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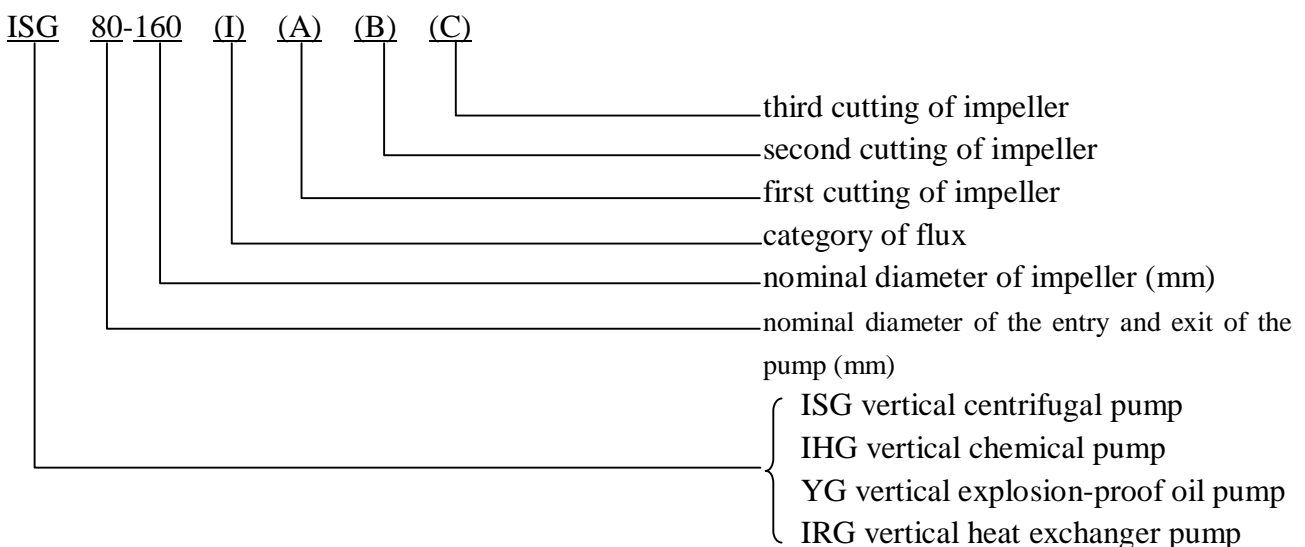
Introduction

ISG single-stage and single-suction horizontal centrifugal pump has been designed in accordance with the property parameters of IS centrifugal pump and the special structure fix of vertical pump, adopting the most advanced hydraulic model and strictly adhering to the international standard ISO02858. Hard alloy mechanical closed device has been used in its shaft packing. This product is energy-saving, of high efficiency, reliable performance, convenient installation and operation. It meets the requirements of the latest national standard JB/T53028-93, and passes through the product inspection made by Mechanical and Industrial Bureau.

Features of the Product

- Stable operation:** the absolute concentricity of the pump spindles and the fine balance of the impeller between activity and inertia ensures a stable performance without any libration.
- No leakage:** Sealed with different hard alloy, it guarantees no leakage when transmitting different materials.
- Low noise:** the pump supported by two bearings with low noise works stably; besides the light sound of electrical motor's operation, there is almost no noise.
- Low deficiency:** with simple and reasonable structures, equipped with international first-class devices in key parts, the whole machine has no deficiency so that it can work much longer.
- Convenient repair:** it is convenient to alter/modify sealing devices and bearings.

Meaning of Codes



Purposes of the Product

1. ISG vertical clear-water pump is used for transporting clear water and other liquid with the similar physical and chemical properties to clear water. It can be applied in industrial and city plumbing, booster transmitting water in high building, garden sprinkling, pressure boost in fire-fighting, long-distance transportation, and supercharge in refrigeration cycle and bathing room and relevant devices with the temperature $T \leq 80^{\circ}\text{C}$.
2. IRG vertical hot-water pump can be widely used in metallurgy, chemistry, textile, paper making, the pressure boost and transmission of hot water from boiler in hotels and restaurants, and city heating system. It is used when $T \leq 120^{\circ}\text{C}$.
3. IHG vertical chemical pump is applied in transporting the liquids, which don't contain solid grains, but are erosive and with the viscosity similar with that of water. It can be used in industries like petro-chemistry, chemistry, metallurgy, electricity, paper-making, food, pharmacy and synthetic fibre etc. It works within the temperature from -20°C to $+120^{\circ}\text{C}$.
4. YG vertical piping oil pump is used for transporting oils, like gasoline, coal oil, diesel oil, or flammable and explosive liquids. It works within the temperature from -20°C to $+120^{\circ}\text{C}$.

Working Conditions

1. The backpressure $\leq 1.0\text{Mpa}$, or the maximal working pressure of the system $\leq 1.6\text{Mpa}$, i.e. the pressure of suction inlet of the pump + the lift of pump $\leq 1.6\text{Mpa}$. The static testing pressure is 2.5Mpa . Please note the system working pressure when placing an order. When system working pressure of the pump is larger than 1.6Mpa , it should be explicitly pointed out in the order, so that the flow passage and the connections of the pump can be made by cast steel.
2. The temperature of the environment $< 40^{\circ}\text{C}$, and the relative humidity $< 95\%$.
3. The volume of the solid grains contained in the transported media should not be larger than 0.1% of the unit volume, and the granularity $< 0.2\text{mm}$.

Attention: if the media used have tiny grains, please give clear indication of it when ordering, so that the manufacturer may adopt abrasion resistant machinery to seal up.

