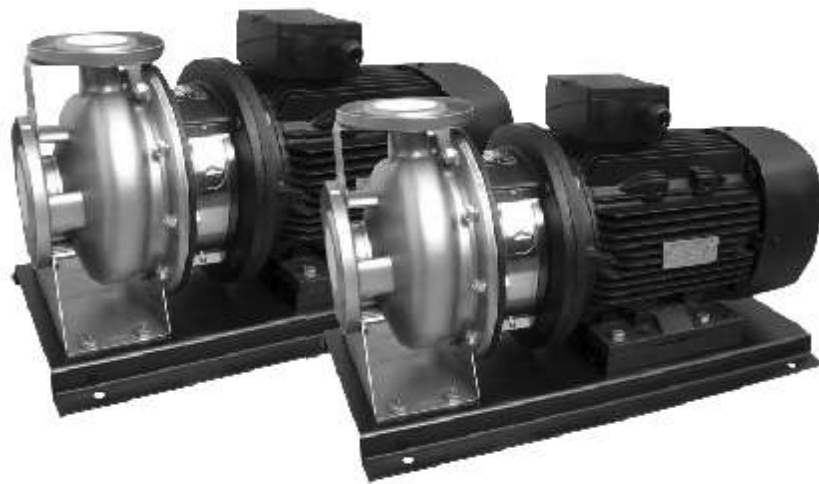




CNP PUMPS INDIA PVT. LTD.

ZS

Stainless Steel Horizontal Single-stage centrifugal Pump



STAINLESS STEEL PUMPS SPECIALIST

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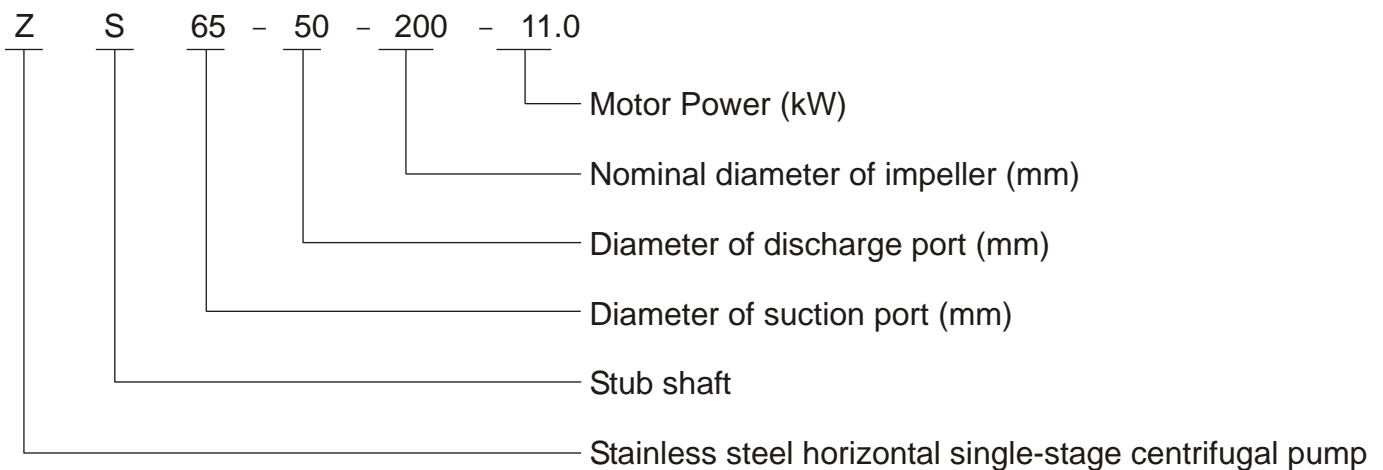
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INTRODUCTION

ZS Stainless steel horizontal single-stage centrifugal pump is made by advanced techniques such as pressing bulging welding of corrosion resistant plate. It is a new generation centrifugal pump initiated in China and may replace traditional IS pump and common corrosion proof pump. It features beautiful appearance, light and handy structure, high efficiency and energy saving, durable, corrosion proof, low noise, etc.

