



ZJQ

Submersible Slurry Motor Pump

山东鲁特西泵业有限公司

SHANDONG LUTSEE PUMP INDUSTRY CO.,LTD

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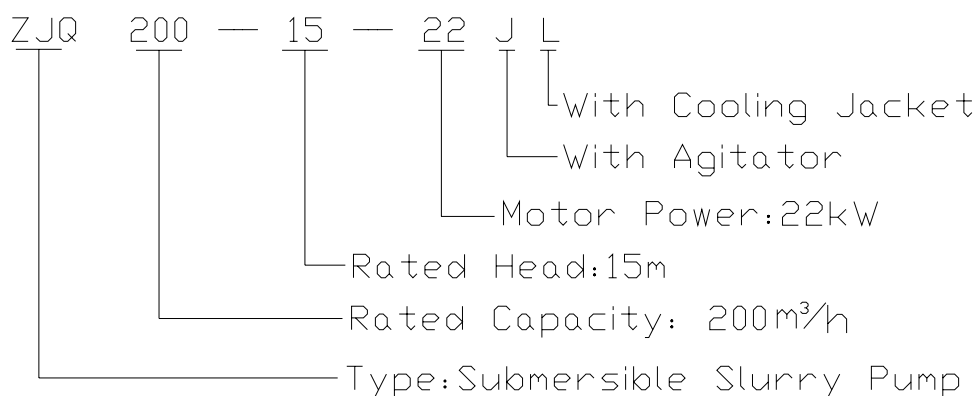
1. General Introduction

ZJQ submersible slurry pump is a kind of hydraulic mechanism which motor connects directly with pump. It is used for delivering liquid contained sand, mud, coal cinder solid etc.. The pump can be mainly employed in clearing the mud in lake, river, sea and widening channel etc. it also can be applied to clear out sewage pool; in building site, steel works and power station etc. the pump adopts excellent material, advanced structure, and it is with wide flowing passage if strong delivery ability. The hydraulic parts are wear-resistant. The pump is yet completed with control unit. It consists of motor and pump two parts. It I adopts three-phase synchronal alternating motor. By static sealing isolates with the pump. The mechanical sealing is wave pipe double-end one which operate in filling oil chamber. There is an oil-water probe between the oil-chamber and the motor chamber. It can protect the pump set operating safely while water step into the motor chamber. The pump set consists of main impeller and vice impeller two parts. The main impeller is used for absorbing and delivering solid-liquid mixture, the vice impeller is used for spraying or stirring solid-liquid mixture to help the impeller delivering.

