



## CATALOGUE

### 2014

**TTAAR-Series of Single Stage  
Single Suction Centrifugal Pump**



PRODUCT BROCHURE

TORONTECH  
**PUMPS**

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Torontech™ is a leading North American based international manufacturer and supplier of pumps, pipes, valves & actuators. The Torontech™ group has established an extensive network in the USA as well as international markets and remains to be a preferred vendor of choice supplying quality pumps for today's leading corporations.

Creating comprehensive solutions for our clients has always been the core value of our company. From sales, to order execution, and post-sales support; every staff member is here to assist you in selecting the solution that best suits your unique requirements and budget.

The Torontech™ group offers a complete range of quality pumps that are ANSI to ISO approved and engineered to last, ensuring your company continuous production without interruptions.

Since the beginning, we have succeeded in only offering quality manufactured pumps that are currently being used worldwide. We offer the best value for your investment and provide world-class support.

Due to the demand for our quality pumps, Torontech™ has experience explosive growth primarily in the oil & gas, water filtration and chemical refinery industries.

We offer an extensive range of solutions and products for oil & gas projects, refineries, petrochemical plants, and marine applications. Our main class of pumps includes API (American Petroleum Institute) Standard, Mining, Water & Sewage and Firefighting applications. The pumps are offered in various configurations depending on orientation of the pump, required head and type of fuel used for operation.

TTAAR-Series of Single Stage Single Suction Centrifugal Pump

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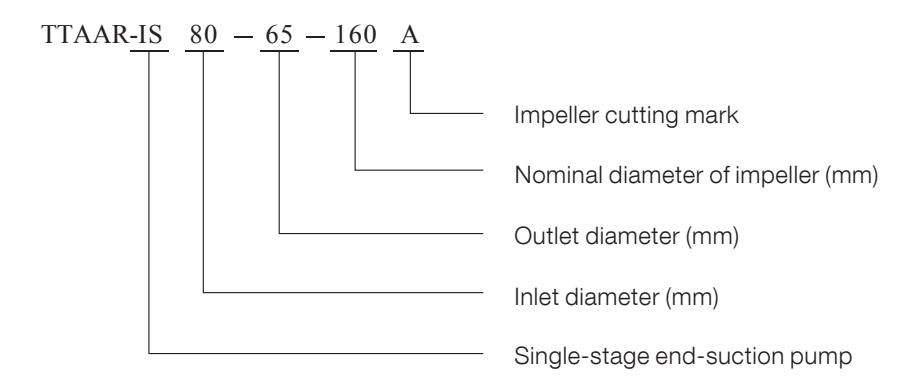
Outline

TTAAR-IS series single-stage end-suction (axial intake) 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 .

Performance range

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

Model meaning



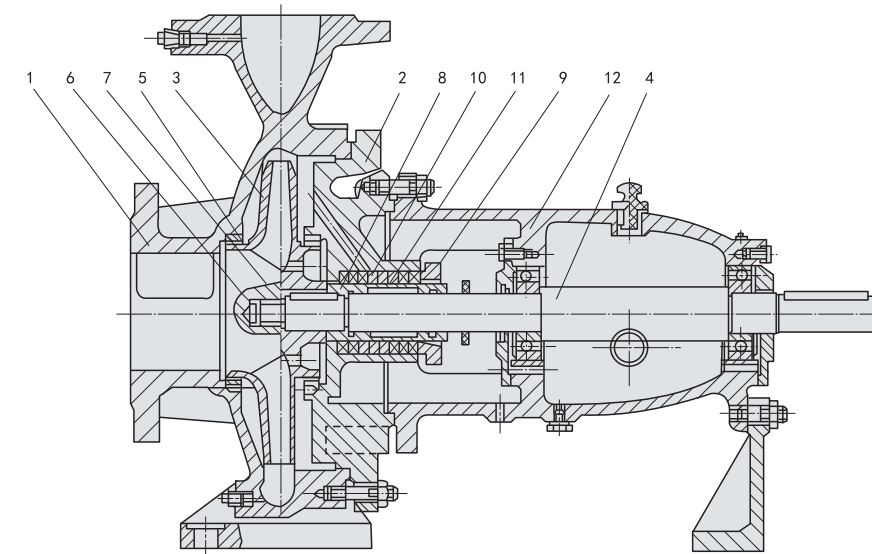
### TTAAR-Series of Single Stage Single Suction Centrifugal Pump

## About of construction

1. TTAAR-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 TTAAR-IS series are separated from the back of impeller, that is to say in general, it has a back open structure.
3. The pump shell (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.
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.