Connotation of the type

ZS 65-50-200/11.0

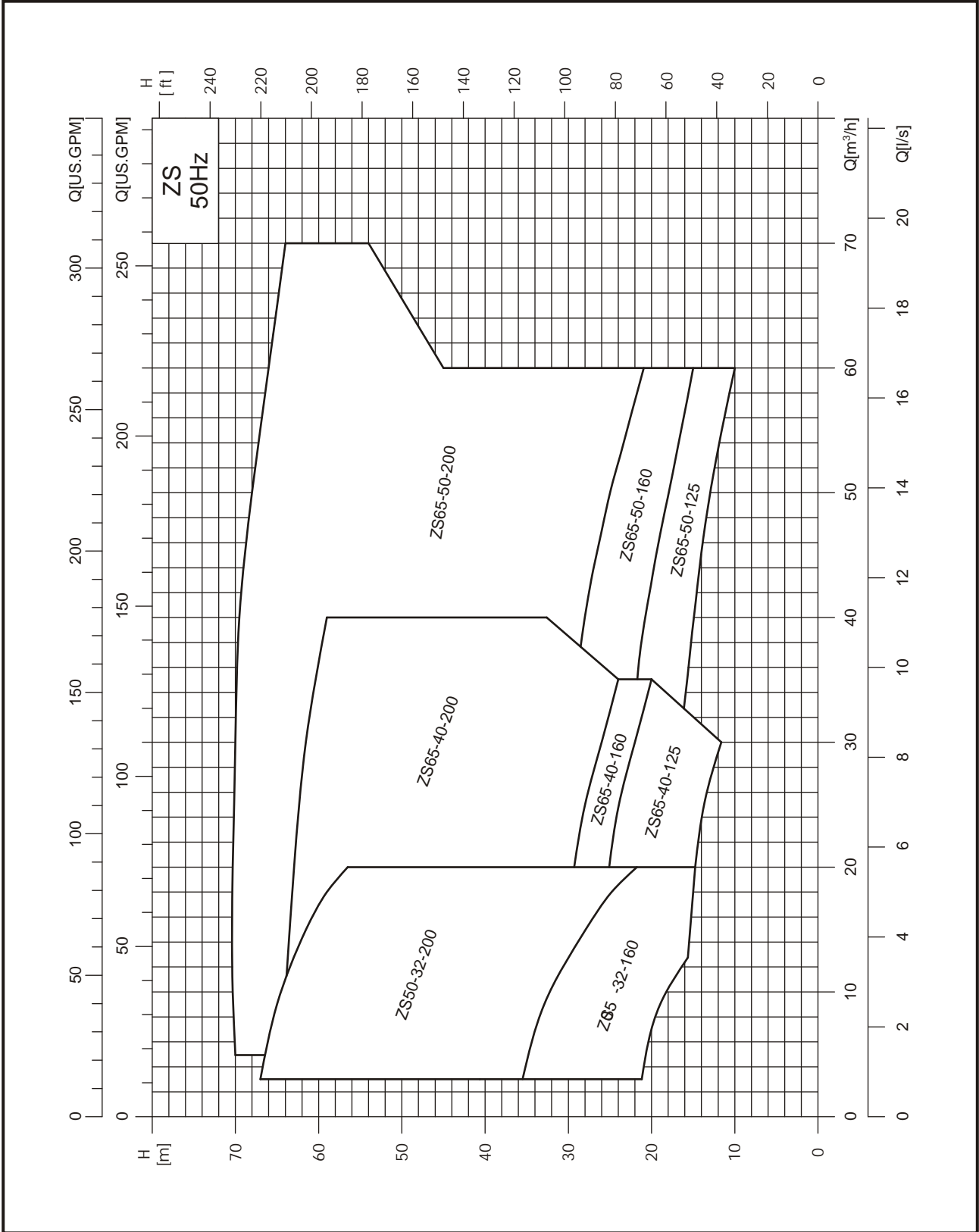


APPLICATION

ZS Stainless steel horizontal single-stage centrifugal pump is a sort of multifunction product with wide range of applications. It may transmit various mediums including water or industrial liquid and is suitable for different temperatures, flow rate and range of pressure. Its typical applications mainly include the following aspects:

- | Water supply: filtration in water works, transportation and subarea water carriage, pressurization of main duct;
- | Industrial pressurization: flow wetting system, cleaning system;
- | Transportation of industrial liquid: water supply of boiler, condensed system, cooling and air conditioning system, machine tool support, light acid and alkali transportation;
- | Water treatment: distilled water system or separator, swimming pool, etc.;
- | Irrigation of agricultural land, petrochemical industry, medicine and sanitation, etc.