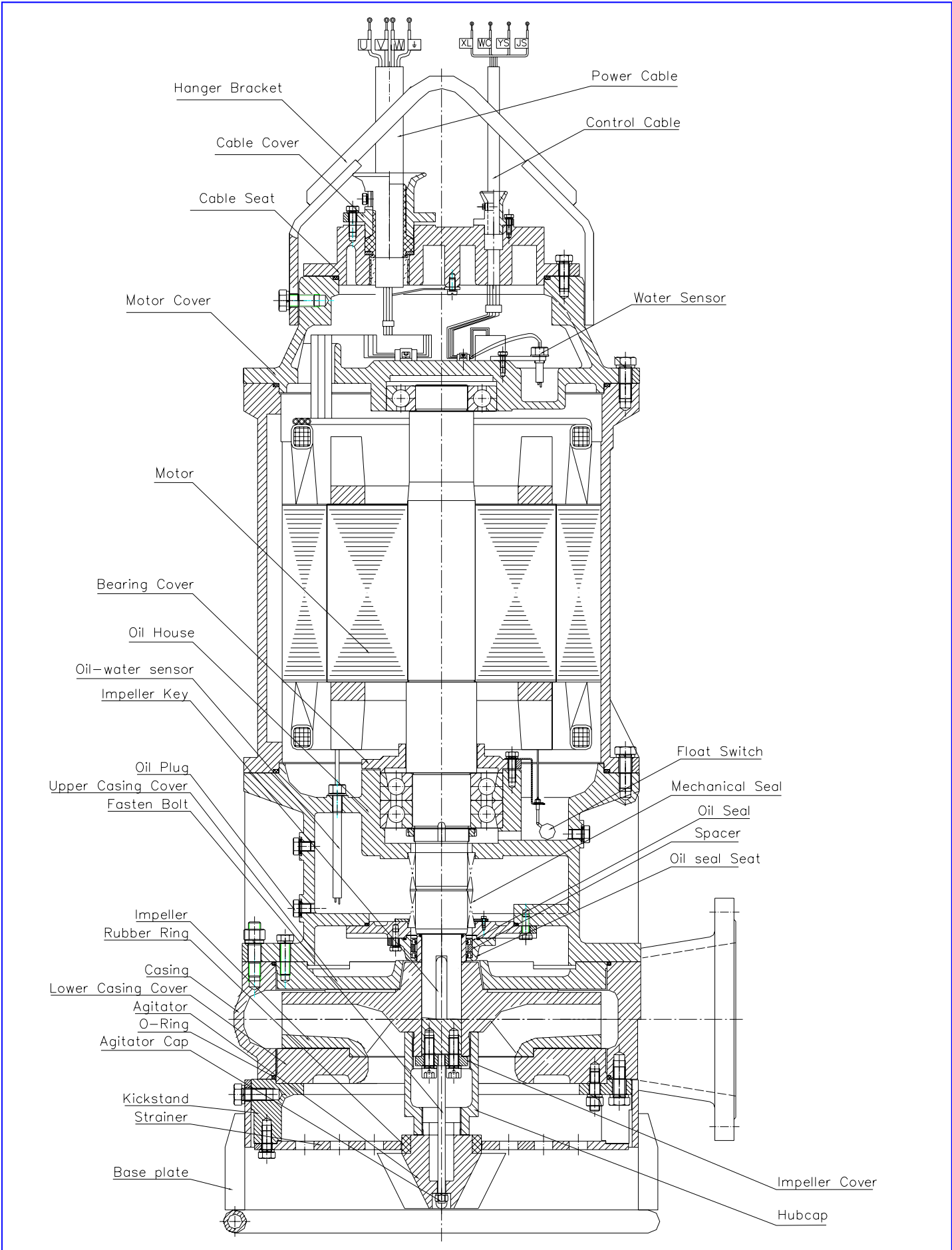
2. Operation Conditions

1. Power Source:
 Voltage: 380V/525V/550V/660V
 Frequency: 50Hz/60Hz
 Three Phase
2. Water Temperature: no more than 40°C.
3. No operating in flammable & explosive working site.
4. Max. volume ratio no more than 30% in water, S.G of medium less than 1.2.
5. The max. depth of submerging should less than 20meter. The motor should be totally submerged in the water.
6. PH value of liquid is 4~10
7. Recommend installation is vertical.
8. Operation condition: S1.

3. Model Meaning



4. Sectional Drawing



6. Performance Data

No.	Model	Outlet Dia. (mm)	Capacity (m ³ /h)	Head (m)	Motor Power (kW)	Speed (r/min)	Eff. (%)	Max. Dia. Of Solids (mm)
1	ZJQ30-30-7.5	80	24	31	7.5	1460	43	13
			30	30				
			36	29				
2	ZJQ50-21-11	100	35	22	11	1460	48	21
			50	21				
			60	20				
3	ZJQ50-26-11	80	35	29	11	1460	48	13
			50	26				
			60	24				
4	ZJQ100-18-11	100	70	20	11	1460	55	21
			100	18				
			120	15				
5	ZJQ25-40-15	80	18	41	15	1460	35	13
			25	40				
			30	39				
6	ZJQ50-35-15	100	35	38	15	1460	47	13
			50	35				
			60	32				
7	ZJQ60-30-15	100	42	33	15	1460	50	13
			60	30				
			72	27				
8	ZJQ75-25-15	100	52	28	15	1460	51	13
			75	25				
			90	22				
9	ZJQ150-15-15	150	105	17	15	1460	56	21
			150	15				
			180	13				
10	ZJQ75-35-22	100	52	38	22	980	48	13
			75	35				
			90	32				
11	ZJQ75-45-22	100	52	48	22	980	48	13
			75	45				
			90	42				
12	ZJQ100-25-22	100	70	27	22	980	55	14
			100	25				
			120	22				
13	ZJQ150-22-22	150	105	25	22	980	60	32
			150	22				
			180	20				

