CVD
Sewage pumps

SPCO®
makes life easier

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 1500m 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

Capacity: 10-3000 m3/h

Operation temperature: 10~75C

Head: 5-80m

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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

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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.

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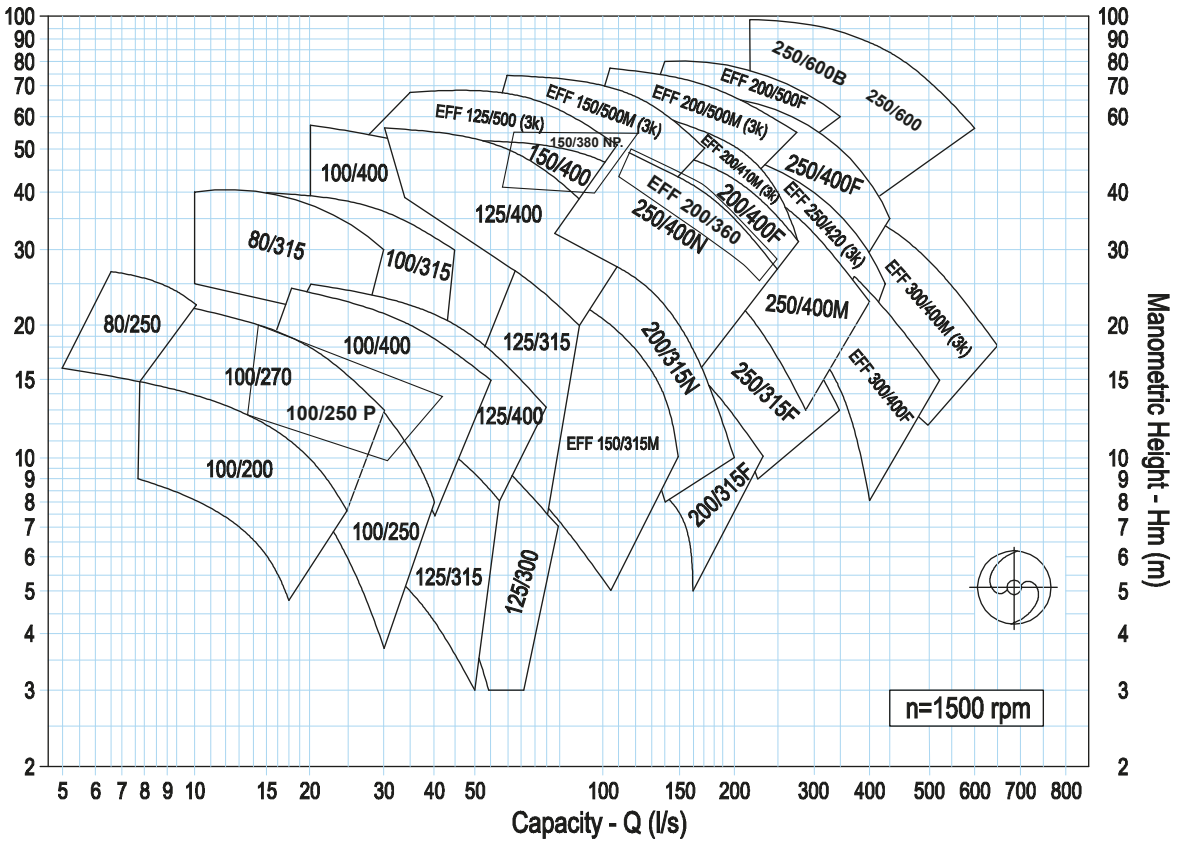
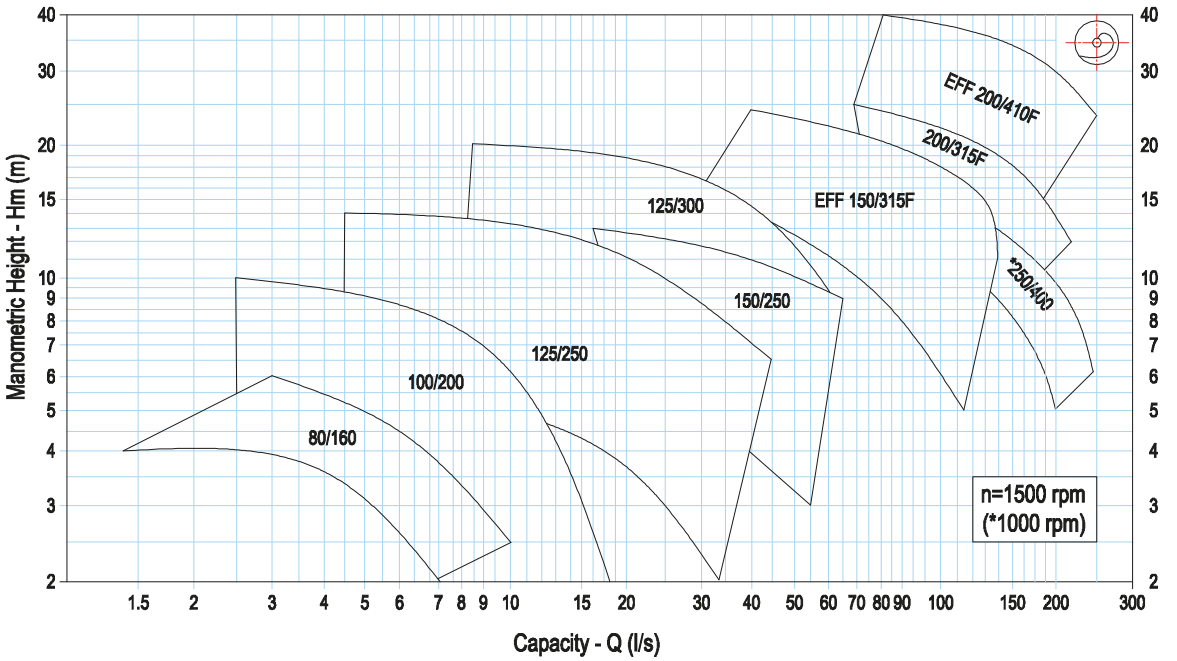
Sewage double vane pump-1500rpm