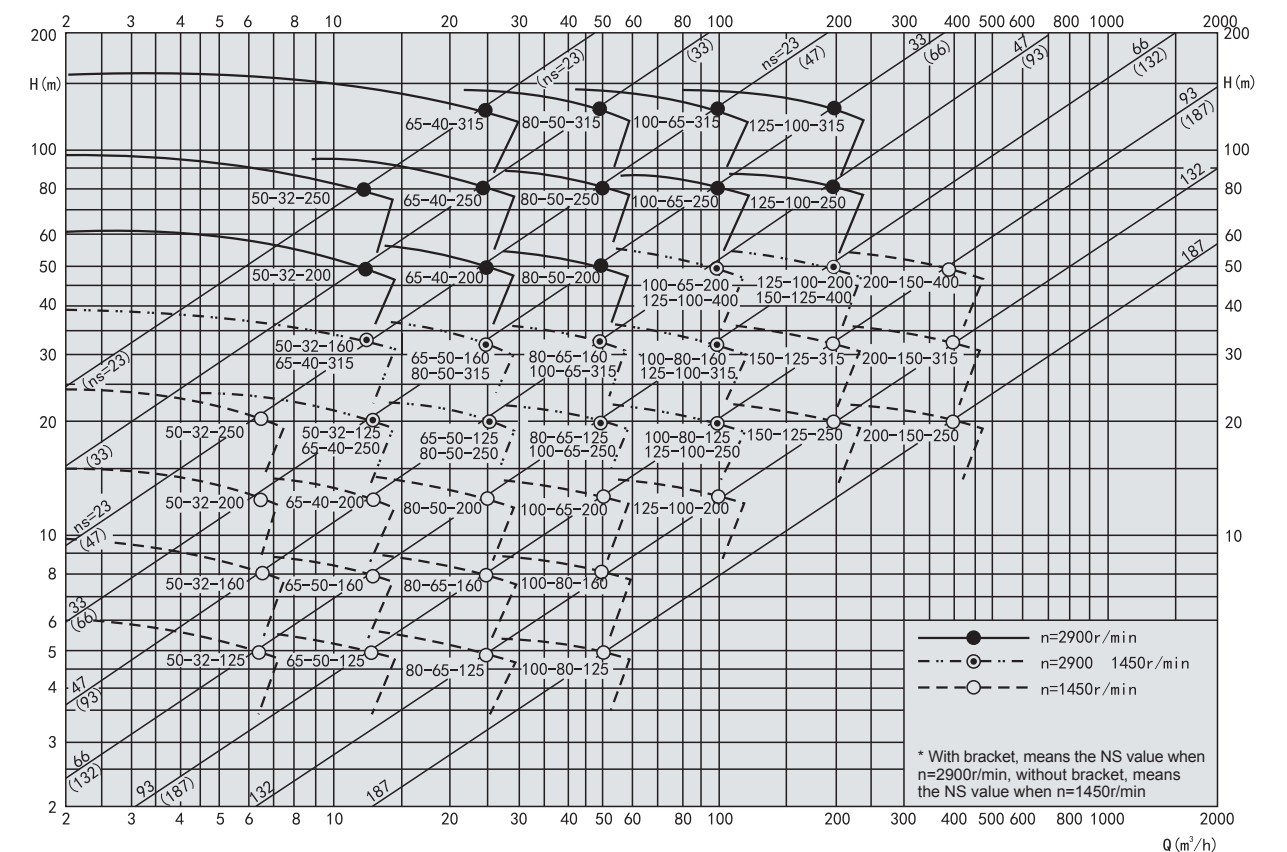
5. The axial sealing ring of the pump is composed of packing gland, packing rings and packing to avoid air admission or severe water leakage. For the impeller with balance hole, the empty chamber with soft packing is straight through with the impeller inlet. If the liquid in the impeller inlet is in 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.
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.

## Construction drawing



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

## Atlas of style



**IS**

TTAAR-IS Performance table

Model	Capacity		Head (m)	Speed (r/min)	Power (kW)		Eff. (%)	Impeller diameter (mm)	(NPSH) <sub>r</sub> (m)
	(m <sup>3</sup> /h)	(L/s)			Shaft	Motor power			
IS50-32-125	7.5	2.08	22	2900	0.96	2.2	47	130	2.0
	12.5	3.47	20		60		2.0		
	15	4.17	18.5		60		2.5		
IS50-32-125B	11.2	3.1	16	2900	0.84	1.5	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		54		2.0		
	15	4.17	29.6		56		2.5		
IS50-32-160A	11.7	3.3	28	2900	1.71	3	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		48		2.0		
	15	4.17	48		51		2.5		
IS50-32-200B	11.7	3.3	44	2900	3.16	4	45	186	2.0
IS50-32-200C	10.8	3	38	2900	2.60	4	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		38		2.0		
	15	4.17	78.5		41		2.5		
IS50-32-250A	11.7	3.3	70	2900	6.47	11	35	234	2.0
IS50-32-250B	10.8	3	60	2900	5.51	7.5	36	217	2.0
IS65-50-125	15	4.17	21.8	2900	1.54	3	58	130	2.0
	25	6.94	20		69		2.5		
	30	8.33	18.5		68		3.0		
IS65-50-125A	22.4	6.2	16	2900	1.47	3	66	116	2.0
IS65-50-160	15	4.17	35	2900	2.65	5.5	54	165	2.0
	25	6.94	32		65		2.0		
	30	8.33	30		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		60		2.0		
	30	8.33	47		61		2.5		
IS65-40-200A	23.4	6.5	44	2900	4.92	7.5	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		50		2.0		
	30	8.33	78		53		2.5		
IS65-40-250A	23.4	6.5	70	2900	9.10	15/13	49	238	2.0