6. Performance Data

No.	Model	Outlet Dia. (mm)	Capacity (m ³ /h)	Head (m)	Motor Power (kW)	Speed (r/min)	Eff. (%)	Max. Dia. Of Solids (mm)
14	ZJQ200-15-22	150	140	17	22	980	60	45
			200	15				
			240	13.5				
15	ZJQ100-35-30	100	70	38	30	980	50	21
			100	35				
			120	31				
16	ZJQ150-30-30	150	105	33	30	980	50	21
			150	30				
			180	26				
17	ZJQ200-25-30	150	140	28	30	980	51	25
			200	25				
			240	21				
18	ZJQ250-20-30	150	175	23	30	980	60	25
			250	20				
			300	18				
19	ZJQ100-45-37	100	70	48	37	980	43	21
			100	45				
			120	42				
20	ZJQ100-50-37	100	70	53	37	980	43	13
			100	50				
			120	47				
21	ZJQ300-20-37	150	240	22	37	980	58	28
			300	20				
			360	17				
22	ZJQ100-60-45	100	70	64	45	980	43	13
			100	60				
			120	55				
23	ZJQ200-30-45	150	140	33	45	980	53	25
			200	30				
			240	27				
24	ZJQ150-45-55	150	105	47	55	980	50	21
			150	45				
			180	42				
25	ZJQ250-35-55	150	175	38	55	980	53	36
			250	35				
			300	33				
26	ZJQ300-30-55	150	210	34	55	980	55	36
			300	30				
			360	26				

6. Performance Data

No.	Model	Outlet Dia. (mm)	Capacity (m ³ /h)	Head (m)	Motor Power (kW)	Speed (r/min)	Eff. (%)	Max. Dia. Of Solids (mm)
27	ZJQ600-15-55	250	420	18	55	980	62	32
			600	15				
			720	11				
28	ZJQ150-55-75	150	105	58	75	980	48	15
			150	55				
			180	51				
29	ZJQ150-60-75	150	105	63	75	980	48	15
			150	60				
			180	56				
30	ZJQ200-45-75	150	140	48	75	980	52	18
			200	45				
			240	41				
31	ZJQ200-55-75	150	140	58	75	980	50	18
			200	55				
			240	51				
32	ZJQ350-35-75	200	245	78	75	980	60	29
			350	75				
			420	71				
33	ZJQ400-25-75	200	280	29	75	980	62	29
			400	25				
			480	23				
34	ZJQ200-60-90	150	140	63	90	980	50	14
			200	60				
			240	57				
35	ZJQ250-55-90	150	170	58	90	980	50	14
			250	55				
			300	52				
36	ZJQ300-45-90	150	210	50	90	980	52	25
			300	45				
			360	39				
37	ZJQ300-50-90	150	210	54	90	980	52	25
			300	50				
			360	45				
38	ZJQ400-40-90	200	280	44	90	980	53	25
			400	40				
			480	36				
39	ZJQ500-25-90	200	350	30	90	980	65	25
			500	25				
			600	20				

6. Performance Data

NO.	Model	Outlet Dia. (mm)	Capacity (m ³ /h)	Head (m)	Motor Power (kW)	Speed (r/min)	Eff. (%)	Max. Dia. Of solids (mm)
40	ZJQ450-30-90	200	315	34	90	980	64	25
			450	30				
			540	25				
41	ZJQ250-60-110	150	175	64	110	980	54	18
			250	60				
			300	55				
42	ZJQ300-60-110	150	210	64	110	980	55	18
			300	60				
			360	56				
43	ZJQ400-50-110	200	280	54	110	980	56	28
			400	50				
			480	45				
44	ZJQ500-35-110	200	350	38	110	980	61	32
			500	35				
			600	31				
45	ZJQ600-30-110	250	420	33	110	980	64	35
			600	30				
			720	26				
46	ZJQ800-25-110	300	560	28	110	980	66	50
			800	25				
			960	21				
47	ZJQ1000-18-110	300	700	22	110	980	68	50
			1000	18				
			1200	13				
48	ZJQ780-26-110	300	545	29	110	980	68	50
			780	26				
			935	22				
49	ZJQ400-60-132	200	280	64	132	980	68	28
			400	60				
			480	55				
50	ZJQ500-45-132	200	350	49	132	980	67	28
			500	45				
			600	42				
51	ZJQ500-55-132	200	350	59	132	980	70	28
			500	55				
			600	52				
52	ZJQ800-35-132	300	560	38	132	980	70	42
			800	35				
			960	32				

