



APEC-SUN

Axial-Flow Submersible Electric Pump

Mixed-Flow Submersible Electric Pump



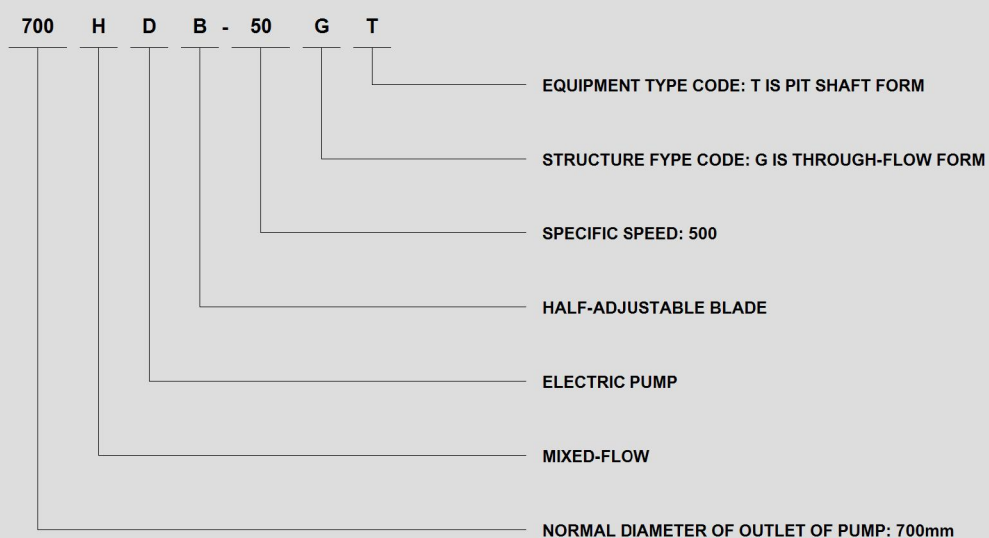
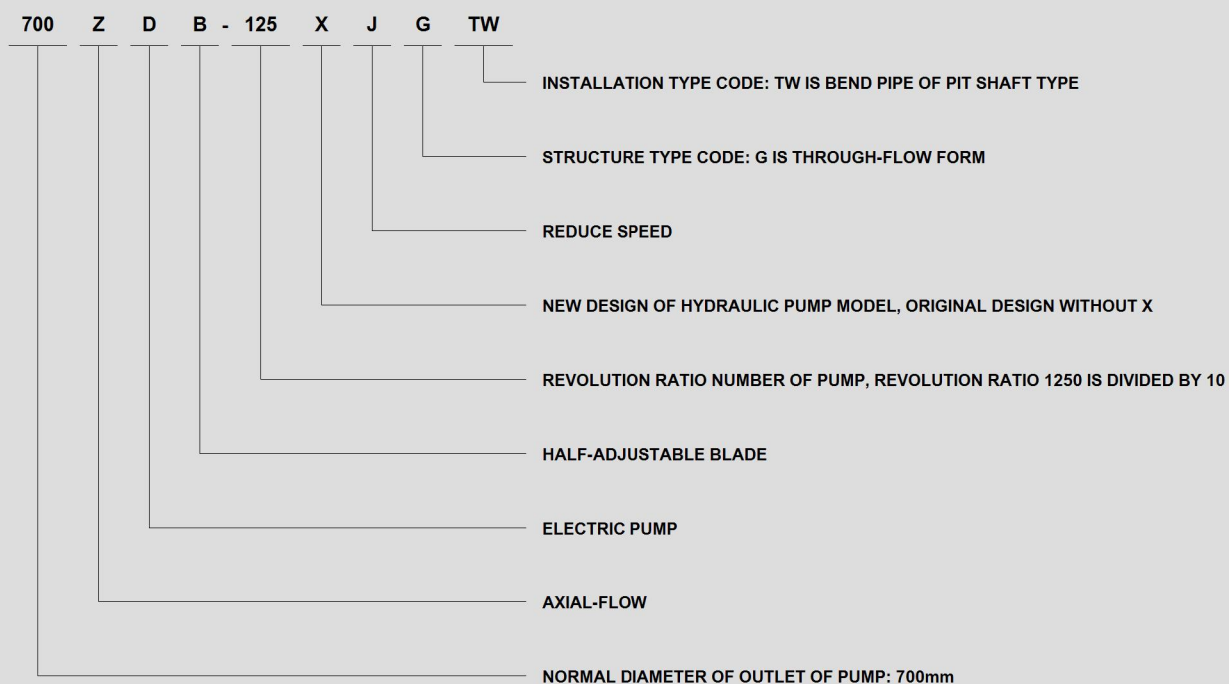
GENERAL:

The ADB model axial-flow submersible electric pump and HDB model mixed-flow submersible electric pump are the upgraded and updated product of electrical motor set of conventional axial-flow pump and mixed-flow pump, the electric motor of hydraulic pump is an asynchronous motor of dry totally-enclosed submersible which can be operated in water for long term with the advantages the conventional motor series can't match.

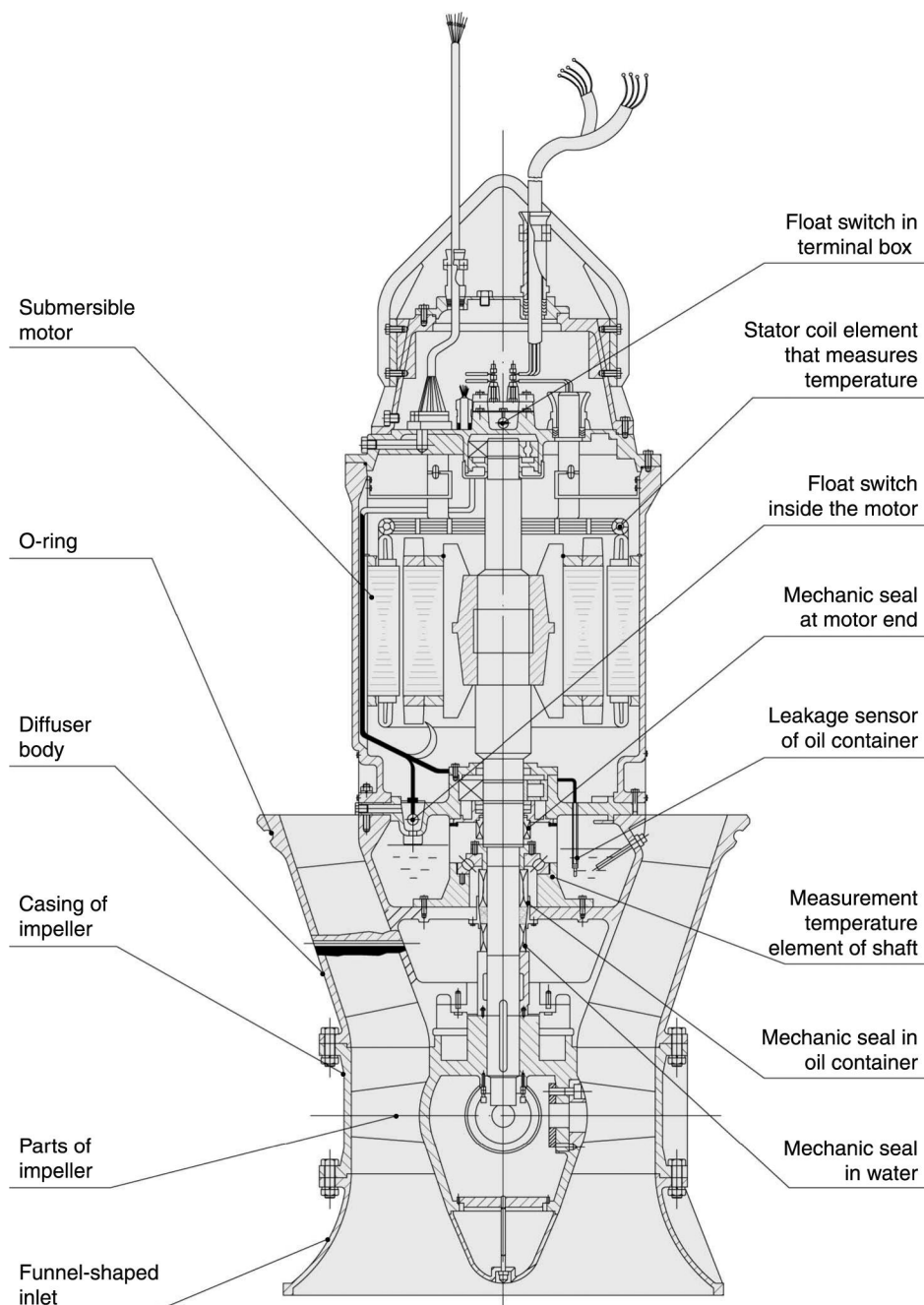
- Because the electric motor is combined with the hydraulic pump, the assemble procedure is no longer necessary for lining up axis of electric motor, transmission mechanism and hydraulic pump on site, which costs labor and time. Now the installation on-the-spot becomes easy and fast.
- Because of its operation submerged into water, the electric pump can greatly simplify geotechnical engineering and building structure engineering of pump station, reduce erection space and save 30%-40% construction cost.
- Low noise, no high temperature in pump station, improving the operational environment and underground pump station can be built according to the requirement, as a result, the environmental scene on the ground can be maintained.
- Submersible electric pump has double and triple mechanical seal and F grade insulation (155°C thermostable) with protection grade IP68 (IEC). The pump has hydraulic model of nationwide unified design, which has high reliability and has the same performance of the conventional hydraulic pump so that the customer can select the model easily.
- Convenient operation, and easy to realize remote control and automatic control.
- Adopting this type of submersible electric pump is the most through approach for building pump station along the river and lake area where the water level fluctuate greatly, as well as for resolving the problem of flood prevention of pump; moreover, the major shaft and intermediate shaft are not required any more, and the machine set can operate more steady and liable.

The two models ADB and HDB submersible electric pump can be used in irrigation and drainage of agricultural field, and can also be used in supply and sewerage water of factory, mine, dock urban construction, water supply works and power station. The Axial-flow submersible electric pump applies to the condition of low lift head, high flow-rate; while the mixed-flow submersible electric pump is very efficient with high performance of cavitation erosion. It is applicable for the occasion where the water level changes greatly and the requirement of the lift head is high. The conveyance medium is untreated water or lightly polluted water. The highest temperature of the conveyed medium is 50°C.

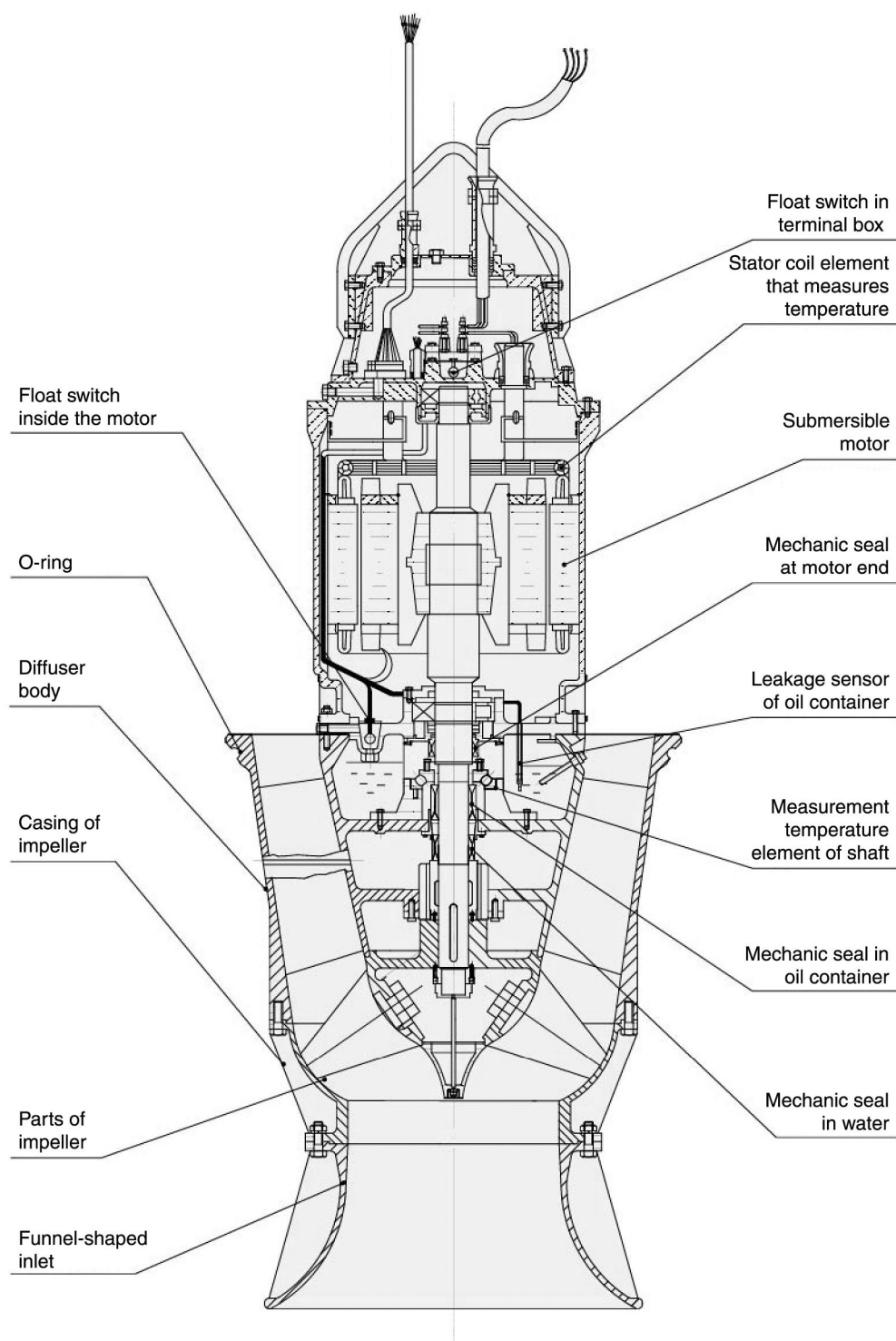
TYPE DESCRIPTION:



STRUCTURAL DIAGRAM (ADB):



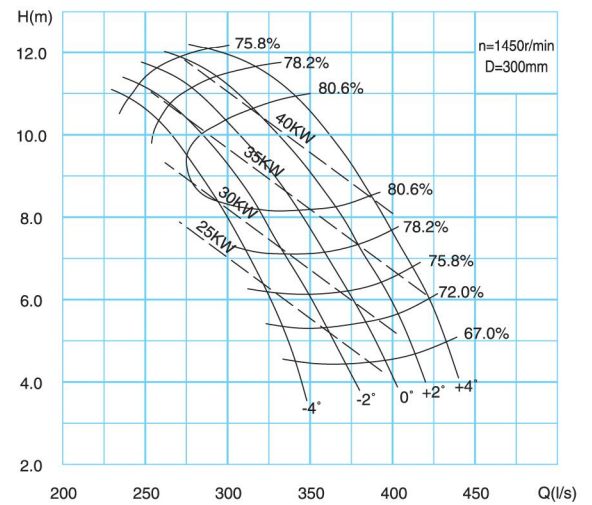
STRUCTURAL DIAGRAM (HDB):



