ES - RANGE

END-SUCTION PUMPS

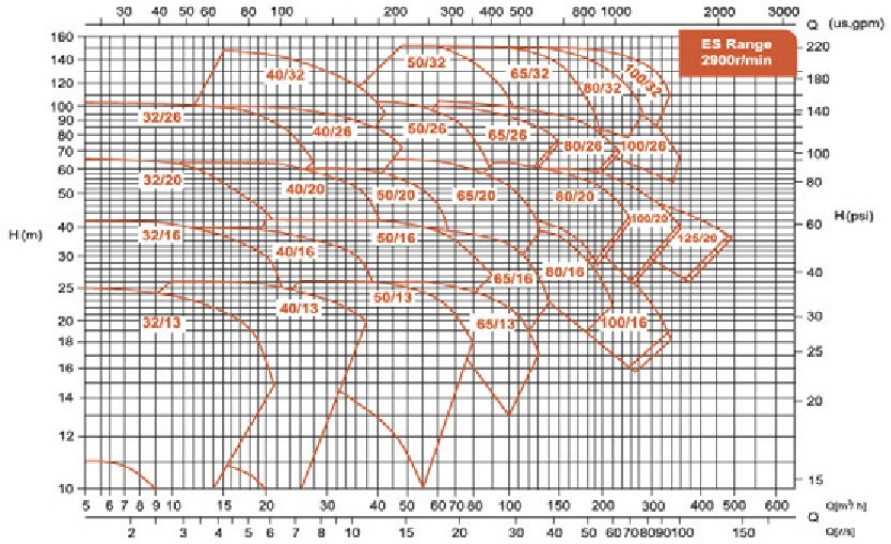


ES - Range

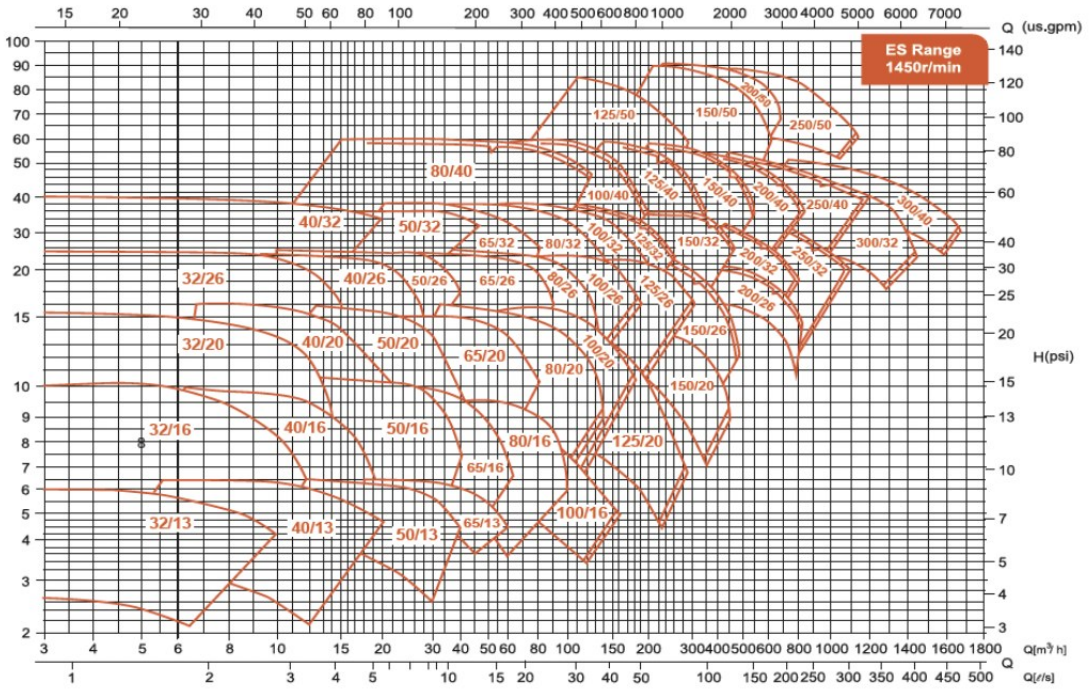
Power Range:	1.1 - 315kW (400V Three Phase)
Motor Speed:	2900 / 1450rpm
Rated Flow:	9 - 1188m³/h
Maximum Head:	86.5m
DN Suction Nozzle:	32 - 300mm
Sealing:	Mech-Seal/Packed Gland
Impeller:	Stainless Steel/Cast Iron
Shaft:	Stainless Steel



Performance Range



Performance Range



Overview

Introduction

ES(S), ESD Series single-stage horizontal centrifugal pump completed the liquid transportation by the centrifugal force generated by the impeller of the rotary pump. It's pump body and motor are composed of a main shaft, impeller, pump case and mechanical seal, and connected by coupling. ES(S), ESD series can work under high temperature and pressure. They are mainly used for heating, cooling tower, air-conditioning system and can be used as booster pump in water supply system. The pull-back structure of axial inlet and radial outlet ensures a more compact pump structure and pipeline.

Pump Structure Design

Pull-back design with seperated motor and pump body.The pump cover bracket acts as a connection between the motor and the pump body. The ES series comes with the dimentions accord to DIN 24255. The flange size meets the requirements of PN16 in GB/T17241.6 or ISO7005-2/DIN2501.

