MARO
water pumps

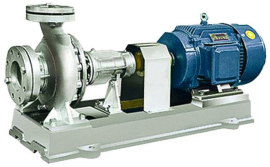
FOCUS ON IMPROVEMENT

PROFESSIONAL IN SERVICES

3S/3E series

SINGLE-STAGE END SUCTION PUMP





COMPANY PROFILE

MARO is a high-tech enterprise integrating research and development, production, sales and service. Factory located in Shanghai Bay High-tech Industrial Zone.

We are committed to the development and manufacturing of special motor industry, the main motors are YE3, YE4 series of high-efficiency three-phase asynchronous motors; YPT3 series variable frequency speed regulating three-phase asynchronous motor; YBX3, YBX4 series high efficiency explosive proof three-phase asynchronous motor, YBBPX3 series explosive proof variable frequency speed regulation three-phase asynchronous motor and other products, the company has passed the ISO9001 quality management system certification, explosion-proof electrical equipment has passed the CCC product certification, explosion-proof motor certificate and many other national departments issued the certification certificate. The company has introduced advanced equipment and technology at home and abroad, and has gained good reputation in the same industry with scientific design, precision processing and rigorous testing.

Adhering to the business philosophy of "focus on improvement, professional in service" and implementing the values of pragmatic work style and concept of integrity and responsibility, we provide high-quality products to establish win-win business relationship with all customers.

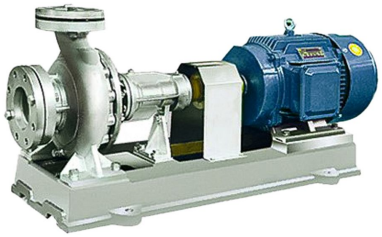
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Brief introduction



3S series horizontal close-couple pump



3E series horizontal coupling pump

The 3S/3E series end-suction pump was developed by YIMAN group as a new generation product, benefit from platform thinking, the product own following advantage:

-Professional appearance of family design

-Hydraulic layout optimized to fit market trend, interchangeable with top brands

-By apply CFD in design process, hydraulic efficiency reach energy conservation level according to GB19762-2007

-Full 3d design, FEA is involved to ensure a optimized structure and strength

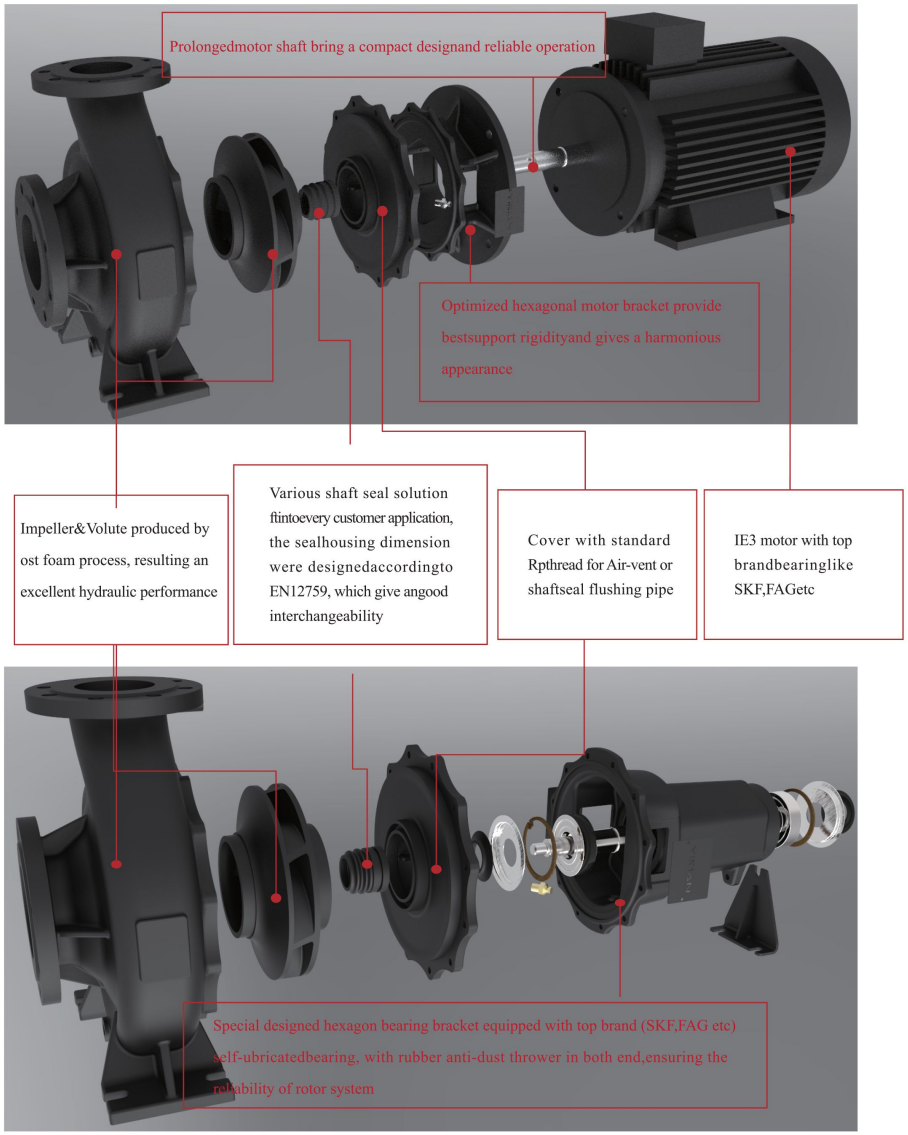
-Prolonged motor shaft provide the chance of reducing complexity and gain high reliability on 3S series pump

-Different bearing bracket could be apply to same pump due to modularized design of 3E series pump

-YX3(IE3) motor as standard offer, contribute to energy conservation and environment protection

-High component commonality with IL series gives a good serviceability and economy

Explosive view:



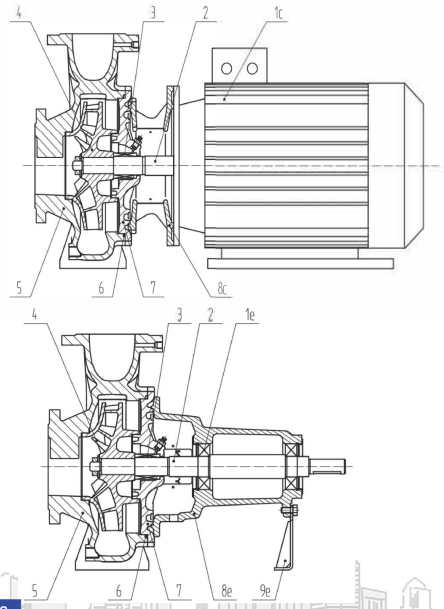
Application

-District heating and air conditioning system
-Cooling system
-Commercial building water supply
-Other light chemical process

Technical data:

	2 Pole	4 Pole
Flow	Max to 400m3/h / Up to 400m3/h	Max to1200m3/h / Up to 1200m3/h
Head	Max to 150m / Up to 150m	Max to90m / Up to 90m
Media temperature	-25~140°C (For details refer to shaft seal selecting sheet)	
Pressure rating	10bar for standard version, 16bar、25bar available as customer required	
Connection	DN50~DN300,dimensions apply to EN 1092-2 and GB/T 17241.6	
Pumping media	Clean,low viscosity water-like liquid without particle or fibers inside	

Component Material:



POS	Description	Material	
		standard	option
1c	Motor	YE3high efficiency motor	others
1e	Bearing	maintenance-free bearing	SKF、NSK
2	Shaft	45#	2Cr13
3	Shaft seal	Standard graphite silicon carbide +EPDM	refer to selection sheet
4	Impeller	HT200	QT450、304
5	Housing	HT250	QT450、304
6	O-ring	EPDM	FKM/Viton
7	Cover	HT250	V450、304
8c	Motor bracket	HT250	QT450、304
8e	Bearing bracke	HT200	
9e	Bracket foot	45#	

M/S selection:

Pumping media	Temperature	Rot. Ring mat.	Sta. Ring mat.	Secondary seal	Remark
Low temp.water	0~120℃	Carbon	SiC	EPDM	Standard
High temp.water	120~140℃	Carbon	WC	EPDM	Optional
Coolant	-25~90℃	SiC	SiC	EPDM	Optional
Oil	~90℃	SiC	SiC	FKM/Viton	Optional

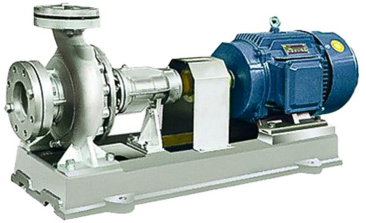
Model Definition:

3S/3E SINGLE-STAGE END SUCTION PUMPS

3S/3E 150-125-250/A/B

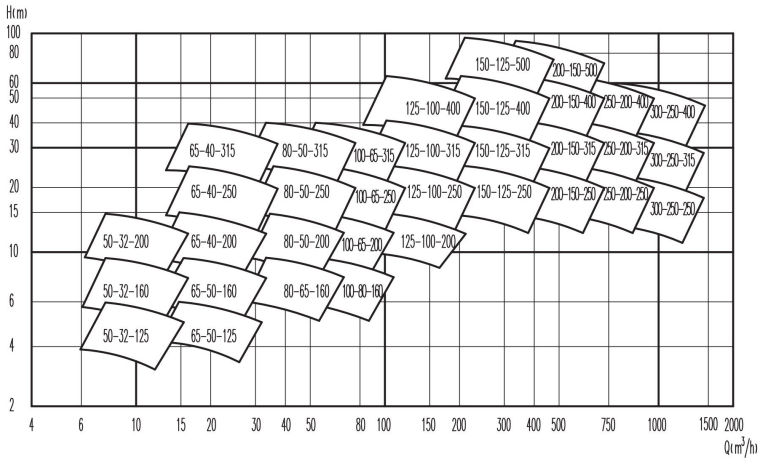
- Impeller cutting diameter code
  E.g:A cutting B two cutting
- Impeller nominal diameter(mm)
  E.g. : 250=250mm
- Outlet port diameter(mm)
  E.g. : 125=125mm
- Inlet port diameter(mm)
  E.g. : 150=150mm
- Product series — 3S/3E series



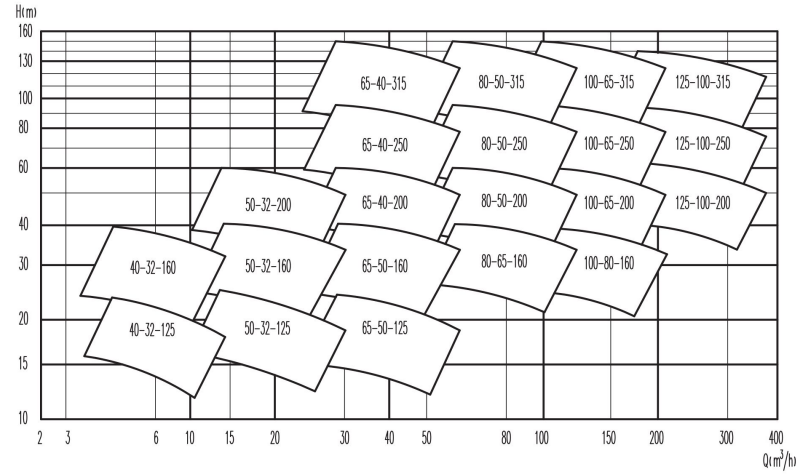


Hydraulic layout

50Hz 4-pole motor



50Hz 2-pole motor



Curve condition

The following conditions are suitable for the performance curves shown:

1．Curve tolerance is conformity with ISO 9906,Annex A;

2．All curves are based on the measured value of magnet 3×380V, under the constant speed of 2900 rpm, 1450 rpm or 1480 rpm;

3．Measurements is done with 20°C, air-free water, without impurities, kinematic viscosity of 1mm2/s (1cSt) ;

4．If the thickness and density of the pumped liquid is different from water, the motor power should be adjusted.

5．The NPSHr curve of the candidate pump type corresponds the biggest impeller diameter, the NPSHr value should be added a minimum safety margin of 0.5 m.

Performance data sheet **50Hz4-pole motor**

S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	Rated speed (r/min)	NPSH (m)
1	50-32-200	8.8	15.1	1.1	1450	1.5
		12.5	14			
		16.3	12.1			
2	50-32-200A	8.0	13.5	0.75	1450	1.5
		11.5	12			
		15.0	10.2			
3	50-32-200B	7.5	12.5	0.75	1450	1.5
		10.5	11			
		13.7	9.5			
4	65-50-160	17.5	9.9	1.1	1450	1.5
		25	9			
		32.5	8			
5	65-50-160A	16.4	7.8	1.1	1450	1.8
		23.5	7			
		30.5	6			
6	65-50-160B	13	6.2	0.75	1450	1.8
		21.5	5.5			
		28	4.5			
7	65-40-200	17.5	15.4	2.2	1450	1.5
		25	14			
		32.5	12.4			
8	65-40-200A	16.4	13.2	1.5	1450	1.8
		23.5	12			
		30.5	10.5			
9	65-40-200B	13	11.1	1.1	1450	1.8
		21.5	10			
		28	8.6			
10	65-40-250	17.5	23.5	3.0	1450	1.6
		25	22			
		32.5	20			
11	65-40-250A	14	20.1	2.2	1450	1.8
		23.5	18			
		30.5	15.9			
12	65-40-250B	13	17.5	2.2	1450	1.8
		21.5	16			
		28	14.3			
13	65-40-315	17.5	37.5	5.5	1450	1.6
		25	36			
		32.5	32			

Performance data sheet **50Hz4-pole motor**

S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	NPSH (m)
14	65-40-315A	16.4	33.5	5.5	1.8
		23.5	32		
		30.5	28.2		
15	65-40-315B	13	29.5	4.0	1.8
		21.5	28		
		28	24.2		
16	80-65-160	35	9.8	2.2	2.0
		50	9		
		65	8		
17	80-65-160A	32.5	7.7	1.5	2.2
		46.5	7		
		60.5	6.1		
18	80-65-160B	31	6.2	1.1	2.2
		44.5	5.5		
		58	4.3		
19	80-50-200	35	15	3.0	2.0
		50	14		
		65	12.2		
20	80-50-200A	32.5	13	3.0	2.2
		46.5	12		
		60.5	10		
21	80-50-200B	31	11	2.2	2.2
		44.5	10		
		58	8.6		
22	80-50-250	35	23.5	5.5	2.0
		50	22		
		65	20.2		
23	80-50-250A	32.5	21.8	5.5	2.2
		46.5	20		
		60.5	17.5		
24	80-50-250B	31	19.6	4.0	2.2
		44.5	18		
		58	15.8		
25	80-50-315	35	37.2	11	2.0
		50	35		
		65	32		
26	80-50-315A	32.5	32.5	7.5	2.2
		46.5	30		
		60.5	27.2		

Performance data sheet **50Hz4-pole motor**

S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	NPSH (m)
27	80-50-315B	31	26.2	5.5	2.2
		44.5	24		
		58	21.4		
28	100-80-160	56	9.9	3.0	2.3
		80	9		
		104	7.8		
29	100-80-160A	53.2	8.5	3.0	2.5
		76	7.5		
		98.8	6.3		
30	100-80-160B	50.8	6.9	2.2	2.5
		72.5	6		
		94.3	4.8		
31	100-65-200	56	15.2	5.5	2.3
		80	14		
		104	12.2		
32	100-65-200A	53.2	13.2	4.0	2.5
		76	12		
		98.8	10.1		
33	100-65-200B	50.8	11.2	3.0	2.5
		72.5	10		
		94.3	7.8		
34	100-65-250	56	23.8	7.5	2.3
		80	22		
		104	20.2		
35	100-65-250A	53.2	21.7	7.5	2.5
		76	20		
		98.8	17.5		
36	100-65-250B	50.8	17.5	5.5	2.5
		72.5	16		
		94.3	13.5		
37	100-65-315	56	37	15	2.3
		80	35		
		104	32		
38	100-65-315A	53.2	32.5	11	2.5
		76	30		
		98.8	25.5		
39	100-65-315B	50.8	25.5	7.5	2.5
		72.5	23		
		94.3	18.5		

Performance data sheet **50Hz4-pole motor**

S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	NPSH (m)
40	125-100-200	105	15.7	11	2.5
		150	14		
		195	11.6		
41	125-100-200A	98	13.7	7.5	2.8
		140	12		
		182	9.6		
42	125-100-200B	91	11.6	5.5	2.8
		130	10		
		169	8		
43	125-100-250	105	24.5	15	2.5
		150	22		
		195	18.8		
44	125-100-250A	98	22.5	15	2.8
		140	20		
		182	16.5		
45	125-100-250B	91	19.5	11	2.8
		130	18		
		169	14.8		
46	125-100-315	105	38.2	22	2.5
		150	35		
		195	30.5		
47	125-100-315A	98	34.2	18.5	2.8
		140	30		
		182	25.5		
48	125-100-315B	91	28.5	15	2.8
		130	25		
		169	20.5		
49	125-100-315S	80	38.2	18.5	3.0
		115	35		
		150	30.5		
50	125-100-315SA	77	36.2	15	3.0
		100	32		
		130	27.5		
51	125-100-400	105	59.5	37	2.5
		150	56		
		195	48.5		
52	125-100-400A	98	51.5	30	2.8
		140	48		
		182	40.5		

Performance data sheet **50Hz4-pole motor**

S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	NPSH (m)
53	125-100-400B	91	41.5	22	2.8
		130	38		
		169	30.5		
54	125-100-400S	80	59.5	30	3.0
		115	56		
		150	48.5		
55	125-100-400SA	77	53.5	22	3.0
		100	50		
		130	42.5		
56	150-125-250	210	24.8	30	3.2
		300	22		
		390	19		
57	150-125-250A	192	22.8	22	3.5
		275	20		
		358	16.4		
58	150-125-250B	175	18.5	18.5	3.5
		250	16		
		325	12.5		
59	150-125-315	210	38.5	45	3.2
		300	35		
		390	30.5		
60	150-125-315A	192	33.5	37	3.5
		275	30		
		358	25.5		
61	150-125-315B	175	28.5	30	3.5
		250	25		
		325	20.5		
62	150-125-315S	150	38.5	37	3.5
		220	35		
		285	30.5		
63	150-125-315SA	140	35.5	30	3.5
		200	32		
		260	27.5		
64	150-125-400	210	62.6	75	3.2
		300	56		
		390	50.5		
65	150-125-400A	192	56.6	55	3.5
		275	50		
		358	44.2		