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

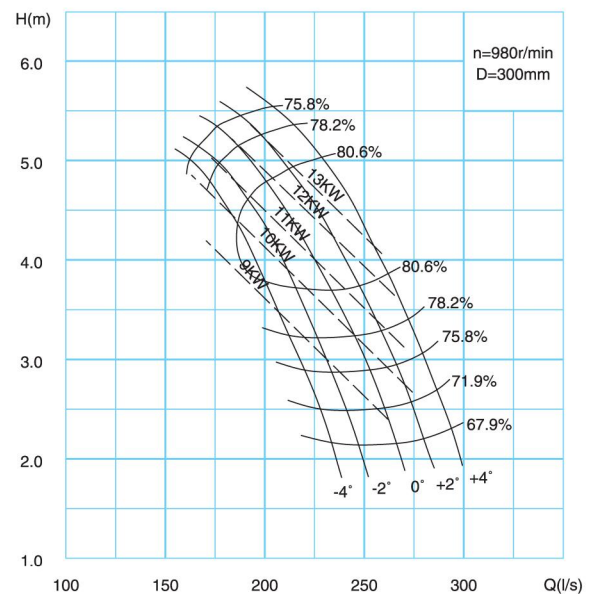
350ADB-50

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	914	254	10.50	1450	33.27	37	78.6	300
	1033	287	8.82		30.79		80.6	
	1137	316	6.82		27.07		78.0	
-2°	972	270	10.60	1450	35.50	40	79.1	300
	1101	306	8.97		33.39		80.6	
	1213	337	6.94		29.36		78.1	
0°	1037	288	10.80	1450	38.30	45	79.6	300
	1177	327	9.08		36.12		80.6	
	1296	360	7.07		31.87		78.3	
+2°	1112	309	10.90	1450	41.30	45	80.0	300
	1253	348	9.20		38.94		80.6	
	1372	381	7.20		34.05		78.0	
+4°	1310	364	9.89	1450	44.06	45	80.1	300
	1346	374	9.35		42.54		80.6	
	1454	404	7.35		37.52		77.6	



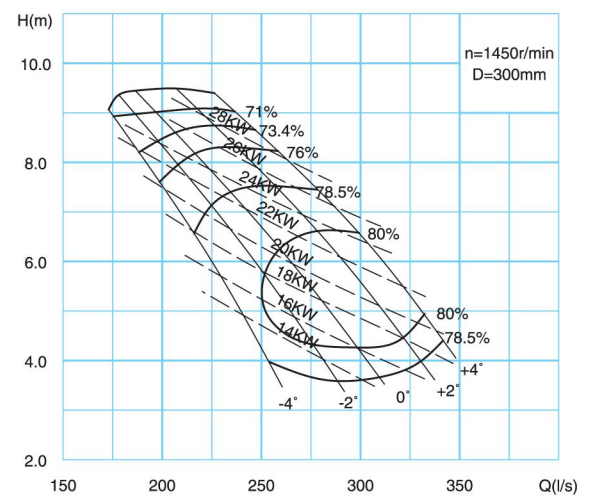
350ADB-50J

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	608	169	4.88	980	10.38	15	77.9	300
	673	187	4.34		9.87		80.6	
	706	196	3.97		9.46		80.6	
-2°	648	180	4.92	980	11.04	15	78.7	300
	716	199	4.39		10.63		80.6	
	752	209	4.02		10.22		80.6	
0°	698	194	4.97	980	11.90	15	79.4	300
	767	213	4.44		11.50		80.6	
	803	223	4.08		11.07		80.6	
+2°	749	208	5.02	980	12.81	15	80.0	300
	817	227	4.50		12.43		80.6	
	853	237	4.15		11.96		80.6	
+4°	814	226	5.10	980	14.09	15	80.2	300
	878	244	4.58		13.59		80.6	
	911	253	4.23		13.02		80.6	



350ADB-70

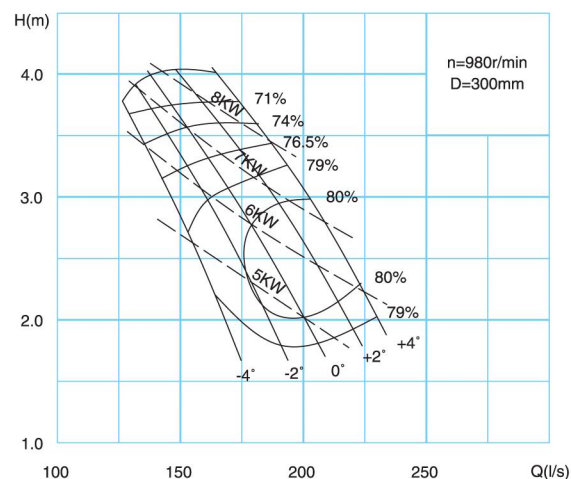
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	716	199	7.56	1450	20.20	22	76.3	300
	824	229	5.74		16.80		79.5	
	918	255	3.92		13.10		77.9	
-2°	770	214	7.65	1450	21.60	30	77.1	300
	896	249	5.88		18.70		80.1	
	1008	280	4.10		14.70		79.7	
0°	817	227	7.73	1450	23.30	30	77.0	300
	954	265	5.99		20.30		80.1	
	1076	299	4.26		16.00		80.1	
+2°	896	249	7.87	1450	26.00	30	76.9	300
	1037	288	6.17		22.70		80.1	
	1159	322	4.46		18.30		80.0	
+4°	958	266	7.99	1450	28.40	37	75.7	300
	1098	305	6.31		24.50		80.1	
	1213	337	4.60		20.00		79.3	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

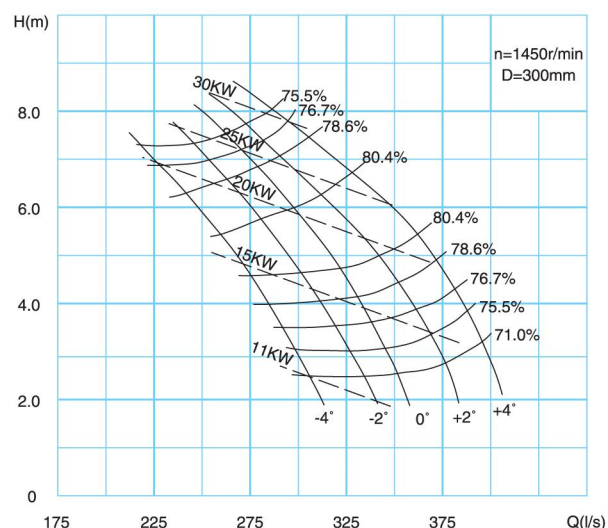
350ADB-70J

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	490	136	3.41	980	5.94	7.5	76.5	300
	558	155	2.63		5.03		79.4	
	623	173	1.77		3.86		77.8	
-2°	526	146	3.47	980	6.41	7.5	77.5	300
	605	168	2.73		5.60		80.1	
	680	189	1.89		4.38		79.8	
0°	554	154	3.53	980	6.92	11	77.0	300
	641	178	2.80		6.10		80.1	
	724	201	2.00		4.92		80.1	
+2°	601	167	3.62	980	7.74	11	76.5	300
	688	191	2.92		6.82		80.1	
	774	215	2.13		5.61		80.1	
+4°	637	177	3.70	980	8.60	11	74.9	300
	727	202	3.01		7.44		80.1	
	810	225	2.23		6.14		80.1	



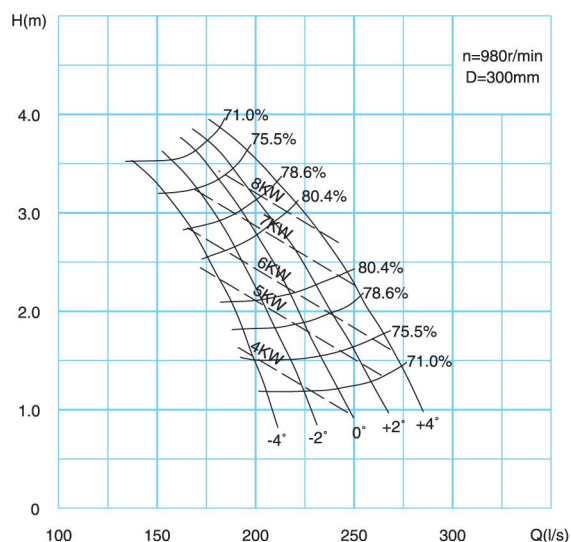
350ADB-85

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	828	230	6.98	1450	20.80	30	75.8	300
	968	269	5.01		16.40		80.4	
	1094	304	2.64		11.20		70.3	
-2°	900	250	7.15	1450	23.30	30	75.3	300
	1048	291	5.22		18.50		80.4	
	1177	327	2.89		13.00		71.5	
0°	965	268	7.30	1450	25.90	37	74.1	300
	1116	310	5.41		20.50		80.4	
	1246	346	3.10		14.30		73.4	
+2°	1012	281	7.41	1450	27.20	37	75.1	300
	1184	329	5.61		22.50		80.4	
	1332	370	3.39		16.50		74.4	
+4°	1073	298	7.59	1450	29.20	37	75.9	300
	1274	354	5.84		25.20		80.4	
	1411	392	3.67		18.90		74.8	



350ADB-85J

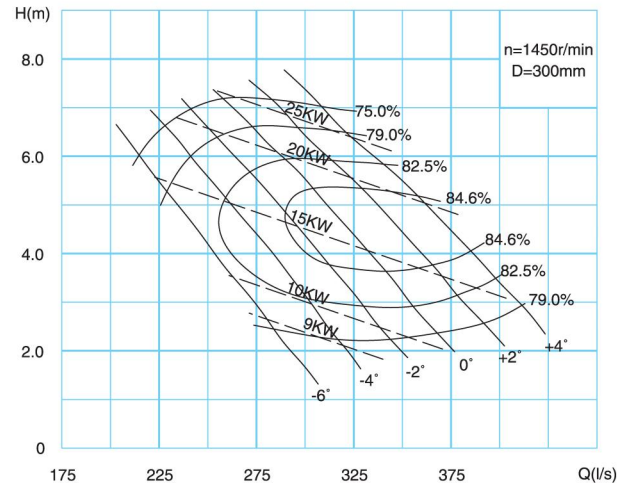
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	583	162	3.00	980	6.20	7.5	77.5	300
	644	179	2.41		5.30		80.4	
	713	198	1.55		4.00		75.2	
-2°	634	176	3.09	980	6.90	11	77.3	300
	695	193	2.51		5.90		80.4	
	770	214	1.66		4.50		76.9	
0°	677	188	3.17	980	7.50	11	76.5	300
	742	206	2.60		6.50		80.4	
	817	227	1.77		5.10		77.2	
+2°	709	197	3.23	980	8.10	11	77.3	300
	785	218	2.70		7.20		80.4	
	868	241	1.90		5.80		77.8	
+4°	756	210	3.33	980	8.80	11	78.1	300
	835	232	2.82		8.00		80.4	
	922	256	2.04		6.60		78.0	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

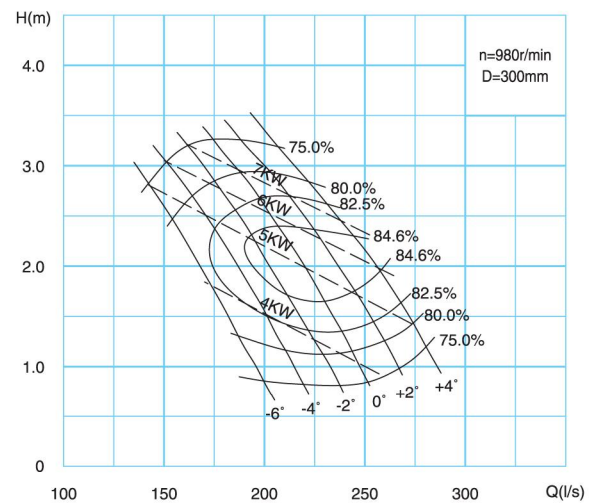
350ADB-100

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	788	219	5.79	1450	15.70	18.5	79.3	300
	936	260	3.77		11.70		82.2	
	1040	289	2.17		8.40		73.3	
-4°	871	242	5.96	1450	17.60	22	80.4	300
	1022	284	3.98		13.20		84.1	
	1127	313	2.42		9.50		78.2	
-2°	940	261	6.12	1450	19.40	30	80.6	300
	1094	304	4.18		14.70		84.6	
	1206	335	2.65		11.00		79.2	
0°	1008	280	6.30	1450	21.50	30	80.5	300
	1170	325	4.39		16.50		84.6	
	1282	356	2.89		12.60		80.1	
+2°	1076	299	6.47	1450	23.80	30	79.9	300
	1246	346	4.62		18.50		84.6	
	1361	378	3.15		14.50		80.4	
+4°	1141	317	6.65	1450	26.80	37	77.1	300
	1318	366	4.85		20.60		84.6	
	1440	400	3.40		16.50		81.0	



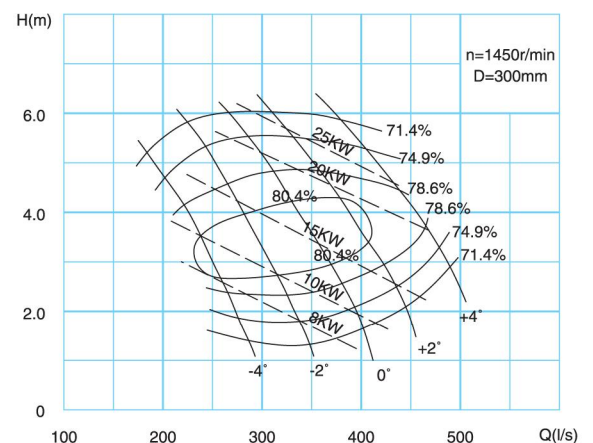
350ADB-100J

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	497	138	2.95	980	5.20	7.5	76.7	300
	612	170	1.93		3.90		82.6	
	688	191	1.16		2.80		77.0	
-4°	547	152	3.02	980	5.80	7.5	77.5	300
	670	186	2.03		4.40		84.3	
	745	207	1.28		3.30		79.9	
-2°	598	166	3.10	980	6.50	7.5	77.6	300
	716	199	2.12		4.90		84.6	
	796	221	1.39		3.70		81.2	
0°	641	178	3.17	980	7.20	11	76.7	300
	767	213	2.22		5.50		84.6	
	846	235	1.50		4.20		82.9	
+2°	680	189	3.24	980	8.10	11	74.5	300
	814	226	2.33		6.10		84.6	
	896	249	1.63		4.80		83.3	
+4°	724	201	3.33	980	9.30	11	70.3	300
	860	239	2.43		6.80		83.4	
	950	264	1.76		5.50		83.1	



350ADB-125

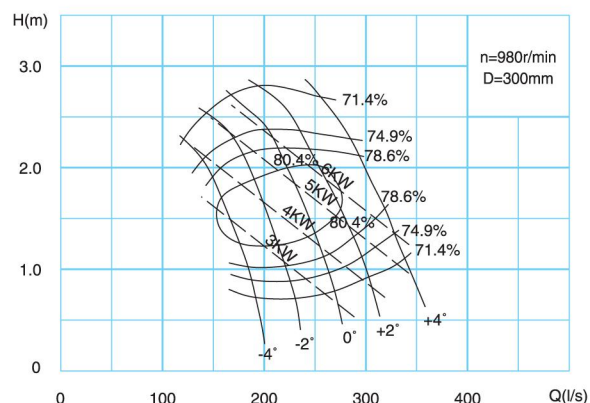
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	745	207	4.56	1450	12.10	15	76.7	300
	914	254	2.84		8.80		80.4	
	1004	279	1.72		6.40		73.6	
-2°	925	257	4.86	1450	15.70	22	77.8	300
	1091	303	3.19		11.80		80.4	
	1188	330	2.12		8.80		77.8	
0°	1080	300	5.17	1450	19.90	30	76.5	300
	1260	350	3.60		15.40		80.4	
	1368	380	2.59		12.30		78.7	
+2°	1202	334	5.46	1450	23.90	30	75.0	300
	1400	389	3.97		18.80		80.4	
	1516	421	3.01		15.70		79.0	
+4°	1364	379	5.88	1450	31.00	37	70.4	300
	1573	437	4.49		24.40		78.8	
	1692	470	3.58		21.10		78.1	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