6. Performance Data

No.	Model	Outlet Dia. (mm)	Capacity (m ³ /h)	Head (m)	Motor Power (kW)	Speed (r/min)	Eff. (%)	Max. Dia. of Solids (mm)
53	ZJQ1000-22-132	300	700	27	132	980	71	50
			1000	22				
			1200	17				
54	ZJQ1250-15-132	300	875	18	132	980	70	56
			1250	15				
			1500	12				
55	ZJQ600-50-160	200	420	56	160	980	65	28
			600	50				
			720	43				
56	ZJQ650-52-160	200	455	56	160	980	65	28
			650	52				
			780	44				
57	ZJQ1250-25-160	350	875	28	160	980	70	56
			1250	25				
			1500	22				
58	ZJQ1000-30-160	300	700	34	160	980	70	53
			1000	30				
			1200	25				
59	ZJQ1750-15-185	350	1225	19	185	980	70	56
			1750	15				
			2100	10				
60	ZJQ600-55-200	250	420	59	200	980	62	28
			600	55				
			720	50				
61	ZJQ800-45-200	300	560	49	200	980	66	42
			800	45				
			960	40				
62	ZJQ1000-40-200	300	700	45	200	980	70	42
			1000	40				
			1200	35				
63	ZJQ1500-20-200	350	1050	24	200	980	71	56
			1500	20				
			1800	15				
64	ZJQ2000-20-200	400	1400	25	200	980	72	56
			2000	26				
			2400	14				
65	ZJQ800-55-220	300	560	60	220	980	66	38
			800	55				
			960	50				

6. Performance Data

No.	Model	Outlet Dia. (mm)	Capacity (m ³ /h)	Head (m)	Motor Power (kW)	Speed (r/min)	Eff. (%)	Max. Dia. Of Solids (mm)
66	ZJQ1250-35-220	350	875	39	220	980	70	45
			1250	35				
			1500	30				
67	ZJQ1000-50-250	300	700	55	250	980	68	45
			1000	50				
			1200	45				
68	ZJQ1500-35-250	350	1050	40	250	980	72	50
			1500	35				
			1800	30				
69	ZJQ1750-30-250	350	1225	34	250	980	70	55
			1750	30				
			2100	25				
70	ZJQ1500-40-280	350	1050	45	280	980	70	50
			1500	40				
			1800	35				
71	ZJQ1750-40-315	350	1225	45	315	980	70	55
			1750	40				
			2100	35				
72	ZJQ2000-35-315	400	1400	40	315	980	72	60
			2000	35				
			2400	30				

7. Installation and Operation


1. Inspection and Note before installation
 - A. Make sure the operation status according to item 2 Operation Conditions
 - B. Actual capacity& head should according to the performance. The best capacity range is 0.8~1.2 times of rated capacity. Pump unit will be seriously damaged if actual capacity more than 1.2 times rated capacity.
 - C. Inspect the assembly quality. Make sure the fastener no loose, the cable no rupture and so on
 - D. Inspect the date in the name plate . Make sure every item is you required. All equipment of start, control and protection should be available.
 - E. Suitable oil is filled in the oil house in works. Oil level should be in line with oil injection hole when the pump is vertical sanding. Or inject turbine oil.
 - F. Keep the clean cooling water continuously flowing if the pump with cooling jacket. The water should enter the lower hole and our from the upper hole. See the figure 3.
 - G. The cooling insulation resistance of motor winding should over 50MΩ with 500V ohmmeter.
 - H. $\frac{\text{---}}{\text{---}}$

2. Installation

(1). Cable Connection

- A). The power cable is 4 cores. Three of them are power lines signed U. V. W. One of them is earth line signed

All the pump is with control cable. The marks of the line as the following:

Name	Mark	Core Name	Core function	Cable length	Insulation resistance between line and earth line
Power Cable	U、V、W	Three phase power line	Power line	10m	∞
		Earth line	Connection to the earth		
Control Cable	WC	Thermal sensor line	Connection to the thermal sensor	10m	0
	YS	Oil-water sensor line	Connection to the oil-water sensor		∞
	XL	Water leakage switch line	Connection to the float switch		∞
	JS	Water sensor line	Connection to the oil-water sensor		∞
	ZC	Bearing temperature sensor line	Connection to the thermal sensor		0

Connect the cable to the control box correctly according to the marks. The resistance between the lines and earth line should according to above table. The resistance should checked by ohmmeter. Be sure the earth line is connected to the earth.

- B). Check the installation resistance frequently during installation. The installation resistance between the motor wing and earth should be not less than 5MΩ when the motor submerged in the water.
 - C). Start the motor, if it do not reach the rated capacity, then the rotation may be wrong. Exchange the connection of any two power line
- (2). Installation method
Refer to the appendix.

