



Submitted Technical Specification for Approval

Item No. : 1	Project:
Quantity : 1 set	Application : river Water
Description	Consultant pump specification
<u>General Specification</u>	
Mark Name	OLYMPIA
Pump model	O-SAP 900-85
Pump type	Submersible propeller pump (direct drive)
Liquid Temperature	Not more than 60°C
Installation type	Installation with pipe column
<u>Pump Data</u>	
Impeller type	Axial Flow with statically or dynamically balanced
Performance Curve	see the drawings
Flow rate (Capacity)	2500L/S (9000m3/hr)
Total dynamic head	5 m
Pump efficiency	83.7%
Overall efficiency	75.3%
Solid passage dia.	Dia. 190mm
Outer diameter of impeller	850 mm
Shaft power	146.5 kW
Speed	490 rpm
Total discharge conn.	D/N 1200mm
Column size	D/N 1330mm
Power cable & Control cable	- 1x20 m Submersible power cable - 1x20 m Submersible auxiliary control cable
<u>Materials</u>	
Motor casing/housing	Cast Iron with Zinc Anode
Pump casing	Cast Iron with Zinc Anode
Impeller Vane/blades	Duplex Stainless Steel 2205
Impeller Hub	Duplex Stainless Steel 2205
Wearing ring	N/A
Shaft	SS 420
Studs, Nuts, Screws	Stainless steel
O-ring	NBR
Double Mechanical seal	Tungsten carbide & Silicon carbide
Heavy duty bearing	Roller bearing with grease lubricate
<u>Surface treatment</u>	Impeller is painted by epoxy resin Paintmaterial: bituminous epoxy resin All cast parts are primed with a re-rust paint The finishing coat is two pack paint The color is black paint
<u>Motor data</u>	
Drive unit / Motor model	185KW / 12P
Design Motor	Squirrel-cage, induction motor
Protection type	IP68
Insulation class	Class H
Main voltage	380v, 3 pH, 50 Hz.
Rated power of motor	185KW
Motor speed	490rpm
Motor efficiency	90.0%
Service factor	1.2
Starting method	VFD
Rated current	412A
<u>Monitoring system, Std.</u>	
Monitoring system, Std.	- Overheat sensor PT100 (for stator winding) - Overheat sensor PT100 (for upper & lower bearings) - Upper float switch (for motor junction box/chamber) - Lower float switch (for motor chamber) - Moisture sensor HM1500 (detecting the humidity in motor junction box/ chamber) - Vibration Sensor in top bearing housing - WLC type float switch for LWL and HWL (GY-A1)

**SUBMERSIBLE MOTOR PUMPS****MOTOR DATA****ELECTRICAL DATA**

Hz	Poles	Phaes	Output(kW)	Voltage(V)	Remarks
50	12	3	185	380	

Name Plate Rating	Output	kW	185
		Hp	250
	Phase		3
	Poles		12
	Voltage (V)		380
	Amperes (A)		412
	Speed (RPM)		490
	Rating		Continuous
	Rotor Type		Squirrel Cage
	Insulation Class		H
Capacitor	Start		-
Size - μ F	Run		-
No Load Amperes			144
100% Load	Current (Amperes)		412
	Efficiency (%)		90.0
	Power Factor (%)		75.8
	Speed (RPM)		490
Start Current (A)			1442
Full Load Torque (Kg-m)			367.73
Locked Rotor Torque (%)			105
Number of Starts Per Hour			6
Design Standard			IEC
Voltage Tolerance (%)			$\pm 10\%$
Frequency Tolerance (%)			$\pm 5\%$

ITEM	LOAD		
	50%	75%	100%
POWER INPUT[Kw]	102.8	154.2	205.3
POWER OUTPUT[kW]	92.5	138.75	185
CURRENT[A]	283.1	309.0	412.0
POWER FACTOR[%]	55.7	68.3	75.8
EFFICIENCY[%]	89.2	89.7	90
SPEED[RPM]	495	493	490