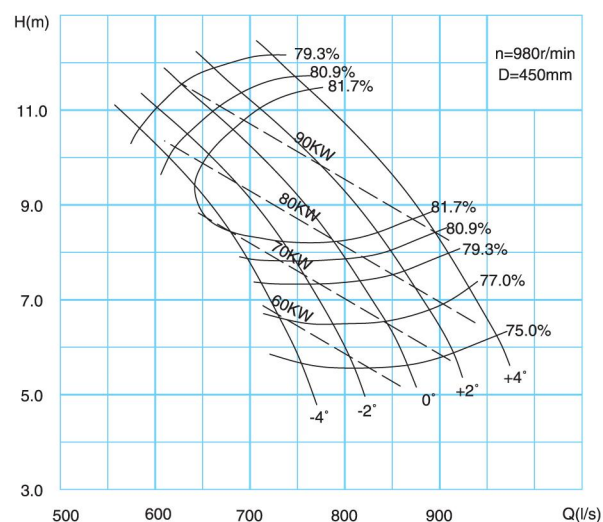
350ADB-125J

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	504	140	2.07	980	3.70	7.5	76.6	300
	612	170	1.35		2.80		80.4	
	695	193	0.66		1.70		71.7	
-2°	619	172	2.26	980	4.90	7.5	77.4	300
	724	201	1.56		3.80		80.4	
	817	227	0.84		2.50		75.4	
0°	713	198	2.45	980	6.30	7.5	75.7	300
	828	230	1.80		3.00		80.4	
	947	263	1.06		3.60		76.9	
+2°	788	219	2.61	980	7.60	11	74.0	300
	911	253	2.01		6.20		80.1	
	1048	291	1.25		4.60		77.4	
+4°	875	243	2.84	980	10.00	11	67.6	300
	1026	285	1.93		6.80		79.6	
	1166	324	1.50		6.30		76.1	



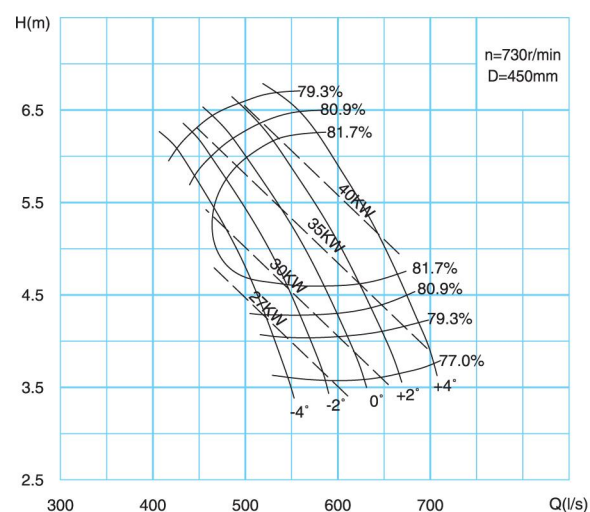
500ADB-50

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1969	547	11.30	980	78.20	90	77.5	450
	2401	667	8.79		70.40		81.7	
	2689	747	5.99		58.60		74.9	
-2°	2099	583	11.40	980	83.50	90	78.0	450
	2556	710	8.90		75.80		81.7	
	2869	797	6.13		63.80		75.1	
0°	2250	625	11.60	980	90.00	110	78.9	450
	2728	758	9.02		82.00		81.7	
	3064	851	6.28		69.40		75.5	
+2°	3419	672	11.70	980	97.10	110	79.4	450
	2902	806	9.15		88.50		81.7	
	3240	900	6.44		76.10		74.7	
+4°	2635	732	12.00	980	107.50	110	80.1	450
	3107	863	9.32		96.50		81.7	
	3420	950	6.60		82.60		74.4	



500ADB-50J

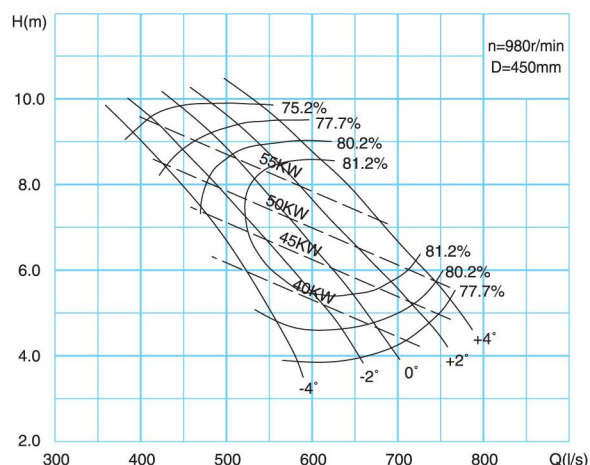
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1559	433	5.98	730	31.80	37	79.8	450
	1778	494	4.93		29.20		81.7	
	1948	541	3.75		25.20		78.8	
-2°	1656	460	6.04	730	33.90	37	80.2	450
	1890	525	5.01		31.60		81.7	
	2077	577	3.85		27.60		78.8	
0°	1771	492	6.12	730	36.50	45	80.9	450
	2012	559	5.10		34.20		81.7	
	2210	614	3.97		30.20		79.1	
+2°	1897	527	6.21	730	39.50	45	81.2	450
	2135	593	5.20		37.00		81.7	
	2336	649	4.08		32.90		78.9	
+4°	2059	572	6.34	730	43.70	45	81.5	450
	2286	635	5.33		40.60		81.7	
	2473	687	4.21		36.00		78.7	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

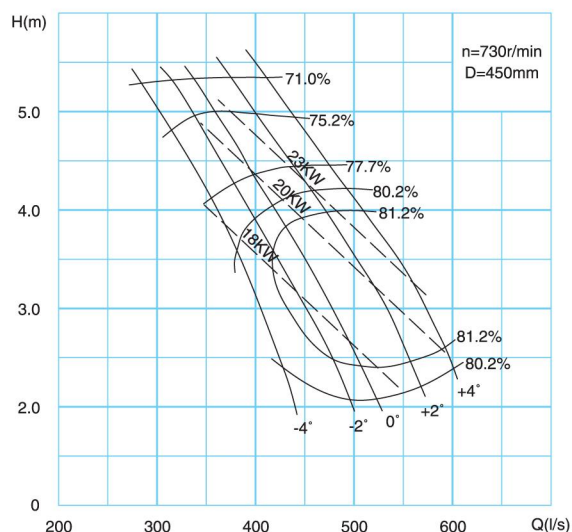
500ADB-70

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1370	380	9.44	980	50.20	55	70.0	450
	1760	489	7.00		42.20		79.6	
	2050	571	4.35		31.00		78.5	
-2°	1720	479	8.20	980	51.70	55	74.5	450
	2010	559	6.43		44.00		80.0	
	2250	625	4.90		40.80		73.5	
0°	2099	583	7.00	980	50.10	55	79.9	450
	2160	600	6.30		45.60		81.2	
	2510	695	3.90		34.50		77.0	
+2°	2340	650	6.60	980	51.60	75	81.5	450
	2560	711	5.60		47.60		82.0	
	2660	741	4.67		41.60		81.5	
+4°	2600	722	6.20	980	53.70	75	81.7	450
	2700	750	5.60		49.60		83.0	
	2858	794	4.40		43.40		79.0	



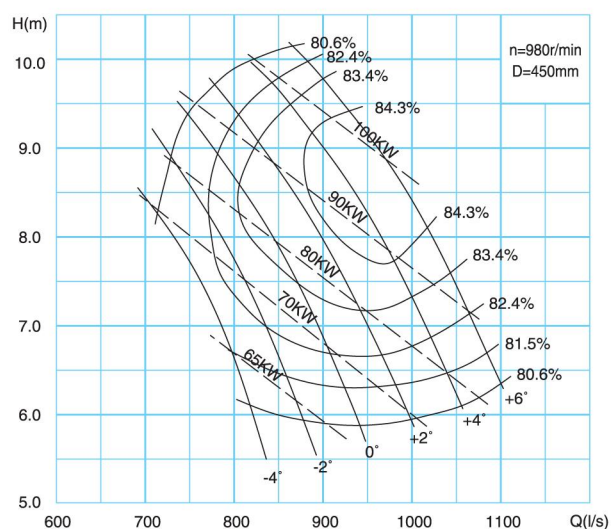
500ADB-70J

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1020	282	5.32	730	21.60	30	68.2	450
	1310	364	3.95		18.00		78.4	
	1530	426	2.45		13.30		77.2	
-2°	1170	326	5.16	730	22.60	30	73.0	450
	1500	416	3.62		18.70		78.8	
	1675	465	2.76		17.50		71.9	
0°	1480	410	4.16	730	21.50	30	77.8	450
	1610	447	3.56		19.50		80.1	
	1870	520	2.16		14.60		75.6	
+2°	1710	474	3.95	730	22.80	30	80.4	450
	1910	530	3.10		19.90		80.9	
	1990	552	2.63		17.70		80.4	
+4°	1640	454	4.44	730	26.20	30	75.4	450
	1860	544	3.52		22.90		82.0	
	2100	582	2.82		20.40		81.5	



500ADB-70X

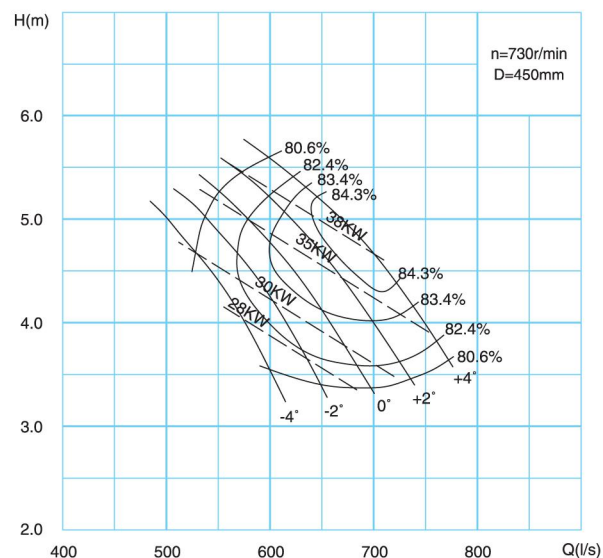
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	2243	623	8.94	980	69.90	90	78.1	450
	2711	753	7.67		69.10		81.9	
	3013	837	5.47		58.40		76.8	
-2°	2574	715	9.11	980	80.50	90	79.4	450
	3190	794	7.86		73.90		82.8	
	2718	886	5.72		62.90		79.0	
0°	3020	755	9.29	980	85.80	110	80.2	450
	3373	839	8.08		79.50		83.6	
	2869	937	5.99		68.60		80.2	
+2°	3172	797	9.48	980	91.10	132	81.3	450
	3546	881	8.29		84.90		84.3	
	3042	985	6.26		74.70		9.0	
+4°	3355	845	9.71	980	98.30	132	81.8	450
	3726	932	8.56		92.80		84.3	
	3193	1035	6.57		82.00		81.3	
+6°	3193	887	9.93	980	105.20	132	82.1	450
	3510	975	8.81		99.90		84.3	
	3906	1085	6.68		87.30		81.4	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

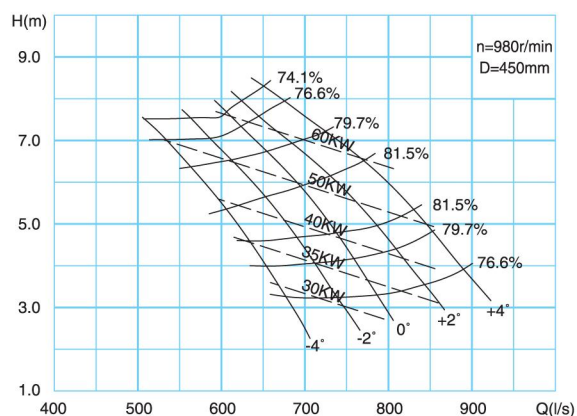
500ADB-70XJ

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1843	512	4.87	730	30.90	37	79.1	450
	1987	552	4.38		29.00		81.7	
	2174	604	3.46		25.50		80.3	
-2°	1955	543	4.96	730	32.90	37	80.3	450
	2102	584	4.48		31.00		82.6	
	2300	639	3.59		27.60		81.5	
0°	2063	573	5.06	730	35.10	45	81.0	450
	2218	616	4.59		33.20		83.6	
	2430	675	3.73		29.90		82.6	
+2°	2174	604	5.17	730	37.30	45	82.2	450
	2333	648	4.70		35.40		84.3	
	2556	710	3.85		32.30		83.1	
+4°	2182	606	5.54	730	41.30	45	79.8	450
	2466	685	4.84		38.60		84.3	
	2696	749	4.00		35.30		83.2	



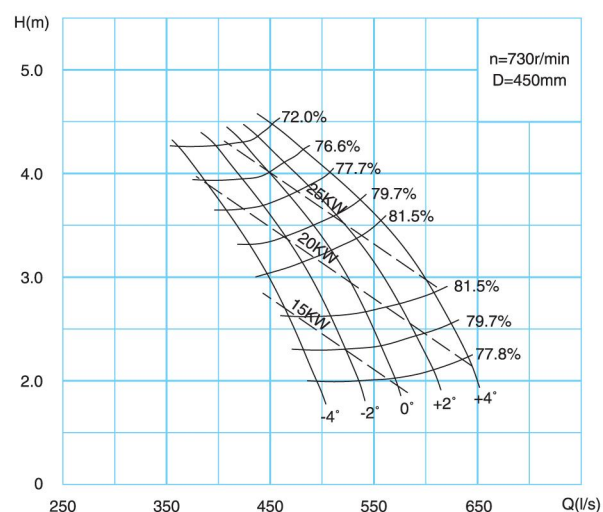
500ADB-85

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1937	538	6.93	980	51.10	55	71.6	450
	2178	605	5.38		39.20		81.5	
	2466	685	3.01		27.80		72.6	
-2°	2102	584	7.10	980	52.40	65	77.5	450
	2358	655	5.59		46.30		81.5	
	26 57	738	3.26		31.60		74.7	
0°	2257	627	7.27	980	58.00	65	77.0	450
	2520	700	5.78		48.70		81.5	
	2812	781	3.47		34.50		77.1	
+2°	2362	656	7.39	980	61.30	80	77.5	450
	2664	740	5.97		53.10		81.5	
	3006	835	3.75		39.70		77.3	
+4°	2520	700	7.58	980	66.20	80	78.6	450
	2837	788	6.21		58.90		81.5	
	3186	885	4.03		45.20		77.3	



500ADB-85J

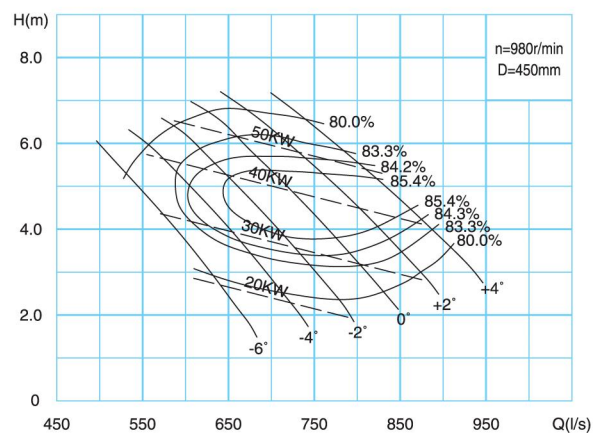
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1346	374	4.21	730	20.70	30	74.7	450
	1613	448	3.03		16.30		81.5	
	1775	493	2.08		12.90		78.1	
-2°	1465	407	4.30	730	23.20	30	73.8	450
	1746	485	3.15		18.40		81.5	
	1912	531	2.22		14.70		78.8	
0°	1559	433	4.38	730	25.60	30	72.7	450
	1681	517	3.27		20.30		81.5	
	2030	564	2.35		16.40		79.4	
+2°	1627	452	4.44	730	27.10	37	72.6	450
	1969	547	3.38		22.20		81.5	
	2160	600	2.51		18.50		79.8	
+4°	1721	478	4.53	730	29.20	37	72.8	450
	2092	581	3.52		24.60		81.5	
	2290	636	2.67		20.80		80.0	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