TTAAR-Series of Single Stage Single Suction Centrifugal Pump

TTAAR-IS Performance table

Model	Capacity		Head (m)	Speed (r/min)	Power (kW)		Eff. (%)	Impeller diameter (mm)	(NPSH) <sub>r</sub> (m)
	(m <sup>3</sup> /h)	(L/s)			Shaft	Motor power			
IS65-40-250B	21.7	6	60	2900	7.51	11	47	220	2.0
IS65-40-315	15	4.17	127	2900	18.5	30	28	315	2.5
	25	6.94	125		50		2.5		
	30	8.33	123		44		3.0		
IS65-40-315A	23.9	6.6	114	2900	19.41	22	38	301	2.5
IS65-40-315A	22.7	6.3	103	2900	17.19	22	37	286	2.5
IS65-40-315B	21.4	5.9	92	2900	15.20	18.5	35	270	2.5
IS80-65-125	30	8.33	22.5	2900	2.87	5.5	64	137	3.0
	50	13.9	20		75		3.0		
	60	16.7	18		74		3.5		
IS80-65-125A	44.7	12.4	16	2900	2.66	5.5	73	125	3.0
IS80-65-160	30	8.33	36	2900	4.82	7.5	61	168	2.5
	50	13.9	32		73		2.5		
	60	16.7	29		72		3.0		
IS80-65-160A	46.8	13	28	2900	5.10	7.5	70	157	2.5
IS80-65-160B	43.3	12	24	2900	4.15	5.5	68	146	2.5
IS80-50-200	30	8.33	53	2900	7.87	15	55	202	2.5
	50	13.9	50		69		2.5		
	60	16.7	47		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	8.33	84	2900	13.2	22	52	252	2.5
	50	13.9	80		63		2.5		
	60	16.7	75		64		3.0		
IS80-50-250A	46.8	13	70	2900	14.87	22	60	238	2.5
IS80-50-250B	43.3	13	60	2900	13.18	18.5	58	218	2.5
IS80-50-315	30	8.33	128	2900	25.5	37	41	315	2.5
	50	13.9	125		54		2.5		
	60	16.7	123		57		3.0		
IS80-50-315A	47.8	13.3	108	2900	27.55	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	16.7	24	2900	5.86	11	67	140	4.0
	100	27.8	20		78		4.5		
	120	33.3	16.5		74		5.0		
IS100-80-125B	89.4	24.8	16	2900	5.19	7.5	70	125	4.5



TTAAR-Series of Single Stage Single Suction Centrifugal Pump

TTAAR-IS Performance table

Model	Capacity		Head (m)	Speed (r/min)	Power (kW)		Eff. (%)	Impeller diameter (mm)	(NPSH)r (m)
	(m³/h)	(L/s)			Shaft	Motor power			
IS100-80-160	60	16.7	36	2900	8.42	15	70	170	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	15	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	22	75	190	3.6
IS100-65-200B	87.2	24.2	38	2900	12.52	18.5	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	37	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	109	2900	44.2	55	64	301	3.6
IS100-65-315B	90.8	25.2	95	2900	37.87	45	62	286	3.6
IS100-65-315C	85.8	23.8	92	2900	35.78	37	60	271	3.6
IS125-100-200	120	33.3	57.5	2900	28.0	45	67	216	4.5
	200	55.5	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	75	76	239	4.2
IS125-100-250B	173.2	48.1	60	2900	38.24	55	74	221	4.2
IS125-100-315	120	33.3	132.5	2900	72.1	110	60	317	5.0
	200	55.6	125		90.8		75		4.5
	240	66.7	120		101.9		77		4.0
IS125-100-315A	191	53.1	114	2900	81.30	110	73	303	4.5
IS125-100-315B	181.5	50.4	103	2900	71.68	90	71	288	4.5

TTAAR-IS Performance table

Model	Capacity		Head (m)	Speed (r/min)	Power (kW)		Eff. (%)	Impeller diameter (mm)	(NPSH)r (m)
	(m³/h)	(L/s)			Shaft	Motor power			
IS125-100-315C	171.6	47.7	92	2900	62.35	75	69	272	4.2
IS50-32-125	3.75	1.04	5.4	1450	0.13	0.55	43	130	2.0
	6.3	1.74	5.0		0.16		54		2.0
	7.5	2.08	4.6		0.17		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	5.4	1450	0.13	0.55	43	158	2.0
	6.3	1.74	5.0		0.16		54		2.0
	7.5	2.08	4.6		0.17		55		2.5
IS50-32-160A	5.8	1.6	4.6	1450	0.15	0.55	46	148	2.0
IS50-32-160B	5.4	1.5	4.1	1450	0.14	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		0.51		42		2.0
	7.5	2.08	12		0.56		44		2.5
IS50-32-200A	5.8	1.6	11	1450	0.43	0.75	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		1.07		32		2.0
	7.5	2.08	19.5		1.14		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	1.5	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		0.27		64		2.0
	15	4.17	4.7		0.30		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		0.45		60		2.0
	15	4.17	7.2		0.49		60		2.5
IS65-50-160A	11.7	3.3	7	1450	0.39	0.75	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		0.77		55		2.0
	15	4.17	11.8		0.85		57		2.5
IS65-40-200A	11.7	3.3	11	1450	0.70	1.1	51	188	2.0
IS65-40-200C	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		1.48		46		2.0
	15	4.17	19.4		1.65		48		2.5



TTAAR-Series of Single Stage Single Suction Centrifugal Pump

TTAAR-IS Performance table

Model	Capacity		Head (m)	Speed (r/min)	Power (kW)		Eff. (%)	Impeller diameter (mm)	(NPSH) <sub>r</sub> (m)
	(m <sup>3</sup> /h)	(L/s)			Shaft	Motor power			
IS65-40-250A	11.7	3.25	17.5	1450	1.23	2.2	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	4	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	0.75	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	1.1	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	1.5	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	3	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		

