

**Sewage And
Waste Water Pumps**



 **calpeda[®]**

CE

Technical specifications

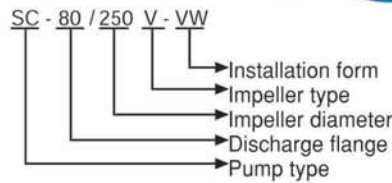
- Calpeda SC series consists of centrifugal sewage and waste water pumps. They are used for pumping muddy liquids like sewage and other solid – water mixtures, with high viscosity.
- For the vertical column pipe types 1500 mm and 1000 mm long standard pipes used. Required length can be adjusted between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

Fields of applications

- Domestic and industrial raw sewage water pumping
- Waste water handling plants
- Factory waste waters
- Pumping of fluid with high viscosity and suspensions.
- Pumping liquids in paint plants
- Pumping industrial and chemical waste water.
- Iron and steel industry
- Paper pulp cellulose plants
- Pumping of cooling water
- Draining, deterring

General details

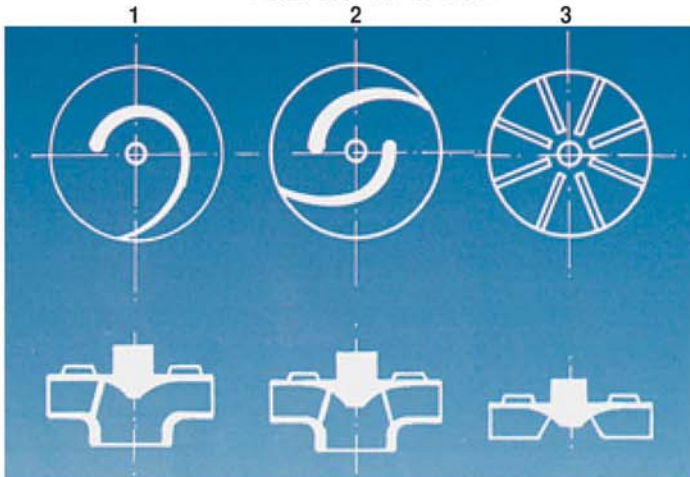
- Suction flange sizes : DN 50 – DN 600
- Discharge flange sizes : DN 50 – DN 600
- Capacity : 10 – 3000 m³/h
- Discharge head : 5 – 60 m
- Operating temperature : - 10°C - + 75°C



Fluid types

- Unscreened sewage and other waste water types with high solids concentration Pumps are designed to tolerate large solids (Ø 30 Ø - 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. Measures must be taken to lower these values.

PUMP IMPELLER TYPE



SC - C - SINGLE CHANNEL (NON - CLOG) IMPELLERS
 These types of impellers are designed to handle large solids. They do not overload the motor at low heads.

SC - N - DOUBLE CHANNEL IMPELLERS
 These types of impellers are usually used in large size pumps. Because of rotational symmetry they operate in balance and vibration free. They can pass solids as wide as impeller channels.

SC - V - VORTEX IMPELLERS
 These types of impellers do not have closed channels. The impeller is placed behind the volute. Due to the rotation of the mass of fluid by the impeller, free vortex motion occurs, providing the pumping effect. As a result of this special design they can easily pump long fibrous matter.

MATERIALS

PART	MATERIALS	
	BRONZE FITTED	CAST IRON
Casing	Cast iron (G.JL 250) (EN-JL 1040) Bronze	Cast iron (G.JL 250) (EN-JL 1040)
Impeller	Cast iron (G.JL 250) (EN-JL 1040)	Cast iron (G.JL 250) (EN-JL 1040)
Diffusor	Cast iron (G.JL 250) (EN-JL 1040) Bronze	Cast iron (G.JL 250) (EN-JL 1040)
Wear ring	Cast iron (G.JL 250) (EN-JL 1040)	Cast iron (G.JL 250) (EN-JL 1040)
Shaft	Stainless steel (AISI 420) (1.4021)	Carbon steel (1.0501)
Shaft sleeve	Stainless steel (AISI 420) (1.4021)	Stainless steel (AISI 420) (1.4021)
Column pipes	(1.0120) welding construction	(1.0120) welding construction

NOTE: All pump components can be manufactured in different materials optionally according to the properties of the liquid to be pumped.

SC SERIES SEWAGE PUMPS MOUNTING ARRANGEMENTS

- 1) VW Vertical wet-pit sewage pump with suspension pipe
- 2) VD Vertical dry-pit sewage pump with suspension pipe
- 3) VDS Vertical dry-pit sewage pump with universal joint shaft

- 4) VDM Vertical dry-pit monoblock sewage pump
- 5) HDS Horizontal dry-pit sewage pump

1) Form VW

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 either carried out by a manual grease gun or by means of an automatic greaser. For VW 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 metres. Form VW is manufactured for branch sizes up to 500 mm and for depths up to 8 meters.



2) Form VD

Vertical dry-pit sewage pump with suspension pipe:

VD 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. Form VD permits inspection and maintenance without disturbing suction and discharge piping. Form VD 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.

Form VD is manufactured for branch sizes up to 500 mm and for depths up to 10 meters.



3) Form VDS

Vertical dry-pit sewage pump with universal joint shaft:

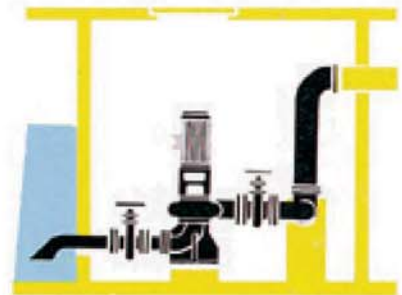
Form VDS is especially suitable for installation into deep and dry-pits and for large discharge. The pump unit is supported by foot and is connected to the motor by an exposed vertical shaft. It has all the properties of form VD. Form VDS is manufactured for branch sizes of 200 mm and over. Mounting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



4) Form VDM

Vertical dry-pit monoblock sewage pump:

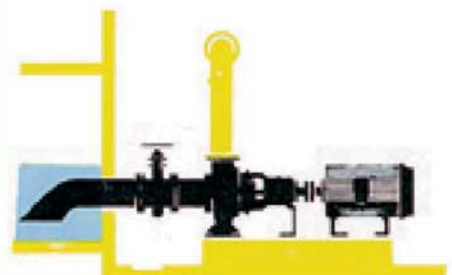
This pump is suitable for installation into dry-pits which are not subject to flooding and for installation on the ground level. Pump and motor form a compact unit. Form VDM permits inspection and maintenance without disturbing suction and discharge piping and casing. The shaft can either be sealed off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



