



**SS/SSD**

 **卧式多级节段式泵**

Horizontal Multi-stage Ring-section Pump



荏原机械淄博有限公司  
EBARA MACHINERY ZIBO CO.,LTD.

**SS/SSD系列泵为卧式、单壳体、节段式、多级结构。SS首级叶轮为单吸结构。SSD首级叶轮为双吸结构。**

SS/SSD type pump is a high pressure centrifugal pump with horizontal, single-stage, multi-stage ring-section pump. SS is the type which first stage impeller is single suction structure; SSD is the type which first stage impeller is double suction structure.

**特征 Features**

- ◆ 壳体中心线支承,重工位设计。  
Centerline support and heavy duty design.
- ◆ 高效率、高可靠性。  
High efficiency, High reliability.
- ◆ 柔性设计,适用介质范围广泛。  
Flexibility of design handles wide range of liquids.
- ◆ 所有部件可最大程度实现互换。  
All components have been designed for maximum parts interchangeability.
- ◆ 低NPSH。  
Low NPSH performance.

**应用领域 Applications**



常规  
电厂  
Coal Fired  
Power Plant



工业  
电厂  
Industrial  
Power Plant



冶金  
钢铁  
Metallurgical Iron  
and Steel



石油化工  
行业  
Petrochemical &  
Chemical



石油及  
天然气  
Petroleum &  
Natural Gas



光热  
发电  
Solar Thermal  
Power Plant



垃圾焚烧  
发电  
Garbage incineration  
power plant



其它化  
工行业  
Other Chemical  
Industries

**主要参数 Ratings**

流量 / Capacities	达720m <sup>3</sup> /h / to720m <sup>3</sup> /h
扬程 / Heads	达2500m / to 2500m
出口压力(表压)Discharge pressure(gage)	达23.5MPa / to23.5MPa
静水压试验压力 / Hydostatic test pressure(gage)	达35.3MPa / to35.3MPa
标准转速 / Speed	2950 rpm(50Hz) / 50Hz 2950min <sup>-1</sup> 3550 rpm(60Hz) / 60Hz 3550min <sup>-1</sup>
最大许用转速 / Max allowable Speed	7000rpm/7000min <sup>-1</sup>
旋转方向 / Rotation	从驱动端看,叶轮顺时针方向旋转 / Clockwise viewed from inboard side
温度范围 / Temperature	达250°C(480°F) / (to 250 C -480°F)
叶轮型式 / Impeller type	闭式 / Closed
进出口方式(标准结构) / Nozzle position	顶进-顶出 / Top-Top
法兰标准 / Flange rating	ASME或其他标准 / ASME or other standard also available
轴封型式 / Shaft sealing	机械密封或填料密封 / Conventional packing and mechanical seal

