

# PSP SERIES



## TECHNICAL MANUAL



## PSP Series

### Vertical Shaft Chemical Waste Pumps

#### General Specifications



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#### General Applications

PSP series pumps are used in;

- Wastewater with fibres
- Industrial facilities
- Industrial waste liquids
- Tank drain
- Corrosive liquids
- Discharging bilge water in ships
- Pumping chemical liquids.

#### Design

- Single stage, with open or vortex type impellers and vertical shaft process pumps.
- PSP pumps have open impeller and impeller connects to shaft with key. It has a locking mechanism for preventing rotation in reverse direction.
- Impellers are balanced according to ISO G 6.3. By the impeller with rear wings, axial loads are decreased and prevented entering of solid particles.
- The filter apertures are sized to prevent the entry of large solid particles.
- The elbow is designed in order to provide maximum hydraulic performance. With special design of the fasteners it allows possible minimum clearance.
- Threaded connections on the discharge pipe allow pipe to be dismantled without removing pump from the well.
- The casing has a radial discharge nozzle. Thanks to casing and bearing fixing element, the parallel verification is provided among the column, suction cover and bearing.

#### Pump Shaft

In Standard design, one-piece shaft is used to provide parallelism.

Shaft surface is machined precisely and it is cleared to prevent the vibration of the shaft and to reduce the collapse of the shaft.

In all series, standard bearing length provide shaft to be kept below the first critical speed.

#### Bearing and Lubrication

Axial bearing is provided with single row ball bearing (6400 type) with grease lubricated. Through mounted to shaft, all axial thrust and also some radial load are carried. All contact surfaces are machined precisely.

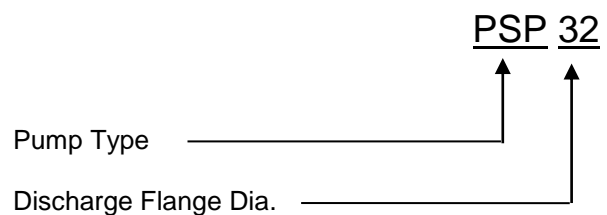
#### Shaft Sealing

In standard manufacturing, uncooled teflon braided soft packing is used as a seal upper side. There are two oil seals on upper and lower side of the plain bearing.

#### Technical Specifications

Discharge Flange	: DN 32 – DN 50
Working Pressure	: 6 Bar
Impeller Diameter	: Ø 120 – Ø 150
Capacity Range (Q)	: 3 – 100 m <sup>3</sup> /hour
Speed Range	: 1000 – 3600 rpm
Temperature	: 90° C
Head Range	: 15 – 50 m

#### Pump Codification




**PSP Series**  
Vertical Shaft Chemical Waste Pumps  
**ATEX Description**



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**ATEX Codification**

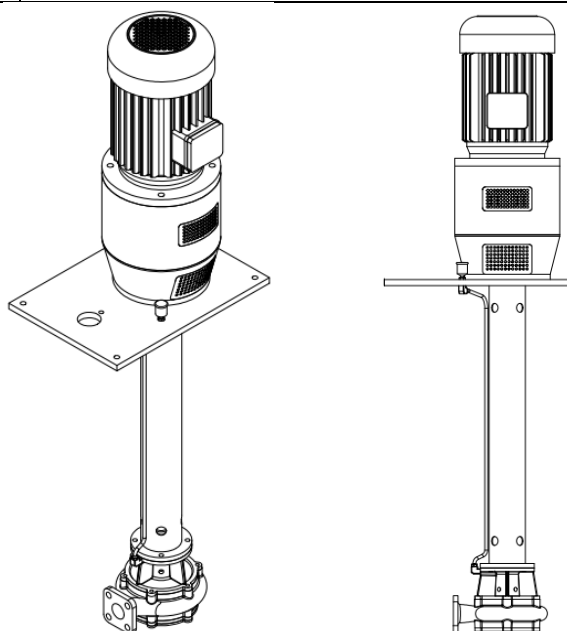
ATEX – 95

 II 2G /D c Tx (85 °C – 200 °C)

Equipment Groups (Annex I of Directive 94/9/EC)							
Group I (mines, mine gas and dust)		Group II (other explosive atmospheres gas/dust)					
Category M 1	Category M 2	Category 1		Category 2		Category 3	
		G (gas) (Zone 0)	D (dust) (Zone 20)	G (gas) (Zone 1)	D (dust) (Zone 21)	G (gas) (Zone 2)	D (dust) (Zone 22)
For equipment providing a very high level of protection when endangered by an explosive atmosphere	For equipment providing a high level of protection when likely to be endangered by an explosive atmosphere	For equipment providing a very high level of protection when used in areas where an explosive atmosphere is very likely to occur		For equipment providing a high level of protection when used in areas where an explosive atmosphere is likely to occur		For equipment providing a normal level of protection when used in areas where an explosive atmosphere is less likely to occur	