SCOPE OF PERFORMANCE



PRODUCT RANGE

Sr. No.	Model	Q [m ³ /h]	H [m]	n [r/min]	[V] Standard voltage	
					1 X 220V	3 X 380V
					P ₂ [kW]	P ₂ [kW]
1	ZS50-32-160/1.1	6.3	20	2900	1.1	1.1
2	ZS50-32-160/1.5	12.5	24		1.5	1.5
3	ZS50-32-160/2.2	12.5	30		2.2	2.2
4	ZS50-32-200/3.0	12.5	36			3
5	ZS50-32-200/4.0	12.5	48			4
6	ZS50-32-200/5.5	12.5	63			5.5
7	ZS65-40-125/1.5	25	13		1.5	1.5
8	ZS65-40-125/2.2	25	18		2.2	2.2
9	ZS65-40-125/3.0	25	24			3
10	ZS65-40-160/4.0	25	28			4
11	ZS65-40-200/5.5	25	36			5.5
12	ZS65-40-200/7.5	25	46			7.5
13	ZS65-40-200/11.0	25	62	2950		11
14	ZS65-50-125/3.0	50	13	2900		3
15	ZS65-50-125/4.0	50	18			4
16	ZS65-50-160/5.5	50	25			5.5
17	ZS65-50-200/7.5	50	32			7.5
18	ZS65-50-200/9.2	50	40			9.2
19	ZS65-50-200/11.0	50	48	2950		11
20	ZS65-50-200/15.0	50	58			15
21	ZS65-50-200/18.5	50	68			18.5

MINIMUM INLET PRESSURE [NPSH]

In case that the pressure in pump is lower than the stream pressure used to convey liquid, the cavitations will occur. To avoid cavitations, a minimum pressure at the inlet side of the pump shall be guaranteed. The maximum suction stroke can be calculated with following formula:

$$H = P_b \times 10.2 - \text{NPSH} - H_f - H_v - H_s$$

P_b Atmosphere pressure (bar)

In a closed system, P_b means system pressure (bar)

NPSH = Net positive suction head (m)

It can read out from the point of possible max. Flow rate shown on NPSH curve.

H_f = Pipeline loss at the inlet (m)

It is in accordance with pipeline possible max. Flow.

H_v = Stream pressure (m)

It depends on liquid temperature and stream pressure value.

