



TOBEE PUMP SPECIFICATION

TJQ Series

HEBEI TOBEE PUMP CO.,LIMITED



SAFETY WARNING

The following warnings should be carefully read before operation.

1. The pump set must be well grounded.
2. Before starting up the pump, oil chamber must be filled with enough turbine oil.
3. Before starting up the pump, cold insulation resistance of the motor should not be lower than 50MΩ.
4. The cable should be in proper tightness to protect the cable from force damage.
5. Make sure the pump operate in correct direction. (This pump should rotate in clockwise direction looking down from the motor).



I. Product Introduction

I.I Overview

TJQ submersible slurry pump is hydraulic machinery, the motor and the pump of which are coaxially submerged in medium to work. The overflowing parts of the pump are made from high alloy wear-resistant material, so the pump has good wear resistance and large flowing passage. It is applicable for conveying media such as sludge, ore slurry, coal slurry, sandstones containing big solid particles. The product is designed and manufactured by domestic and over sea advanced technologies. Besides the main impeller, the bottom of the pump is additionally provided with a set of agitation impeller which can spray the deposited sludge into turbulent flow, and therefore the pump realizes high-concentration conveying under the condition of no auxiliary device. The unique seal device can effectively balance the pressure inside and outside the oil chamber, so as to project the reliability of

the mechanical seal to the maximum extent. The motor adopts various protective such as overheat protection, water inlet detecting projection, and can operate safely for a long term in harsh working conditions. The pump is applicable for pumping sand for building, silty sand, silt, tailing slurry, ore, iron sand ore, sediment in sewage treatment works, etc.

I. II Structural Property

The whole machine is dry submersible pump, and the motor adopts oil chamber seal mode and is provided with mechanical seal inside, so that high pressure water and impurities and are effectively prevented from entering inner cavity of the motor.

1. Besides the main impeller, there is the agitation impeller which can agitate the sludge deposited on the water bottom into turbulent flow and pump the sludge out.
2. The trans-flux parts such as the impeller and the agitation impeller are made from high-hardness high chromium cast steel, have wear resistance, corrosion resistance and strong drainage capacity, and allow big solid particles to pass.
3. The motor is submerged in water, is not limited by suction stroke, and has high sludge suction rate and thorough desilting.
4. The integral device is simplified, needs no auxiliary stirrer device or ejector device, and has simple and convenient operation and low total investment of the unit.
5. The agitation impeller directly approaches the depositional surface, and controls the concentration through submerged depth. Under the condition of large medium proportion, an auxiliary device can be arranged to increase the concentration of the medium.

I. III Use Conditions

1. The power source is three –phase alternating-current supply, and the capacity of the substation transformer two to three times of the rated capacity of the motor.
2. The temperature of the medium cannot exceed 60℃, and the medium does not contain inflammable or explosive gases.

3. The maximum weight concentration of the solid particles in the medium: the maximum weight concentration of the ash is 45% and maximum weight concentration of the slag is 60%.
4. The submerged depth of the unit is not more than 20 meters, and the minimum submerged depth takes submerging of the motor as reference.
5. The unit works in the medium vertically, and the working status is continuous.

II. Production Selection

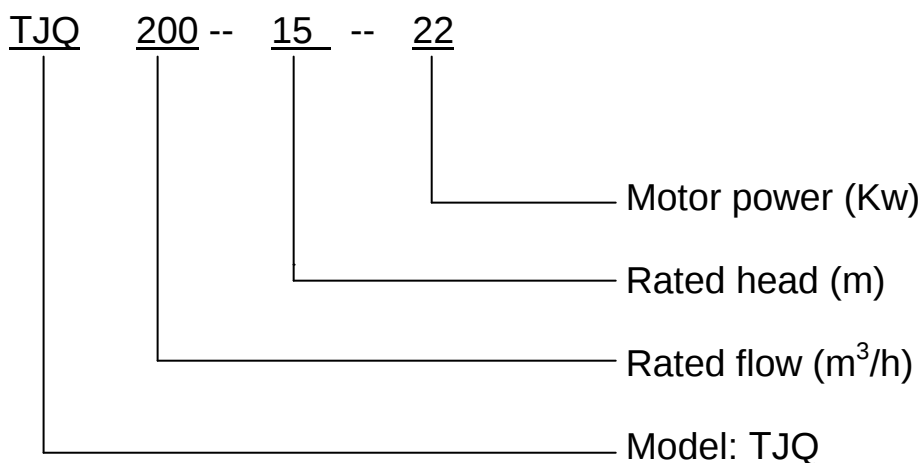
TJQ submersible slurry pump has many specifications to meet different working conditions of different users. As long as specifications and modes meeting the working conditions are reasonably and correctly selected, the best benefit can be obtained with less investment, simultaneously, reasonable working conditions can effectively prolong the service life of the pump, and the methods are as follows:

1. Where the field conditions (such as voltage, frequency, water quality, power source and capacity) accords with the use conditions is mastered.
2. The pump specification is selected:
 - 1) Initial selection of the flow rate : the flow rate of the pump is determined according to demands.
 - 2) Determination of pipes: critical sedimentation flow velocity is calculated according to the conveyed medium, so as to reasonably select the pipe diameter.
 - 3) Calculation of pip loss: the pipe loss is calculated according to the length of the pipe and the number of the siphons and valves.
 - 4) Calculation of the pipe lift: the pump lift= vertical height difference from the water surface to the water outlet +pipe loss +outlet pressure+ safety margin(10%)
 - 5) The pump specification is determined according to the pump lift and flow rate.
 - 6) The installation mode is determined: fixed mode and mobile mode.

3. Friendly Tips

- 1) Only closed system has outlet pressure, and the outlet pressure of the open system is zero.
- 2) The power of the matched motor of the pump is calculated according to intermediate concentration (the medium density is 1.3.), and the power should be rechecked when the pump is used for high-concentration conveying.
- 3) When the medium cannot submerge the motor or the temperature of the medium is more than 60°C, cooling water is 5-8m³/h.
- 4) The outlet of the pump should be provided with a valve, when the pump is started, the valve should be closed and then the motor is started, and the valve is gradually opened after the motor normally rotates.
- 5) The valve should be closed first and then the power source is cut off when the pump is shut down, so as to prevent water hammer in the pipe from severely damaging the pump.
- 6) In order to prevent blockage of the pipe, clear water should be conveyed for a while to clean the pipe before machine halt, until clear water flows out from the water outlet.

III. Model significance



IV. Performance parameter

NO.	Pump Type	DISCH. DIA (mm)	CAP (m ³ /h)	Head (m)	Power (kw)	Rotation speed (r/min)	Eff. (%)	Biggest particles allow to pass (mm)	Weight (Kg)
1	TJQ20-15-3	65	20	15	3	1460	43	10	110
2	TJQ15-20-3	65	15	20	3	1460	43	10	110
3	TJQ25-15-3	65	25	15	3	1460	43	10	110
4	TJQ30-10-4	65	30	10	4	1460	43	10	120
5	TJQ20-25-4	65	20	25	4	1460	43	10	120
6	TJQ25-20-4	65	25	20	4	1460	43	10	120
7	TJQ50-10-5.5	80	50	10	5.5	1460	43	13	130
8	TJQ45-15-5.5	80	45	15	5.5	1460	43	13	130
9	TJQ15-20-5.5	80	15	20	5.5	1460	43	13	130
10	TJQ30-30-7.5	80	24	31	7.5	1460	43	13	140
			30	30					
			36	29					
11	TJQ50-21-11	100	35	22	11	1460	48	21	200
			50	21					
			60	20					
12	TJQ50-26-11	80	35	29	11	1460	48	13	200
			50	26					
			60	24					
13	TJQ100-18-11	100	70	20	11	1460	55	21	260
			100	18					
			120	15					
14	TJQ25-40-15	80	18	41	15	1460	35	13	400
			25	40					
			30	39					
15	TJQ50-35-15	100	35	38	15	1460	47	13	400
			50	35					
			60	32					

NO.	Pump Type	DISCH. DIA (mm)	CAP (m³/h)	Head (m)	Power (kw)	Rotation speed (r/min)	Eff. (%)	Biggest particles allow to pass (mm)	Weight (Kg)
16	TJQ60-30-15	100	42	33	15	1460	50	13	270
			60	30					
			72	27					
17	TJQ75-25-15	100	52	28	15	1460	51	13	270
			75	25					
			90	22					
18	TJQ150-15-15	150	105	17	15	1460	56	21	300
			150	15					
			180	13					
19	TJQ75-35-22	100	52	38	22	980	48	13	700
			75	35					
			90	32					
20	TJQ100-25-22	100	70	27	22	980	55	14	700
			100	25					
			120	22					
21	TJQ150-22-22	150	105	25	22	980	60	32	700
			150	22					
			180	20					
22	TJQ200-15-22	150	140	17	22	980	60	45	700
			200	15					
			240	13.5					
23	TJQ100-35-30	100	70	38	30	980	50	21	660
			100	35					
			120	31					
24	TJQ150-30-30	150	105	33	30	980	50	21	660
			150	30					
			180	26					
25	TJQ200-25-30	150	140	28	30	980	51	25	660
			200	25					
			240	21					
26	TJQ250-20-30	150	175	23	30	980	60	25	660
			250	20					
			300	18					