TEMPERATURE CLASS		
Temperature class required by the area classification	Ignition temperature of gas or vapor	Allowable temperature classes of equipment
T1	> 450 °C	T1 - T6
T2	> 300 °C	T2 - T6
T3	> 200 °C	T3 - T6
T4	> 135 °C	T4 - T6
T5	> 100 °C	T5 - T6
T6	> 85 °C	T6

Code	Description
II	The Usage in other non-mining explosive atmospheres
2	2. Category: High level of protection
G	For potentially explosive environments due to gases or vapors
T	Temperature class
X	ATEX Marking of the motor manufacturer



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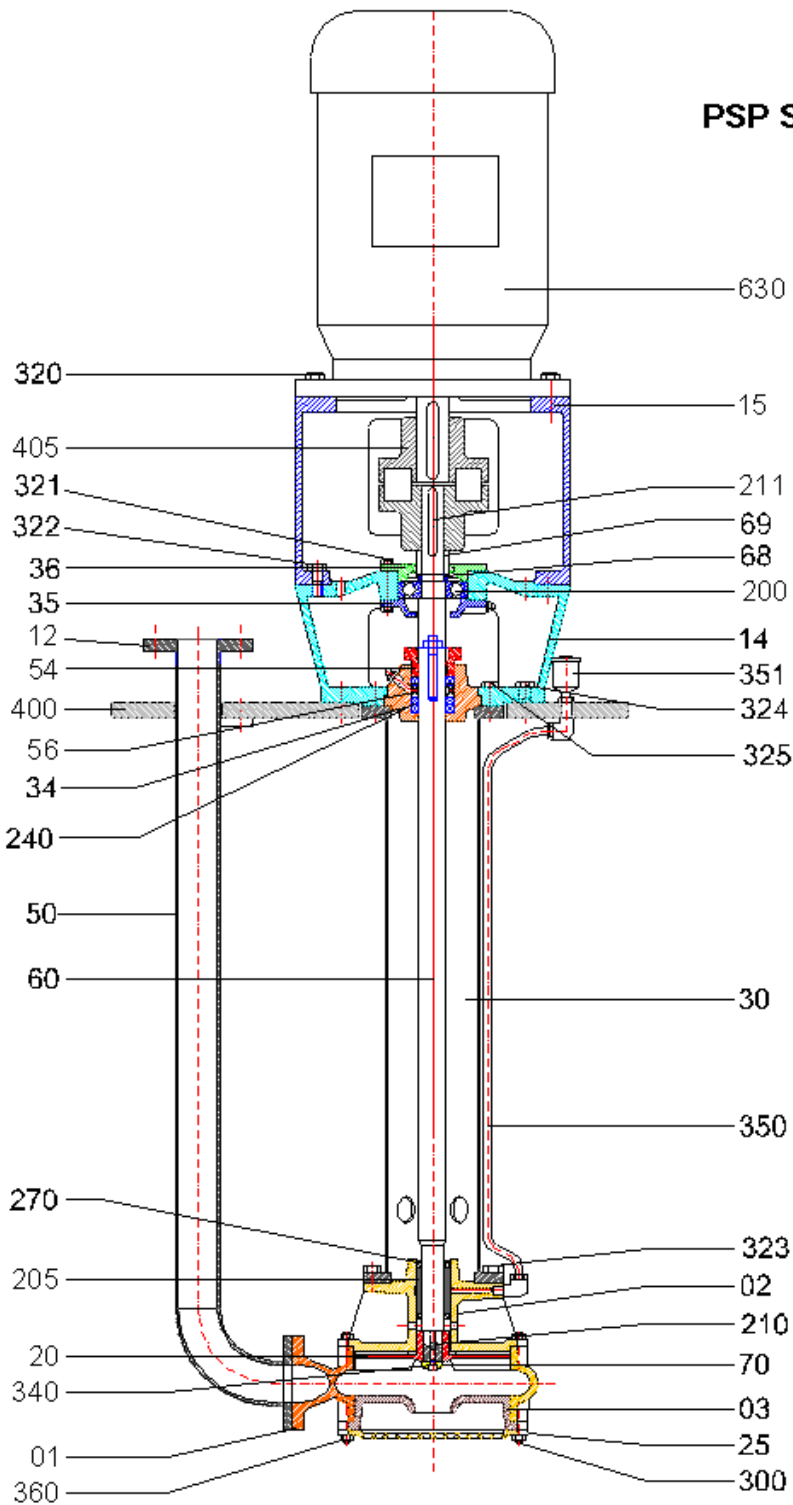
Vertical Shaft Chemical Waste Pumps

