SP-L SERIES

Water & Wast Water Submersible Pumps

GENERAL INFORMATION

Discharge Flange	DN 50 - DN 600
Capacity	Up to 3500 m /h
Head	Up to 100 m
Frequency	Three Phase 50 HZ - 60 HZ
Protection Class	IP 68
Insulation	Class H
Fluid Temperature	Up to 40 C°

Transferable Liquids

- Water and sewage and other waste water types with large solids diameter.

Applications

Water and Waste water

Design Features

- Vertical, wide volute casing, single stage submersible type centrifugal pumps with enclosed, semi-open or vortex types impeller
- Basic models covering wide range of operational area.
- Electric motor isolation class is IP 68.
- Discharge flanges conform to EN 1092-2 / PN 10. (EN 1092-1 / PN 10 for steel or stainless steel casing .
- All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.
- Axial thrust is balanced by impeller back ribs.
- SC model with motor cooling jacket is designed to work in dry surrounding.
- Bearings of SP-L types pumps are "life time lubricated".

Pump Code

SP-L 50 - 250

- Nominal Impeller Diameter (mm)
- Discharge Flange (inch)
- Pump Type

DESCRIPTIONS

DIN EN AISI/SAE/ASTM

Cast Iron	0.6025	EN-GJL-250 (GG25)	A48 CLASS 40B
Ductile Iron Casting	0.7040	EN-GJS-400-15 (GGG 40)	A536 60-40-18
Ductile Iron Casting	0.7043	EN-GJS-400-18-LT (GGG40.3)	A536 60-40-18
Steel Casting	1.0619	GP240GHGS-C25	A216 WCB
Chrome Nickel Steel Casting	1.4308	GX5CrNi19-10	A351 CF8
Chrome Nickel Steel Casting (Low Carbon)	1.4309	GX2CrNi19-11	A351 CF3
Chrome Nickel Molybdenum Steel Casting	1.4408	GX5CrNiMo19-11-2	A351 CF8M
Chrome Nickel Molybdenum Steel Casting (L.C)	1.4409	GX2CrNiMo 19-11-2	A351 CF3M
Austenitic Steel Casting	1.4500	GX7NiCrMoCuNb 25-20	A351 CN7M
Austenitic Ferritic Steel Casting (Dublex)	1.4517	GX2CrNiMoCuN 25-6-3-3	A890 CD4MCuN
Austenitic Ferritic Steel Casting (S.Dublex)	1.4469	GX2CrNiMoN 26-7-4	A890 CE3MN
Martensitic Stainless Steel Casting	1.4317	GX4CrNi 13-4	A352 CA6NM
Martensitic Stainless Steel Casting	1.4008	GX7CrNiMo 12-1	A217 CA15
Bronze Casting (Tinned)	2.1050.01	G-CuSn10	B427 C90700
Bronze Casting (Nickel Alloy)	2.0975.01	G-CuAl10Ni	B148 C95500
Bronze Casting (Leaded)	2.1096.01	G-CuSn5ZnPb	B584 C83600
Chromium Steel	1.4021	X20Cr13	A276 Type 420
Chromium Steel (Heat Treatment)	1.4021	X20Cr13	A276 Type 420+QT
Chrome Nickel Steel	1.4301	X5CrNi 18-10	A276 Type 304
Chrome Nickel Molybdenum Steel (L.Carbon)	1.4404	X2CrNiMo 17-12-2	A276 Type 316L
Dublex (Austenitic Ferritic) Steel	1.4460	X3CrNiMoN 27-5-2	AISI 329
Dublex (Austenitic Ferritic) Steel	1.4462	X2CrNiMoN 22-5-3	UNS S32205
Ductile Iron Casting	0.7050	EN-GJS-500-7-LT (GGG 50)	A536 70-50-05

Motor

Squirrel cage,high performance induction motor, specially designed and manufactured for submersible and dry installations. Stator windings are trickle impregnated in resin to class H insulation.

Shaft

A short overhang of the shaft virtually eliminates shaft deflection. This results in significantly increased sealand bearing life, low vibration and quiet operation.

Seals

Two sets of mechanicals shaft seals that work independently for double security.

Oil housing

In addition to lubricating the seals. the food-grade oil filled compartment diffuses heat from the motor and the bearings. The housing also provides additional security against penetration by liquids.

Bearing

Durable bearing provide a minimum service life up to 100,000 hours.

Monitoring

Thermal sensors embedded in the stator windings help prevent overheating.
Leakage sensors in the stator and oil housings, together with external monitoring equipment, are available as options.

Cable entry

The cable entrance is designed to incorporate both a seal and a strain relief function.

Cooling System (SC model)

In normal applications the surrounding liquid cools the pump motor.
In more demanding applications, or when dry installed, the pumps can be fitted with an integrated cooling system. Specially designed and manufactured for our motors.