NO.	Pump Type	DISCH. DIA (mm)	CAP (m³/h)	Head (m)	Power (kw)	Rotation speed (r/min)	Eff. (%)	Biggest particles allow to pass (mm)	Weight (Kg)
27	TJQ100-45-37	100	70	48	37	980	43	21	1020
			100	45					
			120	42					
28	TJQ100-50-37	100	70	53	37	980	43	13	1020
			100	50					
			120	47					
29	TJQ300-20-37	150	240	22	37	980	58	28	930
			300	20					
			360	17					
30	TJQ100-60-45	100	70	64	45	980	43	13	1200
			100	60					
			120	55					
31	TJQ200-30-45	150	140	33	45	980	53	25	1200
			200	30					
			240	27					
32	TJQ150-45-55	150	105	47	55	980	50	21	1370
			150	45					
			180	42					
33	TJQ250-35-55	150	175	38	55	980	53	36	1370
			250	35					
			300	33					
34	TJQ300-30-55	150	210	34	55	980	55	36	1370
			300	30					
			360	26					
35	TJQ600-15-55	250	420	18	55	980	62	32	1370
			600	15					
			720	11					
36	TJQ150-55-75	150	105	58	75	980	48	15	1848
			150	55					
			180	51					
37	TJQ150-60-75	150	105	63	75	980	48	15	1848
			150	60					
			180	56					
38	TJQ200-45-75	150	140	48	75	980	52	18	1848
			200	45					
			240	41					

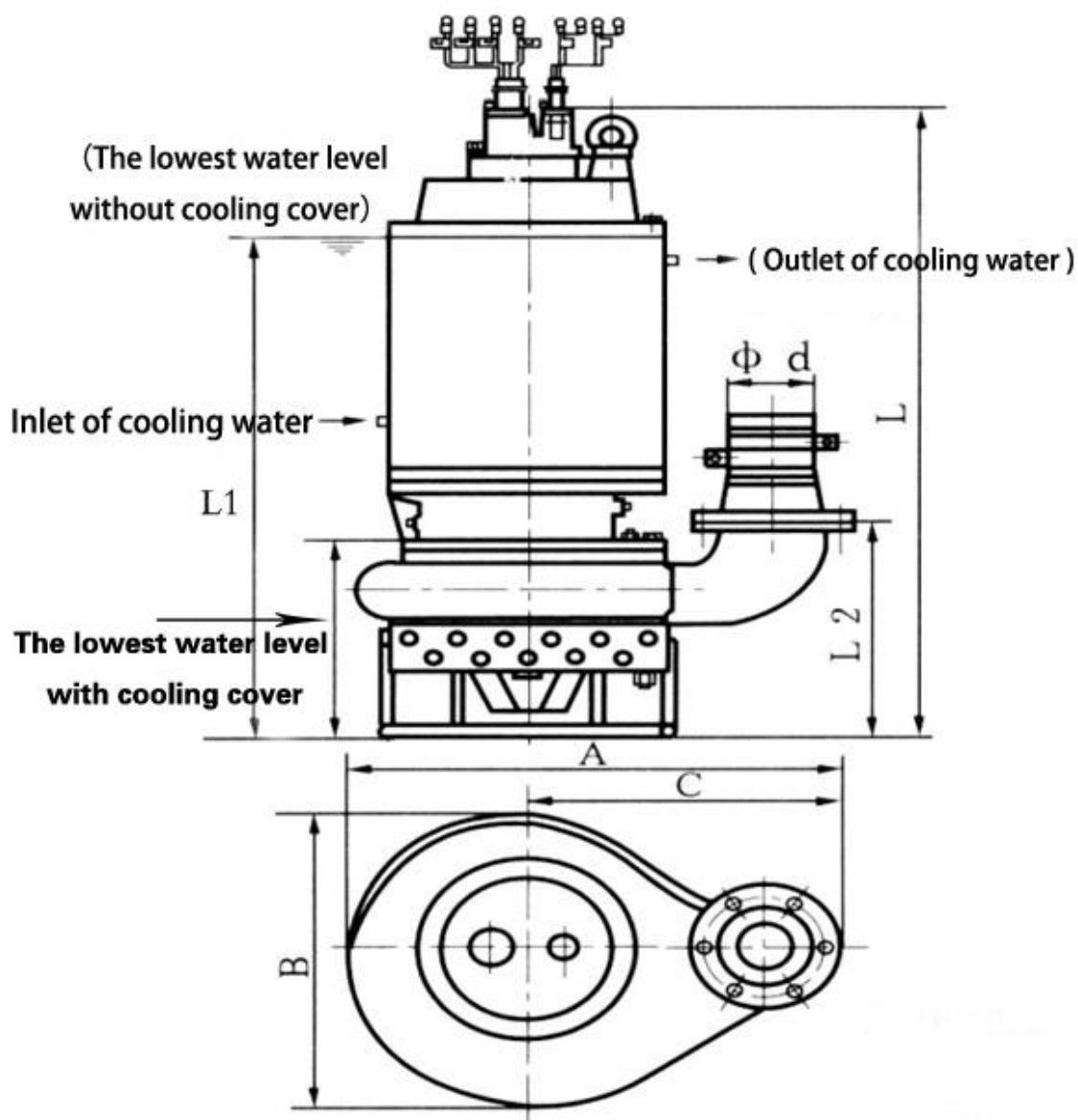
NO.	Pump Type	DISCH. DIA (mm)	CAP (m³/h)	Head (m)	Power (kw)	Rotation speed (r/min)	Eff. (%)	Biggest particles allow to pass (mm)	Weight (Kg)
39	TJQ200-55-75	150	140	58	75	980	50	18	1848
			200	55					
			240	51					
40	TJQ350-35-75	200	245	38	75	980	60	29	1860
			350	35					
			420	31					
41	TJQ400-25-75	200	280	29	75	980	62	29	1860
			400	25					
			480	23					
42	TJQ200-60-90	150	140	63	90	980	50	14	1860
			200	60					
			240	57					
43	TJQ250-55-90	150	170	58	90	980	50	14	1860
			250	55					
			300	52					
44	TJQ300-45-90	150	210	50	90	980	52	25	1860
			300	45					
			360	39					
45	TJQ300-50-90	150	210	54	90	980	52	25	1860
			300	50					
			360	45					
46	TJQ400-40-90	200	280	44	90	980	53	25	1860
			400	40					
			480	36					
47	TJQ500-25-90	200	350	30	90	980	65	25	1860
			500	25					
			600	20					
48	TJQ450-30-90	200	315	34	90	980	64	25	1860
			450	30					
			540	25					
49	TJQ250-60-110	150	175	64	110	980	54	18	2370
			250	60					
			300	55					
50	TJQ300-60-110	150	210	64	110	980	55	18	2370
			300	60					
			360	56					