Sewage single vane pump-1500rpm



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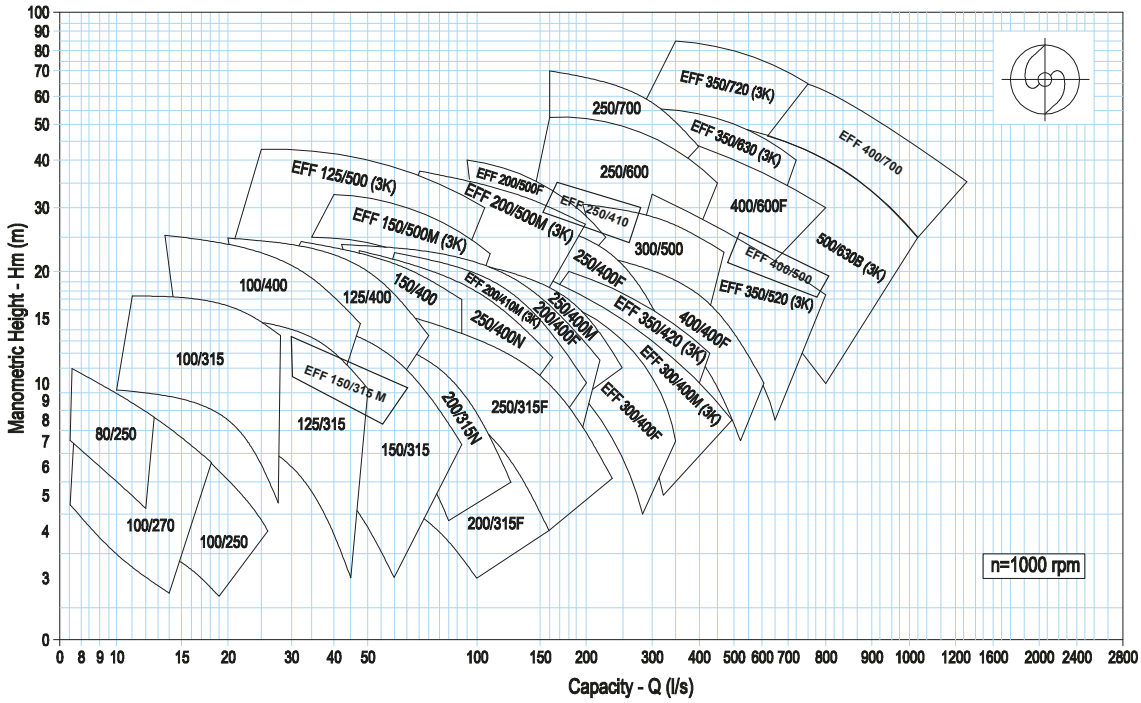
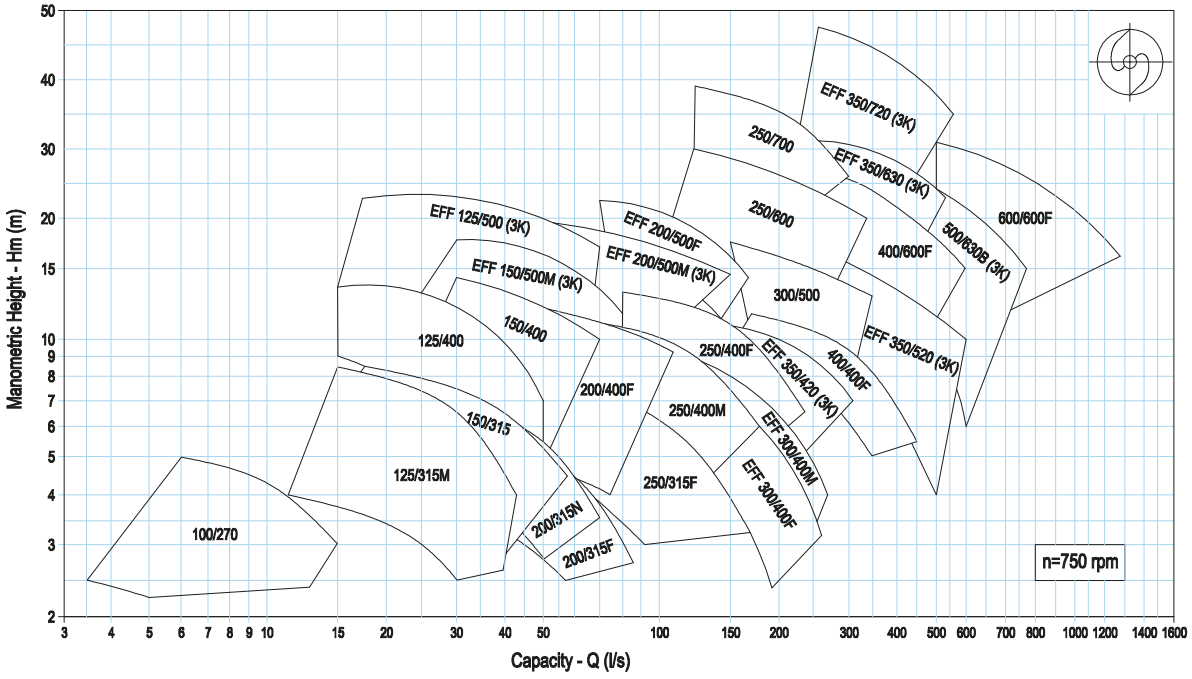
Sewage double vane pump-1000rpm



For 3 vane impellers (3K)

