

CVD

Sewage pumps



Specifications

- CVD series pumps consist of centrifugal sewage and waste water pumps. They are used for pumping muddy liquids like sewage and other solid- water mixers, with high viscosity.
- For the vertical column pipe types 1500mm and 1000mm long standard pipe used.
The required length can be adjusted between 1000mm and 8000mm by using standard parts.
- Axial thrust force is balanced by vanes located behind the impellers. In column pipe models thrust force impeller and shaft weight are balanced by oil or grease lubricated thrust bearing fitted on base plate.
- In dry installed models soft packing or mechanical seal suitable for pumped fluid can be used.
- Pump impellers are statically and dynamically balanced according to ISO 1940 class 6.3
- Direction of rotation of the pump is clock wise seen from drive end.
- All pumps are tested according to ISO 9906.
- CVD series pumps do not have suction ability, there must be positive pressure on suction side.

Field of applications

- Domestic and industrial raw sewage water pumping.
- Waste water handling plants.
- Factory waste water sludge.
- Pumping industrial and chemical waste water.
- Pumping of cooling water.
- Pumping fluid with high viscosity and suspensions.
- All kinds of drainage and de-watering.
- Pumping liquids in paint plants.

Type key

- CVD 250/315
-
- Impeller diameter
Discharge flange
Pump type



Fluid Types

- Unscreened sewage and other waste water types with high solids concentration pumps are designed to tolerate large solids (30 - 200 mm diameter) without clogging.
- Water with sand content. Maximum grain size (20 - 30 mm). Liquid, sand ratio can be maximum 6% .
For higher sand concentration preventive provisions must be taken against wear.
- Maximum allowed fluid temperature is 40°C
- Maximum allowed medium density is 1,2 gr/cm³, maximum allowed medium viscosity is 1,5 x 10⁻⁶ m²/s.

Operating conditions

Suction and discharge flange size: DN 50-DN 600

Operation temperature: 10~75C

Capacity: 10-3000 m³/h

Head: 5-80m

Material

Pump component	Material
Motor casing - volute casing	Cast iron GG-25 (EN-JL 1040)
Impeller	Cast iron GG-25 (EN-JL 1040) / Bronze / AISI316
Shaft	Stainless steel (1.4021)
Shaft sleeve	Stainless steel (1.4021)
Diffuser	Cast iron GG-25 (EN-JL 1040)
Cable	H07RN-f
Wear ring	Bronze/ Cast Iron

Impeller design



Single vane double angled non clogging impeller: These impellers have large solid passages, high efficiencies and they do not strain motor power at low discharge head values.



Double vane impeller: In general they are used in large sized pumps. Rotational symmetry lets them operate without vibration and stable. They are with high efficiency and they do not strain motor with excessive load in case of low discharge head. Large channels between vanes allows pumping of solids.



Vortex type impeller: This type of impellers do not have closed channels. Impeller located deep inside the volute casing. Pumping action is generated by vortex created within the fluid by rotation of the impeller. With this geometry they can tolerate large solids than other impeller types more specifically they tolerate fibrous materials in the pumped liquid. Disadvantage of this impeller type is lower efficiencies

CVD SERIES SEWAGE PUMPS MOUNTING ARRANGEMENTS

1) Vertical wet-pit sewage pump with suspension pipe:

The pump bearings and intermediate bearings are designed and manufactured to run in a wet-pit. The pump is suspended by use of a support plate. The discharge pipe is also attached to the support plate. The discharge outlet can be either above or below the plate level. Lubrication of the bearings is below either carried out by a manual grease gun or by means of an automatic greaser. For this type pump it is necessary to build a pump station over the pit as well as a crane system with lifting height of at least 3 meters. It is manufactured for branch sizes up to 500 mm and for depths up to 8 meters

2) Vertical dry-pit sewage pump with suspension pipe:

This type pumps are manufactured to run in dry-pit. The pump bearings and intermediate bearings are grease lubricated ball bearings. The shaft can either be sealed off with mechanical seals or through a soft packed stuffing box. This form permits inspection and maintenance without disturbing suction and discharge piping. This form is especially suitable for installation into dry-pits which may be subject to flooding. In this case, the level of the motor support plate must be above the flooding level.

This form is manufactured for branch sizes up to 500 mm and for depths up to 10 meters.

3) Vertical dry-pit sewage pump with universal joint shaft:

This type is especially suitable for installation into deep and dry-pits and for large discharge. The pump unit is supported by foot and is connected to the motor by an exposed vertical shaft. It has all the properties of vertical wet form. This form is manufactured for branch sizes of 200 mm and over. Mounting lengths between the pump and the motor up to 10 meters is possible.

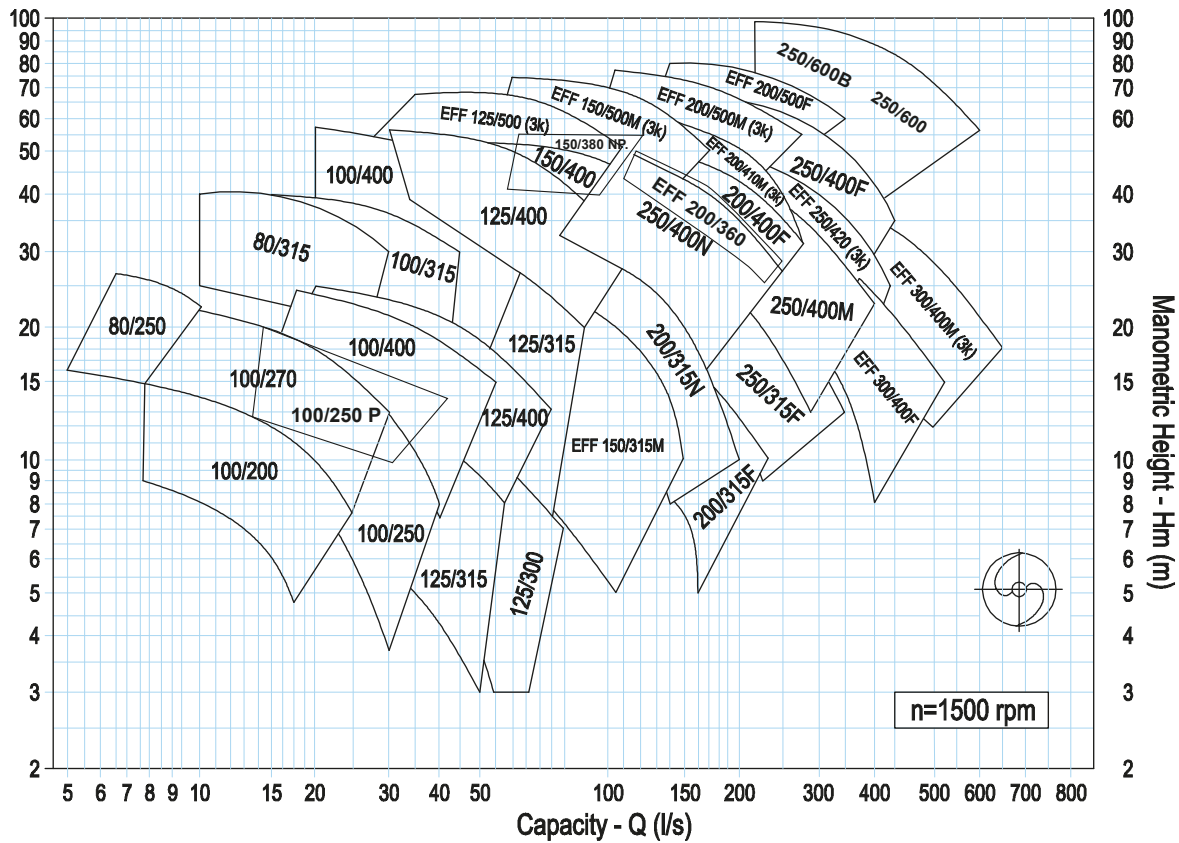
4) Vertical dry-pit mono block sewage pump:

This pump is suitable for installation into dry-pits which are not subject to flooding and for installation on the ground level. Pump and motor form a compact unit. This form permits inspection and maintenance without disturbing suction and discharge piping and casing. The shaft can either be sealed off with mechanical seals or through a soft packed stuffing box and is supported by two grease lubricated ball bearings. These pumps are manufactured for all branch sizes shown in this booklet.

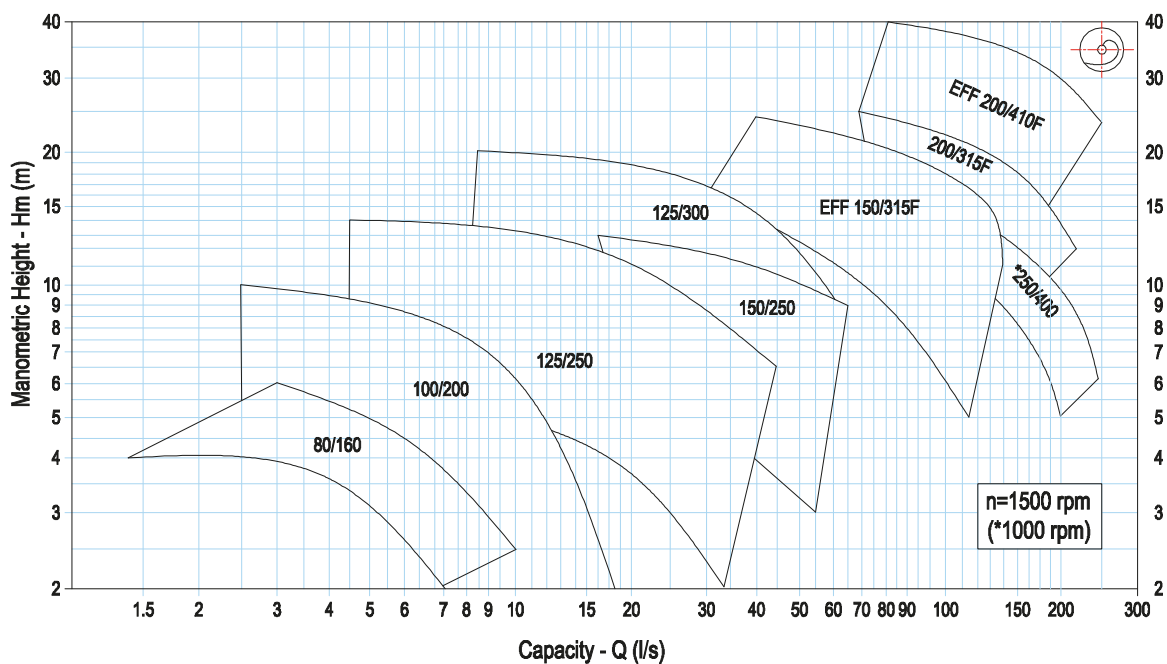
5) Horizontal dry-pit sewage pump:

This pump is suitable for installation wherever there is no danger of flooding. It has all the properties of horizontal pumps. Pump and motor are mounted on a steel base plate and connected by a flexible coupling. The shaft can either be sealed off with mechanical seals or by means of a soft packed stuffing box to avoid water. The pump shaft is supported by two ball bearings with oil or grease lubrication. This form pumps are manufactured for all branch sizes shown in this booklet.