Impeller

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

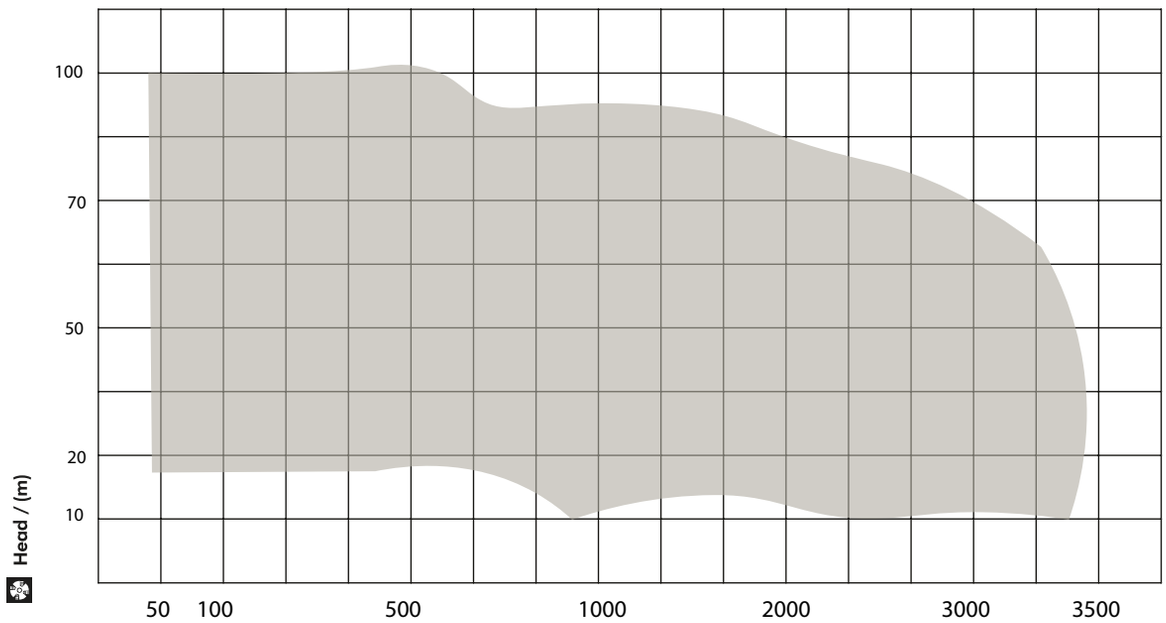
Double vane impeller:
In general they are used in large sized pumps. Rotational symmetry lets them operate without vibration and stable. they are with high efficiency and they don't strain motord with excessive load in case of low discharge head. large channels between vanes allows pumping large solids.

Vortex type impeller:
this type of impellers don't 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.

SELECTION CHARTS

50 Hz

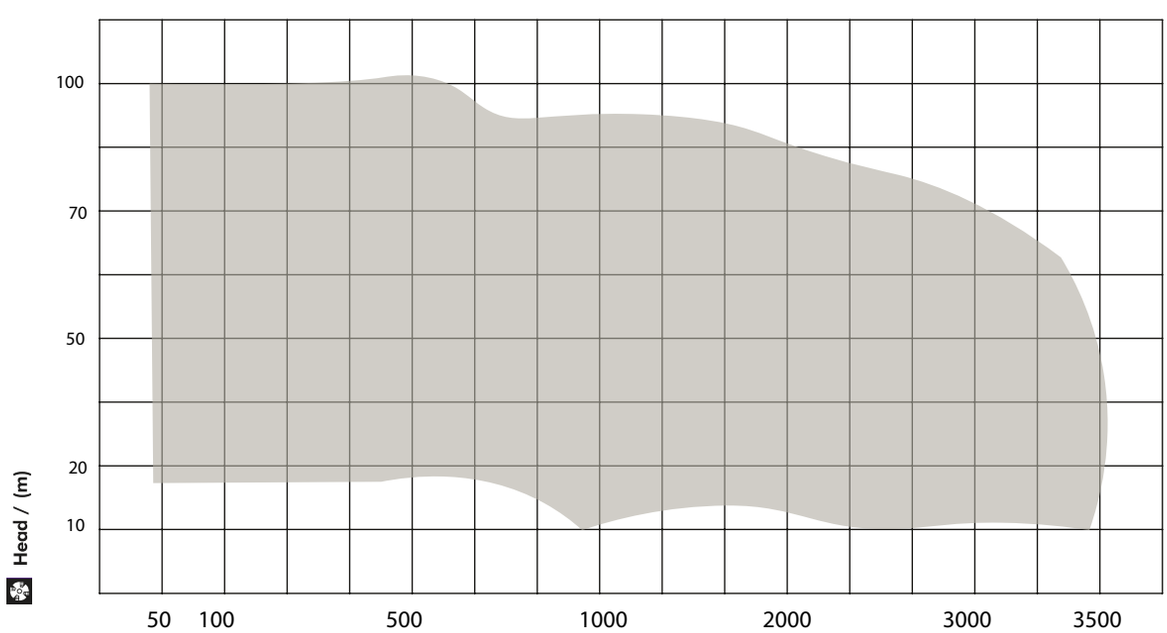
Capacity / (GPM)



