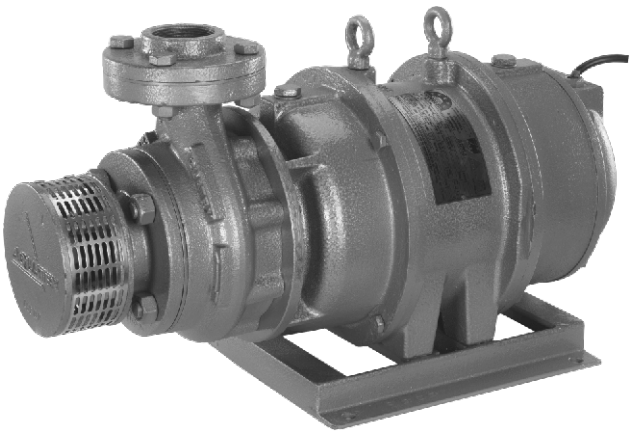
AQUATEX

THREE PHASE

OPENWELL SUBMERSIBLE MONOBLOCK
ASM / ASM 'N' SERIES



INSTALLATION / SPARE PARTS MANUAL

MANUFACTURED BY:

AQUASUB ENGINEERING UNIT-II

S.F. No. 308, Vethalaikali Palayam
N.S.N. Palayam Post
Coimbatore - 641 031.

AQUATEX OPENWELL

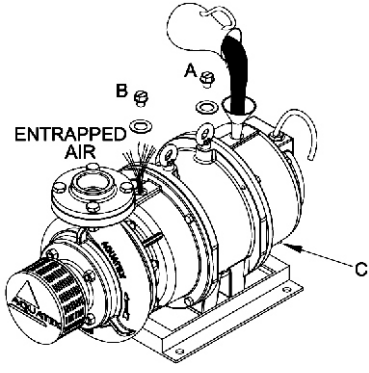
SUBMERSIBLE MONOBLOCK PUMP - ASM / ASM 'N' SERIES

Dear Customer,

Please follow the instructions given in this manual to install and maintain our submersible pumpset to get reliable operation.

When you order spare parts in future, please inform the nameplate details, viz., Serial Number, Motor type, Pump type and other data. Spare parts list of the pumpset is given at the end of this manual for your reference.

WATER FILLING INSTRUCTIONS



1. Open both the water filling plugs (A) and (B)
2. Check the tightness of the drain plug (C)
3. Put the funnel in plug hole (A)
4. Use only clear cold drinking water for filling
5. Pour the water till the water overflows in plug hole (B)
6. Wait till all the air bubbles inside the motor escape.
7. Close both the plugs tightly.

FOR INSTALLATION

1. The Openwell submersible pump should be connected to a balanced three phase 50 cycles AC supply with voltage ranging from 340-440 Volts.

1a. Control Panel :

Use a control panel with :

a) Overload relay
b) Dry running preventer
c) Single phasing preventer
d) Voltmeter, Ammeter and lightening arrester

2. The size of the power supply cable leads must be sufficient to avoid heavy voltage drop. Refer Chart - 1.

3. Only recommended pipe size should be used. Small pipe size, nipples, elbows, bends all give rise to head losses and should either be eliminated or used sparingly.

4. Provide suitable devices like non return valve, air valve, surge tank, etc. to avoid water hammer problems in long pipeline systems.

5. Ensure proper earthing is done at the ground level.

6. Check the direction of rotation by observing rated discharge, If found low discharge, interchange any two of the supply leads.

7. Discharge Regulation :

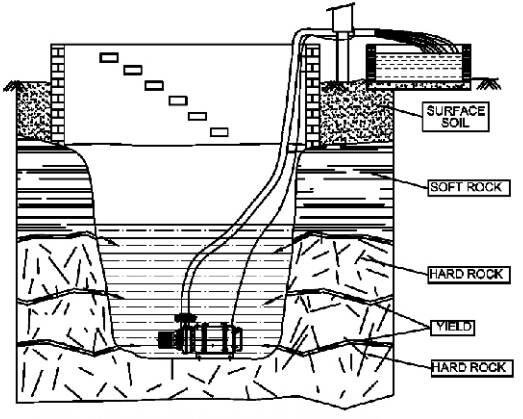
Use throttle gate valve or orifice plate at discharge flange or trimmed impellers with reduced diameter to limit the current loading as per the name plate current valve during post monsoon season when total head lower than the specified values exists.