Liquid Temperature

Normal temperature pump:15˚C to 70˚C
Hot temperature pump:-15˚C to 105˚C

Ambient temperature

If the ambient temperature exceeds the 40˚C or the pump is installed at an altitude exceeding 1000 m, the motor output power P2 will decrease. In such cases, it is necessary to use a motor with a higer rated output.

Motor

Totally enclosed, fan-cooled, 2-pole standard motors.
Enclosure class: IP55
Insulation class: F
Voltage: 3x220-240/380-415V
1x220-240V
Available with single-phase motors (0.37kW-2.2kW)

Pump operating conditions

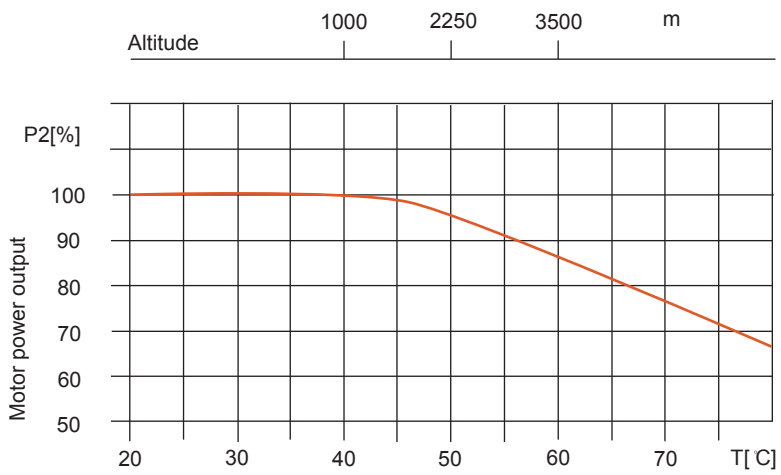
Pumping liquids which are thin, clean, non-flammable, non-compustible or non-explosive with no solid particles or fibres.
Max. ambient temperature: +40 C
Max. altitude above sea level: 1000m

Performance curves

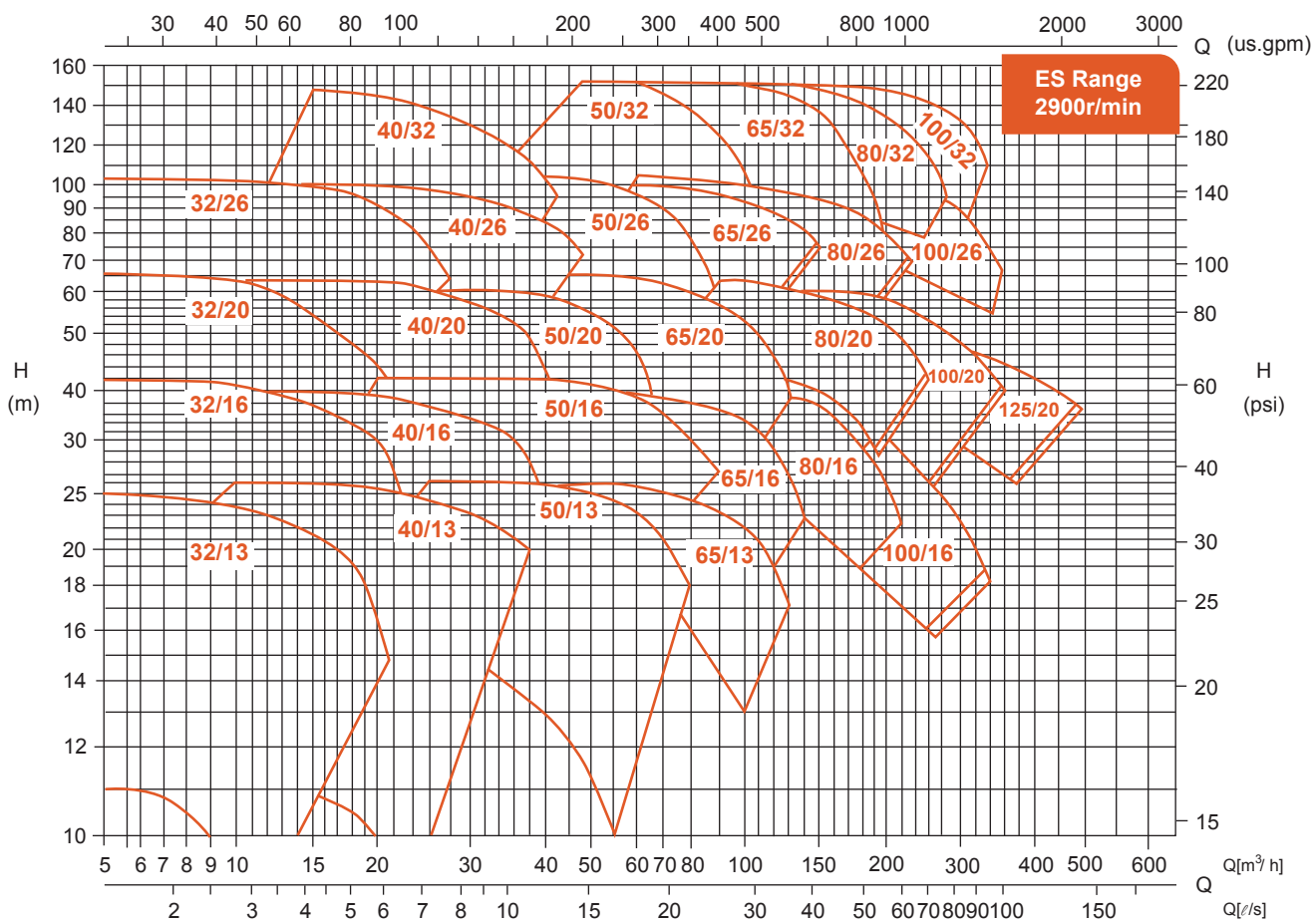
The motors used for the measurements are based on 2900rpm or 2950 rom.
Tolerances to ISO 9906
Measurements have been made with airless water a temperature of 20˚C
Curves apply to kinematic visosity of 1mm^2/s
Select a best efficiency of the pump which is operating within the bold curve of the pump performance.