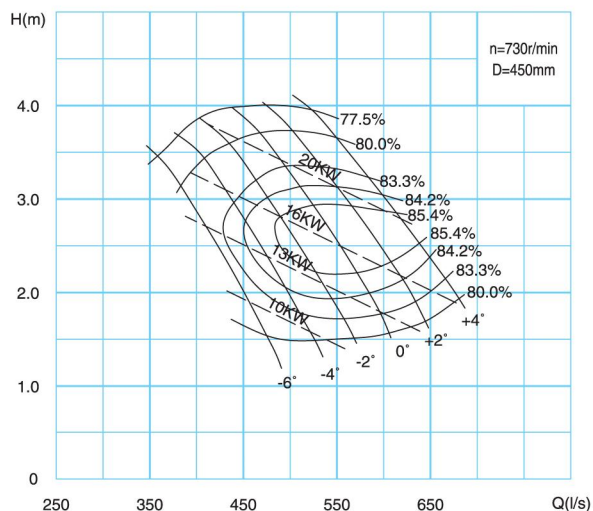
500ADB-100

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	1886	524	5.46	980	34.70	55	80.8	450
	2149	597	2.68		26.80		83.2	
	2390	664	2.07		17.20		78.2	
-4°	2070	575	5.63	980	39.00	55	81.5	450
	2344	651	4.02		30.20		85.1	
	2596	721	2.32		20.20		81.3	
-2°	2236	621	5.80	980	43.10	55	81.9	450
	2513	698	4.22		33.80		85.4	
	2776	771	2.55		23.40		82.5	
0°	2405	668	5.99	980	47.90	55	81.9	450
	2686	746	4.43		37.90		85.4	
	2952	820	2.79		26.70		83.9	
+2°	2556	710	6.17	980	53.10	65	80.9	450
	2858	794	4.66		42.50		85.4	
	3136	871	3.06		31.00		84.2	
+4°	2707	752	6.36	980	59.90	65	78.3	450
	3020	839	4.89		47.20		85.2	
	3316	921	3.34		35.80		84.2	



500ADB-100J

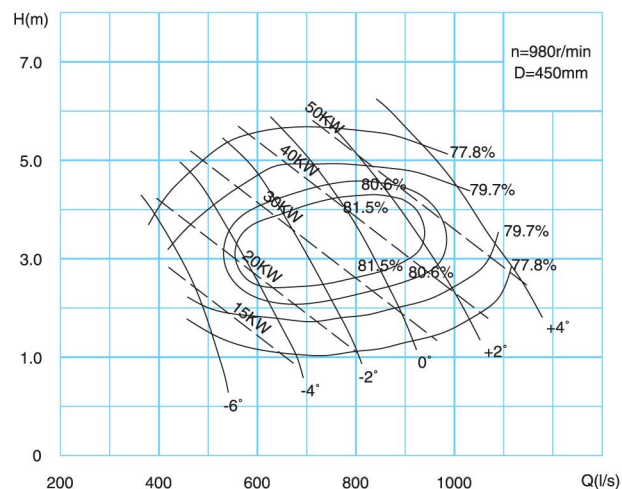
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	1361	378	3.22	730	14.80	22	80.8	450
	1584	440	2.20		11.40		83.2	
	1717	477	1.50		9.00		78.2	
-4°	1498	416	3.33	730	16.70	22	81.5	450
	1724	479	2.33		12.90		85.1	
	1865	518	1.64		10.20		81.3	
-2°	1613	448	3.43	730	18.40	22	81.9	450
	1847	513	2.45		14.40		85.4	
	1994	554	1.78		11.30		82.5	
0°	1732	481	3.54	730	20.40	30	81.9	450
	1973	548	2.59		16.30		85.4	
	2120	589	1.92		13.20		83.9	
+2°	1836	510	3.64	730	22.50	30	80.9	450
	2092	581	2.72		18.10		85.4	
	2250	625	2.07		15.10		84.2	
+4°	1948	541	3.76	730	25.50	30	78.3	450
	2207	613	2.86		20.20		85.2	
	2376	660	2.23		17.10		84.2	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

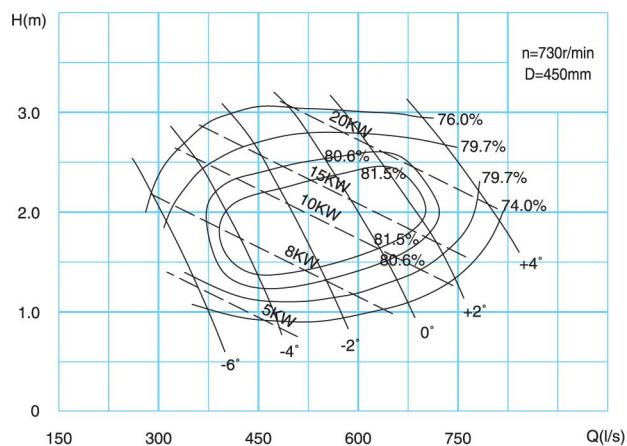
500ADB-125

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	³ (m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	1447	402	3.74	980	18.90	37	77.8	450
	1681	467	2.56		15.10		77.8	
	2599	522	1.01		6.90		74.6	
-4°	1850	514	4.05	980	25.30	37	80.5	450
	2088	580	2.91		20.30		81.5	
	3128	660	1.41		12.20		75.1	
-2°	2239	622	4.42	980	33.40	55	80.7	450
	2473	687	3.32		27.40		81.5	
	3654	765	1.89		17.70		79.9	
0°	2599	722	4.82	980	42.60	55	80.0	450
	2855	793	3.80		36.20		81.5	
	4165	867	2.42		25.30		81.4	
+2°	2873	798	5.17	980	51.40	65	78.6	450
	3150	875	4.21		44.30		81.5	
	4558	966	2.88		33.30		82.0	
+4°	3236	899	5.69	980	67.80	80	73.9	450
	3528	980	4.80		58.30		79.2	
	5036	1069	3.50		45.10		81.3	



500ADB-125J

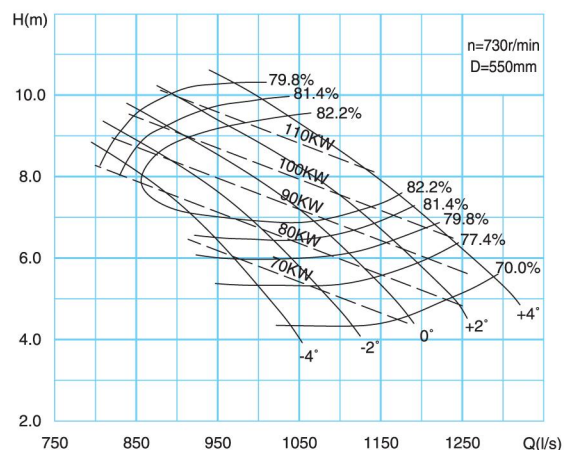
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	³ (m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	1012	281	2.30	730	8.40	11	75.8	450
	1231	342	1.50		6.40		79.0	
	1379	383	0.88		4.60		71.9	
-4°	1318	366	2.44	730	11.00	15	79.3	450
	1541	428	1.67		7.90		81.5	
	1688	469	1.07		6.50		75.6	
-2°	1620	450	2.62	730	14.50	22	79.9	450
	1840	511	1.87		11.50		81.5	
	1994	554	1.29		8.80		79.6	
0°	1886	524	2.80	730	18.20	22	79.0	450
	2128	591	2.10		14.90		81.5	
	2304	640	1.55		12.10		80.4	
+2°	2099	583	2.97	730	21.90	30	77.6	450
	2362	656	2.30		18.10		81.5	
	2552	709	1.79		15.40		80.6	
+4°	2383	662	3.22	730	28.50	37	73.3	450
	2660	739	2.60		23.60		79.7	
	2851	792	2.11		20.50		79.7	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

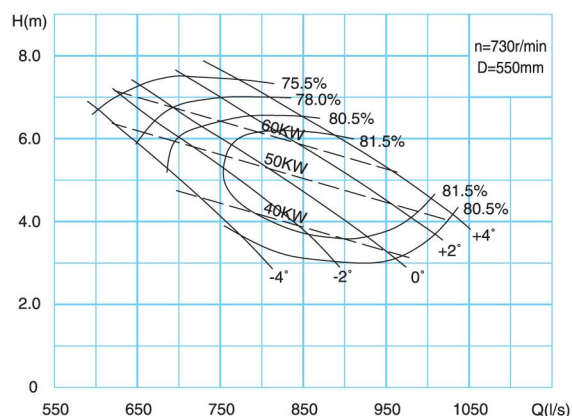
600ADB-50

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	2812	781	9.02	730	86.50	95	79.8	550
	3222	895	7.47		79.70		82.2	
	3668	1019	4.86		64.90		74.8	
-2°	3981	828	9.15	730	92.50	110	80.3	550
	3434	954	7.56		86.00		82.2	
	3917	1088	4.98		70.90		75.0	
0°	3179	883	9.30	730	99.60	110	80.8	550
	3884	1079	7.66		98.60		82.2	
	4180	1161	5.12		77.30		75.4	
+2°	3391	942	9.48	730	108.00	132	81.1	550
	3902	1084	7.78		100.60		82.2	
	4421	1228	5.25		84.60		74.7	
+4°	3665	1018	9.73	730	119.50	132	81.2	550
	4180	1161	7.92		109.70		82.2	
	4666	1296	5.40		92.20		74.4	



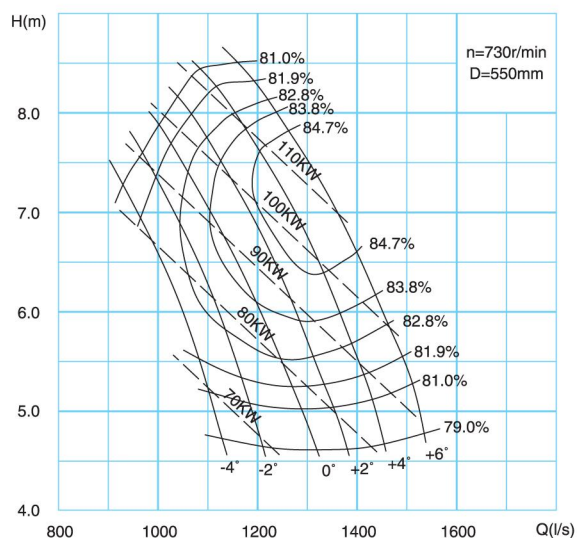
600ADB-70

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	2232	620	6.40	730	50.00	65	77.8	550
	2621	728	4.54		40.00		80.9	
	2797	777	3.62		34.50		79.9	
-2°	2408	669	6.46	730	53.80	65	78.8	550
	2869	797	4.65		44.60		81.5	
	3071	853	3.75		38.50		81.5	
0°	2556	710	6.52	730	57.60	65	78.8	550
	3056	849	4.74		48.40		81.5	
	3283	912	3.86		42.30		81.5	
+2°	2808	780	6.63	730	64.30	75	78.9	550
	3323	923	4.88		54.20		81.5	
	3553	987	4.00		47.50		81.5	
+4°	3002	834	6.71	730	70.40	80	77.9	550
	3510	975	4.98		58.40		81.5	
	3726	1035	4.10		51.00		81.5	



600ADB-70X

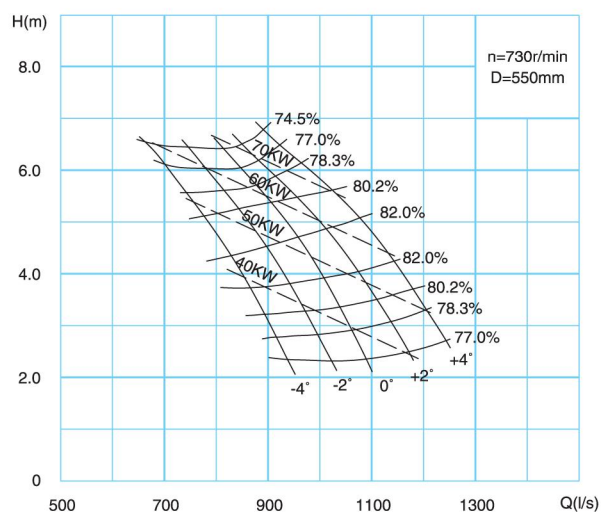
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	3920	914	7.42	730	84.80	95	78.5	550
	3715	1032	6.23		76.60		82.3	
	4064	1129	4.72		66.70		78.4	
-2°	3492	970	7.59	730	90.60	110	79.7	550
	3924	1090	6.40		83.20		82.2	
	4298	1194	4.92		72.00		80.0	
0°	3686	1024	7.71	730	96.20	110	80.5	550
	4144	1151	6.58		88.40		84.0	
	4903	1362	5.14		84.30		81.4	
+2°	3895	1082	7.88	730	102.40	132	81.6	550
	4352	1209	6.77		94.70		84.7	
	4774	1326	5.37		85.10		82.0	
+4°	4126	1146	8.07	730	110.40	132	82.1	550
	4597	1277	6.99		103.30		84.7	
	5018	1394	5.62		93.30		82.3	
+6°	4334	1204	8.25	730	118.20	132	82.4	550
	4817	1338	7.21		111.70		84.7	
	5263	1462	5.88		102.30		82.4	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

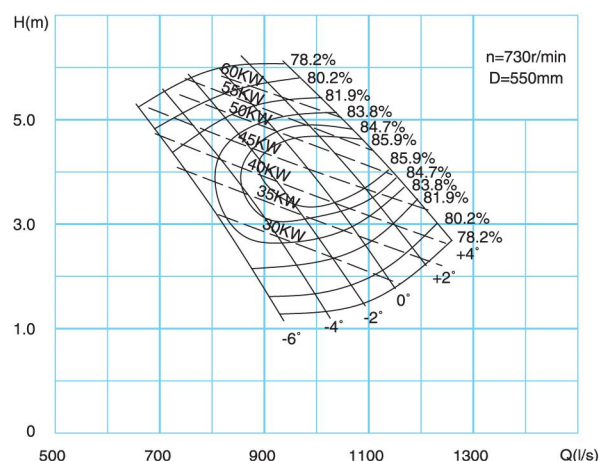
600ADB-85

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	2560	711	5.98	730	53.90	65	77.3	550
	2984	829	4.35		43.10		82.0	
	3391	942	2.26		29.20		71.6	
-2°	2783	773	6.12	730	60.50	75	76.6	550
	3229	897	4.53		48.60		82.0	
	3650	1014	2.48		33.60		73.3	
0°	2984	829	6.25	730	67.30	80	75.5	550
	3449	958	4.71		53.90		82.0	
	3866	1074	2.67		37.40		75.2	
+2°	3114	865	6.35	730	70.90	85	76.0	550
	3643	1012	4.87		58.90		82.0	
	4129	1147	2.92		43.10		76.2	
+4°	3316	921	6.50	730	76.10	95	77.1	550
	3877	1077	5.08		65.40		82.0	
	4374	1215	3.16		49.10		76.6	