Sewage double vane pump-750rpm



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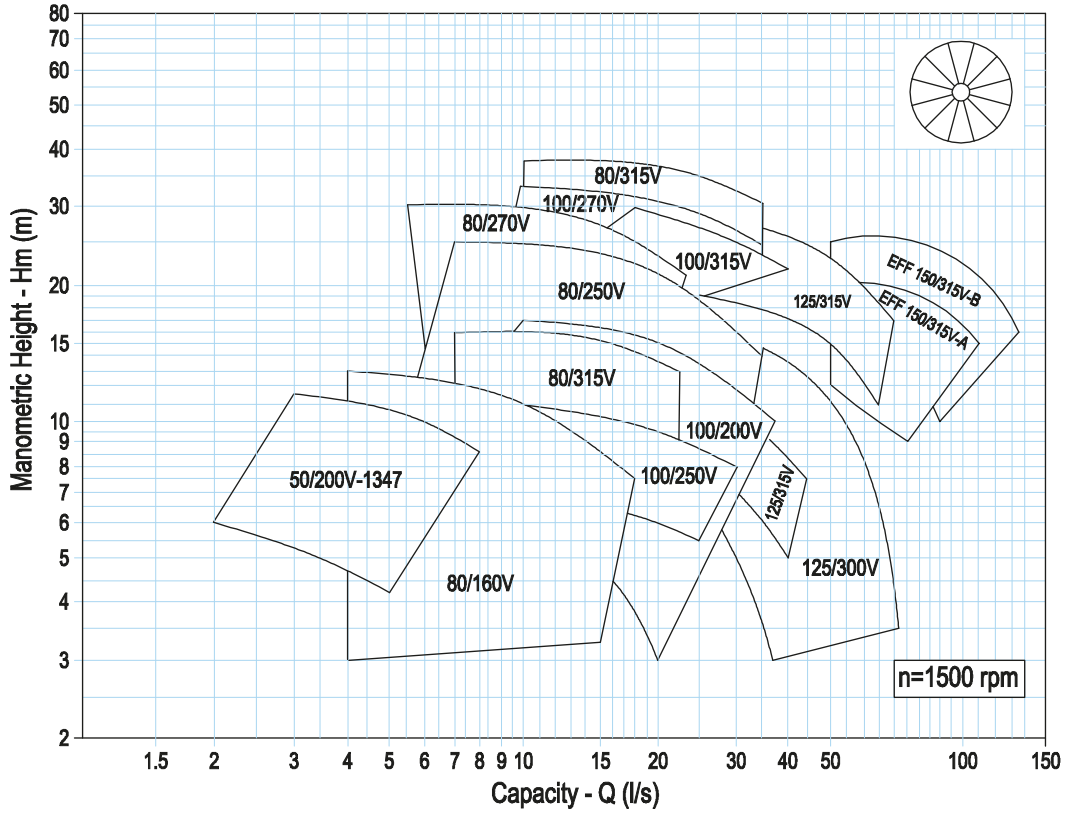
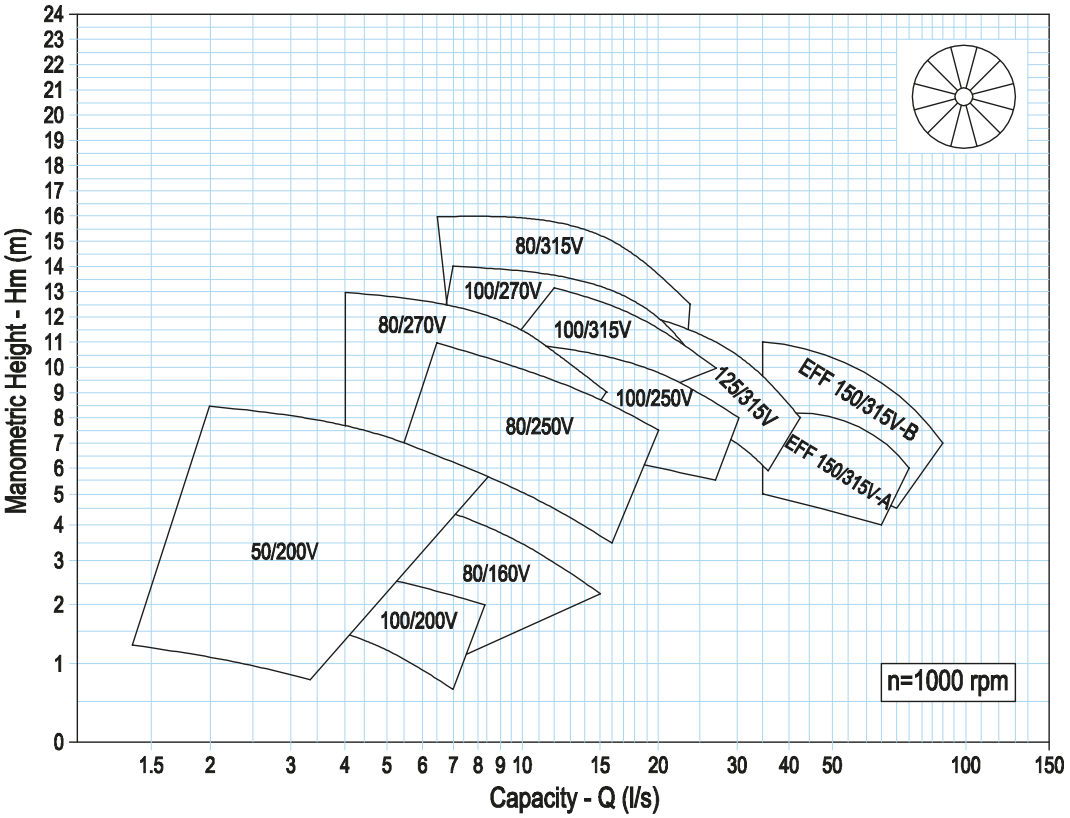
Sewage vortex pump-1500rpm