5) Form HDS

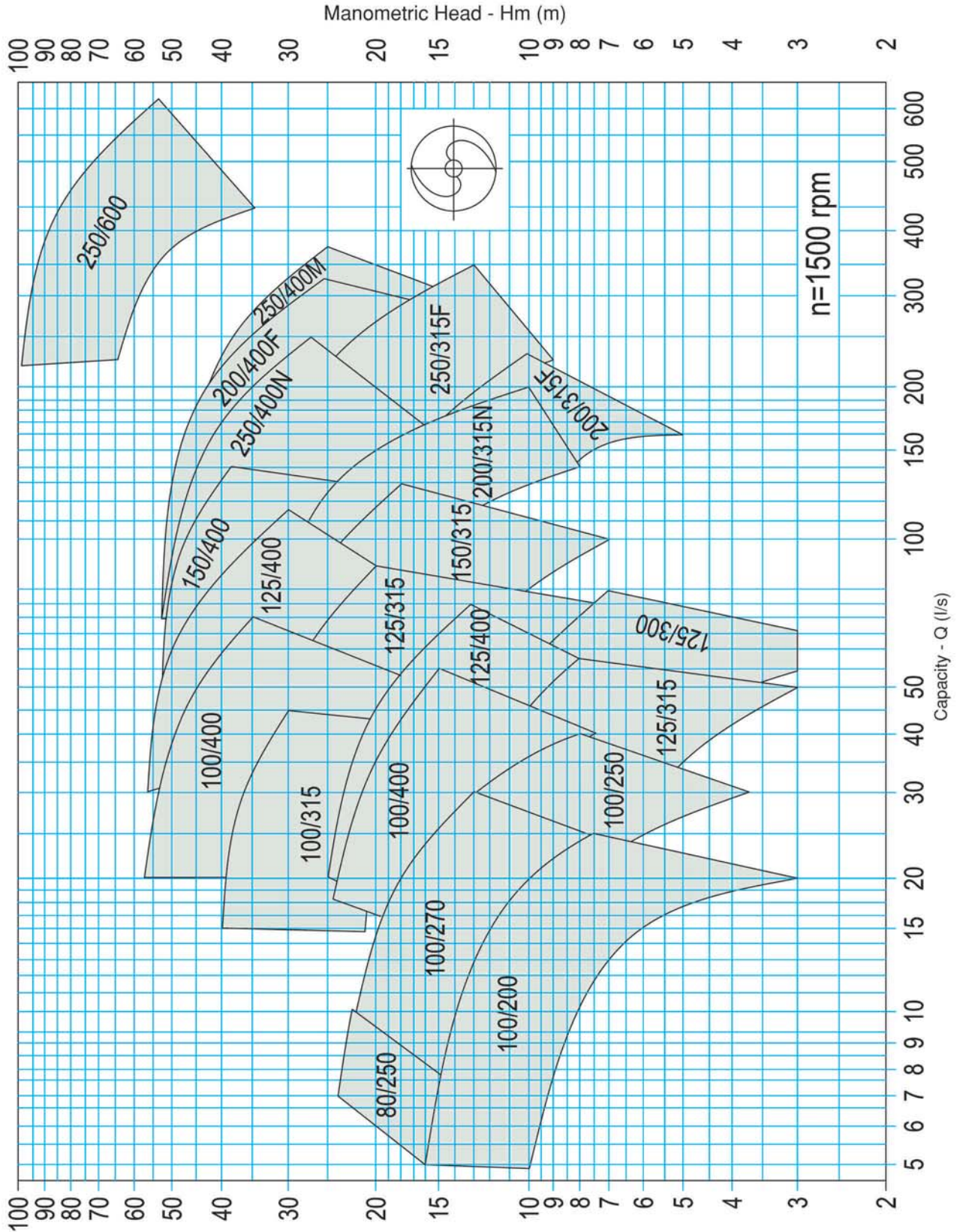
Horizontal dry-pit sewage pump:

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. Form HDS can be equipped with a fly-wheel to avoid water hammer in the system. The pump shaft is supported by two ball bearings with oil or grease lubrication. HDS form pumps are manufactured for all branch sizes shown in this booklet.



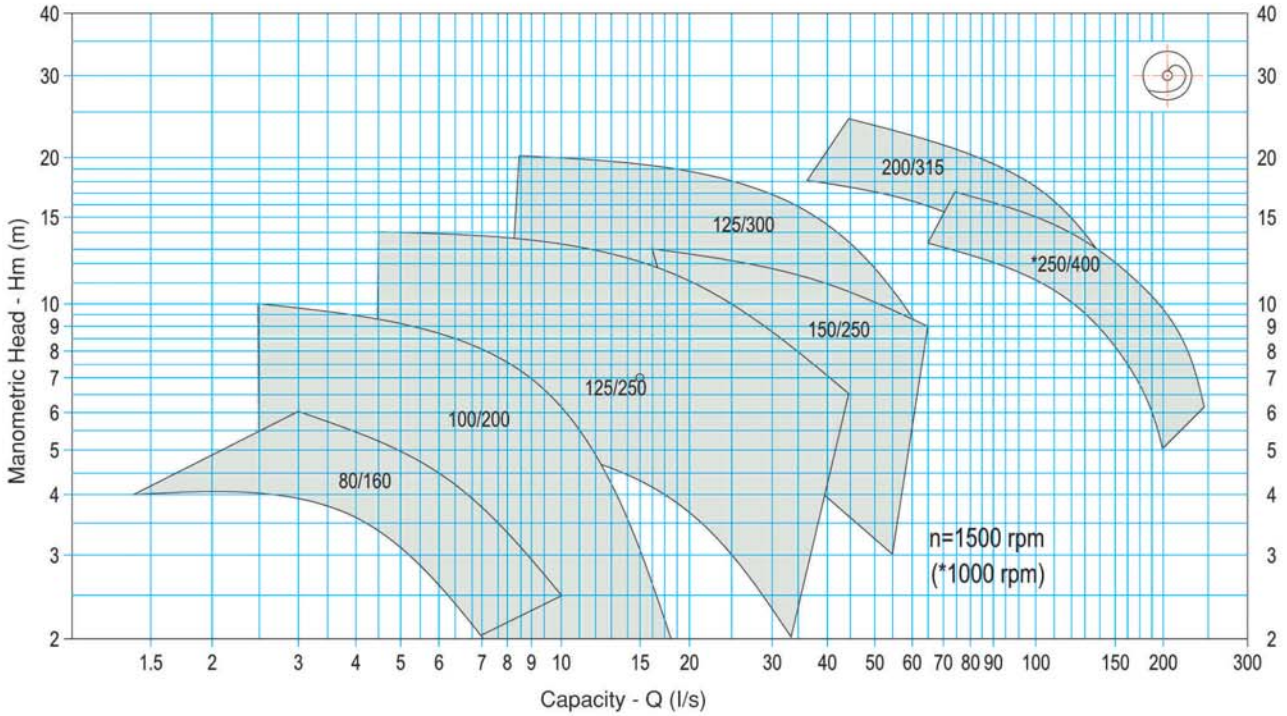
SC Series Pumps Group Performance Curves

SC - N SERIES PUMPS GROUP PERFORMANCE CURVES (DOUBLE CHANNEL IMPELLER) (n = 1500 rpm)