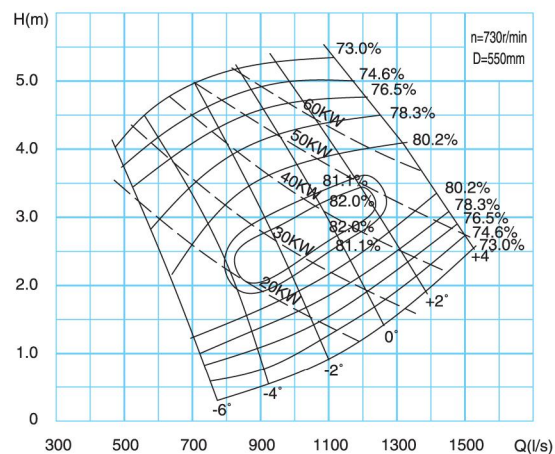
600ADB-100

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	2488	691	4.81	730	40.12	55	81.2	550
	2916	810	3.17		30.20		83.4	
	3233	898	1.80		21.30		74.5	
-4°	2732	759	4.95	730	45.48	55	82.1	550
	3182	884	3.36		34.01		85.6	
	3510	975	2.01		24.32		79.0	
-2°	2952	820	5.10	730	49.72	65	82.5	550
	3406	946	3.53		38.11		85.9	
	3748	1041	2.21		28.05		80.4	
0°	3172	881	5.25	730	58.30	65	82.4	550
	3640	1011	3.72		45.40		85.9	
	3985	1107	2.42		34.40		81.0	
+2°	3373	937	5.40	730	64.50	75	81.6	550
	3870	1075	3.91		51.00		85.9	
	4234	1176	2.65		39.70		81.7	
+4°	3578	994	5.56	730	72.60	80	79.2	550
	4090	1136	4.11		56.60		85.9	
	4471	1242	2.89		45.60		82.0	



600ADB-125

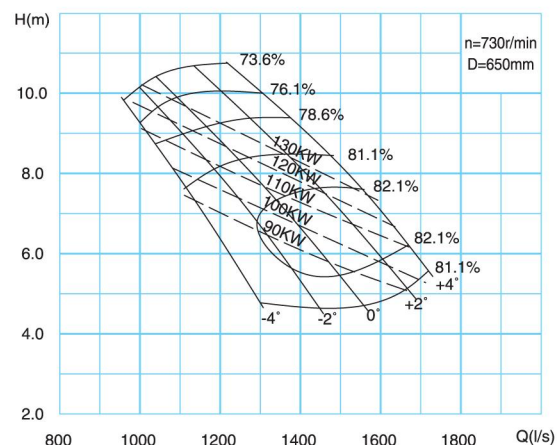
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	1800	500	3.57	730	24.90	30	75.5	550
	2293	637	2.10		18.00		78.2	
	2628	730	0.89		9.00		76.0	
-4°	2329	647	3.82	730	33.00	37	78.7	550
	2833	787	2.42		24.40		82.0	
	3172	881	1.24		15.80		73.4	
-2°	2866	796	4.14	730	43.70	55	79.3	550
	3355	932	2.79		33.30		82.0	
	3719	1033	1.68		23.30		78.2	
0°	3326	924	4.47	730	55.60	65	77.8	550
	3859	1072	3.21		44.00		82.0	
	4259	1183	2.18		33.70		80.2	
+2°	3676	1021	4.75	730	67.00	75	76.0	550
	4244	1179	3.56		53.80		82.0	
	4680	1300	2.61		44.00		80.9	
+4°	4136	1149	5.16	730	88.10	95	70.7	550
	4748	1319	4.08		71.50		79.1	
	5184	1440	3.18		59.50		80.4	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

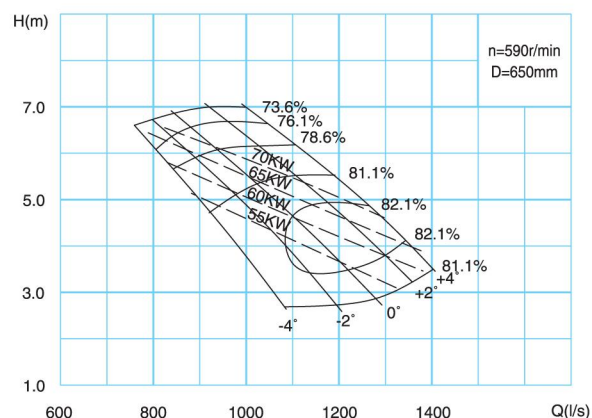
700ADB-70

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	3638	1024	8.93	730	114.60	132	78.2	650
	4147	1152	7.10		98.79		81.2	
	4694	1304	4.71		75.48		79.8	
-2°	3964	1101	9.05	730	123.51	155	79.1	650
	4518	1255	7.27		109.23		81.9	
	5159	1433	4.86		83.78		81.5	
0°	4205	1168	9.15	730	132.68	155	79.0	650
	4799	1333	7.41		118.25		81.9	
	5530	1536	4.99		91.76		81.9	
+2°	4604	1279	9.34	730	148.55	180	78.8	650
	5216	1449	7.63		132.36		81.9	
	5990	1664	5.16		103.34		81.5	
+4°	4907	1363	9.50	730	163.48	180	77.7	650
	5530	1536	7.81		143.62		81.9	
	6271	1742	5.27		112.08		80.3	



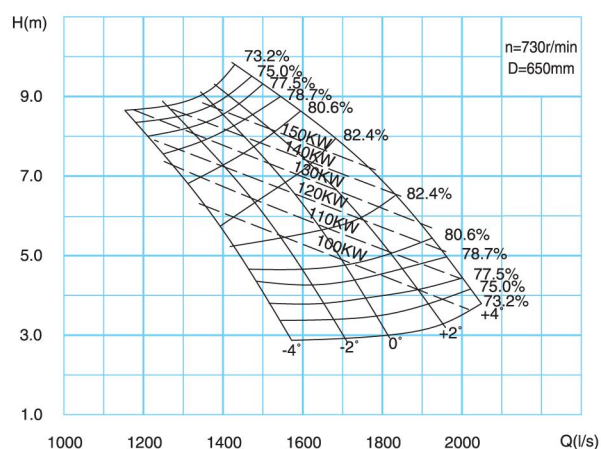
700ADB-70J

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	2988	830	5.80	590	60.25	80	78.3	650
	3557	988	3.93		46.88		81.2	
	3942	1095	2.52		34.62		78.1	
-2°	3229	897	5.85	590	64.72	80	79.5	650
	3906	1085	4.01		52.08		81.9	
	4327	1202	2.63		38.55		80.4	
0°	3438	955	5.90	590	69.41	80	79.6	650
	4172	1159	4.09		56.74		81.9	
	4655	1293	2.73		43.13		80.2	
+2°	3776	1049	5.98	590	77.18	110	79.7	650
	4532	1259	4.19		63.15		81.9	
	5026	1396	2.85		49.47		78.9	
+4°	4043	1123	6.05	590	84.27	110	79.0	650
	4874	1329	4.27		67.93		81.9	
	5238	1455	2.93		54.93		76.5	



700ADB-85

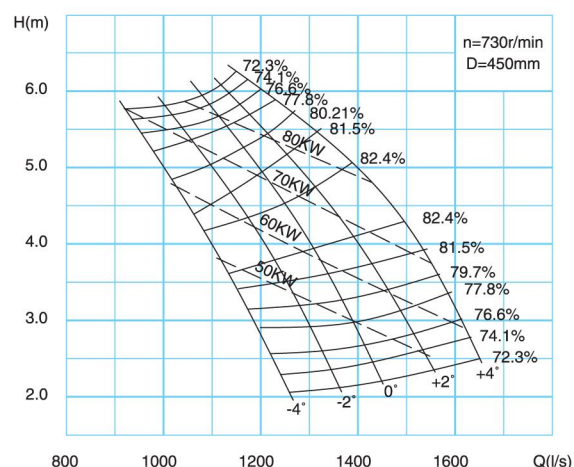
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	4514	1254	7.51	730	114.72	132	80.5	650
	4915	1365	6.12		99.39		82.4	
	5551	1542	3.36		69.59		73.0	
-2°	4900	1361	7.71	730	127.73	155	80.5	650
	5324	1479	6.34		111.57		82.4	
	5987	1663	3.65		79.59		74.8	
0°	5260	1461	7.91	730	140.02	155	80.9	650
	5688	1580	6.56		123.32		82.4	
	6343	1762	3.89		87.11		74.1	
+2°	5522	1534	8.02	730	148.89	180	81.0	650
	6019	1672	6.78		134.88		82.4	
	6786	1885	4.21		100.27		77.6	
+4°	5904	1640	8.30	730	163.54	180	81.6	650
	6419	1783	7.05		149.56		82.4	
	7189	1997	4.52		113.91		77.7	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

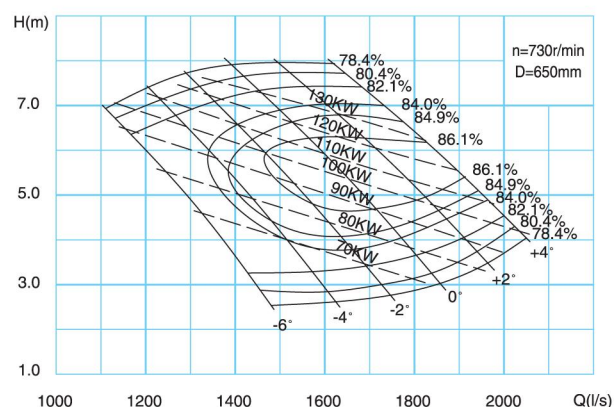
700ADB-85J

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	3539	983	5.17	590	63.20	90	78.8	650
	4018	1116	3.86		51.25		82.4	
	4507	1252	2.15		36.26		72.8	
-2°	3852	1070	5.29	590	70.22	90	79.0	650
	4349	1208	4.01		57.63		82.4	
	4871	1353	2.26		40.75		73.6	
0°	4126	1146	5.41	590	77.53	110	78.4	650
	4640	1289	4.15		63.65		82.4	
	5177	1438	2.36		44.52		74.7	
+2°	4338	1205	5.51	590	82.11	110	79.6	650
	4925	1368	4.30		69.99		82.4	
	5562	1545	2.49		50.11		75.3	
+4°	4558	1266	5.56	590	87.55	110	80.2	650
	5245	1457	4.47		77.49		82.4	
	5922	1645	2.62		56.76		74.4	



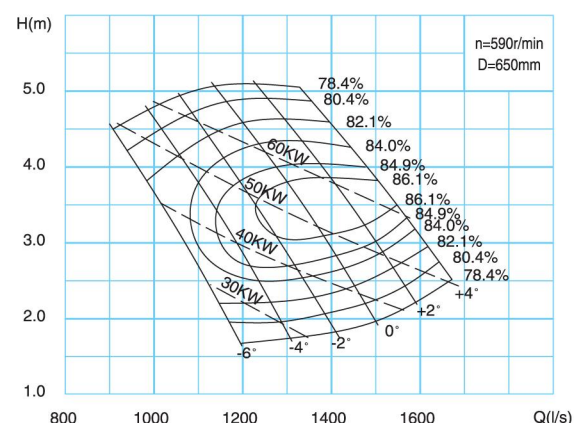
700ADB-100

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	4144	1151	6.63	730	91.33	110	81.9	650
	4727	1313	4.75		72.65		84.2	
	5332	1481	2.53		48.96		75.0	
-4°	4547	1263	6.82	730	102.77	132	82.2	650
	5159	1433	4.99		81.33		86.2	
	5792	1609	2.81		54.22		81.8	
-2°	4914	1365	7.00	730	112.48	132	83.3	650
	5533	1537	5.20		90.90		86.2	
	6196	1721	3.07		63.90		81.1	
0°	5285	1468	7.21	730	124.75	155	83.2	650
	5926	1646	5.44		101.84		86.2	
	6592	1831	3.34		74.40		80.6	
+2°	5623	1562	7.41	730	137.25	155	82.7	650
	6304	1751	5.69		113.32		86.2	
	7006	1946	3.65		87.80		79.3	
+4°	5969	1658	7.62	730	154.21	180	80.3	650
	6671	1853	5.95		125.72		86.0	
	7409	2058	3.96		97.49		82.0	



700ADB-100J

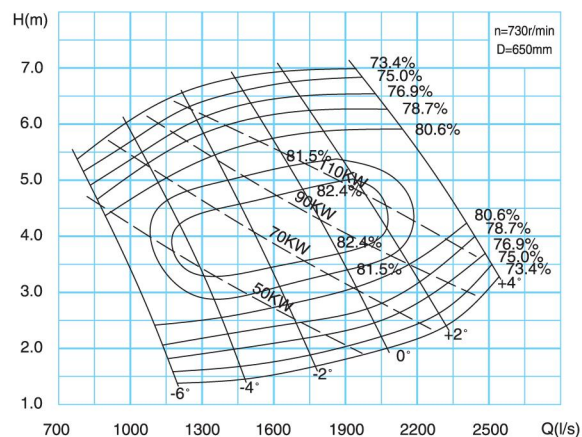
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	3308	919	4.40	590	48.73	65	81.4	650
	3848	1069	3.01		37.60		83.9	
	4362	1184	1.80		27.39		76.3	
-4°	3647	1013	4.53	590	54.72	65	82.2	650
	4208	1169	3.17		42.35		85.8	
	4651	1292	1.91		30.30		79.9	
-2°	3938	1094	4.65	590	60.31	80	82.7	650
	4507	1252	3.31		47.19		86.1	
	5000	1389	2.03		34.32		80.5	
0°	4234	1176	4.78	590	66.59	80	82.8	650
	4824	1340	3.47		52.95		86.1	
	5339	1483	2.14		38.83		80.7	
+2°	4511	1253	4.91	590	73.69	95	81.9	650
	5134	1426	3.64		59.10		86.1	
	5702	1584	2.27		43.64		80.8	
+4°	4784	1329	5.05	590	82.64	95	79.6	650
	5429	1508	3.81		65.42		86.1	
	6066	1685	2.41		49.55		80.3	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

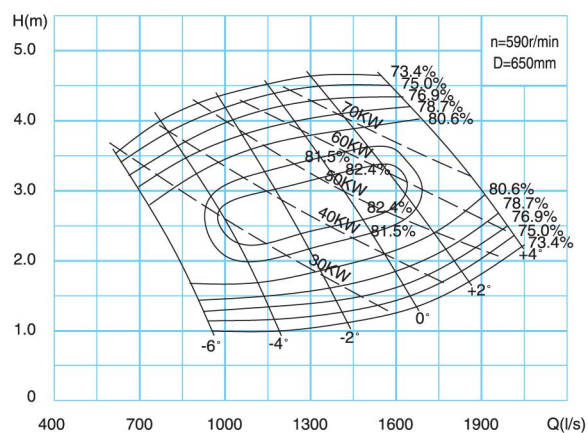
700ADB-125

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m³/h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	2981	828	4.95	730	52.87	65	76.0	650
	3892	1081	2.63		36.00		77.4	
	4388	1219	1.08		16.09		80.2	
-4°	3881	1078	5.27	730	70.18	95	80.2	650
	4802	1334	3.04		48.65		82.4	
	5306	1474	1.54		31.01		76.2	
-2°	4781	1328	5.67	730	92.03	110	80.2	650
	5888	1580	3.51		65.98		80.4	
	6239	1733	2.08		46.36		76.2	
0°	5573	1548	6.08	730	116.96	132	78.9	650
	6570	1825	4.06		88.16		82.4	
	7171	1992	2.72		67.42		78.8	
+2°	6178	1716	6.45	730	140.76	180	77.1	650
	7250	2014	4.54		108.79		82.4	
	7909	2197	3.29		88.95		79.7	
+4°	6991	1942	6.99	730	183.82	220	72.4	650
	8122	2256	5.22		142.22		81.2	
	8773	2437	4.03		122.19		78.8	