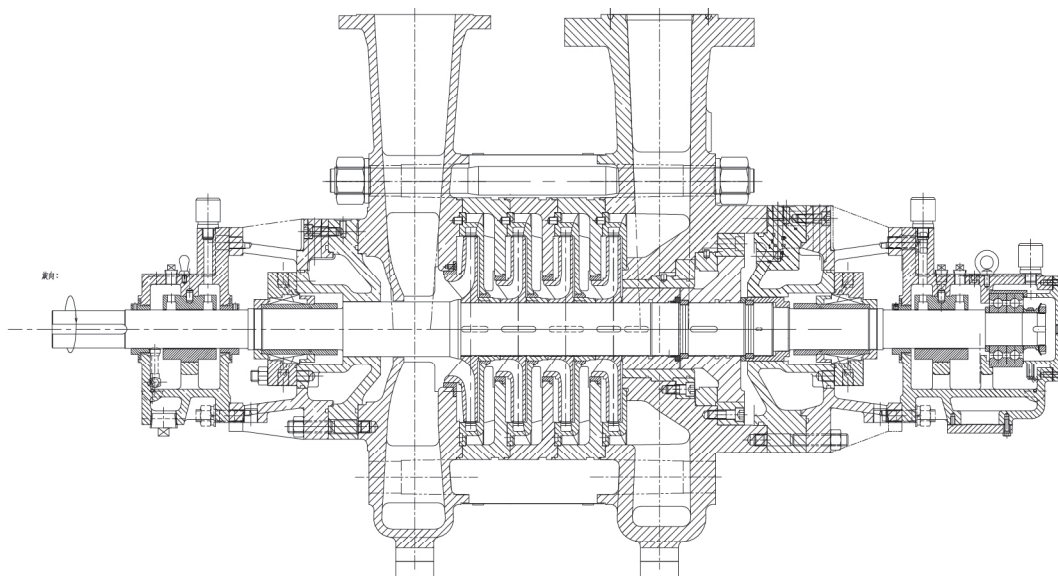
## 结构 Construction

- ◆ 叶轮、导叶，泵壳组成了主要过流通道，决定了泵的水力和汽蚀性能。为了适应各个行业的要求，在原开发了系列产品，针对不同参数应用不同的水力模型可以达到在运行参数的性能最优化。加上叶轮，导叶等的精密加工，保证实现高效运行从而降低运行成本。

Impeller, guide vane and casing form the primary flow passage, which determines the hydraulic and cavitation properties of pump. In order to satisfy the requirements for various industries, EBARA has developed a series of products. Different hydraulic models are applied for different parameters for the purpose of performance optimization of operating parameters. On basis of finishing of impeller, guide vane etc., it will realize high-efficiency operation so as to reduce cost of operation.

- ◆ 转子的动静平衡要求，独特的轴向力平衡系统设计，壳体的中心支撑结构保证泵在高温，高压工况下运行稳定，可靠。

The requirements for dynamic and static balance, unique design of axial thrust force balance system and centerline-mounting structure of casing ensure that the pump will steadily and reliably operate under the condition of high temperature and pressure.



- ◆ 根据客户参数和具体要求，径向轴承既可采用滚子轴承，也可以使用滑动轴承。优化设计的轴承箱体内的润滑油，一般采用空冷方式。也可以根据需要选择水冷结构。

According to the data and specific requirements from customer, radial bearing can be either a roller bearing or a sliding bearing. The lubricant inside bearing box with optimized design generally uses air cooling method. Water cooling is available, if required.

- ◆ 泵的叶轮是单向排列，需要配备平衡装置。根据泵的参数，该装置可采用平衡鼓或平衡盘结构。残余的轴向力由推力轴承承受，推力轴承可采用飞溅润滑的圆锥滚子轴承，或采用承受两个方向推力的强制润滑可倾瓦轴承。

The impeller of pump is in single direction arrangement, which shall be provided with balance device. According to the parameters of pump, either balance drum or balance disc structure is available for this device. Residual axial thrust force is accommodated by thrust force bearing. The thrust force bearing can be a tapered roller bearing with splash lubrication or a forced lubrication tilting-pad bearing that can accommodate thrust force in two directions.