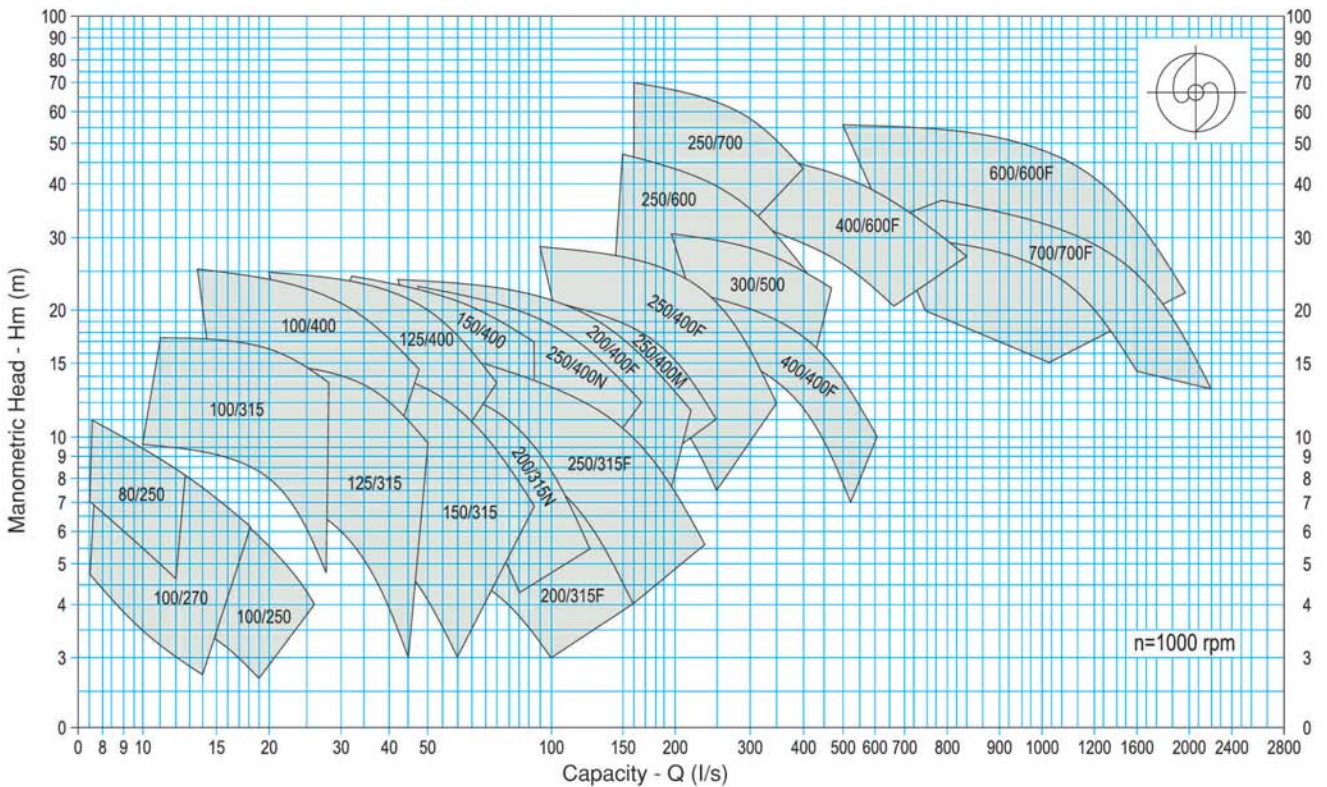


SC Series Pumps Group Performance Curves

SC - C SERIES PUMPS GROUP PERFORMANCE CURVES (SINGLE CHANNEL IMPELLER) (n = 1500 rpm)

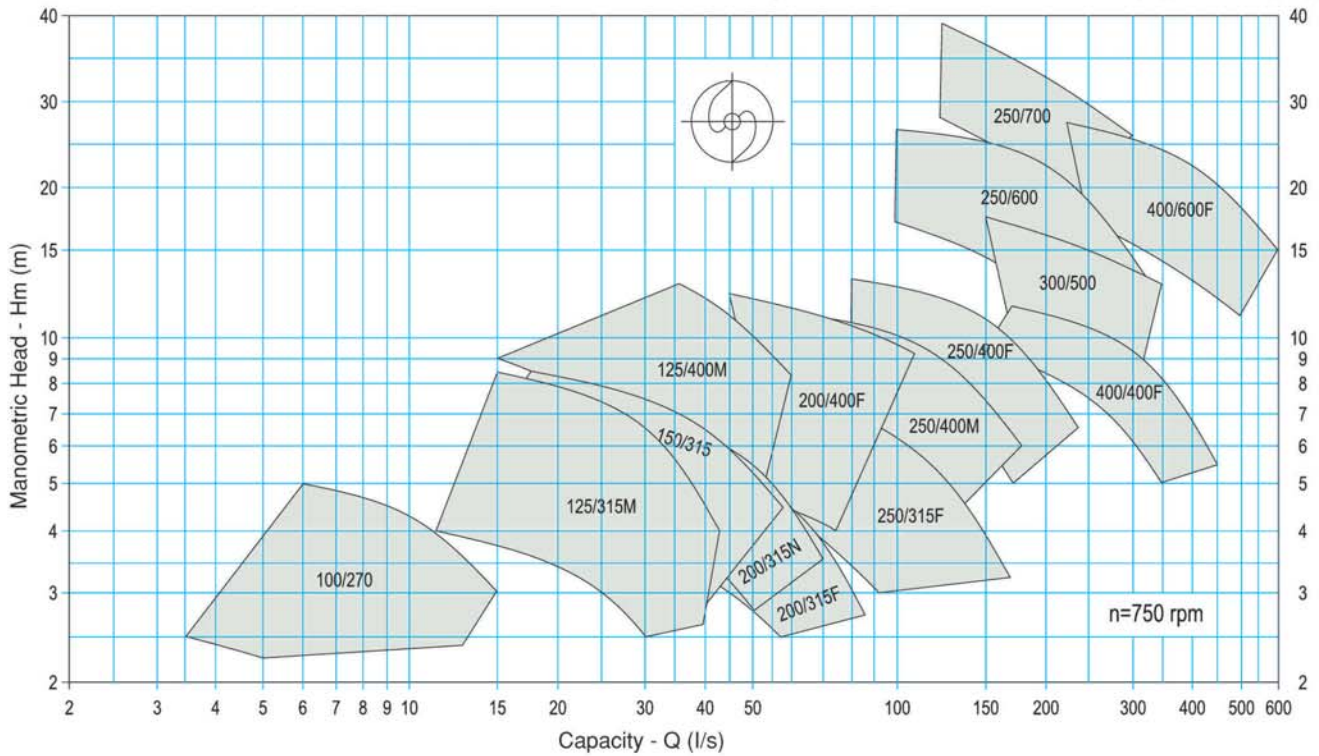


SC - N SERIES PUMPS GROUP PERFORMANCE CURVES (DOUBLE CHANNEL IMPELLER) (n = 1000 rpm)