8. Assembly and Disassembly

Assembly Procedure:

1. Inspan the O-ring to the oil house. Fix the rotator to the oil house then the stator.
2. Place the motor cover on the top of motor casing. Fasten it with bolt. Then fix the cable assembly. Last fax the eye bolt or hanger bracket. The motor assembly is ok now.
3. Fix the cable sleeve and cable marks.
4. Turnover the motor, fix the mechanical seal, upper casing cover, mechanical seal seat.
5. Fix the shaft sleeve and oil seal
6. Fix key, auxiliary impeller, inner casing cover and O-ring.
7. Fix impeller, impeller cap. Then fix casing.
8. fix the kickstand, hubcap, and lower casing cover.
9. Fix the rubber ring , agitator, then the base plate.
10. The disassembly procedure is opposite to the assembly procedure.

9. Trouble and Remedies

Troubles	Causes	Remedies
Over Current	1. Impeller is blocked	1.Clean the imurity in impeller
	2. Actual capacity more than 1.2 times rated capacity	2.Adjust the valve or use large pump.
	3. Pumped liquid is high density or viscosity	3. Reduce density or viscosity
	4. Operating voltage is too slow	4. Use rated voltage
	5. Cooling system has trouble	5. Clean cooling system
	6. Dearing is damaged	6.Renew bearing
Can not start the motor and the motor is buzzing	1. Operating voltage is too slow	1. Use rated voltage
	2. Singal phase operating	2. Check power source
	3. Impeller is blocked	3.Clean the imurity in impeller
	4. pick-up between the impeller and lower casing cover or inner cover	4. Adjust the clearance of impeller
Can not reach rated capacity or no flow	1. Wrong rotation	1. Exchange connection of any two power line
	2. There are blockage in the Impeller	2. Clean the blockage
	3. Inlet can not be submerged in the water	3. Make the pump be submerged in the water
	4. Delivery pipe leakage or be blocked	4. Renew the pipe or clean it.
	5. Actual head to high	5. Choose suitable head pump
Motor resistance not than $0.5M\Omega$	1. Cable junction is damaged	1. Make connection again
	2. Stator winding is damaged	2. Replace winding
	3. The winding is wet	3. Make the winding dry
	4. Cable is damaged	4. Renew cable
Noise and vibration	1. The impeller is attrited	1. Replace the impeller
	2. The rotator is blocked	2. Clean the blockage
	3. The bearing was frayed seriously	3. Replace the bearing

9. Maintenance and Repair

1. Pump set should be take out of the water if it need not to operation for a long time. Clean the pump and motor surface, smear the surface with antirust oil and store the pump set in cleaner, drier area.
2. The following item must be inspected after the continuous running time or total running time up to 2500 hours .
 - A). Tighten all the bolts and nuts
 - B). Make sure no leakage in the seal face.
 - C). Replace the oil house in the oil house.
 - D). Make sure the mechanical seal is reliable.
3. The pump set must be inspected when the running time up to one year. Replace the spare parts in time. Such as casing, impeller, casing cover, agitator, oil seal and so on.
4. The motor house and oil house must be made air pressure test after motor re-assembly. The air pressure is 0.2MPa, keep the pressure at least 5 minutes. It must be no leakage then can continue the following assembly.
 - 1.
9. The disassembly procedure is opposite to the assembly procedure.

10. Spare Parts List

Item	Name	Qty. for one pump	Note
1	Casing	1	High Chrome Cast Iron
2	Impeller	1	High Chrome Cast Iron
3	Agitator	1	High Chrome Cast Iron
4	Inner Casing Cover	1	High Chrome Cast Iron
5	Lower Casing Cover	1	High Chrome Cast Iron
6	Mechanical Seal	1set	
7	Oil Seal	1set	

10. Supply Scope

We can supply the following parts. Please choose as you need and confirm it in the purchase order.