Capacity / (m³/h)

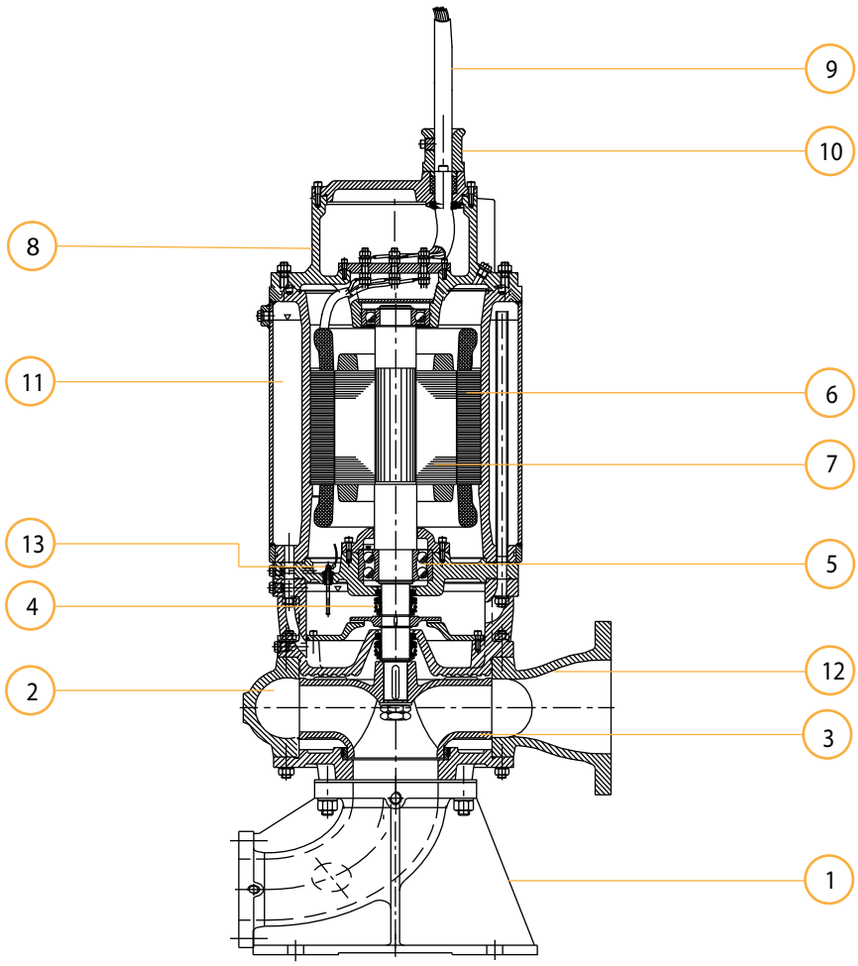
60 Hz

Capacity / (GPM)



Capacity / (m³/h)