## Sectional Drawing and Part List



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PSP S



Part No	Part Name
01	Casing
02	Upper Cover
03	Suction Cover
12	Discharge Flange
14	Bearing Housing
15	Motor Connection
20	Impeller
25	Strainer
30	Column Pipe
34	Stuffing Box
35	Outer Bearing Cover
36	Inner Bearing Cover
50	Discharge Pipe
54	Gland
56	Lantern Ring
60	Shaft
68	Clip
69	Cover Sleeve
70	Impeller Front Sleeve
200	Bearing
205	Graphite Bearing
210	Impeller Key
211	Coupling Key
240	Seal
270	Oil Seal
300	Stud
320	Hexagon Bolt
321	Hexagon Bolt
322	Hexagon Bolt
323	Hexagon Bolt
324	Hexagon Bolt
325	Hexagon Bolt
340	Imbus Bolt
350	Lubricating Pipe
351	Spring Oil Box
360	Nut
400	Carrier Plate
405	Coupling Kit
630	Motor

# PSP Series

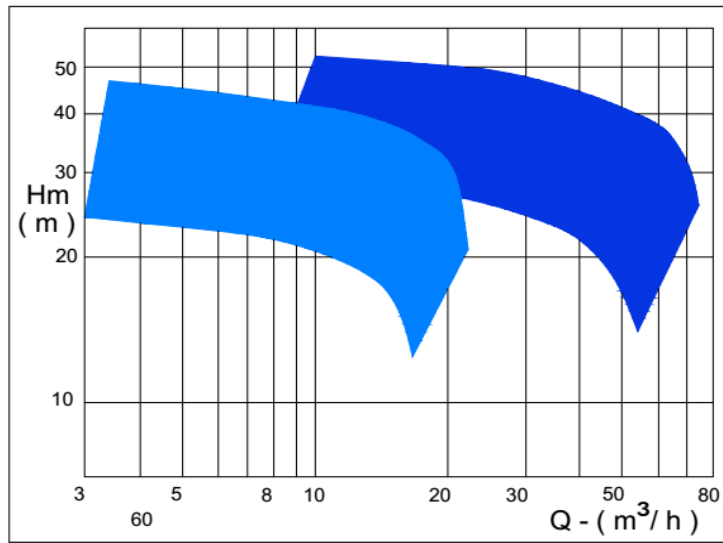
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## Performance Range



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### PSP 32 and PSP 50 – Hidraulics Range



PSP

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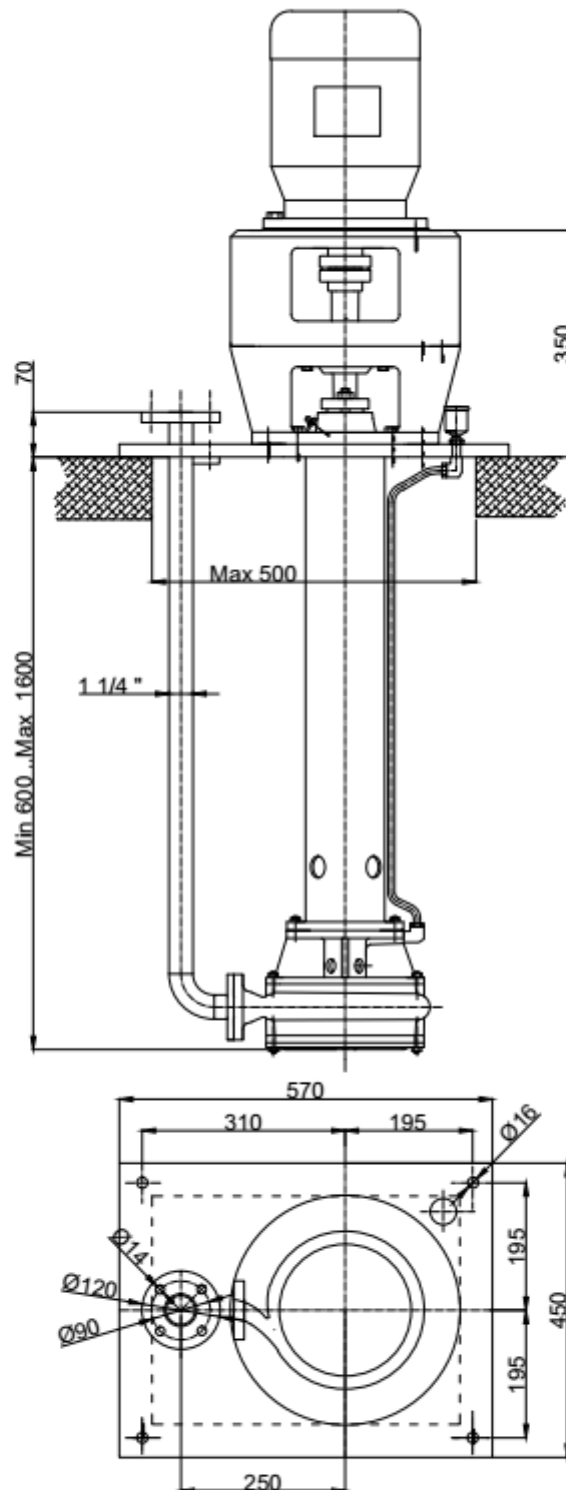
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## Pump Dimensions