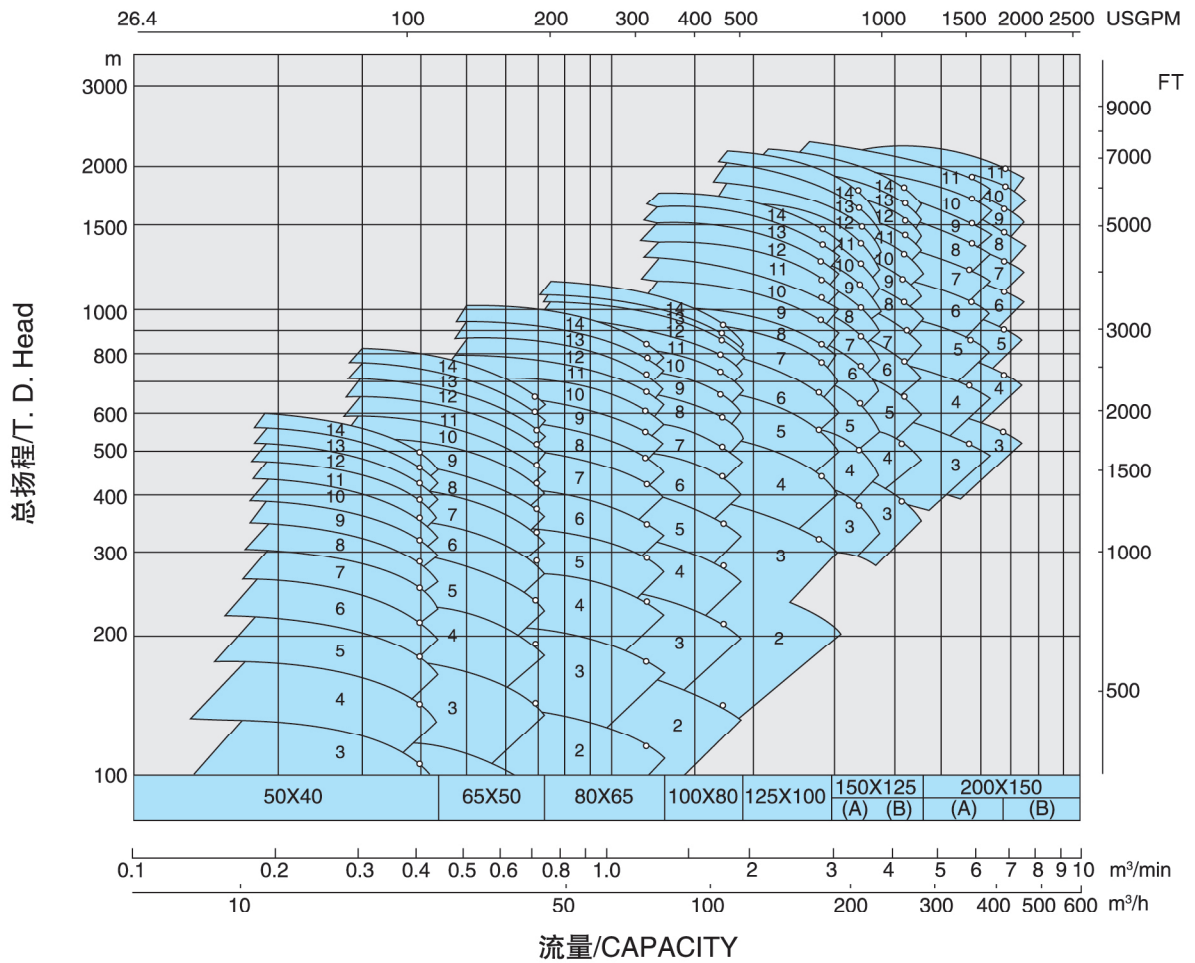
## 材质选用 Metallurgy

部件名称 / Part name	材料等级 / MATERIALS JIS/ASTM/AISI
	铬钢 / 13%Cr,Steel
泵体 / Casing	A487 CA6NM / ZG15Cr1Mo
中段泵壳 / Intermediate casing	ASTM A182M F5a / 30Cr13
叶轮 / Impeller	A487 CA6NM
轴 / Shaft	SUS 630 H1150
中段轴套 / Shaft sleeve for interstage	30Cr13
壳体耐磨环 / Case Wear Ring	30Cr13
泵体螺栓 / Casing bolt	35CrMo

说明：根据需要也可选用其他材料。Note: Supply of other materials on request.