For 3 vane impellers (3K)

Sewage vortex pump-1000rpm



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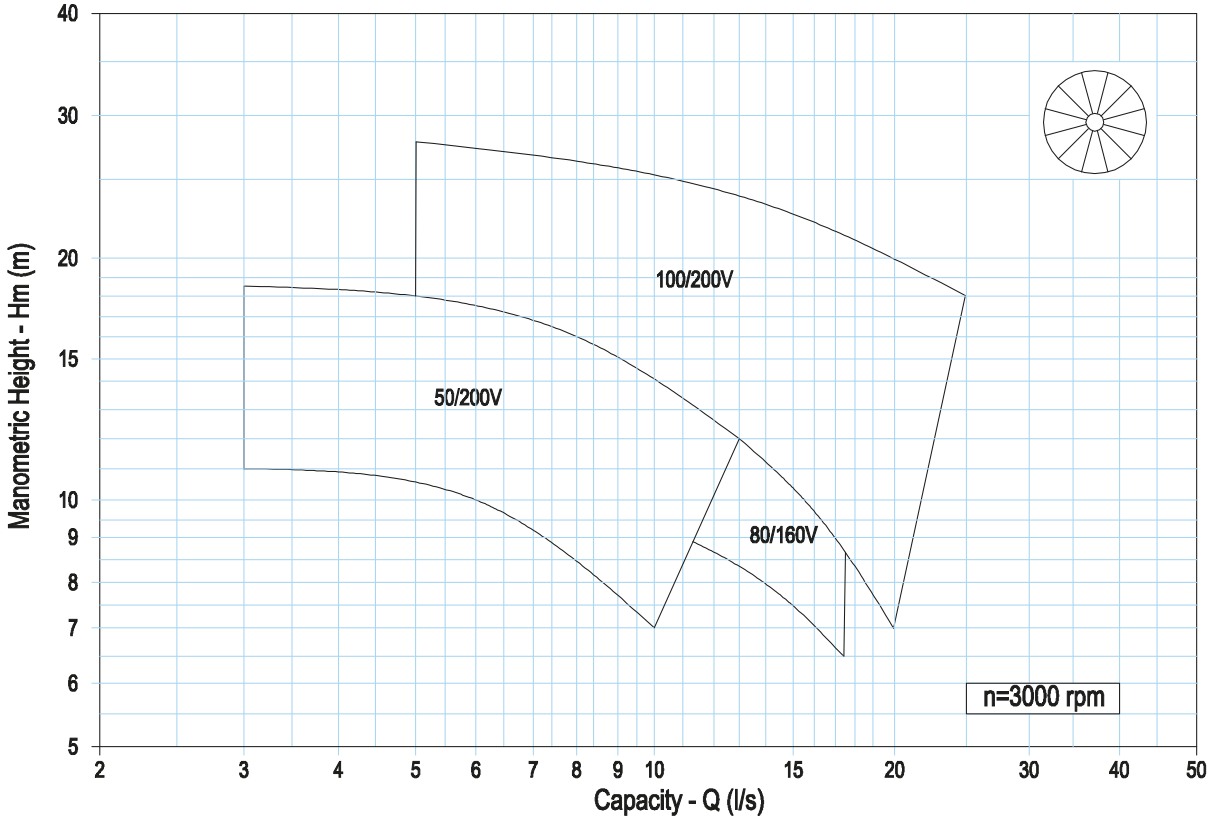
Sewage vortex pump-3000rpm