Table of Major Functional Parameters

No	Model	Flux Q		Lift (m)	Efficiency (%)	Rotate speed (r/min)	Power of electrical motor (kW)	Necessary cavitation margin (m)
		(m ³ /h)	(l/s)					
1	50-100	8.8 12.5 16.3	2.44 3.47 4.53	13.6 12.5 11.3	55 62 60	2900	1.1	2.3
2	50-100A	8 11 14.5	2.22 3.05 4.03	11 10 9	60	2900	0.75	2.3
3	50-125	8.8 12.5 16.3	2.44 3.47 4.53	21.5 20 17.8	49 58 41	2900	1.5	2.3
4	50-125A	8 11 14.5	2.22 3.05 4.03	17 16 14	57	2900	1.1	2.3
5	50-160	8.8 12.5 16.3	2.44 3.47 4.53	33 32 30	45 52 51	2900	3	2.3
6	50-160A	8.8 11.7 15.2	2.28 3.25 4.22	29 28 26	44 51 50	2900	2.2	2.3
7	50-160B	7.3 10.4 13.5	2.38 2.89 3.75	23 22 20.5	50	2900	1.5	2.3
8	50-200	8.8 12.5 16.3	2.44 3.47 4.53	52 50 48	38 46 46	2900	5.5	2.3
9	500-200A	8.3 11.7 15.3	2.31 3.25 4.25	45.8 44 42	37 45 45	2900	4	2.3
10	50-200B	7.5 10.6 13.8	2.08 2.94 3.83	37 36 34	44	2900	3	2.3

11	50-250	8.8 12.5 16.3	2.44 3.47 4.53	82 80 77.5	29 38 40	2900	11	2.3
12	50-250A	8.2 11.6 15.2	2.28 3.22 4.22	71.5 70 68	38	2900	7.5	2.3
13	50-250B	7.6 10.8 14	2.11 3.0 3.89	61.4 60 58	37	2900	7.5	2.3
14	50-250C	7.1 10.0 13.1	1.97 2.78 3.64	53.2 52 50.4	36	2900	5.5	2.3
15	50-100(I)	17.5 25 32.5	4.86 6.94 9.03	13.7 12.5 10.5	67 69 69	2900	1.5	2.5
16	50-100(I)A	15.6 22.3 29	4.3 6.19 8.1	11 10 8.4	65 67 68	2900	1.1	2.5
17	50-125(I)	17.5 25 32.5	4.86 6.94 9.03	21.5 20 18	60 68 67	2900	3	2.5
18	50-125(I)A	15.6 22.3 29	4.33 6.19 8.1	17 16 13.6	58 66 65	2900	2.2	2.5
19	50-160(I)	17.5 25 32.5	4.68 6.94 9.03	34.4 32 27.5	54 63 60	2900	4	2.5
20	50-160(I)A	16.4 23.4 30.4	4.56 6.5 8.44	30 28 24	54 62 59	2900	4	2.5
21	50-160(I)B	15.0 21.6 28	4.17 6.0 7.78	26 24 20.6	58	2900	3	2.5
22	50-200(I)	17.5 25 32.5	4.86 6.94 9.03	52.7 50 45.5	49 58 59	2900	7.5	2.5

23	50-200(I)A	16.4 23.5 30.5	4.56 6.53 8.47	46.4 44 40	48 57 58	2900	7.5	2.5
24	50-200(I)B	15.2 21.8 28.3	4.22 6.06 7.86	40 38 34.5	55	2900	5.5	2.5
25	50-200(I)	17.5 25 32.5	4.86 6.94 9.03	82 80 76.5	39 50 52	2900	15	2.5
26	50-250(I)A	16.4 23.4 30.5	4.56 6.5 8.47	71.5 70 67	39 50 52	2900	11	2.5
27	50-250(I)B	15 21.6 28	4.17 6.0 7.78	61 60 57.4	38 49 54	2900	11	2.5
28	50-315(I)	17.5 25 32.5	4.86 6.94 9.03	128 125 122	30 40 44	2900	30	2.5
29	50-315(I)A	16.6 23.7 31	4.61 6.58 8.6	115 113 110	30 40 44	2900	22	2.5
30	50-315(I)B	15.7 22.5 29.2	4.36 6.25 8.0	103 101 98	39	2900	18.5	2.5
31	50-315(I)C	14.4 20.6 26.8	4.0 5.72 7.44	86 85 83	38	2900	15	2.5
32	80-100	35 50 65	9.72 13.9 18.1	13.8 12.5 10	67 73 70	2900	3	3.0
33	80-100A	31.3 44.7 58	8.7 12.5 16.1	11 10 8	66 72 69	2900	2.2	3.0
34	80-125	35 50 65	9.72 13.9 18.1	22 20 17	67 72.5 70	2900	5.5	3.0

35	80-125A	31.3 45 58	8.7 12.5 16.1	17.5 16 13.6	66 71 69	2900	4	3.0
36	80-160	35 50 65	9.72 13.9 18.1	35 32 28	63 71 70	2900	7.5	3.0
37	80-160A	32.7 46.7 61	9.1 13.0 16.9	30.6 28 24	62 70 69	2900	7.5	3.0
38	80-160B	30.3 43.3 56.3	8.4 12.0 15.6	26 24 21	69	2900	5.5	3.0
39	80-200	35 50 65	9.72 13.9 18.1	53.5 50 46	55 67 68	2900	15	3.0
40	80-200A	32.8 47 61	9.1 13.1 16.9	47 44 40	54 66 67	2900	11	3.0
41	80-200B	30.5 43.5 56.6	8.5 12.1 15.7	40.6 38 33.4	65	2900	7.5	3.0