NO.	Pump Type	DISCH. DIA (mm)	CAP (m³/h)	Head (m)	Power (kw)	Rotation speed (r/min)	Eff. (%)	Biggest particles allow to pass (mm)	Weight (Kg)
51	TJQ400-50-110	200	280	54	110	980	56	28	2370
			400	50					
			480	45					
52	TJQ500-35-110	200	350	38	110	980	61	32	2370
			500	35					
			600	31					
53	TJQ600-30-110	250	420	33	110	980	64	35	2370
			600	30					
			720	26					
54	TJQ800-25-110	300	560	28	110	980	66	50	2370
			800	25					
			960	21					
55	TJQ1000-18-110	300	700	22	110	980	68	50	2370
			1000	18					
			1200	13					
56	TJQ780-26-110	300	545	29	110	980	68	50	2370
			780	26					
			935	22					
57	TJQ400-60-132	200	280	64	132	980	68	28	2400
			400	60					
			480	55					
58	TJQ500-45-132	200	350	49	132	980	67	28	2400
			500	45					
			600	42					
59	TJQ500-55-132	200	350	59	132	980	70	28	2400
			500	55					
			600	52					
60	TJQ800-35-132	300	560	38	132	980	70	42	2400
			800	35					
			960	32					
61	TJQ1000-22-132	300	700	27	132	980	71	50	2400
			1000	22					
			1200	17					
62	TJQ1250-15-132	300	875	18	132	980	70	56	2400
			1250	15					
			1500	12					

NO.	Pump Type	DISCH. DIA (mm)	CAP (m³/h)	Head (m)	Power (kw)	Rotation speed (r/min)	Eff. (%)	Biggest particles allow to pass (mm)	Weight (Kg)
63	TJQ600-50-160	200	420	56	160	980	65	28	3180
			600	50					
			720	43					
64	TJQ650-52-160	200	455	56	160	980	65	28	3180
			650	52					
			780	44					
65	TJQ1250-25-160	350	875	28	160	980	70	56	3180
			1250	25					
			1500	22					
66	TJQ1000-30-160	300	700	34	160	980	70	53	3180
			1000	30					
			1200	25					
67	TJQ1750-15-185	350	1225	19	185	980	70	56	3180
			1750	15					
			2100	10					
68	TJQ600-55-200	250	420	59	200	980	62	28	4080
			600	55					
			720	50					
69	TJQ800-45-200	300	560	49	200	980	66	42	4080
			800	45					
			960	40					
70	TJQ1000-40-200	300	700	45	200	980	70	42	4080
			1000	40					
			1200	35					
71	TJQ1500-20-200	350	1050	24	200	980	71	56	4080
			1500	20					
			1800	15					
72	TJQ2000- 20-200	400	1400	25	200	980	72	56	4080
			2000	26					
			2400	14					
73	TJQ800-55-220	300	560	60	220	980	66	38	4080
			800	55					
			960	50					
74	TJQ1250-35-220	350	875	39	220	980	70	45	4080
			1250	35					
			1500	30					