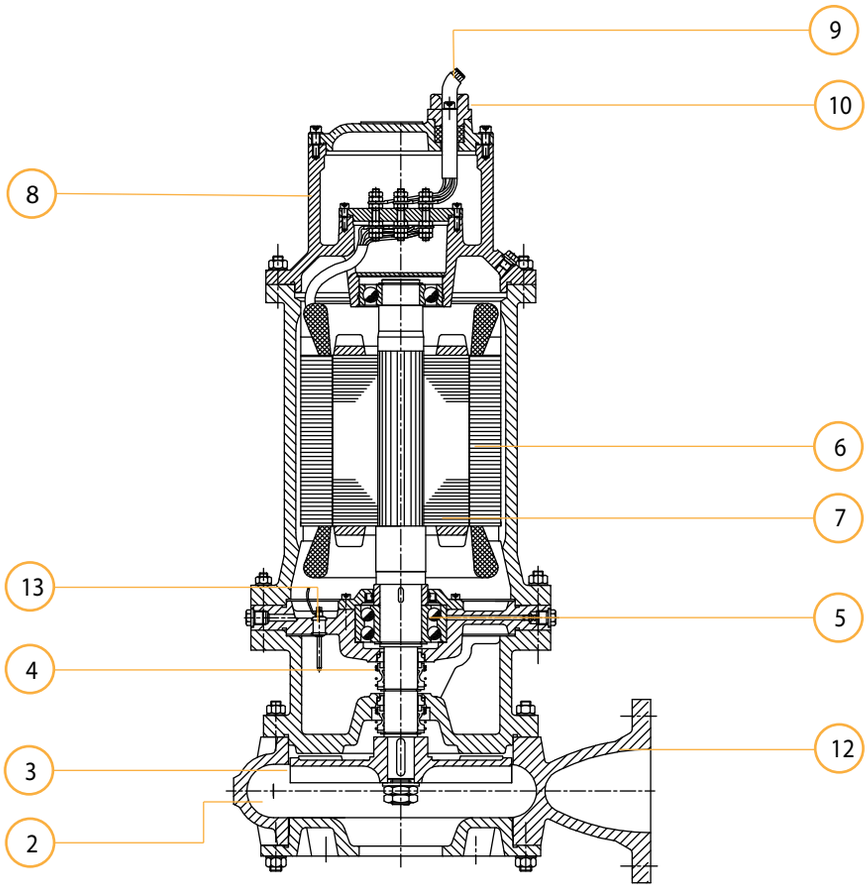
SECTIONAL VIEW



Part List

Pump Support Foot	1
Volute	2
Impeller	3
Mechanical Seal	4
Bearing	5
Stator	6
Rotor	7
Top cover	8
Cable	9
Cable Socket	10
Cooling Jacket	11
Service Hole	12
Sensor	13