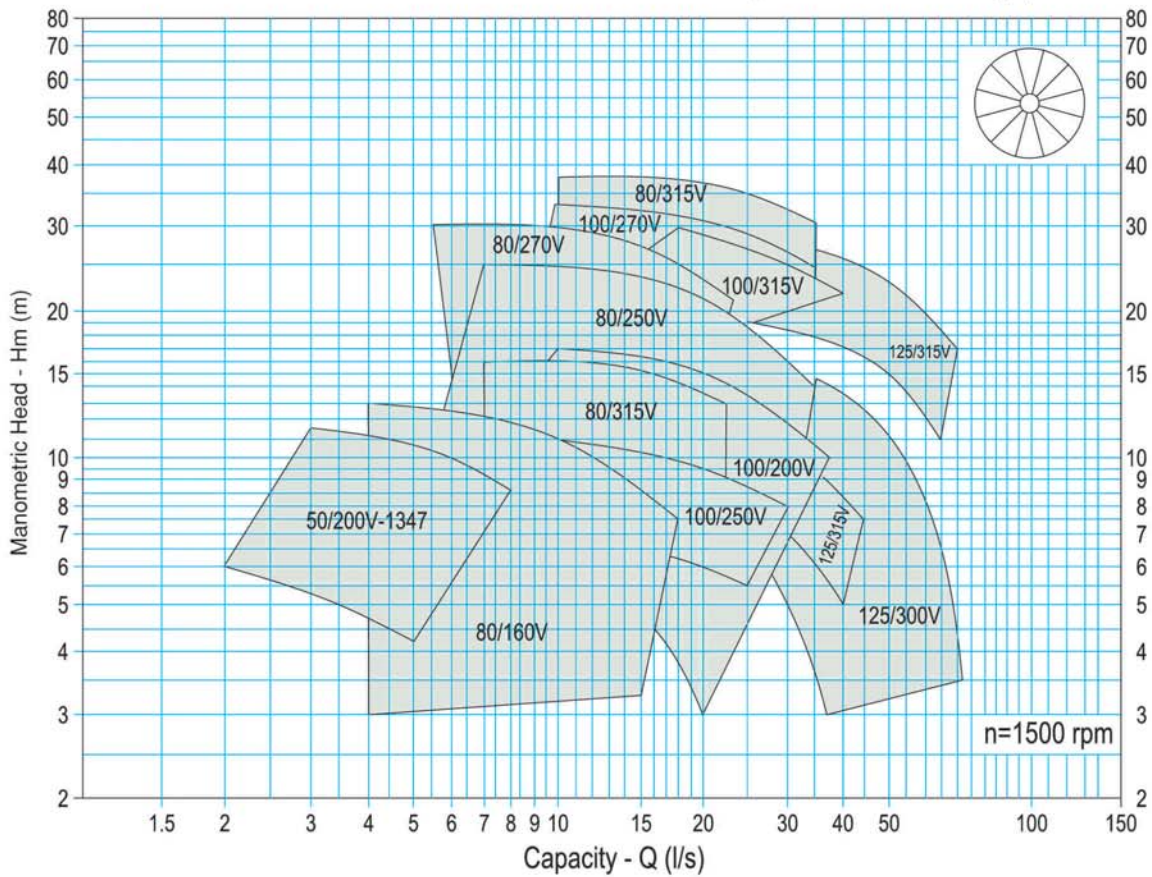


SC Series Pumps Group Performance Curves

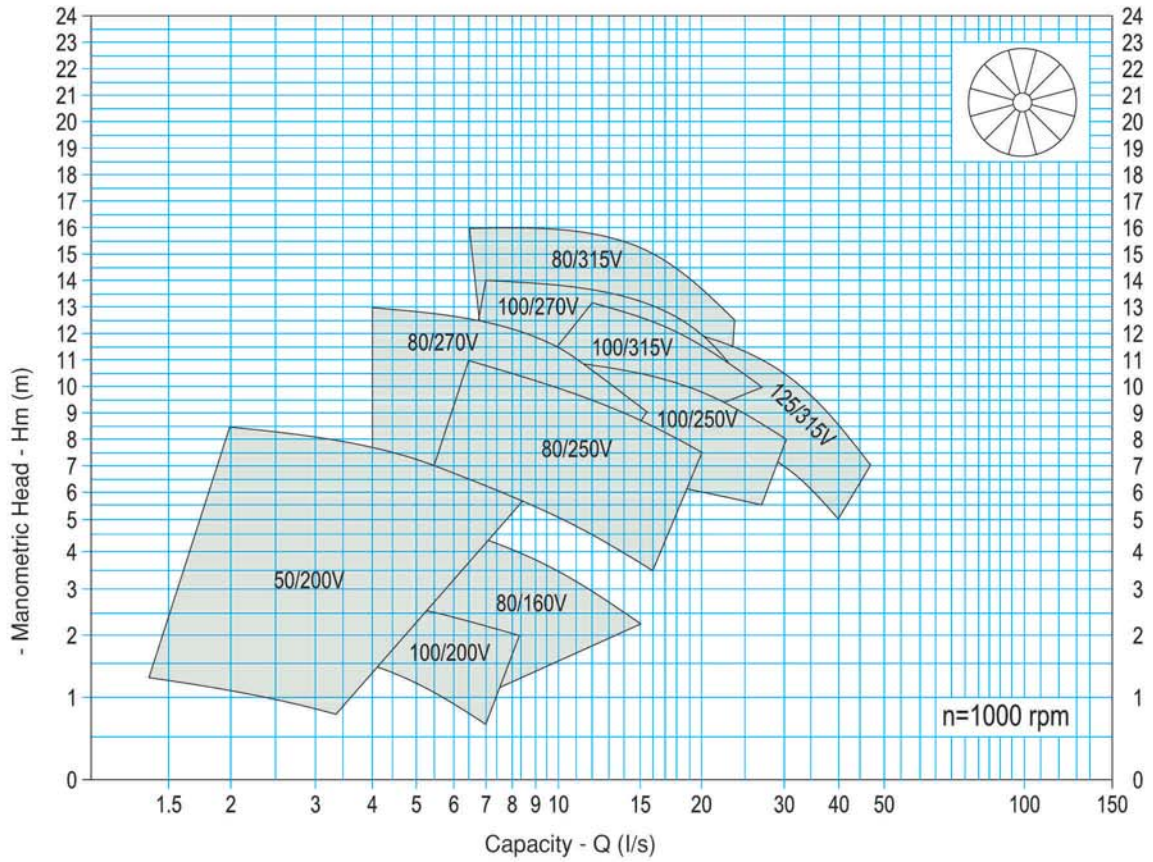
SC - N SERIES PUMPS GROUP PERFORMANCE CURVES (DOUBLE CHANNEL IMPELLER) (n = 750 rpm)



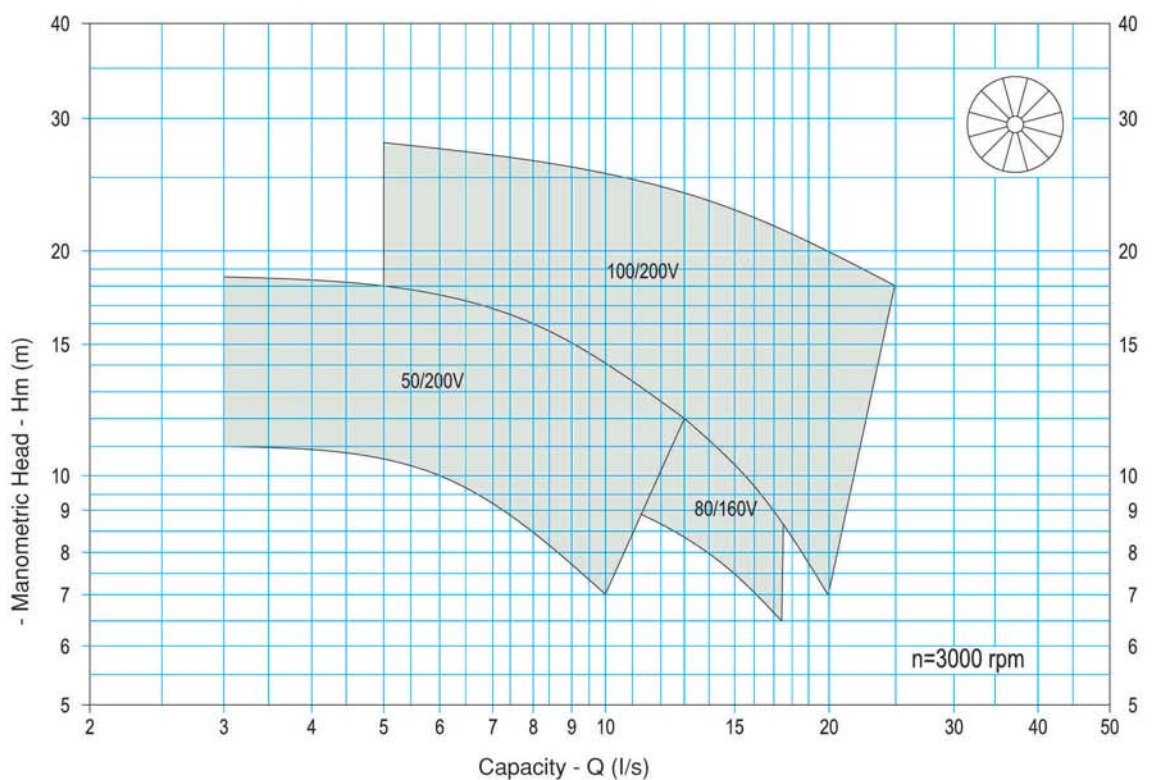
SC - V SERIES PUMPS GROUP PERFORMANCE CURVES (VORTEX IMPELLER) (n = 1500 rpm)



SC - V SERIES PUMPS GROUP PERFORMANCE CURVES (VORTEX IMPELLER) (n = 1000 rpm)