NO.	Pump Type	DISCH. DIA (mm)	CAP (m³/h)	Head (m)	Power (kw)	Rotation speed (r/min)	Eff. (%)	Biggest particles allow to pass (mm)	Weight (Kg)
75	TJQ1000-50-250	300	700	55	250	980	68	45	4200
			1000	50					
			1200	45					
76	TJQ1500-35-250	350	1050	40	250	980	72	50	4200
			1500	35					
			1800	30					
77	TJQ1750-30-250	350	1225	34	250	980	70	55	4200
			1750	30					
			2100	25					
78	TJQ1500-40-280	350	1050	45	280	980	70	50	4200
			1500	40					
			1800	35					
79	TJQ1750-40-315	350	1225	45	315	980	70	55	4200
			1750	40					
			2100	35					
80	TJQ2000-35-315	400	1400	40	315	980	72	60	4440
			2000	35					
			2400	30					

V. Outline dimension



No	Model	L (mm)	L1 (mm)	L2 (mm)	A (mm)	B (mm)	C (mm)	d (mm)
1	TJQ20-15-3	800	720	290	480	320	350	65
2	TJQ15-20-3	800	720	290	480	320	350	65
3	TJQ25-15-3	800	720	290	480	320	350	65
4	TJQ30-10-4	800	720	290	480	320	350	65
5	TJQ20-25-4	800	720	290	480	320	350	65
6	TJQ25-20-4	800	720	290	480	320	350	65

No	Model	L (mm)	L1 (mm)	L2 (mm)	A (mm)	B (mm)	C (mm)	d (mm)
7	TJQ50-10-5.5	842	700	296	605	390	396	80
8	TJQ45-15-5.5	842	700	296	605	390	396	80
9	TJQ15-20-5.5	842	700	296	605	390	396	80
10	TJQ30-30-7.5	842	700	296	605	390	396	80
11	TJQ50-21-11	913	738	300	606	406	405	80
12	TJQ50-26-11	889	720	296	605	390	396	100
13	TJQ100-18-11	913	738	300	606	406	405	80
14	TJQ25-40-15	950	774	290	673	440	435	100
15	TJQ50-35-15	950	774	290	632	385	422	80
16	TJQ60-30-15	950	774	290	632	385	422	100
17	ZJQ75-25-15	950	774	300	606	406	405	100
18	TJQ150-15-15	990	814	340	620	410	455	100
19	TJQ75-35-22	1370	1105	502	925	650	505	150
20	TJQ100-25-22	1401	1135	535	883	630	545	100
21	TJQ150-22-22	1375	1110	507	870	630	551	100
22	TJQ200-15-22	1375	1110	507	870	630	551	100
23	TJQ100-35-30	1452	1144	425	832	630	605	150
24	TJQ150-30-30	1452	1144	425	832	630	605	100
25	TJQ200-25-30	1460	1148	469	835	630	605	150
26	TJQ250-20-30	1460	1148	469	835	630	605	150
27	TJQ100-45-37	1560	1170	485	950	650	640	150
28	TJQ100-50-37	1560	1170	485	950	650	640	100
29	TJQ300-20-37	1567	1170	510	1070	595	775	150
30	TJQ100-60-45	1670	1230	495	1050	680	665	100
31	TJQ200-30-45	1699	1255	495	1006	665	650	100
32	TJQ150-45-55	1692	1248	488	1011	678	640	150
33	TJQ250-35-55	1699	1255	495	1006	665	650	150
34	TJQ300-30-55	1699	1255	495	1006	665	650	150
35	TJQ600-15-55	1720	1275	515	1052	711	675	150
36	TJQ150-55-75	1835	1380	482	1115	800	715	250
37	TJQ150-60-75	1835	1380	482	1115	800	715	150
38	TJQ200-45-75	1904	1425	488	1011	678	640	150
39	TJQ200-55-75	1835	1380	482	1115	800	715	150
40	TJQ350-35-75	1883	1404	485	1332	690	947	150
41	TJQ400-25-75	1888	1410	485	1422	665	1047	200
42	TJQ200-60-90	1835	1380	482	1115	800	715	200
43	TJQ200-55-90	1835	1380	482	1115	800	715	150