No	Model	Flux Q		Lift (m)	Efficiency (%)	Rotate speed (r/min)	Power of electrical motor (kW)	Necessary cavitation margin (m)
		(m ³ /h)	(l/s)					
42	80-250	35 50 65	9.72 13.9 18.1	83 80 72	52 59 60	2900	22	3.0
43	80-250A	32.5 46.7 61	9.0 13.0 16.9	73 70 63	52 59 60	2900	18.5	3.0
44	80-250B	30 43.3 56	8.3 12.0 15.6	62 60 54	58	2900	15	3.0
45	80-315	35 50 65	9.72 13.9 18.1	128 125 122	43 54 57	2900	37	3.0
46	80-315A	32.5 46.5 60.5	9.0 12.9 16.8	112.6 110 107.4	43 54 57	2900	30	3.0
47	80-315B	31 44.5 58	8.6 12.4 16.1	102.5 100 98	53	2900	30	3.0
48	80-315C	29 41 53.6	8.1 11.4 14.9	98 85 83	51	2900	22	3.0
49	80-350	35 50 65	9.72 13.9 18.1	146 150 142	55 66 67	2900	55	3.0
50	80-350A	31 44.5 58	8.6 12.4 16.1	138.4 142 134.8	65	2900	45	3.0
51	80-350B	29 41 53.6	8.1 11.4 14.9	131.4 135 127.8	63	2900	37	3.0

No	Model	Flux Q		Lift (m)	Efficiency (%)	Rotate speed (r/min)	Power of electrical motor (kW)	Necessary cavitation margin (m)
		(m ³ /h)	(l/s)					
52	80-100(I)	70 100 130	19.4 27.8 36.1	13.6 12.5 11	66 76 75	2900	5.5	4.5
53	80-100(I)A	62.6 89 116	17.4 24.7 32.2	11 10 8.8	64 74 74	2900	4	4.5
54	80-125(I)	70 100 130	19.4 27.8 36.1	23.5 20 14	70 76 65	2900	11	4.5
55	80-125(I)A	62.6 89 116	17.4 24.7 32.2	19 16 11	68 74 65	2900	7.5	4.5
56	80-160(I)	70 100 130	19.4 27.8 36.1	36.5 32 24	70 76 65	2900	15	4.5
57	80-160(I)A	65.4 93.5 121.6	18.2 26.0 33.8	32 28 21	68 74 67	2900	11	4.5
58	80-160(I)B	60.6 86.6 112.5	16.8 24.1 31.3	72 24 18	72	2900	11	4.5
59	80-200(I)	70 100 130	19.4 27.8 36.1	54 50 42	65 74 73	2900	22	4.0
60	80-200(I)A	65.4 93.5 121.6	18.2 26.0 33.8	47.5 44 37	64 73 72	2900	18.5	4.0
61	80-200(I)B	61 87 113	16.9 24.2 31.4	41 38 32	71	2900	15	4.0

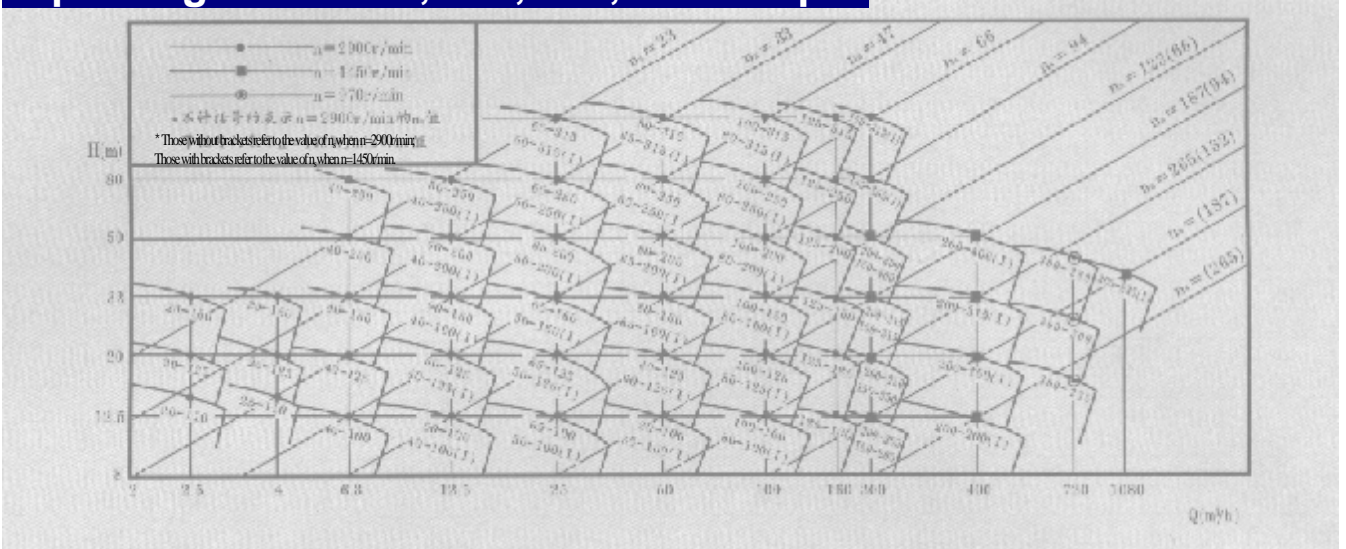
No	Model	Flux Q		Lift (m)	Efficiency (%)	Rotate speed (r/min)	Power of electrical motor (kW)	Necessary cavitation margin (m)
		(m ³ /h)	(l/s)					
62	80-250(I)	70 100 130	19.4 27.8 36.1	87 80 68	62 69 68	2900	37	4.0
63	80-250(I)A	65.4 93.5 121.6	18.2 26.0 33.8	76 70 59.5	61 68 67	2900	30	4.0
64	80-250(I)B	61 87 113	16.9 24.2 31.4	65 60 51	66	2900	30	4.0
65	80-315(I)	70 100 130	19.4 27.8 36.1	132 125 114	55 66 67	2900	75	4.0
66	80-315(I)A	66.5 95 123.6	18.5 26.4 34.3	119 113 103	55 66 67	2900	55	4.0
67	80-315(I)B	63 90 117	17.5 25 32.5	106.6 101 92	65	2900	45	4.0
68	80-315(I)C	58 82 107	16.1 22.8 29.7	90 85 76	63	2900	37	4.0
69	100-100	70 100 130	19.4 27.8 36.1	13.6 12.5 11	66 76 75	2900	5.5	4.5
70	100-100A	62.6 89 116	17.4 47 32.2	11 10 8.8	64 74 74	2900	4	4.5
71	100-125	70 100 130	19.4 27.8 36.1	23.5 20 14	70 76 65	2900	11	4.5