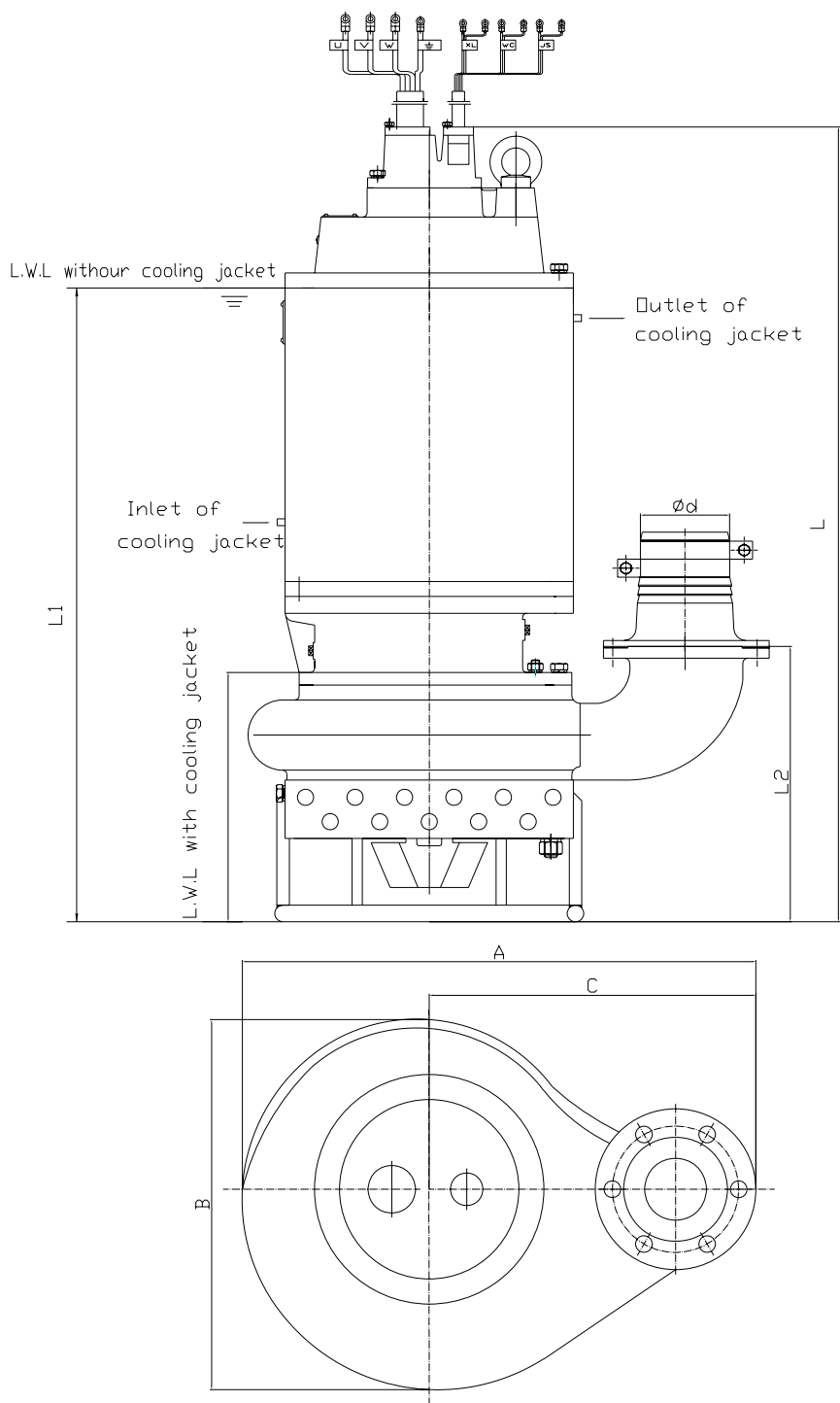
1. Submersible slurry pump set.
2. Control cabinet
3. Delivery pipe.
 - A). Steel pipe, elbow pipe, rubber gasket, bolts, nuts, spring washers.
 - B). Soft tube, tube couplings, tube clamps.
4. Spare Parts
5. Special tools.

11. Quality Warranty

We can supply the following parts. Please choose as you need and confirm it in the purchase order.

1. Submersible slurry pump set.
2. Control cabinet
3. Delivery pipe.
 - A). Steel pipe, elbow pipe, rubber gasket, bolts, nuts, spring washers.
 - B). Soft tube, tube couplings, tube clamps.
4. Spare Parts
5. Special tools.