No	Model	L (mm)	L1 (mm)	L2 (mm)	A (mm)	B (mm)	C (mm)	d (mm)
44	TJQ300-45-90	1883	1380	482	1115	800	715	150
45	TJQ300-50-90	1922	1420	490	1540	849	1110	150
46	TJQ400-40-90	1940	1430	500	1580	850	1150	150
47	TJQ500-25-90	1888	1410	485	1422	665	1047	200
48	TJQ450-30-90	1888	1410	485	1422	665	1047	200
49	TJQ250-60-110	2203	1527	485	1115	800	715	200
50	TJQ300-60-110	2203	1527	485	1115	800	715	150
51	TJQ400-50-110	2225	1550	500	1190	760	790	150
52	TJQ500-35-110	2245	1570	520	1180	750	1020	200
53	TJQ600-30-110	2245	1570	520	1180	750	1020	200
54	TJQ800-25-110	2407	1725	626	1640	854	1027	250
55	TJQ1000-18-110	2407	1725	626	1640	854	1207	300
56	TJQ780-26-110	2407	1725	626	1640	854	1207	300
57	TJQ400-60-132	2328	1665	520	1540	849	1117	300
58	TJQ500-45-132	2320	1656	472	1124	823	739	200
59	TJQ500-55-132	2320	1656	472	1124	823	739	200
60	TJQ800-35-132	2538	1784	601	1581	802	1177	200
61	TJQ1000-22-132	2465	1801	626	1640	854	1207	300
62	TJQ1250-15-132	2538	1784	601	1581	802	1177	300
63	TJQ600-50-160	2673	1772	472	1124	823	739	300
64	TJQ650-52-160	2673	1772	472	1124	823	739	200
65	TJQ1250-25-160	2890	1990	672	1600	820	1180	200
66	TJQ1000-30-160	2891	2137	601	1581	802	1177	350
67	TJQ1750-15-185	2900	2140	652	1660	820	1260	300
68	TJQ600-55-200	2673	1772	472	1140	823	739	350
69	TJQ800-45-200	2934	1993	710	1686	900	1229	250
70	TJQ1000-40-200	2934	1993	710	1686	900	1229	300
71	TJQ1500-20-200	3060	2049	672	1770	870	1850	300
72	TJQ2000-20-200	3060	2049	672	1880	870	1896	350
73	TJQ800-55-220	2934	1993	710	1686	900	1229	400
74	TJQ1250-35-220	2922	2021	730	2150	977	1630	300
75	TJQ1000-50-250	2980	2081	710	2250	9987	1730	350
76	TJQ1500-35-250	3012	2111	730	2150	977	1630	300
77	TJQ1750-30-250	3012	2111	730	2150	977	1630	350
78	TJQ1500-40-280	3058	2159	710	2250	9987	1730	350
79	TJQ1750-40-315	3235	2261	804	2180	1026	1650	350
80	TJQ2000-31-315	3235	2261	804	2260	1026	1730	400

VI. Installation and Application Instruction

1. Preparation before Installation

- 1) Carefully check whether the electric pump is deformed or damaged in the processes of transport, storage and installation and whether the fastening pieces are loosened or fallen off before starting.
- 2) Check whether the cable is damaged or broken, if yes, replace the cable to avoid electric leakage.
- 3) Check whether the power source device is safe and reliable and that the rated voltage should accord with the nameplate.
- 4) Use a megohmmeter to check that the motor stator winding cold ground insulation resistance should not be less than 50 MΩ.
- 5) Check whether the oil quantity in the oil chamber is appropriate and that the oil level of the unit in the vertical position should be flush with the oil filling opening.
- 6) Make sure that clear cold water is filled continuously when the submersible pump with the cooling shield is started, and make sure that the outlet is smooth and the cooling water flows in from one side of the lower end and flows out from the upper end of the other side.

2. Notices

After the pump is operated normally, please observe whether the voltage of the power source, the working current, the flow rate of the pump and the vibration of the pump are normal at any time. If one of the following conditions occurs, please immediately stop the machine to check:

- 1) The working current exceeds the rated current.
- 2) In the rated pump lift, the flow rate is reduced by more than 20% or the water outlet is discontinuous.
- 3) The voltage of the water power source is over high or too low.
- 4) The pump has obvious vibration or noise.

