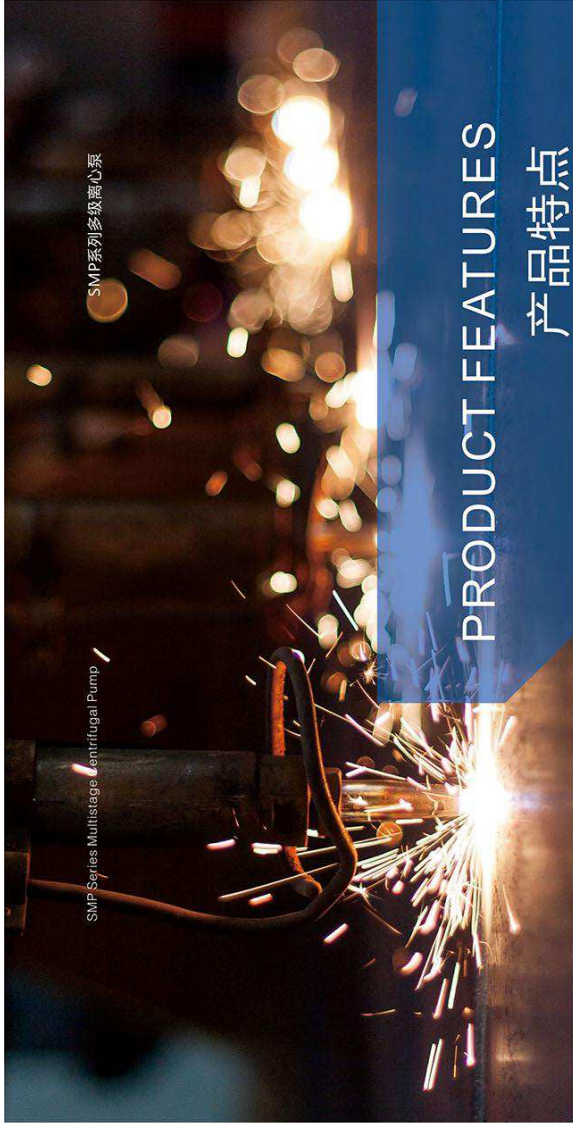


SMP SERIES MULTISTAGE CENTRIFUGAL PUMP SMP系列多级离心泵

SMP系列多级离心泵，是在MC型多级离心泵的基础上，消化引进国外先进的技术进行改造并重新设计的，它是为更好地满足用户的需要以提高可靠性和节能为中心的更新换代而发展的新产品。

SMP series multi-stage centrifugal pump is a new product, which is designed by introducing foreign advanced technology based on Type MC multi-stage centrifugal pump to improve reliability and energy saving as the center and meet the requirements of users.



SMP Series Multistage Centrifugal Pump

SMP系列多级离心泵

PRODUCT FEATURES 产品特点

产品适用范围 | THE SCOPE OF APPLICATION



SMP系列多级离心泵广泛地应用在电站的锅炉给水及冷凝液的输送、工业的海水淡化工程和联合循环电站等领域，适合输送纯净的或稍有污染的、热的和冷的、化学中性的和腐蚀性的介质。

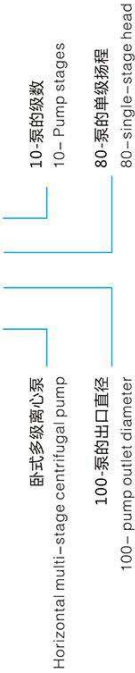
SMP series multistage centrifugal pump is widely used in boiler feed water and condensate liquid pumping in power station, seawater desalination engineering, combined cycle power plant, etc. The pump is suitable for pumping clean or slightly polluted, hot or cold, chemically neutral and corrosive liquids.

- 石油化工
- 化学工业
- 电站和一般工业冷凝液的输送
- 海水淡化工程（反渗透方法）
- 电站用锅炉给水泵
- 联合循环电厂和工业自备电厂辅助系统用泵

- Petrochemical industry
- Chemical industry
- Power station and industrial condensate liquid pumping
- seawater desalination engineering (hyperfiltration)
- Boiler feed water pump in power station
- Pumps of auxiliary standby systems in combined cycle power plant and self-contained power plant