Performance data sheet **50Hz4-pole motor**

S/N	Model	Flow rate (m3/h)	Head (m)	Motor power (kw)	NPSH (m)
66	150-125-400B	175	48.5	45	3.5
		250	42		
		325	38.6		
67	150-125-400S	150	62.6	55	3.8
		220	56		
		285	49.5		
68	150-125-400S（A）	140	50.2	45	3.8
		200	50		
		260	42.5		
69	200-150-250	350	23.5	45	5.5
		500	20		
		600	15		
70	200-150-250A	315	21.5	37	5.8
		450	18		
		540	13		
71	200-150-315	350	39.4	75	5.5
		500	35		
		600	30.2		
72	200-150-315A	315	33.5	55	5.8
		450	30		
		540	24.8		
73	200-150-315B	280	27.6	45	5.8
		400	25		
		480	20.3		
74	200-150-315S	280	39	55	5.8
		400	35		
		480	30		
75	200-150-315SA	260	33.5	45	5.8
		375	30		
		450	25		
76	200-150-400	350	61	110	5.5
		500	56		
		600	49.5		
77	200-150-400A	315	55	90	5.8
		450	50		
		540	43.5		
78	200-150-400B	280	50.5	75	5.8
		400	45		
		480	38.5		

Performance data sheet **50Hz4-pole motor**

S/N	Model	Flow rate (m3/h)	Head (m)	Motor power (kw)	NPSH (m)
79	200-150-400S	280	60	90	5.8
		400	56		
		480	50.5		
80	200-150-400SA	260	55	75	5.8
		375	50		
		450	43.5		
81	200-150-500	350	91.5	200	5.3
		500	85		
		600	76		
82	200-150-500A	315	86	160	5.3
		450	80		
		540	71		
83	200-150-500B	280	81	132	5.3
		400	75		
		480	67		
84	250-200-250	500	24.5	55	6.5
		720	20		
		860	17		
85	250-200-250A	420	19.5	45	6.5
		600	17		
		720	14		
86	250-200-315	525	38	90	6.5
		750	32		
		900	30		
87	250-200-315A	455	33	75	7.0
		650	30		
		780	25		
88	250-200-315B	400	28	55	7.0
		580	25		
		700	20		
89	250-200-400	525	60	160	7.0
		750	55		
		900	49		
90	250-200-400A	455	55	132	7.0
		650	50		
		780	45		
91	250-200-400B	420	50	110	7.0
		600	45		
		720	40		

Performance data sheet **50Hz4-pole motor**

92	300-250-250	560	24.5	75	8.5
		800	20		
		960	15.5		
93	300-250-250A	500	21.5	55	8.5
		720	17		
		860	14		
94	300-250-315	700	36.5	110	8.2
		1000	32		
		1200	27.5		
95	300-250-315A	630	32.5	90	8.5
		900	28		
		1080	23.5		
96	300-250-315B	560	29.5	75	8.5
		800	25		
		960	20.5		
97	300-250-400	700	61	200	8.2
		1000	55		
		1200	50.5		
98	300-250-400A	630	56.6	160	8.5
		900	50		
		1080	44.2		
99	300-250-400B	560	50.5	132	8.5
		800	45		
		960	38.5		
100	300-250-400C	560	45.5	110	8.5
		750	40		
		960	33.5		

Performance data sheet **50Hz2-pole motor**

S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	Rated speed (r/min)	NPSH (m)
1	40-32-125	4.4	21.5	1.1	2900	2.0
		6.3	20			
		8.2	18			
2	40-32-125A	3.9	17.5	0.75	2900	2.0
		5.5	16			
		7.2	14			
3	40-32-160	4.4	37.5	3	2900	2.0
		6.3	36			
		8.2	34			
4	40-32-160A	4.1	33.5	2.2	2900	2.0
		5.9	32			
		7.6	30			
5	40-32-160B	3.9	31.5	1.5	2900	2.0
		5.5	28			
		7.2	26			
6	50-32-125	8.8	21.5	1.5	2900	2.2
		12.5	20			
		16.3	18			
7	50-32-125A	8.1	17.5	1.1	2900	2.2
		11.5	16			
		15	14			
8	50-32-160	8.8	37.5	4	2900	2.2
		12.5	36			
		16.3	34			
9	50-32-160A	8.1	33.5	3	2900	2.2
		11.5	32			
		15	30			
10	50-32-160B	7.4	29.5	2.2	2900	2.2
		10.5	28			
		13.7	26			
11	50-32-200	17.5	61.2	7.5	2900	2.2
		25	56			
		32.5	49			
12	50-32-200A	16.5	55.1	7.5	2900	2.4
		23.5	50			
		30.6	40.5			
13	50-32-200B	15.1	48.5	5.5	2900	2.4
		21.5	44			
		28	35.2			

Performance data sheet **50Hz2-pole motor**

S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	Rated speed (r/min)	NPSH (m)
14	65-50-125	17.5	21.5	3	2900	3.0
		25	20			
		32.5	18			
15	65-50-125A	16.5	17.5	2.2	2900	3.0
		23.5	16			
		30.6	14			
16	65-50-160	35	39	11	2900	3.0
		50	36			
		65	32			
17	65-50-160A	31.5	35	7.5	2900	3.2
		45	32			
		58.5	26.5			
18	65-50-160B	29.8	29	5.5	2900	3.2
		42.5	26			
		55.3	20.5			
19	65-40-200	35	62	15	2900	3.0
		50	56			
		65	49			
20	65-40-200A	31.5	51.5	11	2900	3.2
		45	47			
		58.5	37.6			
21	65-40-200B	29.8	41.8	7.5	2900	3.2
		42.5	38			
		55.3	30.6			
22	65-40-250	35	95.5	22	2900	3.0
		50	88			
		65	80			
23	65-40-250A	31.5	80.3	18.5	2900	3.2
		45	75			
		58.5	58.4			
24	65-40-250B	29.8	67.8	15	2900	3.2
		42.5	62			
		55.3	50.4			
25	65-40-315	35	151	45	2900	3.0
		50	140			
		65	128			
26	65-40-315A	31.5	138	37	2900	3.2
		45	130			
		58.5	119			

Performance data sheet **50Hz2-pole motor**

S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	Rated speed (r/min)	NPSH (m)
27	65-40-315B	29.8	127	30	2900	3.2
		42.5	120			
		55.3	108			
28	80-65-160	70	39.5	15	2900	4.2
		100	36			
		130	31			
29	80-65-160A	66.5	35.5	15	2900	4.5
		95	32			
		123	26			
30	80-65-160B	63	31.5	11	2900	4.5
		90	28			
		117	22			
31	80-50-200	70	61	30	2900	4.2
		100	56			
		130	50.5			
32	80-50-200A	66.5	55	22	2900	4.5
		95	50			
		123	44.5			
33	80-50-200B	63	50.5	18.5	2900	4.5
		90	45			
		117	39.5			
34	80-50-250	70	95	45	2900	4.2
		100	88			
		130	81			
35	80-50-250A	66.5	87	37	2900	4.5
		95	80			
		123	72.5			
36	80-50-250B	63	76.5	30	2900	4.5
		90	70			
		117	62			
37	80-50-315	70	151	75	2900	4.2
		100	140			
		130	128			
38	80-50-315A	66.5	131	55	2900	4.5
		95	120			
		123	105			
39	80-50-315B	63	109.5	45	2900	4.5
		90	100			
		117	84.5			

Performance data sheet **50Hz2-pole motor**

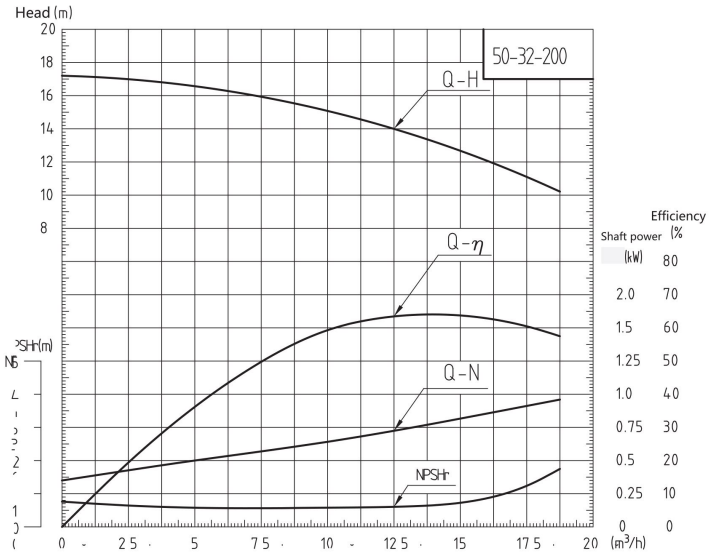
S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	Rated speed (r/min)	NPSH (m)
40	100-80-160	112	40.5	22	2900	4.5
		160	36			
		192	31			
41	100-80-160A	105	34.5	18.5	2900	4.8
		150	30			
		180	25			
42	100-80-160B	98	29.5	15	2900	4.8
		140	25			
		168	20.5			
43	100-65-200	112	61	37	2900	4.8
		160	56			
		192	50.5			
44	100-65-200A	105	52.8	30	2900	5.0
		150	48			
		180	39.5			
45	100-65-200B	98	44.5	22	2900	5.0
		140	40			
		168	32.5			
46	100-65-250	112	95	75	2900	4.8
		160	88			
		192	81			
47	100-65-250A	105	87	55	2900	5.0
		150	80			
		180	72			
48	100-65-250B	98	82	45	2900	5.0
		140	75			
		168	65			
49	100-65-315	112	151	110	2900	4.8
		160	140			
		192	128			
50	100-65-315A	105	131	90	2900	5.0
		150	130			
		180	118			
51	100-65-315B	98	130	75	2900	5.0
		140	120			
		168	108			
52	125-100-200	210	63	75	2900	7.0
		300	56			
		360	49			

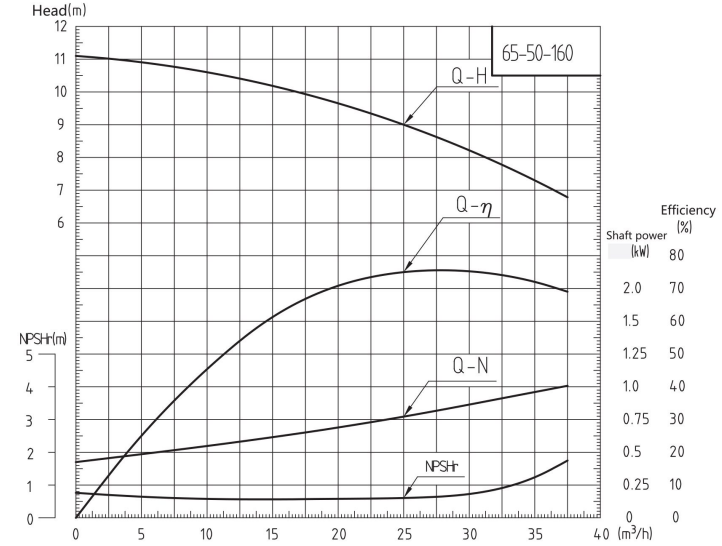
Performance data sheet **50Hz2-pole motor**

S/N	Model	Flow rate (m^3/h)	Head (m)	Motor power (kw)	Rated speed (r/min)	NPSH (m)
53	125-100-200A	182	54.9	55	2900	7.0
		260	50			
		312	41.2			
53	125-100-200A	182	54.9	55	2900	7.0
		260	50			
		312	41.2			
54	125-100-200B	154	49.5	45	2900	7.0
		220	45			
		264	37.5			
55	125-100-250	210	88	90	2900	7.0
		300	80			
		360	71			
56	125-100-250A	192	82.5	75	2900	7.0
		275	75			
		358	65.8			
57	125-100-250B	175	76.5	55	2900	7.0
		250	70			
		325	62			
58	125-100-250S	154	88	75	2900	7.0
		220	80			
		264	71			
59	125-100-250SA	140	78	55	2900	7.0
		200	75			
		240	61			
60	125-100-315	210	142.5	160	2900	7.0
		300	130			
		360	108.5			
61	125-100-315A	192	126.7	132	2900	7.0
		275	115			
		358	92.7			
62	125-100-315B	175	115.6	110	2900	7.0
		250	105			
		325	86.2			
63	125-100-315S	154	143	132	2900	7.0
		220	130			
		264	108			
64	125-100-315SA	140	126	110	2900	7.0
		200	115			

