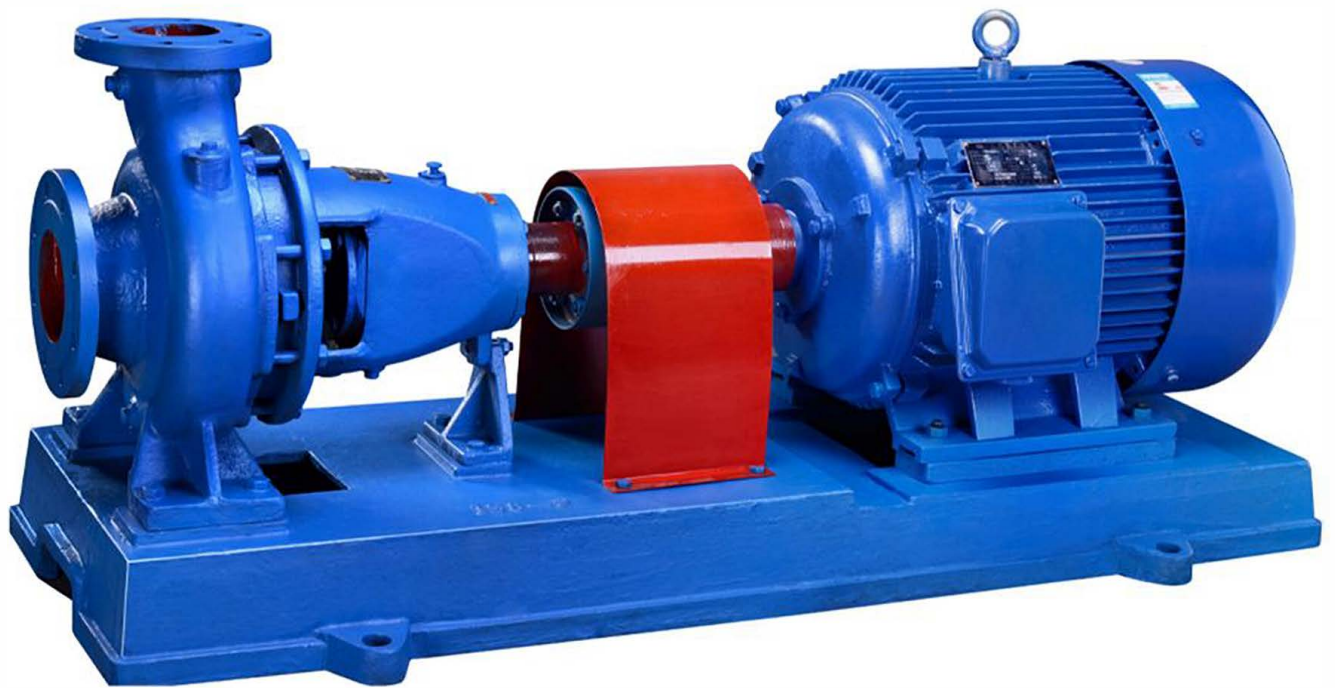




ZOOMLIAN



ChangSha Zoomlian Pump Co.,Ltd

# **HORIZONTAL SINGLE STAGE END SUCTION CENTRIFUGAL PUMP**

## **MODEL:IS**



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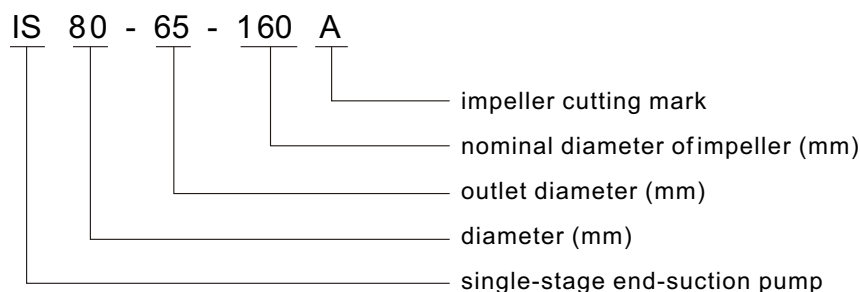
## BRIEF INTRODUCTION

IS series single-stage end-suction (axial intake) centrifugal pump is an energy-saving pump designed by teamwork in the whole nation, it is improved on a basis on model BA, B and other single-stage water centrifugal pump. The advantages: its hydraulic capability is distributed reasonably, wide option for user, conveniently check and repair, the efficiency and throw is up to advanced international level. This pump is suitable for industrial and city water supply, water drainage, and widely used for agricultural irrigation, transportation pure water or other liquids which physical and chemical nature is similar to pure water, and the temperature should not be higher than 80°C.

## FEATURES

speed: 2900RPM and 1450RPM	Suction: 50~200mm
Flow/Capacity: 6.3~400m <sup>3</sup> /h	Head: 5~125m

## MODEL DEFINITION



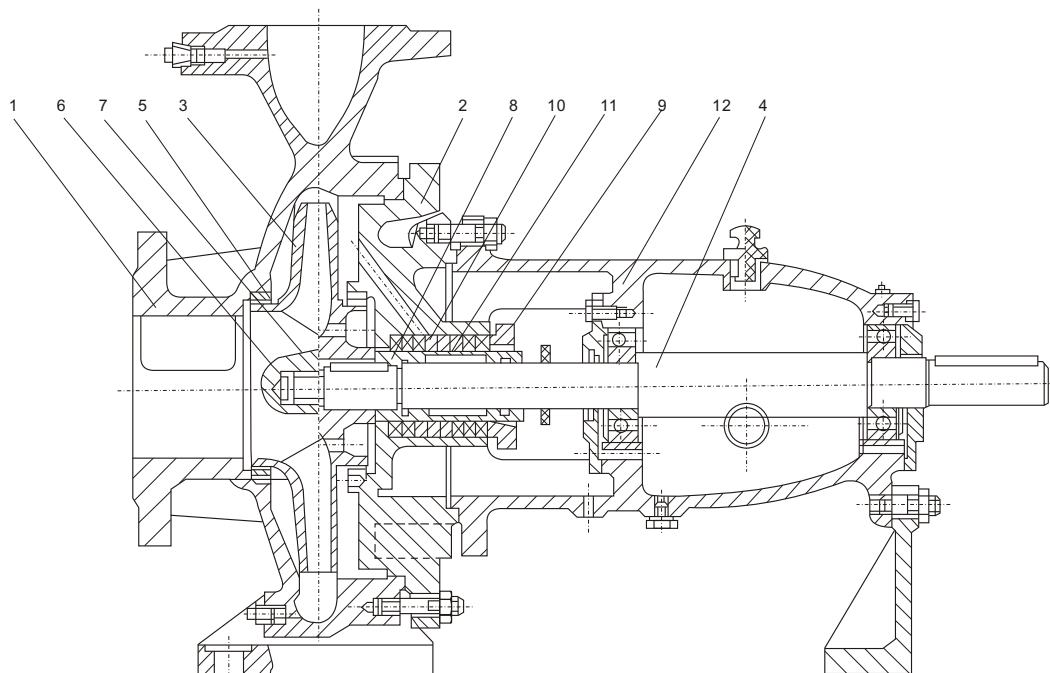
## STRUCTURE DIRECTIONS

1. IS series single-stage end-suction centrifugal pump is designed according to the capability and size stipulated in the International Standard ISO2858, it is composed of pump body, pump cover, impeller, shaft, ring seal, sleeve and suspended bearing units.
2. The pump body and pump cover in IS series are separated from the back of impeller, that is to say in general, back open structure, whose advantages: convenient overhaul, when checking and repairing, the pump body intake pipe, discharge pipe and motor need not to move, just disassembly the middle connector of extended coupling to quit the rotor units for overhaul.
3. The pump shell (that is pump body and pump cover) forms the workroom of pump impeller, shaft and rolling bearing are the rotors for the pump. Suspended bearing units support the rotors in the pump. The rolling bearing stands the radial load and axial force.

## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

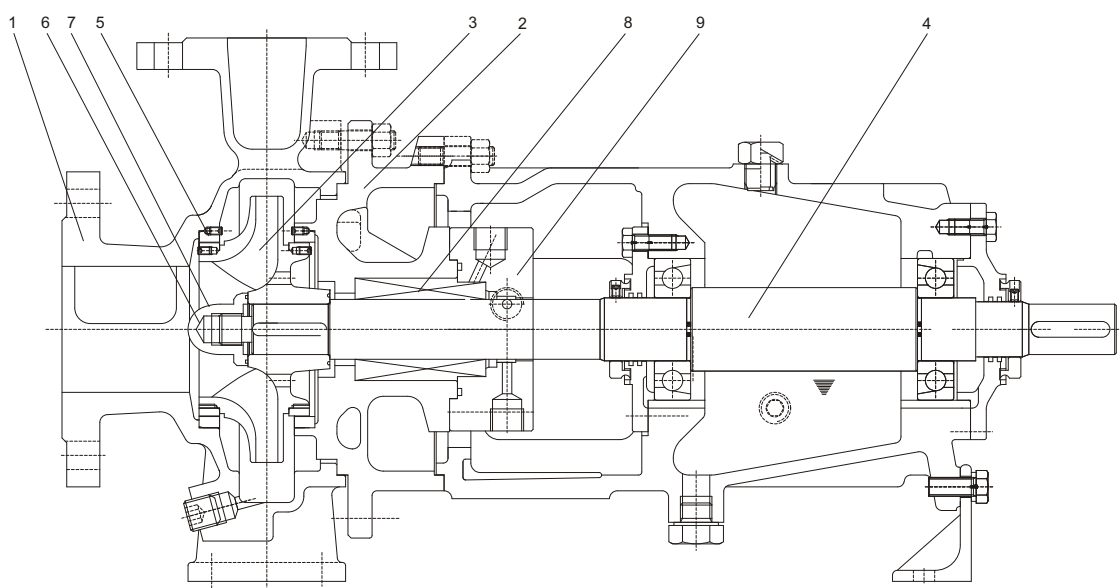
4. In order to balance the axial force of the pump, most of the pumps are designed with sealing rings at the front and back of impellers and a balance hole on the rear impeller cap plate. The reverse of impeller is not designed with sealing rings or balance holes if pump axial force is not powerful.
5. The axial sealing ring of the pump is composed of packing gland, packing rings and packing to avoid air admission or severe water leakage. For the impeller with balance hole, the empty chamber with soft packing is straight through with the impeller inlet. If the liquid in the impeller inlet is in vacuum state, the air will enter along the surface of muff easily. Therefore, the packing chamber is fitted with packing ring, which has the seal function when pressure water inside the chamber is led to it through a small hole in the pump cover. For the impeller without balance hole, the packing ring may be neglected in virtue of no existence of air leakage because the impeller back hydraulic pressure is larger than atmosphere one.
6. To avoid abrasion of shaft, the part where the shaft runs through packing chamber is fitted with protective muff. O ring is fitted between muff and shaft to protect against air entering or water leaking along the matching surface.
7. The pump is connected to motor with extending flexible coupling. The pump turns clockwise when you look from the driving end.

### STRUCTURAL DIAGRAM ( I )



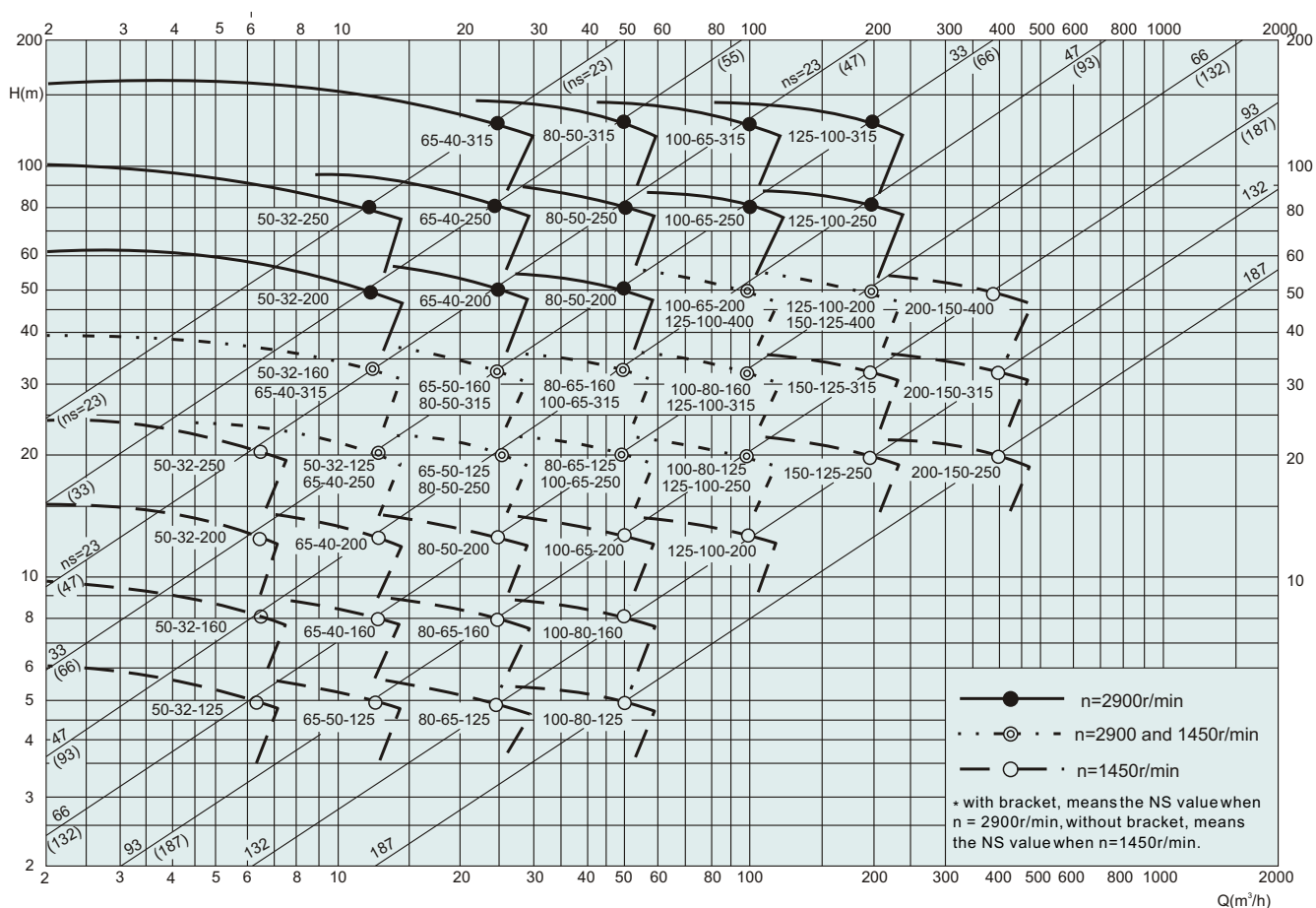
1	Pump casing	4	Shaft	7	Lock washer	10	Packing ring
2	pump cover	5	Sealing ring	8	Muff	11	Packing
3	Impeller	6	Impeller nut	9	packing gland	12	Pendant bearing assembly

**STRUCTURAL DIAGRAM (II)**



1	Pump casing
2	pump cover
3	Impeller
4	Shaft
5	Sealing ring
6	Impeller nut
7	Lock washer
8	Mechanical seal
9	Sealing cap

**CURVE DIAGRAM**



## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### PERFORMANCE DATA/PARAMETER SHEET/SPECIFICATION

Model	Capacity/Flow		Head (m)	Speed (r/min)	Power(kw)		Efficiency (%)	Nominal diameter of impeller (mm)	(NPSH) <sub>r</sub> m
	(m <sup>3</sup> /h)	(L/s)			For shaft	For motor			
IS50-32-125	7.5	2.08	22	2900	0.96	2.2	47	130	2.0
	12.5	3.47	20		1.13		60		2.0
	15	4.17	18.5		1.26		60		2.5
IS50-32-125A	11.2	3.1	16	2900	0.84	1.1	58	116	2.0
IS50-32-160	7.5	2.08	34.3	2900	1.59	3	44	158	2.0
	12.5	3.47	32		2.02		54		2.0
	15	4.17	9.6		2.16		56		2.5
IS50-32-160A	11.7	3.3	28	2900	1.71	2.2	53	148	2.0
IS50-32-160B	10.8	3	24	2900	1.41	2.2	50	137	2.0
IS50-32-200	7.5	2.08	52.5	2900	2.82	5.5	38	198	2.0
	12.5	3.47	50		3.54		48		2.0
	15	4.17	48		3.95		51		2.5
IS50-32-200A	11.7	3.3	44	2900	3.16	4	45	186	2.0
IS50-32-200B	10.8	3	38	2900	2.60	3	43	173	2.0
IS50-32-250	7.5	2.08	82	2900	5.87	11	28.5	250	2.0
	12.5	3.47	80		7.16		38		2.0
	15	4.17	78.5		7.83		41		2.5
IS50-32-250A	11.7	3.3	70	2900	6.47	7.5	35	234	2.0
IS50-32-250B	10.8	3	60	2900	5.51	7.5	32	217	2.0
IS65-50-125	15	4.17	21.8	2900	1.54	3	58	130	2.0
	25	6.94	20		1.97		69		2.5
	30	8.33	18.5		2.22		68		3.0
IS65-50-125A	22.4	6.2	16	2900	1.47	2.2	66	116	2.0
IS65-50-160	15	4.17	35	2900	2.65	5.5	54	165	2.0
	25	6.94	32		3.35		65		2.0
	30	8.33	30		3.71		66		2.5
IS65-50-160A	23.4	6.5	28	2900	2.83	4	63	154	2.0
IS65-50-160B	21.7	6	24	2900	2.35	4	60	143	2.0
IS65-40-200	15	4.17	53	2900	4.42	7.5	49	200	2.0
	25	6.94	50		5.67		60		2.0
	30	8.33	47		6.29		61		2.5
IS65-40-200A	23.4	6.5	44	2900	4.92	5.5	57	188	2.0
IS65-40-200B	21.8	6.1	38	2900	4.13	5.5	55	175	2.0
IS65-40-250	15	4.17	82	2900	9.05	15	37	254	2.0
	25	6.94	80		10.89		50		2.0
	30	8.33	78		12.02		53		2.5
IS65-40-250A	23.4	6.5	70	2900	9.10	11	49	238	2.0

## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### PARAMETER DIAGRAM

Model	Capacity/Flow		Head (m)	Speed (r/min)	Power(kw)		Efficiency (%)	Nominal diameter of impeller (mm)	(NPSH) <sub>r</sub> m
	(m <sup>3</sup> /h)	(L/s)			For shaft	For motor			
IS65-40-250B	21.7	6	60	2900	7.51	11	47	220	2.0
IS65-40-315		4.17	127	2900	18.5	30	28	315	2.5
		6.94	125		21.3		40		2.5
		8.33	123		22.8		44		3.0
IS65-40-315A	23.9	6.6	114	2900	19.41	22	38	301	2.5
IS65-40-315B	22.7	6.3	103	2900	17.19	22	37	286	2.5
IS65-40-315C	21.4	5.9	92	2900	15.20	18.5	35	270	2.5
IS80-65-215		30	22.5	2900	2.87	5.5	64	137	3.0
		50	20		3.63		75		3.0
		60	18		3.98		74		3.5
IS80-65-215A	44.7	12.4	16	2900	2.66	3	73	125	3.0
IS80-65-160		30	36	2900	4.82	7.5	61	168	2.5
		50	32		5.97		73		2.5
		60	29		6.59		72		3.0
IS80-65-160A	46.8	13	28	2900	5.10	5.5	70	157	2.5
IS80-65-160B	43.3	12	24	2900	4.15	5.5	68	146	2.5
IS80-50-200		30	55	2900	7.87	15	55	202	2.5
		50	50		9.87		69		2.5
		60	47		10.8		71		3.0
IS80-50-200A	46.8	13	44	2900	8.37	11	67	190	2.5
IS80-50-200B	43.6	12.1	38	2900	6.83	11	66	176	2.5
IS80-50-250		30	84	2900	13.2	22	52	252	2.5
		50	80		17.3		63		2.5
		60	75		19.2		64		3.0
IS80-50-250A	46.8	13	70	2900	14.87	18.5	60	238	2.5
IS80-50-250B	43.3	13	60	2900	13.18	15	58	218	2.5
IS80-50-315		30	128	2900	25.5	37	41	315	2.5
		50	125		31.5		54		2.5
		60	123		35.3		57		3.0
IS80-50-315A	47.8	13.3	114	2900	29.15	37	51	301	2.5
IS80-50-315B	45.4	12.6	103	2900	25.97	30	49	286	2.5
IS80-50-315C	42.9	11.9	92	2900	22.84	30	47	270	2.5
IS100-80-125		60	24	2900	5.86	11	67	140	4.0
		100	20		7.0		78		4.5
		120	16.5		7.28		74		5.0
IS100-80-125A	89.4	24.8	16	2900	5.19	7.5	75	125	4.5

## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### PARAMETER DIAGRAM

Model	Capacity/Flow		Head (m)	Speed (r/min)	Power(kw)		Efficiency (%)	Nominal diameter of impeller (mm)	(NPSH) <sub>r</sub> m
	(m <sup>3</sup> /h)	(L/s)			For shaft	For motor			
IS100-80-160	60	16.7	26	2900	8.42		70		3.5
	100	27.8	32		11.2		78		4.0
	120	33.3	28		12.2		75		5.0
IS100-80-160A	93.5	26	28	2900	9.52	11	75	159	4.0
IS100-80-160B	86.6	24.1	24	2900	7.77	11	73	147	4.0
IS100-65-200	60	16.7	54	2900	13.6	22	65	203	3.0
	100	27.8	50		17.9		76		3.6
	120	33.3	47		19.9		77		4.8
IS100-65-200A	93.8	26.1	44	2900	15.01	18.5	75	190	3.6
IS100-65-200B	87.2	24.2	38	2900	12.52	15	72	177	3.6
IS100-65-250	60	16.7	87	2900	23.4	37	61	255	3.5
	100	27.8	80		30.3		72		3.8
	120	33.3	74.5		33.3		73		4.8
IS100-65-250A	93.5	26	70	2900	25.49	30	70	239	3.8
IS100-65-250B	86.6	24.1	60	2900	20.85	30	68	221	3.8
IS100-65-315	60	16.7	133	2900	39.6	75	55	315	3.0
	100	27.8	125		51.6		66		3.6
	120	33.3	118		57.5		67		4.2
IS100-65-315A	95.5	26.5	114	2900	46.28	55	64	301	3.6
IS100-65-315B	90.8	25.2	103	2900	41.04	45	62	286	3.6
IS100-65-315C	85.8	23.8	92	2900	35.78	45	60	271	3.6
IS125-100-200	120	33.3	57.7	2900	28.0	45	67	216	4.5
	200	55.6	50		33.6		81		4.5
	240	66.7	44.5		36.4		80		5.0
IS125-100-200A	187	52	44	2900	28.76	37	78	203	4.5
IS125-100-200B	174.4	48.4	38	2900	23.73	30	76	188	4.5
IS125-100-250	120	33.3	87	2900	43.0	75	66	255	3.8
	200	55.6	80		55.9		78		4.2
	240	66.7	72		62.8		75		5.0
IS125-100-250A	187	52	70	2900	46.96	55	76	239	4.2
IS125-100-250B	173.2	48.1	60	2900	38.24	45	74	221	4.2
IS125-100-315	120	33.3	132.5	2900	72.1	110	60	317	4.0
	200	55.6	125		90.8		75		4.5
	240	66.7	120		101.9		77		5.0
IS125-100-315A	191	53.1	114	2900	81.30	90	73	303	4.5
IS125-100-315B	181.5	50.4	103	2900	71.68	90	71	288	4.5



## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### PARAMETER DIAGRAM

Model	Capacity/Flow		Head (m)	Speed (r/min)	Power(kw)		Efficiency (%)	Nominal diameter of impeller (mm)	(NPSH) <sub>r</sub> m
	(m <sup>3</sup> /h)	(L/s)			For shaft	For motor			
IS125-100-315C	171.6	47.7	92	2900	62.35	75	69	272	4.5
IS50-32-125	3.75	1.04	5.4	1450	0.13	0.55	43	130	2.0
	6.3	1.74	5.0		54		2.0		
	7.5	2.08	4.6		55		2.5		
IS50-32-125A	5.6	1.6	4	1450	0.12	0.55	53	116	2.0
IS50-32-160	3.75	1.04	8.5	1450	0.25	0.55	35	158	2.0
	6.3	1.74	8.0		48		2.0		
	7.5	2.08	7.5		49		2.5		
IS50-32-160A	5.8	1.6	7	1450	0.24	0.55	46	148	2.0
IS50-32-160B	5.4	1.5	6	1450	0.21	0.55	43	137	2.0
IS50-32-200	3.75	1.04	13.1	1450	0.41	0.75	33	198	2.0
	6.3	1.74	12.5		42		2.0		
	7.5	2.08	12		44		2.5		
IS50-32-200A	5.8	1.6	11	1450	0.43	0.55	40	186	2.0
IS50-32-200B	5.4	1.5	9.5	1450	0.37	0.55	38	173	2.0
IS50-32-250	3.75	1.04	20.5	1450	0.91	1.5	23	250	2.0
	6.3	1.74	20		32		2.0		
	7.5	2.08	19.5		35		2.5		
IS50-32-250A	5.8	1.6	17.5	1450	0.92	1.5	30	234	2.0
IS50-32-250B	5.4	1.5	15	1450	0.85	1.1	26	217	2.0
IS65-50-125	7.5	2.08	5.35	1450	0.21	0.55	53	130	2.0
	12.5	3.47	5.0		64		2.0		
	15	4.17	4.7		65		2.5		
IS65-50-125A	11.2	3.1	4	1450	0.20	0.55	62	116	2.0
IS65-50-160	7.5	2.08	8.8	1450	0.36	0.75	50	165	2.0
	12.5	3.47	8.0		60		2.0		
	15	4.17	7.2		60		2.5		
IS65-50-160A	11.7	3.3	7	1450	0.39	0.55	58	154	2.0
IS65-50-160B	10.8	3	6	1450	0.32	0.55	56	143	2.0
IS65-40-200	7.5	2.08	13.2	1450	0.63	1.1	43	200	2.0
	12.5	3.47	12.5		55		2.0		
	15	4.17	11.8		57		2.5		
IS65-40-200A	11.7	3.3	11	1450	0.70	1.1	51	188	2.0
IS65-40-200B	10.8	3	9.5	1450	0.58	0.75	48	175	2.0
IS65-40-250	7.5	2.08	21	1450	1.23	2.2	35	254	2.0
	12.5	3.47	20		46		2.0		
	15	4.17	19.4		48		2.5		

## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### PARAMETER DIAGRAM

Model	Capacity/Flow		Head (m)	Speed (r/min)	Power(kw)		Efficiency (%)	Nominal diameter of impeller (mm)	(NPSH) <sub>r</sub> m
	(m <sup>3</sup> /h)	(L/s)			For shaft	For motor			
IS65-40-250A	11.7	3.3	17.5	1450	1.23	1.5	46	238	2.0
IS65-40-250B	10.8	3	15	1450	1.00	1.5	44	220	2.0
IS65-40-315	7.5	2.08	32.3	1450	2.63	4	25	315	2.5
	12.5	3.47	32.0		37		2.5		
	15	4.17	31.7		41		3.0		
IS65-40-315A	11.9	3.3	28.5	1450	2.63	3	35	301	2.5
IS65-40-315B	11.3	3.2	25.8	1450	2.38	3	34	286	2.5
IS65-40-315C	10.7	3	23	1450	2.11	3	32	270	2.5
IS80-65-125	15	4.17	5.6	1450	0.42	0.75	55	137	2.5
	25	6.94	5		71		2.5		
	30	8.33	4.5		72		3.0		
IS80-65-125A	22.4	6.2	4	1450	0.35	0.55	69	125	2.5
IS80-65-160	15	4.17	9	1450	0.67	1.5	55	168	2.5
	25	6.94	8		69		2.5		
	30	8.33	7.2		68		3.0		
IS80-65-160A	23.4	6.5	7	1450	0.68	1.1	66	157	2.5
IS80-65-160B	21.7	6	6	1450	0.55	0.75	64	146	2.5
IS80-50-200	15	4.17	13.2	1450	1.06	2.2	51	202	2.5
	25	6.94	12.5		65		2.5		
	30	8.33	11.8		67		3.0		
IS80-50-200A	23.4	6.5	11	1450	1.10	1.5	64	190	2.5
IS80-50-200B	21.8	6.1	9.5	1450	0.90	1.1	63	176	2.5
IS80-50-250	15	4.17	21	1450	1.75	3	49	252	2.5
	25	6.94	20		60		2.5		
	30	8.33	18.8		61		3.0		
IS80-50-250A	23.4	6.5	17.5	1450	1.96	2.2	57	238	2.5
IS80-50-250B	21.7	6	15	1450	1.60	2.2	55	218	2.5
IS80-50-315	15	4.17	32.5	1450	3.4	5.5	39	315	2.5
	25	6.94	32		52		2.5		
	30	8.33	31.5		56		3.0		
IS80-50-315A	23.9	6.6	28.5	1450	3.76	5.5	49	301	2.5
IS80-50-315B	22.7	6.3	25.8	1450	3.46	4	46	286	2.5
IS80-50-315C	21.4	6	23	1450	3.07	4	44	270	2.5
IS100-80-125	30	8.33	6	1450	0.77	1.5	64	140	2.5
	50	13.9	5		75		2.5		
	60	16.7	4		71		3.0		

## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### PARAMETER DIAGRAM

Model	Capacity/Flow		Head (m)	Speed (r/min)	Power(kw)		Efficiency (%)	Nominal diameter of impeller (mm)	(NPSH) <sub>r</sub> m
	(m <sup>3</sup> /h)	(L/s)			For shaft	For motor			
IS100-80-125A	44.7	12.4	4	1450	0.68	1.1	72	125	2.5
IS100-80-160	30	8.33	9.2	1450	1.12	2.2	67	170	2.0
	50	13.9	8.0		1.45		75		2.5
	60	16.7	6.8		1.57		71		3.5
IS100-80-160A	46.8	13	7	1450	1.24	1.5	72	159	2.5
IS100-80-160B	43.3	12	6	1450	1.01	1.5	70	147	2.5
IS100-65-200	30	8.33	13.5	1450	1.84	4	60	203	2.0
	50	13.9	12.5		2.33		73		2.0
	60	16.7	11.8		2.61		74		2.5
IS100-65-200A	46.9	13	11	1450	1.95	3	72	190	2.0
IS100-65-200B	43.6	12.1	9.5	1450	1.63	2.2	69	177	2.0
IS100-65-250	30	8.33	21.3	1450	3.16	5.5	55	255	2.0
	50	13.9	20		4.00		68		2.0
	60	16.7	19		4.44		70		2.5
IS100-65-250A	46.8	13	17.5	1450	3.38	4	66	239	2.0
IS100-65-250B	43.3	12	15	1450	2.76	4	64	221	2.0
IS100-65-315	30	8.33	34	1450	5.44	11	51	315	2.0
	50	13.9	32		6.92		63		2.0
	60	16.7	30		7.67		61		2.5
IS100-65-315A	47.7	13.3	28.5	1450	6.09	7.5	61	301	2.0
IS100-65-315B	45.4	12.6	25.8	1450	5.40	7.5	59	286	2.0
IS100-65-315C	42.9	11.9	23	1450	4.71	5.5	57	271	2.0
IS125-100-200	60	16.7	14.5	1450	3.83	7.5	62	216	2.5
	100	27.8	12.5		4.48		76		2.5
	120	33.3	11.0		4.79		75		3.0
IS125-100-200A	93.5	26	11	1450	3.84	5.5	73	203	2.5
IS125-100-200B	87.2	24.2	9.5	1450	3.17	4	71	188	2.5
IS125-100-250	60	16.7	21.5	1450	5.59	11	63	255	2.5
	100	27.8	20		7.17		76		2.5
	120	33.3	18.5		7.84		77		3.0
IS125-100-250A	93.5	26	17.5	1450	6.03	7.5	74	239	2.5
IS125-100-250B	86.6	24.1	15	1450	4.92	7.5	72	221	2.5
IS125-100-315	60	16.7	33.5	1450	9.4	15	58	317	2.5
	100	27.8	32		11.9		73		2.5
	120	33.3	30.5		13.5		74		3.0
IS125-100-315A	95.5	26.5	28.5	1450	10.43	15	71	303	2.5

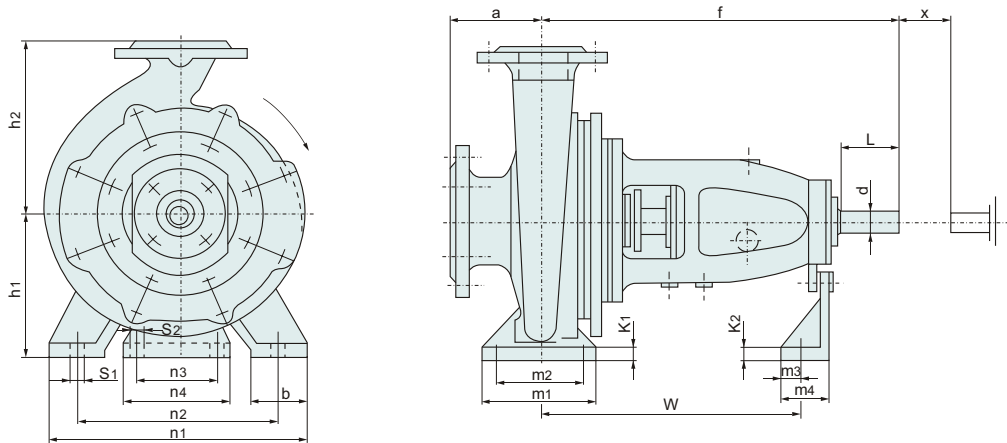
## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### PARAMETER DIAGRAM

Model	Capacity/Flow		Head (m)	Speed (r/min)	Power(kw)		Efficiency (%)	Nominal diameter of impeller (mm)	(NPSH) <sub>r</sub> m
	(m <sup>3</sup> /h)	(L/s)			For shaft	For motor			
IS125-100-315B	90.8	25.2	25.8	1450	9.37	11	68	288	2.5
IS125-100-315C	85.8	23.8	23	1450	8.13	11	66	272	2.5
IS125-100-400	60	16.7	52	1450	16.1	30	53	395	2.5
	100	27.8	50		21.0		65		3.0
	120	33.3	48.5		23.6		67		3.0
IS125-100-400A	93.5	26	44	1450	17.8	22	63	371	3.0
IS125-100-400B	86.6	24.1	38	1450	14.96	18.5	60	345	3.0
IS150-125-250	120	33.3	22.5	1450	10.4	18.5	71	260	3.0
	200	55.6	20		13.5		81		3.0
	240	66.7	17.5		14.7		78		3.5
IS150-125-250A	187	52	17.5	1450	11.44	15	78	243	3.0
IS150-125-250B	173	48	15	1450	9.29	11	76	225	3.0
IS150-125-315	120	33.3	34	1450	15.9	30	70	325	2.5
	200	55.6	32		22.1		79		2.5
	240	66.7	29		23.7		80		3.0
IS150-125-315A	187	52	28	1450	18.78	22	76	304	2.5
IS150-125-315B	173	48	24	1450	15.47	18.5	73	282	2.5
IS150-125-400	120	33.3	53	1450	27.9	45	62	400	2.0
	200	55.6	50		36.3		75		2.8
	240	66.7	46		40.6		74		3.5
IS150-125-400A	187	52	44	1450	30.73	37	73	375	2.8
IS150-125-400B	173	48	38	1450	25.19	30	71	348	2.8
IS200-150-250	240	66.7	22.6	1450	21.1	37	70	275	3.6
	400	111.1	20		26.6		82		4.6
	460	127.8	17.5		27.3		79		4.9
IS200-150-250A	374	104	17.5	1450	22.30	30	80	257	4.6
IS200-150-250B	346	96	15	1450	18.10	22	78	238	4.6
IS200-150-315	240	66.7	37	1450	34.6	55	70	348	3.0
	400	111.1	32		42.5		82		3.5
	460	127.8	28.5		44.6		80		4.0
IS200-150-315A	374	104	28	1450	35.69	45	80	326	3.5
IS200-150-315B	346	96	24	1450	28.96	37	78	301	3.5
IS200-150-400	240	66.7	55	1450	48.6	90	74	395	3.0
	400	111.1	50		67.2		81		3.8
	460	127.8	45		74.2		76		4.5
IS200-150-400A	374	104	44	1450	56.79	75	79	371	3.8
IS200-150-400B	346	96	38	1450	46.45	55	77	342	3.8

# IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

## BASE DIMENSION DRAWING



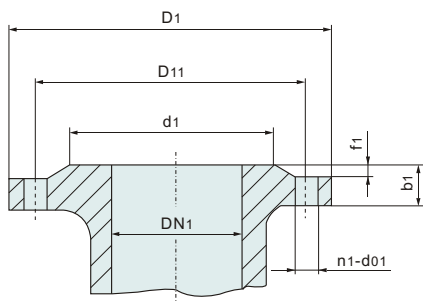
## OVERALL SIZE DIAGRAM

Model	Pump				pump seat										W	bolt hole		shaft end		Clearance	
	a	f	h <sub>1</sub>	h <sub>2</sub>	b	m <sub>1</sub>	m <sub>2</sub>	m <sub>3</sub>	m <sub>4</sub>	n <sub>1</sub>	n <sub>2</sub>	n <sub>3</sub>	n <sub>4</sub>	K <sub>1</sub>		K <sub>2</sub>	s <sub>1</sub>	s <sub>2</sub>	d		L
IS50-32-125	80	385	112	140	50	100	70	19	60	190	140	110	145	14	10	288	M12	M12	24	50	100
IS50-32-160	80	385	132	160	50	100	70	19	60	240	190	110	145	14	10	285	M12	M12	24	50	100
IS50-32-200	80	385	160	180	50	100	70	19	60	240	190	110	145	16	10	285	M12	M12	24	50	100
IS50-32-250	100	500	180	225	65	125	95	25	65	320	250	110	145	20	14	370	M12	M12	32	80	100
IS65-50-125	80	385	112	140	50	100	70	19	60	210	160	110	145	14	10	285	M12	M12	24	50	100
IS65-50-160	80	385	132	160	50	100	70	19	60	240	190	110	145	16	10	285	M12	M12	24	50	100
IS65-40-200	100	385	160	180	50	100	70	19	60	265	212	110	145	16	10	285	M12	M12	24	50	100
IS65-40-250	100	500	180	225	65	125	95	25	65	320	250	110	145	20	14	370	M12	M12	32	80	100
IS65-40-315	125	500	200	250	65	125	95	25	65	345	280	110	145	20	14	370	M12	M12	32	80	100
IS80-65-125	100	385	132	160	50	100	70	19	60	240	190	110	145	16	10	285	M12	M12	24	50	100
IS80-65-160	100	385	160	180	50	100	70	19	60	265	212	110	145	16	10	285	M12	M12	24	50	100
IS80-50-200	100	385	160	200	50	100	70	19	60	265	212	110	145	20	10	285	M12	M12	24	50	100
IS80-50-250	125	500	180	225	65	125	95	25	65	320	250	110	145	20	14	375	M12	M12	32	80	100
IS80-50-315	125	500	225	280	65	125	95	25	65	345	280	110	145	20	14	375	M12	M12	32	80	100
IS100-80-125	100	385	160	180	65	125	95	10	60	280	212	110	145	16	10	285	M12	M12	24	50	100
IS100-80-160	100	500	16	200	65	125	95	24	60	280	212	110	145	20	10	370	M12	M12	32	80	100
IS100-65-200	100	500	180	225	65	125	95	25	65	320	250	110	145	20	14	370	M12	M12	32	80	100
IS100-65-250	125	500	200	250	80	160	120	25	65	360	280	110	145	20	14	370	M16	M12	32	80	140
IS100-65-315	125	530	225	280	80	160	120	28	65	400	315	110	145	25	14	370	M16	M12	42	110	140
IS125-100-200	125	500	200	280	80	160	120	25	65	360	280	110	145	20	14	370	M16	M12	32	80	140
IS125-100-250	140	500	225	280	80	160	120	28	65	400	315	110	145	20	14	370	M16	M12	42	110	140
IS125-100-315	140	530	250	315	80	160	120	28	65	400	315	110	145	25	14	370	M16	M12	42	110	140
IS125-100-400	140	530	280	355	100	200	150	28	65	500	400	110	145	25	14	370	M20	M12	42	110	140
IS150-125-250	140	530	250	355	80	160	120	28	65	400	315	110	145	25	14	370	M16	M12	42	110	140
IS150-125-315	140	530	280	358	100	200	150	28	65	500	400	110	145	25	14	370	M20	M12	42	110	140
IS150-125-400	140	530	315	375	100	200	150	28	65	500	400	110	145	25	14	370	M20	M12	42	110	140
IS200-150-250	160	530	280	375	100	200	150	28	65	500	400	110	145	25	14	370	M20	M18	42	110	180
IS200-150-315	160	670	315	400	100	200	150	38	80	550	450	140	200	30	30	500	M20	M16	48	110	180
IS200-150-400	160	670	315	450	100	200	150	38	80	550	450	140	200	30	30	500	M20	M16	48	110	180

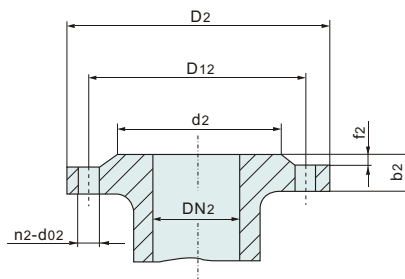
Remarks: X is the necessary clearance when the rotor quits one driving side.

# IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

## FLANGE SIZE SCHEMATICS



suction inlet flange



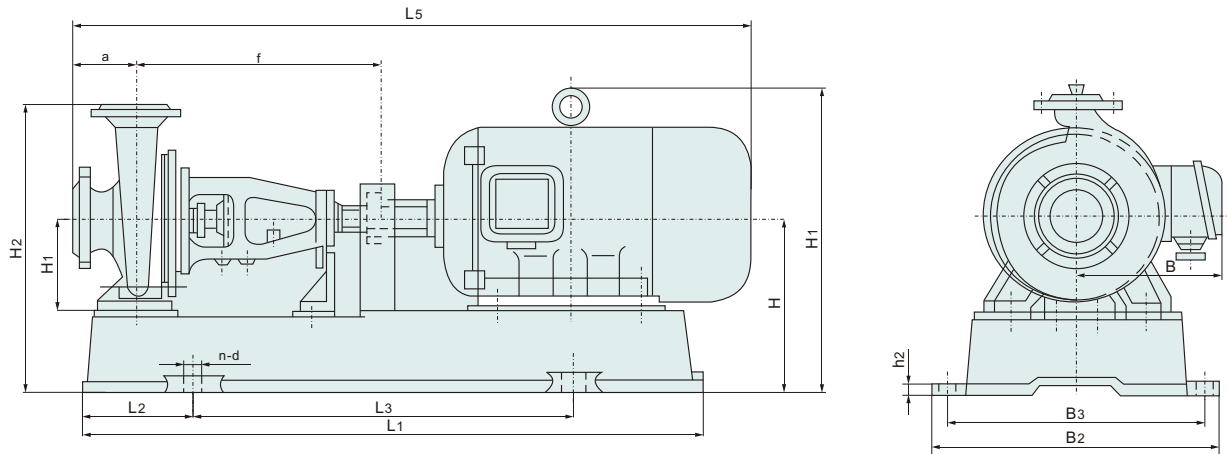
outlet flange

## FLANGE SIZE DIAGRAM

Model	flange size in suction inlet							flange size in outlet						
	DN1	D1	D11	d1	b1	f1	n1-d01	DN2	D2	D12	d2	b2	f2	n2-d02
IS50-32-125	50	165	125	105	20	3	4-17.5	32	140	100	78	18	2	4-17.5
IS50-32-160	50	165	125	105	20	3	4-17.5	32	140	100	78	18	2	4-17.5
IS50-32-200	50	165	125	105	20	3	4-17.5	32	140	100	78	18	2	4-17.5
IS50-32-250	50	165	125	105	20	3	4-17.5	32	140	100	78	18	2	4-17.5
IS65-50-125	65	185	145	122	20	3	4-17.5	50	165	125	102	20	3	4-17.5
IS65-50-160	65	185	145	122	20	3	4-17.5	50	165	125	102	20	3	4-17.5
IS65-40-200	65	185	145	122	20	3	4-17.5	40	150	110	88	18	3	4-17.5
IS65-40-250	65	185	145	122	20	3	4-17.5	40	150	110	88	18	3	4-17.5
IS65-40-315	65	185	145	122	20	3	4-17.5	40	150	110	88	18	3	4-17.5
IS80-65-125	80	200	160	133	22	3	8-17.5	65	185	145	122	20	3	4-17.5
IS80-65-160	80	200	160	133	22	3	8-17.5	65	185	145	122	20	3	4-17.5
IS80-50-200	80	200	160	133	22	3	8-17.5	50	165	125	102	20	3	4-17.5
IS80-50-250	80	200	160	133	22	3	8-17.5	50	165	125	102	20	3	4-17.5
IS80-50-315	80	200	160	133	22	3	8-17.5	50	165	125	102	20	3	4-17.5
IS100-80-125	100	220	180	158	24	3	8-17.5	80	200	160	133	22	3	4-17.5
IS100-80-160	100	220	180	158	24	3	8-17.5	80	200	160	133	22	3	4-17.5
IS100-65-200	100	220	180	158	24	3	8-17.5	65	185	145	122	20	3	4-17.5
IS100-65-250	100	220	180	158	24	3	8-17.5	65	185	145	122	20	3	4-17.5
IS100-65-315	100	220	180	158	24	3	8-17.5	65	185	145	122	20	3	4-17.5
IS125-100-200	125	250	210	184	26	3	8-17.5	100	220	180	158	24	3	8-17.5
IS125-100-250	125	250	210	184	26	3	8-17.5	100	220	180	158	24	3	8-17.5
IS125-100-315	125	250	210	184	26	3	8-17.5	100	220	180	158	24	3	8-17.5
IS125-100-400	125	250	210	184	26	3	8-17.5	100	220	180	158	24	3	8-17.5
IS150-125-250	150	285	240	212	26	3	8-22	125	250	210	184	26	3	8-17.5
IS150-125-315	150	285	240	212	26	3	8-22	125	250	210	184	26	3	8-17.5
IS150-125-400	150	285	240	212	26	3	8-22	125	250	210	184	26	3	8-17.5
IS200-150-250	200	340	295	268	30	3	12-22	150	285	240	212	26	3	8-22
IS200-150-315	200	340	295	268	30	3	12-22	150	285	240	212	26	3	8-22
IS200-150-400	200	340	295	268	30	3	12-22	150	285	240	212	26	3	8-22

# IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

## INSTALLATION SIZE SCHEMATICS



## OVERALL FIGURE AND INSTALLATION SIZE DIAGRAM

Model	seat No./power (kw)	overall figure and installation size															
		L1	L2	L3	L4	a	f	L5	B1	B2	B3	h1	h2	H	H1	H2	n-d
IS50-32-125	80-4/0.55	820	150	540	285	80	885	850	150	360	320	112	25	187	327	277	4- $\phi$ 18.5
	80S-2/1.1	820	150	540	285	80	885	850	150	360	320	112	25	187	327	277	4- $\phi$ 18.5
	90L-2/1.5	820	150	540	310	80	885	875	155	360	320	112	25	187	327	277	4- $\phi$ 18.5
	90L-2/2.2	920	170	600	335	80	885	900	155	390	350	112	25	187	327	287	4- $\phi$ 18.5
IS50-32-160	80-4/0.55	820	150	540	285	80	385	850	150	360	320	132	25	207	367	297	4- $\phi$ 18.5
	90S-2/1.5	820	150	540	310	80	385	875	155	360	320	132	25	207	367	307	4- $\phi$ 18.5
	90L-2/2.2	920	170	600	335	80	385	900	155	360	320	132	25	207	367	307	4- $\phi$ 18.5
	100L-2/3.2	920	170	600	380	80	385	945	180	390	320	132	25	207	367	352	4- $\phi$ 18.5
IS50-32-200	80-4/0.75	820	150	540	285	80	385	850	150	360	320	132	25	235	415	325	4- $\phi$ 18.5
	100L-2/3	920	170	600	380	80	385	945	180	390	350	160	25	235	415	380	4- $\phi$ 18.5
	112M-2/4	920	170	600	400	80	385	965	190	390	350	160	25	235	415	388	4- $\phi$ 18.5
	132S-2/5.5	1020	190	660	475	80	385	1040	210	450	400	160	25	235	415	418	4- $\phi$ 24
IS50-32-250	90S-4/1.1	1020	190	660	310	100	500	1010	155	450	400	180	30	255	480	355	4- $\phi$ 24
	90L-4/1.5	1020	190	660	335	100	500	1035	155	450	400	180	30	255	480	355	4- $\phi$ 24
	132S-2/7.5	160	210	740	475	100	500	1175	210	490	440	180	30	270	495	453	4- $\phi$ 24
	160M-2/11	1290	225	840	600	100	500	1300	255	540	490	180	30	290	515	515	4- $\phi$ 24
IS65-50-125	88-4/0.55	820	150	540	285	80	385	850	150	360	320	112	30	187	327	277	4- $\phi$ 18.5
	90S-2/1.5	820	150	540	310	80	385	875	155	360	320	112	25	187	327	287	4- $\phi$ 18.5
	90L-2/2.2	920	170	600	335	80	385	900	155	390	350	112	25	187	327	287	4- $\phi$ 18.5
	100L-2/3	920	170	600	380	80	385	945	180	390	350	112	25	187	327	332	4- $\phi$ 18.5

## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### OVERALL FIGURE AND INSTALLATION SIZE DIAGRAM

Model	seat No./power (kw)	overall figure and installation size															
		L1	L2	L3	L4	a	f	L5	B1	B2	B3	h1	h2	H	H1	H2	n-d
IS65-50-160	88-4/0.75	820	150	540	285	80	385	850	150	360	320	132	25	207	367	297	4-φ 18.5
	100L-2/3	920	170	600	380	80	385	945	180	390	350	132	25	207	367	352	4-φ 18.5
	112M-2/4	920	170	600	400	80	385	965	190	390	350	132	25	207	367	360	4-φ 18.5
	132S-20/5.5	1020	190	660	475	80	385	1040	210	450	400	132	30	207	367	390	4-φ 24
IS65-40-200	80-4/0.75	920	170	600	285	100	385	870	150	390	350	160	25	235	415	325	4-φ 18.5
	90S-4/1.1	920	170	600	310	100	385	895	155	390	350	160	25	235	415	335	4-φ 18.5
	112M-2/5.5	920	170	600	400	100	385	985	190	390	350	160	25	235	415	388	4-φ 18.5
	132S-2/0.75	1020	190	660	475	100	385	1060	210	450	400	160	30	235	415	418	4-φ 24
IS65-40-250	90S-4/1.1	1020	190	660	310	100	500	1010	155	450	400	180	30	255	480	355	4-φ 24
	90L-4/1.5	1020	190	660	335	100	500	1035	155	450	400	180	30	255	480	365	4-φ 24
	100L-4/2.2	1020	190	660	380	100	500	1080	188	450	400	180	30	255	480	400	4-φ 24
	132S-2/7.5	160	210	740	475	100	500	1175	210	490	440	180	30	270	495	453	4-φ 24
	160M-2/15	1290	225	840	600	100	500	1300	255	540	490	180	30	290	515	515	4-φ 24
IS65-40-315	100L-4/3	1140	210	740	380	125	500	1105	180	490	440	200	30	290	540	435	4-φ 24
	112-4/4	1140	210	740	400	125	500	1125	190	490	440	200	30	290	540	443	4-φ 24
	160L-2/18.5	1290	225	840	645	125	500	1370	255	540	490	200	30	310	560	535	4-φ 24
	180M-2/22	1290	225	840	670	125	500	1395	285	540	490	200	30	310	560	560	4-φ 24
	200L-2/30	1420	250	940	775	125	500	1500	310	610	550	200	40	330	580	605	4-φ 28
IS80-65-125	80-4/0.75	820	150	540	285	100	385	870	150	360	320	132	25	207	367	297	4-φ 18.5
	100L-2/3	920	170	600	385	100	385	965	180	390	350	132	25	207	367	352	4-φ 18.5
	112M-2/4	920	170	600	400	100	385	985	190	390	350	132	25	207	367	360	4-φ 18.5
	132S-2/5.5	1020	190	660	475	100	385	1060	210	450	400	132	35	207	367	390	4-φ 24
IS80-65-160	80-4/0.75	920	170	600	285	100	385	870	150	390	350	160	25	235	415	325	4-φ 18.5
	90S-4/1.1	920	170	600	310	100	385	895	155	390	350	160	25	235	415	335	4-φ 18.5
	90L-4/1.6	920	170	600	335	100	385	920	155	390	350	160	25	235	415	335	4-φ 18.5
	112M-2/4	920	170	600	400	100	385	985	190	390	350	160	25	235	415	388	4-φ 18.5
	132S-2/7.5	1020	190	660	475	100	385	1060	210	450	400	160	30	235	415	418	4-φ 24
IS80-50-200	90S-4/1.1	920	170	600	310	100	385	895	155	390	350	160	25	235	435	335	4-φ 18.5
	90L-4/1.5	920	170	600	335	100	385	920	155	390	350	160	25	235	435	335	4-φ 18.5
	100L-4/2.2	920	170	600	380	100	385	965	180	390	350	160	25	235	435	380	4-φ 18.5
	132S-2/7.5	1020	190	660	475	100	385	1060	210	450	400	160	30	235	435	398	4-φ 24
	160M-2/15	1140	210	740	600	100	385	1185	255	490	440	160	30	250	450	478	4-φ 24
IS80-50-250	100L-4/3	1020	190	660	380	125	500	1105	180	450	400	180	30	255	480	400	4-φ 24
	160M-2/15	1290	225	840	600	125	500	1325	255	540	490	180	30	290	515	515	4-φ 24
	160L-2/18.5	1290	225	840	645	125	500	1370	255	540	490	180	30	290	515	515	4-φ 24
	180M-2/22	1290	225	840	670	125	500	1395	285	540	490	180	30	290	515	540	4-φ 24



## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### OVERALL FIGURE AND INSTALLATION SIZE DIAGRAM

Model	seat No./power (kw)	overall figure and installation size															
		L1	L2	L3	L4	a	f	L5	B1	B2	B3	h1	h2	H	H1	H2	n-d
IS80-50-315	112M-4/4	1140	210	740	400	125	500	1125	190	490	440	225	30	315	595	468	4-φ24
	132S-4/5.5	1160	210	740	475	125	500	1200	210	490	440	225	30	315	595	498	4-φ24
	180M-2/22	1290	225	840	670	125	500	1395	285	540	490	225	30	335	615	585	4-φ24
	200L-2/37	1420	250	940	775	125	500	1500	310	610	550	225	40	355	635	630	4-φ28
IS100-80-125	80-4/0.75	920	170	600	285	100	385	870	150	390	350	160	25	235	415	325	4-φ18.5
	90S-4/1.1	920	170	600	310	100	385	895	155	390	350	160	25	235	415	335	4-φ18.5
	90L-4/1.5	920	170	600	335	100	385	920	155	390	350	160	25	235	415	335	4-φ18.5
	132S-2/7.5	1020	190	660	475	100	385	1060	210	450	400	160	30	235	415	418	4-φ24
	160M-2/11	1140	210	740	600	100	385	1185	255	490	440	160	30	250	430	475	4-φ24
IS100-80-160	90L-4/1.5	1020	190	660	335	100	500	135	155	450	400	160	30	235	435	335	4-φ24
	100L-4/2.2	1020	190	660	380	100	500	1080	180	450	400	160	30	235	435	380	4-φ24
	160M-2/15	1290	225	840	600	100	500	1300	255	540	490	160	30	270	470	495	4-φ24
IS100-65-200	100L-4/3	1140	210	740	380	100	500	1120	180	490	440	180	30	270	495	415	4-φ24
	112M-4/4	1140	210	740	400	100	500	1140	190	490	440	180	30	270	495	423	4-φ24
	160M-2/15	1290	225	840	600	100	500	1340	255	540	490	180	30	290	495	495	4-φ24
	160L-2/18.5	1290	225	840	645	100	500	1385	255	540	490	180	30	290	495	495	4-φ24
	180M-2/22	1290	225	840	670	100	500	1410	285	540	490	180	30	290	495	520	4-φ24
IS100-65-250	100L-4/3	1140	210	740	380	125	500	1145	180	490	400	200	30	290	540	435	4-φ24
	112M-4/4	1140	210	740	400	125	500	1165	190	490	400	200	30	290	540	443	4-φ24
	132S-4/5.5	1160	210	740	475	125	500	1240	210	490	400	200	30	290	540	473	4-φ24
	180M-2/22	1290	225	840	670	125	500	1435	285	540	490	200	30	310	560	560	4-φ24
	200L-2/37	1420	250	940	775	125	500	1540	310	610	550	200	40	330	580	605	4-φ28
IS100-65-315	132S-4/5.5	1270	225	840	475	125	500	1270	210	540	490	225	30	335	615	518	4-φ24
	132M-4/7.5	1270	225	840	515	125	500	1310	210	540	490	225	30	335	615	518	4-φ24
	160M-4/11	1270	250	840	600	125	500	1395	255	540	490	225	30	335	615	560	4-φ24
	200-2/37	1420	250	940	775	125	500	1575	315	610	550	225	40	355	635	630	4-φ28
	225M-2/45	1620	290	1060	815	125	530	1610	345	660	600	225	40	375	655	680	4-φ28
	250M-2/55	1620	290	1060	930	125	530	1725	385	660	600	225	40	375	655	700	4-φ28
	280S-2/75	1820	320	1200	1000	125	530	1795	410	730	670	225	40	375	655	735	4-φ28
IS125-100-200	112M-4/4	1140	210	740	400	125	500	1165	190	490	440	200	30	290	570	443	4-φ24
	132S-4/5.5	1160	210	740	475	125	500	1240	210	490	440	200	30	290	570	473	4-φ24
	132M-4/7.5	1160	210	740	515	125	500	1280	210	490	440	200	30	290	570	473	4-φ24
	180M-2/22	1290	225	840	670	125	500	1430	285	540	490	200	30	310	590	560	4-φ24
	200L-2/37	1420	250	940	775	125	500	1510	310	610	550	200	40	330	610	605	4-φ28
	225M-2/45	1420	250	940	815	125	500	1580	345	610	550	200	40	330	610	635	4-φ28

## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

### OVERALL FIGURE AND INSTALLATION SIZE DIAGRAM

Model	seat No./power (kw)	overall figure and installation size															
		L1	L2	L3	L4	a	f	L5	B1	B2	B3	h1	h2	H	H1	H2	n-d
IS125-100-250	132S-4/5.5	1270	225	840	475	140	530	1285	210	540	490	225	30	335	615	518	4-φ24
	132M-4/7.5	1270	225	840	515	140	530	1325	210	540	490	225	30	335	615	518	4-φ24
	160M-4/11	1270	225	840	600	140	530	1410	255	540	490	225	30	335	615	560	4-φ24
	200L-4/37	1420	250	940	775	140	530	1585	310	610	550	225	40	335	635	630	4-φ28
	225M-4/45	1620	290	1060	815	140	530	1625	345	660	600	225	40	375	655	680	4-φ28
	250M-4/55	1620	290	1060	930	140	530	1740	385	660	600	225	40	375	655	700	4-φ28
	280S-4/75	1820	320	1200	1000	140	530	1810	410	730	670	250	40	375	655	735	4-φ28
IS125-100-315	160M-4/11	1270	225	840	600	140	530	1410	225	540	490	250	30	360	675	585	4-φ24
	160L-4/15	1420	250	940	645	140	530	1455	225	610	550	250	40	380	695	605	4-φ28
	280S-4/75	1820	320	1200	1000	140	530	1810	410	730	670	250	40	400	715	760	4-φ28
	280M-4/9	1820	320	1200	1050	140	530	1860	410	730	670	250	40	400	715	760	4-φ28
	315S-4/110	1820	320	1200	1190	140	530	2000	460	800	740	280	40	400	715	845	4-φ28
IS125-100-400	160L-4/15	1620	290	1060	645	140	530	1455	255	660	600	280	40	430	785	655	4-φ28
	180M-4/18.5	1620	290	1060	670	140	530	1480	285	660	600	280	40	430	785	680	4-φ28
	180L-4/22	1620	290	1060	710	140	530	1520	285	660	600	280	40	430	785	680	4-φ28
	200L-4/30	1620	290	1060	775	140	530	1585	310	660	600	250	30	430	785	705	4-φ28
IS150-125-250	160L-4/11	1270	225	840	600	140	530	1410	255	540	490	250	40	360	715	585	4-φ28
	160L-4/15	1420	250	940	645	140	530	1455	255	610	550	250	40	380	735	605	4-φ28
	180M-4/18.5	1420	250	940	610	140	530	1480	282	610	550	280	40	380	735	630	4-φ28
IS150-125-315	180M-4/18.5	1620	290	1060	670	140	530	1480	285	660	600	280	40	430	785	680	4-φ28
	180L-4/22	1620	290	1060	710	140	530	1520	285	660	600	280	40	430	785	680	4-φ28
	200L-4/30	1620	290	1060	775	140	530	1585	310	660	600	315	40	430	785	705	4-φ28
IS150-125-400	200L-4/30	1620	290	1060	775	140	530	1585	310	660	600	315	40	465	865	740	4-φ24
	225S-4/37	1620	290	1060	820	140	530	1630	345	660	600	315	40	465	865	770	4-φ28
	225M-4/45	1620	290	1060	845	140	530	1655	345	660	600	280	40	465	865	770	4-φ28
IS200-150-250	180L-4/22	1620	290	1060	710	160	530	1580	285	660	600	280	40	430	805	680	4-φ28
	200L-4/30	1620	290	1060	775	160	530	1645	310	660	600	280	40	430	805	705	4-φ28
	225S-4/37	1620	290	1060	820	160	530	1690	345	660	600	315	40	430	805	735	4-φ28
IS200-150-315	200L-4/30	1820	320	1200	775	160	670	1785	310	730	670	315	40	465	865	740	4-φ28
	225S-4/37	1820	320	1200	820	160	670	1830	345	730	670	315	40	465	865	770	4-φ28
	225M-4/45	1820	320	1200	845	160	670	1855	345	730	670	315	40	465	865	770	4-φ28
	250M-4/55	1820	320	1200	930	160	670	1940	385	730	670	315	40	465	865	790	4-φ28
IS200-150-400	225M-4/55	1820	320	1200	845	160	670	1855	345	730	670	315	40	465	915	770	4-φ28
	250M-4/55	1820	320	1200	930	160	670	1940	385	730	670	315	40	465	915	790	4-φ28
	230S-4/75	1820	320	1200	1000	160	670	2010	410	730	670	315	40	465	915	825	4-φ28
	280M-4/90	1840	320	1200	1050	160	670	2060	410	730	670	315	40	465	915	825	4-φ28

### ASSEMBLY AND DISASSEMBLY OF WATER PUMP

Please check whether the fittings have any defect and clean them before assembling.

