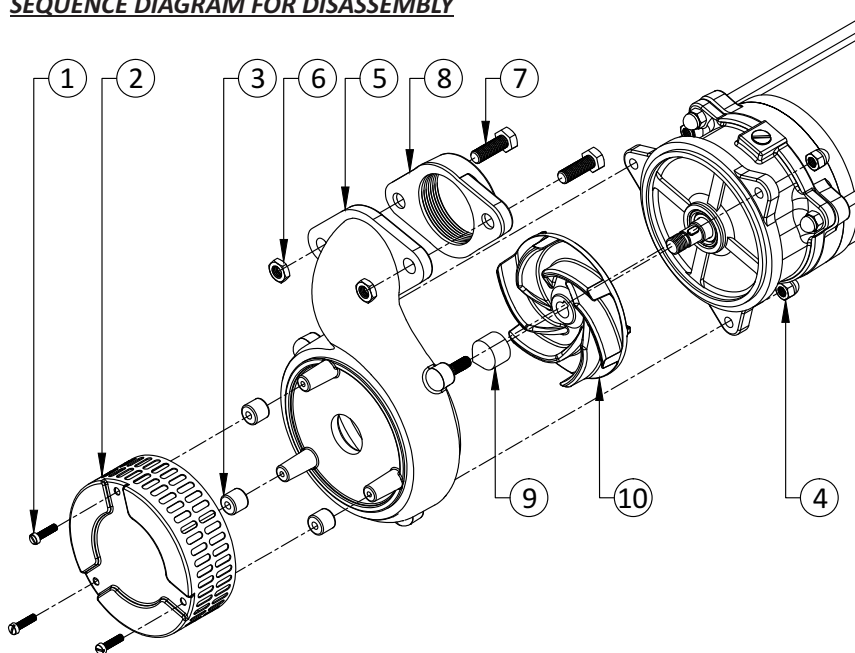
For inspecting or cleaning the specified pump components please follow the given guidelines and the sequence shown in figure.



**WARNING**

In case of any replacement of components or sealing system maintenance contact the dealer where the pump was purchased or the "AQUASUB ENGINEERING's" sales office in your area for specialized service. Do not try to disassemble any unspecified part of pump, as it may lead to severe damage to the pump or personal injuries.

### **SEQUENCE DIAGRAM FOR DISASSEMBLY**



### **REASSEMBLY OF PUMP**

Reassembly of the pump can be done by reversing disassembly procedure. Make sure all the components are clean and free from damages. Tighten the bolts and nuts properly to avoid leakage and vibration.

## GENERAL INSTALLATION PRECAUTIONS

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Do not use this pump for oil or toxic, acetic, corrosive and inflammable liquids. Pumping inflammable liquids could cause explosion.



Do not use this pump for pumping potable liquids, it is danger for health.



Do not use cable for lifting the pump. Do not damage, fold, twist, make alterations or bundle the cable.



The rope or chain for suspending the pump during installation that accommodates the weight of the pump should be thick and make sure, that does not get twisted. Damages in rope or chain can cause the pump to fall.



For better performance avoid flexible hose and use rigid pipe. Excessive bending of the discharge pipe could obstruct the water flow, reduce the discharge volume or clog the pipe with mud, which could affect pump performance. Route the pipe as straight as possible.



Use a power supply cable that has sufficient rating and has been exclusively provided for the pump. Sharing power cables with other equipments, can lead to abnormal heat at the plug outlet and it can lead to fire.



Provide proper earthing. Do not connect the earthing wire to water pipe, lightning rod or telephone earth wire. Improper earthing could cause electrical shock.



To verify the insulation of the motor, use megger. Insulation resistance should be 20M $\Omega$  minimum.