SUBMERSIBLE MOTOR PUMPS

CIRCLE DIAGRAM

MOTOR SPECIFICATION

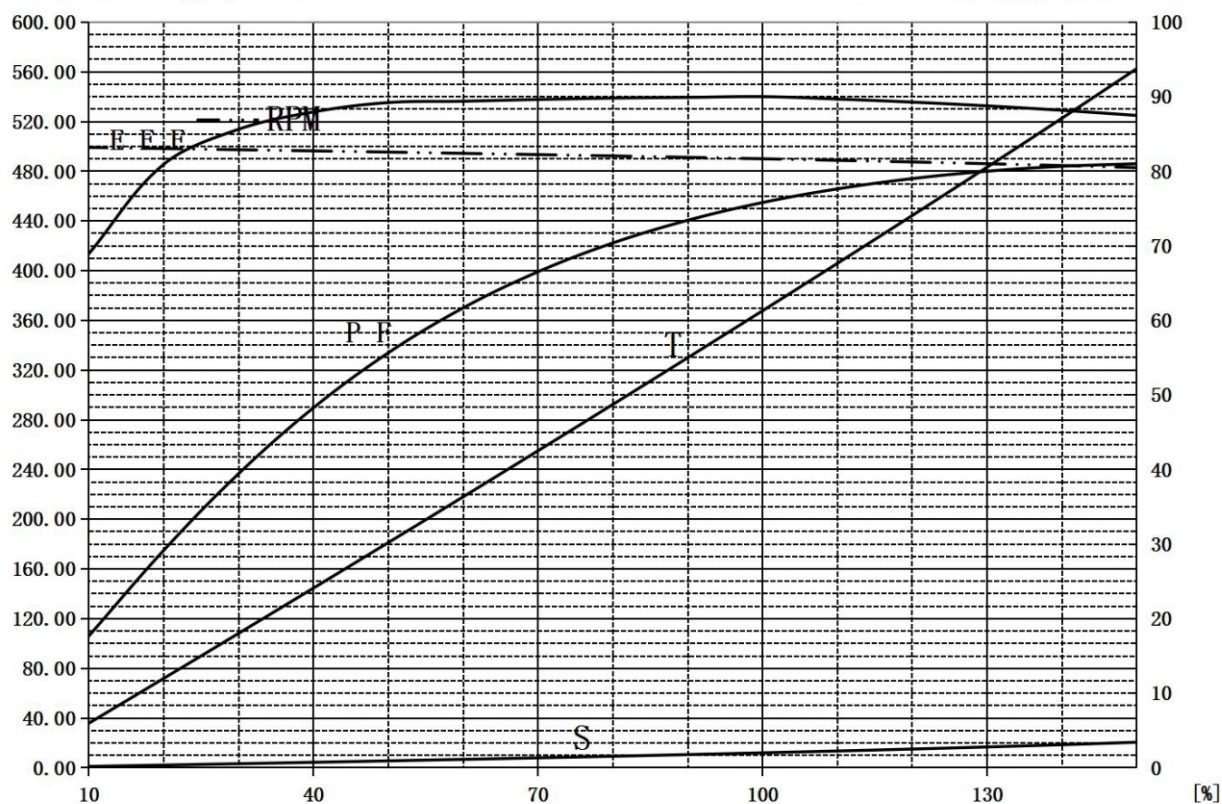
Motor Type	:	Totally Enclosed, Submerged Type (IP 68)				
Motor Output	:	185	[kW]	Voltage	:	380 [V]
Revolution	:	490	[rpm]	No. of Poles	:	12 [P]
Frequency	:	50	[Hz]	Rate Current	:	412 [A]
Efficiency	:	90.0	[%]	Power Factor	:	75.8 [%]
Rotor Type	:	Squirrel Cage			Ins. of Class:	H
Cooling Method	:	Water			Liquid Temp. :	AMB
Starting Method:	:	VSD			Rating :	CONT.

MOTOR CIRCLE DIAGRAM

(L- CIRCLE, 185 [kW])

Torque [kg-m] / Output [A] / Overload [kW]

Efficiency [%] / Power Factor [%] / Slip [%]