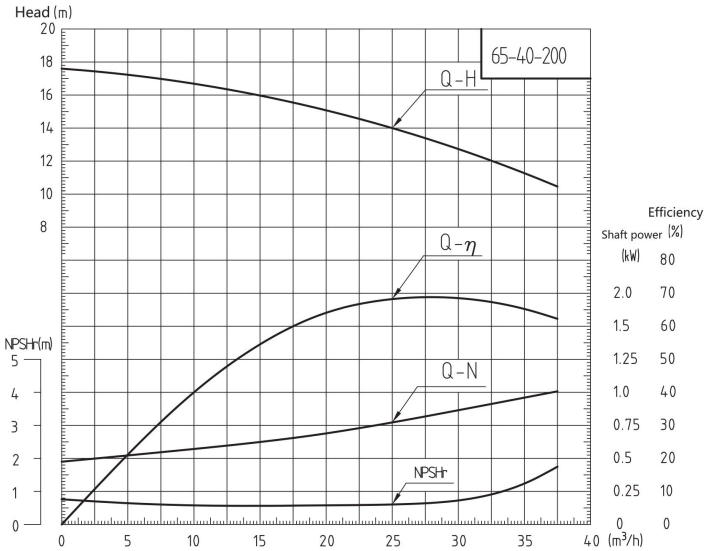
Performance curves

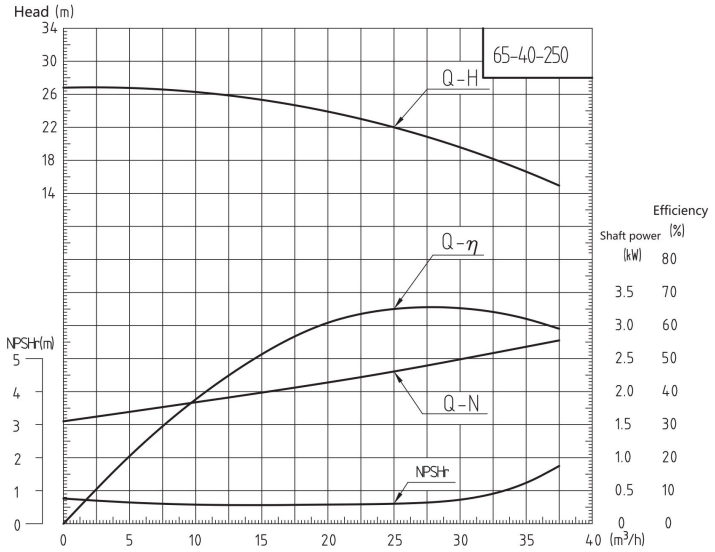
50Hz 4-pole motor



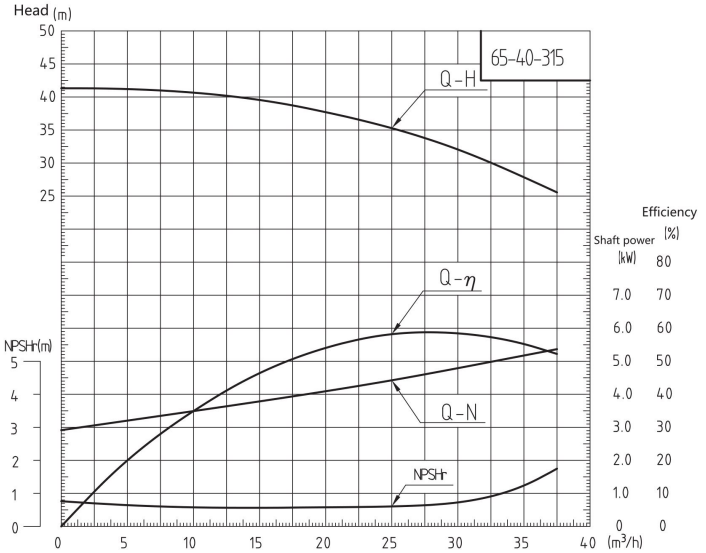


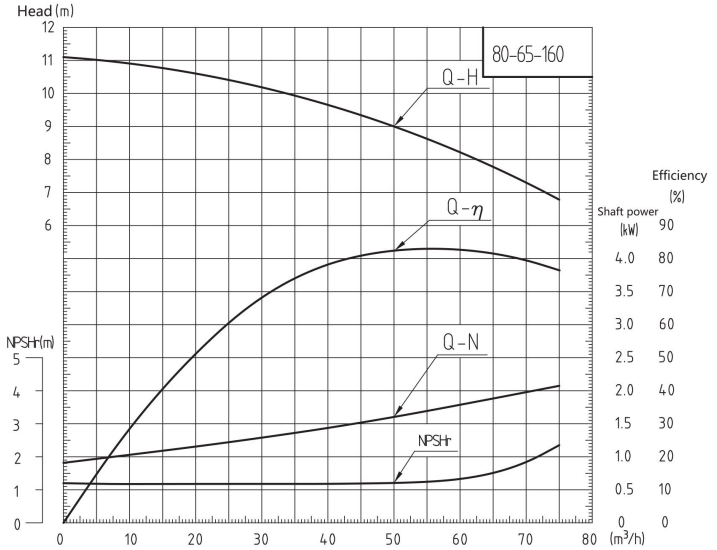
50Hz 4-pole motor

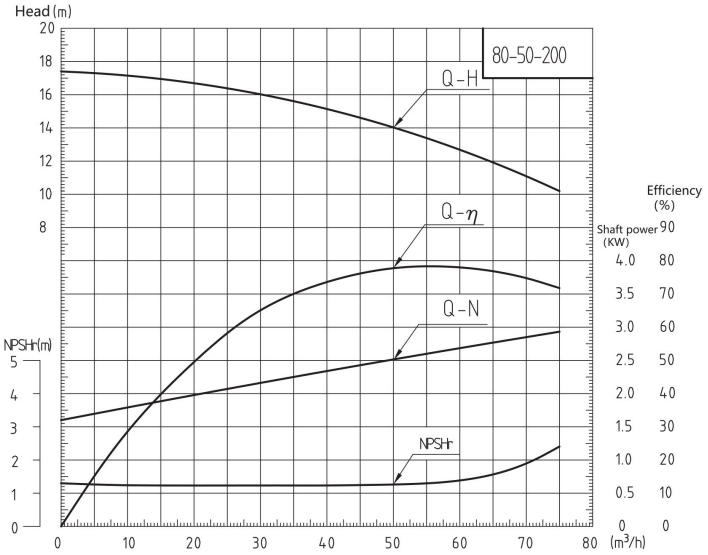


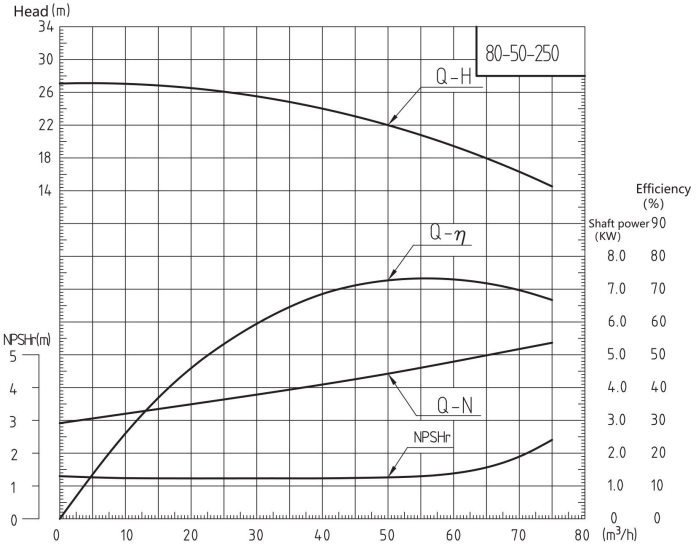


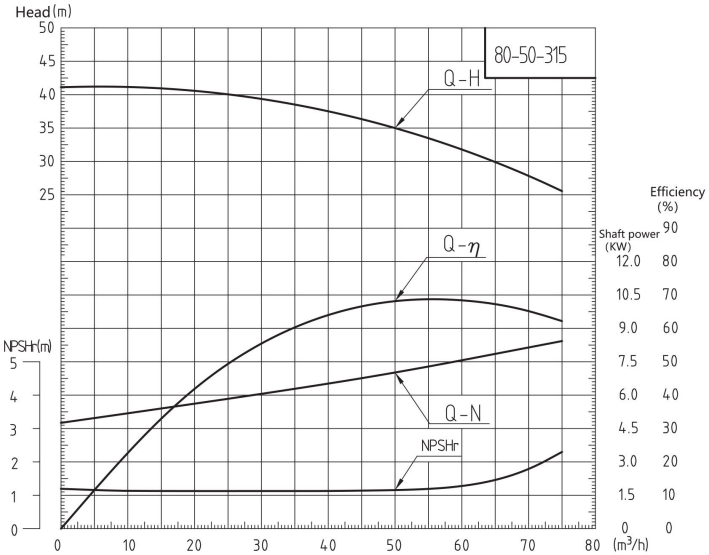
50Hz 4-pole motor

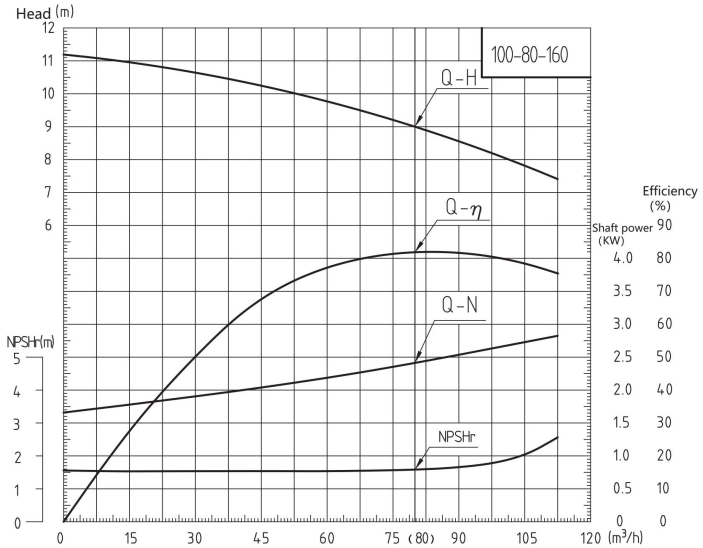


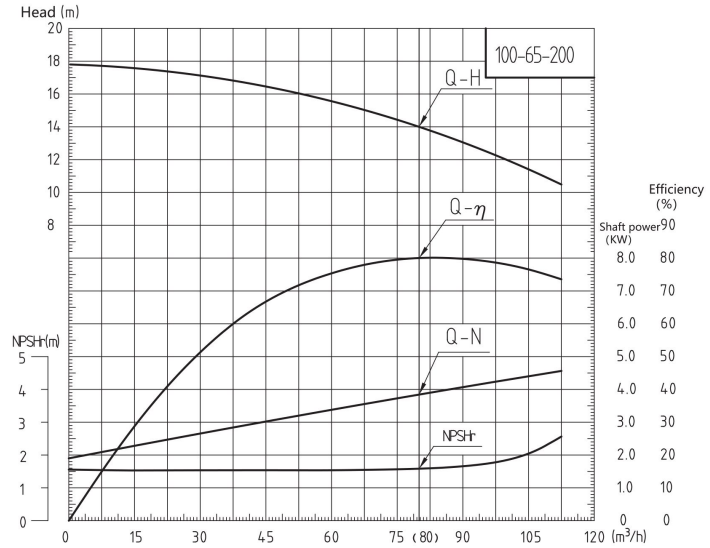


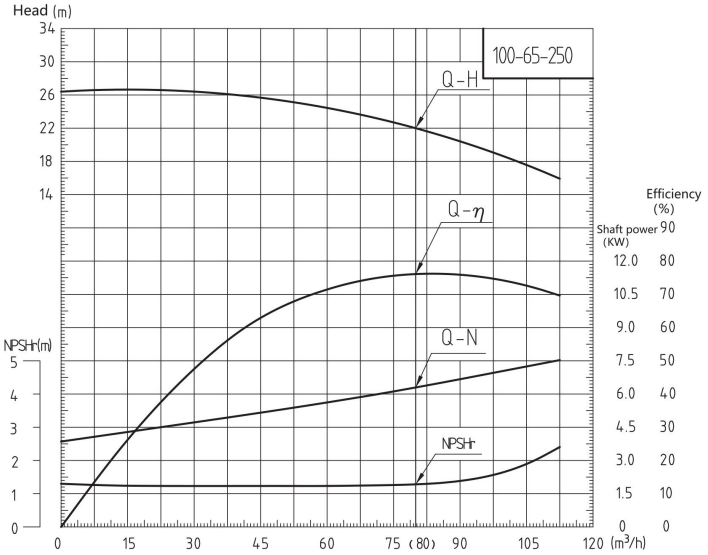

80-50-200
Head (m)
Q-H
Q-η
Q-N
NPSHr
NPSH(m)
Shaft power (KW)
Efficiency (%)
(m³/h)

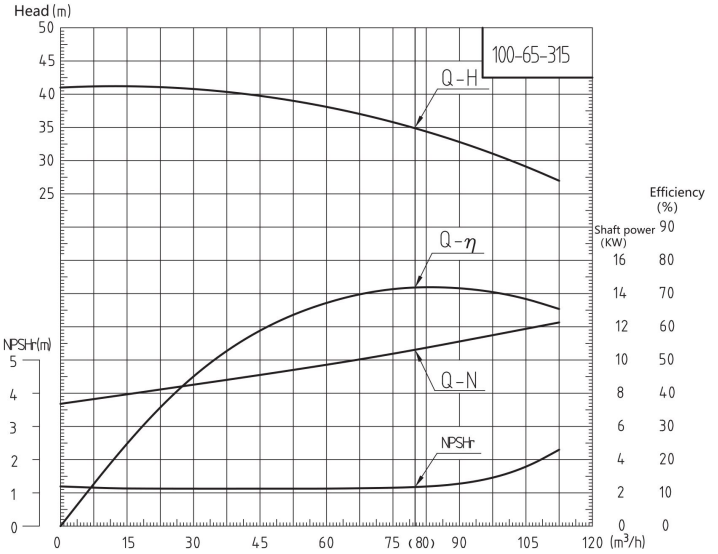

80-50-250
Head (m)
Q-H
Q-η
Q-N
NPSHr
NPSH(m)
Shaft power (KW)
Efficiency (%)
(m³/h)

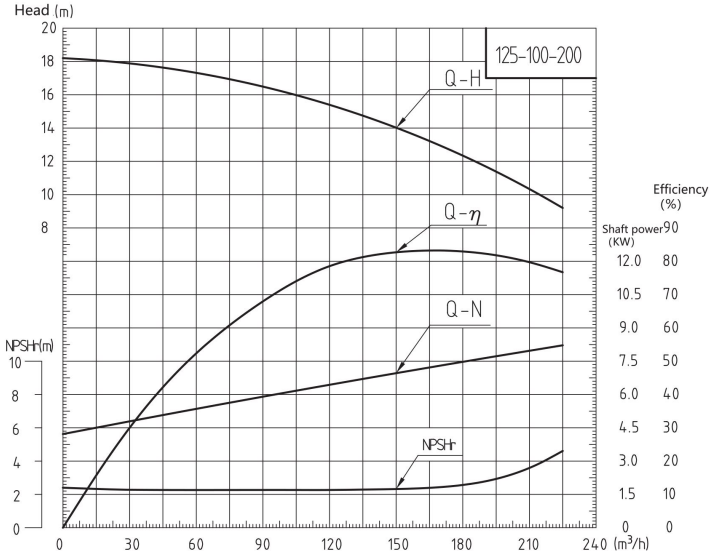

80-50-315
Head (m)
Q-H
Q-η
Q-N
NPSHr
NPSH(m)
Shaft power (KW)
Efficiency (%)
(m³/h)

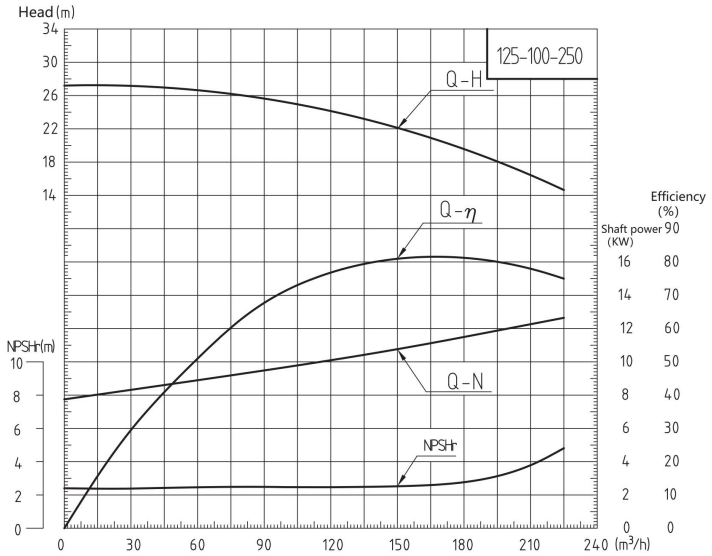

100-80-160
Head (m)
Q-H
Q-η
Q-N
NPSHr
NPSH(m)
Shaft power (KW)
Efficiency (%)
(m³/h)

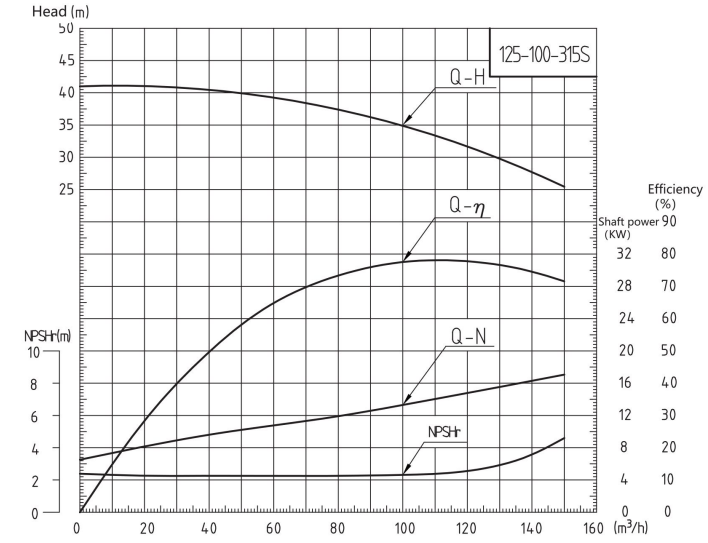

Head (m)
100-65-200
Q-H
Q-η
Q-N
NPSHr
Efficiency (%)
Shaft power (KW)
NPSH(m)
(m³/h)

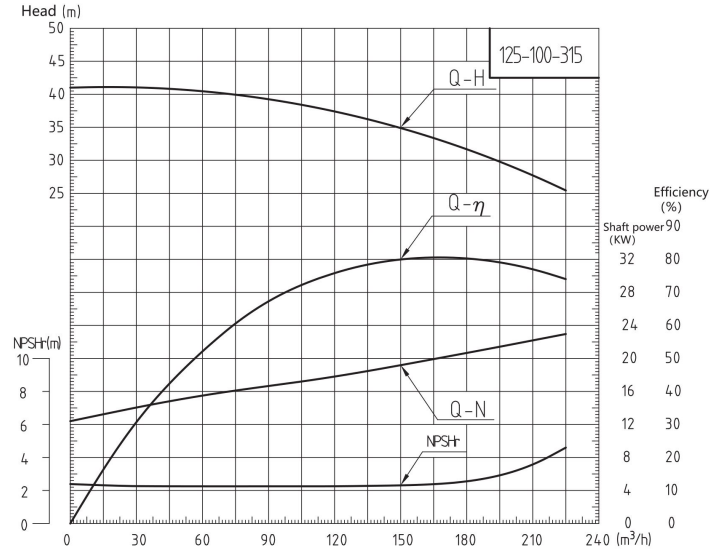

Head (m)
100-65-250
Q-H
Q-η
Q-N
NPSHr
Efficiency (%)
Shaft power (KW)
NPSH(m)
(m³/h)

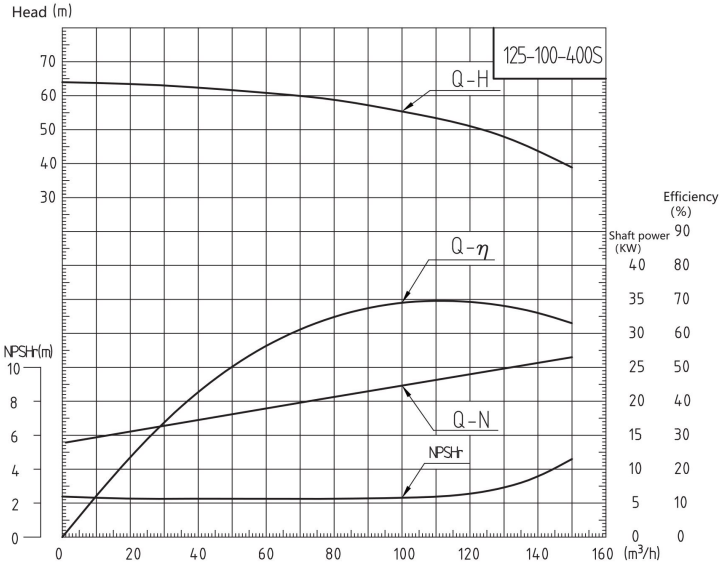

Head (m)
100-65-315
Q-H
Q-η
Q-N
NPSHr
Efficiency (%)
Shaft power (KW)
NPSH(m)
(m³/h)

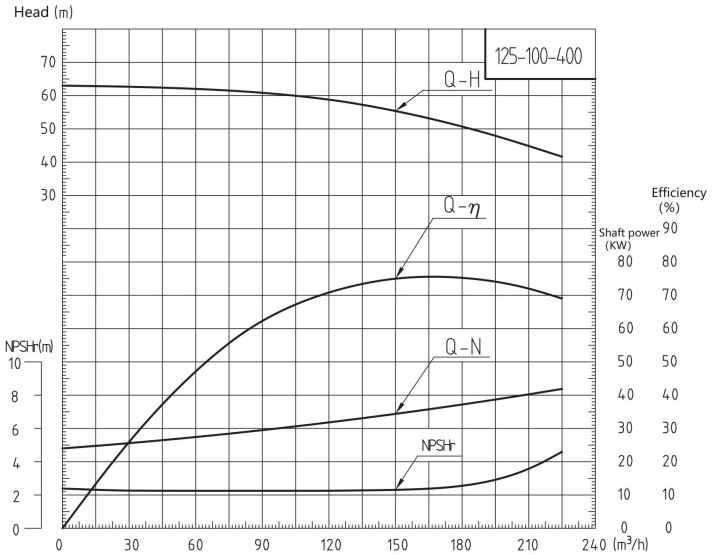

Head (m)
125-100-200
Q-H
Q-η
Q-N
NPSHr
Efficiency (%)
Shaft power (KW)
NPSH(m)
(m³/h)

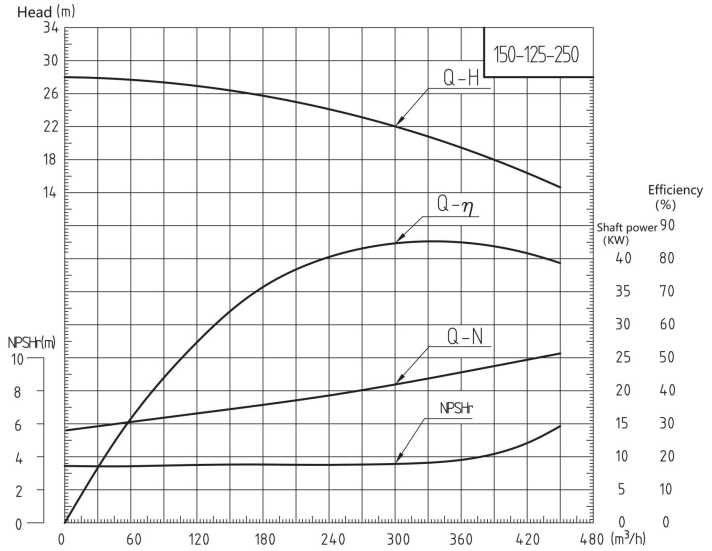

125-100-250
Head (m)
Q-H
Q-η
Q-N
NPSH
NPSH (m)
Efficiency (%)
Shaft power (KW)
(m³/h)

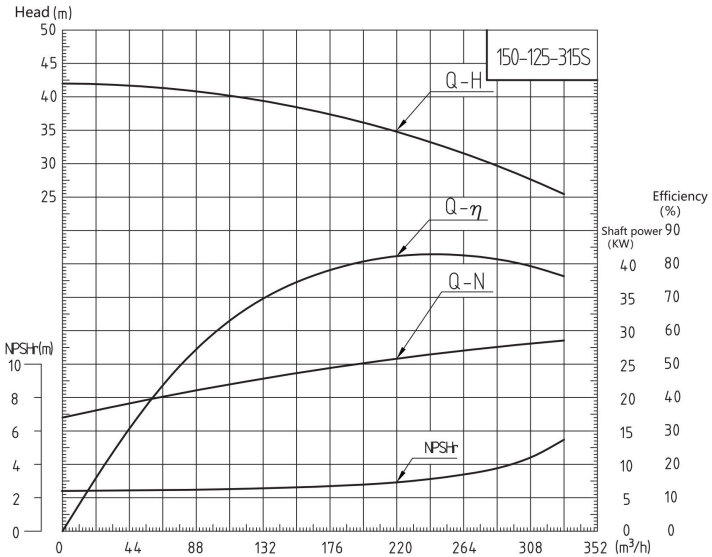

125-100-315S
Head (m)
Q-H
Q-η
Q-N
NPSH
NPSH (m)
Efficiency (%)
Shaft power (KW)
(m³/h)