8. Select suitable DOL/STAR DELTA Starter with correct range of over load relay and it should be suitable for low voltage operation also.

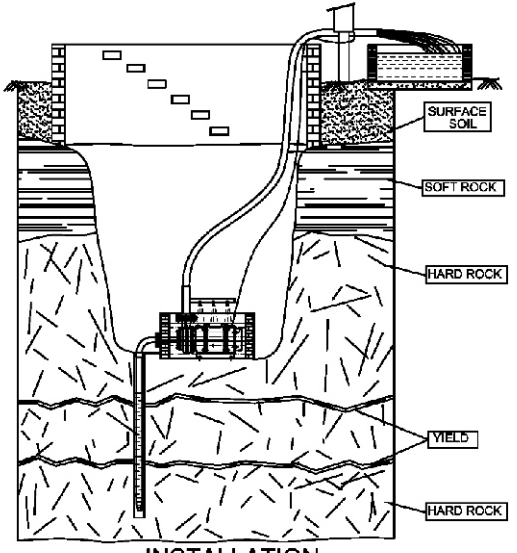
9. In case of Star delta Starter, 0.58 of rated current should be set in the relay setting.

10. Operating coil of contactor in the Starter should be capable of operating with wide voltage variations.

OPENWELL MONOBLOCK
ERECTION METHODS



INSTALLATION IN OPENWELL



INSTALLATION
IN OPENWELL-CUM-BOREWELL

CABLE SELECTION CHART - 1

SUBMERSIBLE PUMPSET CABLE SELECTION CHART FOR 415 V - THREE PHASE - 50 Hz

	LENGTH IN METRES																				
HP	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	450	500
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4
2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5	2.5	4	4	4	4
3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5	2.5	4	4	4	6	6	6
4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4	4	6	6	6	10	10
5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5	2.5	4	4	4	6	6	10	10	10	10
6	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5	2.5	2.5	4	4	4	6	6	10	10	10	10	16
7.5S	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4	4	4	4	4	6	6	10	10	10	16	16	16
7.5D	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5	4	4	4	6	6	10	10	10
10	1.5	1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5	2.5	2.5	4	4	4	6	6	10	10	10	10	16
12.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4	4	4	4	4	6	6	10	10	10	16	16	16
15	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4	4	4	4	6	6	6	10	10	10	16	16	16	16
17.5	4	4	4	4	4	4	4	4	4	4	6	6	6	10	10	10	16	16	16	25	25
20	4	4	4	4	4	4	4	4	4	6	6	10	10	10	10	16	16	16	25	25	25
25	4	4	4	4	4	4	4	4	4	6	6	10	10	10	16	16	16	25	25	25	35
30	6	6	6	6	6	6	6	6	6	6	10	10	10	10	16	16	25	25	25	35	35

Note : 1. HP 7.5 D and above are STAR / DELTA motors.

2. For STAR DELTA Starting reduce current by $1/\sqrt{3}$ for selecting suitable cable.

Conversion Table :