12. Outline Dimension



Outline Drawing

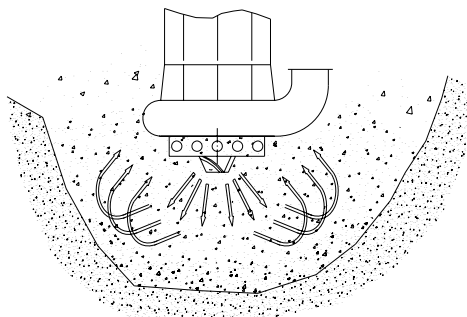
Dimension Chart

No.	Model	L (mm)	L1 (mm)	L2 (mm)	A (mm)	B (mm)	C (mm)	d (mm)
1	ZJQ30-30-7.5	842	700	296	605	390	396	80
2	ZJQ50-21-11	913	738	300	606	406	405	100
3	ZJQ50-26-11	889	720	296	605	390	396	80
4	ZJQ100-18-11	913	738	300	606	406	405	100
5	ZJQ25-40-15	950	774	290	673	440	435	80
6	ZJQ50-35-15	950	774	290	632	385	422	100
7	ZJQ60-30-15	950	774	290	632	385	422	100
8	ZJQ75-25-15	950	774	300	606	406	405	100
9	ZJQ150-15-15	990	814	340	620	410	455	150
10	ZJQ75-35-22	1370	1105	502	925	650	505	100
11	ZJQ75-45-22	1370	1105	502	925	650	505	100
12	ZJQ100-25-22	1401	1135	535	883	630	545	100
13	ZJQ150-22-22	1401	1135	535	883	630	568	150
14	ZJQ200-15-22	1375	1110	507	870	630	551	150
15	ZJQ100-35-30	1452	1144	425	832	630	605	100
16	ZJQ150-30-30	1452	1144	425	832	630	605	150
17	ZJQ200-25-30	1460	1148	469	835	630	605	150
18	ZJQ250-20-30	1460	1148	469	835	630	605	150
19	ZJQ100-45-37	1560	1170	485	950	650	640	100
20	ZJQ100-50-37	1560	1170	485	950	650	640	100
21	ZJQ300-20-37	1567	1170	510	1070	595	775	150
22	ZJQ100-60-45	1670	1230	495	1050	680	665	100
23	ZJQ200-30-45	1699	1255	495	1006	665	650	150
24	ZJQ150-45-55	1692	1248	488	1011	678	640	150
25	ZJQ250-35-55	1699	1255	495	1006	665	650	150
26	ZJQ300-30-55	1699	1255	495	1006	665	650	150
27	ZJQ600-15-55	1720	1275	515	1052	711	675	250
28	ZJQ150-55-75	1835	1380	482	1115	800	715	150
29	ZJQ150-60-75	1835	1380	482	1115	800	715	150
30	ZJQ200-45-75	1904	1425	488	1011	678	640	150
31	ZJQ200-55-75	1835	1380	482	1115	800	715	150
32	ZJQ350-35-75	1883	1404	485	1332	690	947	200
33	ZJQ400-25-75	1888	1410	485	1422	665	1047	200
34	ZJQ200-60-90	1835	1380	482	1115	800	715	150
35	ZJQ200-55-90	1835	1380	482	1115	800	715	150
36	ZJQ300-45-90	1883	1380	482	1115	800	715	150
37	ZJQ300-50-90	1922	1420	490	1540	849	1110	150
38	ZJQ400-40-90	1940	1430	500	1580	850	1150	200
39	ZJQ500-25-90	1888	1410	485	1422	665	1047	200
40	ZJQ450-30-90	1888	1410	485	1422	665	1047	200