Sewage double vane pump-1500rpm

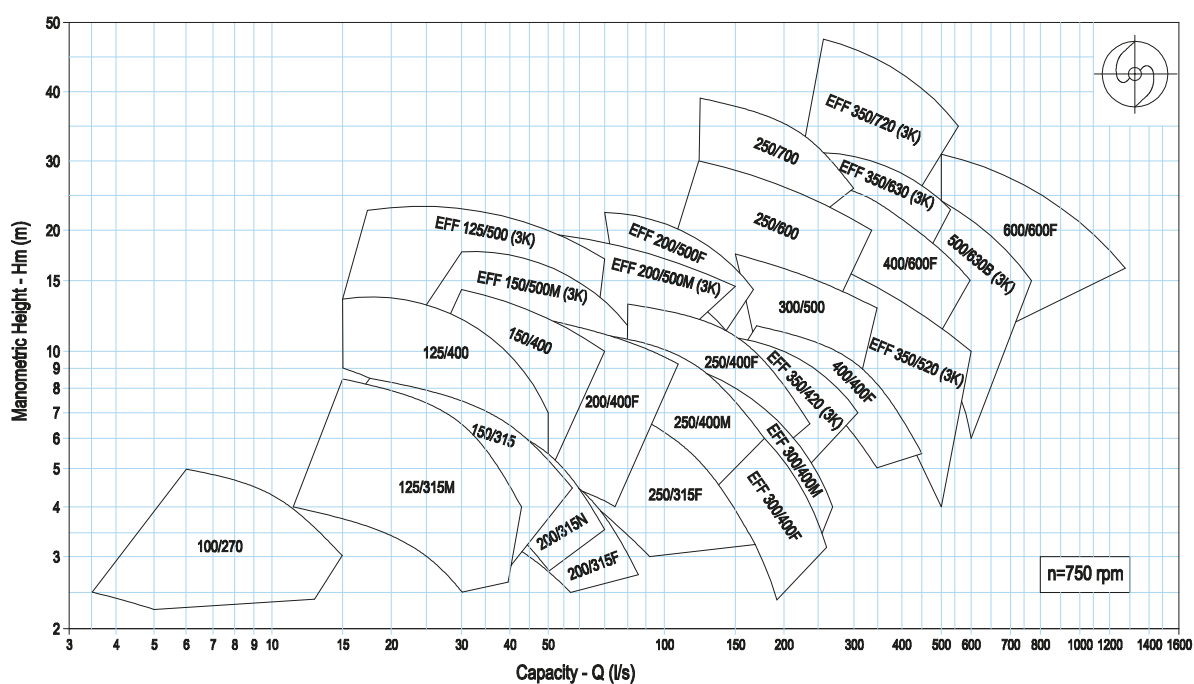


Sewage single vane pump-1500rpm

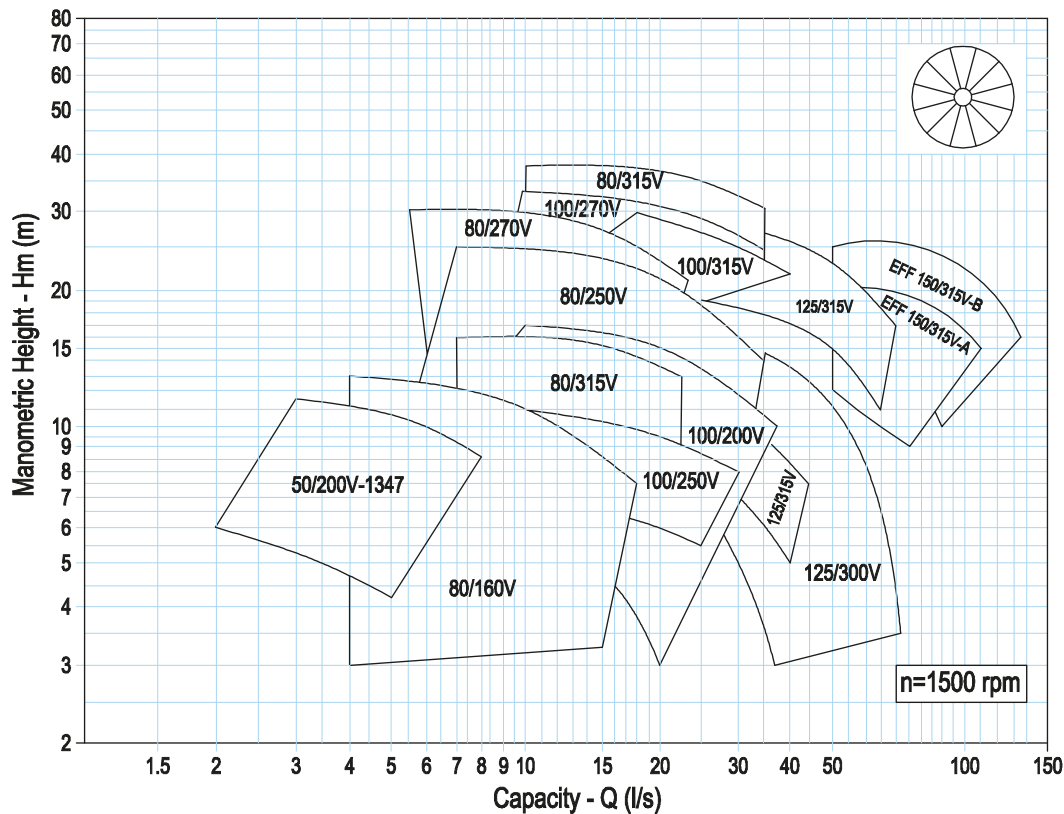




n=1000 rpm

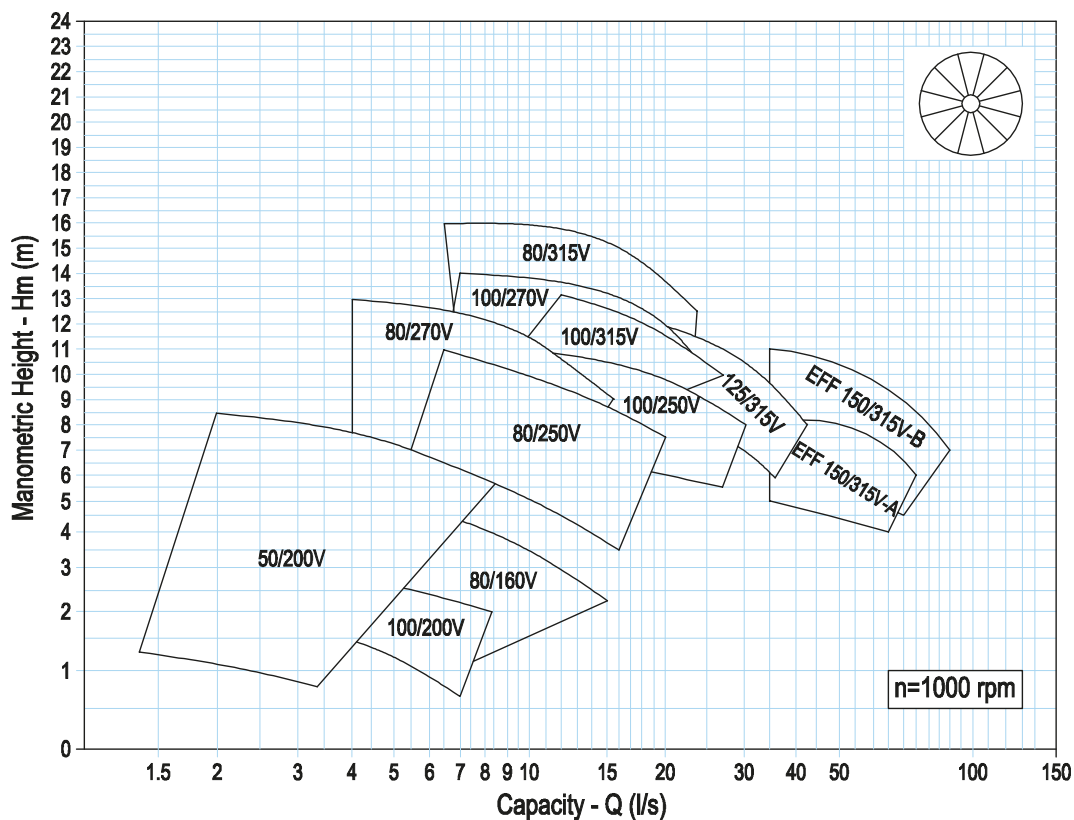


Sewage vortex pump-1500rpm

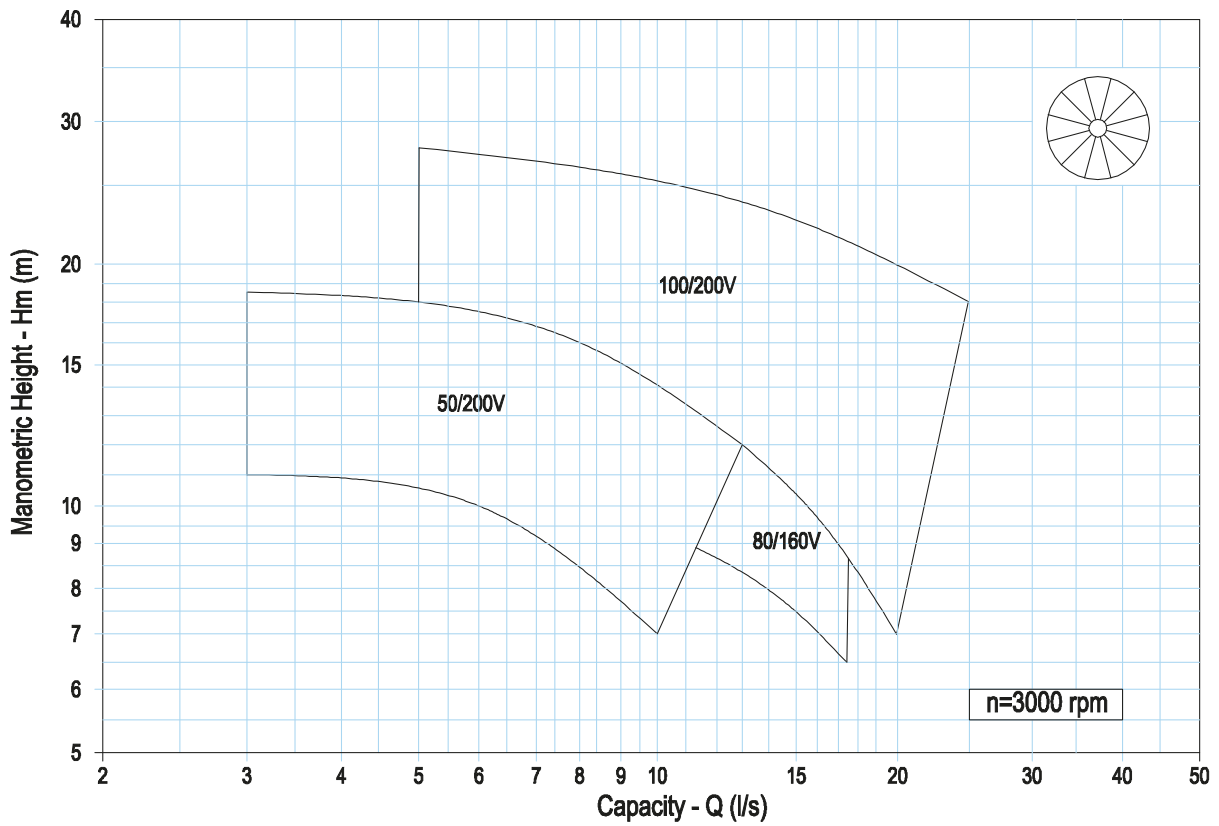


For 3 vane impellers (3K)

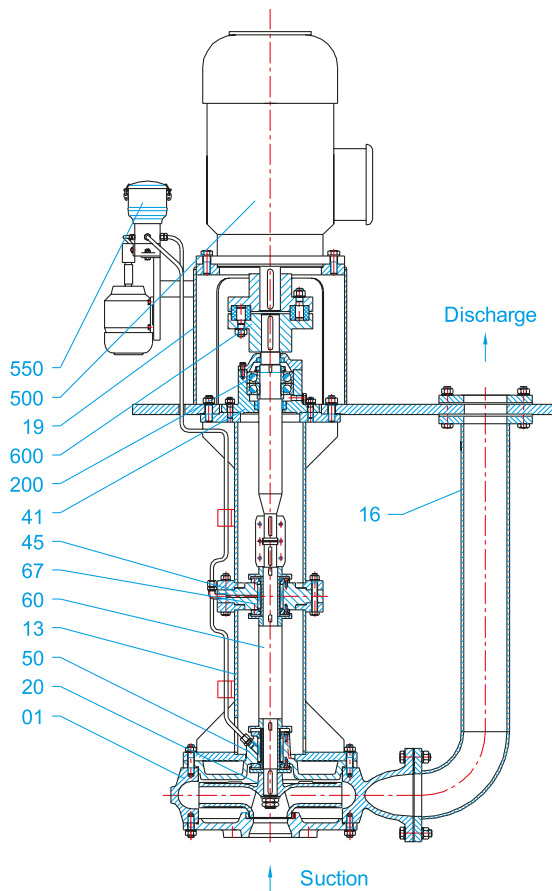
Sewage vortex pump-1000rpm