3. Installation Notices

- 1) Electrical connection: the electrical connection should be carried out by professional electrician according to the circuit diagram, the insulation resistance should be detected at any time in the installation process, and the motor insulation resistance should not be less than 50 MΩ after the installation is over. The pump is hung and subjected to inching turning, so as to observe its rotation direction, and the pump is rated clockwise if a person looks downward from the motor direction. If the rotation direction is wrong, please replace any two connectors of the three phase power supply.
- 2) Prohibit using the cable of the pump as a rope for installation and hoisting, so as to avoid dangers.
- 3) The pump should be vertically submerged in water, should not be horizontally placed and fall into sludge, and the power source should be cut off when the pump is moved.

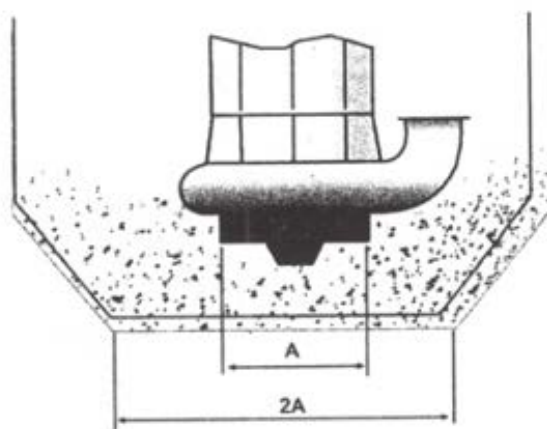
4. Storage Notices

- 1) The electric pump should be placed into clear water to rotate for several minutes after being used for many times, so as to prevent sediment from remaining in the pump and ensure the cleanness of the electric pump.
- 2) The electric pump should be taken out from water if not used for a long term, so as to reduce the occasion that the motor stator winding is affected with damp and prolong the service life of the electric pump.
- 3) Under normal working conditions, the electric pump should be maintained after working for a year, the worn wearing parts should be replaced, the tightening status should be checked, and the lubricating grease of the bearing and the insulating oil in the oil chamber should be replenished or replaced, so as to ensure good operation of the electric pump.

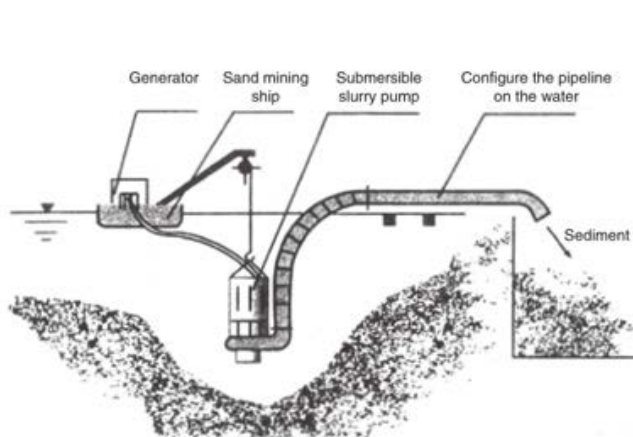
VII. Field installation and use of examples



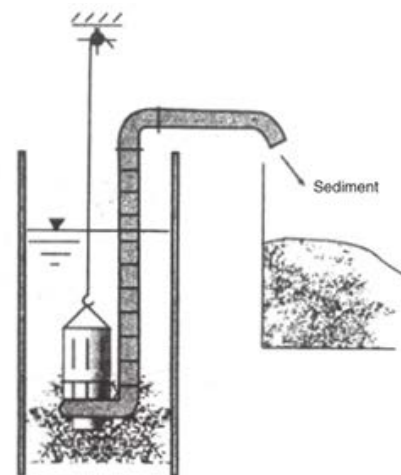
Mixing effect example in water



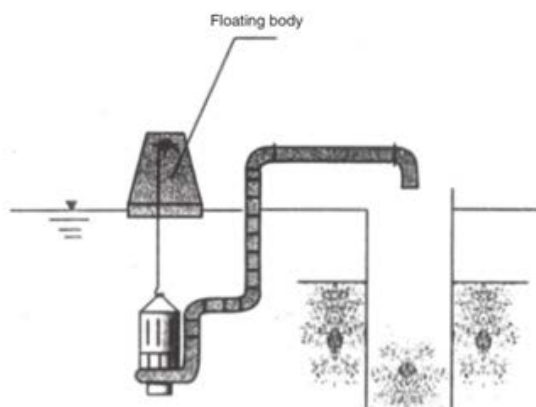
Mixing impeller with safety pump range



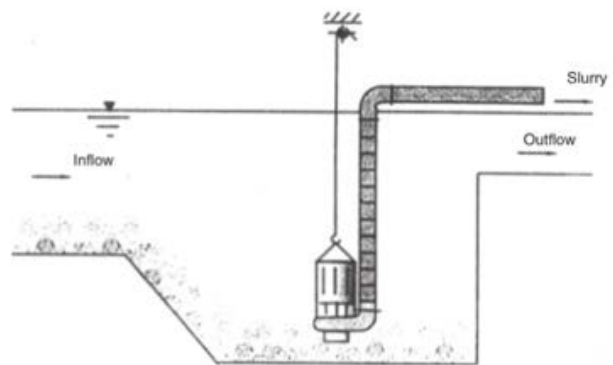
Sediment removal or channel dredging in rivers, lakes, ponds, diversion works



