

# PJC & PVJC

## VERTICAL & HORIZONTAL SUMP PUMP

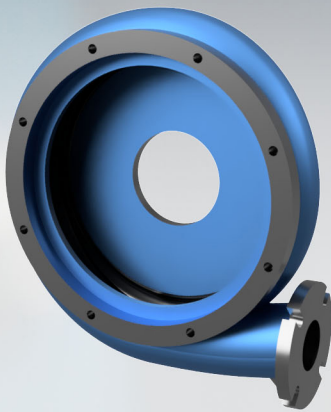
### DESIGN OVERVIEW

#### WET END

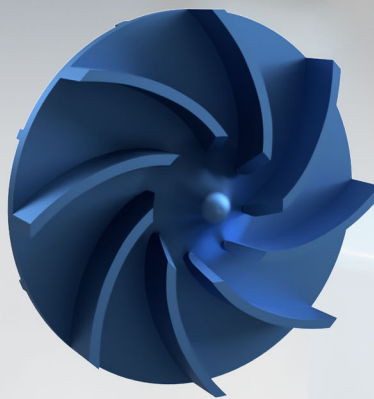
- To maximise pump efficiency and compensate for wear, the PJC wet end has been designed to allow the impeller to be adjusted externally.
- Wetted parts can be ordered in a selection of materials including: stainless steel, cast iron, chrome 28, duplex stainless steel and other materials by arrangement.
- Standard wet end material is 28% chrome hardened to 600 brinell.
- Spherical solids of up to 57mm can be pumped using the PJC & PVJC Range.

#### **The wet end of this pump is ideally suited to the following applications:**

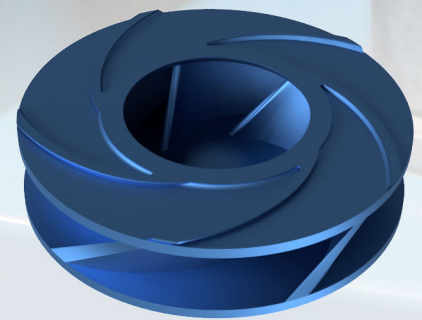
- Sugar Juices
- Diffuser Chain Wash
- Falling Film
- Caustic Rinse
- Boiler Ash Slurries
- Paper Mill Wastes
- Carbon Slurries
- Coal Slurries
- Fracking Slurries
- Liquors
- Back-Fill
- Clay and Sand Slurries
- Wet Scrubber Systems
- Raw Water
- Waste Sludge
- Mining Slurries



