

Catalog of 5ZB Large Flow Series Injection Pump

General Introduction

5ZB Large Flow Plunger pumps are horizontal triplex single active reciprocating pump series. It mainly consists of power end, fluid end and lubrication system, It is mainly used for circulating system of work over, wash well, cement well and drilling operations. Power rate range: 450~900kW, flow rate range: 26~216 m³/h, discharge pressure range: 6.3~50MPa, Stroke: 180-200mm, Sucking pressure: 0.02~0.1MPa.



Usage

The series are new water injection pumps for replacing the multistage centrifugal pumps in the oil field. It can deliver clean water or produced water on the oil fields.

Structural Feature

The pump adopts spring self-seal structure with reliable seal and less leak to maintain the plungers a longer life as well as the less friction and wearing to cut down power consumption.

Based on the Aerospace seal technology, we developed the YM5030-20-J, YM5030-40-J packing with the features of anti-corrosion and stable seal, which has got excellent effort on the produced water of the oil fields. It has perfect chemical stabilization and heat resistance and can be safely used at the temperature range of -15~120°C. There is four fluorine spacer ring between packing to guarantee the packing be compacted evenly and get lubricated with a longer serving life.

Springs set between the plunger compositions are used to press the packing to ensure its work at suitable pressure for a better seal and longer life. Hydraulic end adopts horizontal or vertical structure with materials 20Cr13/1Cr18Ni9Ti/304/316L according to



different medium.

Control System

Model GJB1-MCC monitoring system is special control facility as a protect device of 5ZB800 pump unit based on IEC standard. It can control various operation parameters of the plunger pump, and display, protect, remotely diagnose, take real-time videos and make data sheets or drawings for the plunger pump. The information can be shown vividly on the remote computer and the mobile.

Technical strength:

Patents

COUNTRY	APPLICATION PATENT NUM.	OR	PATENT NAME
China	ZL201220278054.0		Large flow rate injection pump for oil fields
China	ZL20133 0451871.1		5ZB600 injection pump
China	ZL200820029999.2		Valve seat structure of high pressure injection pump for oil fields
China	ZL201320178756.6		Sectional spherical valve
China	ZL201620995238.7		Smart remote control system

Strength

It is highly automatic, large flow, higher discharge pressure, better efficiency and long life as well as meet the oil field requirement accurate injection and green energy saving. Compared with the multistage centrifugal pump, it improves the pump efficiency better and helps solve energy utilization, and cuts down the oil recovery cost as a mechanical and electrical integration. It will become indispensable to a new generation of oilfield drilling equipment updating and upgrading of products.

Successful cases

The series has been smoothly operated in **Daqing oil field** which belongs to CNPC for over ten months since last October. All the wearing assemblies and the seal of the packing maintain perfect state. CNOOC ordered 10 sets of 5ZB800 to apply on their sea platform in Bohai Bay, China in March, 2023.

Economy Cost

Based on the flow rate $105\text{m}^3/\text{h}$, discharge pressure 17MPa, the consume cost per our 5ZB800 is \$0.59, the corresponding centrifugal pumps is \$1.13. Totally 48% consumption



cost has been saved for the end user.

Product Specifications

1. Specifications of 5ZB400

Rated motor power: 335.3-536.4 Hp (250-400 Kw)

Discharge Flow rate: 15~200m³/h,

Discharge pressure (D.P): 0-7,252psi

Stroke: 180mm

Plunger DN: 40-110 mm

Pump shaft speed: 230-290rpm

Inlet DN: 65-200mm

Outlet DN: 40-150 mm

2. Specifications of 5ZB500

Rated motor power: 308.3-750.7Hp (280-560kw)

Discharge Flow rate: 20-180m³/h

Discharge pressure (D.P): 6.3-50Mpa

Stroke: 180mm

Plunger's Dia.: 45-135mm

Pump shaft speed: 230-290rpm

Inlet DN: 65-250mm

Outlet DN: 40-200 mm

3. Specifications of 5ZB600

Rated motor power: 536.4-844.8 Hp (400-630 Kw)

Discharge Flow rate: 15~200m³/h,

Discharge pressure (D.P): 0-7,252psi

Stroke: 180mm

Plunger Dia.: 60-78mm

Pump shaft speed: 230-290rpm

Inlet DN: 65-250mm

Outlet DN: 40-200 mm

4. Specifications of 5ZB800

Rated motor power: 612.2-1224.5 Hp (450-900 Kw)

Discharge Flow rate: 26~216m³/h,

Discharge pressure (D.P): 0-8750psi

Stroke: 200mm

Plunger DN: 50-150mm

Pump shaft speed: 230-290rpm

Inlet DN: 65-250mm

Outlet DN: 40-200 mm



5. Specifications of 5ZB1000

Rated motor power: 500-1000Kw

Discharge Flow rate:37.5-270m³/h,

Discharge pressure (D.P): 0-8750psi

Stroke: 200mm

Seal Type: Mechanic

Hydraulic End type: Horizontal / Vertical