Sewage dredging in large diameter deep wells



River sand pile project



Precipitation of slurry in steelworks, power plants, mines, etc. and various excavation works and removal of mud and sand in water

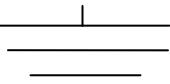
VIII. Causes of Faults and Countermeasures

NO.	Faults	Possible Causes	Solution
1	The Current is over high and exceeds the rated current	1.The pump is friction-resistant	1.Adjusting the clearance
		2.The pump lift of the device is too low and the pump is operated in large flow rate	2. Controlling the flow rate by the valve or replacing a pump with proper pump lift
		3. The bearing is damaged	3.Replacing the bearing

2	The motor does not rotate and has noise when started.	1. The voltage is too low	1. Adjusting the voltage to the rated value
		2. The motor is rotated with single phase	2. Checking the lines and connecting the broken lines
		3. The pump is blocked by foreign matters	3. Removing the foreign matters
		4. The impeller rubs with the inner pump cover or the water suction plate	4. Adjusting the clearance of the impeller to normal value
3	The pump does not output water or output a small quantity of water	1. The impeller rotates reversely	1. Changing any two phase power cords
		2. Water strainer is blocked	2. Removing the blockage
		3. The water inlet is exposed out of the water surface	3. Adjusting the pump to submerged the pump
		4. Water pipe leaks or are leaked	4. Replacing the water pipe or removing the sludge
		5. The actual pump lift is too high	Selecting a pump with proper pump lift
4	The insulation resistance is reduced to below 0.5 MΩ	1. Cable connector is damaged	1. Treating the cable connector again
		2. The stator winding insulation is damaged	2. Replacing the stator winding
		3. Water enters the cavity of the motor	3. Removing the water content and drying the winding
		4. The cable is damaged	4. Repairing the cable
5	The pump has unstable operation and serious vibration	1. The impeller is worn seriously	1. Replacing the impeller
		2. Impurities block the rotating parts	2. Clearing the impurities
		3. The bearing is damaged.	3. Replacing the bearing

IX. Electrical wiring diagram

The cable for the pump is 4 cores, 3 pieces power line, and one is for earth wire; The pump which with protective device also with control cable; There is different signboard for difference core wire with difference function.

Type	Symbol	Core name	Core function	Cable length	The cable core wire to the grounding wire insulation resistance
Power cable	U、V、W	Three phase power core	Control of three-phase power core	10 m	∞
		For grounding wire	Connected to ground		Together with hull
Control cable	WC	Thermal protection wire	To the thermal protector	10 m	0
	XL	Leakage protection wire	To the float switch		∞

X. Maintenance and repair

1. If the pump needs no longer to use, please take it out of the water, make its surface clean, remove debris of filter screen, paint anti-rust oil, and then put it on the dry ventilated place.
2. After continuously or totally operating more than 2500 hours, the fasteners and seal of pump should be checked, the turbine oil and mechanical seal of oil chamber should be changed.
3. After continuously operating for one year, these wearing parts should be exchanged: mechanical seal, oil seal, impeller, stirring impeller, inner pump cover, water suction plate. etc.
4. After being re-disassembled, the inner chamber of motor and oil chamber must be made pressure test of 0.2Mpa, no leakage happens within 5 minutes.

XI. Complete sets of products & Wearing parts accessories

Item	Name	Quantity (piece)	Remark
Completed products	Submersible slurry pump	1	With 10 meter length cable (Rated length is 10 meter, if need longer, please inform before order)
	Control box	1	
	Hose connecter	1	With rubber mat and connecting bolts
Wearing parts	Pump case		It can be purchased separately according to customers' requirements
	Impeller		
	agitator		
	Inner pump cover		
	Suck-water plate		
	Mechanical seal		
	Hose connecter		
	Oil seal		

As we are constantly endeavouring to improve the performance of our pumps.
The company reserves the right to make alteration from time to time and equipment
differ from that detailed in this specification.



HEBEI TOBEE PUMP CO.,LIMITED

Add: Hi-tech Development Zone, Shijiazhuang City, Hebei Province, China.

Email: Sales@tobee pump.com, Skype:Tobee.pump, Mob:+86-18032034573, Web:www.tobee pump.com