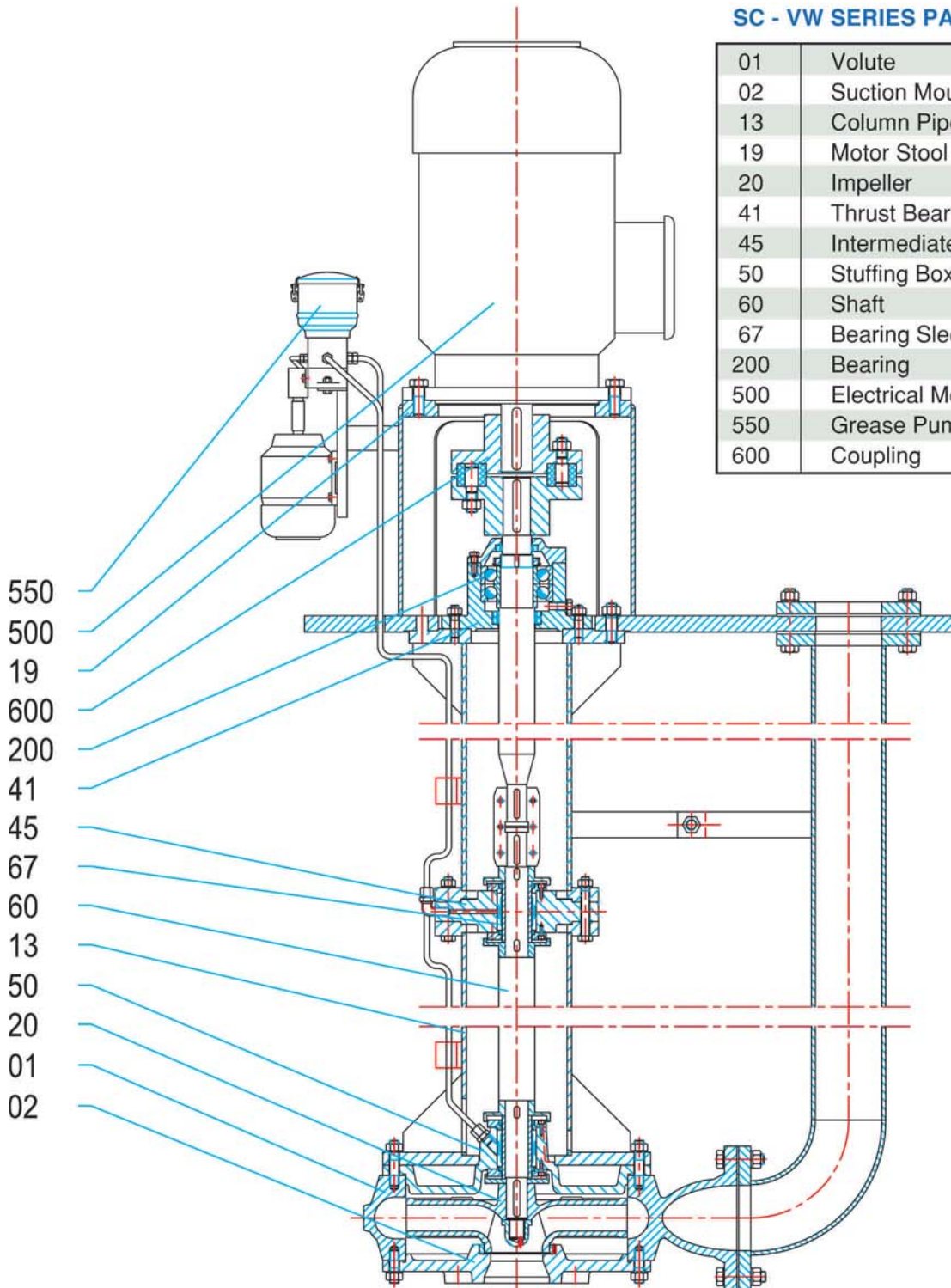


SC - V SERIES PUMPS GROUP PERFORMANCE CURVES (VORTEX IMPELLER) (n = 3000 rpm)