No	Model	Flux Q		Lift (m)	Efficiency (%)	Rotate speed (r/min)	Power of electrical motor (kW)	Necessary cavitation margin (m)
		(m ³ /h)	(l/s)					
72	100-125A	62.6 89 116	17.4 24.7 32.2	19 16 11	68 74 63	2900	7.5	4.5
73	100-160	70 100 130	19.4 27.8 36.1	36.5 32 24	70 76 65	2900	15	4.5
74	100-160A	65.4 93.5 121.6	18.2 26.0 33.8	32 28 21	68 74 67	2900	11	4.5
75	100-160B	60.6 86.6 112.5	16.8 24.1 31.3	27 24 18	72	2900	11	4.5
76	100-200	70 100 130	19.4 27.8 36.1	54 50 42	65 74 73	2900	22	4.0
77	100-200A	65.4 93.5 121.6	18.2 26.0 33.8	47.5 44 37	64 73 72	2900	18.5	4.0
78	100-200B	61 87 113	16.9 24.2 31.4	41 38 32	71	2900	15	4.0
79	100-250	70 100 130	19.4 27.8 36.1	37 80 68	62 69 68	2900	37	4.0
80	100-250A	65.4 93.5 121.6	18.2 26.0 33.8	76 70 59.5	61 68 67	2900	30	4.0
81	100-250B	18.2 26.0 33.8	16.9 24.2 31.4	65 60 51	66	2900	30	4.0

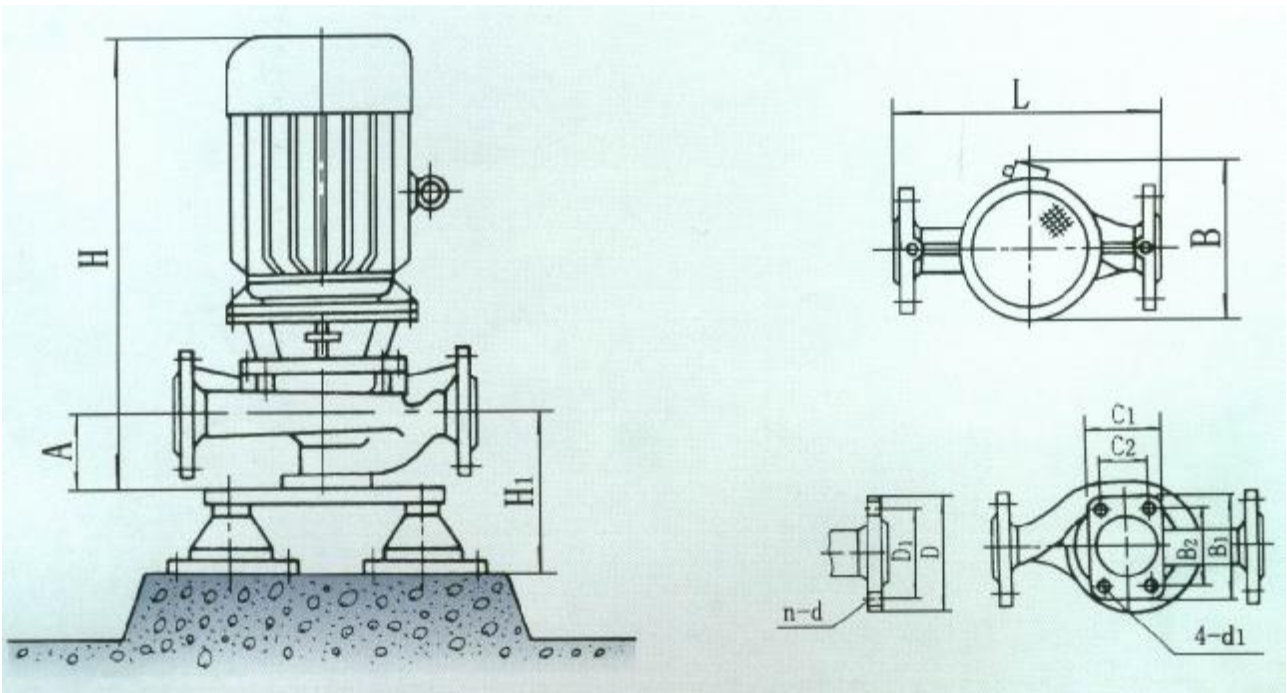
No	Model	Flux Q		Lift (m)	Efficiency (%)	Rotate speed (r/min)	Power of electrical motor (kW)	Necessary cavitation margin (m)
		(m ³ /h)	(l/s)					
82	100-315	70 100 130	19.4 27.8 36.1	132 125 114	55 66 67	2900	75	4.0
83	100-315A	66.5 95 123.6	18.5 26.4 34.3	119 113 103	65 66 67	2900	55	4.0
84	100-315B	63 90 117	17.5 25 32.5	106.6 101 92	65	2900	45	4.0
85	100-315C	58 82 107	16.1 22.8 29.7	90 85 76	63	2900	37	4.0
86	100-100(I)	96 160 192	26.7 44.4 53.3	14 12.5 10	64 73 70	2900	11	4.5
87	100-125(I)	96 160 192	26.7 44.4 53.3	24 20 14	62 74 69	2900	15	4.5
88	100-125(I)A	84 140 168	23.3 39 46.7	20 17 12	64 72 68	2900	11	4.5
89	100-160(I)	96 160 192	26.7 44.4 53.3	36 32 27	69 79 75	2900	22	5.6
90	100-160(I)A	84 140 168	23.3 39 23.5	32 28 23.5	66 76 72	2900	18.5	5.0
91	100-200(I)	96 160 192	26.7 44.4 53.3	53 50 45	69 79 78	2900	37	5.2