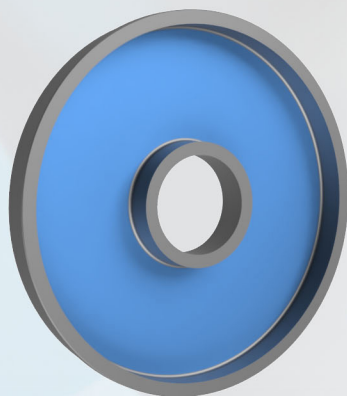
CASING



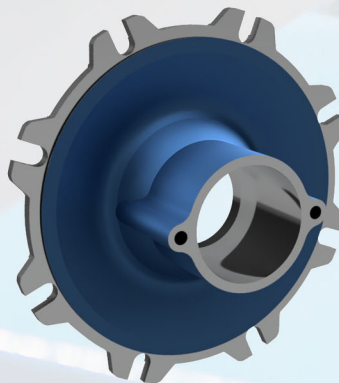
IMPELLER



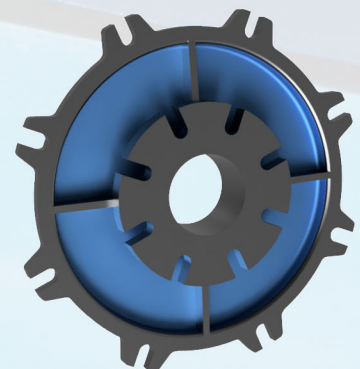
CLOSED 10PJC IMPELLER



SUCTION DISC LINER



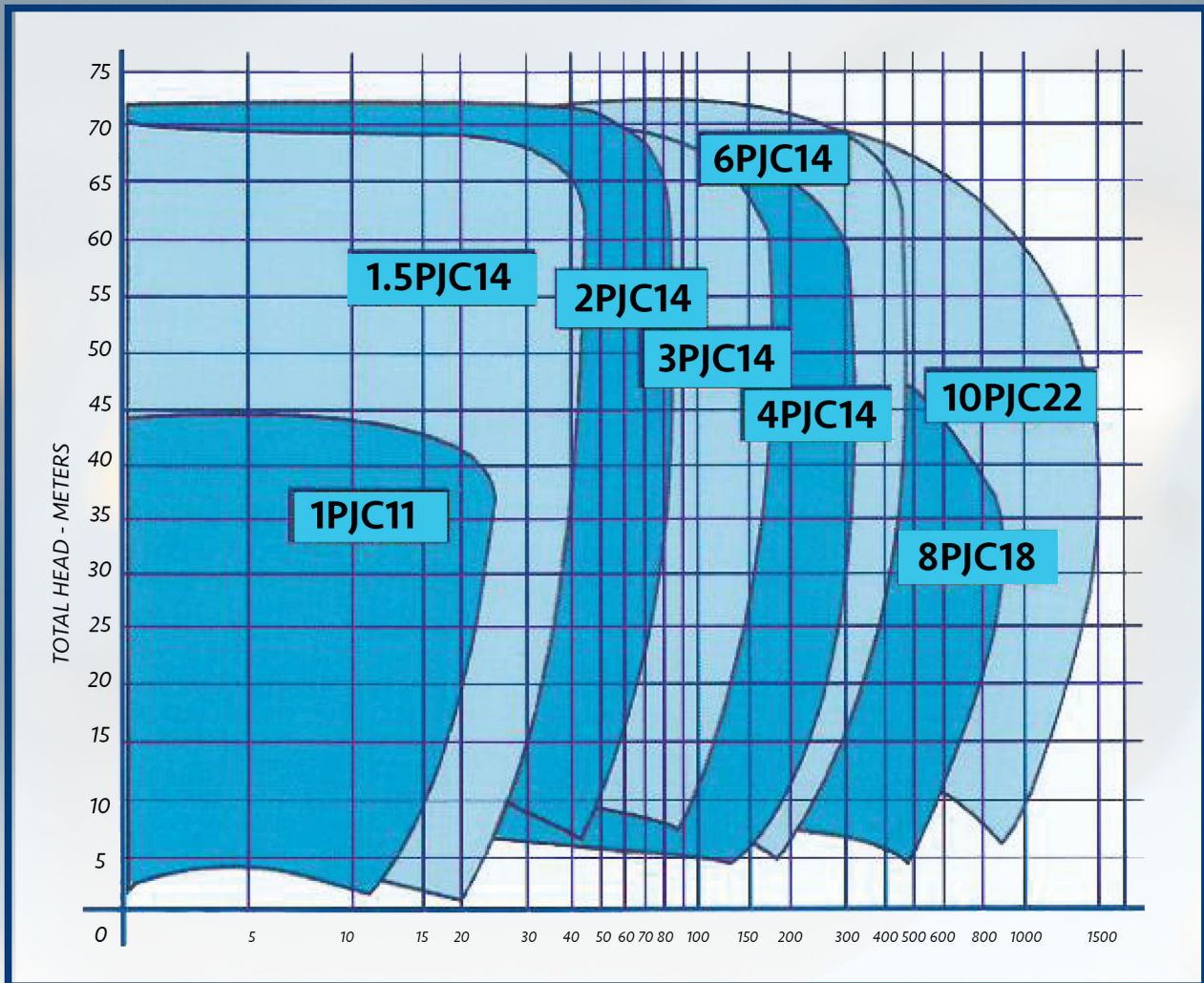
HUB DISC



SUCTION DISC

# PJC & PVJC

## HYDRAULIC RANGE

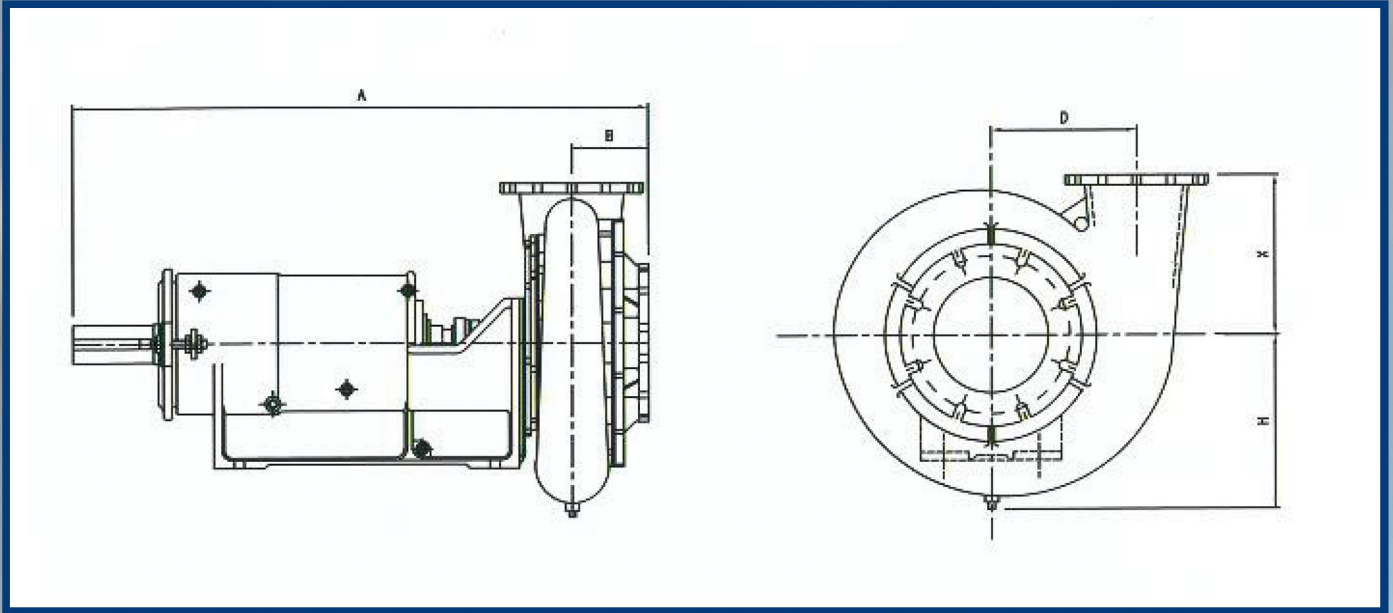


### Important Notes:

- Not indicated on the graph above is the efficiencies these pumps are capable of performing at their desired duty points. An individual curve showing their exact duty point and efficiency can be obtainable from your representative or agent respectively. The PHS range is capable of attaining high efficiencies thus allowing for a much lower overall total cost of ownership.
- This pump is available in a horizontal and vertical configuration and will perform per the graph provided here above.
- The entire range of pumps and sump depths are covered by few bearing frame sizes which allows for minimum spares needs and allows for easier standardisation in the work place, due to this the training requirements of the maintenance staff are also minimised.
- When making the decision of vertical cantilever over vertical spindle it is strongly advised that the manufacturer is consulted to avoid unnecessary cost implications.
- It is possible to have a pump to carry out multiple duties as the pumps are selected on a variable speed basis which once again allows for standardisation and minimised stock holding however care needs to be taken not to select the pump too close to the thrust side of the curve (left of curve) please consult with your representative or agent in this regard.