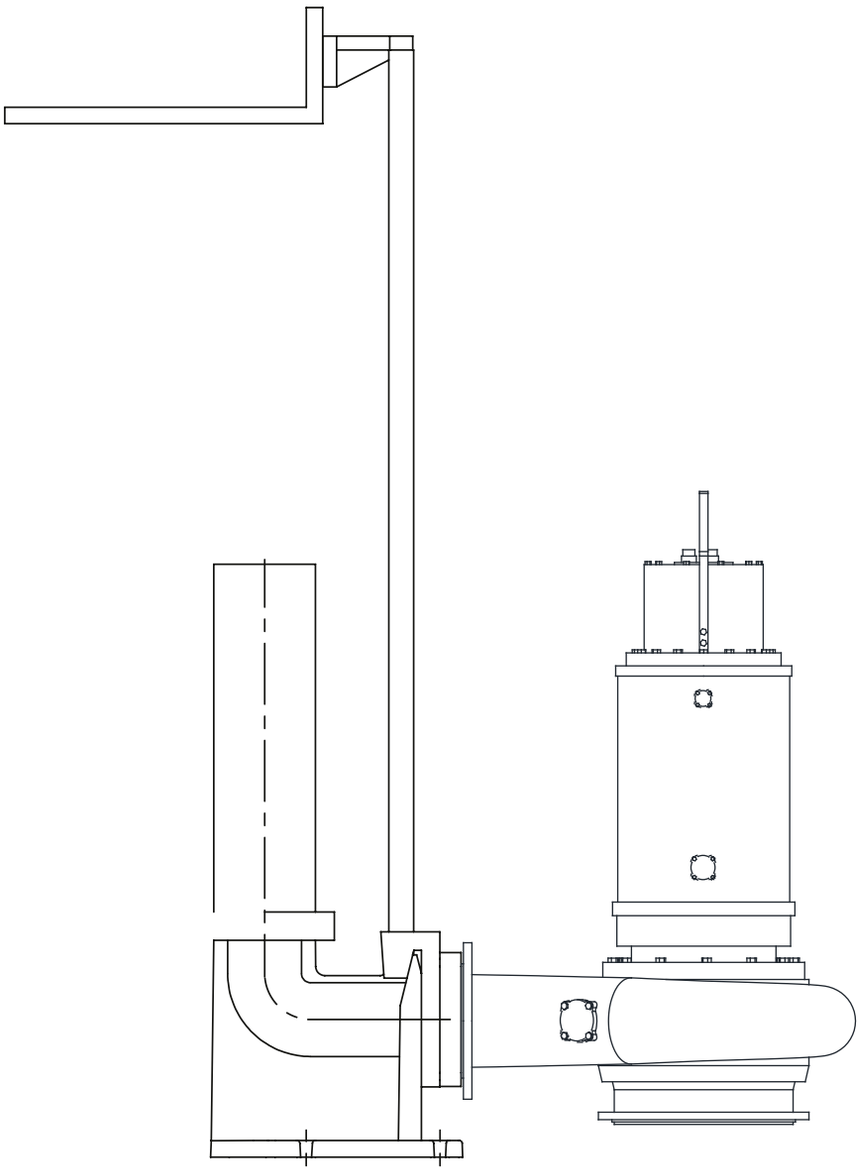
SECTIONAL VIEW

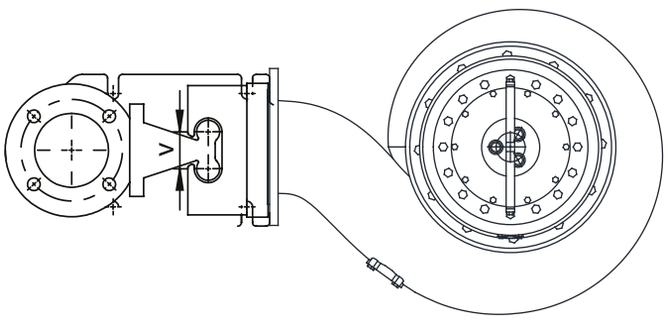


Part List

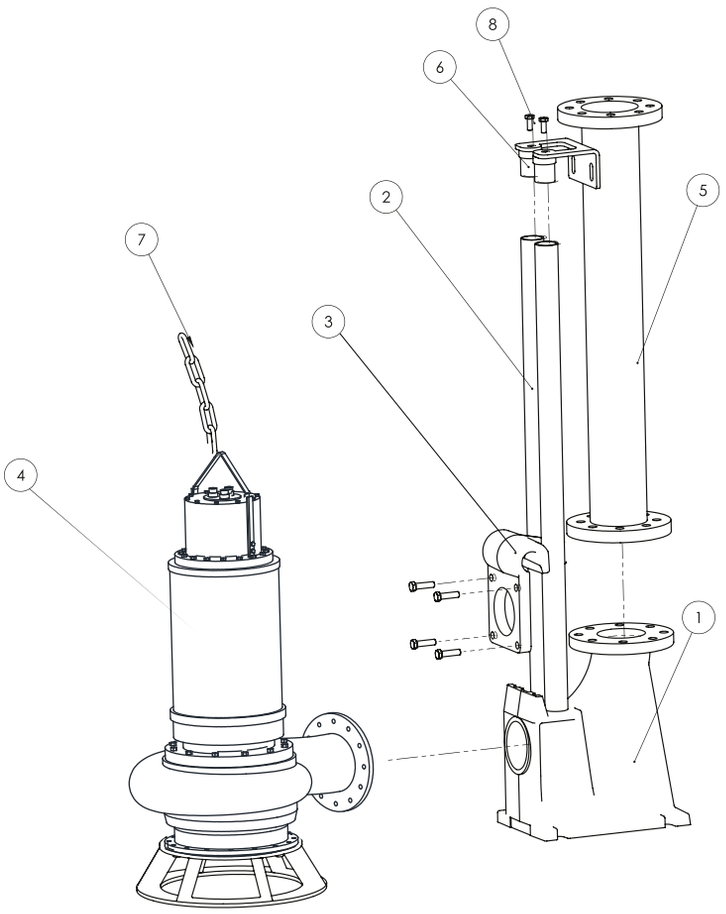
Volute	2
Impeller	3
Mechanical Seal	4
Bearing	5
Stator	6
Rotor	7
Top cover	8
Cable	9
Cable Socket	10
Service Hole	12
Sensor	13