No	Model	Flux Q		Lift (m)	Efficiency (%)	Rotate speed (r/min)	Power of electrical motor (kW)	Necessary cavitation margin (m)
		(m ³ /h)	(l/s)					
92	100-200(IA)	84 140 168	23.3 39 46.7	48 45 40	64 74 73	2900	30	4.5
93	100-200(IB)	60 100 120	16.7 27.8 33.3	43 40 36	72	2900	22	4.5
94	100-250(I)	96 160 192	26.7 44.4 53.3	83 80 72	65 77 74	2900	55	4.8
95	100-250(IA)	84 140 168	23.3 39 46.7	75 70 65	60 72 69	2900	45	4.5
96	100-250(IB)	60 100 120	16.7 27.8 33.3	68 65 58	70	2900	37	4.5
97	100-350	60 100 120	16.7 27.8 33.3	153.6 150 142	72 57 74	2900	90	4.0
98	100-350A	61 87 113	16.9 24.2 31.4	145.6 142 134	75	2900	75	4.0
99	100-350B	58 82 107	16.1 22.8 29.7	138.6 135 127	75	2900	55	4.0

Spectrogram of ISG, IRG, IHG, YG Pumps



Mode of Installation



Special instruction:

Pumps with less than 7.5KW can be equipped with vibration isolating tray directly on the foundation.

Pumps with more than 7.5KW can be installed together with moulding foundation, or installed with IS connection panel provided by our company and isolator. The installation of isolator follows the same way with that of ISW pump.

The dimensions of the supporting isolator are the same with those of the isolator used with the pump of the same spec in ISW series.

Table of Figurations and Installing Dimensions

No.	Model of pump	Outline Dimensions				Installation Dimensions			Inlet&Outlet Flange Dimensions		
		L	B	H	C ₁ ×B ₁	A	C ₂ ×B ₂	4-d1	D	D1	n-d
1	50-100	290	230	455	100×150	95	70×120	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
2	50-100A	290	230	455	100×150	95	70×120	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
3	50-125	300	240	465	100×150	95	70×120	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
4	50-125A	300	240	465	100×150	95	70×120	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
5	50-160	320	300	550	120×170	100	80×130	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
6	50-160A	320	300	515	120×170	100	80×130	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
7	50-160B	320	300	490	120×170	100	80×130	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
8	50-200	360	350	635	120×170	100	80×130	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
9	50-200A	360	350	570	120×170	100	80×130	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
10	50-200B	320	300	550	120×170	100	80×130	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
11	50-250	440	430	780	140×200	105	100×160	4 ∅ 14	∅ 165	∅ 125	4- ∅ 18
12	50-250A	440	360	650	140×200	105	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18

13	50-250B	440	430	780	140×200	105	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
14	50-250C	440	430	780	140×200	105	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
15	50-100(D)	320	235	475	140×200	105	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
16	50-100(D)A	440	235	460	140×200	105	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
17	50-125(D)	340	280	550	140×200	95	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
18	50-125(D)A	340	280	515	140×200	95	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
19	50-160(D)	360	305	570	140×200	100	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
20	50-160(D)A	360	305	570	140×200	100	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
21	50-160(D)B	360	305	550	140×200	100	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
22	50-200(D)	380	350	635	140×200	105	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
23	50-200(D)A	380	350	635	140×200	105	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
24	50-200(D)B	380	350	635	140×200	105	100×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
25	50-250(D)	480	435	785	160×220	110	120×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
26	50-250(D)A	480	435	785	160×220	110	120×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
27	50-250(D)	480	435	785	160×220	110	120×160	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18

28	50-315(D)	550	510	920	190×280	110	150×240	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
29	50-315(D)A	550	470	855	190×280	110	150×240	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
30	50-315(D)B	550	435	830	190×280	110	150×240	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
31	50-315(D)C	550	435	785	190×280	110	150×240	4 ∅ 18	∅ 165	∅ 125	4- ∅ 18
32	80-100	400	285	570	140×200	120	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
33	80-100A	400	245	535	140×200	120	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
34	80-125	400	360	660	140×200	120	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
35	80-125A	400	315	595	140×200	120	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
36	80-160	400	360	660	140×200	125	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
37	80-160A	400	360	660	140×200	125	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
38	80-160B	400	315	660	140×200	125	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
39	80-200	430	430	795	140×200	125	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
40	80-200A	430	430	795	140×200	125	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
41	80-200B	430	360	665	140×200	125	100×160	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
42	80-250	480	465	870	160×220	130	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18