# PJC

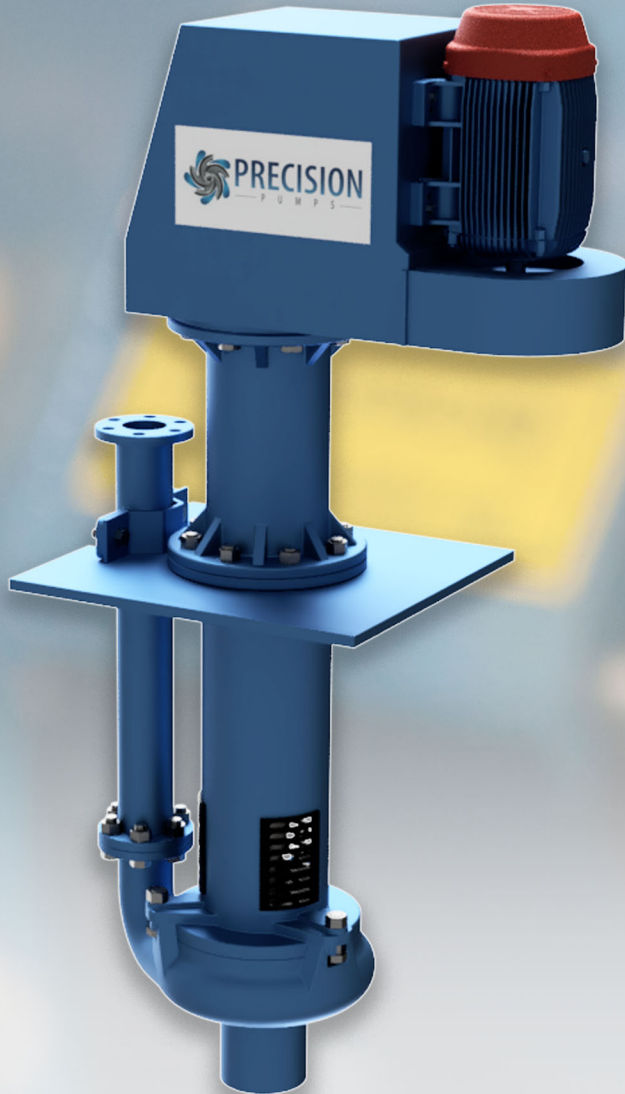
## DIMENSIONAL DATA FOR MODEL PJC HORIZONTAL PUMP RANGE



The PJC Horizontal Pump Range is available in the following sizes:

PUMP SIZE	FRAME	A	B	D	H	X	SHAFT CE	WEIGHT (KG)	
1PJC 11	1 X 1.5 - 11	1J	787	76	149	159	178	35	100
1.5 PJC 14	1.5 X 2 - 14	2J	800	89	200	238	210	42	144
2 PJC 14	2 X 3 -14	2J	813	102	205	210	229	42	150
3 PJC 14	3 X 4 -14	3J	933	121	213	270	235	55	200
4 PJC 14	4 X 6 -14	3J	946	133	232	295	267	55	216
6 PJC 14	6 X 8 - 14	4J	1070	143	241	346	318	65	323
8 PJC 15	8 X 10 -18	4J	1178	245	330	457	419	65	464
10 PJC 22	10 X 12 -22	5J	1286	245	432	556	508	75	819

## DESIGN FEATURES VERTICAL PUMP RANGE



The above diagram shows the PJC in a vertical cantilever configuration. In these applications, run dry capability is achieved by the absence of a throttle bush at the base of the pump.

This pump configuration has been successfully installed at a number of plants throughout Southern Africa, pumping a variety of products ranging from diffuser juice, chain wash and boiler ash.

The standard PJC pump can handle PH ranges from PH5-10. For environments outside of the normal operating range, contact a Precision Pumps Representative for assistance.

### **IMPELLER ADJUSTMENT**

The clearance between the suction disc liner and the impeller is externally adjusted without the need for removing the pump from operation by adjusting the travel on the shaft via the thrust bearing housing.

### **DIRECT OR BELT DRIVE**

Pumps may be driven with either belts, pulleys or directly. Speeds may be varied by pulley ratios, motor variable speed drives, or both.

### **HORIZONTAL, CANTILEVER, VERTICAL SPINDLE**

The wet end and bearing housing are designed to work in horizontal, vertical or cantilever positions. The pros and cons of these configurations can be discussed with someone from the Precision Pumps team.