Sewage vortex pump-3000rpm

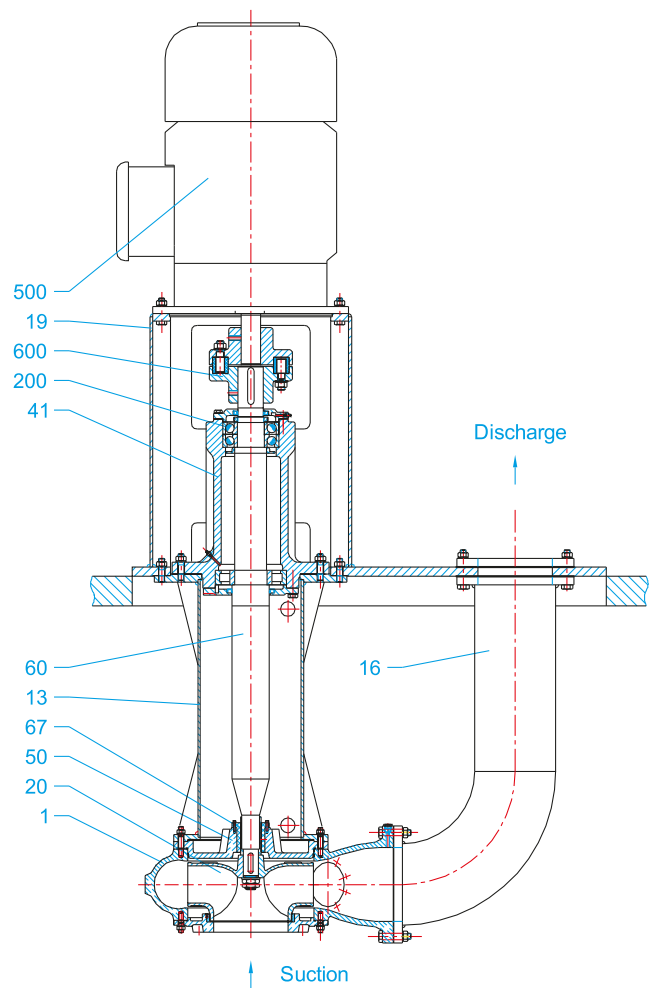
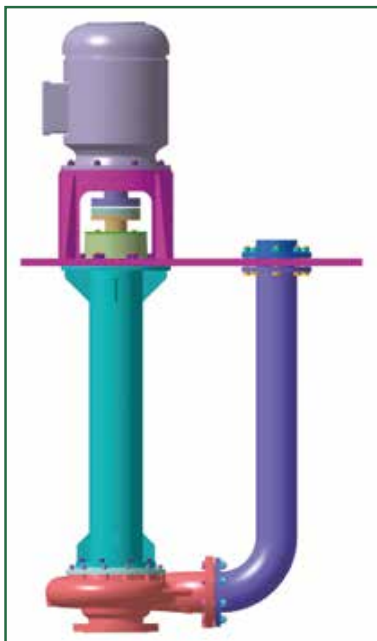


Sectional drawing



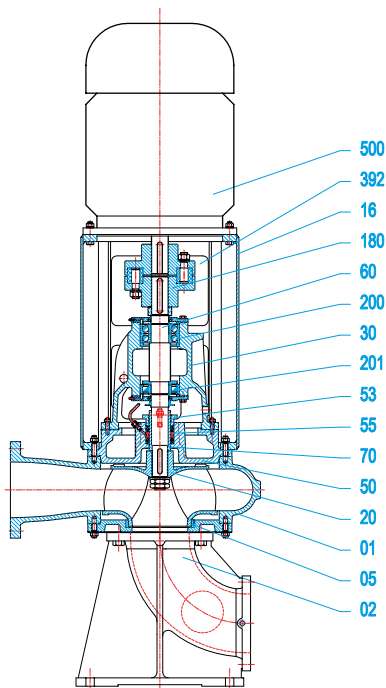
01	Volute
13	Column Pipe
16	Discharge Pipe
19	Motor Stool
20	Impeller
41	Thrust Bearing
45	Intermediate Bearing
50	Stuffing Box
60	Shaft
67	Bearing Sleeve
200	Bearing
500	Electrical Motor
550	Grease Pump
600	Coupling