性能参数 | PERFORMANCE PARAMETERS

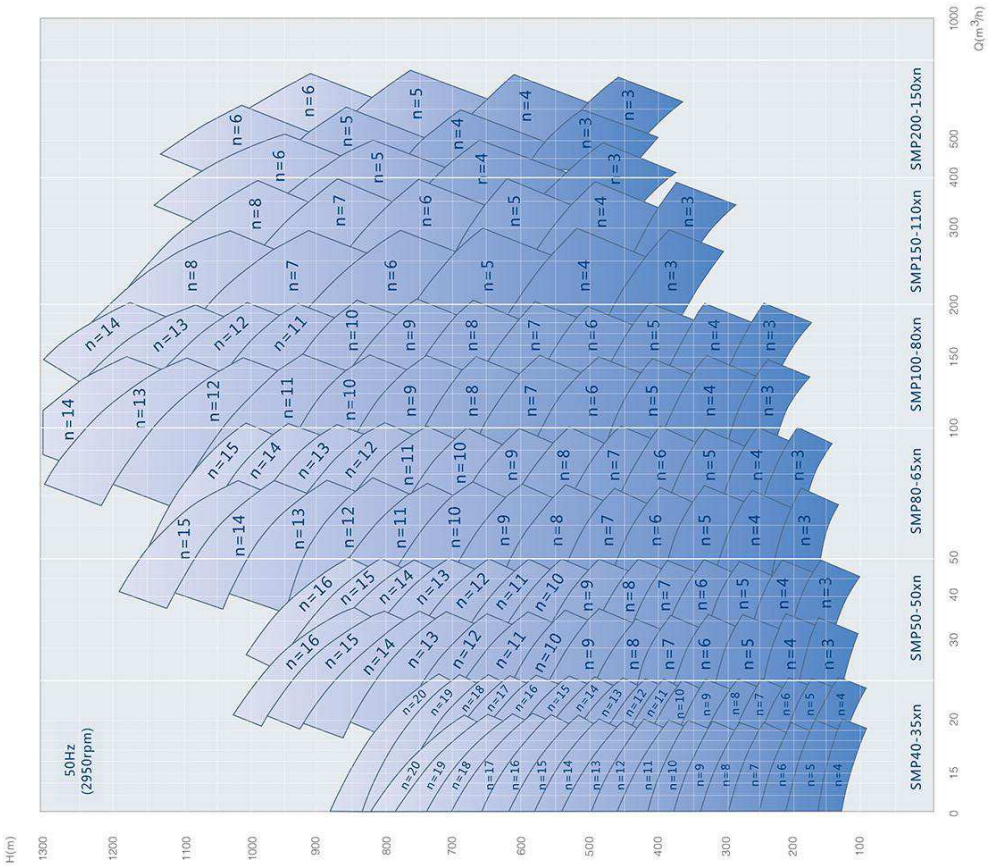
型号	Type	SMP100-80x10
流量	Flow Rate	10~500m³/h
扬程	Head	up to1200m
工作温度	Operating Temperature	-80~180℃
压力等级	Pressure	15MPa
转数	Speed	2950r/min
型号意义	Designation of Pump Sizes	SMP 100-80 x10



主要零件材质 | MATERIALS OF MAIN PARTS

零件名称	Part Name	材 料	Material	零件名称	Part Name	材 料	Material
吸入段	SUCTION CASING	ZG230-450 / ZG1Cr13Ni		平衡套	BALANCE SLEEVE	RWA350	
吐出段	DISCHARGE CASING	ZG230-450 / ZG1Cr13Ni		平衡套压板	BALANCE SLEEVE PLATE	RWA350	
尾 盖	BACK COVER	ZG230-450 / ZG1Cr13Ni		叶轮密封环	IMPELLER SEAL RING	S203	
中 段	STAGE CASING	ZG230-450 / ZG1Cr13Ni		轴	SHAFT	40CrVA / 4Cr14Mo	
导 叶	GUIDE VANE	ZG1Cr13Ni		叶 轮	IMPELLER	ZG1Cr13NiMo	
密封箱体	SEAL BOX	ZG230-450 / ZG1Cr13Ni		平衡鼓	BALANCED DRUM	S203	
中段密封环	STAGE CASING SEAL RING	RWA350		轴 套	SHAFT SLEEVE	3Cr13	

性能型谱 | PERFORMANCE SPECTRUM



DESIGN FEATURES AND ADVANTAGES

设计特点及优势

SMP 系列泵水力过流部件采用了高效节能泵的水力模型，经过优化的水力设计确保泵的最佳效率，水力型谱覆盖范围广、高效区宽、流量覆盖范围广、扬程高、可靠性强、运行平稳、维修简便等特点。

We adopt high-efficiency energy saving hydraulic model for flow passage components. The optimized hydraulic design has the advantages of best efficiency, wide range of hydraulic spectrum, high efficiency point and flow rate, high head and reliability, stable operation, easy maintenance, etc.