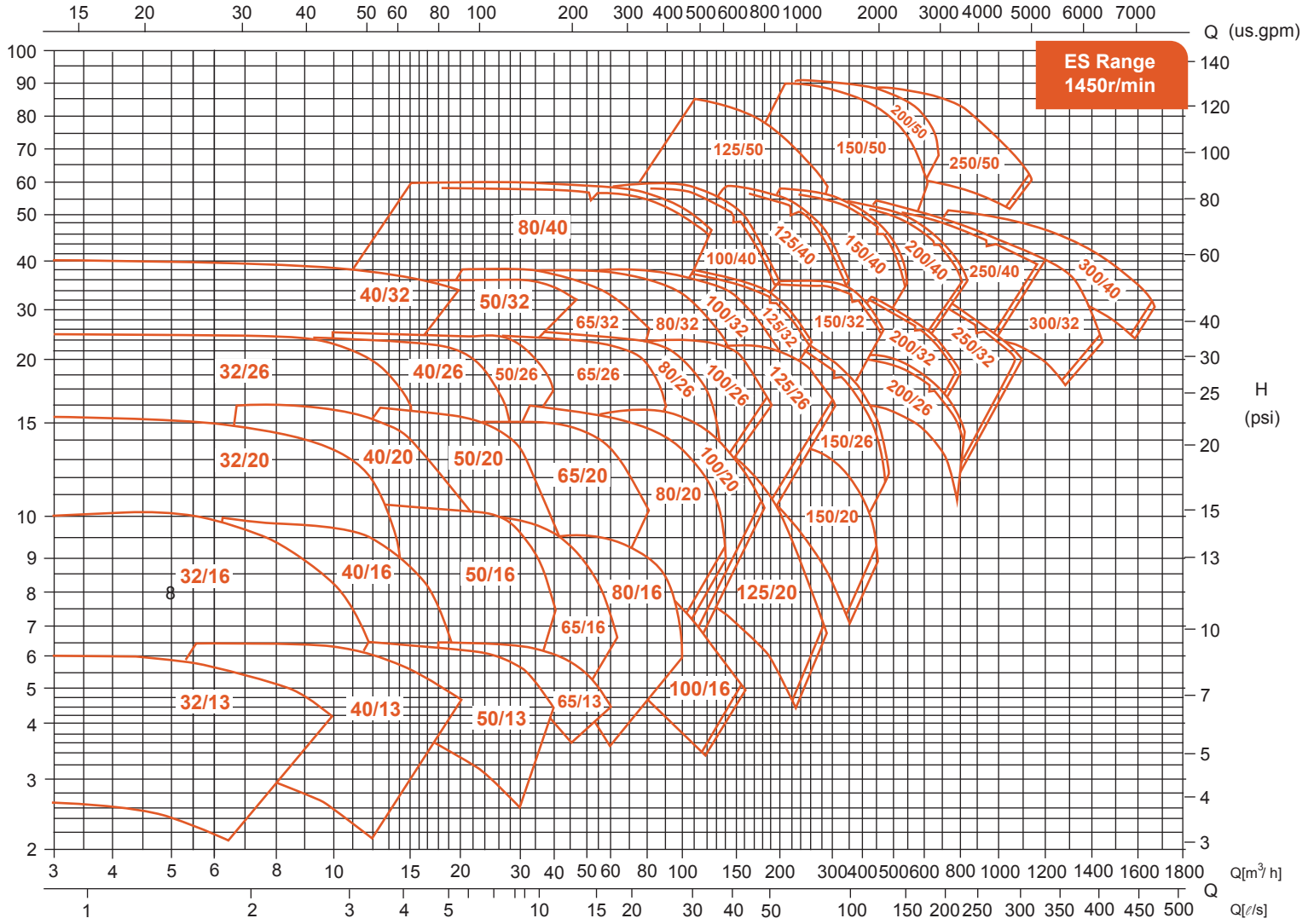
Maximum working pressure

Normal pressure type: PN12bar
High pressure type:PN16bar



Performance Range





Pump labelling

ES 32/13

ES/ESS 32 / 13

- End suction pump of cast iron
- Rated diameter of outlet (DN)
- Nominal diameter of impeller (CM)

ESS 32/13

ESD/ESDS 32 / 13

- End suction pump with direct connection
- Rated diameter of outlet (DN)
- Nominal diameter of impeller (CM)

Applications

Water supply

- Water filtering
- Supercharging
- Pressurization of hotels
- Industrial pressurization

Industrial liquid transport

- Cooling air conditioning system
- Boiler feed water
- Condensing system and cooling tower
- Machine tool cooling lubrication system

Irrigation

- Regional irrigation
- Sprinkler irrigation
- Drip irrigation
- Greenhouse irrigation