700ADB-125J

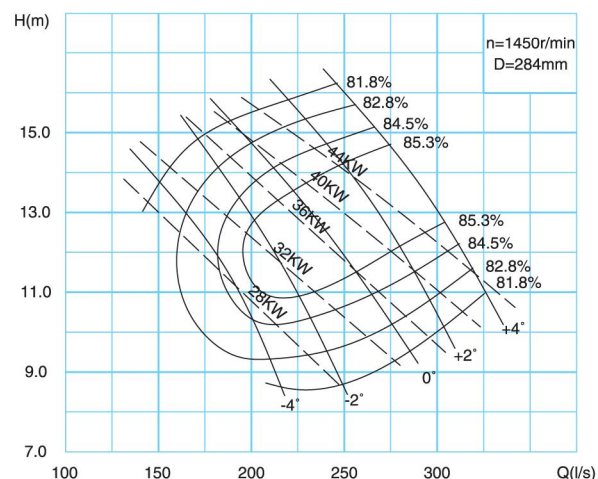
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m³/h)	(l/s)			SHAFT POWER	MOTOR POWER		
-6°	2146	596	3.67	590	29.61	45	72.4	650
	3010	836	2.04		21.01		79.6	
	3388	941	1.13		14.38		72.6	
-4°	2909	808	3.81	590	39.61	45	76.2	650
	3776	1049	2.23		27.83		82.4	
	4158	1155	1.34		20.05		75.7	
-2°	3697	1027	4.01	590	51.80	65	77.9	650
	4518	1255	2.46		36.73		82.4	
	4928	1369	1.60		27.05		79.4	
0°	4345	1207	4.20	590	64.30	80	77.3	650
	5260	1461	2.73		47.46		82.4	
	5720	1589	1.92		37.29		80.2	
+2°	4871	1353	4.38	590	76.27	110	76.2	650
	5857	1627	2.98		57.69		82.4	
	6361	1767	2.21		47.81		80.1	
+4°	5569	1547	4.65	590	98.64	110	71.5	650
	6620	1839	3.33		73.71		81.5	
	7117	1977	2.59		63.93		78.5	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

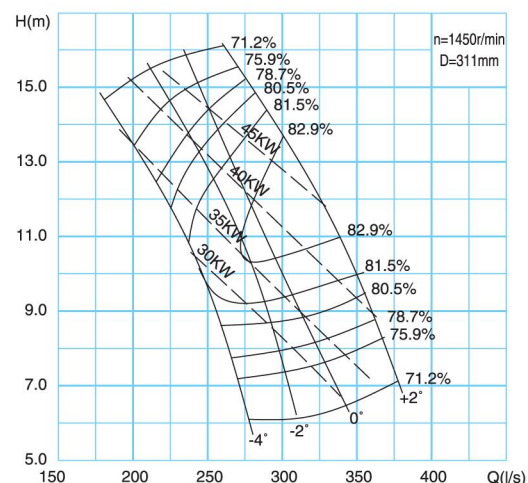
400HDB-40

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	630	175	13.80	1450	29.25	37	81.0	284
	756	210	11.70		28.38		84.9	
	868	241	8.61		24.72		82.3	
-2°	752	209	14.00	1450	34.59	40	82.9	284
	864	240	11.80		32.55		85.3	
	983	273	8.79		28.70		82.0	
0°	799	222	14.90	1450	39.25	45	82.6	284
	925	257	13.00		38.40		85.3	
	1094	304	8.98		32.90		81.4	
+2°	925	257	15.20	1450	45.53	65	84.1	284
	1030	286	13.50		44.38		85.3	
	1217	338	9.21		37.79		80.8	
+4°	1026	285	15.50	1450	51.39	65	84.3	284
	1130	314	13.80		49.80		85.3	
	1328	369	9.44		41.57		82.2	



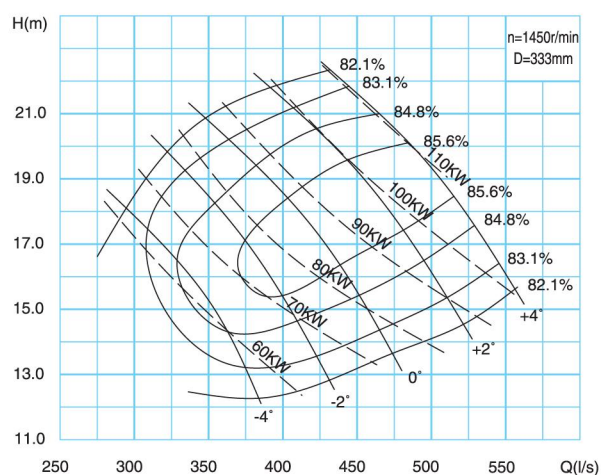
400HDB-50

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	666	185	14.43	1450	35.51	40	73.7	311
	864	240	10.60		30.64		81.4	
	986	274	6.62		23.87		74.5	
-2°	810	225	14.63	1450	41.91	45	77.0	311
	986	274	10.82		35.10		82.8	
	1102	306	6.85		27.62		74.4	
0°	889	247	14.76	1450	45.76	65	78.1	311
	1076	299	11.00		38.94		82.8	
	1206	335	7.08		31.13		74.7	
+2°	1008	280	14.98	1450	51.60	65	79.7	311
	1206	335	11.28		44.74		82.8	
	1350	375	7.43		36.37		75.1	



500HDB-40

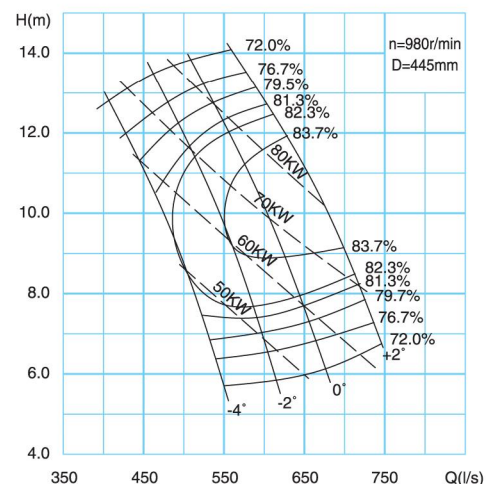
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	932	259	19.58	1450	61.67	75	80.6	333
	1271	353	15.07		61.14		85.3	
	1310	364	14.14		59.47		84.9	
-2°	1159	322	19.89	1450	76.52	85	82.1	333
	1343	373	17.21		73.56		85.6	
	14 83	412	14.46		68.83		84.9	
0°	1314	365	20.15	1450	86.33	110	83.5	333
	15 12	420	17.52		84.28		85.6	
	1656	460	14.82		79.22		84.4	
+2°	1523	423	20.54	1450	100.24	110	84.7	333
	1602	445	19.50		99.38		85.6	
	1843	512	15.25		91.91		83.3	
+4°	1688	469	20.89	1450	112.67	130	85.3	333
	1764	490	19.86		111.46		85.6	
	2009	558	15.68		104.33		82.2	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

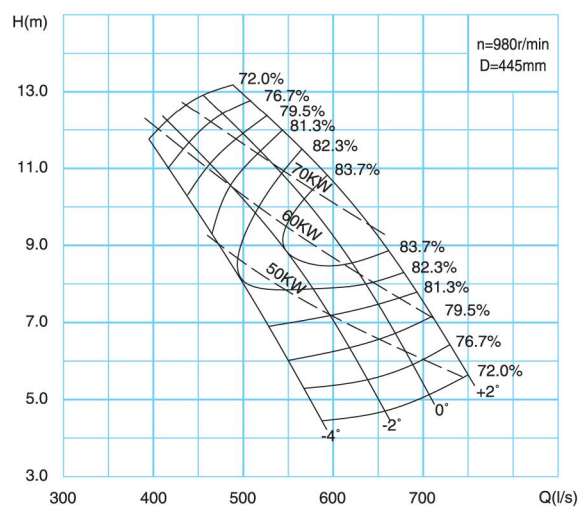
500HDB-50

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	$\frac{m^3}{h}$	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1620	450	11.10	980	60.26	65	81.3	445
	1731	481	9.72		55.68		82.3	
	1948	541	6.36		44.22		76.3	
-2°	1854	515	11.40	980	69.56	80	82.8	445
	1962	373	9.98		63.71		83.7	
	2171	603	6.64		51.27		76.6	
0°	2027	563	11.60	980	76.59	90	83.6	445
	2146	596	10.20		71.21		83.7	
	2376	660	6.92		58.11		77.1	
+2°	2264	629	11.90	980	87.67	110	83.7	445
	2394	665	10.60		82.57		83.7	
	2650	736	7.34		67.87		78.0	



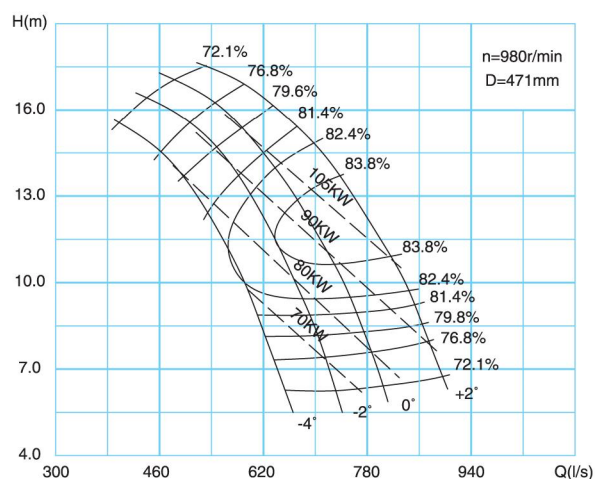
500HDB-50A

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	$\frac{m^3}{h}$	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1620	450	10.20	980	55.56	65	81.0	445
	1800	500	8.00		47.59		82.4	
	1973	548	6.08		40.33		81.0	
-2°	1656	460	11.20	980	62.36	75	81.0	445
	1951	542	9.00		57.07		83.8	
	2214	615	6.50		48.38		81.0	
0°	1800	500	11.90	980	72.02	80	81.0	445
	2070	575	10.00		67.27		83.8	
	2412	670	6.70		54.33		81.0	
+2°	1926	535	12.20	980	79.02	90	81.0	445
	2178	606	10.50		74.44		83.8	
	2563	712	7.00		60.32		81.0	



600HDB-50

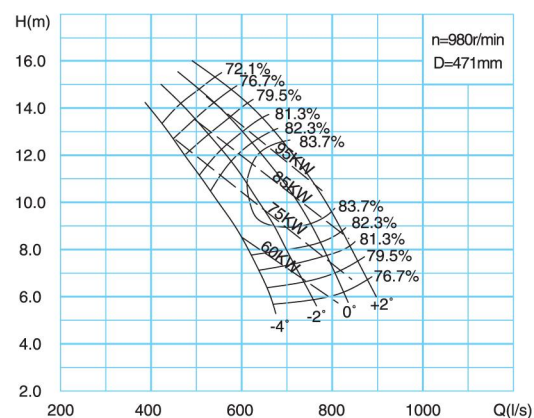
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	$\frac{m^3}{h}$	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1602	445	14.30	980	81.00	95	77.0	471
	2088	580	10.20		72.40		82.5	
	2304	640	7.42		60.50		77.0	
-2°	21710	475	15.20	980	92.00	115	77.0	471
	2322	645	11.00		83.80		83.0	
	2574	751	7.50		68.30		77.0	
0°	1847	513	15.90	980	104.00	115	77.0	471
	2459	683	12.00		95.80		83.9	
	2844	790	7.65		77.00		77.0	
+2°	2052	570	16.80	980	122.00	130	77.0	471
	2808	780	12.00		109.40		83.9	
	3186	885	7.90		89.10		77.0	



PERFORMANCE PARAMETERS and PERFORMANCE CURVES:

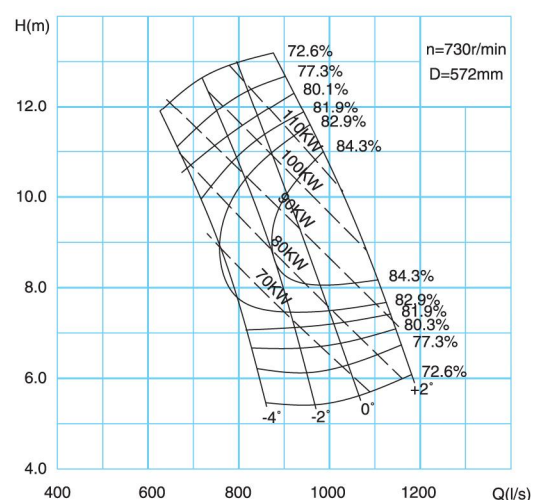
600HDB-50A

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	1602	445	12.90	980	73.09	95	77.0	471
	2106	585	9.00		62.57		82.5	
	2412	670	5.80		49.48		77.0	
-2°	1782	495	13.65	980	86.03	115	77.0	471
	2322	645	10.00		75.37		83.9	
	2718	755	5.90		56.72		77.0	
0°	1926	535	14.20	980	96.73	115	77.0	471
	2520	700	10.50		85.88		83.9	
	2952	820	5.25		54.80		77.0	
+2°	2027	575	14.70	980	105.40	130	77.0	471
	2700	750	11.00		96.40		83.9	
	3118	880	6.70		73.90		77.0	



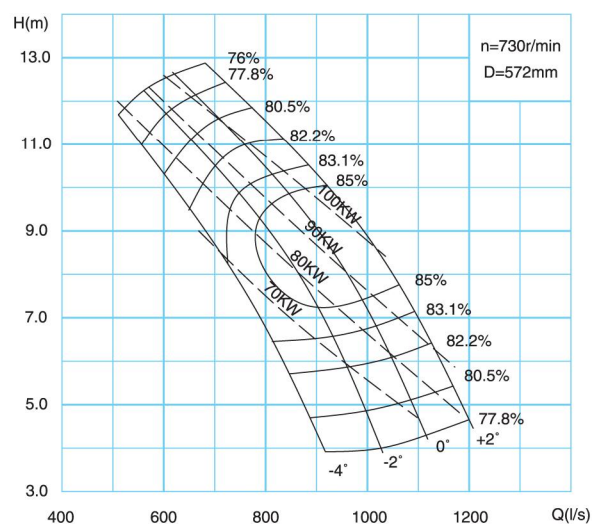
700HDB-50

INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	2531	703	10.30	730	87.02	110	81.6	572
	2725	757	8.96		80.21		82.9	
	3060	850	5.89		63.89		76.8	
-2°	2902	806	10.60	730	101.03	110	82.9	572
	3092	859	9.21		92.01		84.3	
	3420	950	6.16		73.90		77.6	
0°	3164	879	10.80	730	110.89	130	83.9	572
	3366	935	9.42		102.43		84.3	
	3733	1037	6.42		82.77		78.9	
+2°	3535	982	11.10	730	126.77	155	84.3	572
	3758	1044	9.74		118.26		84.3	
	4165	1157	6.81		98.02		78.8	