SMP 系列泵是模块化设计的径向剖分节段式、卧式多级泵。穿杠将前段、中段、后段连成一体。泵的转子由装在轴上的叶轮、平衡鼓等零件组成，泵为水平中心线或脚支撑两种结构。承压件可以按客户要求采用锻件。

SMP series pump is a modular, radially split, segmental, horizontal multi-stage pump. Suction casing, stage casing and discharge casing are linked together by tie bolts. The rotor consists of impeller on the shaft, balance drum, etc. The pump is horizontal centerline or foot mounted. The pressure-containing parts can be forged.

● 泵的轴承结构除 SMP40、50、80 采用滚动轴承外，其余型号全部采用径向滑动轴承和一对角接触轴承组成，在轴承体上分别设有安装各种监视仪表的接口。

We use roller bearings for SMP40, 50 and 80, radial sliding bearings and a pair of angular contact bearings for other sizes. The bearings are respectively provided with various instrument monitoring interfaces.

● 平衡机构采用平衡鼓结构来平衡轴向力，这种平衡机构它能平衡大部分轴向力，灵敏度高，残余轴向力由一对角接触轴承来平衡。工况变化时自动调整能力好。同时具有在频繁启动与停车时平衡鼓和平衡套不易产生研磨。

The axial force is balanced by balance drum which can balance most axial force and has high sensitivity. The residual axial force is balanced by a pair of angular contact bearings. The balance mechanism can be adjusted automatically as required to meet the application. There is no grinding between balance drum and balance sleeve after frequent start and stop.

● 轴承体装在泵轴的两端，轴承润滑方式：稀油润滑，轴承体的冷却方式有两种：风冷和水冷。

Bearings are installed at both ends of pump shaft. The bearings are lubricated by grease. There are two cooling methods: wind cooling and water cooling.

CROSS SECTION DRAWING OF SMP SERIES MULTISTAGE CENTRIFUGAL PUMP

Suction Casing, Stage Casing and Discharge Casing

- Suction casing, stage casing and discharge casing are linked together by tie bolts. The pump is foot mounted as standard, or is centerline mounted for large size and high temperature.
- Maximum design pressure is 1.5 Mpa
- Fluid temperature is -80~180°C
- Top suction and top discharge nozzles conform to ANSI and DIN standards

- Suction and discharge nozzles can be welded or connected by flanges in accordance with industrial standards

Rotor Component

- The rotor consists of shaft, impeller, inter-stage shaft sleeve, balance drum, spacer ring, snap ring, lock ring, O seal ring, fastening nut, etc.

- Rotors between bearings are dynamically balanced to GB9239 G2.5 class.

Bearing Structure

- Radial bearing: we use rolling bearings for SMP40, 50 and 80, radial sliding bearings for other sizes.
- Thrust bearing: the residual axial force is balanced by a pair of angular contact bearings. The bearings can bear axial loads at two directions.
- The bearings are lubricated by oil.

Pump Casing Drain Structure

- Use flange connection as standard
- Drain structure can be optional according to users' requirements

Pressure-containing Part Seal

- Main seal is metal-to-metal surface seal. O seal ring is used as auxiliary seal
- Materials of O seal rings can be selected as required to meet the application

Measuring Instruments

Various kinds of measuring instruments can be optional according to conditions at site.

- Suction and discharge pressure gauges
- Bimetal thermometer and platinum thermal resistance for measuring bearing temperature
- Bearing vibration measuring instruments at both ends in three directions

Impeller, Guide Vane

- Closed impeller with high anti cavitation performance is used as first stage impeller. Inducer can be optional for high requirements of NPSH.
- Static balance must be done for all the impellers to GB9239 G6.3 class.
- Impellers are fixed on the shaft by balance drum and lock ring
- Impellers and guide vanes are precisely cast to guarantee geometric accuracy and surface roughness of flow passages, which have the advantages of improving performance indexes and corrosion resistance

O Ring

- O rings for impellers are optional to make sure that the pump has high efficiency, low maintenance cost, high reliability, short start-up and shut-time time within the period of use

Mechanical Seal

- The size of seal chamber can completely conform with ISO21049 and API 682 standards.
- Single and double mechanical seal, or assembly mechanical seal is optional. Flushing, cooling, heating, quenching and buffer tank connection conform with API 610 standards.

Shaft

- The critical speed higher than operating speed: low shaft deflection, protected abrasion area
- The shaft adopts heavy load and large diameter to meet the requirement of low shaft deflection and guarantee the life of bearing and seal
- Materials of shaft can be optional in accordance with different conditions to guarantee the minimum shaft deflection

Balance Mechanism

- Balance mechanism comprises: balance drum, balance plate, snap ring, etc.
- The axial force is balanced by balance drum which can balance most axial force and has high sensitivity. The balance mechanism can be adjusted automatically as required to meet the application. A pair of angular contact bearings can be used for balancing the residual axial force and controlling axial movement of rotor