GUIDE RAIL





COUPLING DIMENSIONS

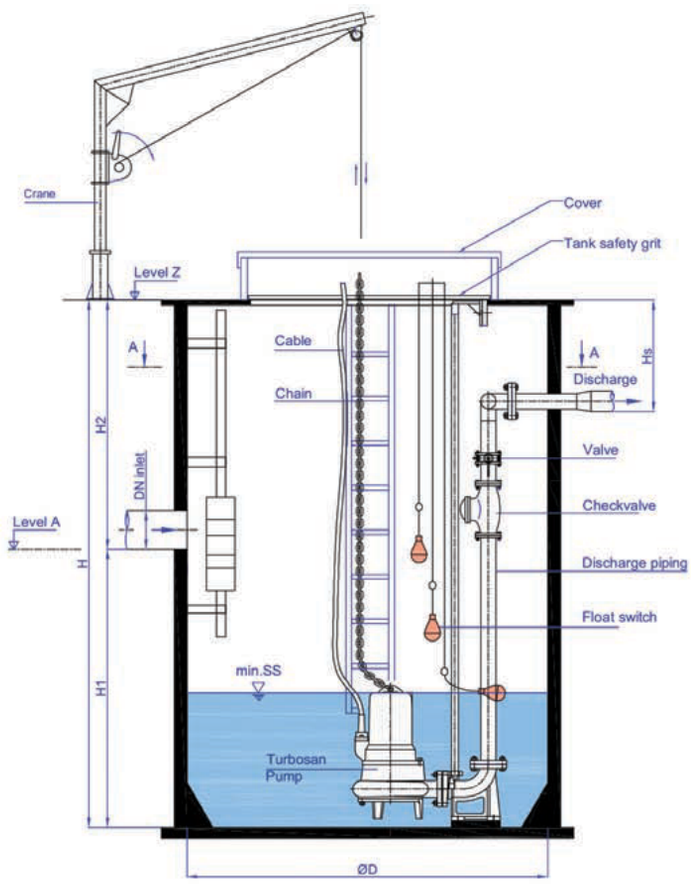


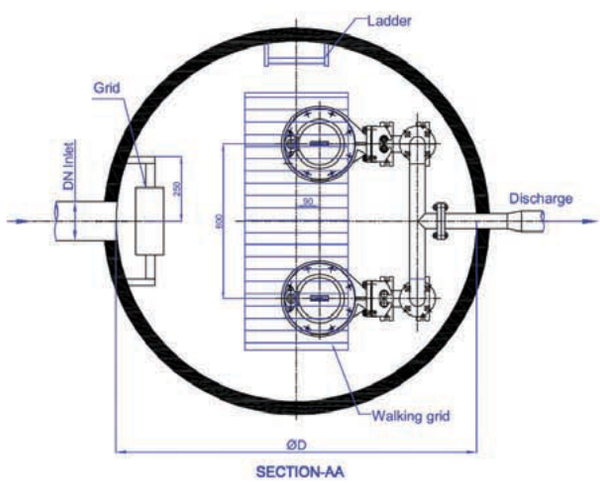
Part List

Duck Foot Bend	1
Guide Rail	2
Guide Flange	3
Pump	4
Discharge Pipe	5
Upper Support Braket	6
Chain	7
Bolt	8

Automatic Coupling (Duck Foot Bend) :

It is an economic and practical installation for stationary systems. The automatic coupling system consists of a duck foot bend fixed on sump floor, guide rail (rectangular cross-section) and fixing flange which is fitted to the pump. The automatic coupling set components and discharge piping have to be installed before the sump get filled with a medium.
Fixing flange which is fitted to the pump slides through the guide rails and pump lowered to the sump by means of chain. To take the pump out of the sump by pulling the sump by chain is enough, no dismantling or bolt removal is required.

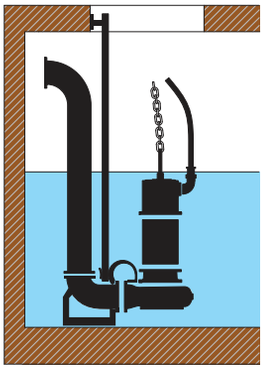




Methods of installation :

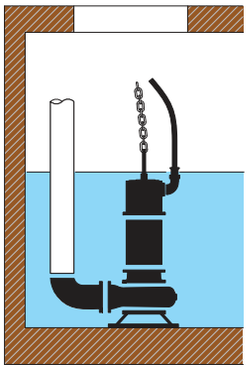
To reduse the cost of installation WG has standardized many of the main elements of pumping stations so that they can be combined to match specific site conditions.

The examples illustrated here show the flexibility of the system, and provide some guidelines for optimizing the design of your own station.



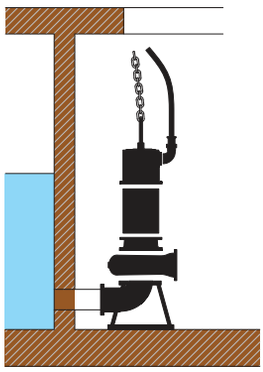
(1)

For semi-permanent wet well installation. The pump is installed with twin guide bars
on a discharge connection.



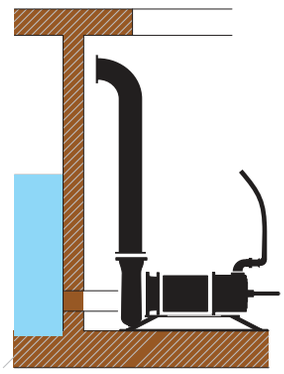
(2)

A semi-permanent free standing installation. Transportable version
with pipe or hose connection.



(3)

A vertically-mounted, permanent dry well or in-line installation with flange connections for suction and discharge pipe work.

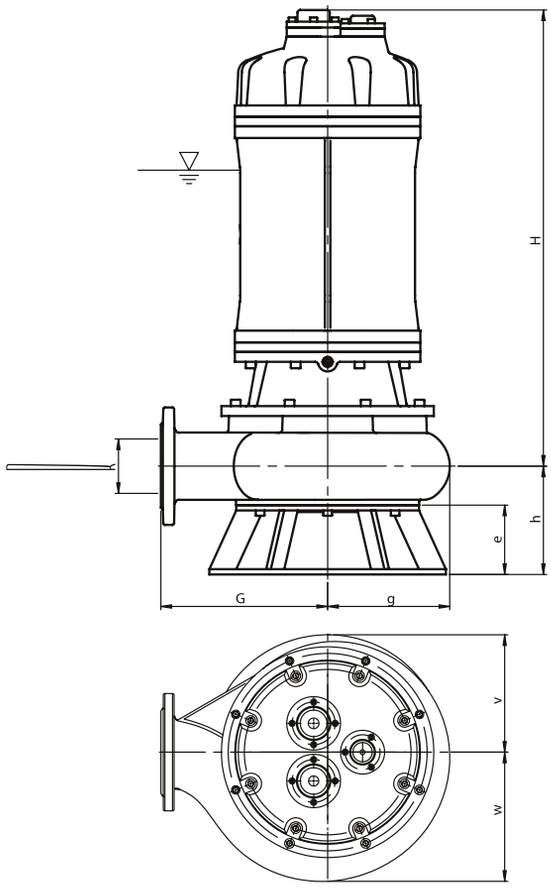


(4)

A horizontally-mounted, perma-nent
dry well or in-line installation with flange connections for suction and