1. Screw down the connecting bolts and pipe plugs onto the corresponding fittings respectively in advance.
2. Put the O rings, paper washers and felts onto the concerned accessories in advance.
3. Install the sealing ring, packing, packing ring, packing gland onto the pump cover in turns in advance.
4. Mount the rolling bearing onto the axis, then place them into the pendant; close the gland, press the rolling bearing, and tighten the connecting bolt onto the axis.
5. Put the axis sheath onto the axis, fix the pump cover onto the pendant, assemble the impeller, clamping washer, impeller nut, etc. and tighten them. At last, install the above-mentioned assembly into the pump body, tighten the pump body and the connecting bolt on the pump cover.

During the above-mentioned assembly procedure, pay more attention to those small parts which are easily omitted or installed in wrong order, such as flat key, oil guard disc, and O ring in the water retainer ring muff.

In principle, the disassembly procedure is opposite to assembly order.

### INSTALLATION OF WATER PUMP

The proper installation has great impact on the performance and life-span of water pump, so it shall be carefully installed and adjusted.

#### I. Installation and Commission

1. Clean out the grease and stain on the base and put it on the ground.
2. Use the gradienter to examine the level degree of the ground and the wedge iron is allowed to make level.
3. Pour the cement onto the base and the eyelets of ground bolts.
4. Check whether the base and the eyelets of ground bolts are loose or not after the cement is dry. Screw down the ground bolts and reexamine the level degree.
5. Clean out the supporting plane of base, the planes for pump foot and motor foot, then install the pump and the motor on the base.
6. Keep proper clearance between couplings. Check whether the centerline of pump axis is consistent with that of motor axis, if not, adjust them to be concentric by using thin gasket. Measure the clearance between the up and down, right and left of excircle of the coupling and ensure that it is less than 0.1 mm, and difference between max. & min. Clearance of two couplings shall be no more than 0.3 mm in a cycle.

#### II. Points of Installation

1. In order to avoid unnecessary loss, installation height of pump, length and diameter of pipeline, and velocity of flow shall be in accordance with the result of calculation.
2. It is preferred to apply the pipeline of bigger diameter for long distant feeding. Ensure that pump pipelines have own brackets and it is forbidden to put the weight of pipelines on the pump in case that the pump is broken by heavy weight.
3. If check valve is installed on discharge pipe, it shall be fixed outside of gate valve.

### STARTUP, STOP AND RUN OF WATER PUMP

#### I. Startup

1. Before the motor is connected to the pump, confirm the rightness of the turning of motor, and smooth running of pump.
2. Shut down the gate valve on the discharge pipe.
3. Fill the pump with water or draw water by using vacuum pump.

## IS SERIES SINGLE-STAGE END-SUCTION CENTRIFUGAL PUMP

4. Switch on the power, after the pump is up to the normal rotating speed, turn on the gate valve on the discharge pipe little by little. And adjust the required working situation. When the gate valve on the discharge pipe is off, the pump can not run continuously beyond 3 minutes.

### II. Stop

1. turn off the gate valve on the discharge pipe little by little, switch off the power.
2. if the surrounding temperature is lower than 0°C, drain the water from the pump to prevent it from frost crack.
3. if the pump is left unused for a long time, it should be disassembled, cleaned and lubricated, then packed to prevent it from rusting.

### III. Run

1. during the pump is running, attention the reading number in the meter, check whether the bearing is heated, the stuffing is leaking water, the vibration and noise are normal. If there is something abnormal, solve it in time.
2. the temperature of the bearing can not be higher than 80°C, and should not be 40°C higher than the surrounding temperature.
3. stuffing is normal, water leakage should be little and even.
4. lubricating oil level of the bearing should be kept normal, it cannot be too high or too low. When it is too low, add the lubricating oil in time.
5. if the clearance wearing between seal ring and impeller is too large, replace it.

## COMMON TROUBLE REASONS AND SOLUTIONS

Trouble	Reasons	Solutions
1. the water pump doesn't work, the pointers in the pressure gauge and vacuum gauge jump strongly.	a. the water poured into the pump is not enough b. air leakage for the intake water tube and the meter	a. pour water into the pump continuously b. fasten and block the air leakage point
2. the water pump doesn't work, the vacuum gauge shows high vacuum.	a. the bottom valve is not turned on or blocked b. the resistance of water-sucking tube is too strong. c. water-sucking height is too high.	a. level or replace the bottom valve b. clean or replace the water-sucking tube c. reduce the water-sucking height
3. there is pressure in the manometer, but the water pump doesn't work.	a. the resistance of water-sucking tube is too strong. b. wrong rotating direction c. the impeller is blocked d. the rotating speed of water pump is not enough.	a. clean or shorten the water tube b. check the rotating direction of the motor c. clean the impeller d. increase the rotating speed of the impeller
4. pump capacity reduces or the head of the pump goes down	a. The impeller or the pipe is blocked. b. too much abrasion of the seal ring or the impeller c. rotating speed is not enough	a. clean the impeller or the pipe b. replace the broken parts c. obtain the rated rotating speed
5. Too large power consumption.	a. packing gland is too tight, the stuffing box gland is heated b. The impeller and ring seal have friction c. too big rate of flow	a. loosen the packing gland b. eliminate the mechanical friction c. diminish the water-discharge gate valve
6. abnormal noise inside the water pump, it can not pump the water.	a. too strong resistance in the water intake tube b. there is some air leaked into the water intake tube c. large rate of flow to lead to cavitation damage.	a. decrease the height of water intake height, shorten the length of water-sucking tube b. block the air leakage point c. adjust the outlet valve to make the pump used in the stipulated working scope
7. the water pump vibrates too hard.	a. the pump is cavitation damage, the impeller is not balanced b. pump shaft and the motor is not in the same center line c. foot bolt is loosen	a. eliminate the cavitation damage, balance the impeller b. calibrate them to be in the same center line c. fasten the foot bolt
8. the bearing is overheat.	a. inadequate, too much or metamorphosed lubricating oil b. the water pump and the motor shaft are not concentric	a. check the lubricating oil, clean the bearing and replace the oil b. aim at the center line of them

REFERENCE DIAGRAM FOR PIPE LOSS

Pipe diameter (mm)	rate of flow (L/s)																																
	1	2	4	6	8	10																											
25	32.7	13.0																															
38	3.5	14	55					15	20																								
50	0.8	3.1	13	29						25	30																						
65		0.8	3.2	7.1	13	20								40	50																		
75		0.4	1.6	3.3	5.9	9.6	21.6								60	70																	
100			0.4	0.8	1.3	2.1	6.8	8.6	13	19.4																80	90						
125				0.23	0.4	0.63	1.3	2.7	4.1	5.9	10.7																100	110					
150					0.16	0.26	0.58	1.1	1.6	2.3	4.2	6.4	9.4															120	130				
175						0.11	0.27	0.5	0.74	1.05	1.9	2.9	4.3	5.8	7.7	9.6													140	160			
200							0.13	0.26	0.37	0.53	0.93	1.5	2.1	2.9	3.7	4.7	6.1	7.2	8.5											180	200		
250								0.07	0.12	0.18	0.30	0.48	0.68	0.93	1.2	1.5	1.9	2.3	2.8	3.3	3.7	4.9	6.2										
300											0.07	0.12	0.19	0.27	0.37	0.49	0.61	0.76	0.9	1.1	1.3	1.5	2.0	2.4	3.0								

Friction loss chart of straight pipe (for estimate use). The loss meter for 100m straight pipe is subject to the new foundry pipe, and it will be multiplied for the old pipe.

MAX FLOW LIMIT OF FIXED PIPE DIAMETER

Pipe diameter (mm)	max flow (L/s)	max flow speed (m/s)
25	1	2.04
38	2.5	1.69
50	4.17	2.12
65	6.67	2.01
75	10.0	2.26
100	18.4	2.33
125	30.0	2.41
150	43.0	2.45
175	60.0	2.49
200	83.0	2.69
250	133.3	2.72
300	192.0	2.71

Remarks: beyond this limit the loss of pipeline will be obviously increased.

VALVE AND THE LENGTH OF STRAIGHT PIPE FROM BENDING PIPE (EACH ONE)

Type	bended pipe diameter multiple	Remarks
Full-open gate valve	13	Unopened multiple
Standard bending pipe	25	
Clack valve	100	
Bottom valve	100	partial block multiple

Remarks: ex: 100mm diameter pipe, the length of the straight pipe equals 100×100=10000mm=10m, if the rate of flow is 8L/s, the loss is 1.3m every 100m straight pipe, then the loss is 0.13m in 10m, that is, for a 100mm bottom valve, 8L/s rate of flow, the loss throw is 0.13m.



## **CHANGSHA ZOOMLIAN PUMP CO., LTD.**

**Head Office:** International Enterprise Center, Changsha, Hunan Province, China

**Manufacturing:** National economic development zone, Pingxiang, Jiangxi Province, China

**Tel:** 0086 731 88192011

**Website:** <https://www.zoompumps.com/>

**E-mail:** [info@zoomlian.com](mailto:info@zoomlian.com)