43	80-250A	480	430	850	160×220	130	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
44	80-250B	480	430	805	160×220	130	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
45	80-315	580	530	1000	190×280	130	150×240	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
46	80-315A	580	530	1000	190×280	130	150×240	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
47	80-315B	580	530	1000	190×280	130	150×240	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
48	80-315C	580	470	885	190×280	130	150×240	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
49	80-350	630	610	1100	202×260	130	166×220	4 ∅ 18	∅ 200	∅ 160	4- ∅ 18
50	80-350A	630	575	1015	202×260	130	166×220	4 ∅ 18	∅ 200	∅ 160	4- ∅ 18
51	80-350B	630	545	975	202×260	130	166×220	4 ∅ 18	∅ 200	∅ 160	4- ∅ 18
52	80-100(I)	460	360	675	160×220	140	166×220	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
53	80-100(IA)	460	360	610	160×220	140	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
54	80-125(I)	450	430	805	160×220	140	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
55	80-125(IA)	450	350	675	160×220	140	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
56	80-160(I)	500	430	835	160×220	160	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
57	80-160(IA)	500	430	835	160×220	160	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18

58	80-160(DB)	500	430	835	160×220	160	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
59	80-200(I)	480	475	880	160×220	135	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
60	80-200(DA)	480	430	860	160×220	135	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
61	80-200(DB)	480	430	815	160×220	135	120×180	4 ∅ 18	∅ 200	∅ 160	8- ∅ 18
62	80-250(I)	550	520	1015	190×280	155	150×240	4 ∅ 22	∅ 200	∅ 160	8- ∅ 18
63	80-250(DA)	550	520	1015	190×280	155	150×240	4 ∅ 22	∅ 200	∅ 160	8- ∅ 18
64	80-250(DB)	550	520	1015	190×280	155	150×240	4 ∅ 22	∅ 200	∅ 160	8- ∅ 18
65	80-315(I)	580	700	1235	190×280	165	150×240	4 ∅ 22	∅ 200	∅ 160	8- ∅ 18
66	80-315(DA)	580	640	1165	190×280	165	150×240	4 ∅ 22	∅ 200	∅ 160	8- ∅ 18
67	80-315(DB)	580	580	1080	190×280	165	150×240	4 ∅ 22	∅ 200	∅ 160	8- ∅ 18
68	80-315(DC)	580	580	1040	190×280	165	150×240	4 ∅ 22	∅ 200	∅ 160	8- ∅ 18
69	100-100	460	360	675	160×220	140	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
70	100-100A	460	315	610	160×220	140	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
71	100-125	440	430	805	160×220	140	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
72	100-125A	440	350	675	160×220	140	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18

73	100-160	500	430	835	160×220	160	120×180	4 \varnothing 18	\varnothing 220	\varnothing 180	8- \varnothing 18
74	100-160A	500	430	835	160×220	160	120×180	4 \varnothing 18	\varnothing 220	\varnothing 180	8- \varnothing 18
75	100-160B	500	430	835	160×220	160	120×180	4 \varnothing 18	\varnothing 220	\varnothing 180	8- \varnothing 18
76	100-200	480	475	880	160×220	140	120×180	4 \varnothing 18	\varnothing 220	\varnothing 180	8- \varnothing 18
77	100-200A	480	430	860	160×220	140	120×180	4 \varnothing 18	\varnothing 220	\varnothing 180	8- \varnothing 18
78	100-200B	480	430	815	160×220	140	120×180	4 \varnothing 18	\varnothing 220	\varnothing 180	8- \varnothing 18
79	100-250	550	520	1015	160×220	155	120×180	4 \varnothing 22	\varnothing 220	\varnothing 180	8- \varnothing 18
80	100-250A	550	520	1015	160×220	155	120×180	4 \varnothing 22	\varnothing 220	\varnothing 180	8- \varnothing 18
81	100-250B	550	520	1015	160×220	155	120×180	4 \varnothing 22	\varnothing 220	\varnothing 180	8- \varnothing 18
82	100-315	630	700	1235	250×300	165	210×260	4 \varnothing 22	\varnothing 220	\varnothing 180	8- \varnothing 18
83	100-315A	630	640	1165	250×300	165	210×260	4 \varnothing 22	\varnothing 220	\varnothing 180	8- \varnothing 18
84	100-315B	630	580	1080	250×300	165	210×260	4 \varnothing 22	\varnothing 220	\varnothing 180	8- \varnothing 18
85	100-315C	630	520	1040	250×300	165	210×260	4 \varnothing 22	\varnothing 220	\varnothing 180	8- \varnothing 18
86	100-350	680	630	1310	230×320	175	166×220	4 \varnothing 18	\varnothing 220	\varnothing 180	8- \varnothing 18
87	100-350A	680	630	1260	230×320	175	166×220	4 \varnothing 18	\varnothing 220	\varnothing 180	8- \varnothing 18

88	100-350B	680	605	1190	230×320	175	166×220	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
89	100-100(I)	460	415	802	160×220	140	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
90	100-125(I)	500	300	807	160×220	160	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
91	100-125(I)A	500	280	807	160×220	160	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
92	100-160(I)	480	330	884	160×220	170	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
93	100-160(I)A	480	330	884	160×220	170	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
94	100-200(I)	560	365	970	160×220	165	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
95	100-200(I)A	560	345	970	160×220	165	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
96	100-200(I)B	560	345	970	160×220	165	120×180	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
97	100-250(I)	600	435	1121	190×280	175	150×240	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
98	100-250(I)A	600	360	1121	190×280	175	150×240	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18
99	100-250(I)B	600	360	1121	190×280	175	150×240	4 ∅ 18	∅ 220	∅ 180	8- ∅ 18

Main Material Used of ISG Pump

Name of Parts	Materials Used
Spindle	45, 3Cr13, 40Cr, 1Cr18Ni9, 1Cr18Ni9Ti
Mainframe of pump	HT200, HT250, ZG25II, ZGCr13, ZG1Cr18Ni9, Cr18Ni9Ti
Impeller	HT200, HT250, ZG25II, ZGCr13, ZG1Cr18Ni9, ZH62, ZcuSn10p1