PUMP DIMENSIONS

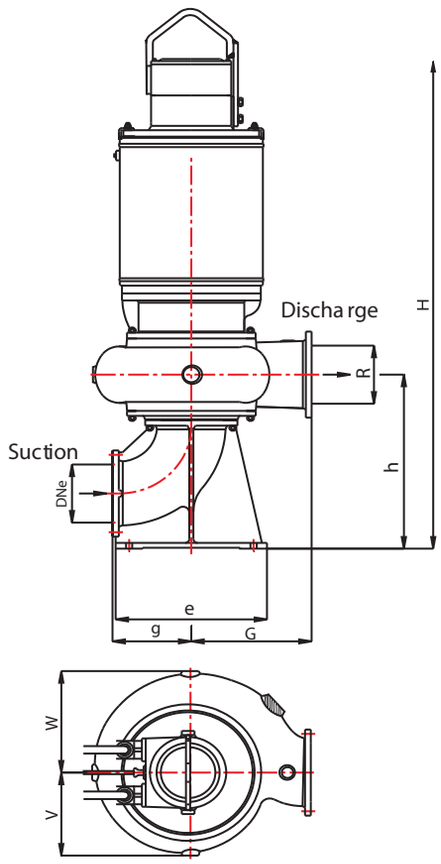
Form 3



Pump Type (SP-L)	Form	Motor				Discharge		Dimensions (mm)							Mechanical Seal
		Power (kW)			IEC No	DN	R(inch)	G	g	e	h	H	v	w	
		1000	1500	3000											
80-315 HE	Form3	-	7.5	-	132	80	3	310	231	130	180	785	220	237	—
80-315 HE	Form3	-	11	-	160	80	3	310	231	130	180	785	220	237	—
80-315 HE	Form3	-	15	-	160	80	2	310	231	130	180	785	220	237	—
100-315	Form3	-	11	-	160	100	4	310	227	130	203	805	220	242	—
100-315	Form3	-	15	-	160	100	4	310	227	130	203	805	220	242	—
100-315	Form3	-	18.5	-	180	100	4	310	227	130	203	855	220	242	—
100-315	Form3	-	22	-	180	100	4	310	227	130	203	855	220	242	—
100-315	Form3	-	30	-	200	100	4	310	227	130	203	1116	220	242	—
150-315	Form3	-	15	-	160	150	6	355	272	150	266	805	273	293	—
150-315	Form3	-	18.5	-	180	150	6	355	272	150	266	856	273	293	—
150-315	Form3	-	22	-	180	150	6	355	272	150	266	856	273	293	—
150-315	Form3	-	30	-	200	150	6	355	272	150	266	1116	273	293	—
150-315	Form3	-	37	-	225	150	6	355	272	150	266	1116	273	293	—
150-315	Form3	-	45	-	225	150	6	355	272	150	266	1116	273	293	—
150-315	Form3	-	55	-	250	150	6	355	272	150	266	1320	273	293	—
200-400	Form3	90	75	-	280	200	8	530	338	150	293	1353	320	372	—
300-500	Form3	200	400	-	-	300	10	560	450	200	330	1800	380	450	—
500-600	Form3	400	450	-	-	500	15	1050	640	210	600	3250	650	850	—

PUMP DIMENSIONS

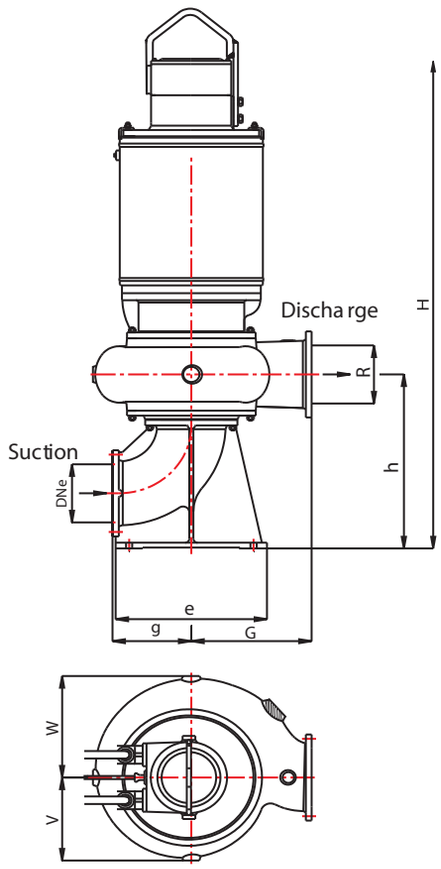
Form SC (with cooling jacket)