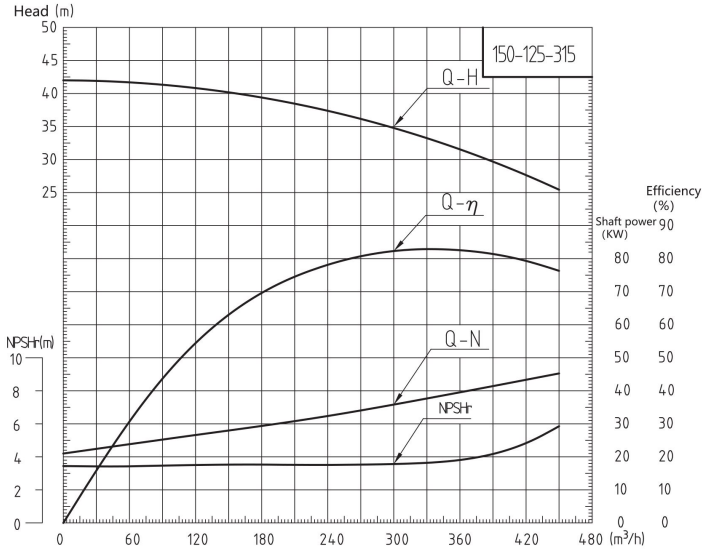

125-100-315
Head (m)
Q-H
Q-η
Q-N
NPSH
NPSH (m)
Efficiency (%)
Shaft power (KW)
(m³/h)

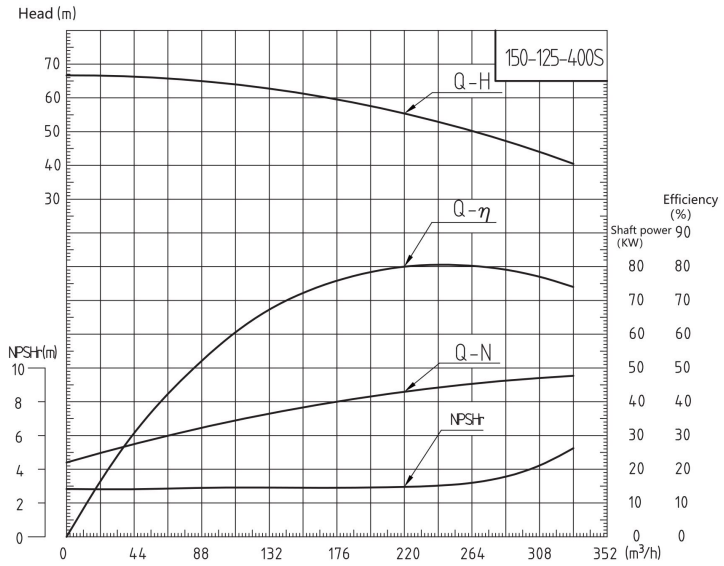

125-100-400S
Head (m)
Q-H
Q-η
Q-N
NPSH
NPSH (m)
Efficiency (%)
Shaft power (KW)
(m³/h)

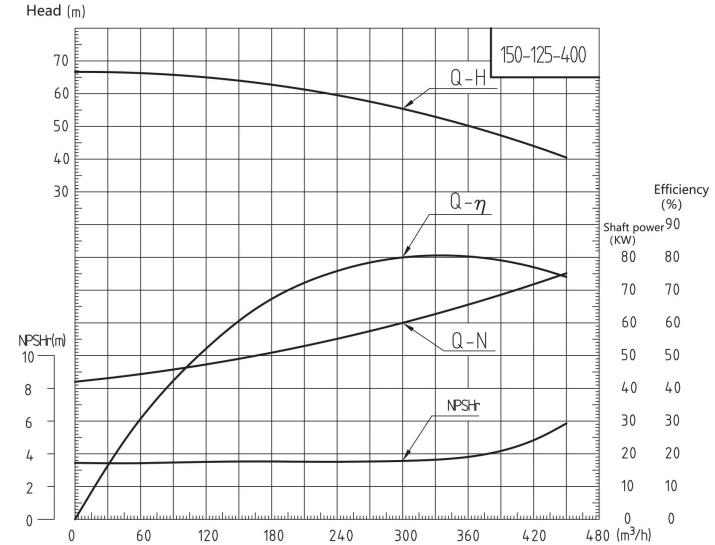

125-100-400
Head (m)
Q-H
Q-η
Q-N
NPSH-r
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

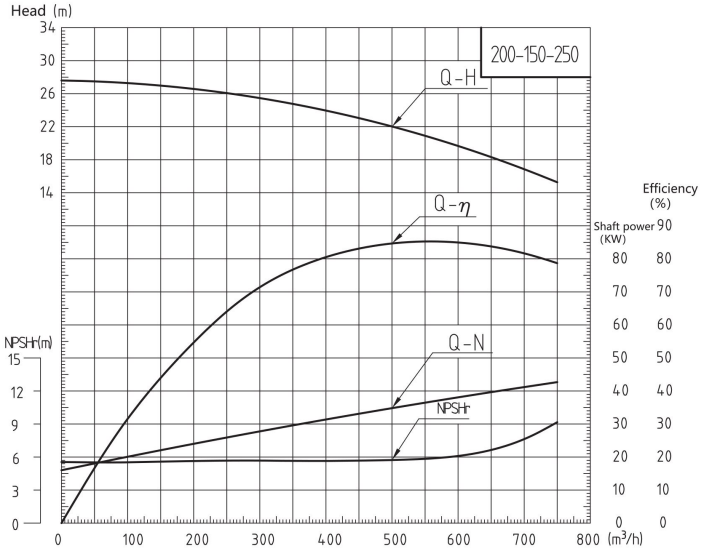

150-125-250
Head (m)
Q-H
Q-η
Q-N
NPSH-r
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

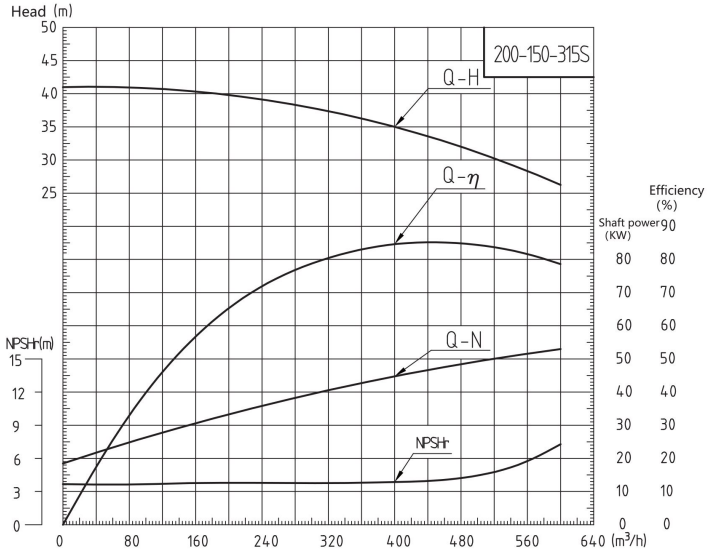

150-125-315S
Head (m)
Q-H
Q-η
Q-N
NPSH-r
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

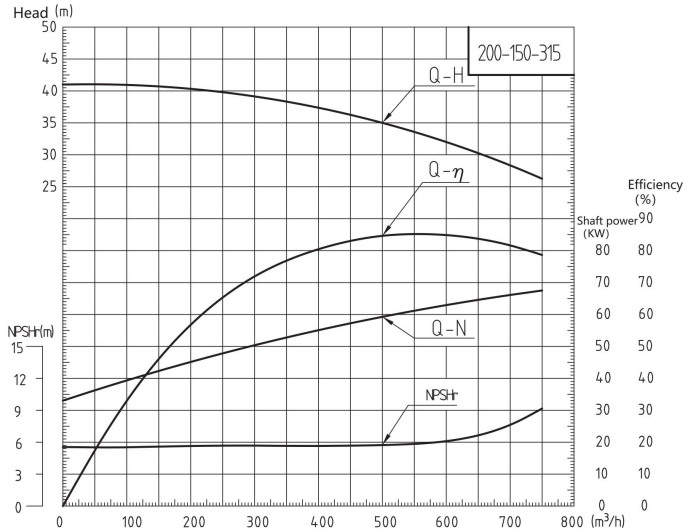

150-125-315
Head (m)
Q-H
Q-η
Q-N
NPSH-r
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

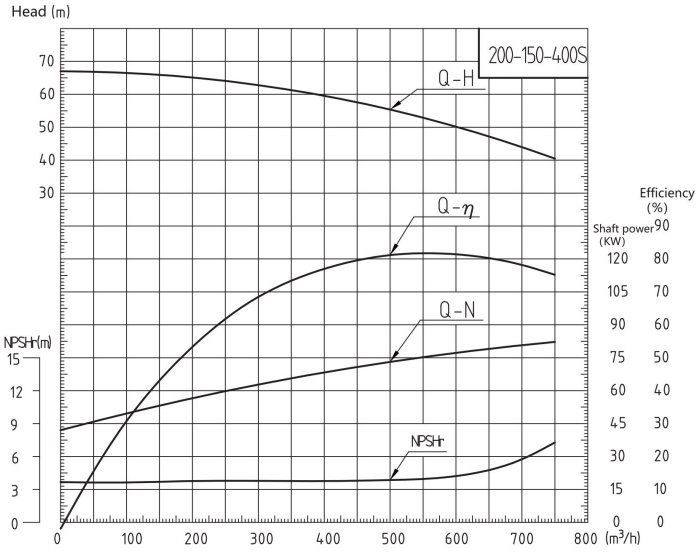

150-125-400S
Head (m)
Q-H
Q-η
Q-N
NPSH
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

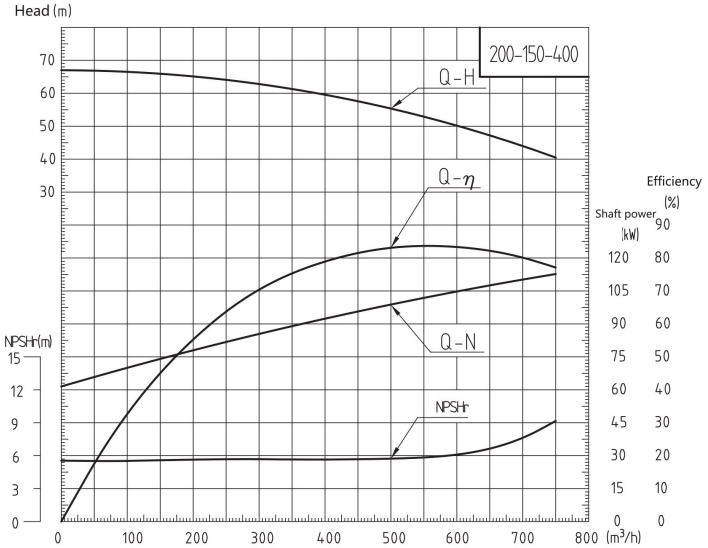

150-125-400
Head (m)
Q-H
Q-η
Q-N
NPSH
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

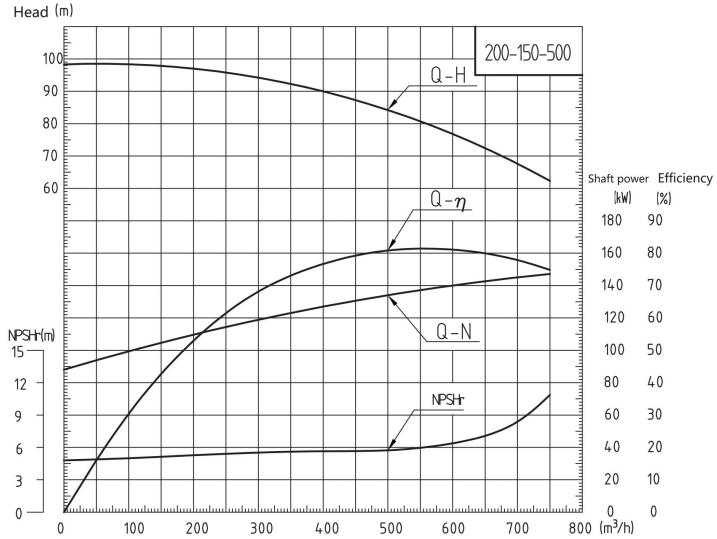

200-150-250
Head (m)
Q-H
Q-η
Q-N
NPSH
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)


200-150-315S
Head (m)
Q-H
Q-η
Q-N
NPSH
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

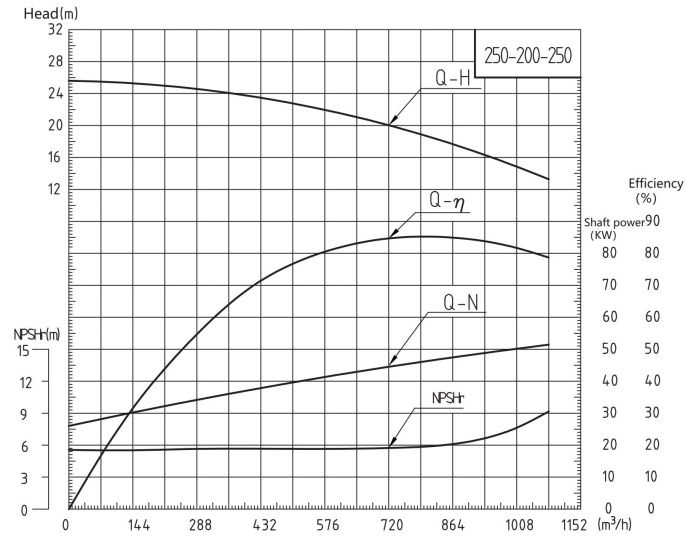

Head (m)
200-150-315
Q-H
Q-η
Q-N
NPSH
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

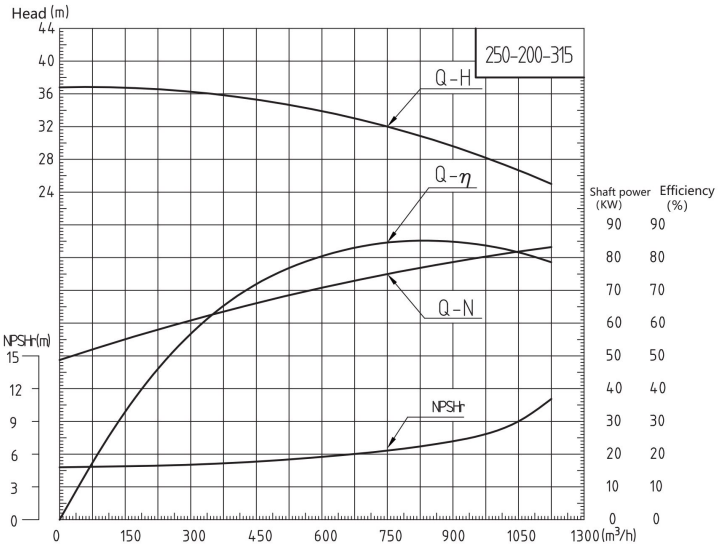

Head (m)
200-150-400S
Q-H
Q-η
Q-N
NPSH
NPSH(m)
Efficiency (%)
Shaft power (KW)
(m³/h)


Head (m)
200-150-400
Q-H
Q-η
Q-N
NPSH
NPSH(m)
Efficiency (%)
Shaft power (kW)
(m³/h)

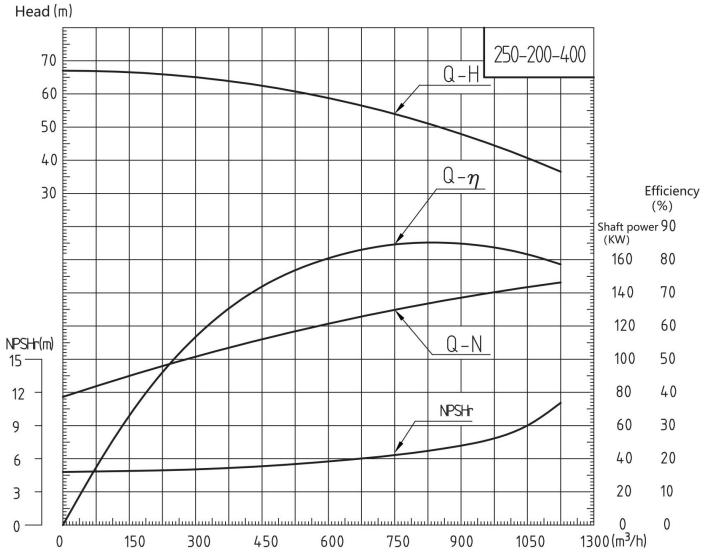

Head (m)
200-150-500
Q-H
Q-η
Q-N
NPSH
NPSH(m)
Shaft power (kW)
Efficiency (%)
(m³/h)