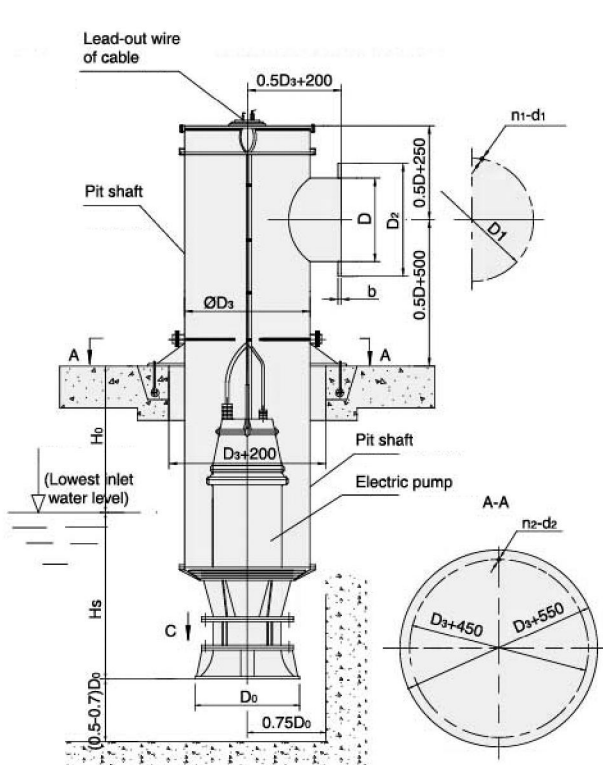


700HDB-50A

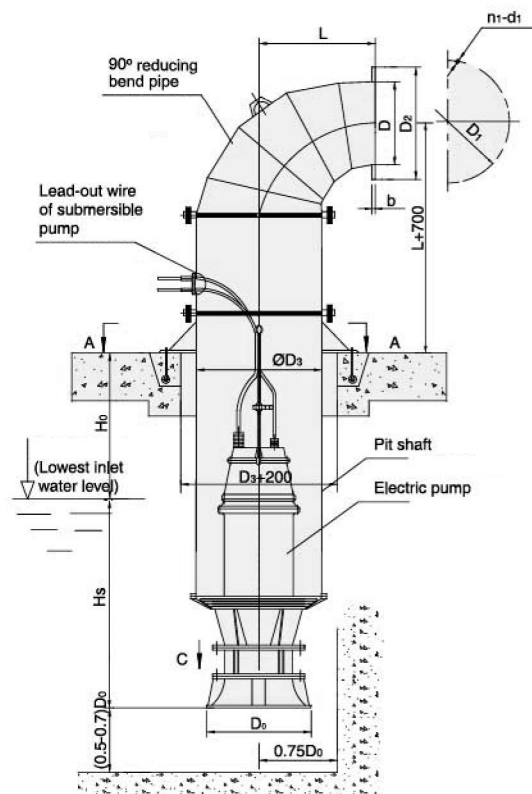
INSTALLATION ANGLE	CAPACITY		HEAD (m)	SPEED (r/min)	POWER		EFF. %	D (mm) IMPELLER DIAMETER
	(m ³ /h)	(l/s)			SHAFT POWER	MOTOR POWER		
-4°	2124	590	10.50	730	75.92	80	80.0	572
	2794	776	7.30		66.91		83.0	
	3197	888	4.70		50.83		80.5	
-2°	2363	656	11.10	730	86.74	90	82.3	572
	3078	855	8.20		81.34		84.5	
	3604	1001	4.80		58.88		80.0	
0°	2552	709	11.60	730	100.16	110	80.5	572
	3341	928	8.60		92.60		84.5	
	3913	1087	5.10		67.10		81.0	
+2°	2747	763	12.00	730	111.93	132	80.2	572
	3582	995	9.00		103.90		84.5	
	4201	1167	5.50		76.74		80.0	



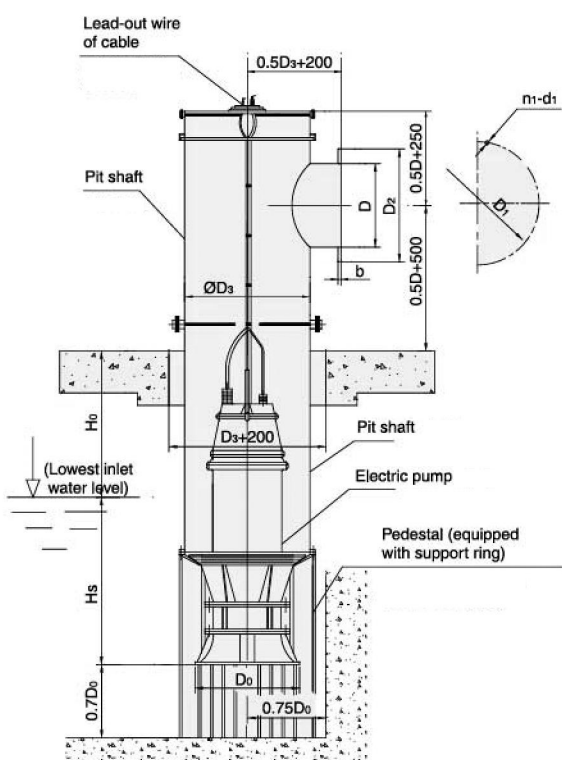
INSTALLATION DIMENSIONS:



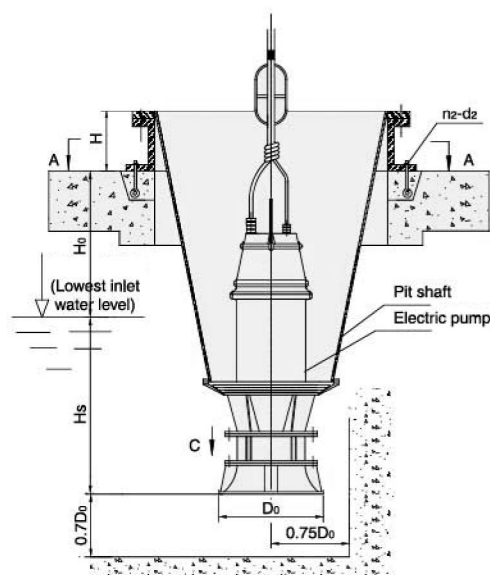
Outline dimensions of pit shaft equipment (GT)



Outline dimensions of pit shaft of bend pipe equipment (GTW)

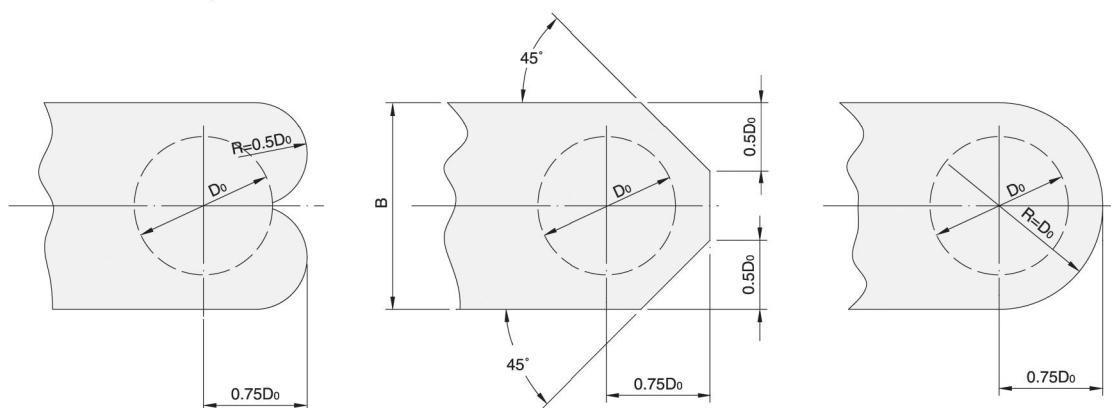


Outline dimensions of ground pit shaft equipment (GD)



Outline dimensions of open pit shaft equipment (GK)

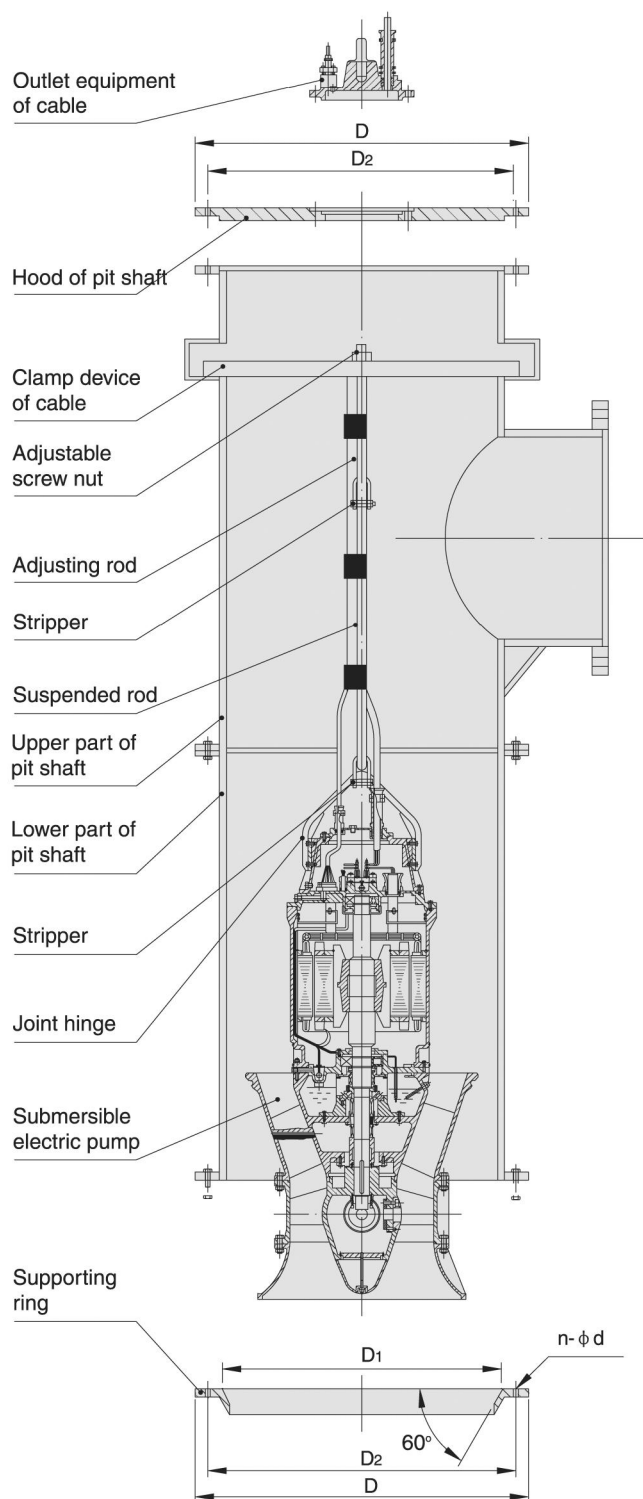
SHEET OF EQUIPMENT DIMENSIONS:



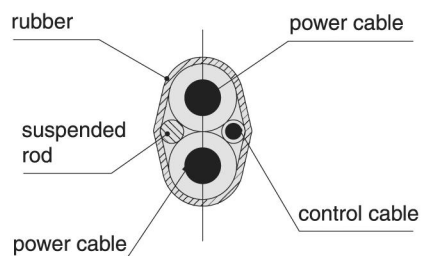
(Unit) : mm

No.	TYPE	H _s	H ₀	D ₀	D ₃	n ₂ -d ₂	D	D ₁	D ₂	b	n ₁ -d ₁	H	L	WEIGHT OF PUMP (Kg)	WEIGHT OF PIT SHAFT (Kg/m)														
1	350ADB	500	H ₀ is specified by the user, whose value should be given out in the contract.	500 (445)	600 (500)	6-Ø22 M20 x 300	400	495	540	16	8-Ø22	— — — — —	545	420	120														
							—	—	—	—	—	~400																	
							2	500ADB	0	700	820	8-Ø30				600	705	755	18	10-Ø25	— — — — — —	695	850	160					
																—	—	—	—	—	—								
																3	600ADB	1700	920	1020	8-Ø30				800	920	980	18	12-Ø22
—	—	—		—	—	—																							
—	—	—		—	—	—																							
4	700ADB	—		—	—	—	—	—	—	—	—																		
		—		—	—	—	—	—	—	—	—	—																	
5	400HDB	600		500	600	6-Ø22	400	495	540	16	8-Ø22	—	545	560	120														
6	500HDB	900	700	700	8-Ø30 M24 x 400	600	705	755	18	10-Ø25	— — —	695	850	160															
7	600HDB		830	1020		800	920	980		12-Ø25	— — —	785	1800	200															
8	700HDB		920								— —																		
			—																										

SPARE PARTS OF INSTALLATION SYSTEM OF PIT SHAFT TYPE:



Picture of cable bundle



TYPE	D	D ₁	D ₂	n-Ød
350ADB	655	500	605	12-Ø23
400ADB	755	600	705	
500A(H)DB	980	800	920	16-Ø30
600A(H)DB	1175	1000	1120	24-Ø30
700A(H)DB				

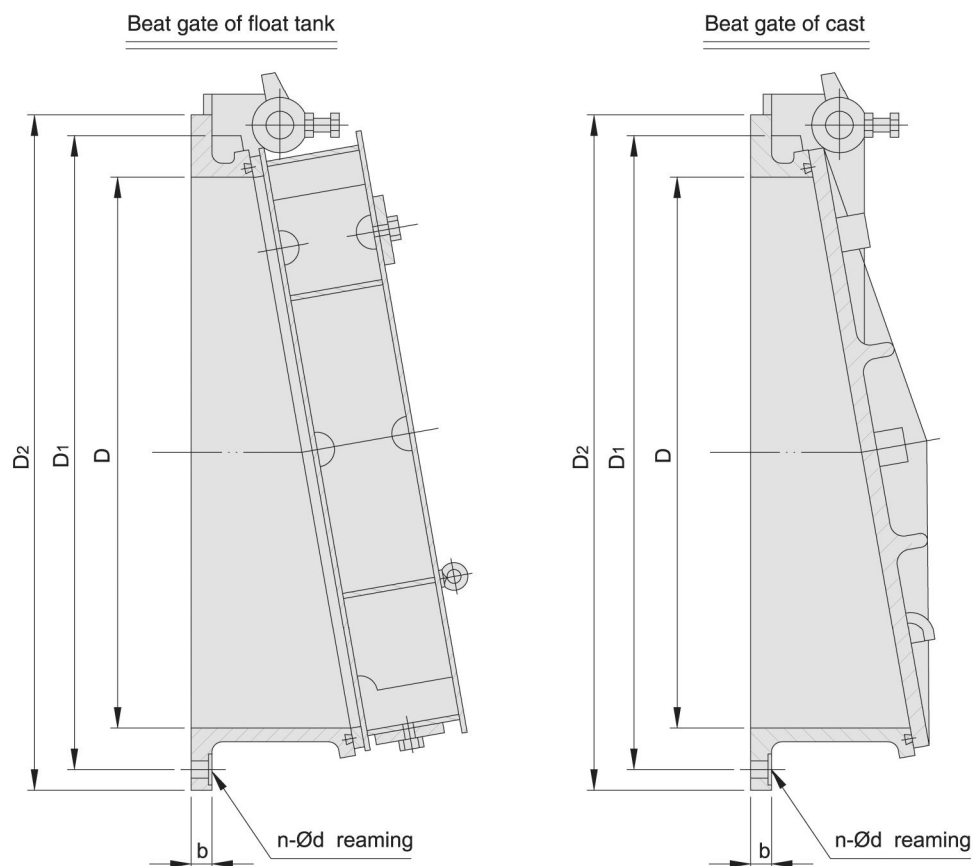
COMPLETE SET:

No.	NAME	INSTALLATION FORMATION				REMARK
		PIT SHAFT TYPE GT	GROUND PIT SHAFT TYPE GD	BEND PIPE AND PIT SHAFT TYPE GTW	OPEN TYPE GK	
1	Axial-flow, mixed-flow submersible electric pump	◆	◆	◆	◆	Indicate pump type, flow rate, lift head, voltage and equipment formation when order goods
2	Supporting ring	◆	◆	◆	◆	HT200 or Q235-A
3	Pit shaft of steel	◆	◆	◆		Q235-A or 1Cr18NiTi (determined by user)
4	Diverging pipe				◆	
5	Wall pipe	◆	◆	◆	◆	
6	Drain pipe	▽	▽	▽	▽	
7	Reducing bend pipe		◆			
8	Hood of pit shaft	◆	◆			
9	Suspended rod	◆	◆	◆	◆	
10	Clamp equipment of cable	◆	◆	◆	◆	
11	Pump base	▽	▽	▽		HT200 or Q235-A
12	Outlet equipment of cable	◆	◆	◆	◆	
13	Gasket	◆	◆	◆	◆	
14	Standard fastener	◆	◆	◆	◆	ZnD or A ₂ -70
15	Foundation bolt	◆	◆	◆	◆	
16	Beat gate	▽	▽	▽	▽	Beat gate of cast or beat gate of float tank
17	Exclusive starting rail span	▽	▽	▽	▽	
18	Power cable	◆	◆	◆	◆	Electric cable is 12 meters long or indicate length when place an order
19	Control cable	◆	◆	◆	◆	
20	Water-level controller	▽	▽	▽	▽	
21	Mechanic seal	▽	▽	▽	▽	Indicate the number of spare parts when place an order
22	O-ring	▽	▽	▽	▽	
23	Bearing	▽	▽	▽	▽	
24	Special tool	▽	▽	▽	▽	

Note: ◆ is the parts to be purchased parts, which are necessary for this type of installation formation.