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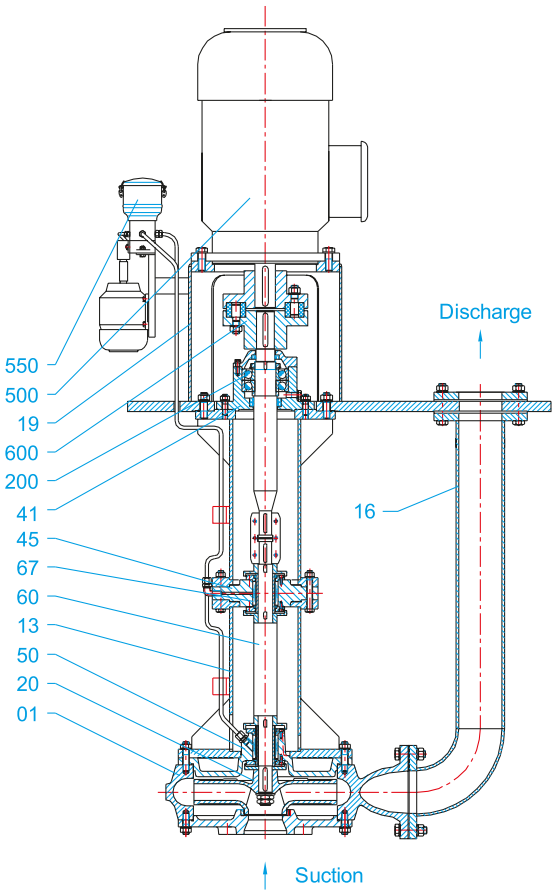
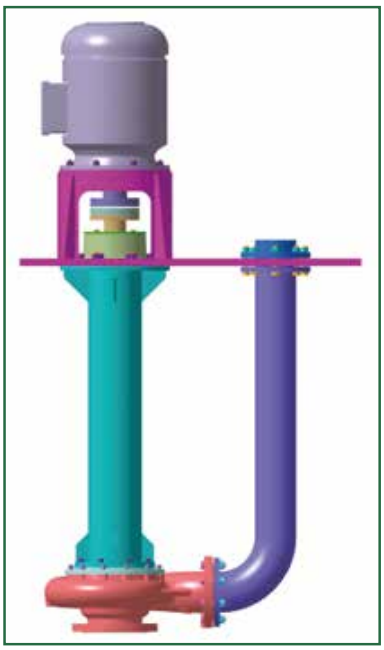
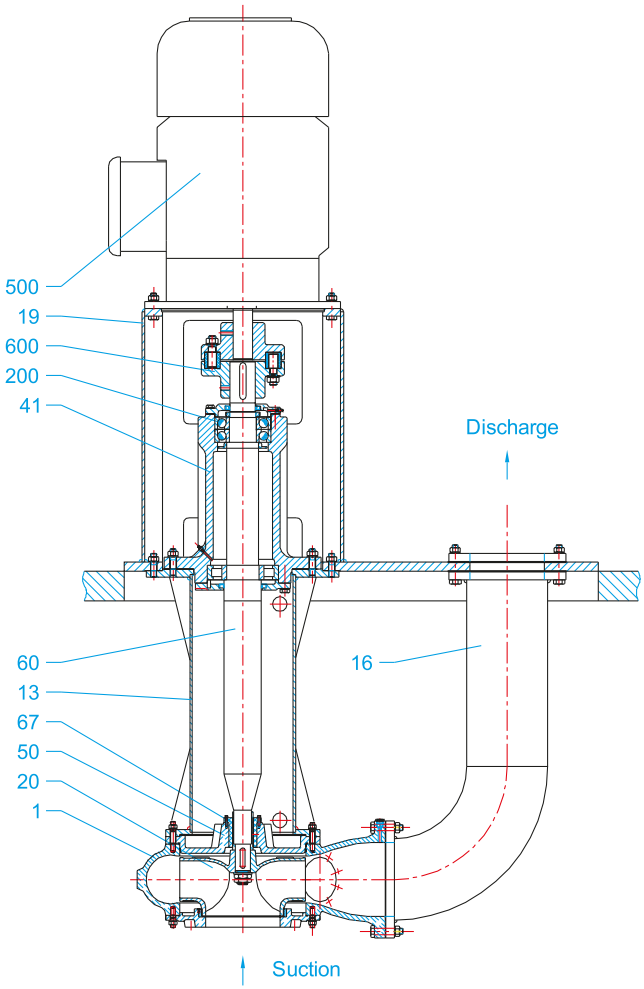
Sectional drawing



PUMP WITH GREASE LUBRICATED SLEEVE BEARING



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 SELF LUBRICATED RUBBER SLEEVE BEARING