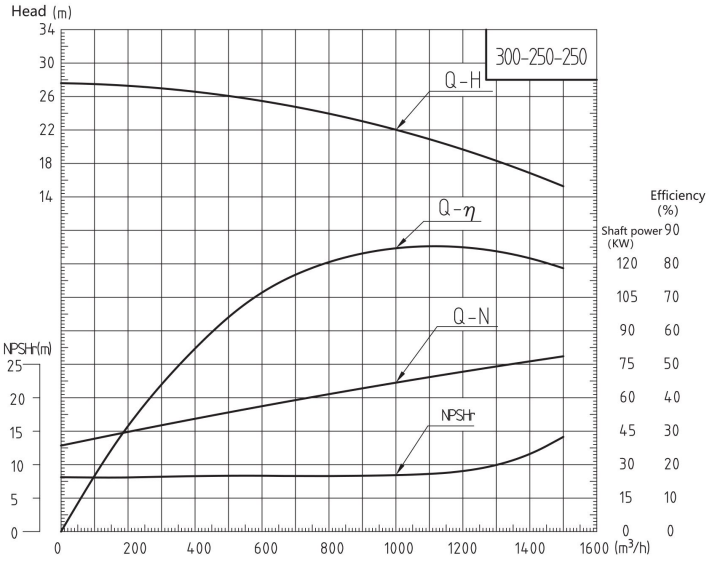
50Hz 4-pole motor



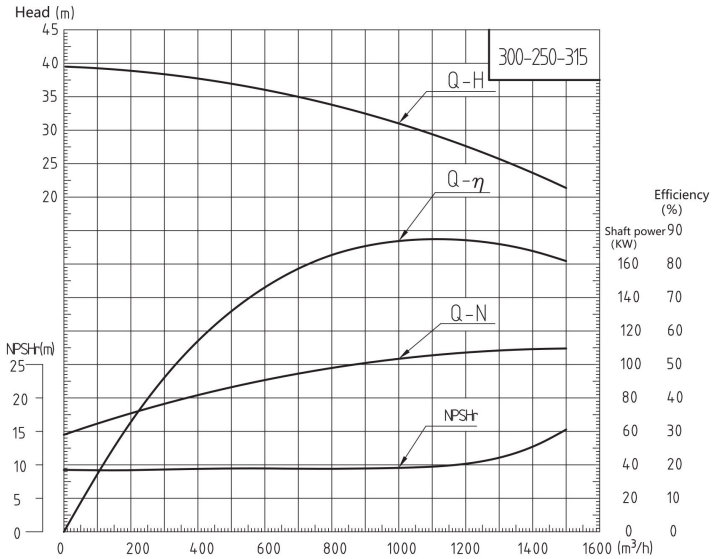


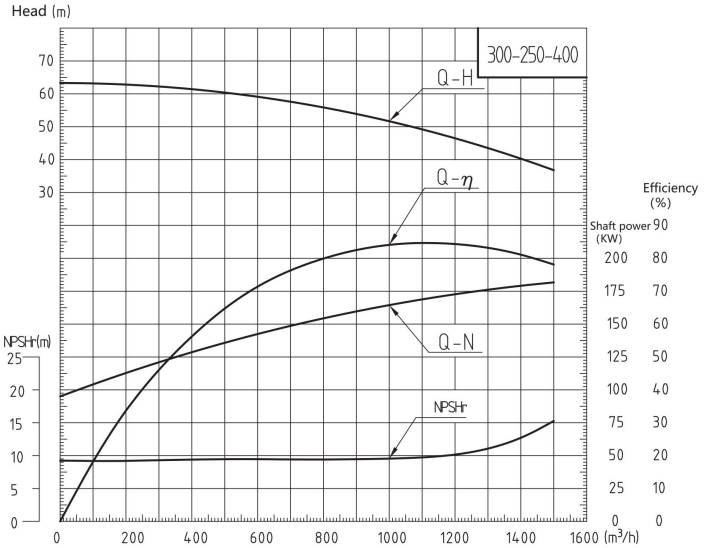
50Hz 4-pole motor



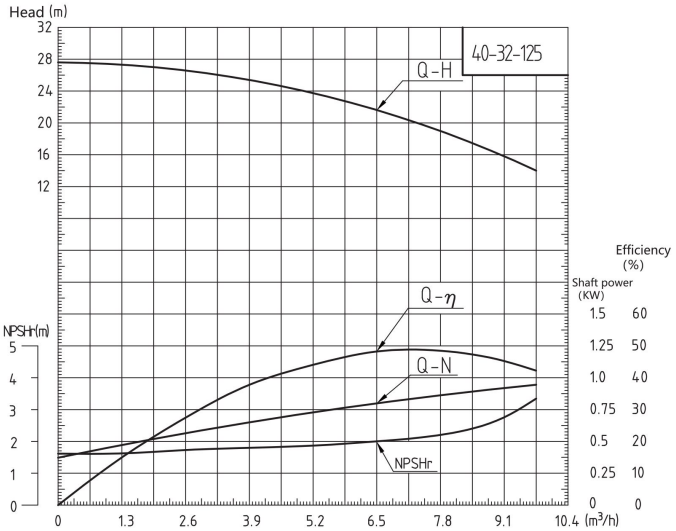


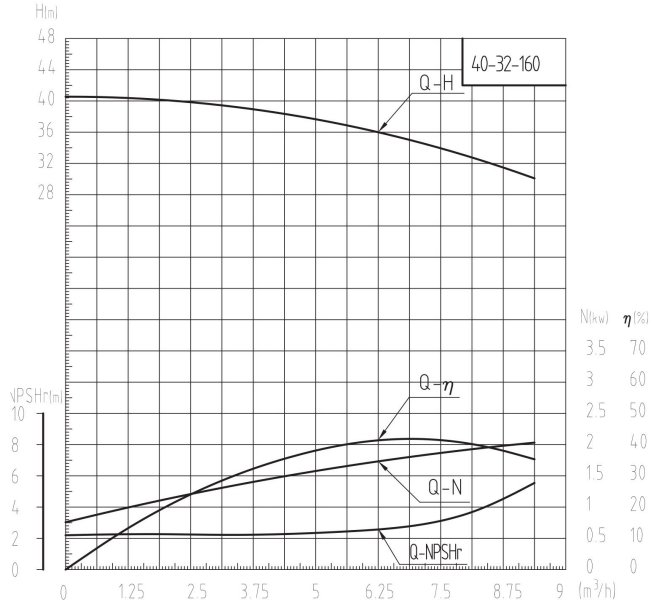
50Hz 4-pole motor

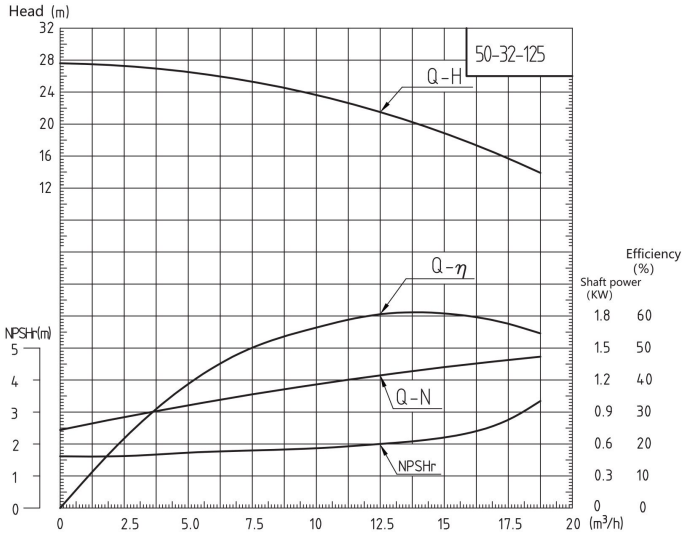


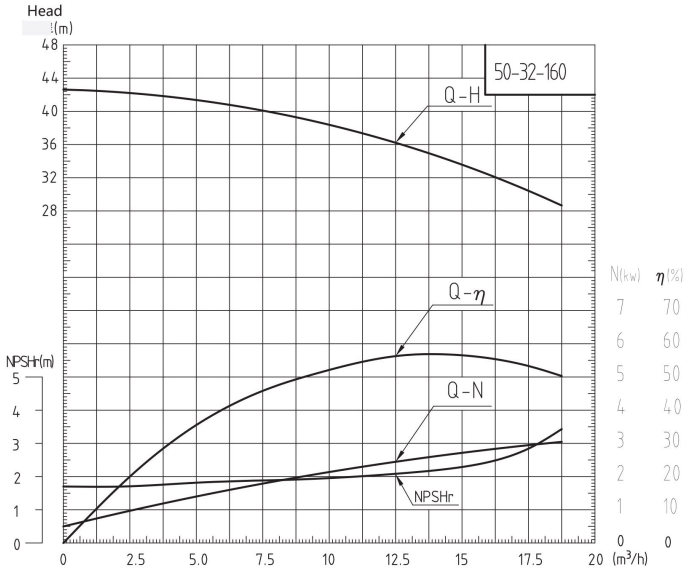


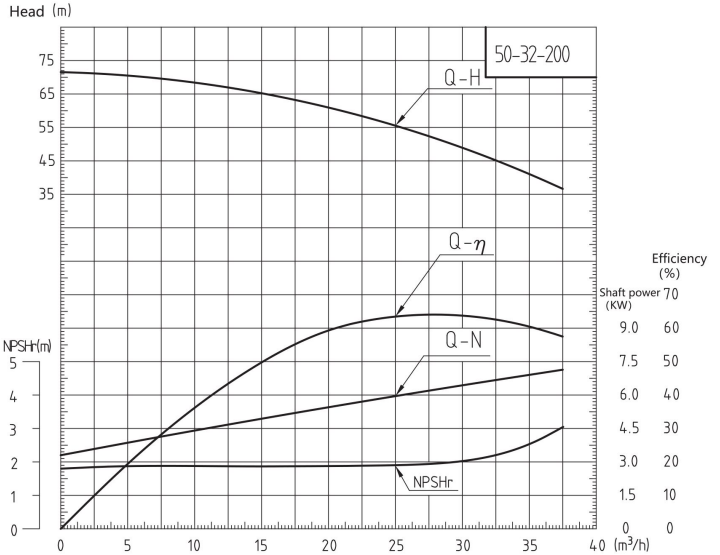
50Hz 2-pole motor

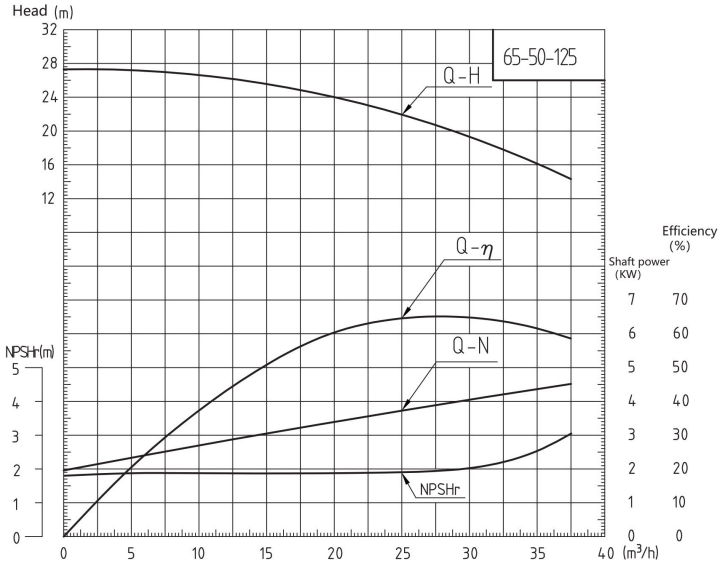


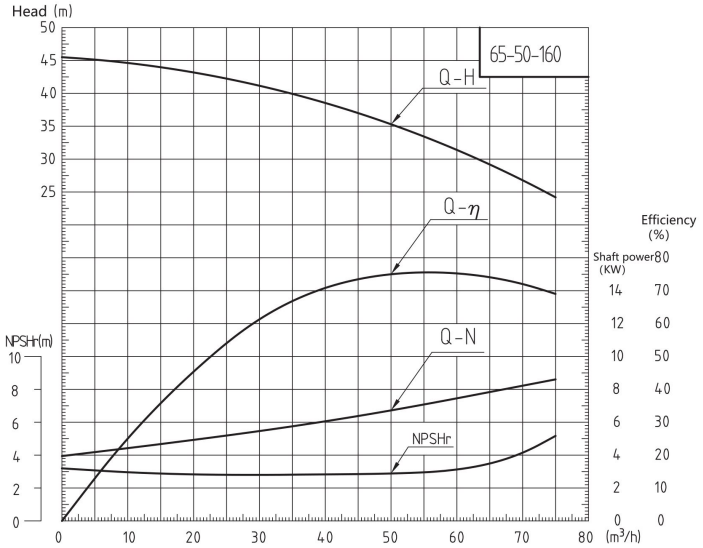


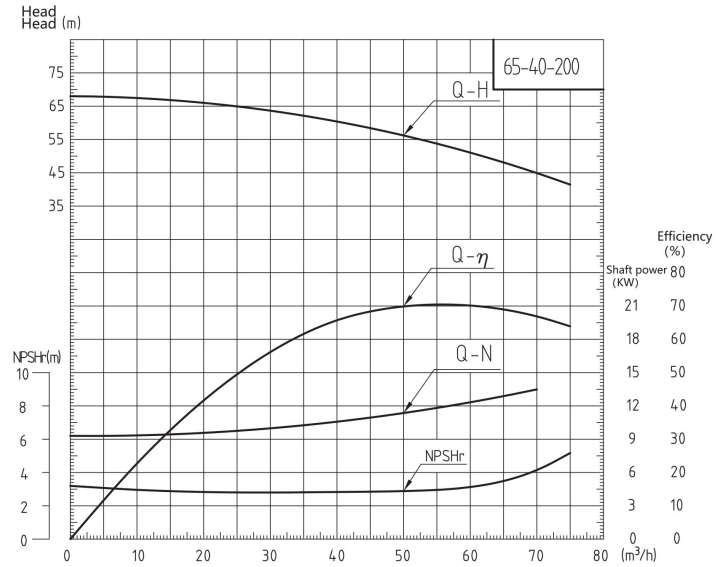

Head (m)
50-32-125
Q-H
Q-η
Q-N
NPSHr
NPSH(m)
Efficiency (%)
Shaft power (KW)
1.8 60
1.5 50
1.2 40
0.9 30
0.6 20
0.3 10
0 0
0 2.5 5.0 7.5 10 12.5 15 17.5 20 (m³/h)

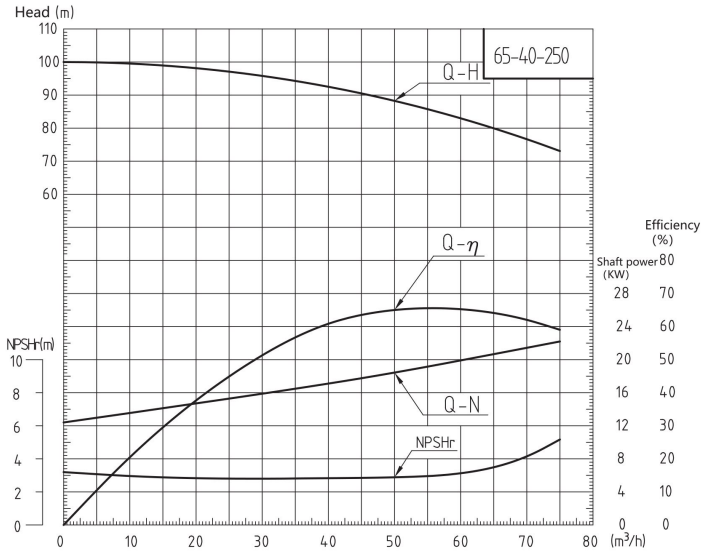

Head (m)
50-32-160
Q-H
Q-η
Q-N
NPSHr
NPSH(m)
N(kw) η(%)
7 70
6 60
5 50
4 40
3 30
2 20
1 10
0 0
0 2.5 5.0 7.5 10 12.5 15 17.5 20 (m³/h)

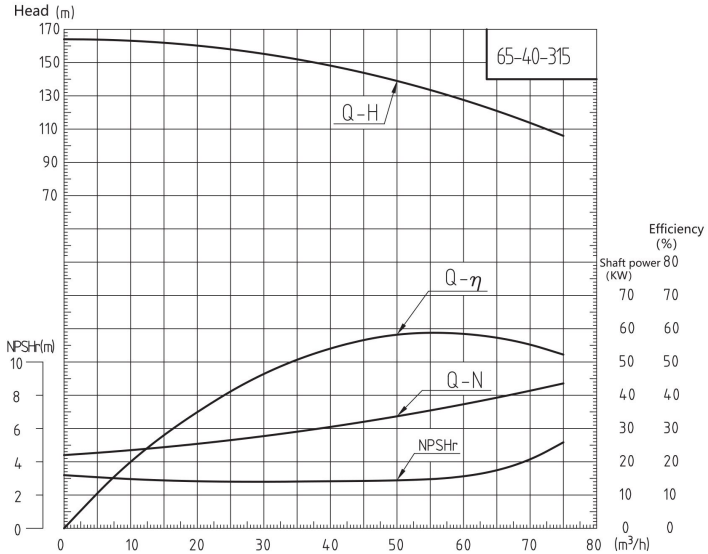

Head (m)
50-32-200
Q-H
Q-η
Q-N
NPSHr
NPSH(m)
Efficiency (%)
Shaft power (KW)
9.0 60
7.5 50
6.0 40
4.5 30
3.0 20
1.5 10
0 0
0 5 10 15 20 25 30 35 40 (m³/h)

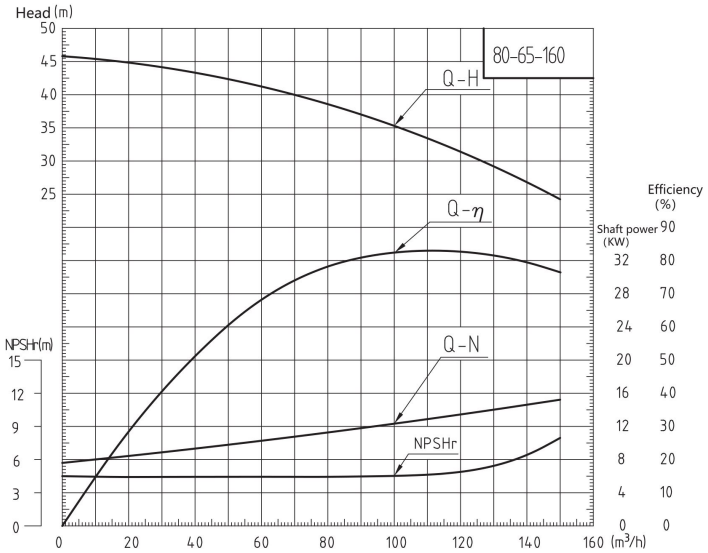

Head (m)
65-50-125
Q-H
Q-η
Q-N
NPSHr
NPSH(m)
Efficiency (%)
Shaft power (KW)
7 70
6 60
5 50
4 40
3 30
2 20
1 10
0 0
0 5 10 15 20 25 30 35 40 (m³/h)

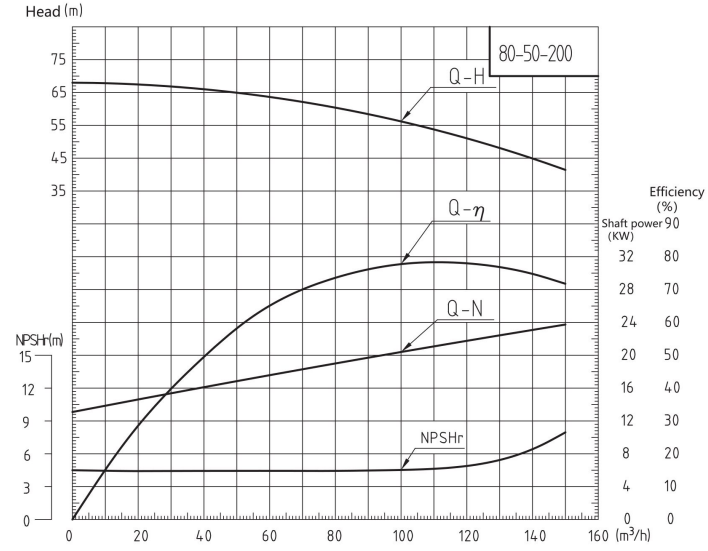

65-50-160
Head (m)
Q-H
Q-η
Q-N
NPSHr
Efficiency (%)
Shaft power (KW)
NPSH(m)
(m³/h)