TTAAR-IS Performance table

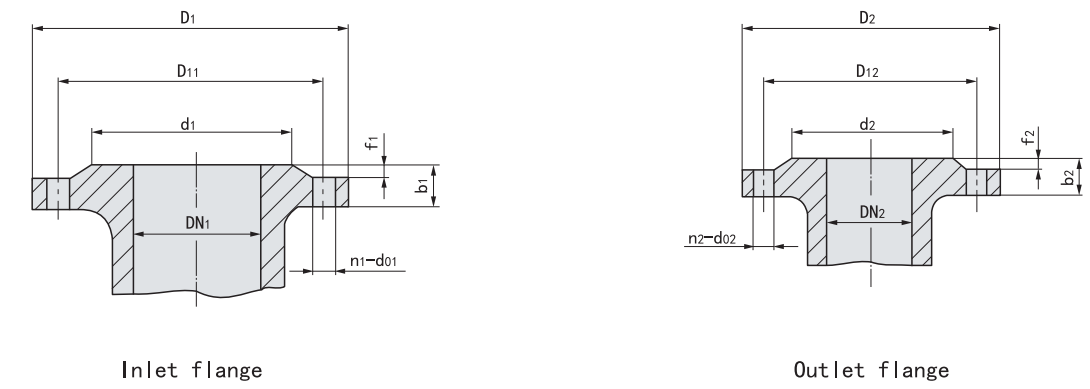
Model	Capacity		Head (m)	Speed (r/min)	Power (kW)		Eff. (%)	Impeller diameter (mm)	(NPSH) <sub>r</sub> (m)
	(m <sup>3</sup> /h)	(L/s)			Shaft	Motor power			
IS100-80-125B	44.7	12.4	4	1450	0.68	1.1	66	125	2.5
IS100-80-160	30	8.33	9.2	1450	1.12	2.2	67	170	2.0
	50	13.9	8.0		75		2.5		
	60	16.7	6.8		71		3.5		
IS100-80-160A	46.8	13	7	1450	1.24	2.2	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		73		2.0		
	60	16.7	11.8		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	3	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		68		2.0		
	60	16.7	19		70		2.5		
IS100-65-250A	46.8	13	17.5	1450	3.38	5.5	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		63		2.0		
	60	16.7	30		64		2.5		
IS100-65-315A	47.7	13.3	28.5	1450	6.09	11	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		76		2.5		
	120	33.3	11.0		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	5.5	71	188	2.5
IS125-100-250	60	16.7	21.5	1450	5.59	11	63	255	2.5
	100	27.8	20		76		2.5		
	120	33.3	18.5		77		3.0		
IS125-100-250A	93.5	26	17.5	1450	6.03	11	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		73		2.5		
	120	33.3	30.5		74		3.0		
IS125-100-315A	95.5	26.5	28.5	1450	10.43	15	71	303	2.5

TTAAR-Series of Single Stage Single Suction Centrifugal Pump

TTAAR-IS Performance table

Model	Capacity		Head (m)	Speed (r/min)	Power (kW)		Eff. (%)	Impeller diameter (mm)	(NPSH) <sub>r</sub> (m)
	(m <sup>3</sup> /h)	(L/s)			Shaft	Motor power			
IS125-100-315B	90.8	25.2	25.8	1450	9.37	15	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		65		2.5		
	120	33.3	48.5		67		3.0		
IS125-100-400A	93.5	26	44	1450	17.8	22	63	371	2.5
IS125-100-400B	86.6	24.1	38	1450	14.96	18.5	63	345	2.5
IS150-125-250	120	33.3	22.5	1450	10.4	18.5	71	260	3.0
	200	55.6	20		81		3.0		
	240	66.7	17.5		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	15	76	225	3.0
IS150-125-315	120	33.3	34	1450	15.9	30	70	325	2.5
	200	55.6	32		79		2.5		
	240	66.7	29		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		75		2.8		
	240	66.7	46		74		3.5		
IS150-125-400A	187	52	44	1450	30.73	45	73	375	2.8
IS150-125-400B	173	48	38	1450	25.19	37	71	348	2.8
IS200-150-250	240	66.7	25	1450	23.7	37	69	375	3.0
	400	111.1	22		82.5		3.5		
	460	127.8	20		82		4.0		
IS200-150-250A	374	104	17.5	1450	22.30	30	80	257	3.4
IS200-150-250B	346	96	15	1450	18.10	30	78	238	4.6
IS200-150-315	240	66.7	37	1450	34.6	55	70	348	3.0
	400	111.1	32		82		3.5		
	460	127.8	28.5		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	70	301	3.5
IS200-150-400	240	66.7	55	1450	48.6	90	74	395	3.0
	400	111.1	50		81		3.8		
	460	127.8	45		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	75	77	342	3.8