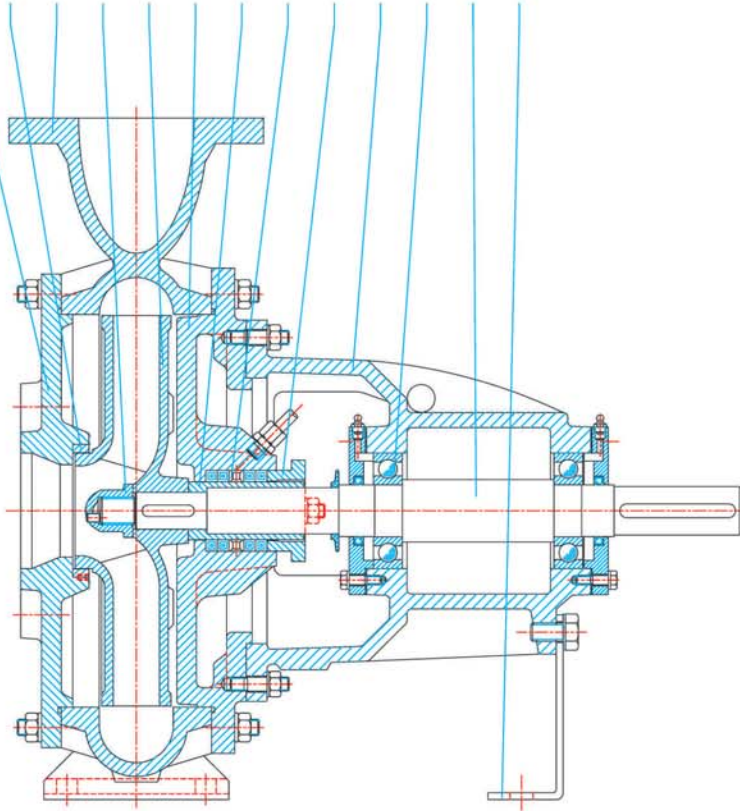
SC - VW SERIES PART LIST

01	Volute
02	Suction Mouth
13	Column 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



SC - HDS and VDM Series Pumps Sectional Drawings And Parts List

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

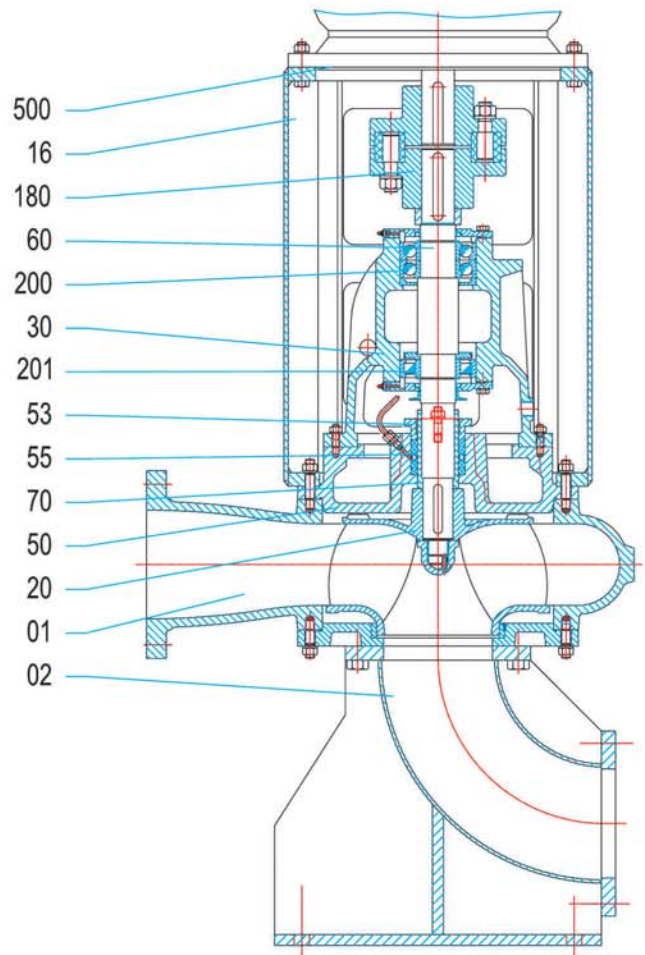


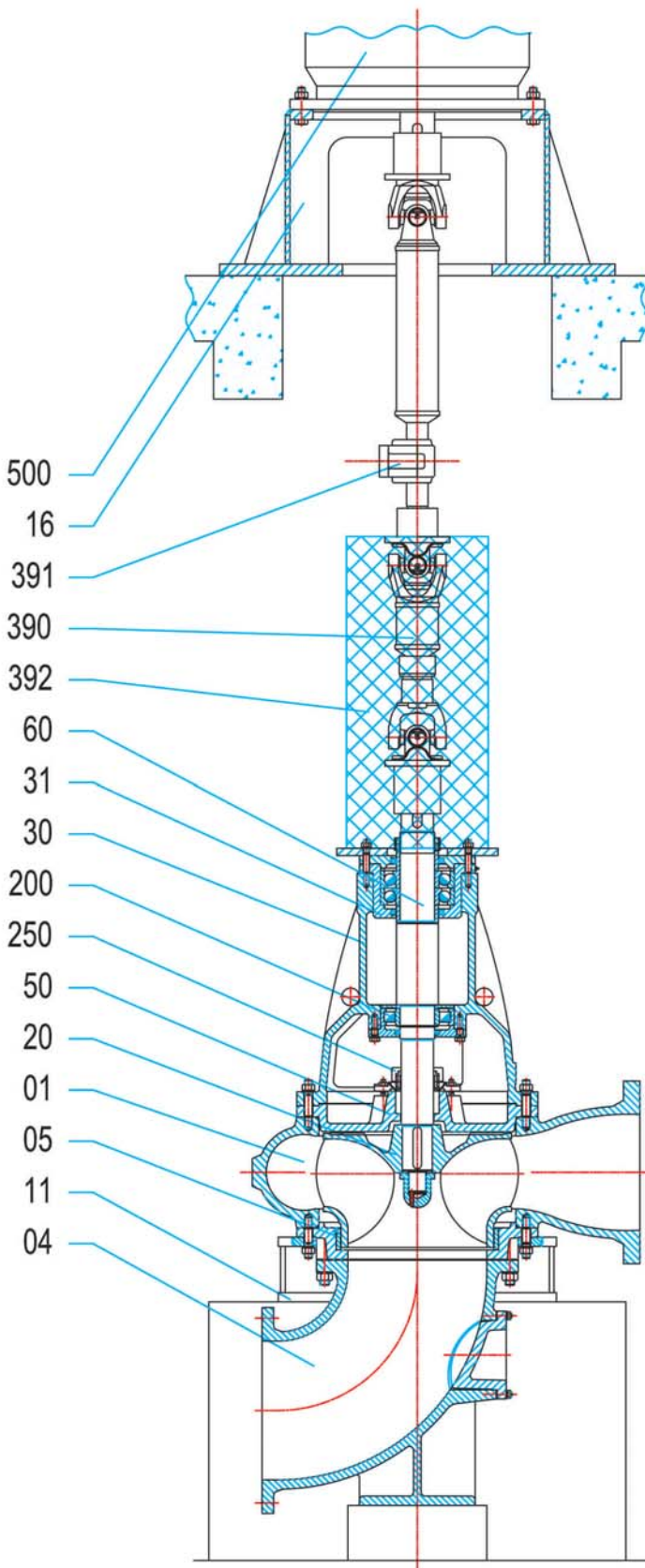
SC - HDS SERIES PARTS LIST

01	Volute
02	Suction Mouth
05	Wear Ring
11	Support Foot
20	Impeller
30	Bearing Housing
50	Stuffing Box
53	Gland
55	Lantern Ring
60	Shaft
65	Impeller Nut
70	Shaft Sleeve
200	Bearing

SC - VDM SERIES PARTS LIST

01	Volute
02	Suction Bend
16	Motor Stool
20	Impeller
30	Bearing Housing
50	Stuffing Box
53	Gland
55	Lantern Ring
60	Shaft
70	Shaft Sleeve
180	Coupling
200	Bearing
201	Bearing
500	Electric Motor

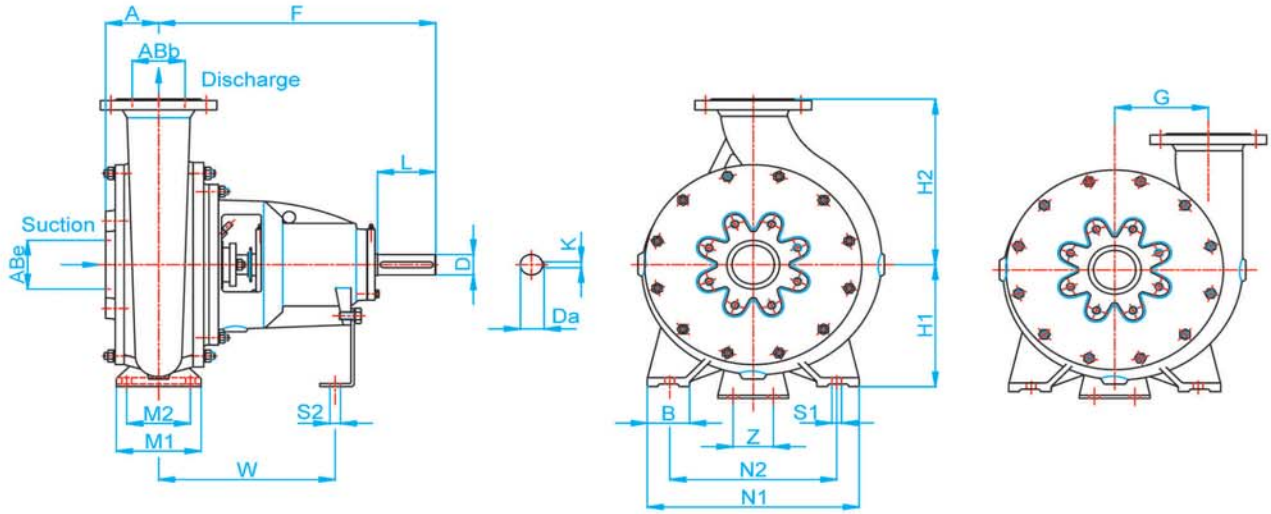




SC - VDS SERIES PUMPS PARTS LIST

01	Volute
04	Suction Bendh
05	Wear Ring
11	Support Foot
16	Motor Stool
20	Impeller
30	Bearing Housing
31	Bearing Housing
50	Stuffing Box
60	Shaft
200	Bearing
250	Mechanical Seal
390	Cardan Shaft
391	Intermadiate Bearing
392	Safety Guard
500	Electric Motor

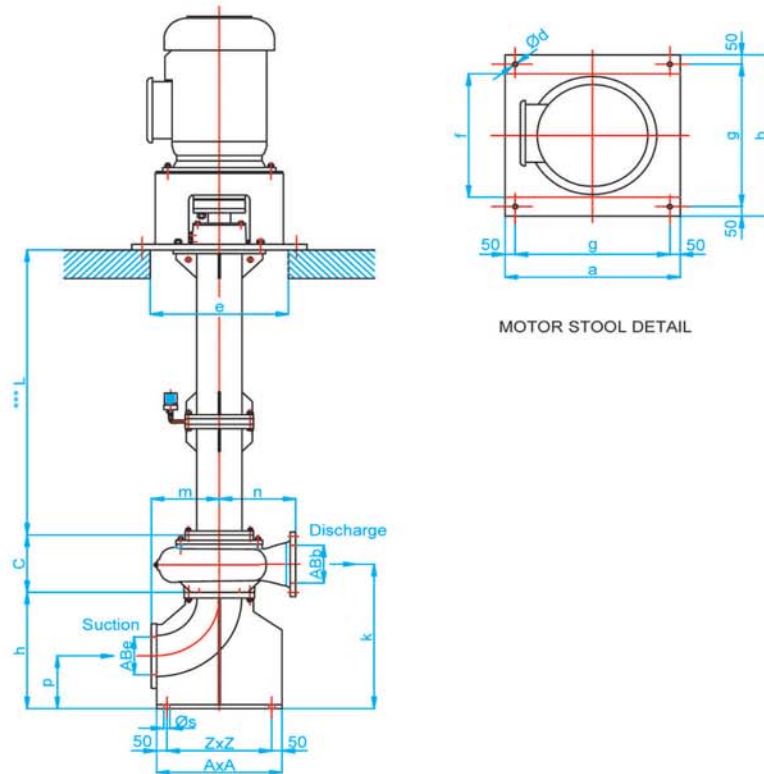
SC - HDS Series Horizontal Sewage Pumps Dimension Table