PUMP WITH GREASE LUBRICATED SLEEVE BEARING



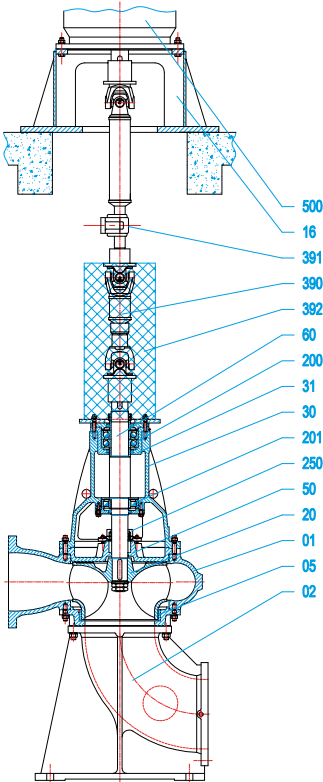
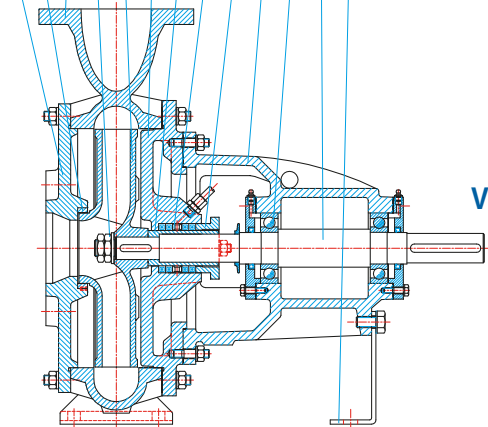
PUMP WITH SELF LUBRICATED RUBBER SLEEVE BEARING

Sectional drawing

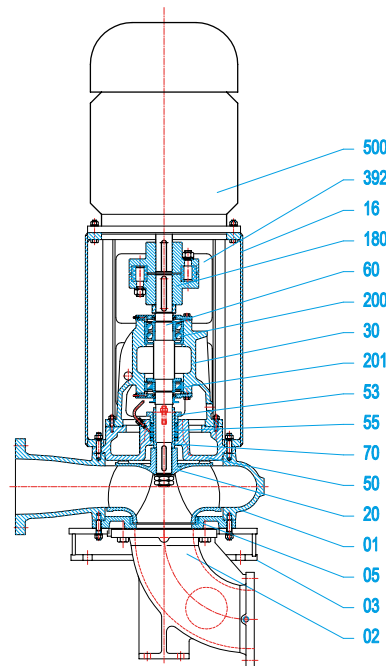


01	Volute
02	Suction Bend
05	Wear Ring
16	Motor Stool
20	Impeller
30	Bearing Frame
31	Bearing Housing
50	Stuffing Box
53	Gland
55	Lantern Ring
60	Shaft
70	Shaft Sleeve
180	Coupling
200	Bearing
201	Bearing
250	Mechanical Seal
390	Cardan Shaft
391	Intermediate Bearing
392	Safety Guard
500	Electric Motor

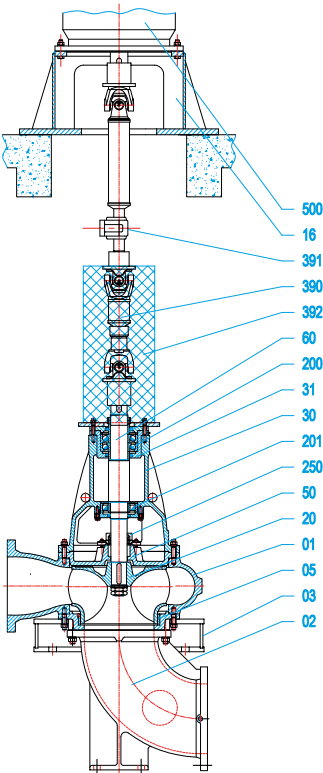
02 05 01 65 20 50 70 55 53 30 200 60 11



Vertical monoblock



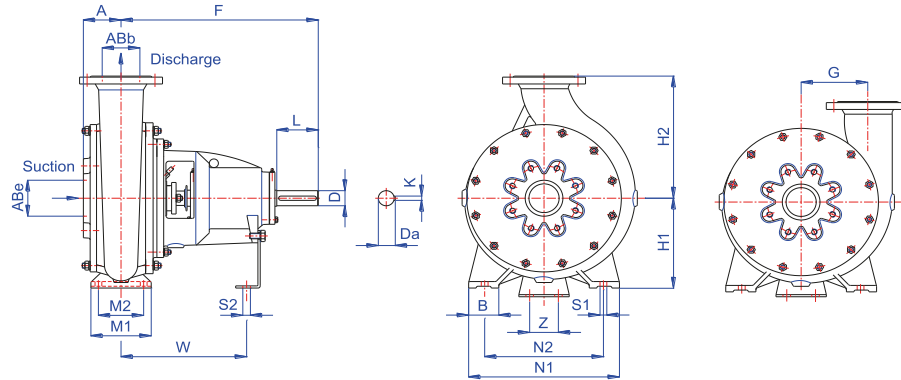
Vertical shaft driven



Horizontal Pump

01	Volute
02	Suction Elbow
03	Pump Stool
05	Wear Ring
16	Motor Stool
20	Impeller
30	Bearing Frame
31	Bearing Housing
50	Stuffing Box
53	Gland
55	Lantern Ring
60	Shaft
70	Shaft Sleeve
180	Coupling
200	Bearing
201	Bearing
250	Mechanical Seal
390	Cardan Shaft
391	Intermediate Bearing
392	Safety Guard
500	Electric Motor