▽ is the optional parts, which the user determines whether to buy or not and the quantity according to his requirement.

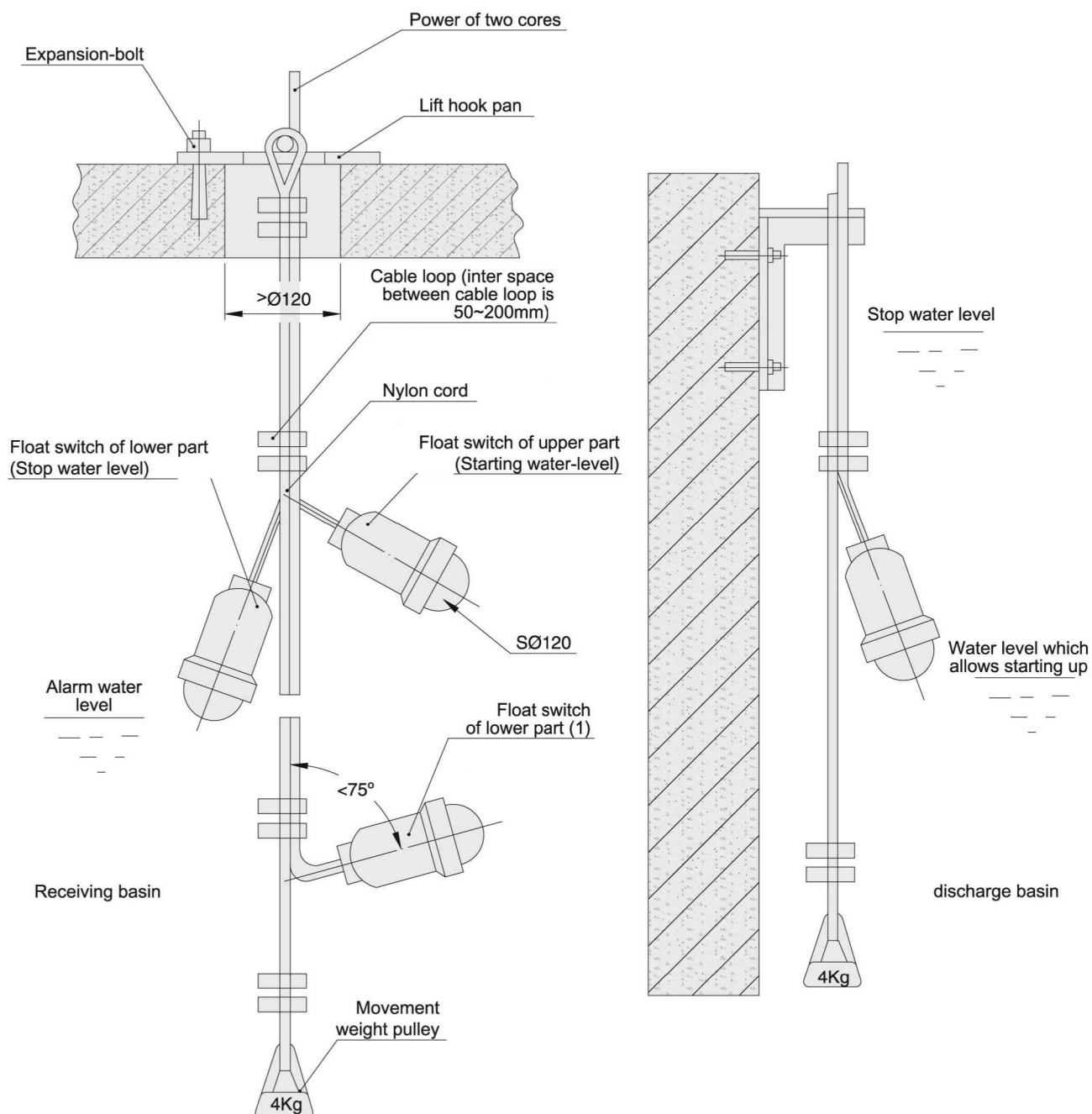
BEAT GATE:



DIAMETER OF PUMP OUTLET	EXTERNAL DIMENSION OF BEAT GATE (mm)					
	DIMENSION	D	D1	D2	b	n-Ød
350/400	400	400	495	540	22	8-Ø22
500	600	500	705	755	25	10-Ø25
600	800	800	920	980	28	12-Ø25
700						

Specific gravity of float chamber type gate in water is a little greater than that of water, so use the buoyancy force to increase the open angle, reduce the loss of hydraulic power, and increase the unit Efficiency of pump station.

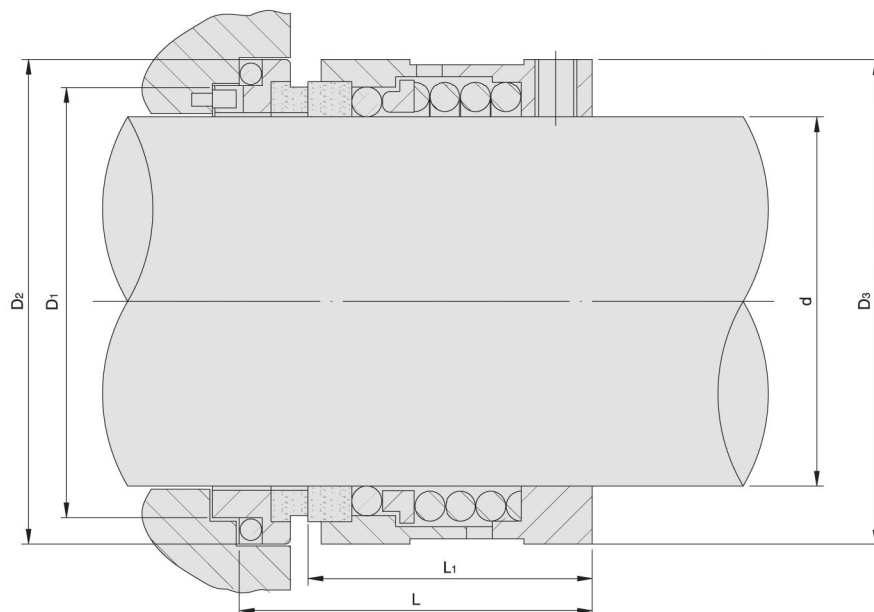
WATER LEVEL CONTROLLER:



The conducting wire between the water level controller of floating ball type (YWK-702), cable loop and float ball is 0.05-0.5 meter, fix the float ball on the nylon cord according to requirement. When the float ball sags to form an angle of 120 °C, the electric resistance shall be ∞ . When the float ball place upside down forming an angle of 75 °C, the electric resistance is zero.

Contact capacity: 220 VA/0.5 A

MECHANIC SEAL:



TYPE	d	D ₁	D ₂	D ₃	L	L ₁
M524-30	30	40	50	50	60	48
M524-35	35	45	55	55	60	48
M524-40	40	50	60	60	63	50
M524-45	45	55	65	65	63	50
M524-50	50	60	70	70	67	54
M524-55	55	65	75	75	67	54
M524-60	60	70	80	80	67	54
M524-65	65	75	85	85	67	54
M524-70	70	82	92	92	67	54
M524-75	75	88	97	95	67	54
M524-80	80	95	105	105	68	54
M524-85	85	100	110	110	68	54
M524-90	90	105	115	115	73	58
M524-95	95	110	120	120	73	58
M524-100	100	115	125	125	81	66
M524-105	105	120	130	130	81	66
M524-110	110	126	136	136	95	79
M524-120	120	138	150	150	99	79
M524-140	140	158	170	170	101	81
M524-150	150	170	182	182	103	81

SENSOR INSIDE SUBMERSIBLE ELECTRIC PUMP AND ITS FUNCTIONAL TABLE:

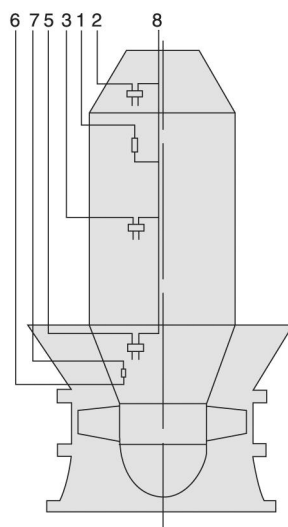
CONTROL CABLE No. OF COMPONENT WIRE	1-8	2-8	3-8	5-8	6-7
Name of sensor	Winding temperature Temperature element JW6A (135°C)	Electrode of water leakage in terminal box	Electrode of water leakage in electrical machinery	Electrode of water leakage in oil container	Bearing temperature sensor ADM590
Value of electric resistance in normal state	0	Cut-out ∞	Cut-out ∞	$\geq 33k\Omega$	Positive direction $< 33k\Omega$, reverse direction $\approx \infty$
Function	After the temperature of stator coil's over temperature protection is higher than $135^{\circ}\text{C} \geq 4$	Terminal box occurs leakage, electric resistance ≈ 0	The inside of electrical machinery occurs leakage, electric resistance ≈ 0	Water in oil reaches 10%, resistance of oil- water mixture $< 33k\Omega$	Integrated package temperature element (ADM590) delivered directly proportional electric quantity signal of milliamperer grading

Note:

1. The winding temperature element JW6A, bearing temperature sensor ADM590 in the above table is the basic arrangement of sensor. Also according to the user's requirement, P.T.S or PT100 (RTD) is selected as winding temperature element; PT100 (RTD) is selected for use of bearing temperature sensor, which should be written in the contract.
2. When there is water leakage in 500ADB, 500HDB and electrical machinery of following specification, electrode should be adopted for sensor.
3. 350ADB and 400HDB only protects three type of occasion, which is overheating winding (sensor JW6A), water into terminal box (electrode of sensor), water into electrical machinery (electrode of sensor).
4. The arrangement of sensors in the submersible electric pump.

TYPE OF ELECTRIC PUMP	WINDING TEMPERATURE	WATER LEAKAGE SENSOR IN TERMINAL BOX	WATER LEAKAGE SENSOR IN MOTOR	WATER LEAKAGE SENSOR IN OIL CHAMBER	BEARING TEMPERATURE SENSOR
350ADB, 400HDB	JW6A	ELECTRODE	ELECTRODE	—	—
500ADB, 500HDB	JW6A	ELECTRODE	ELECTRODE	ELECTRODE	ADM590
600ADB, 600HDB	JW6A	ELECTRODE	ELECTRODE	ELECTRODE	ADM590
700ADB, 700HDB	JW6A	ELECTRODE	ELECTRODE	ELECTRODE	ADM590

DRAWING OF ARRANGEMENT OF INSIDE SENSOR:



POWER CABLE:

Power cable adopted by this series of submersible electric pump is 3 x 70+1 x 16, and the following specification is flexible cable of rubber casing used in mine which can be used in 660V alternating current and in the following occasion. Product standard number is GB1170-74, with U-type and UP-type, the outer retainer of U-type rubber casing flexible cable is neoprene rubber, the insulation of wire core is natural rubber. When UP-type is shield rubber casing flexible cable used in mine and wire core insulation is natural rubber, the wire core of the cable which conducts electricity permits +65°C for long-term use. When the cable is laid in the air and environmental temperature is 25°C, please see current capacity in table 1. For all the specification over 3 x 70+1 x 16, the heavy-duty rubber casing cable is adopted, whose product standard number is GB1169-74 and type is YCW. When the cable is laid in the air and environmental temperature is 25°C, please see current capacity in table 2.

Table 1. Current capacity of U-type and UP-type power cable

WIRE CORE x CROSS SECTION (mm) ²	CORE STRUCTURE OF WIRE NUMBER / SINGLE DIAMETER (mm)	MAXIMUM OUTER DIAMETER OF CABLE (mm)	CURRENT CAPACITY OF CABLE (+25 °C) (A)
3 x 6+1 x 6	49/0.39+49/0.39	24.4	46
3 x 10+1 x 6	84/0.39+49/0.39	29.2	64
3 x 16+1 x 6	84/0.49+49/0.39	32.5	85
3 x 25+1 x 10	133/0.49+84/0.39	38.8	113
3 x 35+1 x 10	133/0.58+84/0.39	40.3	138
3 x 50+1 x 10	133/0.68+84/0.39	45.3	173
3 x 70+1 x 16	189/0.68+84/0.49	51.9	215

Table 2. Current capacity of YCW-type power cable

WIRE CORE x CROSS SECTION (mm) ²	CORE STRUCTURE OF WIRE NUMBER / SINGLE DIAMETER (mm)	MAXIMUM OUTER DIAMETER OF CABLE (mm)	CURRENT CAPACITY OF CABLE (+25 °C) (A)
3 x 6+1 x 6	84/0.49+49/0.39	28.2	84
3 x 25+1 x 10	133/0.49+84/0.39	36.0	116
3 x 35+1 x 10	133/0.58+84/0.39	38.6	143
3 x 50+1 x 16	133/0.68+84/0.49	45.8	177
3 x 70+1 x 25	189/0.68+133/0.49	51.5	224
3 x 90+1 x 35	259/0.68+133/0.58	56.8	273
3 x 120+1 x 35	259/0.76+133/0.58	60.0	316

When the environmental temperature is over or lower than +25°C, current capacity of cable should be adjusted accordingly, i.e., the current capacity in table 1 and table 2 multiplied by the correction.

Factor as follows

ENVIRONMENTAL TEMPERATURE (°C)	15	20	25	30	35
CORRECTION FACTOR	1.12	1.06	1.00	0.94	0.87

When multiple cable is laid parallel, the correctin factor of flow-rate is shown as following

		CORRECTION FACTOR OF CURRENT CAPACITY		
CENTER DISTANCE OF CABLE	NUMBER METHOD OF ARRAY	1	2	3
	SINGLE	COUPLET PARALLEL CENTER DISTANCE S	THREE CABLE IS PARALLELED CENTER DISTANCE S	
S = d		1.0	0.9	0.85
S = 2d		1.0	1.0	0.98
S = 3d		1.0	1.0	1.00

CONTROL CABLE:

This series of submersible electric pump adopts KJVDR31 and 8 x 1.5 mm² rubber casing flexible cable as control cable. Maximum outer diameter of cable is 11 mm, which is suitable for usage in the following occasion under 500V.

ORDERING INSTRUCTIONS:

1. When placing an order, please give clear indicaton of name, type model, number, installation method, range in kit form, starting method, lift head, flow-rate, power, voltage, water quality conditon, and material of main parts of the submersible electric pump. Attention should be paid if the chosen lifting head is the total head including all water head loss of pump equipment. If you can't estimate the total head correctly, please give clear indication of your lift head and installation directin to our company or consult out company for calculating more precise lift head so as to define specification and model of the submersible electric pump.
2. Refer to the performance curve and performance table of catalogue for the highest and lowest lift head of pump. If the lift head is over the range, please consult our company.
3. When you are selecting the installation mode, we recommend the dimensions in the catalogue for installation mode of steel pit shaft. If you want to change dimensions of sheet or select other dimensions of installation mode, please consult us.
4. When placing an order, please notice completerset range of catalogue. We suggest giving priority to the necessary parts, and the optaional parts are recommended to use.
5. Starting mode should be direct starting, Y- Δ reducing starting, auto reduced-voltage starting and soft start. Our company provides various starting tank, automatic level control equipment and logic sequence controlling device of multiple pump in pump station.
6. If there is no special requirement indicated, power frequency and voltage of electric pump is 50HZ, 380V. Please arrange with us for the product of 60HZ and special voltage when placing order.