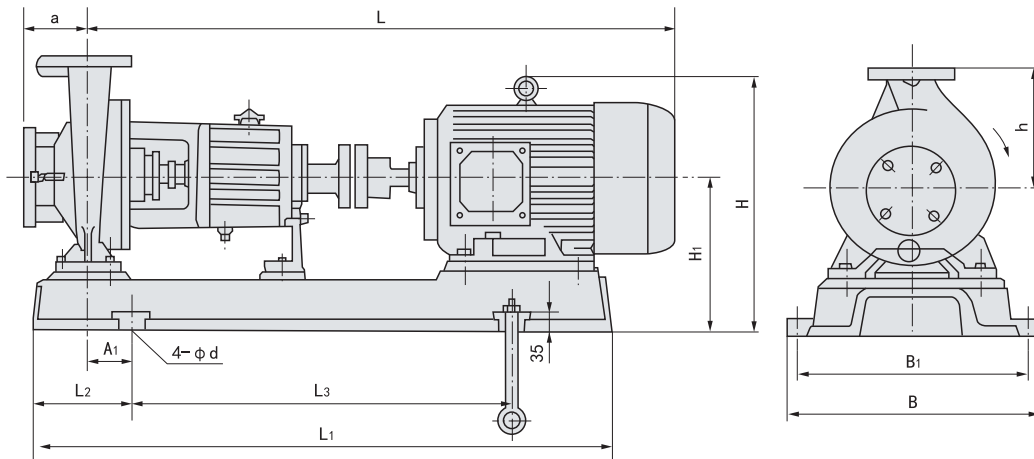
In-outlet flange dimension drawing



TTAAR-IS In-outlet flange dimension table

Model	Inlet flange dimension							Outlet flange dimension						
	DN <sub>1</sub>	D <sub>1</sub>	D <sub>11</sub>	d <sub>1</sub>	b <sub>1</sub>	f <sub>1</sub>	n <sub>1</sub> -d <sub>01</sub>	DN <sub>2</sub>	D <sub>2</sub>	d <sub>12</sub>	d <sub>2</sub>	b <sub>2</sub>	f <sub>2</sub>	n <sub>2</sub> -d <sub>02</sub>
IS50-32-125	50	165	125	102	20	3	4-17.5	32	140	100	78	18	2	4-17.5
IS50-32-160	50	165	125	102	20	3	4-17.5	32	140	100	78	18	2	4-17.5
IS50-32-200	50	165	125	102	20	3	4-17.5	32	140	100	78	18	2	4-17.5
IS50-32-250	50	165	125	102	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	20	3	8-17.5	65	185	145	122	20	3	4-17.5
IS80-65-160	80	200	160	133	20	3	8-17.5	65	185	145	122	20	3	4-17.5
IS80-50-200	80	200	160	133	20	3	8-17.5	50	165	125	102	20	3	4-17.5
IS80-50-250	80	200	160	133	20	3	8-17.5	50	165	125	102	20	3	4-17.5
IS80-50-315	80	200	160	133	20	3	8-17.5	50	165	125	102	20	3	4-17.5
IS100-80-125	100	220	180	158	22	3	8-17.5	80	200	160	133	20	3	8-17.5
IS100-80-160	100	220	180	158	22	3	8-17.5	80	200	160	133	20	3	8-17.5
IS100-65-200	100	220	180	158	22	3	8-17.5	65	185	145	122	20	3	4-17.5
IS100-65-250	100	220	180	158	22	3	8-17.5	65	185	145	122	20	3	4-17.5
IS100-65-315	100	225	180	158	22	3	8-17.5	65	185	145	122	20	3	4-17.5
IS125-100-200	125	250	210	184	22	3	8-17.5	100	220	180	158	22	3	8-17.5
IS125-100-250	125	250	210	184	22	3	8-17.5	100	220	180	158	22	3	8-17.5
IS125-100-315	125	250	210	184	22	3	8-17.5	100	220	180	158	22	3	8-17.5
IS125-100-400	125	250	210	184	22	3	8-17.5	100	220	180	158	22	3	8-17.5
IS150-125-250	150	285	240	212	24	3	8-22	125	250	210	184	22	3	8-17.5
IS150-125-315	150	285	240	212	24	3	8-22	125	250	210	184	22	3	8-17.5
IS150-125-400	150	285	240	212	24	3	8-22	125	250	210	184	22	3	8-17.5
IS200-150-250	200	340	295	268	24	3	12-22	150	285	240	212	24	3	8-22
IS200-150-315	200	340	295	268	24	3	12-22	150	285	240	212	24	3	8-22
IS200-150-400	200	340	295	268	24	3	12-22	150	285	240	212	24	3	8-22

### Out-form and installation dimension drawing



### TTAAR-IS Out-form and installation dimension table

Pump		Motor		L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	A <sub>1</sub>	B <sub>1</sub>	H <sub>1</sub>	a	h	d	H	L	B	Total weight (kg)	
Model	Impeller type	Model	kw														
IS50-32-125	O	90L-2	2.2	755	170	480	90	350	200	80	140	16	300	800	400	95	
	A															775	90
	B															705	82
IS50-32-125(J)	O	801-4	0.55	705	150	440	70	320	200	80	140	16	450	750	370	83	
	A																
	B																
IS50-32-160	O	100L-2	3	780	170	480	90	350	220	80	160	16	365	845	400	113	
	A															755	105
	B															755	102
IS50-32-160(J)	O	801-4	0.55	705	150	440	70	320	220	80	160	16	310	750	370	92	
	A																
	B																
IS50-32-200	O	132S1-2	5.5	830	190	540	110	400	250	80	180	16	435	940	450	152	
	A																
	B																
IS50-32-200(J)	O	802-4	0.75	705	150	440	70	320	250	80	180	16	340	750	370	97	
	A																
	B																
IS50-32-250	O	160M1-2	11	1075	220	660	130	490	270	100	225	20	495	1200	540	256	
	A															965	205
	B															965	205