Dimensions



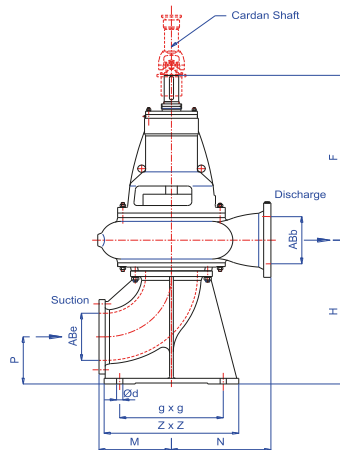
PUMP TYPE	Discharge ABb-PN10	Suction ABa-PN10	A	F	H1	H2	B	M1	M2	N1	N2	S1	D	Da	K	L	W	Z	S2	G
80/250	80	80	80	487	200	280	80	125	85	360	280	M16	32	35	10	80	305	100	M12	-
EFF 80/260		125	125	555	250			160	100		315	M12	42	45	12	110	371	150		-
80/270		80	61	472	225	235		125	85	400			32	35	10	80	312			135
80/315			73	555		340		120	475	400		M16	42	45	12	110	370			-
EFF 80/320	100	125	125	555	250		80	160	100				42	45	12	110	370		160	-
100/250		100	78	493	225				120				32	35	10	80	330			-
100/250NP		125	100	500	190	290		80	160	320	160	M12	32	35	10	80	340			-
EFF 100/260		150	150	550		300		160					42	45	12	110	365			-
100/315		100	100	523	250		80		120			M16	42	45	12	110	333		150	-
EFF 100/320		150	140	580	275	340						M12	42	45	12	110	395			-
100/400		100	104	553	315	367		200	150	550	400	M20	42	45	12	110	369			-
EFF 100/400		150	170	562	315	400			150	550	400	M20	38	41	10	110	378			-
EFF 100/400NP		150	170	562	315	400	120		150	550	400	M20						150		-
125/250	125	125	120	475	250	315	100	160	120	400	315		32	35	10	80	335	100	M12	-
125/300			116	529	288	335						M16					369			-
125/315			83	557	280	315		200		500	400		42	45	12	110	398	150		-
125/400			107	559	315	370											373			-
EFF 125/500	150	150	160	720	355	450	150	250	150	550	450	M20	60	64	18	140	480	190	150	-
150/250		200	159	577	280	355				500	400					110	405	15		-
150/315		150	118	569	255	380		200				M16	42	45	12		385	100		-
EFF 150/315			180	570												110				-
150/400			112	630	315	400				550	450		52	56	16		420	150		-
150/380NP		200	130	550	315	450	100	150	100	500	415		38	41	10	110	370	120	M20	-
EFF 150/410		200	175	640	350	450		200	150	550	450		52	56	16	110	430	150		-
EFF 150/500		200	180	715	380	500		250	180	560	450		60	64	18	140	475	190		-
200/315N			127	565	315	360		100		500	400		42	45	12	110	381	150		-
200/315F			144	585	330	370		150	240	160	600	500		42	45	12	110	401	M20	-
EFF 200/360	200	250	167	713	380	480	150	250	200	650	500		60	64	18	125	464	190		-
EFF 200/320			250	200	565	375		100	220	140	550	450		42	45	12	110	380		-
200/400			200	148	764	380		150	280	200	650	500	M24	60	64	18		515		-
EFF 200/410			250	180	740	355		120	250	150	550	450	M20					490		-
200/500		200	210	874			120	280		200	720		M27					630	190	-
EFF 200/500		250	200	820	425	560			210	700		600	M20					575		-
250/400N		250	140	850										70	75	20		605		-
250/400M		250	160		380	480			180	600	500	M27								-
250/400F		300	295	855			250												M24	-
250/400F		350	295	855																-
EFF 250/410	250	250	165	756	400	525		200	650	590			60	65	18	135	517			-
EFF 250/420		250	210	720	400	600		170	800	670	M24		60	64	18	140	480			-
250/600		300					160												200	-
250/600		350	280	1213	550	650		350	250	900	740		100	106	28	210	847			-
250/600B		350																		-
250/700		300	321	1159	650	750		400	280	1100	940	M27						743	400	-
EFF 300/400	300	350	170	860		600	350			650								605		-
300/500		300	335	882		580		250		800	660							638		-
EFF 350/420		350	200	836	560								70	75	20	140	592			-
EFF 350/520			265	835	680			225	400		1080	860	M24					590		-
EFF 350/630		400	300	1275	670		150						100	106	28	210	915		190	-
400/400			243	850	580												116	606		-
400/402			388	858	573	565		350	270	800	660	M30	70	75	20		140	613		-
EFF 400/500		400	300	1375	600	800		250	400	300	1000	750	M36	100	106	28	210	1010		-
400/600	400		417	1035	550		160			900	740	M27	80	85	22	150	900	240	M20	-
400/700								400	300	1150	1000									-
500/600			350	1275	700	700		250	440	340	1250	1100	M36	100	106	28	210	915		-
500/630B																				-
600/600	600	600	422	1202	800		325	500	400	1300	1000					210	814	400	M24	500

Dimensions are in mm, and subjected to change without prior notice

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Dimensions



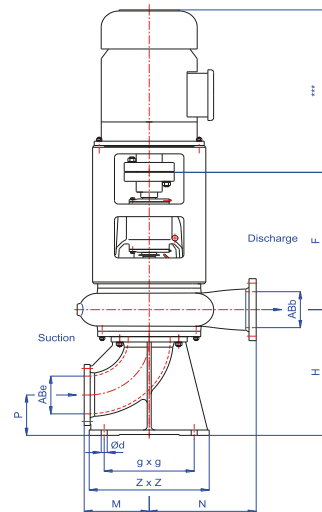
PUMP TYPE	Discharge ABb-PN10	Suction ABe-PN10	F	H	M	N	P	Z x Z	g x g	Ød	Anchor Bolt			
50/200V	50	65	440	294	145	200	125	270X270	200X200	20	M18x200			
80/160	80	80	480	408	190	280	150	350X350	250X250	23	M20x200			
80/250		125	555	528	215		185	440X440	345X345					
EFF 80/260		80	454	405	190	315	150	350X350	350X350					
80/270			555	413	340	185	440X440	345X345						
80/315			498	435	246	300	190	390x390	295x295					
EFF 80/320	80	125	555	528	215	300	185	440X440	345X345	28	M24x250			
100/200	100	100	465	446	195	300	190	390x390	295x295					
100/250		500	456	290	300	210	500x500	350X350						
EFF 100/250NP		150	550	613	275	300	190	390X390	295x295					
EFF 100/260		100	448	440	195	315	210	500X500	350X350					
100/270		100	523	468	340	210	500X500	350X350						
100/315		150	580	603	275	210	500X500	350X350						
EFF 100/320		100	553	472	195	340	190	390X390	295X295					
100/400		150	562	472	195	340	190	390X390	295X295					
EFF 100/400		150	562	472	195	340	190	390X390	295X295					
EFF 100/400NP		150	562	472	195	340	190	390X390	295X295	23	M20x200			
125/250	125	125	475	543	215	315	185	440X440	345X345					
125/300		150	529	589	275	335	210	500x500	350X350					
125/315		125	561	485	215	315	185	440X440	345X345					
125/400		150	559	510	275	370	210	500x500	350X350					
EFF 125/500		150	720	620	275	450	210	500x500	350X350					
150/250	150	200	577	712	325	355	225	600x 600	500x500	30	M27x300			
150/315		150	150	570	581	275	400	210	500x500	350X350	28	M24x250		
EFF 150/315			644	643										
150/400			200	640	575									
EFF 150/410			200	550										
150/380NP			200	550										
EFF 150/500		200	200	715	733	325	500	225	600x 600	500x500	30	M27x300		
200/315N			200	565	680	370								
200/315F			200	585	697	370								
EFF 200/320			250	565	803	350	500						250	650x650
EFF 200/360			200	713	813	325	500						225	600X600
200/400	200		779	703	325	530	225	600X600						
EFF 200/410	250		740	780	350	500	250	650x650						
200/500	200		874	763	325	560	225	600X600						
EFF 200/500	250		820	803	350	560	250	650x650						
250/315F	250		702	784	350	440	250	650x650	600X600				30	M27x300
250/400N	200	757	770	325	480									
250/400M	250	875	763	350	480									
250/400F	300	882	850	380	480									
250/400F	350	882	850	380	480									
EFF 250/410	250	250	756	784	350	525	250	650x650		500X500				
EFF 250/420		250	720	813	350	600	250	650x650		500X500				
250/600		300	1213	948	380	650	285	730X705		600X600				
250/600		350	1213	948	380	650	285	730X705		600X600				
250/600B		300	1159	853	380	750	205	730X705		600X600				
EFF 300/400	300	350	850	948	445	600	330	850X850	700X700	350	M27x300			
300/500		300	882	1000	380	585	285	730X705	600X600					
EFF 350/420		350	836	978	445	330	330	850X850	700X700					
EFF 350/520		400	880	1155	510	800	380	1000x1000	800X800					
EFF 350/630			915	1180										
400/400	858		1130											
400/402	400	500	1375	1403	635	700	470	1200X1200	1000X1000					
EFF 400/500		500	1259	1520	635	700	470	1200X1200	1000X1000					
400/600		500	1275	1454	635	1000	470	1200X1200	1000X1000					
400/700		500	1275	1454	635	1000	470	1200X1200	1000X1000					
EFF 400/800		500	1506	1350	550	930	430	500X500	320X320					
500/600	500	1275	1454	635	1000	470	1200X1200	1000X1000	30	M27x300				
500/630B	500	600	1202	1850	960	700	470	1850X1850			1650X1650			
600/600	600	600	1202	1850	960	700	470	1850X1850			1650X1650			
600/600	600	600	1202	1850	960	700	470	1850X1850			1650X1650			