Industrial boosting

- Cleaning system
- High pressure flushing systems
- Firefighting systems
- Car cleaning equipment

Water treatment

- Ultrafiltration system
- Reverse osmosis system
- Distillation system
- Separator
- Swimming pool



Minimum inlet pressure, NPSH

Cavitation may occur if the following conditions exist during the operation of the water pump:

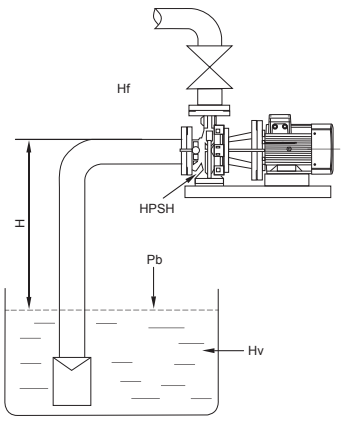
- The water tank or pool is lower than the pump inlet
- Actual flow is significantly greater than the rated flow

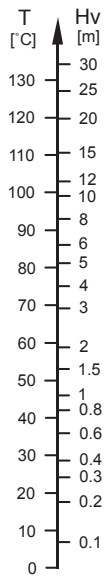
To avoid cavitation, make sure there is a minimum pressure on the inlet sidemof the pump. The maximum suction range H (m) can be calculated as follows:

Pb=Atmospheric pressure (atmospheric pressure can be set to bar)
HT=Net positive suction head (can be read from the maximum possible flow rate on the NPSH curve).
HI= Pipeline loss at inlet
Hv=Vaporization pressure
HS=Safety margin,minimum 0.5m heas

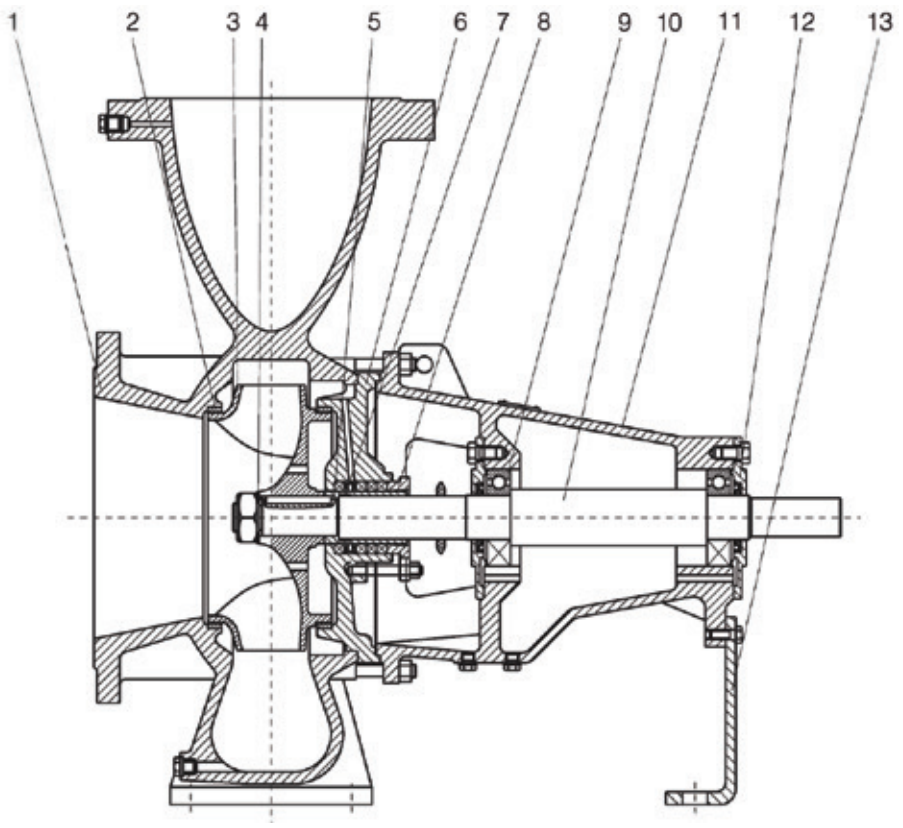
If the calculated value of H is positive, the pump can be operated at the maximum suction range H.

If the calculated value of H is negative, there must be a head with a minimum inlet pressure H.