Pump Type	Form	Motor				Dimensions (mm)								
		Power (kW)			IEC No									
		1000	1500	3000		DNe	R	G	g	e	h	H	v	w
SP-L 80-250	3 SC	-	-	-	-	80	80	280	190	400	408	980	150	175
SP-L 80-250 V	3 SC	-	-	-	-	80	80	280	190	400	408	980	150	175
SP-L 80-260 EFF	3 SC	-	-	-	-	125	80	280	215	490	528	1040	190	220
SP-L 80-270 V	3 SC	-	-	-	-	80	80	315	190	400	410	1010	200	218
SP-L 80-315 V	3 SC	-	-	-	-	80	80	340	190	400	418	1080	235	255
SP-L 80-320 EFF	3 SC	-	-	-	-	125	80	300	215	490	528	1140	220	245
SP-L 100-200	3 SC	-	-	-	-	100	100	246	195	440	429	1080	158	173
SP-L 100-250 V	3 SC	-	-	-	-	100	100	300	195	440	429	1060	180	220
SP-L 100-260 EFF	3 SC	-	-	-	-	150	100	300	275	550	613	1140	210	260
SP-L 100-270 V	3 SC	-	-	-	-	100	100	315	195	440	448	1040	197	198
SP-L 100-315 V	3 SC	-	-	-	-	100	100	340	195	440	468	1090	220	248
SP-L 100-320 EFF	3 SC	-	-	-	-	150	100	340	275	550	603	1130	225	265
SP-L 100-400	3 SC	-	-	-	-	100	100	340	195	440	474	1300	270	300
SP-L 125-315 V	3 SC	-	-	-	-	125	125	315	215	490	512	1300	235	267
SP-L 125-400	3 SC	-	-	-	-	125	125	370	215	490	512	1495	280	315
SP-L 125-500 EFF	3 SC	-	-	-	-	150	125	450	275	550	623	1555	335	385
SP-L 150-315	3 SC	-	-	-	-	150	150	380	275	550	581	1280	240	280
SP-L 150-315 EFF	3 SC	-	-	-	-	150	150	400	275	550	643	1350	220	280
SP-L 150-400	3 SC	-	-	-	-	150	150	400	275	550	574	1315	300	325
SP-L 150-500 EFF	3 SC	-	-	-	-	200	150	500	325	650	733	1385	305	365
SP-L 200-315 N	3 SC	-	-	-	-	200	200	370	325	650	680	1300	275	335
SP-L 200-315 F	3 SC	-	-	-	-	200	200	370	325	650	702	1335	275	335

PUMP DIMENSIONS

Form SC (with cooling jacket)



Pump Type	Form	Motor				Dimensions (mm)								
		Power (kW)			IEC No									
		1000	1500	3000		DNe	R	G	g	e	h	H	v	w
SP-L 200-320 EFF	3 SC	-	-	-	-	250	200	500	350	700	804	1390	290	395
SP-L 200-400 F	3 SC	-	-	-	-	200	200	530	325	650	724	1715	355	375
SP-L 200-410 EFF	3 SC	-	-	-	-	250	200	500	350	700	784	1910	305	385
SP-L 200-500 EFF	3 SC	-	-	-	-	250	200	560	350	700	804	2700	355	425
SP-L 250-315 F	3 SC	-	-	-	-	250	250	440	350	700	784	1750	290	355
SP-L 250-400 N	3 SC	-	-	-	-	200	250	480	325	650	694	2030	336	387
SP-L 250-400 M	3 SC	-	-	-	-	250	250	480	350	700	764	2050	336	387
SP-L 250-400 F	3 SC	-	-	-	-	300	250	480	380	780	857	2080	336	387
SP-L 250-420 EFF	3 SC	-	-	-	-	250	250	600	350	700	814	2100	330	445
SP-L 250-600 N	3 SC	-	-	-	-	250	250	650	350	700	767	2210	485	555
SP-L 250-700	3 SC	-	-	-	-	300	250	750	380	780	990	2830	540	620
SP-L 300-400 EFF	3 SC	-	-	-	-	350	300	600	445	900	959	2100	325	475
SP-L 300-500 F	3 SC	-	-	-	-	300	300	585	380	780	900	2170	340	525
SP-L 350-420 EFF	3 SC	-	-	-	-	350	350	800	445	900	979	2300	400	560
SP-L 350-520 EFF	3 SC	-	-	-	-	400	400	800	510	1050	1154	3255	475	640
SP-L 350-630 EFF	3 SC	-	-	-	-	400	400	800	510	1050	1189	3285	490	640
SP-L 400-400 F	3 SC	-	-	-	-	400	400	800	510	1050	1132	3235	476	620
SP-L 400-500 EFF	3 SC	-	-	-	-	500	400	800	635	1250	1404	3940	430	630
SP-L 400-600 F	3 SC	-	-	-	-	500	400	700	635	1250	1536	4050	471	570
SP-L 400-700	3 SC	-	-	-	-	500	400	1000	635	1250	1454	-	576	685
SP-L 500-600	3 SC	-	-	-	-	500	500	1000	635	1250	1454	3900	600	747
SP-L 500-630 B	3 SC	-	-	-	-	600	600	1000	960	1900	1850	3900	600	785