### **WET END MATERIALS**

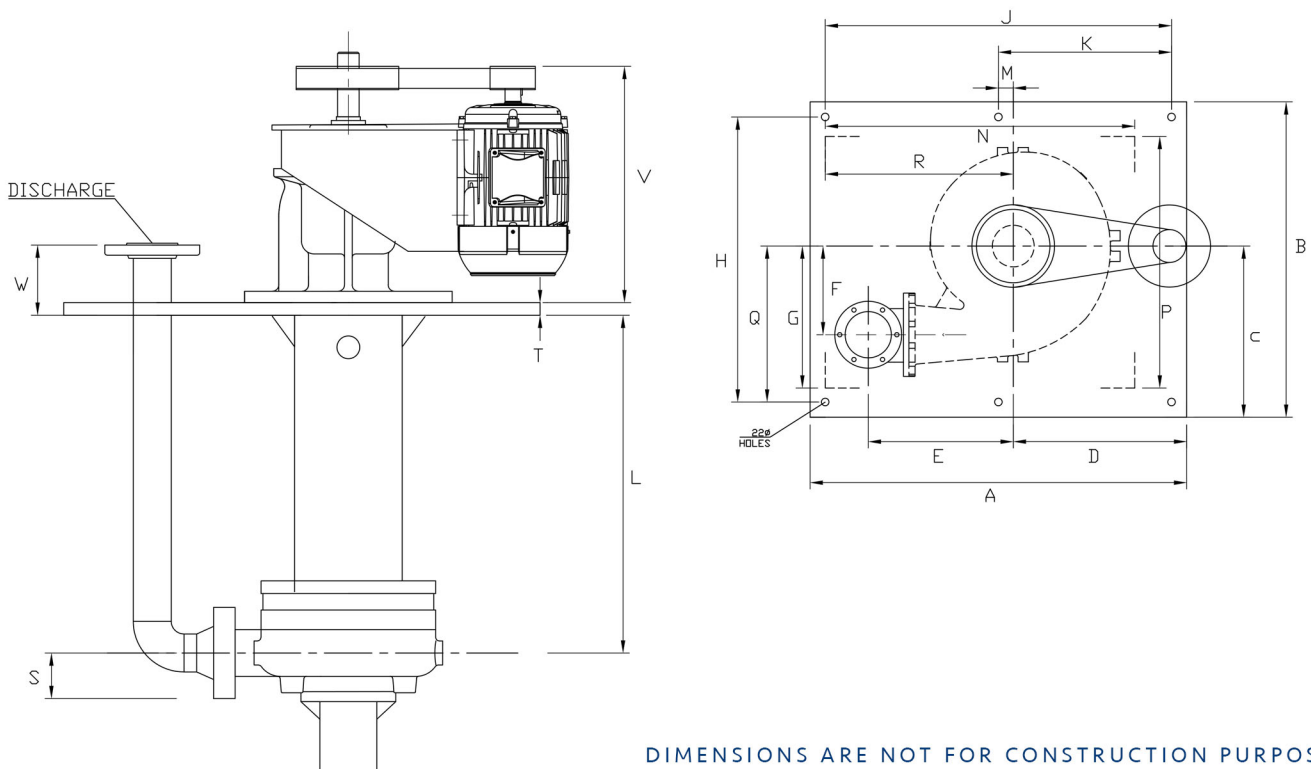
The wet end materials are constructed from chrome 28 and then hardened to 600 brinell (+- 85 Rockwell). This is our standard material, however, stainless steel, cast iron, CD4MCU and other materials are available on request.

### **WET END DESIGN**

As can be seen by the diagrammatic representation the pump has a wear liner that is fastened to the suction plate which is easily changed by removing the suction plate, the liner and the impeller which limits the down time and therefore improves overall usage of the pump. The impeller is also of the open type so it allows a fair solids passage through the pump. Due to the proximity of the impeller to the near plate the efficiency ratio of this pump are relatively high to the industry standard and can therefore achieve higher heads and flows with a lower overall power consumption.

# PVJC

## VERTICAL PUMP GENERAL ARRANGEMENT



DIMENSIONS ARE NOT FOR CONSTRUCTION PURPOSES  
DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE

DIMENSIONS	FRAME 1-3 PJC	FRAME 4PJC	FRAME 6 PJC	FRAME 8-10 PJC
A	1320	1397	1600	1829
B	1067	1143	1397	1600
C	544	569	704	813
D	635	660	673	750
E	448	503	573	450
F	274	290	391	470
G	660	520	653	762
H	957	1042	1296	1500
J	1220	1296	1500	1728
K	670	634	750	863
L	FROM	ONE - THREE	METER	
M	26	32	125	160
N	953	1010	1340	1575
P	813	863	1143	1347
Q	425	450	578	686
R	559	610	800	958
S	94	115	140	170
T	19	19	19	19
W	150	170	221	247
<b>SOLIDS - PASS</b>	16	19	32	65