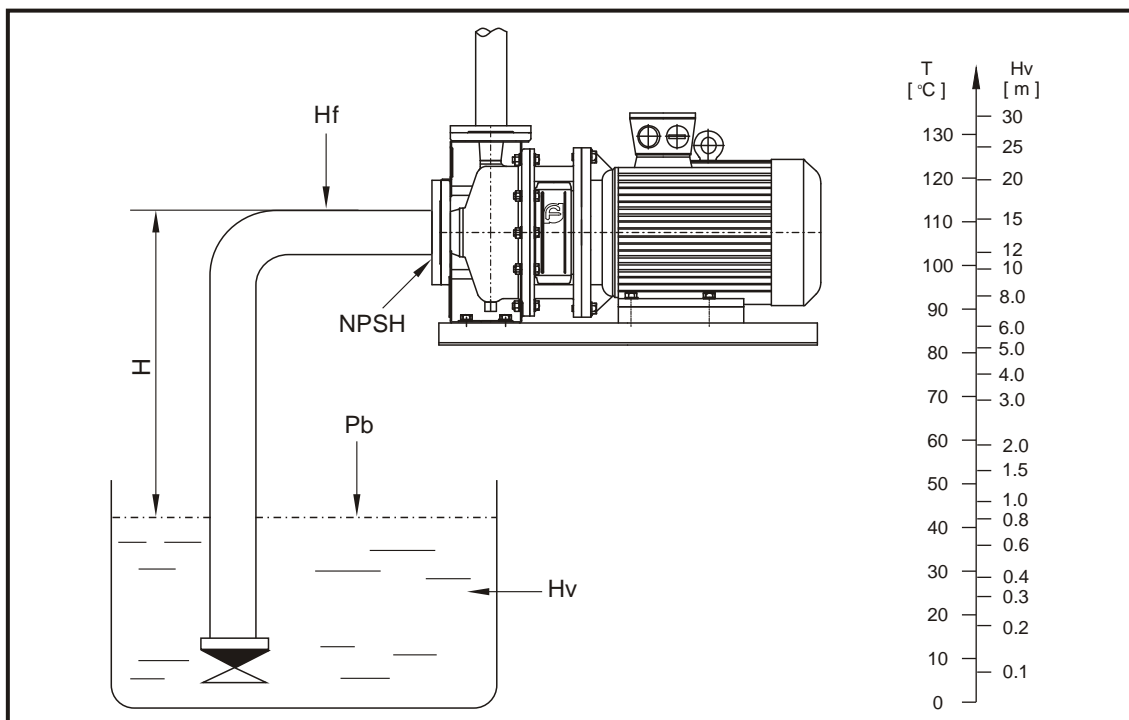
H_s = Safety margin (m)

Minimum 0.5m delivery head.

If the calculated result H is negative, the pump may run under the max. Suction head H . In case the calculated result H is negative, a delivery head of min. Inlet pressure is necessary

Note: Normally, the above calculation will not be done. H is calculated in the following conditions:

- 1 The liquid temperature is comparatively higher;
- 2 Liquid flow exceeds rated value;
- 3 Suction head is comparatively large or inlet pipeline long;
- 4 System pressure is too low;
- 5 Bad inlet condition.



INSTALLATION REQUIREMENTS

- 1 ZS Stainless steel horizontal single-stage centrifugal pump is directly connected to motor by pump shaft, composed of pump, pump shaft and standard motor;
- 1 The pump shall be installed on the ventilating and anti-freezing place; The installation of the pump shall ensure that the pump will not be influenced by the tension of the pipeline;
- 1 If the pump is installed outdoor, suitable outer cover must be configured to prevent electric elements from water inflow or coagulating dew;
- 1 To facilitate inspection and maintenance, enough space must be left around the machine group;
- 1 Electric wiring device shall guarantee that the pump will not be damaged by lack of phase, unstable voltage, current leakage and overload;
- 1 The pump shall be installed on the pedestal horizontally. Horizontal direction is the suction port for the pump, and vertical direction is the discharge port for the pump.

CURVES

Following conditions are suitable for the performance curves shown below:

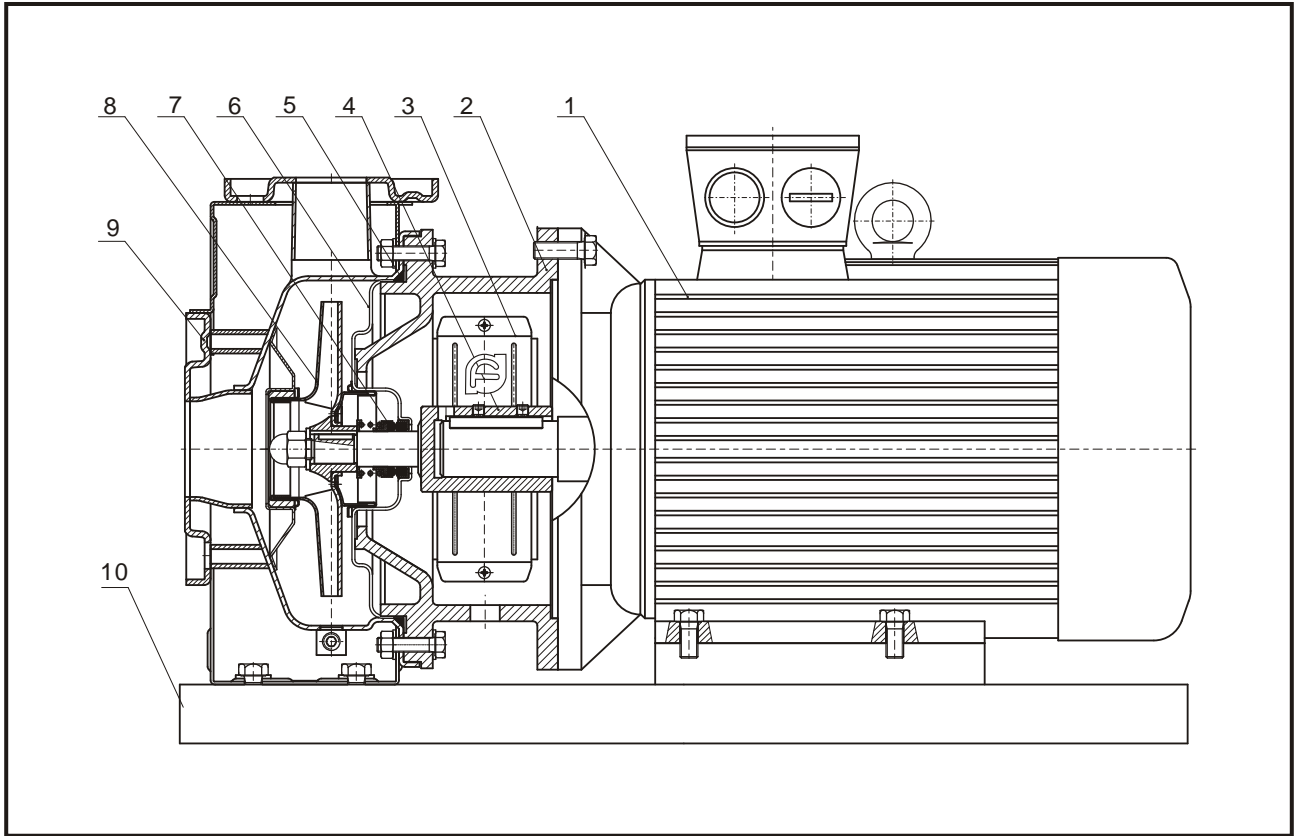
- 1 Curve tolerance is in conformity with ISO9906, Appendix A;
- 2 Motors used in tests are JB/T8680.1-1998 "Y2 series 3-phase asynchronous motor".
- 3 All curves are based on the measured value of motor 3 380V, under the constant speed of 2900rpm or 2950rpm;
- 4 Test methods are in conformity with the stipulation about centrifugal pump, mixed-flow pump, axial pump, and vortex pump test method in GB/T3216-1989;
- 5 The test medium is clear 20°C water without any solid impurity
- 6 Pumps should not work if the flow is beyond the minimum or the maximum flow in the curves
- 7 The motor power shall be adjusted if the viscosity or density of medium is different from water.

OPERATING CONDITION

- 1 Clean, thin, non-flammable and explosive, not containing the liquid with solid particle and fibre
- 1 Liquid temperature -20°C +100°C
- 1 Ambient temperature: up to +40°C
- 1 Altitude: up to 1000m;
- 1 Max. pressure of the system is 10 bar.

MOTOR

- 1 TEFC motor, 2-pole;
- 1 Protection class:IP55;
- 1 Insulation class :F;
- 1 Standard voltage:50Hz 1 x 220V
3 x 380V.

SECTION DRAWING

MATERIAL

NO.	Parts	Material	AISI/ASTM
1	Motor		
2	Bracket	Ht200	ASTM25B
3	Guard plate	0Cr18Ni9	AISI304
4	Shaft	2Cr13/0Cr18Ni9	AISI420/AISI304
5	Rubber parts	EPDM	
6	Lining of pump head	0Cr18Ni9	AISI304
7	Mechanical seal	Carbon/Silicon Carbide	
8	Impeller	0Cr18Ni9	AISI304
9	Pump body	0Cr18Ni9	AISI304
10	Base plate	Q235	ASTMA570