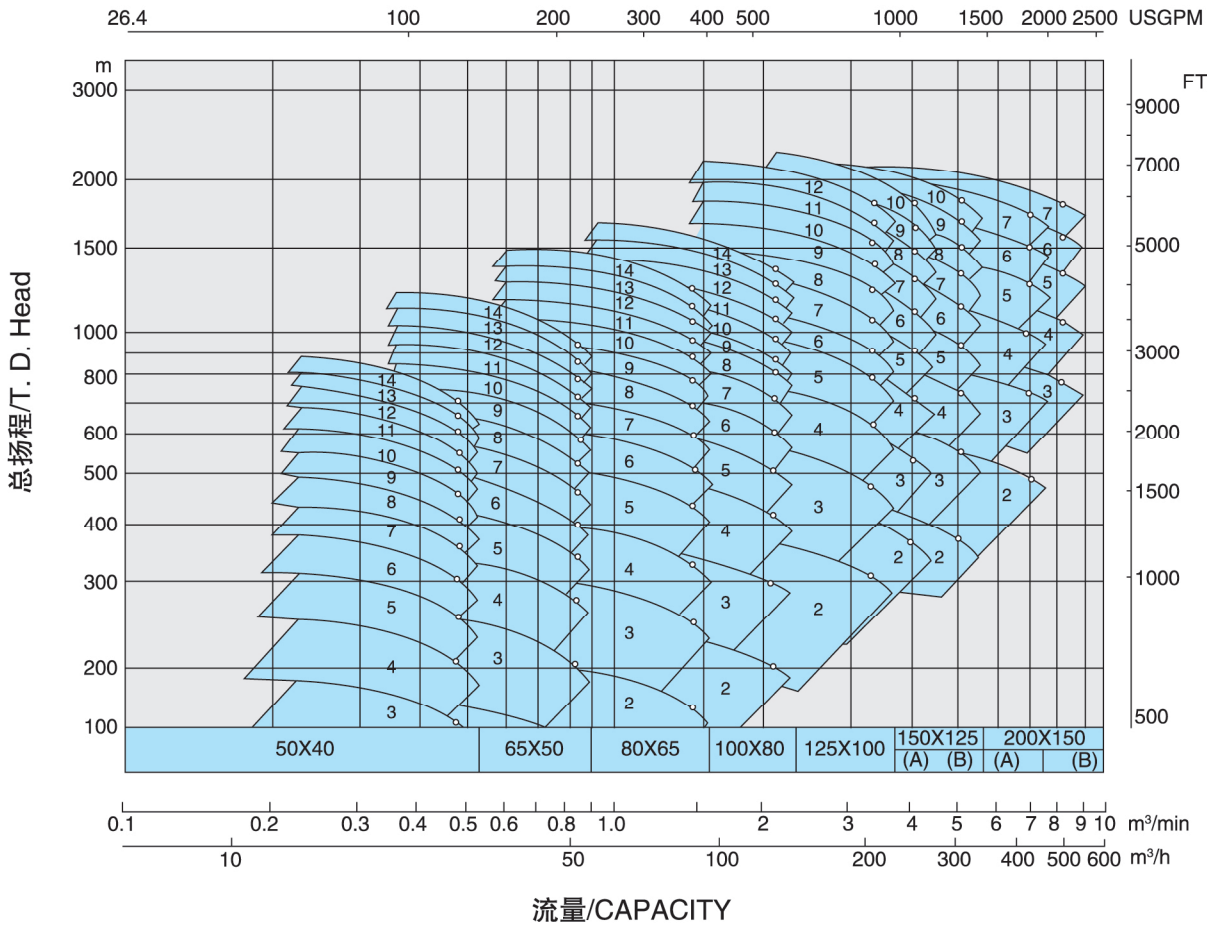
**SS/SSD型谱**

**50Hz** (2950 min<sup>-1</sup>)



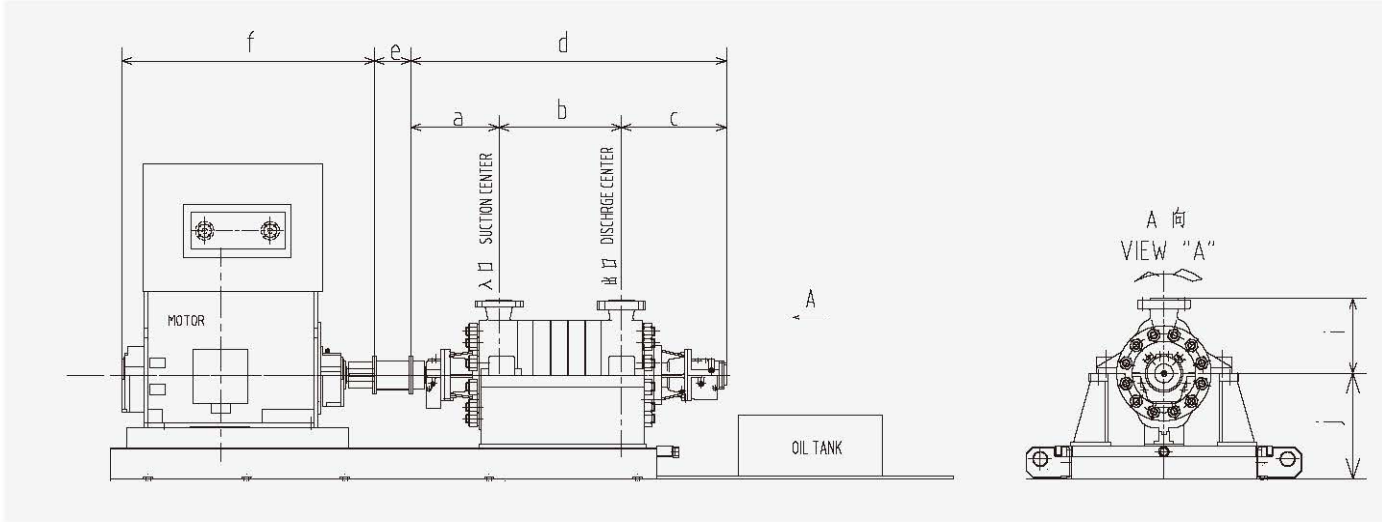
本型谱仅用于初步选型，对于扬程超过2500m场合，需要增速，请与荏原公司联系。  
Performance ranges shown on this chart are for preliminary selection only. In case of over 2500m total head requirement, high speed application should be recommended. Please contact Ebara Corporation.

# 60Hz (3550 min<sup>-1</sup>)



本型谱仅用于初步选型，对于扬程超过2500m场合，需要增速，请与荏原公司联系。  
 Performance ranges shown on this chart are for preliminary selection only. In case of over 2500m total head requirement, high speed application should be recommended. Please contact Ebara Corporation.

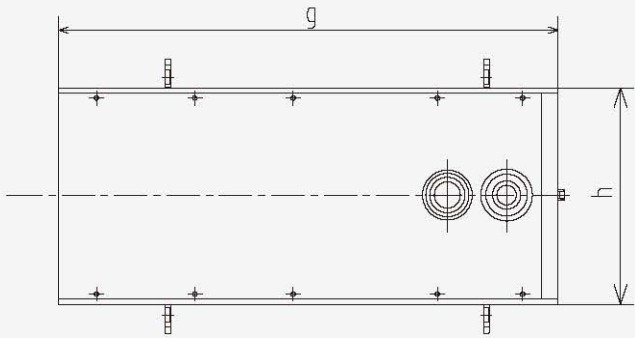
**外型尺寸 Dimensions**



Unit(mm)

Size	Stages	a	b	c	d	e	f	g	h	i	j
50X40 SS	6	410	338	391	1139	160	1000	2100	600	240	450
	7	410	390	391	1191	160	1000	2200	600	240	450
	8	410	442	391	1243	160	1000	2300	600	240	450
	9	410	494	391	1295	160	1000	2300	600	240	450
	10	410	546	391	1347	160	1000	2400	600	240	450
	11	410	598	391	1399	160	1100	2500	600	240	450
	12	410	650	391	1451	160	1100	2600	600	240	450
65X50 SS	5	419	328	392	1139	160	1100	2200	700	270	450