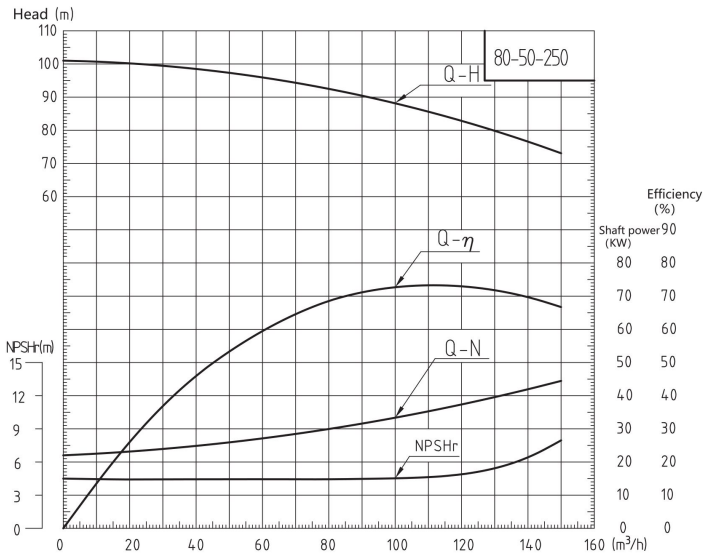

65-40-200
Head
Head (m)
Q-H
Q-η
Q-N
NPSHr
Efficiency (%)
Shaft power (KW)
NPSH(m)
(m³/h)

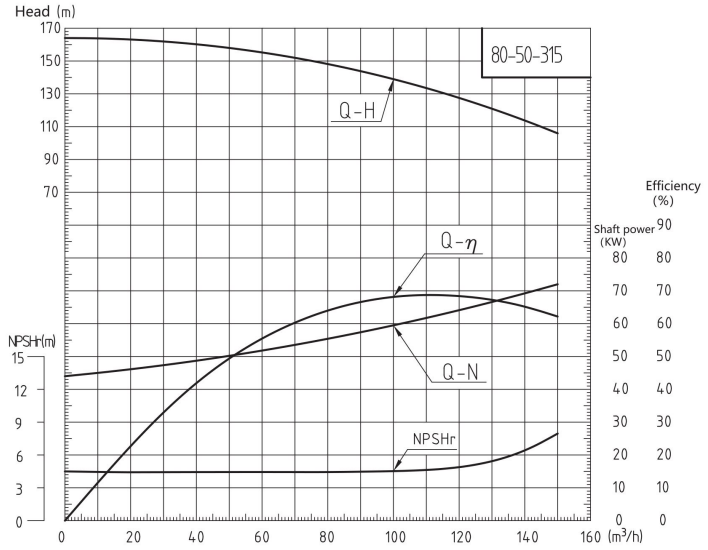

65-40-250
Head (m)
Q-H
Q-η
Q-N
NPSHr
Efficiency (%)
Shaft power (KW)
NPSH(m)
(m³/h)


65-40-315
Head (m)
Q-H
Q-η
Q-N
NPSHr
Efficiency (%)
Shaft power (KW)
NPSH(m)
(m³/h)

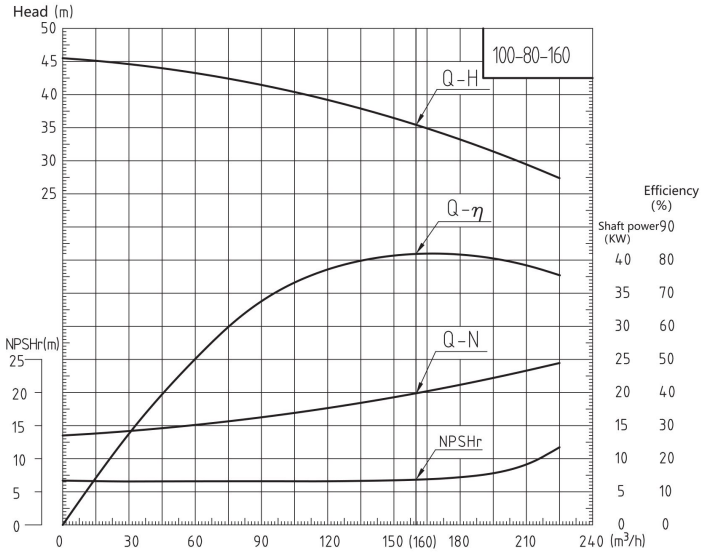

Head (m)
80-65-160
Q-H
Q-η
Q-N
NPSHr
NPSH'(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

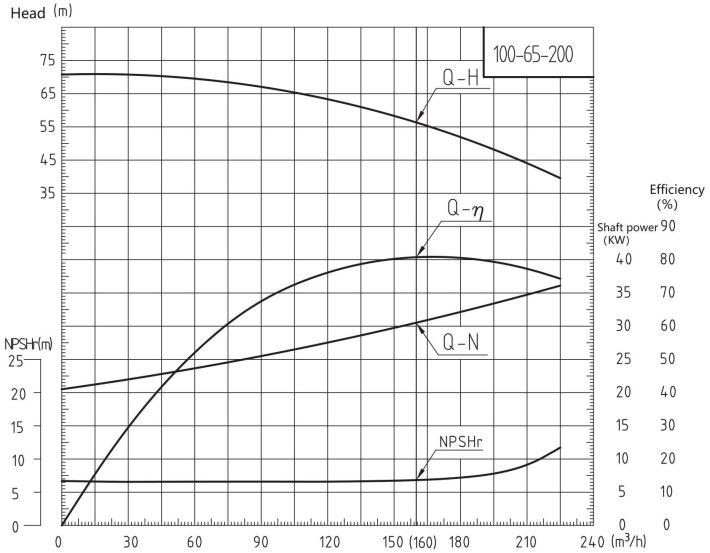

Head (m)
80-50-200
Q-H
Q-η
Q-N
NPSHr
NPSH'(m)
Efficiency (%)
Shaft power (KW)
(m³/h)


Head (m)
80-50-250
Q-H
Q-η
Q-N
NPSHr
NPSH'(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

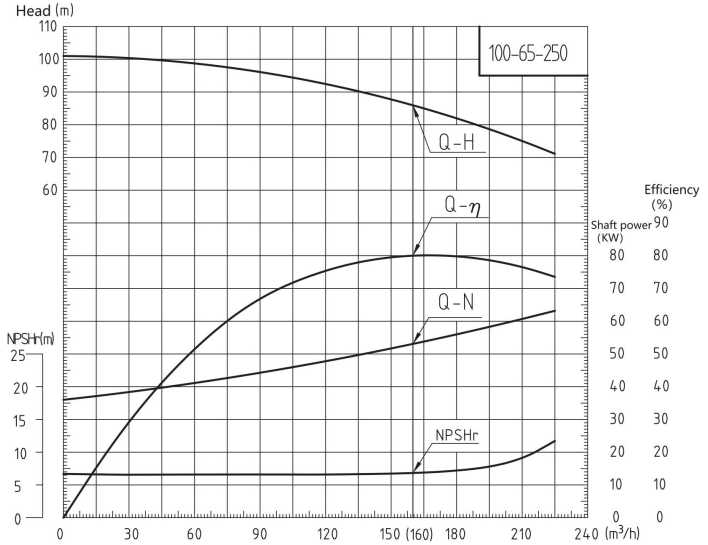

Head (m)
80-50-315
Q-H
Q-η
Q-N
NPSHr
NPSH'(m)
Efficiency (%)
Shaft power (KW)
(m³/h)

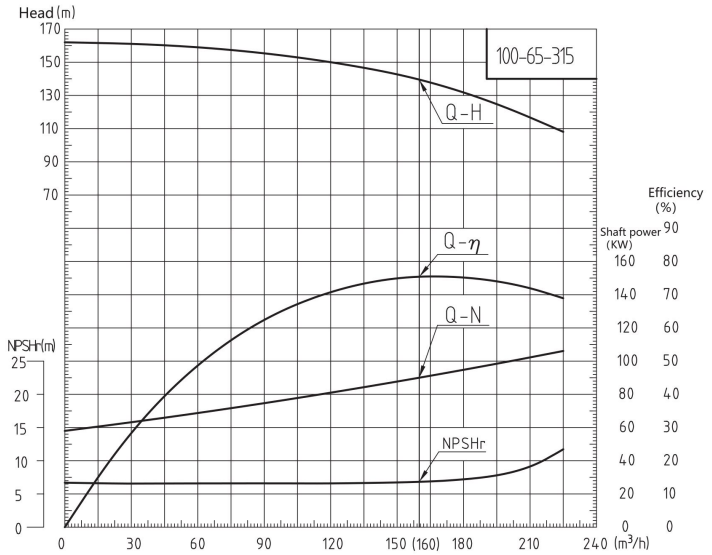
50Hz 2-pole motor



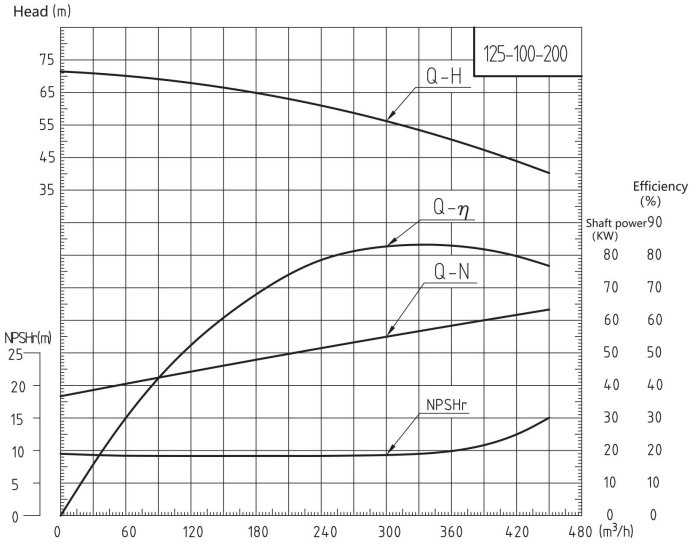


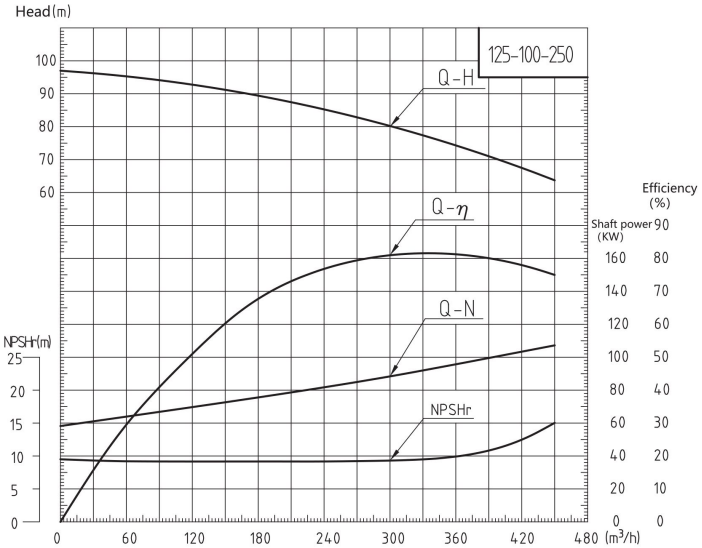
50Hz 2-pole motor



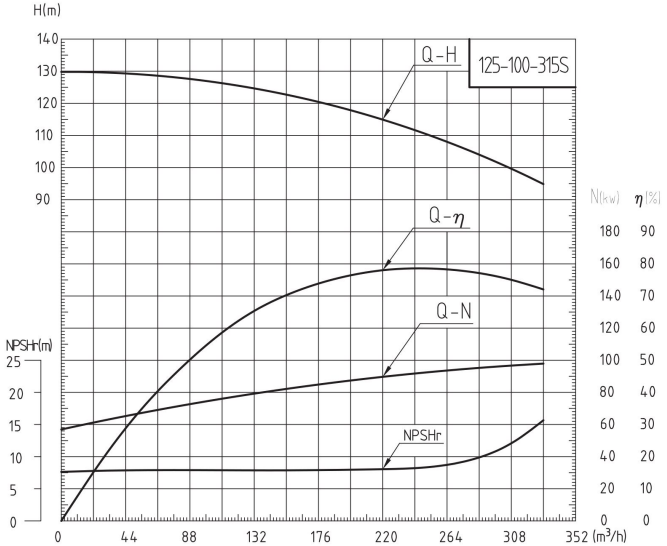


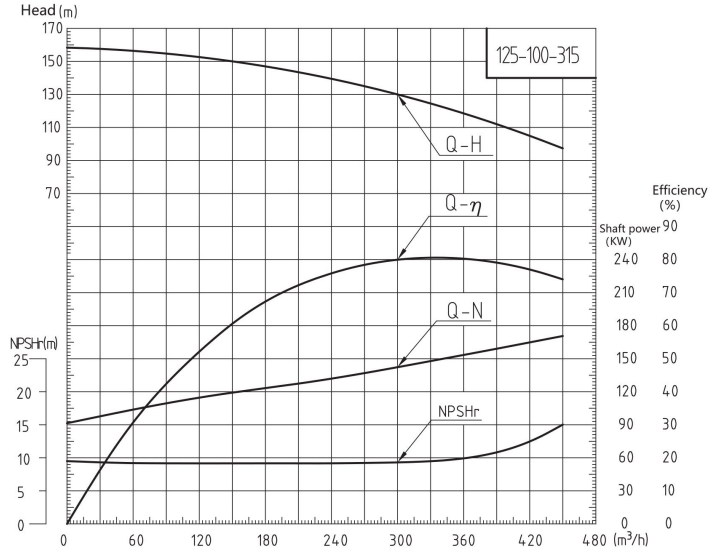
50Hz 2-pole motor





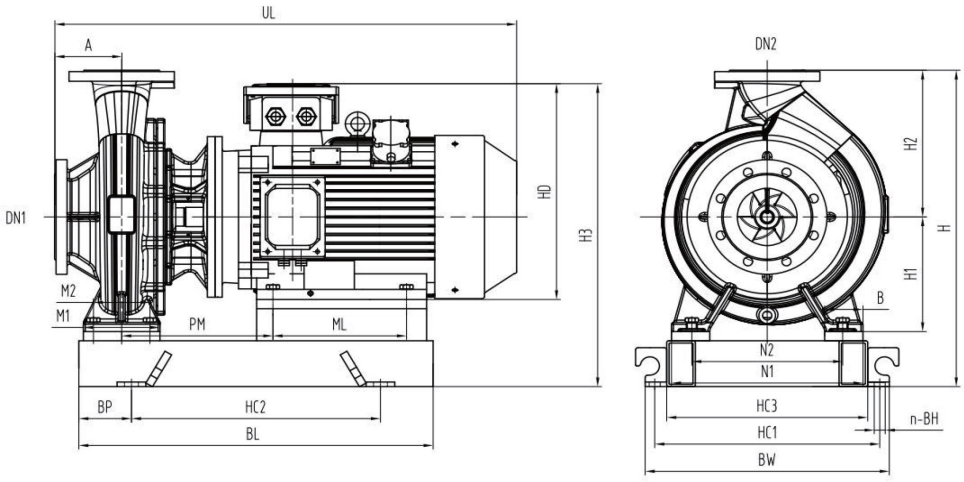
50Hz 2-pole motor





dimensions

Horizontal Close-Coupled End Suction Pump



Model with 4-pole motor

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
50-32-200	0.75	50	32	80	50	240	190	100	70	160	195	216	100	250	495	50	305	300	260	340	400	4-15	435	410
	1.1	50	32									216	100	260	520	55	305	300	260	340	410	4-15	435	410

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
65-50-160	0.75	65	50	80	50	240	190	100	70	132	170	216	100	250	495	50	305	300	260	340	400	4-15	382	382
	1.1	65	50									216	100	260	520	55	305	300	260	340	410	4-15	382	382
65-40-200	1.1	65	40	100	50	265	212	100	70	160	200	216	100	260	540	55	325	300	280	360	410	4-15	440	410
	1.5	65	40									216	125	260	565	70	325	300	280	360	440	4-15	440	410
	2.2	65	40									223	140	280	610	80	325	300	280	360	460	4-15	440	420
65-40-250	2.2	65	40	100	50	320	250	125	95	180	225	247	140	280	610	80	375	300	330	410	460	4-15	485	440
	3	65	40									247	140	280	610	80	375	300	330	390	460	4-15	485	440
65-40-315	4	65	40	125	65	345	280	125	95	220	260	257	140	310	645	95	405	300	360	440	490	4-15	560	498
	5.5	65	40									257	140	330	695	85	405	350	360	440	520	4-18	560	498
80-65-160	1.1	80	65	100	50	265	212	100	70	160	180	216	100	260	540	55	325	300	280	360	410	4-15	420	410
	1.5	80	65									216	125	260	566	70	325	300	280	360	440	4-15	420	410
	2.2	80	65									223	140	280	610	80	325	300	280	360	460	4-15	420	420
80-50-200	2.2	80	50	100	50	265	212	100	70	160	205	223	140	280	610	80	325	300	280	360	460	4-15	445	420
	3	80	50									223	140	280	610	80	325	300	280	360	460	4-15	445	420
80-50-250	4	80	50	125	65	320	250	125	95	180	230	245	140	310	660	70	385	350	340	420	490	4-15	490	458
	5.5	80	50									269	140	330	675	80	385	350	340	420	510	4-18	490	458
80-50-315	5.5	80	50	125	65	345	280	125	95	225	280	269	140	330	675	80	405	350	360	440	510	4-18	585	503
	7.5	80	50									269	178	330	715	75	405	400	360	440	550	4-18	585	503
	11	80	50									293	210	420	788	80	405	450	360	440	610	4-18	585	565
100-80-160	2.2	100	80	100	65	280	212	125	95	160	215	223	140	280	610	85	345	300	300	380	470	4-15	455	420
	3	100	80									223	140	280	610	85	345	300	300	380	470	4-15	455	420
100-65-200	3	100	65	100	65	320	250	125	95	180	225	238	140	280	625	70	385	350	340	420	490	4-15	485	440
	4	100	65									245	140	310	635	70	385	350	340	420	490	4-15	485	458
	5.5	100	65									269	140	330	650	80	385	350	340	420	510	4-18	485	458