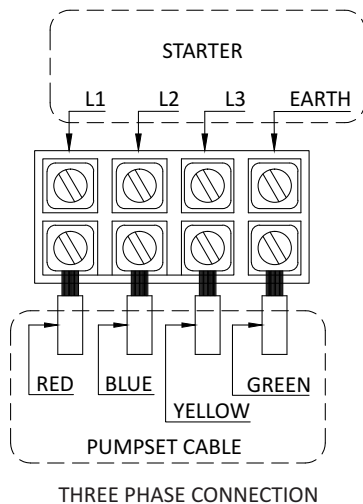
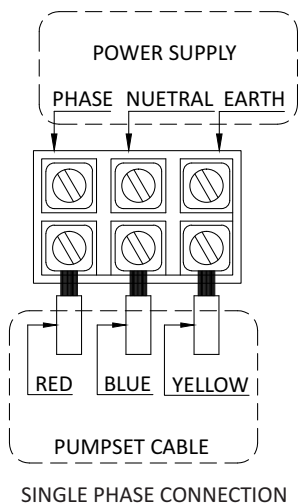
It is recommended to use an Earth Leakage Circuit Breaker (ELCB) to connect the pump with main supply for safe operation.



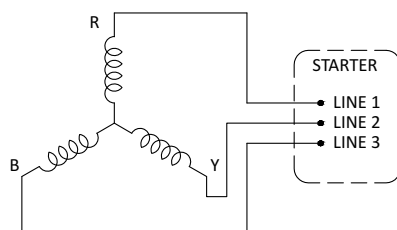
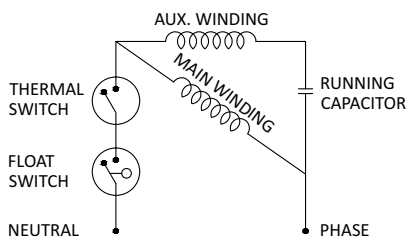
Do not place the pump in the sludge, as it may lead to chocking of the pump impeller.

# ***ELECTRICAL CONNECTION***

## **CONNECTION DIAGRAM**



## **CIRCUIT DIAGRAM**



## **CAPACITOR RATINGS FOR SINGLE PHASE MODELS**

- ◉ ADP03SF 15 MFD, 440 V, 50Hz, Capacitor Run
- ◉ ADP07SF 25 MFD, 440 V, 50Hz, Capacitor Run
- ◉ ADP11SF 36 MFD, 440 V, 50Hz, Capacitor Run

## ***OPERATION PRECAUTIONS***

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**CAUTION**

Do not run the pump dry, it could lead to product damage.



**WARNING**

Switch off the power supply and ensure the impeller fully stop, before changing rotation or making any other adjustments.



**CAUTION**

Do not use this pump for hot liquids exceeding 40°C temperature, it may lead to product failure.



**WARNING**

Do not switch on the pump if there is any human contact with the pumping water. If any electrical leakage occurs it could be harmful.

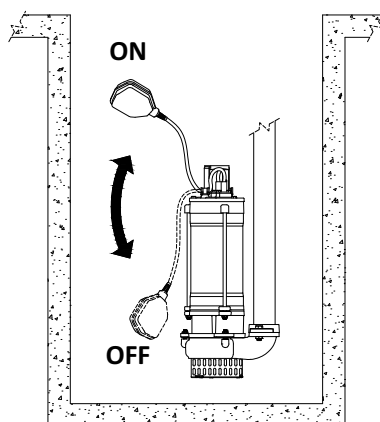
### **TRIAL OPERATION**

The Submersible Dewatering pumps are equipped with float switch which can automatically switch "on" and "off" the pump by sensing water level.

Trial operation can be done before installing the pump in pit, by following below said procedure,

1. By default, float switch will be in downward direction. In this position switch on the pump, ensure that the pump is in "off" condition.
2. Move the float switch upward and ensure that the pump starts.
3. Move the float switch downward and ensure that the pump stops.

Repeat this procedure for 2 to 3 times and ensure that the pump is working normally.



**CAUTION**

Ensure the free movement of float switch. Sump wall or any other structure should not obstruct the free movement of float switch.