PUMP TYPE	Discharge ABb-PN10	Suction ABe-PN10	A	F	H1	H2	B	M1	M2	N1	N2	S1	D	Da	K	L	W	Z	S2	G
50/200V	50	65	80	440	188	200	-	-	-	-	-	-								
80/160			65	463												70	-	190		-
80/250	80	80	60	487	200	280							32	35	10					
80/270			61	472	225	235	80	125	85	360	280								80	326
80/315			70	555	250	340	85	160	120	175	400	320	M16			110	365		M12	135
100/250			78	465		300														
100/270V	100	100	72	448	188	235							32	35	10	70	-	190		135
100/270M			164																	
100/315			100	523	250	340	80	160	120	400	315	M16	42	45	12	110	333	140		-
100/400			104	553	315	367	120	200	150	500	400	M20	32	35	10	70	369	150	M20	-
125/250	125	125	120	496	250	315							32	35	10					
125/315			103	558	280															80
125/400					315	370											398			-
150/315	150	150	118	569	255	380							42	45	12					
150/400			112	630			100	200	150	500	400									
200/315N	200	200	127	617	315	400							52	56	16	110				
200/315F			148	630	330	370	150	240	160	600	550	450					M20	52	56	16
250/400N	250	250	140										60	64	18					
250/400M			160	864	380	480	140	280	200	650	500									
250/400F			188													140				-
250/600	300	300	280	741	550	650							70	75	20		665	190		-
300/500	300	300	211	886	500	585	160	350	250	800	660								778	
400/400	400	400	243	850	580	800	150		270			M30				116	606			-
400/600		500	417	1035	550	700	160	400	300	900	740	M27	80	85	22	150	900	240		
600/600	600	600	422	1202	800	700	325	500	400	1300	1000	M36	100	106	28	210	814	400	M24	500

1) Dimensions (mm) subject to change without prior notice!
 2) For flange dimensions refer to flange standards.

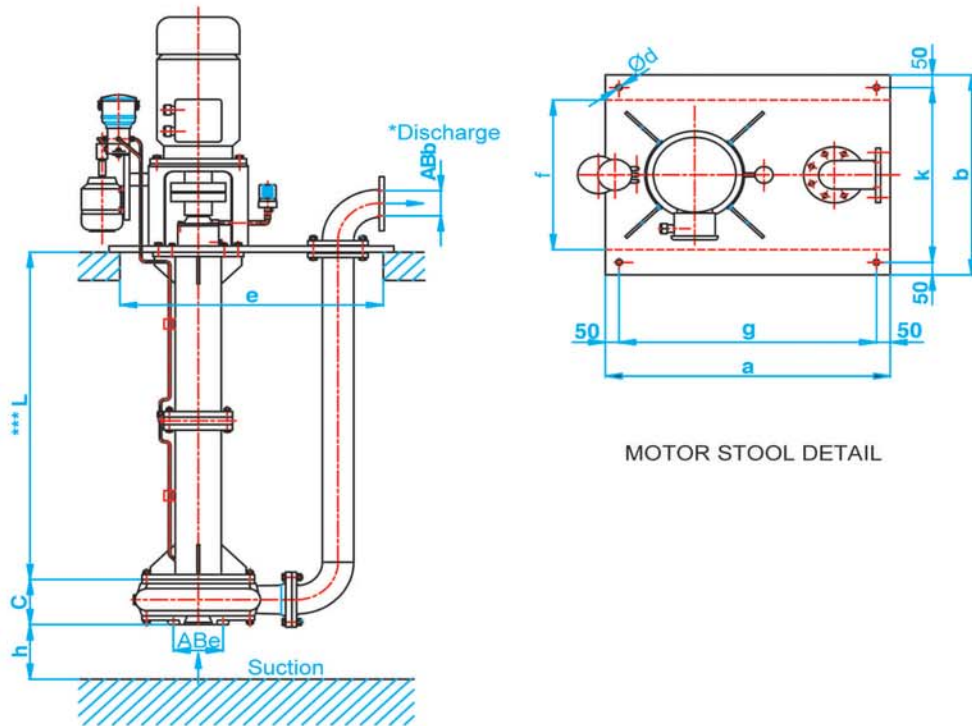
SC - VD Series Vertical Suspension Pipe Sewage Pumps Dimension Table
Dry Installation



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	291	143	200	250x250	200x200	20	M18X200	
80/160			450	500	400		450	350				118	403						
80/250	80	80	700	700	600	23	600	500	150	338	118	398	189	280	400x400	300x300	23	M20x200	
80/270							500					121	267						
80/315	100	100	700	700	600	28	600	500	195	375	122	447	200	300	400x400	300x300	28	M24x250	
100/250							500					132							235
100/270							224					539							367
100/315							206					456							370
100/400	125	125	800	800	700	28	650	450	185	400	210	540	217	315	500x500	400x400	28	M24x250	
125/250N-F												215	510	260					370
125/315N-F	150	150	900	900	800	28	750	640	210	460	262	535	275	400	600x600	500x500	28	M24x250	
150/315M												282	682	326					340
150/400M	200	200	900	900	800	28	750	640	225	1100	282	682	326	370	600x600	500x500	28	M24x250	
200/315N												315	700	370					400
200/315F	250	250	1000	1000	900	28	850	760	250	1500	335	690	325	400	600x600	500x500	28	M24x250	
250/400N												360	820	400					400
250/400M	300	300	1000	1000	900	28	850	760	250	1500	360	820	400	400	600x600	500x500	28	M24x250	
250/400F												380	856	400					400

1) Dimensions (mm) subject to change without prior notice!
 2) For flange dimensions refer to flange standards.
 *** L = Total column pipe length

SC - VN Series Vertical Suspension Pipe Sewage Pumps Dimension Table
Wet Installation



PUMP TYPE	Discharge ABh-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			135	200				500	400	350					
80/250			118					750	750	650			700	600	500
80/270			121					900	900	800			750	650	550
80/315	145	250	800		800	700	700	600	500						
100/250	150		1000	1000	900	800	700	600	500						
100/270	132									800	800	700	700	600	500
100/315	224									1000	1000	900	800	700	600
100/400	206	800								800	700	700	600	500	
125/250N-F	125	125	210	300	1000	1000	900	800	700	600	28	M24x250			
125/315N-F			215												
125/400M	150	150	262	400	1100	1100	1000	800	700	600	28	M24x250			
150/315M			282												
150/400M			315												
200/315N			335												
200/315F	200	200	315	450	1400	1500	1400	1000	900	800	28	M24x250			
200/400M			335												
250/400N	250	250	360	500	1400	1500	1400	1000	900	800	28	M24x250			
250/400M			360												
250/400F			300										380		