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
100-65-250	5.5	100	65	100	65	360	280	160	120	200	250	269	140	330	675	90	425	350	380	460	530	4-18	530	478
	7.5	100	65									269	178	330	718	90	425	400	380	460	580	4-18	530	478
100-65-315	7.5	100	65	125	80	400	315	160	120	225	280	283	178	330	725	90	465	400	420	500	580	4-18	585	503
	11	100	65									303	210	420	825	95	465	450	420	500	640	4-18	585	565
	15	100	65									303	254	420	880	95	465	500	420	500	690	4-18	585	565
125-100-200	5.5	125	100	125	80	360	280	160	120	200	280	269	140	330	690	90	425	350	380	460	530	4-18	560	478
	7.5	125	100									269	178	330	715	85	425	400	380	460	570	4-18	560	478
	11	125	100									293	210	420	815	100	425	430	380	460	630	4-18	560	540
125-100-250	11	125	100	140	80	400	315	160	120	225	290	302	210	420	845	95	465	450	420	500	640	4-18	595	565
	15	125	100									302	254	420	895	95	465	500	420	500	690	4-18	595	565
125-100-315	15	125	100	140	80	400	315	160	120	250	320	303	254	420	895	100	470	520	420	510	720	4-18	690	630
	18.5	125	100									316	241	450	905	100	470	540	420	510	740	4-18	690	640
	22	125	100									316	279	450	965	100	470	540	420	510	740	4-18	690	640
125-100-400	22	125	100	140	100	500	400	200	149	280	360	311	279	450	960	105	570	550	520	610	760	4-18	760	670
	30	125	100									328	305	510	995	100	570	600	520	610	800	4-18	760	710
	37	125	100									354	286	550	1020	105	570	600	520	610	810	4-18	760	725
150-125-250	18.5	150	125	140	80	400	315	160	149	250	355	316	241	450	925	100	470	500	420	510	700	4-18	725	640
	22	150	125									316	279	450	965	110	470	520	420	510	740	4-18	725	640
	30	150	125									333	305	510	998	115	470	550	420	510	780	4-18	755	680
150-125-315	30	150	125	140	100	500	400	200	149	280	355	348	305	510	1015	105	570	600	520	610	810	4-18	755	710
	37	150	125									369	286	550	1060	110	570	600	520	610	820	4-18	755	725
	45	150	125									369	311	550	1065	100	570	650	520	610	850	4-18	755	725
150-125-400	45	150	125	140	100	500	400	200	149	315	400	369	311	550	1075	105	570	650	520	620	860	4-18	835	760
	55	150	125									393	349	680	1140	105	570	700	520	620	910	4-18	835	865

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
	75	150	125									415	368	720	1255	105	620	750	570	670	960	4-22	835	875
200-150-250	30	200	150	160	100	500	400	200	149	280	375	333	305	510	1020	100	570	600	520	620	800	6-22	775	710
	37	200	150									354	286	550	1035	100	570	620	520	620	820	6-22	775	725
	45	200	150									354	311	550	1080	100	570	640	520	620	840	6-22	775	725
200-150-315	45	200	150	160	100	550	450	200	149	315	400	369	311	550	1095	105	620	650	570	670	860	6-22	835	760
	55	200	150									393	349	680	1160	105	620	700	570	670	910	6-22	835	865
	75	200	150									415	368	720	1230	105	620	750	570	670	960	6-22	835	875
200-150-400	75	200	150	160	100	550	450	200	149	315	450	415	368	720	1220	105	620	750	570	670	960	6-22	885	875
	90	200	150									415	419	720	1270	100	620	410	570	670	1020	6-22	885	875
	110	200	150									446	406	870	1322	100	700	430	650	750	1060	6-22	905	1010
200-150-500	132	200	150	180	100	550	450	200	149	375	475	446	457	870	1600	100	700	485	650	750	1170	6-27	990	1070
	160	200	150									446	508	870	1600	100	700	485	650	750	1170	6-27	990	1070
	200	200	150									446	508	870	1600	100	700	485	650	750	1170	6-27	990	1070
250-200-250	45	250	200	170	100	550	450	200	149	315	400	364	311	550	1103	100	620	650	570	670	850	6-27	835	760
	55	250	200									389	349	680	1169	105	620	700	570	670	910	6-27	835	865
250-200-315	55	250	200	160	100	550	450	200	149	315	400	403	349	680	1175	110	620	700	570	670	920	6-27	835	865
	75	250	200									425	368	720	1235	110	620	770	570	670	970	6-27	835	875
	90	250	200									425	419	720	1285	100	620	410	570	670	1020	6-27	835	875
250-200-400	110	250	200	160	100	600	500	200	149	350	475	451	406	870	1350	100	700	435	650	750	1070	6-27	965	1045
	132	250	200									451	457	870	1570	100	700	490	650	750	1180	6-27	965	1045
	160	250	200									451	508	870	1570	100	700	490	650	750	1180	6-27	965	1045
300-250-250	55	300	250	180	100	600	500	200	149	350	425	393	349	680	1200	105	620	700	570	670	910	6-27	895	900
	75	300	250									415	368	720	1260	105	620	750	570	670	960	6-27	895	910
	90	300	250									415	419	720	1310	100	620	405	570	670	1010	6-27	895	910

MARO water pumps

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
300-250-315	75	300	250	180	100	600	500	200	149	350	450	428	368	720	1250	110	670	750	620	720	970	6-27	920	910
	90	300	250									428	419	720	1305	100	670	410	620	720	1020	6-27	920	910
	110	300	250									459	406	870	1355	100	670	435	620	720	1070	6-27	940	1045
300-250-400	110	300	250	180	100	600	500	200	149	400	500	453	406	870	1355	90	700	450	650	750	1080	6-27	1040	1095
	132	300	250									453	457	870	1600	140	700	450	650	750	1180	6-27	1040	1095
	160	300	250									453	508	870	1600	140	700	450	650	750	1180	6-27	1040	1095
	200	300	250									453	508	870	1600	140	700	450	650	750	1180	6-27	1040	1095

Model with 2-pole motor

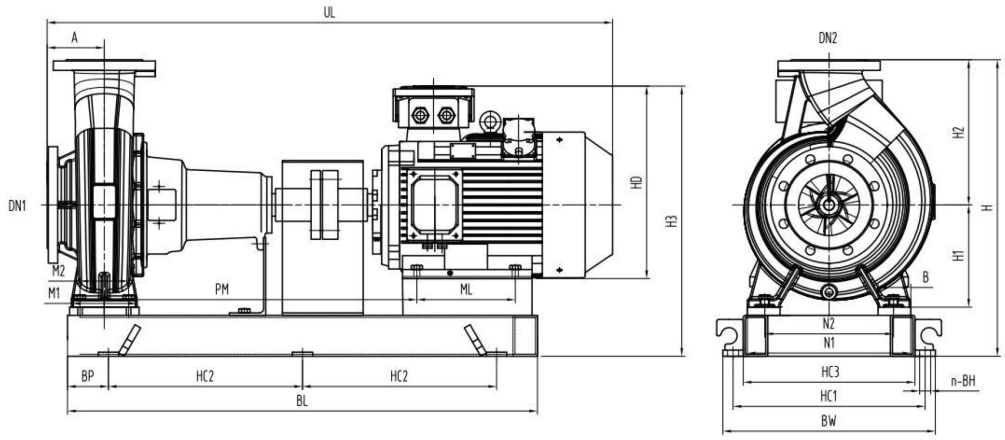
Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
40-32-125	0.75	40	32	80	50	210	160	90	60	115	140	198	100	250	473	65	275	250	230	310	380	4-15	335	365
	1.1	40	32									198	100	250	473	65	275	250	230	310	380	4-15	335	365
40-32-160	1.5	40	32	80	50	240	190	90	60	132	165	208	100	260	497	75	305	250	260	340	400	4-15	377	382
	2.2	40	32									208	125	260	522	65	305	300	260	340	430	4-15	377	382
	3	40	32									215	140	280	582	75	305	300	260	340	450	4-15	377	392
50-32-125	1.1	50	32	80	50	210	160	90	60	115	140	198	100	250	473	65	275	250	230	310	380	4-15	335	365
	1.5	50	32									204	100	260	493	70	275	250	230	310	390	4-15	335	365
50-32-160	2.2	50	32	80	50	240	190	90	60	132	170	208	125	260	522	65	305	300	260	340	430	4-15	382	382
	3	50	32									215	140	280	582	75	305	300	260	340	450	4-15	382	392
	4	50	32									222	140	310	582	75	305	300	260	340	450	4-15	382	410
50-32-200	4	50	32	80	50	240	190	100	70	160	195	230	140	310	580	80	305	300	260	340	460	4-18	445	438
	5.5	50	32									254	140	330	637	95	325	300	280	360	490	4-18	445	438
	7.5	50	32									254	140	330	637	95	325	300	280	360	490	4-18	445	438
65-50-125	2.2	65	50	80	50	210	160	90	60	120	150	204	125	260	518	90	275	300	230	310	480	4-15	335	370
	3	65	50									211	140	280	553	100	275	300	230	310	500	4-15	335	380
65-50-160	5.5	65	50	80	50	240	190	100	70	132	170	254	140	330	635	90	325	300	280	360	480	4-18	382	410
	7.5	65	50									254	140	330	635	90	325	300	280	360	480	4-18	382	410
	11	65	50									278	210	420	755	90	375	400	330	410	580	4-18	410	500
65-40-200	11	65	40	100	50	265	212	100	70	160	200	278	210	420	775	90	375	400	330	410	580	4-18	440	500
	15	65	40									278	210	420	775	90	375	400	330	410	580	4-18	440	500
65-40-250	15	65	40	100	50	320	250	125	95	180	225	278	210	420	775	100	375	400	330	410	600	4-18	485	520
	18.5	65	40									278	254	420	830	95	375	450	330	410	640	4-18	485	520
	22	65	40									291	241	450	872	100	415	450	370	450	650	4-18	485	530

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions（mm）											Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
65-40-315	30	65	40	125	65	345	280	125	95	220	260	328	305	510	975	100	470	550	420	510	750	4-18	600	650
	37	65	40									328	305	510	975	100	470	550	420	510	750	4-18	600	650
	45	65	40									344	311	550	1035	95	500	600	450	540	790	4-18	605	670
80-65-160	7.5	80	65	100	50	265	212	100	70	160	180	254	140	330	640	90	325	300	280	360	480	4-18	420	438
	11	80	65									273	210	420	770	90	385	400	340	420	580	4-18	420	500
	15	80	65									273	210	420	770	90	385	400	340	420	580	4-18	420	500
80-50-200	18.5	80	50	100	50	265	212	100	70	160	205	282	254	420	835	90	385	450	340	420	630	4-18	445	500
	22	80	50									295	241	450	865	95	415	450	370	450	640	4-18	465	530
	30	80	50									311	305	510	938	90	470	550	420	510	730	4-18	525	630
80-50-250	30	80	50	125	65	320	250	125	95	180	230	323	305	510	975	105	470	550	420	510	760	4-18	550	630
	37	80	50									323	305	510	975	105	470	550	420	510	760	4-18	550	630
	45	80	50									344	311	550	1095	95	510	600	460	550	790	4-18	575	670
80-50-315	45	80	50	125	65	345	280	125	95	225	280	344	311	550	1035	100	500	600	450	540	800	4-18	625	670
	55	80	50									368	349	680	1100	100	570	650	520	610	850	4-18	650	800
	75	80	50									390	368	720	1160	100	625	700	570	680	900	4-22	680	840
100-80-160	15	100	80	100	65	280	212	125	95	160	215	278	210	420	750	100	385	400	340	420	600	4-18	455	500
	18.5	100	80									278	254	420	830	100	385	450	340	420	650	4-18	455	500
	22	100	80									291	241	450	860	100	415	450	370	450	650	4-18	475	530
100-65-200	22	100	65	100	65	320	250	125	95	180	225	306	241	450	875	100	415	470	370	450	670	4-18	485	530
	30	100	65									323	305	510	950	105	470	550	420	510	790	4-18	545	630
	37	100	65									323	305	510	950	105	470	550	420	510	790	4-18	545	630
100-65-250	45	100	65	100	65	360	280	160	120	200	250	344	311	550	1035	105	500	600	450	540	810	4-18	595	670
	55	100	65									368	349	680	1100	110	570	650	520	610	870	4-18	620	800
	75	100	65									390	368	720	1160	110	620	700	570	650	920	4-22	650	840

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions（mm）											Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
100-65-315	75	100	65	125	80	400	315	160	120	225	280	400	368	720	1170	110	625	700	570	670	920	4-22	680	840
	90	100	65									400	419	720	1220	110	625	750	570	670	970	4-22	680	840
	110	100	65									436	406	870	1280	100	700	415	650	750	1030	6-22	735	1010
125-100-200	45	125	100	125	80	360	280	160	120	200	280	344	311	550	1035	105	500	600	450	540	810	4-18	625	670
	55	125	100									373	349	680	1105	110	570	650	520	610	870	4-18	650	800
	75	125	100									395	368	720	1165	110	620	700	570	660	920	4-22	680	840
125-100-250	55	125	100	140	80	400	315	160	120	225	290	382	349	680	1130	110	570	650	520	620	870	4-22	660	800
	75	125	100									404	368	720	1190	110	625	700	570	670	920	4-22	690	840
	90	125	100									404	419	720	1240	115	625	750	570	670	980	4-22	690	840
125-100-315	110	125	100	140	80	400	315	160	120	250	320	436	406	870	1405	100	700	415	650	750	1030	6-27	755	1010
	132	125	100									436	457	870	1545	100	700	470	650	750	1140	6-27	755	1010
	160	125	100									436	508	870	1545	100	700	470	650	750	1140	6-27	755	1010

Note :1. The UL, BL and HC2 sizes in the above table are sieze coupled with YE3 motor If other brand motors to be used, the above sizes shall be confirmed by the manufacturer.
2, if BL length is less than 1 meter, HC2 size is a section; If BL is more than 1 meter , then HC2 is two segments of equal length.

Horizontal coupling end suction pump



Model with 4-pole motor

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
50-32-200	0.75	50	32	80	50	240	190	100	70	160	195	486	100	250	765	100	305	480	260	340	680	4-15	435	410
	1.1	50	32									496	100	260	785	100	305	480	260	340	680	4-15	435	410
65-50-160	0.75	65	50	80	50	240	190	100	70	132	170	486	100	250	765	100	305	480	260	340	680	4-15	382	382
	1.1	65	50									496	100	260	785	100	305	480	260	340	680	4-15	382	382

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
65-40-200	1.1	65	40	100	50	265	212	100	70	160	200	496	100	260	820	95	325	500	280	360	690	4-15	440	410
	1.5	65	40									496	125	260	845	100	325	520	280	360	720	4-15	440	410
	2.2	65	40									513	140	280	900	100	325	550	280	360	750	4-15	440	420
65-40-250	2.2	65	40	100	50	320	250	125	95	180	225	537	140	280	900	100	375	550	330	410	750	4-15	485	440
	3	65	40									537	140	280	900	100	375	550	330	410	750	4-15	485	440
65-40-315	4	65	40	125	65	345	280	125	95	220	260	635	140	310	1035	100	405	680	360	440	880	4-15	560	498
	5.5	65	40									674	140	330	1100	100	405	630	360	440	930	4-18	560	498
80-65-160	1.1	80	65	100	50	265	212	100	70	160	180	496	100	260	820	95	325	500	280	360	690	4-15	420	410
	1.5	80	65									496	125	260	845	100	325	520	280	360	720	4-15	420	410
	2.2	80	65									513	140	280	900	100	325	550	280	360	750	4-15	420	420
80-50-200	2.2	80	50	100	50	265	212	100	70	160	205	513	140	280	900	100	325	550	280	360	750	4-15	445	420
	3	80	50									513	140	280	900	100	325	550	280	360	750	4-15	445	420
80-50-250	4	80	50	125	65	320	250	125	95	180	230	635	140	310	1035	100	385	680	340	420	880	4-15	490	458
	5.5	80	50									674	140	330	1100	100	385	720	340	420	920	4-18	490	458
80-50-315	5.5	80	50	125	65	345	280	125	95	225	280	674	140	330	1100	100	405	720	360	440	920	4-18	585	503
	7.5	80	50									674	178	330	1120	100	405	760	360	440	960	4-18	585	503
	11	80	50									723	210	420	1218	100	405	420	360	440	1040	6-18	585	565
100-80-160	2.2	100	80	100	65	280	212	125	95	160	215	513	140	280	900	100	345	560	300	380	760	4-15	455	420
	3	100	80									513	140	280	900	100	345	560	300	380	760	4-15	455	420
100-65-200	3	100	65	100	65	320	250	125	95	180	225	628	140	280	1015	100	385	680	340	420	880	4-15	485	440
	4	100	65									635	140	310	1025	100	385	680	340	420	880	4-15	485	458
	5.5	100	65									674	140	330	650	100	385	720	340	420	920	4-18	485	458
100-65-250	5.5	100	65	100	65	360	280	160	120	200	250	674	140	330	1080	100	425	740	380	460	940	4-18	530	478
	7.5	100	65									674	178	330	1123	100	425	790	380	460	990	4-18	530	478

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)											Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
100-65-315	7.5	100	65	125	80	400	315	160	120	225	280	708	178	330	1150	100	465	405	420	500	1010	6-18	585	503
	11	100	65									753	210	420	1275	100	465	445	420	500	1090	6-18	585	565
	15	100	65									753	254	420	1330	100	465	470	420	500	1140	6-18	585	565
125-100-200	5.5	125	100	125	80	360	280	160	120	200	280	674	140	330	1095	100	425	740	380	460	940	4-18	560	478
	7.5	125	100									674	178	330	1120	100	425	780	380	460	980	4-18	560	478
	11	125	100									723	210	420	1245	100	425	430	380	460	1060	6-18	560	540
125-100-250	11	125	100	140	80	400	315	160	120	225	290	752	210	420	1295	100	465	445	420	500	1090	6-18	595	565
	15	125	100									752	254	420	1345	100	465	470	420	500	1140	6-18	595	565
125-100-315	15	125	100	140	80	400	315	160	120	250	320	753	254	420	1345	100	470	485	420	510	1170	6-18	690	630
	18.5	125	100									766	241	450	1355	100	470	500	420	510	1200	6-18	690	640
	22	125	100									766	279	450	1415	100	470	500	420	510	1200	6-18	690	640
125-100-400	22	125	100	140	100	500	400	200	149	280	360	761	279	450	1410	100	570	505	520	610	1210	6-18	760	670
	30	125	100									773	305	510	1440	100	570	525	520	610	1250	6-18	760	710
	37	125	100									824	286	550	1490	100	570	540	520	610	1280	6-18	760	725
150-125-250	18.5	150	125	140	80	400	315	160	149	250	355	766	241	450	1375	100	470	475	420	510	1150	6-18	725	640
	22	150	125									766	279	450	1415	100	470	500	420	510	1200	6-18	725	640
	30	150	125									778	305	510	1445	100	470	515	420	510	1230	6-18	755	680
150-125-315	30	150	125	140	100	500	400	200	149	280	355	923	305	510	1590	100	570	600	520	610	1400	6-18	755	710
	37	150	125									969	286	550	1660	100	570	610	520	610	1420	6-18	755	725
	45	150	125									969	311	550	1665	100	570	625	520	610	1450	6-18	755	725
150-125-400	45	150	125	140	100	500	400	200	149	315	400	964	311	550	1670	100	570	630	520	620	1460	6-18	835	760
	55	150	125									988	349	680	1705	100	570	655	520	620	1510	6-18	835	865
	75	150	125									1010	368	720	1850	100	620	680	570	670	1560	6-22	835	875
200-150-250	30	200	150	160	100	500	400	200	149	280	375	778	305	510	1465	100	570	525	520	620	1250	6-22	775	710