	Static circle materials	Dynamic circle materials	Structure	Rubber item	Spring
Major materials for mechanical sealing (according to media use)	Tungsten carbide(WC) Silicon carbide (SiC) Silicon nitrogen (Si ₃ N ₄) Aluminaium oxide ceramics Graphite	Tungsten carbide(WC) Silicon carbide (SiC) Silicon nitrogen (Si ₃ N ₄) Aluminaium oxide ceramics Graphite	H62 Brass 1Cr18Ni9Ti	Nitrile rubber Fluoro rubber Tetrafluoro sealing circe	65Mn chromeplate 1Cr18Ni9Ti

Instruction of Installation

1. Before installation please examine whether the fastening pieces of the unit are loose or not, and whether there are obstructive substances in the flow passage of the pump as obstacles, so as to avoid tampering with the impeller and mainframe of the pump when it operating.
2. When installing, do not place the pipes on the pump, to avoid the transfiguration of the pump.
3. When installing, do screw down the foundation bolt, otherwise, its vibration when started up will influence the performance of the pump.
4. In order to ensure convenient repair and safe operation, adjusting valves are fixed in the pipes of exit and entry of the pump, and a pressure gage is installed near the exit. In this way, it guarantees the pump works within rated lift and flux, and can perform properly, so as to increase its longevity of use.
5. After installation, when stirring the pump spindle, the impeller makes no scrubbing noise and it should not get stuck. If not, disassemble the pump to inspect the reason for its improper performance.
6. There are two connection modes (refer to Connection Mode): inflexible and flexible connecting installation.

Serial Number of Foundation & Installing Dimensions of Junction Boxes in Electrical Motor

Serial number of foundation and installing dimensions

No. of foundation	LD	LK	LG	BG	BK	BW	dl
D37	90	190	370	195	225	255	15
D48	110	260	480	275	305	335	15
D53	120	290	530	320	350	400	20
D74	130	480	740	370	400	450	24
D84	140	500	840	450	470	520	20
D90	150	600	900	530	560	610	20
D105	180	690	1050	590	630	690	24
D83	130	570	830	490	520	570	20
D84	140	560	840	540	570	620	20
D87	170	520	870	590	630	680	24
D104	170	600	1040	590	630	690	24
D114	190	760	1140	690	730	790	24
D125	210	830	1250	790	830	890	24
D108	180	720	1080	690	730	790	24

Installing dimensions of junction box in electrical motor

No. of electrical motor's foundation	AD	No. of electrical motor's foundation	AD
Y80	150	Y180L	285
Y90S	160	Y200L	315
Y90L	160	Y225S	345
Y100L	180	Y225M	345
Y112M	190	Y250M	385
Y132S	210	Y280S	410
Y132M	210	Y280M	410
Y160M	265	Y315S	576
Y160L	265	Y315M	576
Y180M	285	Y315L	576

Start-up and Shut-down

Preparation before start-up:

1. Test whether the electrical motor rotates in the correct direction, i.e. looking from the top of the electrical motor into the pump, it should be clockwise rotation. The test should be carried out within quite a short time so as to avoid dry abrasion of mechanical sealing.
2. Turn on the evacuation valve to fill the pump body with liquid, and turn off the valve till it is full of liquid.
3. Examine whether all parts work properly.
4. Rotate the pump with hand to let lubricant into the surface of mechanical seal.
5. The high-temperature pump should warm up before normal operation. The speed of increasing temperature should be $50^{\circ}\text{C}/\text{h}$ so as to ensure even heating of all parts.

Start-up:

1. Turn on the suction valve completely.
2. Turn off the valve of exiting pipe.
3. Start the electrical motor to make sure whether the pump works properly.
4. Adjust the aperture and required performance of the exit valve, for example, by fixing a flow-meter or a pressure gage. Adjustment of the aperture of the exit valve should ensure that the pump operates at the rated points in accordance with the table of functional parameters. Given the user has equipped the exit of the pump with a flowmeter or a pressure gage, by adjusting the aperture of the exit valve, he measures the current of the electric motor so as to guarantee the motor working within the rated electrical current. Otherwise, the pump works at an overload (i.e. operates in high current), which leads to the pump's burning out. The situation of turning on the adjusted exit valve is related with the work conditions of the pipes.
5. Examine shaft-packing leakage. The normal leakage of mechanical seal should be less than 3drops/min.
6. Check the temperature rise of electrical motor and axle bearing, and it should be $\leq 70^{\circ}\text{C}$.

Shut-down:

1. As for the high-temperature pump, please lower the temperature first. The rate of lowering the temperature should be $< 10^{\circ}\text{C}/\text{min}$. Only when the temperature is lowered under 80°C , can the pump be shut down.
2. Shut the valve of exiting pipe.
3. Stop the electrical motor.
4. Shut the entry valve.
5. If it will be shut down for a long period, the liquid in the pump should be eliminated.

Maintenance

Maintenance when operating

1. The pipes of entry should be filled with liquid. The pump is not allowed to operate in cavitation.
2. Inspect the current of the electrical motor periodically to make sure it is lower than the rated electrical current of the motor.
3. After long operation, due to mechanical abrasion, the pump may cause increasing noise and vibration. It is advisable to inspect of the mechanical unit when shutting down the pump. If necessary, the quick-wear parts and the bearings can be altered. The period of overhauling check of the unit generally is one year.