SUBMERSIBLE MOTOR PUMPS

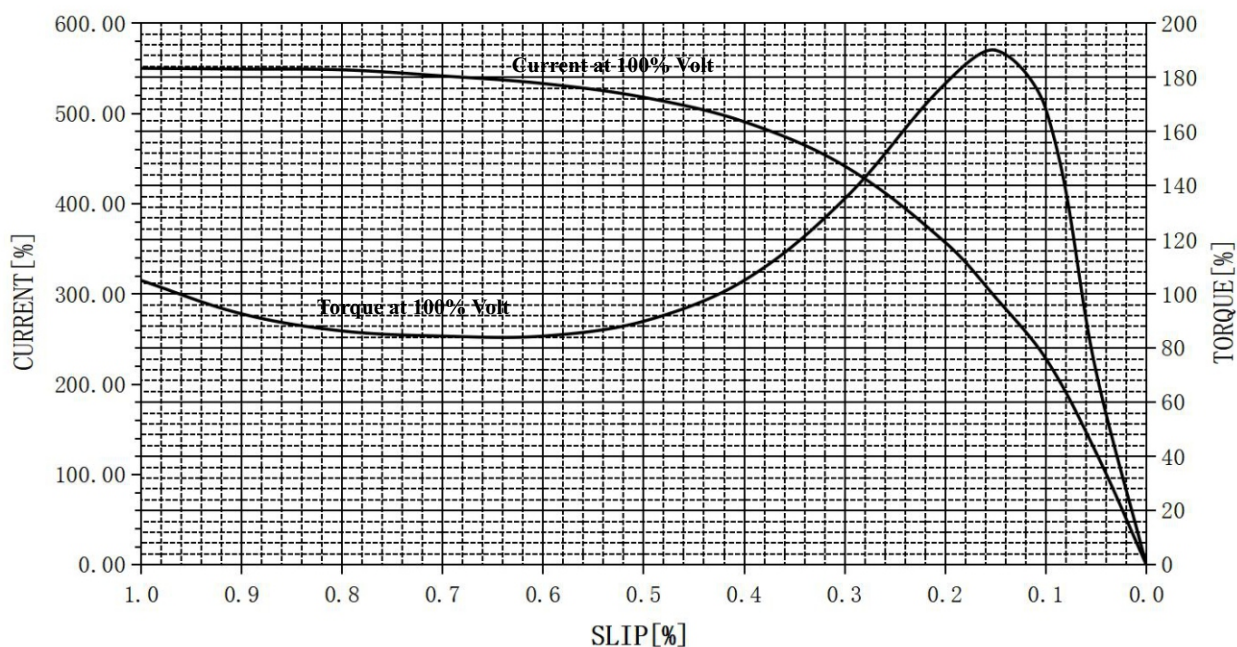
SPEED & TORQUE & CURRENT CURVE

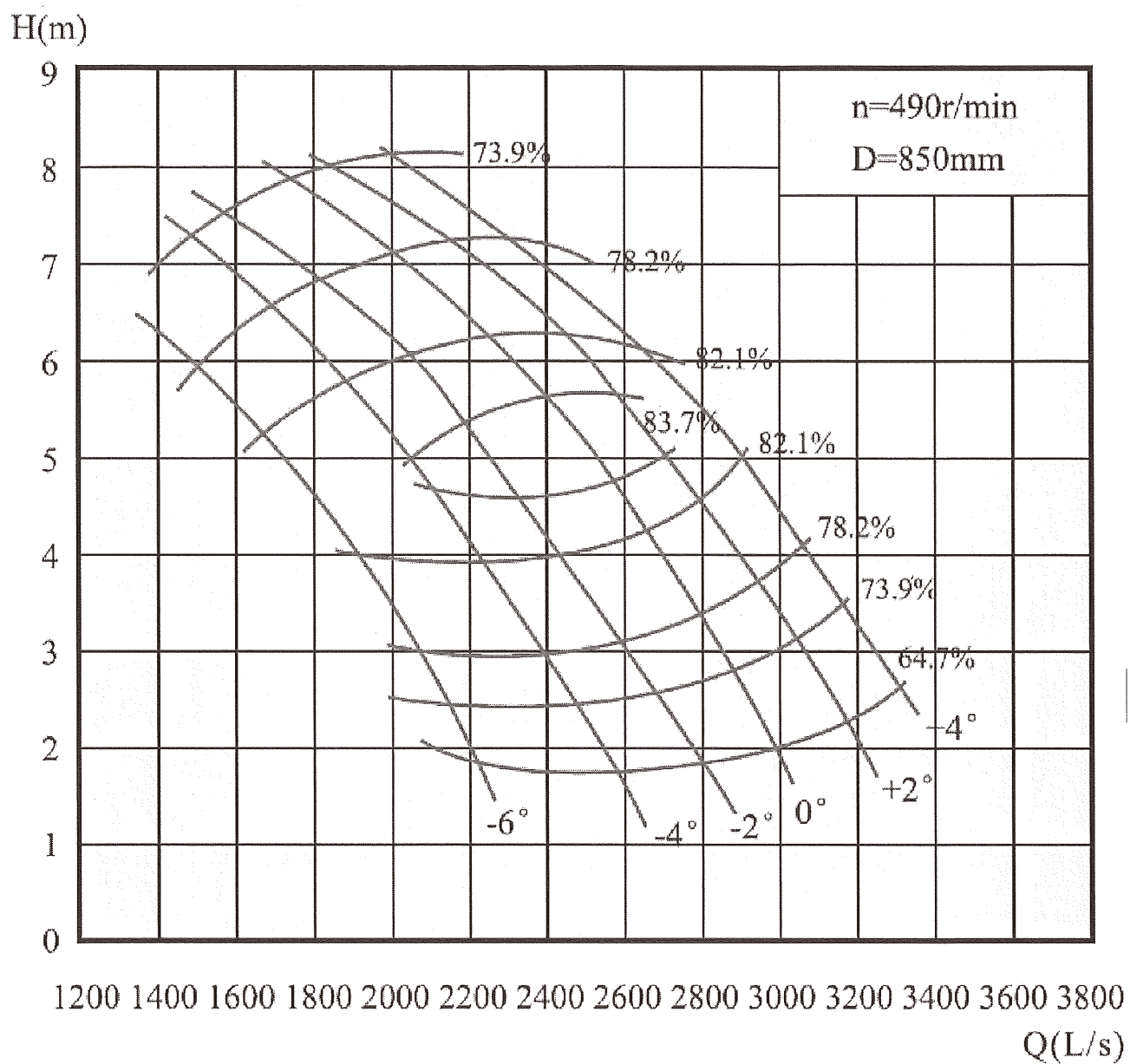
MOTOR SPECIFICATION

Motor Type	:	Totally Enclosed, Submerged Type (IP 68)					
Motor Output	:	185	[kW]	Voltage	:	380	[V]
Revolution	:	490	[rpm]	No. of Poles	:	12	[P]
Frequency	:	50	[Hz]	Rate Current	:	412	[A]
Torque	:	367.7	[%]	Starting Current	:	1442	[A]
Starting Torque:		105	[%]	Ins. of Class	:	H	
Starting Method:		VSD		Liquid Temp.	:	AMB	
				Rating	:	CONT.	