### TTAAR-Series of Single Stage Single Suction Centrifugal Pump

### TTAAR-IS Out-form and installation dimension table

Pump		Motor		L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	A <sub>1</sub>	B <sub>1</sub>	H <sub>1</sub>	a	h	d	H	L	B	Total weight (kg)			
Model	Impeller type	Model	kw																
IS50-32-250(J)	O	90L-4	1.5	885	185	540	95	400	270	100	225	16	370	935	450	158			
	A																		
	B																		
IS65-50-125	O	100L-2	3	780	170	480	90	350	200	80	112	16	345	845	400	113			
	A																		
	B																		
IS65-50-125(J)	O	90L-2	2.2	755	170	480	90	350	200	80	112	16	300	800	400	103			
	A																		
	B																		
IS65-50-160	O	132S1-2	5.5	830	170	480	90	350	220	80	160	16	405	940	400	148			
	A																		
	B																		
IS65-50-160(J)	O	112M-2	4	790	170	480	90	350	220	80	160	16	375	865	400	130			
	A																		
	B																		
IS65-50-200	O	100L-2	3	780	170	480	90	350	220	80	160	16	365	845	400	117			
	A																		
	B																		
IS65-50-200(J)	O	802-4	0.75	705	170	440	70	320	220	80	160	16	310	750	370	96			
	A																		
	B																		
IS65-40-200	O	801-4	0.55	705	170	440	70	320	220	80	160	16	310	750	370	95			
	A																		
	B																		
IS65-40-250	O	132S2-2	7.5	830	185	540	110	400	250	100	180	16	435	1075	450	170			
	A																		
	B																		
IS65-40-250(J)	O	132S1-2	5.5	830	185	540	110	400	250	100	180	16	435	1075	450	164			
	A																		
	B																		
IS65-40-315	O	90S-4	1.1	755	170	480	90	350	250	100	180	16	360	910	400	119			
	A																		
	B																		
IS65-40-315(J)	O	802-4	0.75	715	165	480	90	350	250	100	180	16	340	885	400	111			
	A																		
	B																		
IS80-65-125	O	160M2-2	15	1075	220	660	130	490	290	125	250	20	565	1400	600	417			
	A															540	1295	540	365
	B															515	1270	540	320
IS80-65-125(J)	O	160M2-2	15	1300	220	660	130	490	290	125	250	20	515	1225	540	298			
	A																		
	B																		
IS80-65-125	O	112M-2	4	915	200	600	115	440	290	125	250	16	445	1025	490	212			
	A																		
	B																		
IS80-65-125	O	100L2-4	3	205	205	600	115	440	290	125	250	16	435	1005	490	205			
	A																		
	B																		
IS80-65-125	O	132S1-2	5.5	830	190	540	110	400	220	100	160	16	405	960	490	138			
	A																		
	B																		
IS80-65-125	O	112M-2	4	790	170	480	90	350	220	100	160	16	375	885	490	124			
	A																		
	B																		
IS80-65-125	O	100L-2	3	780	170	480	90	350	220	100	160	16	365	865	490	107			
	A																		
	B																		





TTAAR-Series of Single Stage Single Suction Centrifugal Pump

TTAAR-IS Out-form and installation dimension table

Pump		Motor		L1	L2	L3	A1	B1	H1	a	h	d	H	L	B	Total weight (kg)
Model	Impeller type	Model	kw													
IS80-65-125(J)	O	802-4	0.75	705	150	440	70	320	220	100	160	16	290	770	370	84
	A															83
	B	801-4	0.55													83
	C															83
IS80-65-160	O	132S2-2	7.5	830	185	540	110	400	250	100	180	16	435	960	450	155
	A	132S1-2	5.5													149
	B															149
IS80-65-160(J)	O	90L-4	1.5	755	170	480	90	350	250	100	180	16	350	795	400	820
	A	90S-4	1.1													795
	B															795
IS80-50-200	O	160M2-2	15	955	210	600	130	440	250	100	200	16	475	1085	490	230
	A	160M1-2	11													222
	B															222
IS80-50-200(J)	O	100L1-4	2.2	780	170	480	90	350	250	100	200	16	365	865	400	120
	A	90L-4	1.5													820
	B															820
IS80-50-250	O	180M-2	22	1135	220	660	130	490	270	100	225	20	520	1270	540	335
	A	160L-2	18.5													1245
	B															1245
IS80-50-250(J)	O	100L2-4	3	910	185	540	95	400	270	100	225	16	395	980	450	175
	A	100L1-4	2.2													171
	B															171
IS80-50-315	O	200L2-2	37	1200	245	740	155	550	315	125	280	20	590	1400	600	430
	A	200L2-2	30													416
	B															416
IS80-50-315(J)	O	132S-4	5.5	965	205	600	115	440	315	125	280	16	500	1100	490	235
	A	112M-4	4													207
	B															207
IS100-80-125	O	160M1-2	11	955	205	600	115	440	250	125	180	16	475	1085	490	210
	A	132S2-2	7.5													157
	B															157
IS100-80-125(J)	O	90L-4	1.5	765	165	480	75	350	250	100	180	16	350	795	400	820
	A	90S-4	1.1													795
	B															795
IS100-80-160	O	160M2-2	15	1075	220	660	130	490	250	100	200	20	475	1200	540	250
	A	160M1-2	11													242
	B															242