### PSP 32



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MAS PSP 32

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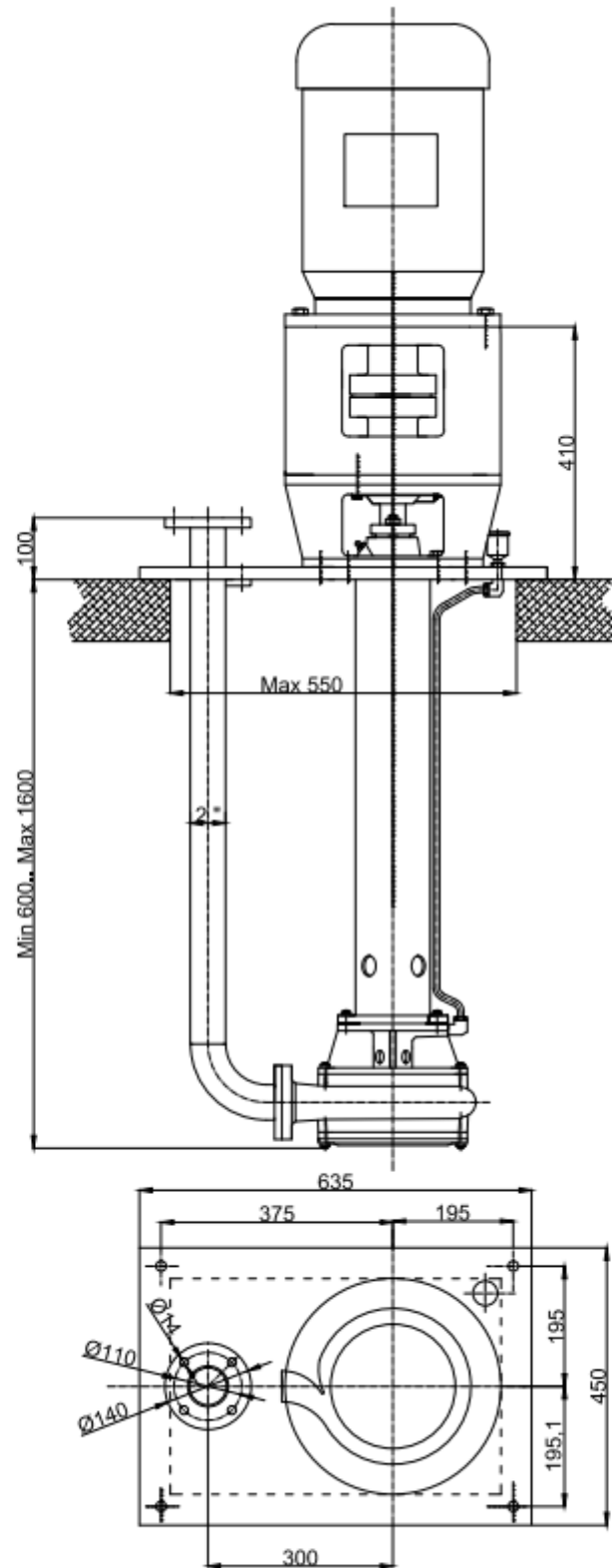
Vertical Shaft Chemical Waste Pumps

## Pump Dimensions

### PSP 50



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MAS PSP 50



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