SPEED & TORQUE & CURRENT CURVE

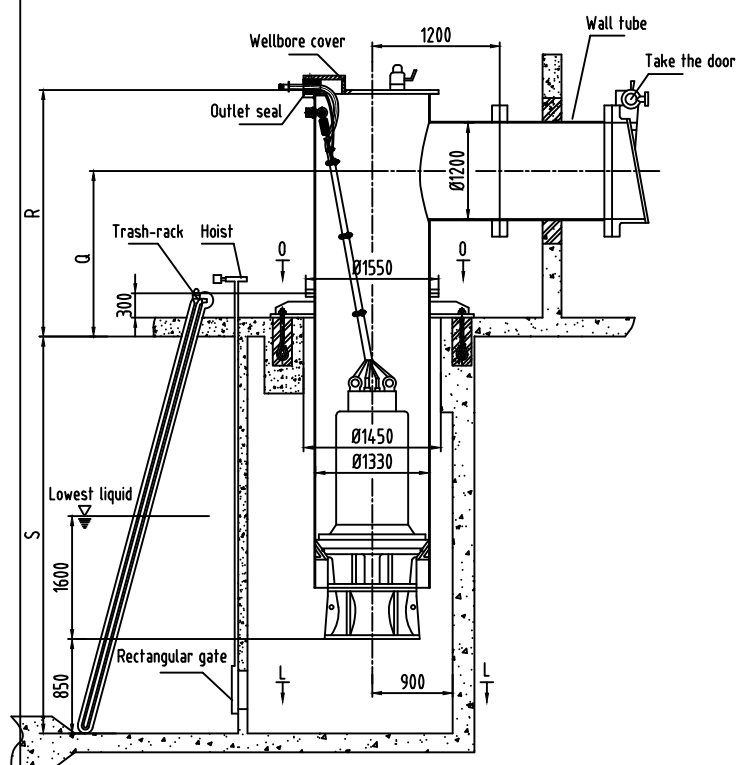
SPEED & TORQUE, CURRENT CURVE



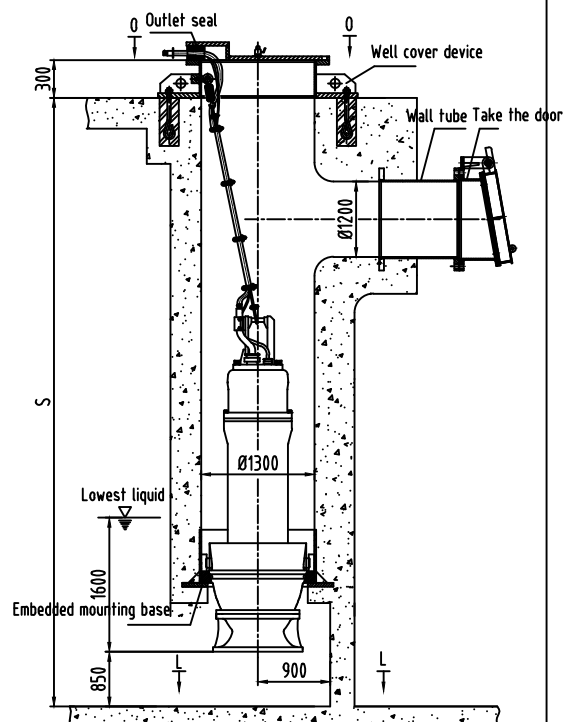


Angle	Flow		Head (m)	Speed (r/min)	Shaft power (kW)	Motor power (kW)	Eff. (%)
	(m ³ /h)	(L/s)					
0°	10514.9	2920.8	2.8	490	108.4	185	74
	9241.9	2567.2	4.85		143.7		85
	6419.5	1783.2	7.56		178.7		74

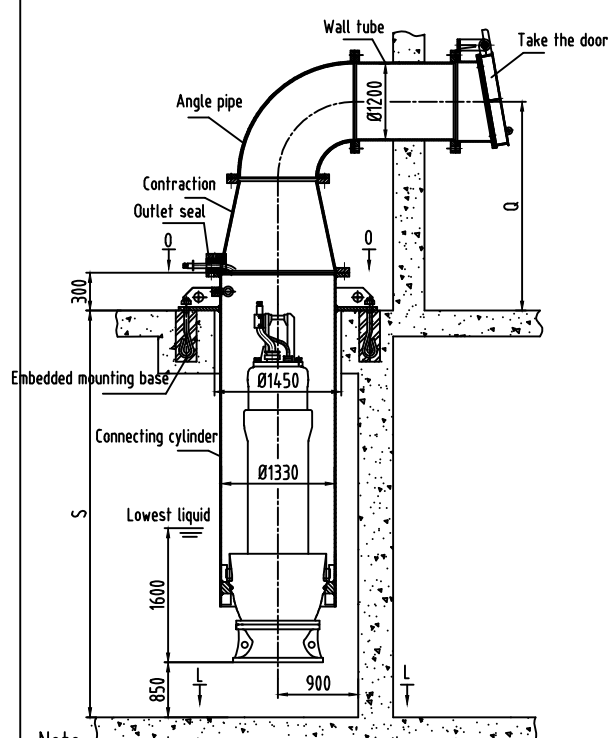
1, Wellbore suspension installation



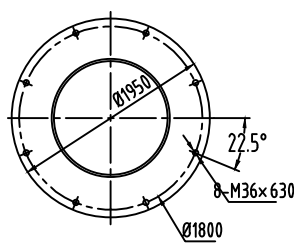
2, Precast concrete shaft installation



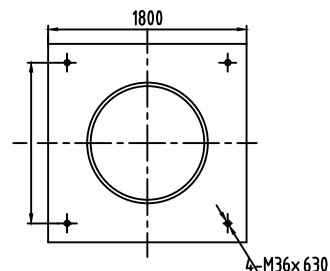
3, Elbow suspension installation



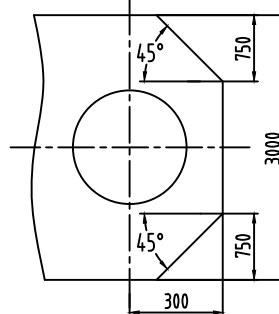
0-0(I)



0-0(II)



L-L



Note:

1. The dimensions in the drawing are the installation dimension of the pump and the hydraulic control dimension of the pump station design, in which the hydraulic dimension of the pump station design is the reference value;
2. The size A is determined according to the pump flow rate, so as to control the flow rate and reduce the hydraulic loss. The table is a reference value, which can be increased appropriately if necessary; Dimensions S, Q and R are determined according to the field dimensions of the pumping station. The above dimensions are determined according to user's requirements.
3. The distance between the center of the pump and the rear pool wall is not greater than the dimension t..
4. The center distance between two pumps in the same pool shall not be less than dimension z..