	6	419	384	392	1195	160	1100	2300	700	270	450
	7	419	440	392	1251	160	1200	2400	700	270	450
	8	419	496	392	1307	160	1200	2500	700	270	450
	9	419	552	392	1363	160	1200	2600	700	270	450
	10	419	608	392	1419	160	1400	2700	700	270	500
	11	419	664	392	1475	160	1400	2800	700	285	500
80X65 SS	4	424	287	406	1117	160	1200	2300	700	300	500
	5	424	351	406	1181	160	1200	2400	700	300	500
	6	424	415	406	1245	160	1400	2600	700	300	500
	7	424	479	406	1309	160	1400	2700	700	300	500
	8	424	543	406	1373	160	1500	2900	800	300	550
	9	461	607	454	1522	160	1500	3000	800	320	550
	10	461	671	454	1586	160	1500	3100	800	320	550
100X80 SS	3	466	250	456	1172	200	1384	2500	800	350	500
	4	466	320	456	1242	200	1384	2600	800	350	500
	5	466	390	456	1312	200	1485	2700	800	350	550
	6	466	460	456	1282	200	1485	2800	800	350	550
	7	466	530	456	1452	200	1485	2900	800	350	550
	8	466	600	456	1522	200	1485	3000	800	350	550
	9	466	670	456	1592	200	1485	3000	800	350	550
	10	466	740	456	1662	200	1485	3100	900	350	550
	11	466	810	456	1732	200	1485	3200	900	350	550
	12	466	880	456	1802	200	1485	3200	900	350	550
13	500	977	514	1991	200	1485	3300	900	410	550	
14	500	1049	514	2063	200	1485	3400	900	410	550	