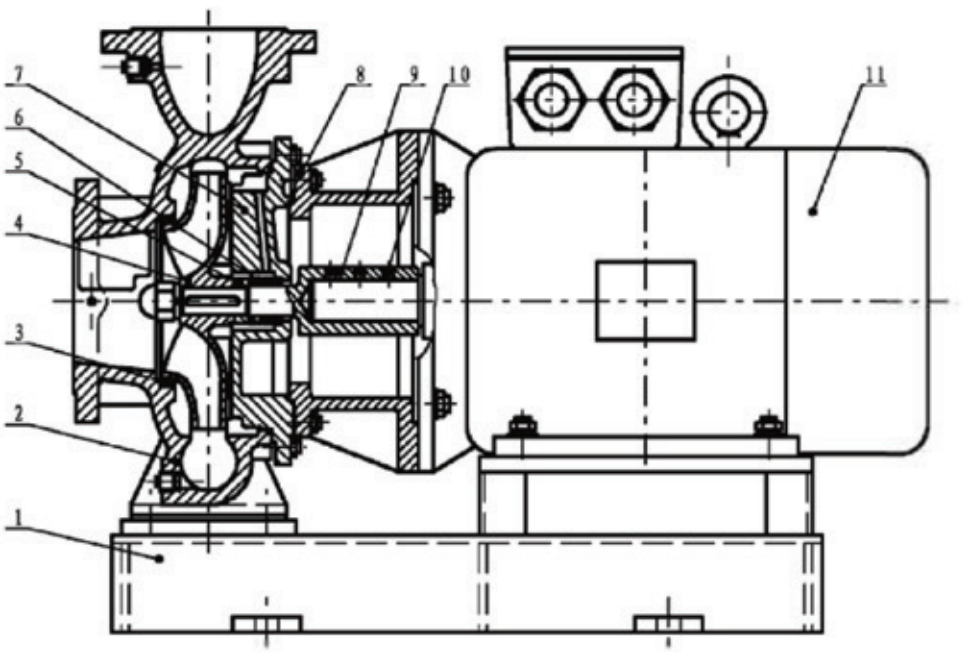


Structure ES



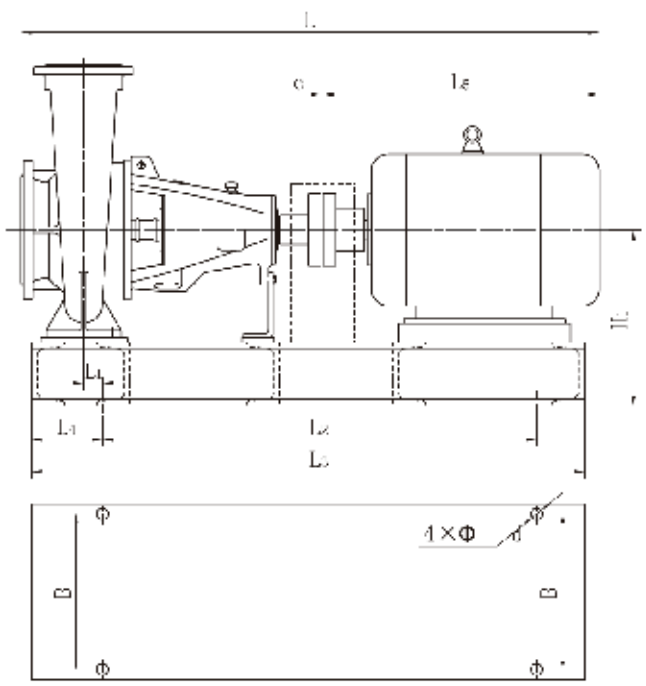
1	Pump Casing
2	O Ring
3	Impeller
4	Impeller Nut
5	Sleeve
6	Pump Cover
7	Mechanical Seal
8	Mechanical Seal Cover
9	Bearing
10	Shaft
11	Suspension
12	Bearing Cover
13	Suspension Bracket

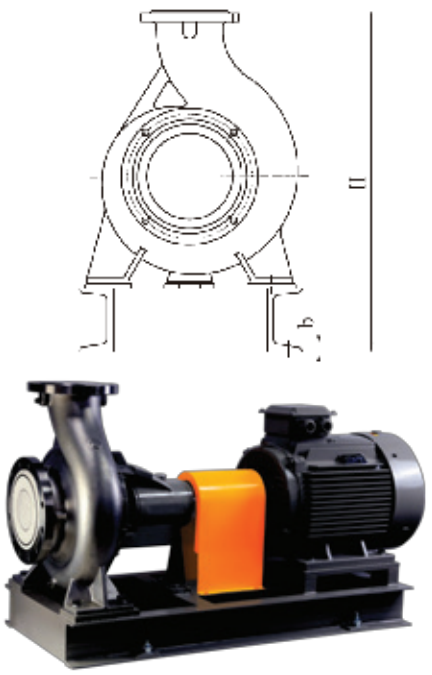
Structure ESD



1	Base
2	Casing
3	Wear Ring
4	Impeller
5	Mechanical Seal Locking Collar
6	Mechanical Seal
7	Casing Cover
8	Motor Bracket
9	Shaft
10	Shaft Set Screw
11	Motor

Installation dimension





Size and weight

(Rated speed:2900rpm)

Model	Motor		Installation Dimension												Weight
	Motor Model	P	L	L_1	L_2	L_3	L_4	L_5	B	H	H_1	b	c	Φd	(kg)
ES(S)32/13	YE3 90L-2	2.2	791	51	450	760	150	344	270	327	187	11	2	13.5	79
	YE3 90S-2	1.5	766	51	450	760	150	319	270	327	187	11	2	13.5	76
ES(S)32/16	YE3 132S_1-2	5.5	931	77	500	840	170	484	310	367	207	11	2	13.5	129
	YE3 112M-2	4	856	69	450	760	150	409	310	367	207	11	2	13.5	108
ES(S)32/20	YE3 160M_1-2	11	1056	102	580	980	190	609	350	432	252	11	2	13.5	204
	YE3 132S_2-2	7.5	931	77	500	840	170	484	310	415	235	11	2	13.5	141
ES(S)32/26	YE3 160L-2	18.5	1125	106	580	980	190	658	350	497	272	11	2	13.5	249
	YE3 160M_2-2	15	1080	106	580	980	190	613	350	497	272	11	2	13.5	235
ES(S)40/13	YE3 112M-2	4	856	69	450	760	150	409	310	327	187	11	2	13.5	103
	YE3 100L-2	3	836	69	450	760	150	389	310	327	187	11	2	13.5	92
ES(S)40/16	YE3 132S_2-2	7.5	931	77	500	840	170	484	310	367	207	11	2	13.5	135
	YE3 132S_1-2	5.5	931	77	500	840	170	484	310	367	207	11	2	13.5	130
	YE3 112M-2	4	856	69	450	760	150	409	310	367	207	11	2	13.5	109
ES(S)40/20	YE3 160M_1-2	11	1077	102	580	980	190	610	350	432	252	11	2	13.5	208
ES(S)40/26	YE3 180M-2	22	1145	117	580	980	190	683	350	497	272	11	2	13.5	279
	YE3 160L-2	18.5	1125	106	580	980	190	658	350	497	272	11	2	13.5	251
ES(S)40/32	YE3 200L_2-2	37	1387	137	730	1180	220	790	400	567	342	16	2	24	413
	YE3 200L-2	30	1387	137	730	1180	220	790	400	567	342	16	2	24	394
	YE3 180M-2	22	1280	127	660	1110	220	683	370	540	315	12	2	19	350