TTAAR-IS Out-form and installation dimension table

Pump		Motor		L1	L2	L3	A1	B1	H1	a	h	d	H	L	B	Total weight (kg)				
Model	Impeller type	Model	kw																	
IS100-80-160(J)	O	100L1-4	2.2	910	185	540	95	400	250	100	200	16	395	980	450	150				
	A															141				
	B	90L-4	1.5													855				
	C															855				
IS100-65-200	O	180M-2	22	1135	220	660	130	490	270	100	225	20	520	1270	540	335				
	A	160L-2	18.5													1130				
	B															1130				
IS100-65-200(J)	O	112M-4	4	915	200	600	115	440	270	100	225	16	425	1000	490	181				
	A	100L2-4	3													177				
	B															177				
IS100-65-250	O	200L2-2	37	1215	245	740	140	550	290	125	250	20	565	1400	590	440				
	A	200L1-2	30													425				
	B															425				
IS100-65-250(J)	O	132S-4	5.5	1015	210	600	100	440	290	125	250	16	475	1100	490	231				
	A	112M-4	4													203				
	B															203				
IS100-65-315	O	280S-2	75	1505	325	940	210	670	390	125	280	20	750	1655	720	824				
	A	250M-2	55													683				
	B															683				
	C	200L2-2	37													1260	250	740	140	550
IS100-65-315(J)	O	160M-4	11	1125	225	660	115	490	315	125	280	20	540	1255	540	353				
	A	132M-4	7.5													300				
	B															300				
IS125-80-160	Z	200L1-2	30	1200	245	740	155	550	290	125	225	20	585	1410	600	386				
	O	180M-2	22													1135	520	1305	540	326
	A	160L-2	18.5													1125	495	1280	540	285
	B	160M-2	15													1125	495	1225	540	262
IS125-80-160(J)	Z	112M-4	4	915	205	600	115	440	270	125	225	16	425	1035	490	174				
	O	100L2-4	3													170				
	A	100L1-4	2.2													165				
B	165																			
IS125-80-200	Z	225M-2	45	1270	260	740	140	550	315	125	250	20	640	1450	590	500				
	O	200L2-2	37													430				
	A	2000L1-2	30													415				
	B	180M-2	22													1200	220	660	115	490
IS125-80-200(J)	Z	132S-4	5.5	1015	205	600	100	440	290	125	250	16	500	1110	490	230				
	O	112M-4	4													940	270	200		
	A	100L2-4	3													930				
B	190																			
IS125-80-250	Z	280S-2	75	1505	325	940	210	670	390	125	280	20	750	1635	820	775				
	O	250M-2	55													1385	360	860		
	A	225M-2	45													1295	335	530		
	B	200L2-2	37													1260	250	740	140	550



TTAAR-Series of Single Stage Single Suction Centrifugal Pump

TTAAR-IS Out-form and installation dimension table

Pump		Motor		L1	L2	L3	A1	B1	H1	a	h	d	H	L	B	Total weight (kg)	
Model	Impeller type	Model	kw														
IS125-80-250(J)	Z	160M-4	11	1125	220	660	115	490	315	125	280	20	540	1225	540	315	
	O	132M-4	7.5	1055									1150	260			
	A	132S-4	5.5										500	1110		245	
	B																
IS125-80-315	Z	315S-2	110	1600	325	940	210	670	425	125	315	20	975	1855	720	1290	
	O	280M-2	90	1505									1715	910			
	A	280S-2	75										750	1665		815	
	B																
C	(250M-2)	60	1385	295	840	180	600	385	685	1600	650	710					
IS125-80-315(J)	Z	160L-4	15	1125	220	660	115	490	340	125	315	20	565	1310	540	390	
	O																1265
	A	160M-4	11	1055									525	1180		315	
	B																
C	132M-4	7.5	1260	645	1440	575											
IS125-80-400	Z	200L-4	30	1260	245	740	140	550	370	125	355	20	620	1375	590	500	
	O	180L-4	22	1230									1335	490			
	A	180M-4	18.5										600	1310		450	
	B	160L-4	15										1180	640		1440	500
IS125-100-200	O	225M-2	45	1270	260	740	140	550	335	125	280	20	640	1440	590	500	
	A	200L2-2	37	1215	565								1440	435			
	B	200L1-2	30		540								1335	540		370	
	C	(180L-2)	25		1195								220	660		115	490
IS125-100-200(J)	O	132M-4	7.5	1015	210	600	100	440	290	125	280	16	475	1140	490	227	
	A	132S-4	5.5										1100	490		214	
	B																
	C	112M-4	4										940	445		1025	200
IS125-100-250	O	280S-2	75	1505	295	840	180	600	360	140	280	20	750	1690	650	817	
	A	(250M2-2)	60	1385									685	1620		676	
	B	250M-2	55										1295	640		1505	560
	C	(200L4-2)	40											1260		250	740
IS125-100-250(J)	O	160M-4	11	1125	225	660	115	490	315	140	280	20	540	1290	540	346	
	A	132M-4	7.5	1055									1205	292			
	B												132S-4	5.5		500	1165
	C																
IS125-100-315	O	315S-2	110	1540	325	940	210	670	425	140	315	20	975	1870	720	1290	
	A	(280M2-2)	100	1505									1820	935			
	B	280M-2	90										750	1680		920	
	C	(280S2-2)	80														
C	280S-2	75															
IS125-100-315(J)	O	160L-4	15	1180	250	740	140	550	340	140	315	20	565	1325	540	600	
	A	(160M2-4)	13	1125									1280	540			
	B	160L-4	15										1325	600			
	C	(160M2-4)	13											540		1280	540
C	160M-4	11															
IS125-100-400	O	200L-4	30	1285	290	840	160	600	390	140	355	20	665	1455	650	700	
	A	180L-4	22	1245									640	1390		530	
	B	180M-4	18.5										640	1350		522	
	C	160L-4	15										1215	615		1325	490