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Dimensions



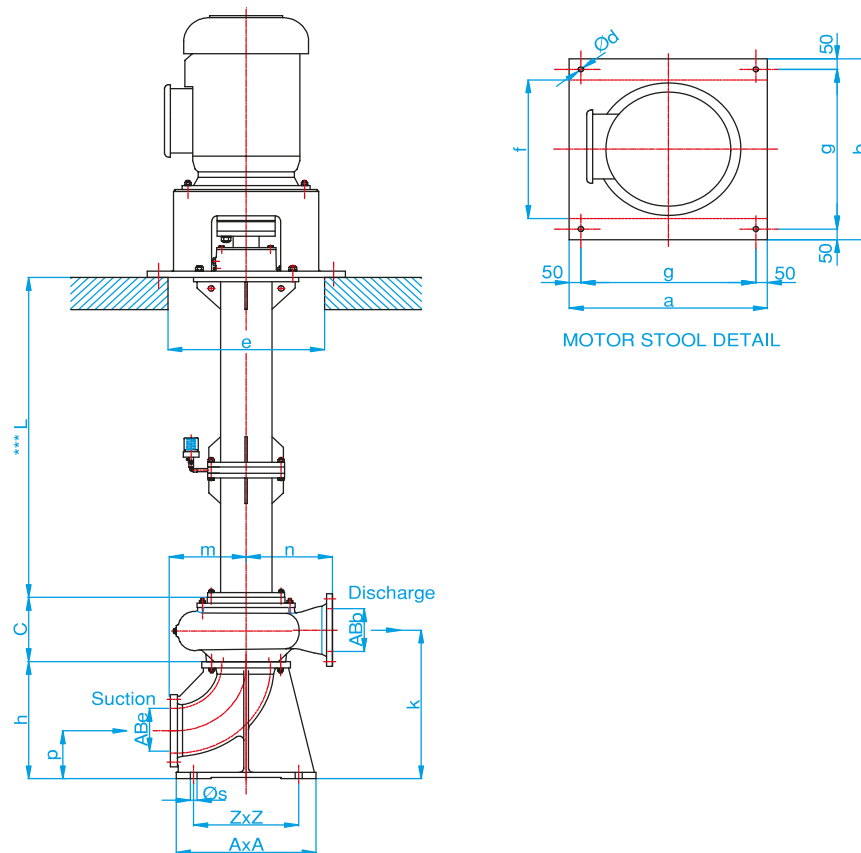
PUMP TYPE	Discharge ABb-PN10	Suction ABe- PN10	F	H	M	N	P	Z x Z	g x g	Ød	Anchor Bolt
50/200V	50	65	440	294	145	200	125	270X270	200X200	20	M18x200
80/160	80	80	480	408	190	280	150	350X350	250X250	23	M20x200
80/250		125	555	528	215		185	440X440	345X345		
EFF 80/260		80	454	405	190		150	350X350	350X350		
80/270		80	555	413	190		315	350X350	350X350		
80/315	80	125	555	528	215	300	185	440X440	345X345	23	M20x200
EFF 80/320		100	498	435	195	300	190	390X390	295X295		
100/200		100	465	446	195	300	190	390X390	295X295		
100/250		100	500	456	195	290	190	390X390	295X295		
EFF 100/250NP	100	150	550	613	275	300	210	500X500	350X350	28	M24x250
EFF 100/260		100	448	440	195	315	190	390X390	295X295	23	M20x200
100/270		100	523	468	195	340	190	500X500	350X350	28	M24x250
100/315		150	580	603	275	340	210	500X500	350X350	28	M24x250
EFF 100/320	100	100	553	472	195	340	190	390X390	295X295	23	M20x200
100/400		150	562	472	195	340	190	390X390	295X295	23	M20x200
EFF 100/400		150	562	472	195	340	190	390X390	295X295	23	M20x200
EFF 100/400NP		150	562	472	195	340	190	390X390	295X295	23	M20x200
125/250	125	125	475	543	215	315	185	440X440	345X345	28	M24x250
125/300		150	529	589	275	335	210	500X500	350X350		
125/315		125	561	485	215	315	185	440X440	345X345		
125/400		150	559	510	215	370	185	440X440	345X345		
EFF 125/500	125	150	720	620	275	450	210	500X500	350X350	28	M24x250
150/250		200	577	712	325	355	225	600x 600	500x500	30	M27x300
150/315		150	570	581	275	380	210	500X500	350X350	28	M24x250
EFF 150/315		150	644	643	275	400	210	500X500	350X350	28	M24x250
150/400	150	200	640	575	275	450	210	500X500	350X350	28	M24x250
EFF 150/410		200	640	575	275	450	210	500X500	350X350	28	M24x250
150/380NP		200	640	575	275	450	210	500X500	350X350	28	M24x250
EFF 150/500		200	715	733	325	500	225	600x 600	500x500	30	M27x300
200/315N	200	200	565	680	325	370	225	600x 600	500x500	30	M27x300
200/315F		200	585	697	325	370	225	600x 600	500x500		
EFF 200/320		250	565	803	350	500	250	650x650	500x500		
EFF 200/360		250	713	813	350	500	250	650x650	500x500		
200/400	200	200	779	703	325	530	225	600X600	500X500	30	M27x300
EFF 200/410		250	740	780	350	500	250	650x650	500X500		
200/500		200	874	763	325	560	225	600X600	500X500		
EFF 200/500		250	820	803	350	560	225	600X600	500X500		
250/315F	250	250	702	784	350	440	250	650x650	500X500	30	M27x300
250/400N		200	757	770	325	480	250	650x650	500X500		
250/400M		250	875	763	350	560	225	600X600	500X500		
250/400F		300	882	850	380	560	225	600X600	500X500		
250/400F	250	350	882	850	380	560	225	600X600	500X500	30	M27x300
EFF 250/410		250	756	784	350	525	250	650x650	500X500		
EFF 250/420		250	720	813	350	600	250	650x650	500X500		
250/600		300	1213	948	380	650	285	730X705	600X600		
250/600	250	350	1213	948	380	650	285	730X705	600X600	30	M27x300
250/600B		350	1213	948	380	650	285	730X705	600X600		
250/700		300	1159	853	380	750	205	730X705	600X600		
EFF 300/400		350	850	948	445	600	330	850X850	700X700		
300/500	300	300	882	1000	380	585	285	730X705	600X600	30	M27x300
EFF 350/420		350	836	978	445	600	330	850X850	700X700		
EFF 350/520		400	880	1155	510	800	380	1000x1000	800X800		
EFF 350/630		400	915	1180	510	800	380	1000x1000	800X800		
400/400	400	400	858	1130	510	800	380	1000x1000	800X800	30	M27x300
400/402		400	858	1130	510	800	380	1000x1000	800X800		
EFF 400/500		500	1375	1403	635	1000	470	1200X1200	1000X1000		
400/600		500	1259	1520	635	700	470	1200X1200	1000X1000		
400/700	400	500	1275	1454	635	1000	470	1200X1200	1000X1000	30	M27x300
EFF 400/800		500	1506	1350	550	930	430	500X500	320X320		
500/600		500	1275	1454	635	1000	470	1200X1200	1000X1000		
500/630B		500	1202	1850	960	1000	470	1850X1850	1650X1650		
600/600	600	600	1202	1850	960	700	470	1850X1850	1650X1650	30	M27x300