Size and weight

Model	Motor		Installation Dimension												Weight
	Motor Model	P	L	L_1	L_2	L_3	L_4	L_5	B	H	H_1	b	c	Φd	(kg)
ES(S)50/13	YE3 132S_2-2	7.5	951	77	500	840	170	484	310	367	207	11	2	13.5	133
	YE3 132S_1-2	5.5	951	77	500	840	170	484	310	367	207	11	2	13.5	128
ES(S)50/16	YE3 160M_1-2	11	1077	102	580	980	190	610	350	432	252	11	2	13.5	202
ES(S)50/20	YE3 160L-2	18.5	1122	106	580	980	190	655	350	452	252	11	2	13.5	234
	YE3 160M_2-2	15	1077	106	580	980	190	610	350	452	252	11	2	13.5	220
ES(S)50/26	YE3 200L_2-2	37	1257	137	630	1060	210	790	400	540	315	12	2	17.5	378
	YE3 200L_1-2	30	1257	137	630	1060	210	790	400	540	315	12	2	17.5	362
ES(S)50/32	YE3 280S-2	75	1612	162	910	1455	245	1015	570	745	465	16	2	28	793
	YE3 225M-2	45	1427	136	800	1266	230	830	450	640	360	16	2	28	618
ES(S)65/13	YE3 160M_1-2	11	1077	106	580	980	190	610	350	432	252	11	2	13.5	203
	YE3 132S_2-2	7.5	952	77	500	840	170	485	310	415	235	11	2	13.5	140
ES(S)65/16	YE3 160L-2	18.5	1122	106	580	980	190	655	350	452	252	11	2	13.5	231
	YE3 160M_2-2	15	1077	106	580	980	190	610	350	452	252	11	2	13.5	217
	YE3 160M_1-2	11	1077	106	580	980	190	610	350	452	252	11	2	13.5	209
ES(S)65/20	YE3 200L_1-2	30	1222	137	630	1045	220	760	395	540	315	16	2	24	373
	YE3 180M-2	22	1145	117	580	980	190	683	350	497	272	11	2	13.5	295
ES(S)65/26	YE3 250M-2	55	1522	132	870	1390	260	945	500	660	410	15	2	26	588
	YE3 225M-2	45	1407	117	800	1260	230	830	450	610	360	14	2	22	479
ES(S)65/32	YE3 315S-2	110	1805	200	870	1460	300	1208	620	780	500	16	2	28	1296
	YE3 280M-2	90	1665	162	910	1510	300	1068	550	745	465	16	2	28	925
	YE3 280S-2	75	1617	162	910	1510	300	1015	550	745	465	16	2	28	845
ES(S)80/16	YE3 200L_1-2	30	1280	137	630	1060	210	788	400	540	315	12	2	17.5	349
	YE3 180M-2	22	1175	117	580	980	190	683	350	497	272	11	2	13.5	272
	YE3 160L-2	18.5	1150	106	580	980	190	658	350	497	272	11	2	13.5	244
ES(S)80/20	YE3 225M-2	45	1432	117	800	1260	230	830	450	610	360	14	2	22	468
	YE3 200L_2-2	37	1392	117	780	1230	230	790	400	585	335	14	2	22	401
ES(S)80/26	YE3 280S-2	75	1617	162	910	1510	300	1015	550	720	440	15	2	26	752
ES(S)80/32	YE3 315M-2	132	1822	200	910	1540	300	1210	655	815	500	16	2	28	1442
	YE3 315S-2	110	1805	200	870	1460	300	1208	620	815	500	16	2	28	1342
	YE3 280M-2	90	1665	162	910	1510	300	1068	550	780	465	16	2	28	958
ES(S)100/16	YE3 200L_2-2	37	1392	117	780	1230	230	790	400	585	335	14	2	22	421
ES(S)100/20	YE3 280S-2	75	1617	162	910	1510	300	1015	550	720	440	15	2	26	746
	YE3 250M-2	55	1547	132	870	1390	260	945	500	690	410	15	2	26	592
	YE3 225M-2	45	1432	117	800	1260	230	830	450	640	360	14	2	22	489
ES(S)100/26	YE3 315S-2	110	1831	200	870	1460	300	1208	620	760	480	15	3	26	1125
	YE3 280M-2	90	1691	162	910	1510	300	1068	550	720	440	15	3	26	835
ES(S)100/32	YE3 315L_2-2	200	1822	200	910	1540	300	1210	655	815	500	16	2	28	1499
	YE3 315L_1-2	160	1822	200	910	1540	300	1210	655	815	500	16	2	28	1434
	YE3 315M-2	132	1822	200	910	1540	300	1210	655	815	500	16	2	28	1281
ES(S)125/20	YE3 280M-2	90	1682	162	910	1510	300	1065	550	755	440	15	2	26	822
	YE3 280S-2	75	1632	162	910	1510	300	1015	550	755	440	15	2	26	767