**WARNING**

If you find any abnormalities like vibration, noise, smell etc.. in the pump during trial operation, switch off the pump and contact the dealer where this pump was purchased or the "AQUASUB ENGINEERING's" sales office in your area.



## **MAINTENANCE**

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For uninterrupted performance, planned maintenance and inspection are indispensable. Please follow below guidelines while maintaining or inspecting the pump.

### **MAINTENANCE PRECAUTION**



Disconnect the power supply before starting maintenance or inspection of the pump to avoid electrical shock.



Ensure the pump is intact, free from damage and has no loose components.



Use appropriate tools for executing maintenance, or it may lead to component damage or personal injuries.



If you find any damages or abnormalities like vibration, noise, smell etc. in the pump, switch off the pump and contact the dealer where this pump was purchased or the "AQUASUB ENGINEERING's" sales office in your area for proper maintenance.

### **REVERSE FLUSHING OF THE PUMP**

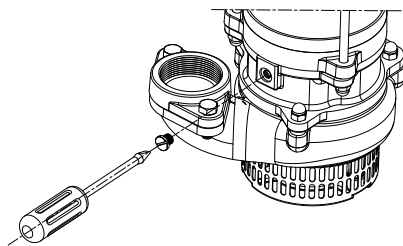
It is a simple procedure to clean impeller and casing by forcing water by an external pump from delivery side. It is recommended to follow this procedure once in a week to have long trouble free operation.

### **OIL INSPECTION AND CHANGING**

**INSPECTING OIL :** It is recommended to inspect the oil for every 1000 Hrs of usage, or once in six months whichever is earlier. Remove the drain plug by a screw driver and take out a small amount of oil by slightly tilting the pump. If the oil looks like milky or intermixed with any other content, the oil is contaminated.

It may be due to the failure of sealing system, which should be repaired immediately. It can be solved by disassembling the pump and replacing relevant components and replacing oil.

**REPLACING OIL :** It is recommended to change the oil for every 2000 Hrs of usage, or once in a year whichever is earlier. Drain oil completely then pour 0.3 litres of "SAE 20/40 OIL (coolant oil)" or "PENTAGON COOLCUT S OIL" and close the drain plug.



# INSTALLATION PRECAUTIONS

## PRODUCT INSPECTION

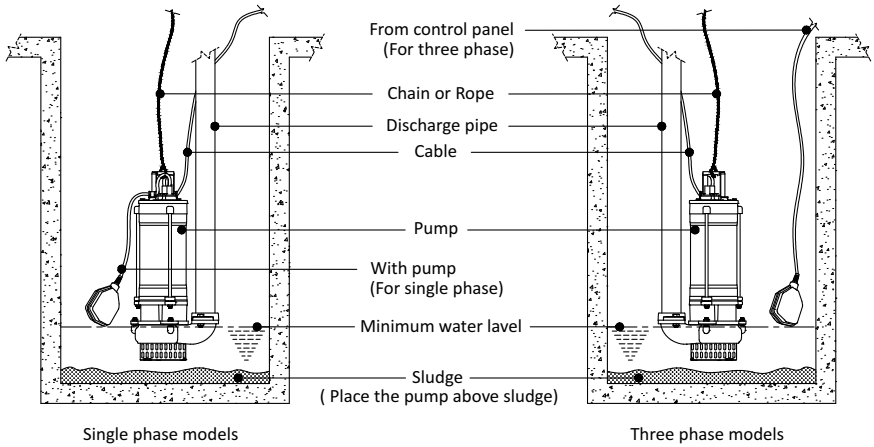
Inspect the purchased pump for damage or leakage during transportation. And make sure all bolts and nuts are tightened properly.



If you find damage or discrepancy in the product, contact the dealer where the pump was purchased or the "AQUASUB ENGINEERING's" sales office in your area.

## TYPICAL INSTALLATION

A typical installation diagram is shown below. Please follow the given installation precautions before and during installation.