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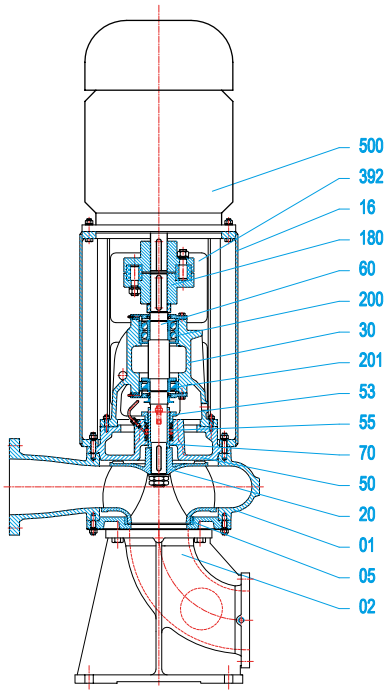
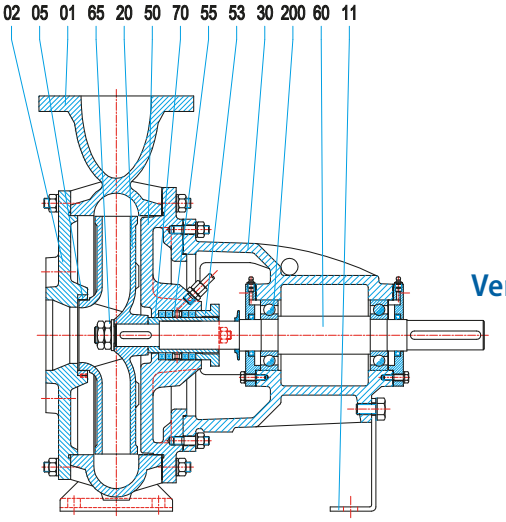
Sectional drawing



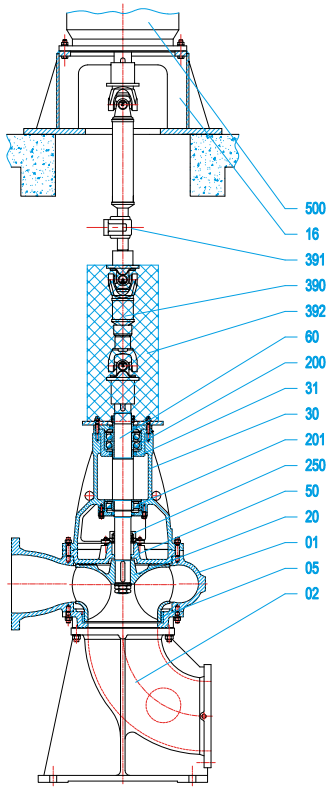
FORM (A)

Vertical monoblock

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 (CAP-VM)
200	Bearing (73....)
201	Bearing (NU....)
250	Mechanical Seal
390	Cardan Shaft (CAP-VS)
391	Intermadiate Bearing (CAP-VS)
392	Safety Guard
500	Electric Motor

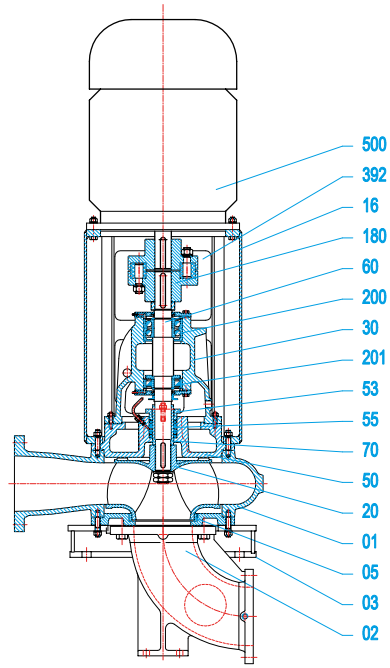


Horizontal Pump



FORM (A)

Vertical shaft driven



FORM (B)

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 (CAP-VM)
200	Bearing (73....)
201	Bearing (NU....)
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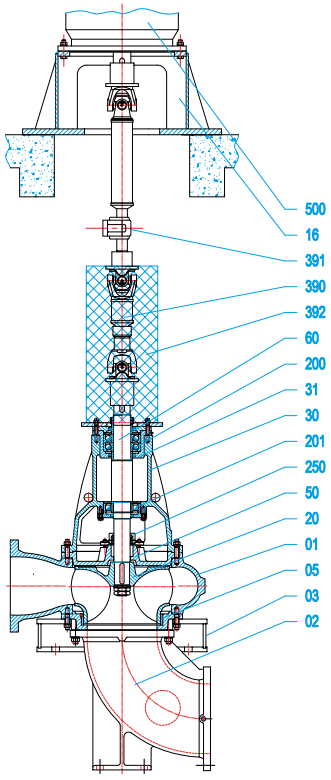
391	Intermadiate Bearing (CAP-VS)
392	Safety Guard
500	Electric Motor



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