Size and weight

Model	Motor		Installation Dimension												Weight
	Motor Model	P	L	L_1	L_2	L_3	L_4	L_5	B	H	H_1	b	c	Φd	(kg)
ES(S)32/13	Y801-4	0.55	741	37	430	675	120	294	270	327	187	11	2	13.5	68
ES(S)32/16	Y801-4	0.55	741	37	430	675	120	294	270	367	207	11	2	13.5	75
ES(S)32/20	Y90S-4	1.1	766	51	450	760	150	319	270	415	235	11	2	13.5	89
ES(S)32/26	$Y100L_2$-4	3	856	69	450	760	150	389	310	480	255	11	2	13.5	125
ES(S)40/13	Y801-4	0.55	741	37	430	675	120	294	270	327	187	11	2	13.5	70
ES(S)40/16	Y90S-4	1.1	766	51	450	760	150	319	270	367	207	11	2	13.5	86
ES(S)40/20	Y90L-4	1.5	812	51	450	760	150	345	270	415	235	11	2	13.5	98
ES(S)40/26	$Y100L_2$-4	3	856	69	450	760	150	389	310	480	255	11	2	13.5	127
ES(S)40/32	Y132S-4	5.5	1090	94	630	1025	210	488	400	540	315	12	2	17.5	219
ES(S)50/13	Y90S-4	1.1	786	51	450	760	150	319	270	367	207	11	2	13.5	84
ES(S)50/16	Y90L-4	1.5	812	51	450	760	150	345	270	415	235	11	2	13.5	92
ES(S)50/20	$Y100L_1$-4	2.2	857	69	450	760	150	390	310	435	235	11	2	13.5	108
ES(S)50/26	Y132S-4	5.5	952	77	500	840	170	485	310	480	255	11	2	13.5	159
ES(S)50/32	Y160M-4	11	1215	105	750	1160	220	613	400	620	340	12	2	17.5	286
	Y132M-4	7.5	1130	94	630	1025	210	528	400	620	340	12	2	17.5	237
ES(S)65/13	Y90L-4	1.5	812	51	450	760	150	345	270	415	235	11	2	13.5	93
ES(S)65/16	$Y100L_1$-4	2.2	857	69	450	760	150	390	310	435	235	11	2	13.5	105
ES(S)65/20	Y112M-4	4	880	69	450	760	150	413	310	480	255	11	2	13.5	136
ES(S)65/26	Y132M-4	7.5	1105	94	630	1025	210	528	400	565	315	12	2	17.5	217
ES(S)65/32	Y160L-4	15	1260	105	750	1160	220	658	400	620	340	12	2	17.5	308
	Y160M-4	11	1215	105	750	1160	220	613	400	620	340	12	2	17.5	295
ES(S)80/16	$Y100L_2$-4	3	881	69	450	760	150	389	310	480	255	11	2	13.5	120
ES(S)80/20	Y132M-4	7.5	1130	94	630	1025	210	528	400	545	295	12	2	17.5	206
ES(S)80/26	Y160M-4	11	1215	105	750	1160	220	613	400	595	315	12	2	17.5	276
ES(S)80/32	Y180M-4	18.5	1287	104	750	1160	220	685	400	680	365	12	2	17.5	364
	Y160L-4	15	1260	105	750	1160	220	658	400	680	365	12	2	17.5	318
ES(S)80/40	Y200L-4	30	1454	123	800	1260	230	790	500	775	420	14	2	22	512
	Y180L-4	22	1389	130	750	1190	220	725	500	775	420	14	2	22	452
ES(S)100/16	Y132S-4	5.5	1090	94	630	1025	210	488	400	565	315	12	2	17.5	213
ES(S)100/20	Y160M-4	11	1215	105	750	1160	220	613	400	595	315	12	2	17.5	270
ES(S)100/26	Y160L-4	15	1275	105	750	1160	220	658	400	620	340	12	2	17.5	323
ES(S)100/32	Y180L-4	22	1342	104	750	1160	220	725	400	680	365	12	2	17.5	396
	Y180M-4	18.5	1302	104	750	1160	220	685	400	680	365	12	2	17.5	378
ES(S)100/40	Y225M-4	45	1546	140	820	1320	250	863	550	795	440	15	3	26	629
ES(S)100/40	YE3 225S-4	37	1521	140	820	1320	250	838	550	795	440	15	3	26	594
	YE3 200L-4	30	1476	140	800	1260	230	793	500	775	420	14	3	22	594
ES(S)125/20	YE3 160M-4	11	1230	105	750	1160	220	613	400	680	365	12	2	17.5	291
ES(S)125/26	YE3 180L-4	22	1342	104	750	1160	220	725	400	720	365	12	2	17.5	377
	YE3 180M-4	18.5	1302	104	750	1160	220	685	400	720	365	12	2	17.5	359
ES(S)125/32	YE3 200L-4	30	1467	125	800	1260	230	790	500	775	420	14	2	22	514
	YE3 180L-4	22	1402	117	780	1230	230	725	540	775	420	14	2	22	443
ES(S)125/40	YE3 280S-4	75	1701	190	910	1510	300	1018	550	875	475	15	3	26	865