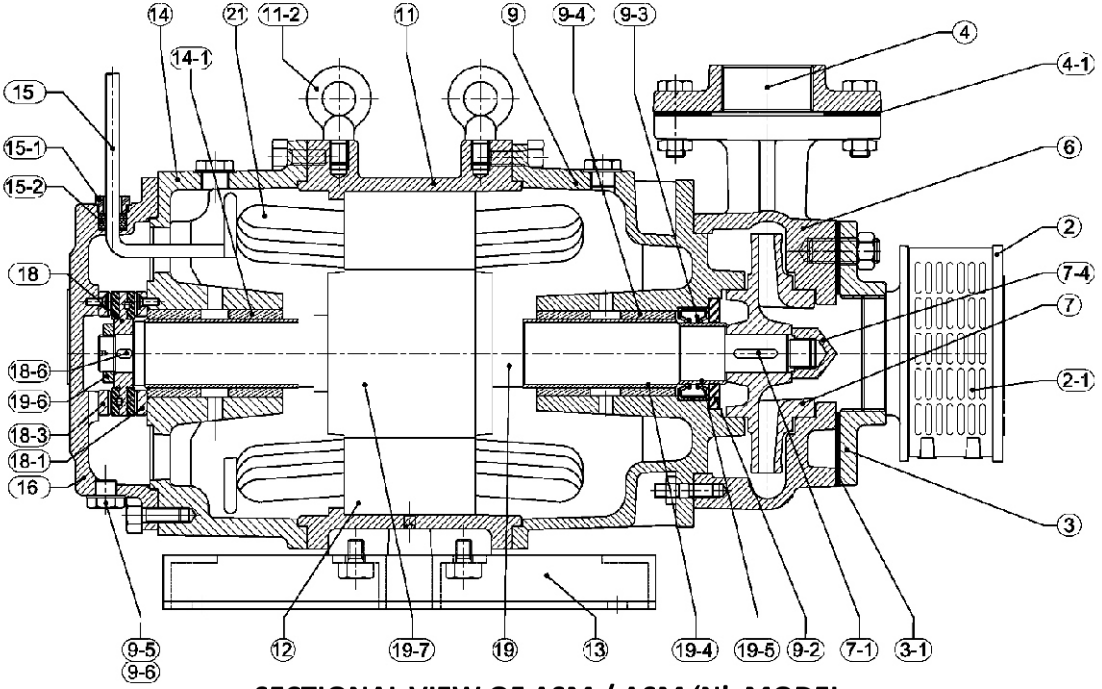
1 m = 3.28 ft

1 ft = 0.305 m

For other Voltages the cable size is to be selected as follows :

Calculated length = (415 ÷ volt) x actual length

Example : For a 20 HP motor at 350 volts and 90 metres actual cable length, calculated length = (415 ÷ 350) x 90 = 107 m . The size of the cable to be selected for 107m from the chart is 6mm^2.



SECTIONAL VIEW OF ASM / ASM 'N' MODEL

SPARE PARTS LIST :

ASM / ASM 'N' Series

Part No	Part Name	Quantity Required	Material
2	Suction Bracket	1	Cast Iron
2-1	Strainer	1	Stainless Steel
3	Suction Flange	1	Cast Iron
3-1	Suction Flange Washer	1	Rubber
4	Delivery Flange	1	Cast Iron
4-1	Delivery Flange Washer	1	Rubber
6	Casing	1	Cast Iron
7	Impeller	1	Cast Iron
7-1	Key - Impeller	1	Stainless Steel
7-4	Lock Nut - Impeller	1	Extruded Brass
9	Front Bearing Housing	1	Cast Iron
9-2	Sand Guard	1	Nylon GFN
9-3	Oil seal	1 / 2	Rubber
9-4	Bearing Bush (Front)	1 / 2	Bronze
9-5	Plug - Drain	3	Brass
9-6	Fibre Washer	3	Fibre
11	Frame	1	Cast Iron
11-2	Eye Bolt	1 / 2	Forged Steel
12	Stator Assembly	1	-
13	Base Frame	1	Mild Steel
14	Rear Bearing Housing	1	Cast Iron
14-1	Bearing Bush (Rear)	1 / 2	Bronze
15	Cable	1 / 2	-
15-1	Cable Gland	1 / 2	Extruded Brass
15-2	Cable Bush	1 / 2	Rubber
16	Rear Cover	1	Cast Iron
18	Thrust Coupling	1	Cast Iron with Carbon
18-1	Thrust Ring - Front	1	Stainless Steel
18-3	Thrust Ring - Rear	1	Stainless Steel
18-6	Key - Thrust coupling	1	Stainless Steel
19	Shaft	1	Alloy Steel
19-4	Shaft Sleeve	2	Stainless Steel
19-5	Oil Seal Sleeve	1	Stainless Steel
19-6	Lock Nut Thrust Coupling	1	Stainless Steel
19-7	Rotor	1	Aluminium / Copper
21	Winding Set	1	Wire Set

WARRANTY FOR THREE PHASE OPENWELL SUBMERSIBLE :

Aquasub Engineering Unit-II warrants to the purchaser of this **AQUATEX** product, that for a period of 12 months commencing from the date of purchase of the product, Aquasub Engineering Unit-II will repair or replace free of charge any part or parts of the product, should Aquasub Engineering Unit-II 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. Aquasub Engineering Unit-II 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 Unit-II 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 Unit-II 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. Further more, 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 Pumpset is not used according to the instructions given in this Installation and 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 Unit-II Service Centre / Service Agent.
d. The serial Number is deleted, defaced or altered.

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 .....

w.e.f. Sep'2016 R.N.00