Maintenance of mechanical seal

1. The lubricant of mechanical seal should be clean without any solid grains.
2. The mechanical seal is not allowed to work in dry grinding.
3. Stir the pump (electrical motor) several rounds before starting up, in order to avoid the graphite circle rupturing due to the sudden start.
4. The franchise of leakage of seal should be 3drops/min. If not, check to find the reason.

Main Material Used

ISG IRG IHG Clear-water pump			Pump body	Impeller	Pump cylinder	Conjuncted foundation	Axle	Impeller nut
	Temperature -20°C to +120°C		HT200	HT200	HT200	HT200	45	2Cr13
	Temperature -45°C to +240°C		ZG25	ZG25	ZG25	ZG25	35CrMo	2Cr13
IRG Oil pump	I	Non-erosive -20°C to +120°C	HT200	HT250	HT200	HT200	45	2Cr13
	II	Non-erosive -45°C to +240°C	ZG25	ZG25	25	ZG25	35CrMo	2Cr13
	III	Non-erosive -45°C to +240°C	305	305	305	305	3Cr13	2Cr13
Material and code of IHG chemical pump	Material		ZG1Cr18Ni9	ZG1Cr18Ni9	ZG0Cr18Ni12Mo 2Ti	ZG1Cr18Ni12Mo 2Ti		
	Code		303	305	306	307		
Major materials for mechanical sealing (according to user's request)	Static circle materials		Dynamic circle materials		Structure		Rubber item	
	Tungsten carbide(WC) Silicon carbide (SiC) Silicon nitrogen (Si ₃ N ₄) Aluminaium oxide ceramics Graphite		Tungsten carbide(WC) Silicon carbide (SiC) Silicon nitrogen (Si ₃ N ₄) Aluminaium oxide ceramics Graphite		H62 Brass 1Cr18Ni9Ti		Nitrile rubber Fluoro rubber Tetrafluoro sealing circe	
						65Mn chromeplate 1Cr18Ni9Ti		

Quick-wear Parts (Mechanical Seal & Bearing)

Power of electrical motor	Spec of mechanical seal	Spec of bearing
0.25, 0.37KW	CF01-14	180202
0.55, 0.75, 1.1KW	CF01-18	180204
1.5, 2.2KW	CF01-20	180205
3KW	CF01-25	180206
4KW	CF01-25	180308
5.5, 7.5KW (2 pole)	CF01-30	180308
7.5KW(pole)	CF01-35	180308
11,15(2,4pole) 18.5KW(2pole)	CF01-35	45309, 180308
18.5(4pole) 22KW(2,4pole)	CF01-40	46311, 180310
30(2,4pole) 37KW(2pole)	CF01-45	46312, 180311
37KW(4pole) 45KW(2,4pole)	CF01-45	46313, 180312
55KW(2,4pole)	CF01-55	46314, 180313
75KW(2,4pole)90KW(2,4pole)	CF01-55	46317, 180316

Cause and Debugging of Malfunction

Phenomena of malfunction	Possible causes	Debugging measures
1. No water from the pump	<ul style="list-style-type: none"> a. Without opening the valves of entry and exit, obstructions in the entry and exit pipes or impeller of the flow passage gets stuck b. Motor operates in a wrong direction, and the rotate speed is very slow. c. Leakage in the suction pipe. d. The pump has not been filled with liquid, and there is air in the pump chamber. e. Not enough water supply in the entry or the water is lifted too high or leakage in the bottom of the valve. f. Excessive resistance in the pipes, or wrong choice of the pump type. 	<ul style="list-style-type: none"> a. Inspect the pump and clear away the obstructions. b. Adjust the operating direction of motor and tighten the connections of motor. c. Screw down all the sealed surfaces to remove the air. d. Open the cover on the top of the pump or the exhaust valve to eliminate the air. e. Shut down the pump for inspection and adjustment. (It is more likely to happen when connected with water pipes). f. Reduce curves of the pipes or re-select a pump.
2. Inadequate flux from the pump	<ul style="list-style-type: none"> a. Examine the reason in accordance to 1 first. b. The pipes or impeller of flow passage are partially obstructed; or waste water is accumulated, or the aperture of the valve is not enough. c. Electrical pressure is too lower. d. Abrasion of the impeller. 	<ul style="list-style-type: none"> a. Debug according to 1. b. Clear away the obstructions and adjust the aperture of the valve again. c. Stabilize the pressure. d. Alter the impeller.
3. Excessive power	<ul style="list-style-type: none"> a. Operation in over rated flux. b. Suction course is too high. c. Abrasion of the bearing of the pump. 	<ul style="list-style-type: none"> a. Adjust the flux and turn down the exit valve. b. Lower it. c. Alter the bearing.
4. Noise and libration	<ul style="list-style-type: none"> a. The supporting of pipes is unsteady. b. Gas mixed in the liquid. c. Cavitation happens. d. Tampering with the bearing. e. Motor operates at an overload and lets out much heat. 	<ul style="list-style-type: none"> a. Fix the pipes. b. Increase the evacuation of suction pressure. c. Reduce the vacuity. d. Alter the bearing. e. Adjust it according to 5.
5. The electrical motor is heated.	<ul style="list-style-type: none"> a. Excessive flux, and operation at an overload. b. Bumping and scraping. c. Tampering with bearing of the motor. d. Inadequate electrical pressure. 	<ul style="list-style-type: none"> a. Turn down the exit valve. b. Check and clear it away. c. Alter the bearing. d. Stabilize the pressure.
6 Water leaking from the pump.	<ul style="list-style-type: none"> a. Abrasion of mechanical seal. b. Holes or fractures on pump body. c. Uneven sealed surface. d. The installing bolt is loose. 	<ul style="list-style-type: none"> a. Alter it. b. Repairing it by welding or alteration. c. Make it smooth. d. Screw it down.