# PVJC

## VERTICAL MATERIAL

### PIPE COLUMNS

The pipe column is available in 5 different material of construction including the following:

- Mild Steel
- Stainless Steel 304
- Stainless Steel 316
- 3Cr12
- Epoxy Coated Mild Steel

The purpose of having these configurations is to both suit the application and the budget of the client. The columns are designed with a purpose to last and are equipped with gussets to sustain the full range of the wet ends. There are two standard pipe sizes for the complete pump range namely the 6 inch diameter and the 8 inch diameter.

### COLUMN LENGTH

The column length depends entirely on the sump depth and constant water depth of the sump. The standard unit does not normally exceed 3 meters but longer units are available on request. We have a number of standard lengths and any other size is manufactured according to the clients requirements. The size of the standard unit is as follows:

- 1 mtr • 1.2 mtrs • 1.5 mtrs
- 1.8 mtrs • 2.0 mtrs • 2.5 mtrs • 3.0 mtrs

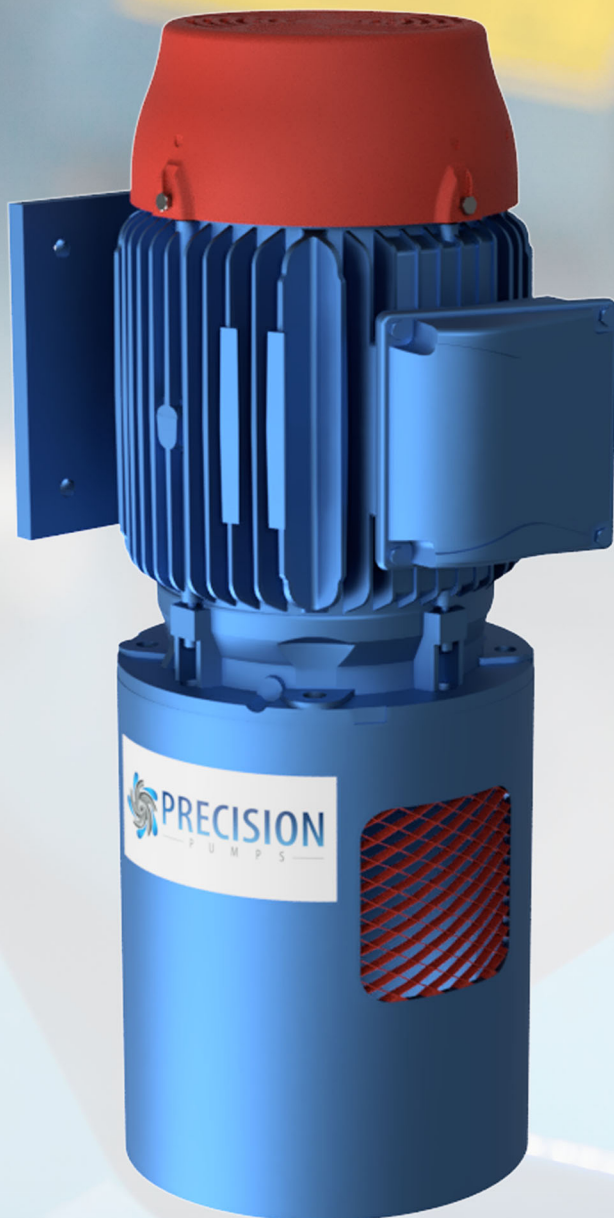
Any of the above lengths are applicable to the entire vertical series and are fully adaptable to each situation. We recommend that they are kept to the standard lengths to enable us to supply the spares with the shortest possible lead time due to the fact that units manufactured to clients specifications are not kept as stock items.



# PVJC

## DIRECT DRIVE VERTICAL MOTOR MOUNT

The PJC and PVJC are also available in a belt drive configuration as displayed on the right.



The direct drive motor bracket is used for a fixed speed drive or VSD equipped pump set. The stool is designed to be fitted directly to the pump bearing housing and the motor secured directly to the flange mounted motor bracket, as can be seen in the image to the left.