For three phase models it is recommended to use a control panel with single phase prevention, overload relay and control for float switch operation.

## ***TROUBLE SHOOTING***

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If you find any trouble during operation of the pump, please follow the guidelines to overcome some of the troubles given below.

<b><i>TROUBLE</i></b>	<b><i>PROBABLE SOLUTION</i></b>
Pump doesnot start Or Starts but stops Immediately	1. Check the power supply. 2. Ensure float switch operation and water level, 3. Check that the pump is not placed in sludge.
Low delivery rate or no delivery.	1. Check power supply, 2. Ensure the strainer is free from blocks, 3. Ensure that the direction of rotation is correct, 4. Make sure for free rotation of impeller, 5. Check for blocks in delivery line, 6. Check the impeller, if damaged or worn change it.
Pump generates vibration or excessive noise.	1. Ensure proper installation 2. Check the bearing, if damaged change it.
Pump does not stop automatically	1. Check proper function of float switch
Motor not running	1. Check for overheat, if overheated allow the pump to cool down. Pump may be tripped by thermal overload protector. 2. Check for impeller choke.



NOTE

Conduct trial operation after maintenance or inspection.



NOTE

Dispose replaced components and oil with appropriate care, to save environment.



WARNING

For unsolvable troubles in the pump, contact the dealer where this pump was purchased or the "AQUASUB ENGINEERING's" sales office in your area for specialized service.

Do not try to solve unspecified troubles of pump, as it may lead to severe damage to the pump or personal injuries.

## ***NOTES***

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# WARRANTY DECLARATION

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## WARRANTY FOR DEWATERING PUMP

AQUASUB ENGINEERING warrants to the purchaser of this TEXMO product, that for a period of 12 months commencing from the date of purchase of the product, Aquasub Engineering will repair or replace free of charge any part or parts of the product, should AQUASUB ENGINEERING be fully satisfied in its sole discretion, that the defect/s is / are due to faulty material or workmanship only. The warranty will be governed by the following clauses:

1. Only AQUASUB ENGINEERING or their Authorised Service Agent / Dealer will repair / replace all parts that are failing due to faulty material or defective workmanship pertaining to the above product.
2. Only Aquasub Engineering or its Authorised Service Agent / Dealer can service / repair or attend to install / reinstall the above product.
3. All expenses incurred in collecting the units or parts thereof from the Authorised Service Centre or the Dealer of Aquasub Engineering as well as expenses incurred in connection with deputing of service personnel / technicians towards to and fro travel conveyance and other incidentals etc., will be borne by the customer.
4. The warranty extended therein is in lieu of all implied conditions and warranties under the law and is confined to the repair or replacement of defective parts and does not cover any consequential or resulting liability, damage or loss arising from such defects. Furthermore, the warranty in no case, shall extend to the payment or any monetary consideration whatsoever, of the replacement or return of the product as a whole.
5. The warranty is issued subject to jurisdiction of Coimbatore Court of Law.
6. The warranty is covered by Force Majeure clause. In the event if the above product is struck by any natural calamity, this warranty stands null and void.

### **This Warranty is not valid in case of any of the following events.**

- a. This Pump is not used according to the instructions given in this Operation manual.
- b. If the electrical power supply voltage is not within the stipulated norms.
- c. Any repair work / installation carried out by a person other than Aquasub Engineering Service Centre / Service Agent / Dealer.

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## WARRANTY CARD

(Please retain this for your personal record)

Product Name & Model No. .... Serial No.....

Name and Address of dealer .....

Bill No. .... Date of Purchase.....

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Authorised Dealer's seal

Name & Signature of Authorised Dealer

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## OTHER BUILDING SERVICES PRODUCTS



Hydropneumatic Pumping System



Domestic Booster System, Water Transfer, Sewage, Drainage,  
Construction Dewatering and  
Vertical Inline High Pressure Pumpsets.

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