Dimensions are in mm, and subjected to change without prior notice

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Dimensions



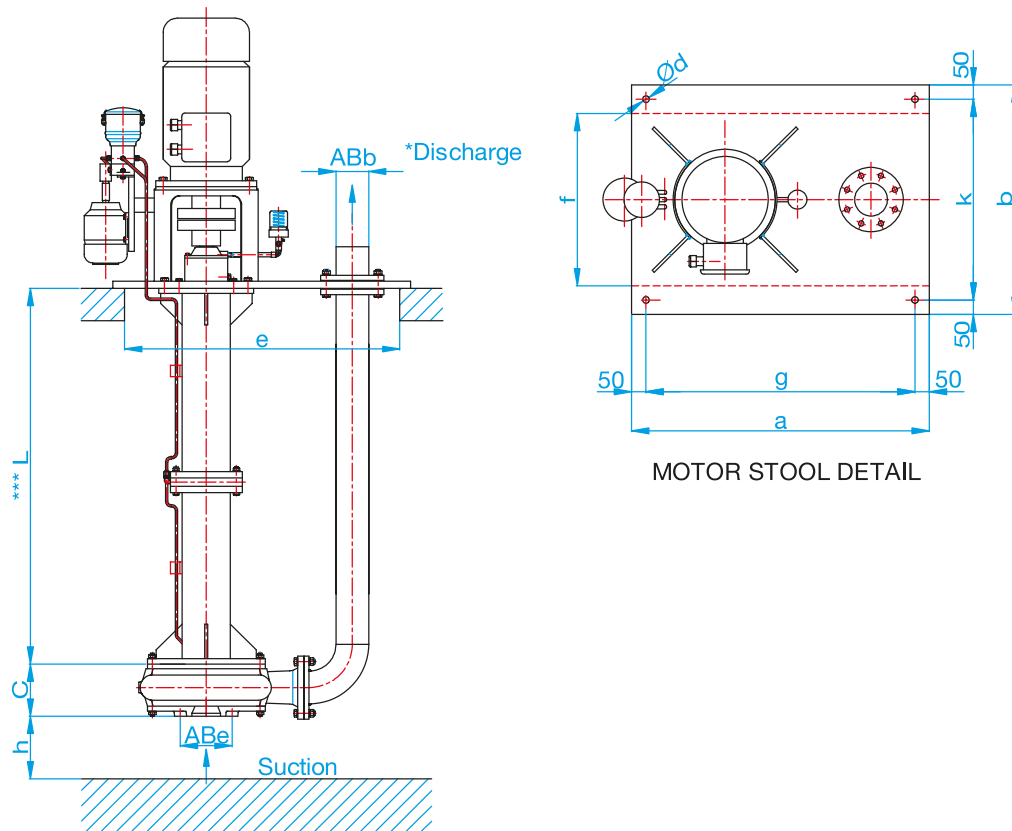
PUMP TYPE	Discharge ABb-PN10	Suction ABe-PN10	a	b	g	Ød	e	f	p	h	C	k	m	n	AXA	ZxZ	Øs	Anchor Bolt
50/200V	50	65	400	450	350	20	400	300	125	240	95	290	145	200	250x250	200x200	20	M18X200
80/160	80	80	700	700	600	23	450	500	150	340	135	405	190	280	350x350	250x250	23	M20x200
80/250							600				118	400						
80/270							500				128	410						
80/315							600				152	410						
100/250	100	100	700	700	600	28	500	500	195	375	170	465	200	235	400x400	300x300	28	M24x250
100/270							500				132	447						
100/315							600				195	475						
100/400							600				230	480						
125/250N-F	125	125	800	800	700	28	650	550	185	400	210	540	215	315	450x450	350x350	28	M27x300
125/315N-F							650				215	485						
125/400M							750				240	510						
150/315M							750				260	580						
150/400M	150	150	900	900	800	28	750	640	210	460	276	472	275	300	500x500	450x450	30	M27x300
200/315N							750				282	682						
200/315F							750				302	700						
200/400M							750				366	690						
250/400N	250	250	1000	1000	900	28	850	760	225	550	335	690	350	480	650x650	500x500	30	M27x300
250/400M							850				304	760						
250/400F							850				332	853						
250/400F							850				332	853						

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MOTOR STOOL DETAIL

PUMP TYPE/	Discharge ABb-PN10	Suction ABe	C	h min.	e	a	g	b	k	f	Ød	Anchor Bolt
50/200V	50	65	95	150	600	600	500	450	350	300	20	M18x200
80/160V	80	80	135	200				750	750	650	500	400
80/250			118		750	600	500					
80/270			128									
80/315			152									
100/250	100	100	170	250	800	800	700	700	600	500	28	M24x250
100/270			132					800	700	600		
100/315			195									
100/400			230									
125/250N-F	125	125	210	300	800	800	700	700	600	500		
125/315N-F			215					700	600			
125/400M			240									
150/315M	150	150	260	400	1250	1250	1150	800	700	600		
150/400M			276						750	650		
200/315N	200	200	282	450	1250	1250	1150	1000	750	650		
200/315F			315									
200/400M			366									
250/400N	250	250	335	500	1400	1500	1400	1000	900	800		
250/400M			304									
250/400F			300									

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