Size and weight

Model	Motor		Installation Dimension												Weight
	Motor Model	P	L	L_1	L_2	L_3	L_4	L_5	B	H	H_1	b	c	Φd	(kg)
ES(S)125/40	YE3 250M-4	55	1631	150	870	1390	260	948	500	875	475	15	3	26	719
	YE3 225M-4	45	1546	150	800	1315	260	863	500	875	475	15	3	26	620
ES(S)125/50	YE3 315S-4	110	2074	168	1140	1770	310	1220	625	1040	540	16	3	28	1521
	YE3 280S-4	75	1874	200	1020	1660	320	1021	625	1040	540	16	3	28	1044
	YE3 250M-4	55	1801	200	890	1540	320	948	550	1040	540	16	3	28	926
ES(S)150/20	YE3 180M-4	18.5	1347	114	780	1230	230	685	540	820	420	14	2	22	418
ES(S)150/26	YE3 200L-4	30	1487	125	800	1260	230	790	500	745	390	14	2	22	499
ES(S)150/32	YE3 250M-4	55	1651	150	870	1390	260	948	550	840	440	15	3	26	702
	YE3 225M-4	45	1566	140	820	1320	250	863	550	840	440	15	3	26	625
	YE3 225S-4	37	1541	140	820	1320	250	838	550	840	440	15	3	26	590
ES(S)150/40	YE3 280M-4	90	1774	190	910	1510	300	1071	550	925	475	15	3	26	916
	YE3 280S-4	75	1724	190	910	1510	300	1021	550	925	475	15	3	26	901
ES(S)150/50	YE3 315L_1-4	160	2124	168	1140	1775	315	1270	625	1040	540	16	4	28	1846
	YE3 315M-4	132	2124	168	1140	1775	315	1270	625	1040	540	16	4	28	1638
	YE3 315S-4	110	2074	168	1140	1770	310	1220	625	1040	540	16	4	28	1544
ES(S)200/26	YE3 250M-4	55	1694	150	870	1415	260	948	550	930	480	15	3	26	800
ES(S)200/32	YE3 280S-4	75	1884	200	1040	1615	320	1021	620	960	480	15	3	26	964
	YE3 250M-4	55	1814	200	900	1545	320	951	620	960	480	15	3	26	832
	YE3 225M-4	45	1729	200	870	1475	320	866	620	960	480	15	3	26	745
ES(S)200/40	YE3 315M-4	132	2124	168	1140	1780	320	1270	620	980	500	15	4	26	1510
	YE3 315S-4	110	2074	168	1140	1780	320	1220	620	980	500	15	4	26	1360
	YE3 280M-4	90	1904	159	1040	1675	320	1050	620	980	500	15	4	26	1050
	YE3 280S-4	75	1854	159	1040	1675	320	1000	620	980	500	15	4	26	1035
ES(S)200/50	YE3 355M_2-4	250	2419	230	1100	1911	400	1530	725	1125	625	16	4	28	2587
	YE3 315L_2-4	200	2159	230	910	1753	400	1270	715	1125	625	16	4	28	1962
	YE3 315L_1-4	160	2159	230	910	1753	400	1270	715	1125	625	16	4	28	1833
ES(S)250/32	YE3 280M-4	90	1965	180	1040	1675	320	1050	620	1040	520	15	4	26	1065
	YE3 280S-4	75	1915	180	1040	1675	320	1000	620	1040	520	15	4	26	1050
	YE3 250M-4	55	1845	180	1040	1675	320	930	620	1040	520	15	4	26	925
ES(S)250/40	YE3 315L_1-4	160	2176	180	1140	1780	320	1270	620	1125	565	15	4	26	1685
	YE3 315M-4	132	2176	180	1140	1780	320	1270	620	1125	565	15	4	26	1605
	YE3 315S-4	110	2176	180	1140	1780	320	1220	620	1125	565	15	4	26	1455
	YE3 280M-4	90	1956	171	1040	1675	320	1050	620	1125	565	15	4	26	1145
ES(S)250/50	YE3 355L_2-4	315	2749	230	1100	2226	400	1630	725	1195	650	16	4	28	2877
	YE3 355M_2-4	250	2649	230	1100	2141	400	1530	725	1195	650	16	4	28	2726
	YE3 315L_2-4	200	2389	230	1100	2005	400	1270	715	1195	650	16	4	28	2100
ES(S)300/32	YE3 315L_1-4	160	2409	188	1100	2025	380	1270	855	1110	550	16	4	28	2705
	YE3 315M-4	132	2409	188	1100	2025	380	1270	855	1110	550	16	4	28	2080
	YE3 315S-4	110	2359	188	1100	2025	380	1220	855	1110	550	16	4	28	1951
ES(S)300/40	YE3 355M_2-4	250	2669	230	1100	2161	400	1530	759	1325	725	16	4	28	2807
	YE3 315L_2-4	200	2409	188	1100	2025	380	1270	759	1325	725	16	4	28	2182
	YE3 315L_1-4	160	2409	188	1100	2025	380	1270	759	1325	725	16	4	28	2053