TTAAR-IS Out-form and installation dimension table

Pump		Motor		L1	L2	L3	A1	B1	H1	a	h	d	H	L	B	Total weight (kg)
Model	Impeller type	Model	kw													
IS150-125-250	O	180M-4	18.5	1225	250	740	140	550	340	140	355	20	590	1350	600	435
	A	160L-4	15	1180									565	1325		400
	B	(160M2-4)	13	1015									540	1280		380
	C	160M-4	11													360
IS150-125-315	O	200L-4	30	1285	290	840	160	600	300	140	355	20	665	1455	650	605
	A	180L-4	22	1245									640	1390		525
	B	180M-4	18.5										640	1350		517
	C	160L-4	15										1215	615		1325
IS150-125-400	O	225M-4	45	1345	290	840	160	600	425	140	400	20	730	1545	650	640
	A	(200L4-4)	40	1285									685	1475		
	B	225S-4	37	1345									730	1520		610
	C	(200L2-4)	33	1285									685	1475		
IS200-150-250	O	225S-4	37	1320	290	840	160	600	390	160	375	20	695	1500	650	635
	A	200L-4	30	1285									665	1455		625
	B	(180L2-4)	25	1245									640	1390		545
	C	180L-4	22													
IS200-150-315	O	250M-4	55	1555	320	940	190	670	425	160	400	20	750	1750	730	825
	A	225M-4	45	1495									730	1665		730
	B	225S-4	37										700	1595		685
	C	200L-4	30										1430	700		1595
IS200-150-400	O	280M-4	90	1665	320	940	190	670	425	160	450	20	785	1890	730	1110
	A	280S-4	75	1555									785	1840		1050
	B	(250M2-4)	60										750	1770		865
	C	250M-4	55													
C	(225M2-4)	50	1495													

Note: 1. That with a bracket in the column of "model of motor" means model YDX low harmonic winding three-phase asynchronous motor and that without a bracket means the general Y series motor.

2. "O" in the column of "type of impeller" means the pump with an uncut outer diameter of impeller.

3. The datum in the column of "total weight" means the weight of the unit comprised of pump, motor, clutch and base.

4. The norm of the foot bolt is M12×300 or M16×300.



Reference table for pipeline loss

Capacity (L/s)

Pipe diameter (mm)	Capacity (L/s)									
	1	2	4	6	8	10	15	20	25	30
25	32.7	13.0								
38	3.5	1.4	5.5							
50	0.8	3.1	1.3	2.9						
65		1.6	3.2	7.1	13	20				
75		0.4	0.8	3.3	5.9	9.6	21.6			
100			0.23	0.8	1.3	2.1	6.8	8.6	13	19.4
125				0.23	0.4	0.63	1.3	2.7	4.1	5.9
150					0.16	0.26	0.58	1.1	1.6	2.3
175						0.11	0.27	0.5	0.74	1.05
200							0.13	0.26	0.37	0.53
250								0.07	0.12	0.18
300									0.07	0.12

Capacity (L/s)

Pipe diameter (mm)	Capacity (L/s)									
	40	50	60	70	80	90	100	110	120	130
150										
175										
200										
250										
300										

Brief table for the frictional loss of a straight pipe (for evaluation), the lost meters of a 100m straight pipe takes the newly cast iron pipe as the standard and multiple for the old one.

The length of a straight pipe converted into from both valve and elbow (each)

Variety	Convert into the times of the diameter of a straight pipe	Remark
Fully opened gate valve	13	Multiple in case of unopen
Standard elbow	25	
Back valve	100	
Foot valve	100	Partial block-up multiplied

Note: For instance, a 100mm diameter pipe, the foot valve has a  $100 \times 100 = 10000 \text{mm} = 10 \text{m}$  diameter when which is converted into 100 times that of the pipe's diameter. Suppose the flow is 8L/s, looked into the above table, the loss of the straight pipe is 1.3m each 100m, then the one for 100mm is 0.13m, that is, for a 100mm foot valve with a flow 8L/s, its head loss is 0.13m.

Limit of the maximum flow for a pipe with a certain diameter

Pipeline diameter (mm)	Maximum flow (L/s)	Maximum flow rate (m/s)	Pipeline diameter (mm)	Maximum flow (L/s)	Maximum flow rate (m/s)
25	1	2.04	125	30.0	2.44
38	2.5	1.69	150	43.0	2.45
50	4.17	2.12	175	60.0	2.49
65	6.67	2.01	200	83.3	2.69
75	10.0	2.26	250	133.0	2.72
100	18.4	2.33	300	192.0	2.71

Note: The pipeline loss would be made greatly increased once the limit is over.



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