注:表中数据仅供参考  
 Note: Dimensions are in mm and for reference only.



◀ SS/SSD外形安装尺寸图  
SS/SSD Outline Drawing

Unit(mm)

Size	Stages	a	b	c	d	e	f	g	h	i	j
125X100 SS	6	505	565	505	1575	200	1500	3000	900	430	550
	7	505	650	505	1660	200	1500	3100	900	430	550
	8	540	748	846	2134	200	1800	4700	900	450	600
	9	540	833	846	2219	200	1800	4800	900	450	600
	10	591	918	855	2364	200	1900	5000	1000	450	600
	11	591	1003	855	2449	200	2000	5200	1000	450	650
	12	591	1088	855	2534	200	2000	5300	1000	450	650
	13	591	1173	855	2619	200	2100	5500	1100	450	650
150X125(A) SS	5	680	540	962	2182	220	1500	4400	1200	580	850
	6	680	628	962	2270	220	1500	4500	1200	580	850
	7	680	716	962	2358	220	1500	4600	1200	580	850
	8	680	804	962	2446	220	1900	5100	1200	580	850
	9	680	892	962	2534	220	2000	5300	1200	580	850
	10	680	980	962	2622	220	2000	5400	1200	580	850
	11	650	1068	962	2680	220	2100	5500	1200	585	850
	12	650	1156	962	2768	220	2100	5600	1200	585	850
150X125(B) SS	5	662	540	962	2164	220	1800	4700	1200	580	850
	6	662	628	962	2252	220	1900	4900	1200	580	850
	7	662	716	962	2340	220	2000	5100	1200	580	850
	8	662	804	962	2428	220	2000	5200	1200	580	850
	9	662	892	962	2516	220	2100	5400	1200	585	850
	10	662	980	962	2604	220	2200	5600	1200	585	850
	11	662	1068	962	2692	220	2300	5700	1200	585	850
	12	662	1156	962	2780	220	2300	5800	1200	585	850
200X150(A) SS	4	675	485	946	2106	220	2100	5000	1300	710	900
	5	675	580	946	2201	220	2100	5100	1300	710	900
	6	675	675	946	2296	220	2300	5400	1300	710	950
	7	675	770	946	2391	220	2300	5500	1300	710	950
	8	675	865	946	2486	220	2300	5600	1300	710	950
	9	675	960	946	2581	220	2300	5700	1300	710	950
	10	675	1055	946	2676	220	2300	5700	1300	710	1000
200X150(B) SS	5	675	620	946	2241	220	2300	5300	1300	710	950
	6	675	725	946	2346	220	2300	5400	1300	710	950
	7	675	830	946	2451	220	2300	5500	1300	710	950
	8	675	935	946	2556	220	2300	5600	1300	710	950
	9	675	1040	946	2661	220	2500	5900	1300	710	950
	10	675	1145	946	2766	220	2500	6000	1300	710	1000
	11	675	1250	946	2871	220	2500	6100	1300	710	1000

Looking ahead,  
going beyond expectations  
*Ahead > Beyond*



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