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)											Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
	37	200	150									824	286	550	1505	100	570	550	520	620	1300	6-22	775	725
	45	200	150									824	311	550	1550	100	570	550	520	620	1310	6-22	775	725
200-150-315	45	200	150	160	100	550	450	200	149	315	400	964	311	550	1690	100	620	630	570	670	1460	6-22	835	760
	55	200	150									988	349	680	1755	100	620	655	570	670	1510	6-22	835	865
	75	200	150									1010	368	720	1825	100	620	680	570	670	1560	6-22	835	875
200-150-400	75	200	150	160	100	550	450	200	149	315	450	1010	368	720	1815	100	620	680	570	670	1560	6-22	885	875
	90	200	150									1010	419	720	1865	100	620	710	570	670	1620	6-22	885	875
	110	200	150									1056	406	870	1932	100	700	730	650	750	1670	6-22	905	1010
200-150-500	132	200	150	180	100	550	450	200	149	375	475	1056	457	870	2210	100	700	790	650	750	1780	6-27	990	1070
	160	200	150									1056	508	870	2210	100	700	790	650	750	1780	6-27	990	1070
	200	200	150									1056	508	870	2210	100	700	790	650	750	1780	6-27	990	1070
250-200-250	45	250	200	170	100	550	450	200	149	315	400	833	311	550	1573	100	620	560	570	670	1320	6-27	835	760
	55	250	200									853	349	680	1635	100	620	590	570	670	1380	6-27	835	865
250-200-315	55	250	200	160	100	550	450	200	149	315	400	998	349	680	1770	100	620	660	570	670	1520	6-27	835	865
	75	250	200									1020	368	720	1830	100	620	685	570	670	1570	6-27	835	875
	90	250	200									1020	419	720	1880	100	620	710	570	670	1620	6-27	835	875
250-200-400	110	250	200	160	100	600	500	200	149	350	475	1141	406	870	2040	100	700	780	650	750	1760	6-27	965	1045
	132	250	200									1141	457	870	2260	100	700	835	650	750	1870	6-27	965	1045
	160	250	200									1141	508	870	2260	100	700	835	650	750	1870	6-27	965	1045
300-250-250	55	300	250	180	100	600	500	200	149	350	425	853	349	680	1660	100	620	590	570	670	1380	6-27	895	900
	75	300	250									875	368	720	1720	100	620	610	570	670	1420	6-27	895	910
	90	300	250									875	419	720	1770	100	620	635	570	670	1470	6-27	895	910
300-250-315	75	300	250	180	100	600	500	200	149	350	450	1018	368	720	1840	100	670	680	620	720	1560	6-27	920	910
	90	300	250									1018	419	720	1895	100	670	705	620	720	1610	6-27	920	910

MARO water pumps

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
	110	300	250									1069	406	870	1965	100	670	740	620	720	1680	6-27	940	1045
300-250-400	110	300	250	180	100	600	500	200	149	400	500	1143	406	870	1355	100	700	785	650	750	1770	6-27	1040	1095
	132	300	250									1143	457	870	2290	100	700	835	650	750	1870	6-27	1040	1095
	160	300	250									1143	508	870	2290	100	700	835	650	750	1870	6-27	1040	1095
	200	300	250									1143	508	870	2290	100	700	835	650	750	1870	6-27	1040	1095

Model with 2-pole motor

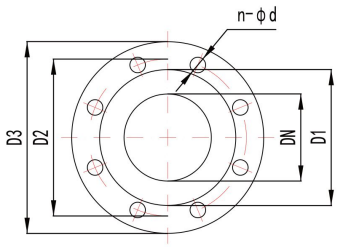
Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
40-32-125	0.75	40	32	80	50	210	160	90	60	115	140	468	100	250	743	100	275	460	230	310	660	4-15	335	365
	1.1	40	32									478	100	250	753	100	275	460	230	310	660	4-15	335	365
40-32-160	1.5	40	32	80	50	240	190	90	60	132	165	488	100	260	777	100	305	480	260	340	680	4-15	377	382
	2.2	40	32									488	125	260	802	100	305	510	260	340	710	4-15	377	382
	3	40	32									505	140	280	872	100	305	540	260	340	740	4-15	377	392
50-32-125	1.1	50	32	80	50	210	160	90	60	115	140	478	100	250	753	100	275	460	230	310	660	4-15	335	365
	1.5	50	32									484	100	260	773	100	275	470	230	310	670	4-15	335	365
50-32-160	2.2	50	32	80	50	240	190	90	60	132	170	488	125	260	802	100	305	510	260	340	710	4-15	382	382
	3	50	32									505	140	280	872	100	305	540	260	340	740	4-15	382	392
	4	50	32									512	140	310	872	100	305	540	260	340	740	4-15	382	410
50-32-200	4	50	32	80	50	240	190	100	70	160	195	520	140	310	870	100	305	550	260	340	750	4-18	445	438
	5.5	50	32									559	140	330	942	100	325	600	280	360	800	4-18	445	438
	7.5	50	32									559	140	330	942	100	325	600	280	360	800	4-18	445	438
65-50-125	2.2	65	50	80	50	210	160	90	60	120	150	484	125	260	798	100	275	560	230	310	760	4-15	335	370
	3	65	50									501	140	280	843	100	275	590	230	310	790	4-15	335	380
65-50-160	5.5	65	50	80	50	240	190	100	70	132	170	559	140	330	940	100	325	590	280	360	790	4-18	382	410
	7.5	65	50									559	140	330	940	100	325	590	280	360	790	4-18	382	410
	11	65	50									608	210	420	1085	100	375	710	330	410	910	4-18	410	500
65-40-200	11	65	40	100	50	265	212	100	70	160	200	608	210	420	1105	100	375	710	330	410	910	4-18	440	500
	15	65	40									608	210	420	1105	100	375	710	330	410	910	4-18	440	500
65-40-250	15	65	40	100	50	320	250	125	95	180	225	608	210	420	1105	100	375	730	330	410	930	4-18	485	520
	18.5	65	40									608	254	420	1160	100	375	780	330	410	980	4-18	485	520
	22	65	40									621	241	450	1200	100	415	780	370	450	980	4-18	485	530

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
65-40-315	30	65	40	125	65	345	280	125	95	220	260	753	305	510	1400	100	470	490	420	510	1180	6-18	600	650
	37	65	40									753	305	510	1400	100	470	490	420	510	1180	6-18	600	650
	45	65	40									764	311	550	1455	100	500	510	450	540	1220	6-18	605	670
80-65-160	7.5	80	65	100	50	265	212	100	70	160	180	559	140	330	945	100	325	590	280	360	790	4-18	420	438
	11	80	65									603	210	420	1100	100	385	710	340	420	910	4-18	420	500
	15	80	65									603	210	420	1100	100	385	710	340	420	910	4-18	420	500
80-50-200	18.5	80	50	100	50	265	212	100	70	160	205	612	254	420	1165	100	385	770	340	420	970	4-18	445	500
	22	80	50									625	241	450	1195	100	415	770	370	450	970	4-18	465	530
	30	80	50									636	305	510	1360	100	470	430	420	510	1060	6-18	525	630
80-50-250	30	80	50	125	65	320	250	125	95	180	230	748	305	510	1400	100	470	500	420	510	1200	6-18	550	630
	37	80	50									748	305	510	1400	100	470	500	420	510	1200	6-18	550	630
	45	80	50									764	311	550	1455	100	510	510	460	550	1220	6-18	575	670
80-50-315	45	80	50	125	65	345	280	125	95	225	280	764	311	550	1455	100	500	510	450	540	1220	6-18	625	670
	55	80	50									813	349	680	1545	100	570	550	520	610	1300	6-18	650	800
	75	80	50									835	368	720	1605	100	625	575	570	680	1350	6-22	680	840
100-80-160	15	100	80	100	65	280	212	125	95	160	215	608	210	420	1080	100	385	400	340	420	930	4-18	455	500
	18.5	100	80									608	254	420	1160	100	385	450	340	420	980	4-18	455	500
	22	100	80									621	241	450	1190	100	415	450	370	450	980	4-18	475	530
100-65-200	22	100	65	100	65	320	250	125	95	180	225	736	241	450	1305	100	415	450	370	450	1100	6-18	485	530
	30	100	65									748	305	510	1375	100	470	510	420	510	1220	6-18	545	630
	37	100	65									748	305	510	1375	100	470	510	420	510	1220	6-18	545	630
100-65-250	45	100	65	100	65	360	280	160	120	200	250	764	311	550	1455	100	500	515	450	540	1230	6-18	595	670
	55	100	65									813	349	680	1545	100	570	560	520	610	1320	6-18	620	800
	75	100	65									835	368	720	1605	100	620	590	570	650	1380	6-22	650	840

Model	Motor	Inlet flange	Outlet flange	Pump Overall Dimensions (mm)												Pump set Overall Dimensions (mm)								
	kW	DN1	DN2	A	B	N1	N2	M1	M2	H1	H2	PM	ML	HD	UL	BP	HC1	HC2	HC3	BW	BL	n-BH	H	H3
100-65-315	75	100	65	125	80	400	315	160	120	225	280	865	368	720	1635	100	625	600	570	670	1400	6-22	680	840
	90	100	65									865	419	720	1685	100	625	625	570	670	1450	6-22	680	840
	110	100	65									881	406	870	1735	100	700	650	650	750	1500	6-22	735	1010
125-100-200	45	125	100	125	80	360	280	160	120	200	280	764	311	550	1455	100	500	515	450	540	1230	6-18	625	670
	55	125	100									818	349	680	1550	100	570	560	520	610	1320	6-18	650	800
	75	125	100									840	368	720	1610	100	620	600	570	660	1400	6-22	680	840
125-100-250	55	125	100	140	80	400	315	160	120	225	290	747	349	680	1595	100	570	575	520	620	1350	6-18	660	800
	75	125	100									869	368	720	1655	100	625	600	570	670	1400	6-22	690	840
	90	125	100									869	419	720	1705	100	625	625	570	670	1450	6-22	690	840
125-100-315	110	125	100	140	80	400	315	160	120	250	320	891	406	870	1860	100	700	650	650	750	1500	6-27	755	1010
	132	125	100									891	457	870	2000	100	700	700	650	750	1600	6-27	755	1010
	160	125	100									891	508	870	2000	100	700	700	650	750	1600	6-27	755	1010

Note :1. The UL, BL and HC2 sizes in the above table are sieze coupled with YE3 motor If other brand motors to be used, the above sizes shall be confirmed by the manufacturer.
2, if BL length is less than 1 meter, HC2 size is a section; If BL is more than 1 meter , then HC2 is two segments of equal length.

Pump flange dimensions



Flange dimensions					
DN	D1	D2	D3	n	d
32	76	100	140	4	18
40	84	110	150	4	18
50	102	125	165	4	18
65	122	145	185	4	18
80	133	160	200	8	18
100	158	180	220	8	18
125	184	210	250	8	18
150	212	240	285	8	22
200	268	295	340	12	22
250	320	355	405	12	26
300	370	410	460	12	26

Installation&maintenance

Installation requirements

1.Use the secondary grouting method for installation. Make the concrete foundation according to the base size, and bury the anchor bolts. The installation base should be level.

2.The pump and motor should be checked before installation:

- All parts should be free of damage, and there should be no debris in the pump;
- The model and parameters of the pump and motor should be correct;
- The technical data and quality certificates should be complete.

3.An expansion joint should be set between the suction and discharge pipe of the pump and the pump to compensate for the alignment error, and to isolate the vibration of the pump body and the pipe;

4.In order to prevent debris from entering the pump, it is recommended that a filter should be set at the inlet, and the filtration area should be 3 to 4 times greater than the cross-sectional area of the pipeline;

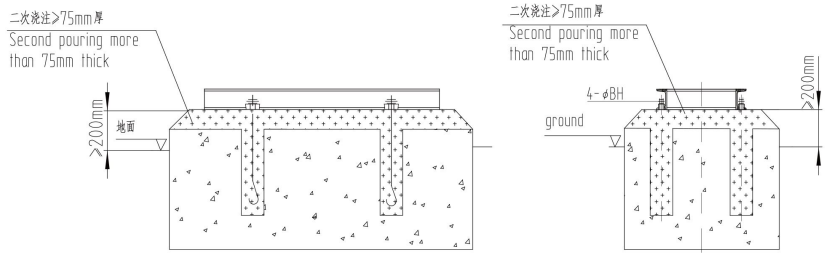
5. The pump with high head and the pump running in parallel should also be installed on the outlet pipe to prevent the water hammer damage of sudden stop;

6. It is necessary to ensure that the installation height of the pump is in line with the cavitation allowance of the pump, and consider the pipeline loss and medium temperature.

Attentions

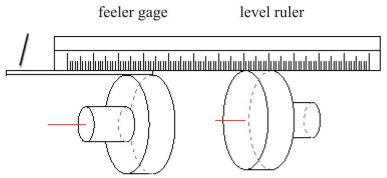
Preparation of concrete:

We recommend to use the concrete as shown by below drawing, to ensure the best stability of the pump set.

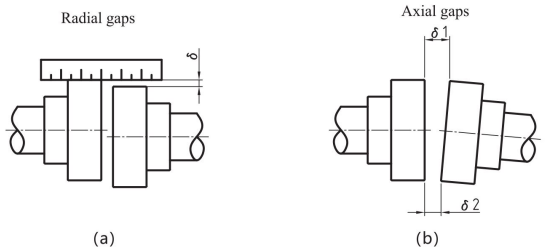


Alignment of the coupling of 3S pump:

After the 3S pump unit is installed on the base, the alignment of the coupling must be readjusting, that is, placing a flat ruler on the coupling to check whether the shaft line of the pump and the shaft line of the motor coincide. If the level does not coincide, slightly move the pump foot and motor foot; If the vertical does not coincide, the foot of the motor or the foot of the pump is covered with a thin iron sheet, so that the two couplings are round and flat, and then take out the thin iron sheet of the pad, replace the iron sheet with a processed iron block, and finally re-check the installation.



In order to check the precision of the installation, measure the gap between the planes of the two shaft couplings on a few opposite positions (0 and 6 o'clock, 3 and 9 o'clock) with feeler gage. The difference of the maximum and minimum radial gaps all around the plane must not exceed 0.3 millimeter, while the horizontal and vertical differences of the maximum and minimum axial gaps $\triangle$($\triangle$=δ1-δ3 for vertical difference, $\triangle$=δ2-δ4 for horizontal difference) of both ends' centerlines must not exceed 0.1 millimeter.



Start&Run

1.Before starting, the pump should be filled with the delivered liquid (if it is sucked on) close the outlet valve and connect the power line;

2.Turn on the power and check whether the steering of the pump is correct, as shown in the direction of the sign;

3.Trial test run 5~10 minutes, if no abnormal phenomenon can be put into operation;

4.When stopping, the exit gate valve should be closed first, and then cut off the power supply;

5. When disassembling, first flush the flow channel of the pump with clean water until the debris in the pump is completely washed;

6.When replacing the parts of the pump, do not hit the parts with sharp objects or hard objects, and gently tap the wood wrapped in a soft cloth. The removed parts should be handled lightly with the sealing surface facing up.

7.During use, often check the pump and motor. If abnormal noise or temperature rise is found, it should be stopped immediately for maintenance.

Typical malfunctions with Trouble shootings

Malfunctions	Possible Reasons	Solutions
No water come from pump when starting	There is residual air in suction pipeline or pump housing.	Open the exhaust valve, refill the water, and expel the air.
	Air leakage in suction pipeline.	Inspect and adjust suction pipelines,tighten seal faces,expel the residual air.
	Either suction or discharge valves are closed or pipelines are blocked.	Open suction and discharge valves or clean the pipelines.
	The motor rotates inversely or slowly, lacks phase.	Alternate the rotating direction of the pump; Tighten the motor wiring.
	The mounting height is too high. Suction pressure is so low that cavitation happens. Bottom valve leaks out.	Lower mounting height. Stop the pump to check and adjust the suction pressure. Repair or replace the bad bottom valve.
	The resistance of discharge pipeline is too large or geometric height is too high. Improper pump selection, excessively lower head than needed.	Bold discharge pipeline or reduce the corners number. Re-select the pump.
The capacity of pump is insufficient.	Firstly check the causes of above malfunction 1.	Firstly to solve by malfunction 1.
	Impellers are worn-out	Replace impellers.
	Rotating speed of pump or power voltage is far below the required value.	Check the motor and remain stable power voltage supply.
	Impeller flow channels, discharge pipelines or suction pipelines are blocked by the scale.	Clean impellers and pipeline.

Malfunctions	Possible Reasons	Solutions
	The discharge valve opens less than reqired.	Turn up the discharge valve.
Motors overload	The flow rate exceeds allowable range.	Turn down the discharge valve to adjust the flow rate.
	There are mechanical frictions somewhere.	Check and locate frictions, prepare for maintenance.
Motors overload	The flow rate exceeds allowable range. The motor is overloaded.	Turn down the discharge valve.
	The rotar scratches.	Check and remove.
	Bearings are worn out.	Replace worn bearings.
	Power voltage is insufficient.	Remain stable power voltage supply.
Pumps make noise and vibrate violently.	Cavitation happens.	Turn down the discharge valve.Bring down height of installation.Lower the resistance of suction pipeline.
	The impeller single vane is congested.	Clean the impellers.
	Fastening parts or foundation becomes flexible.	Fasten anchor nuts and reinforce the foundation.
	There are mechanical frictions somewhere.	Check and locate frictions, prepare for maintenance.
The pump leaks out: shaft end leakage, pump shell leakage, the seal faces leakage	Shaft end seal clearance is too large.	Replace wear rings.
	Mechanical seal dynamic and static rings are worn out, spring pressure is too light.	Repair or replace the worn material, adjusting the spring.

Malfunctions	Possible Reasons	Solutions
(including mechanical seal)		Turn up the discharge valve.
	Uneven seal faces fit poor (including echanical seal dynamic and static rings).	Repair the seal faces flat (including echanical seal dynamic and static rings).
	The pump shell has sand holes or cracks.	Weld repair the defects or replace a new shell.