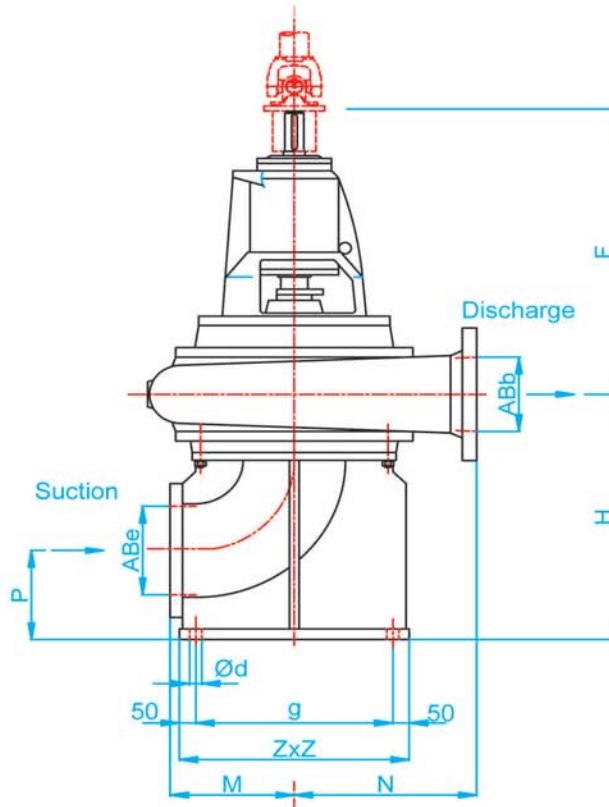
1) Dimensions (mm) subject to change without prior notice!

2) For flange dimensions refer to flange standards.

*** L = Total column pipe length

SC - VDS Series Vertical Sewage Pumps Dimension Table

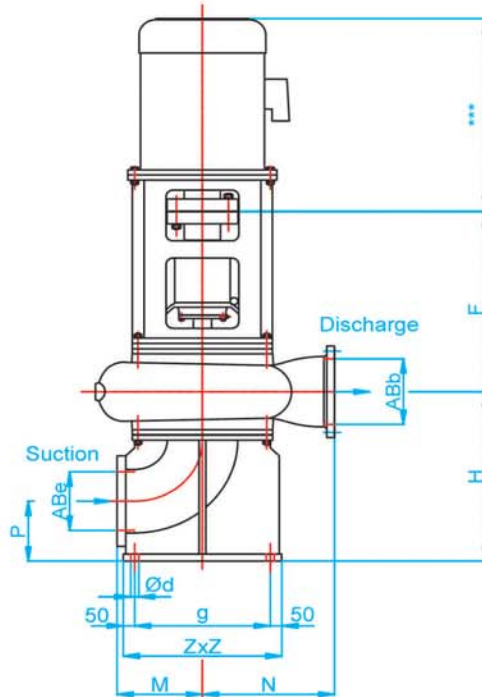
Dry Installation with Cardan Shaft Drive



PUMP TYPE	Discharge ABb-PN10	Suction ABe-PN10	F	H	M	N	P	ZxZ	g	Ød	Anchor Bolt
50/200V	50	65	456	290	143	200	125	250x250	150x150	23	M20x200
80/160	80	80		403	200	280	150				
80/250				350	194	235					
80/270				375	340						
80/315	100	100	465	450	200	300	195	400*400	300*300	28	M24x250
100/250			488	448	235						
100/270V			550	450	340						
100/315			550	450	367						
100/400	125	125	527	510	265	315	185	500*500	400*400	28	M24x250
125/315			557	520	370						
125/400			551	580	275	380					
150/315	150	150	565	680	326	370	225	600*600	500*500	28	M24x250
200/315N	200	200	585	690	400	480					
200/315F			741	790	478	300					
250/400N	250	250	741	930	400	650	250	600*600	500*500	28	M24x250
250/400M				960	478	300	700*700	600*600			
250/400F	250	300	886	835	365	585	300	700*700	600*600	30	M27x300
250/600	300	400	850	958	540	540	288	900*1200	800*1100		
300/500	400	500	1035	1132	540	700	300	900*1200	800*1100		
400/400	600	600	1202	1522	600	500	500	1200*1200	1100*1100		

1) Dimensions (mm) subject to change without prior notice!

SC - VDM Series Vertical Monoblock Sewage Pumps Dimension Table
Dry Installation



PUMP TYPE	Discharge ABb-PN10	Suction ABe-PN10	F	H	M	N	P	ZxZ	g	Ød	Anchor Bolt				
50/200V	50	65	473	290	143	200	125	250x250	150x150	23	M20x200				
80/160			485	403	200	280									
80/250	80	80	456	350	194	150	400x400	300x300							
80/270			465	375					235						
80/315			465	375	340										
100/250	100	100	488	450	200	195	400x400	300x300							
100/270			448	448					235						
100/315			550	450	340										
100/400			550	450	367										
125/250	125	125	475	520	265	315	185	500x500	400x400			28	M24x250		
125/315			527	510						370					
125/400	150	150	551	580	275	300	210	500x500	400x400						
150/315			630	574						400					
150/400			565	680	326					370	225			600x600	500x500
200/315N			585	690											
200/315F	768	700	400	480	250	700x700	600x600								
200/400	768	700						370							
250/400N	250	250	741					690	400	250	700x700			600x600	
250/400M			741					790							480
250/400F			741	960	478	300	700x700	600x600							
250/600	300	300	930	400	400	650	250	600x600	500x500			30	M27x300		
300/500			886	835						365	585			700x700	600x600
400/400	400	400	850	958	540	540	300	900*1200	800*1100						
400/600		500	1035	1132						700					
600/600	600	600	1202	1522	600	700	500	1200*1200	1100*1100						

1) Dimensions (mm) subject to change without prior notice!

SC-E/K Series Submersible Pumps With Tube

APPLICATIONS:

SC - E / K series pumps are axial and mixed flow submersible pumps with tube operating submerged. They are for high capacity and low head values.

- De-watering
- High capacity agricultural irrigation systems
- Cooling water pumping
- Circulation water pumping for fish farming

MATERIALS:

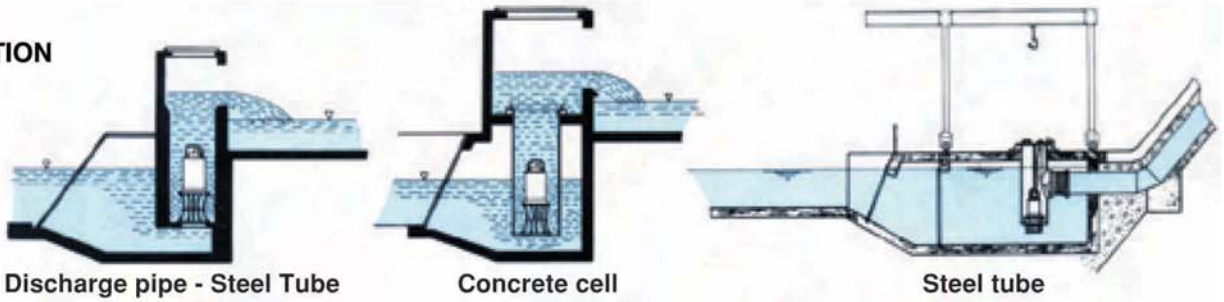
- Casing, Diffuser : Cast iron (EN-JL 1040)
- Impeller : Stainless steel
- Shaft : Stainless steel
- Shaft sealing : Mechanical seal
- Tube : (1.0120) sheet metal construction
- Cable : H07RN -F Rubber coated
- Paint : Epoxy coal tar
- Motor : 400 V 50 Hz F insulation IP 68 Thermistor protected.
- Impeller type : Axial or mixed flow open type impeller.
- Max. fluid temperature : 40 °C



PERFORMANCE DATA

Capacity (L/s)	140 - 3000
Discharge Head (mwc)	2 - 20
Tube Diameter (mm)	700 - 1400
Motor Power (KW)	22 - 315

INSTALLATION



IMPELLER

SC-E
Open axial type



SC-K
Mixed flow type