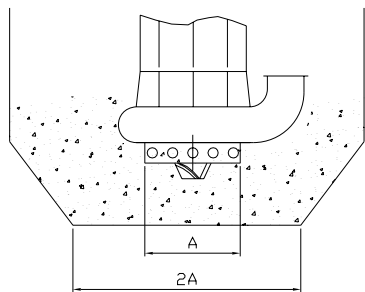
Dimension Chart

No.	Model	L (mm)	L1 (mm)	L2 (mm)	A (mm)	B (mm)	C (mm)	d (mm)
41	ZJQ250-60-110	2203	1527	485	1115	800	715	150
42	ZJQ300-60-110	2203	1527	485	1115	800	715	150
43	ZJQ400-50-110	2225	1550	500	1190	760	790	200
44	ZJQ500-35-110	2245	1570	520	1180	750	1020	200
45	ZJQ600-30-110	2245	1570	520	1180	750	1020	250
46	ZJQ800-25-110	2407	1725	626	1640	854	1207	300
47	ZJQ1000-18-110	2407	1725	626	1640	854	1207	300
48	ZJQ780-26-110	2407	1725	626	1640	854	1207	300
49	ZJQ400-60-132	2328	1665	520	1540	849	1117	200
50	ZJQ500-45-132	2320	1656	472	1124	823	739	200
51	ZJQ500-55-132	2320	1656	472	1124	823	739	200
52	ZJQ800-35-132	2538	1784	601	1581	802	1177	300
53	ZJQ1000-22-132	2465	1801	626	1640	854	1207	300
54	ZJQ1250-15-132	2538	1784	601	1581	802	1177	300
55	ZJQ600-50-160	2673	1772	472	1124	823	739	200
56	ZJQ650-52-160	2673	1772	472	1124	823	739	200
57	ZJQ1250-25-160	2890	1990	672	1600	820	1180	350
58	ZJQ1000-30-160	2891	2137	601	1581	802	1177	300
59	ZJQ1750-15-185	2900	2140	652	1660	820	1260	350
60	ZJQ600-55-200	2673	1772	472	1140	823	739	250
61	ZJQ800-45-200	2934	1993	710	1686	900	1229	300
62	ZJQ1000-40-200	2934	1993	710	1686	900	1229	300
63	ZJQ1500-20-200	3060	2049	672	1770	870	1850	350
64	ZJQ2000-20-200	3060	2049	672	1880	870	1896	400
65	ZJQ800-55-220	2934	1993	710	1686	900	1229	300
66	ZJQ1250-35-220	2922	2021	730	2150	977	1630	350
67	ZJQ1000-50-250	2980	2081	710	2250	9987	1730	300
68	ZJQ1500-35-250	3012	2111	730	2150	977	1630	350
69	ZJQ1750-30-250	3012	2111	730	2150	977	1630	350
70	ZJQ1500-40-280	3058	2159	710	2250	9987	1730	350
71	ZJQ1750-40-315	3235	2261	804	2180	1026	1650	350
72	ZJQ2000-35-315	3235	2261	804	2260	1026	1730	400

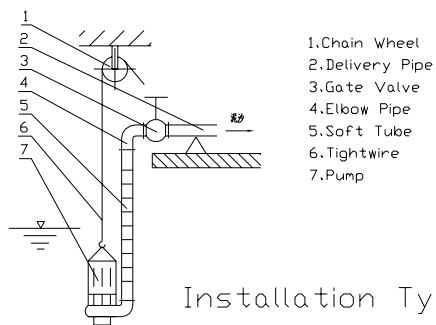
13. Available Drawing



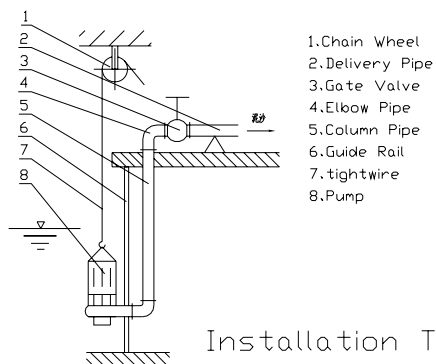
Pump Working



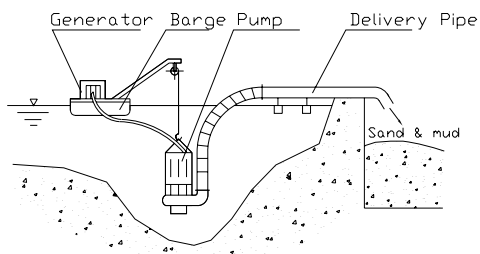
Permite working dimension of agitator



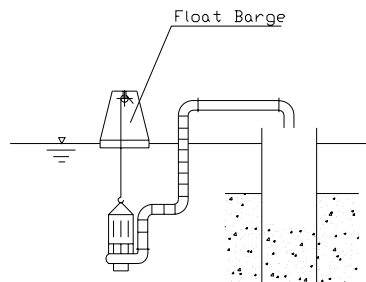
Installation Type 1



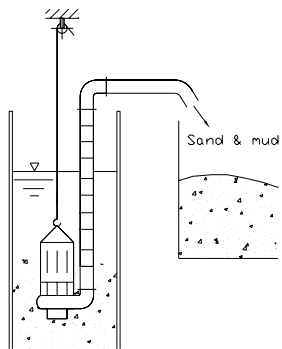
Installation Type 2



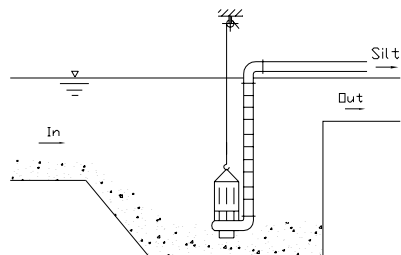
Clear the sand or mud in river, lake, pool, sea, or sea route



Bank Engineering



Clear sand and mud in deep well



Clear silt in iron&steel works, Power works, mine or building