



EBARA

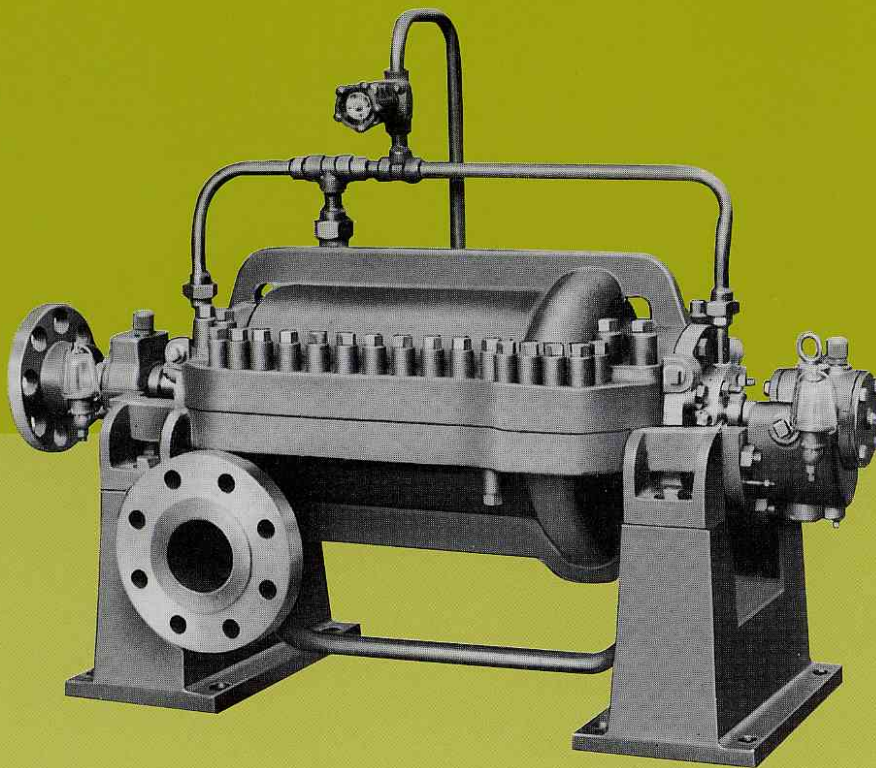
HORIZONTAL MULTISTAGE PUMPS

CS1833EE

Single Case, Axially Split, Diffuser Type For Refinery, Pipeline,
Descaling Boiler Feed and Other High Pressure Services

Models

SPR/SPRB **API 610** **API 682**



HORIZONTAL MULTISTAGE PUMPS

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Models

SPR/SPRB

API 610

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EBARA MODEL SPR / SPRB HORIZONTAL MULTISTAGE PUMPS of single case, axially split, diffuser, and centerline support type have been widely used in refinery, pipeline, boiler feed and other high pressure services for many years.

Many improvements have been made on this pump to enhance its performance.

Unique design of this high performance pump provides for superior and extended low-cost operation.

Model SPR denotes one direction impeller arrangement type. Model SPRB denotes back-to-back impeller arrangement type.

Application

- Petroleum Refineries
- The Petrochemical Industry
- Other Chemical Industries
- Boiler Feed
- Mine Dewatering

Ratings

Capacity	To 3m ³ /min {790 USGPM}* [‡]
Head	To 1500m {4920 ft}* [‡]
Discharge pressure(Gage)	To 14.7MPaG {2140 PIS}* [‡]
Hydrostatic test pressure(Gage)	To 22.0MPaG {3200PIS}* [‡]
Speed	50Hz 2950min ⁻¹ 60Hz 3550min ⁻¹
Max.allowable speed	To 7000min ⁻¹
Rotation	Clockwise viewed from inboard side
Temperature	~230°C {445°F}* [‡]
Impeller type	Closed
Nozzle position	Side-Side
Flange rating	~ANSI 2500lb other standards also available
Shaft sealing	Mechanical seal, conventional packing, floating seal & throttle bushing

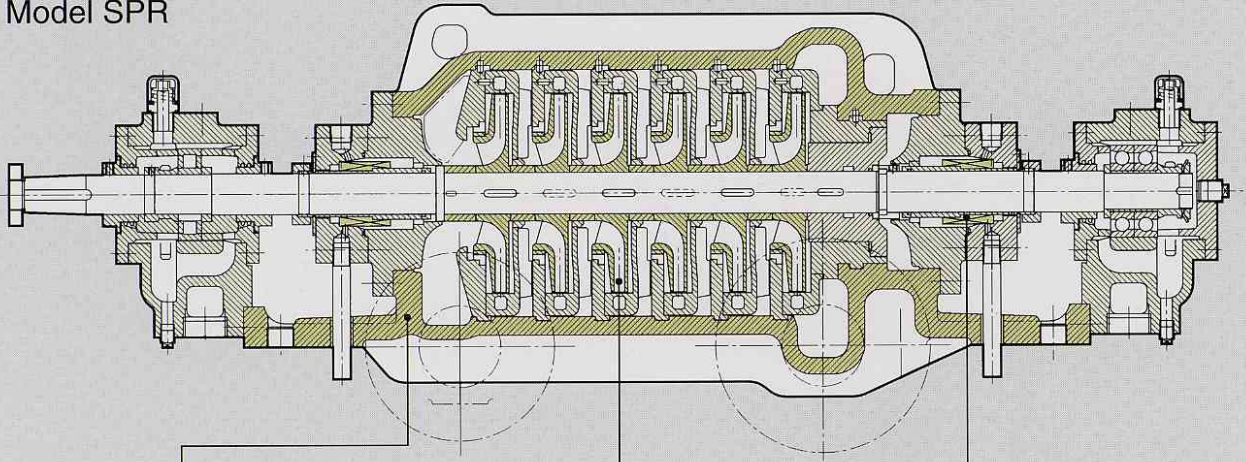
*These values in parenthesis { } are reference only.

Features

- Centerline support and heavy duty design.
- Axially split, permits removal of top half of case.
- Full compliance with API610/API682 specifications.
- Radial and axial balance is assured by diffuser design and balance piston or impeller arrangement.
- Flexibility of design handles wide range of liquids.
- All components have been designed for maximum parts interchangeability.
- Low NPSH performance.
- Small installation area and easy maintenance.

Construction

Model SPR

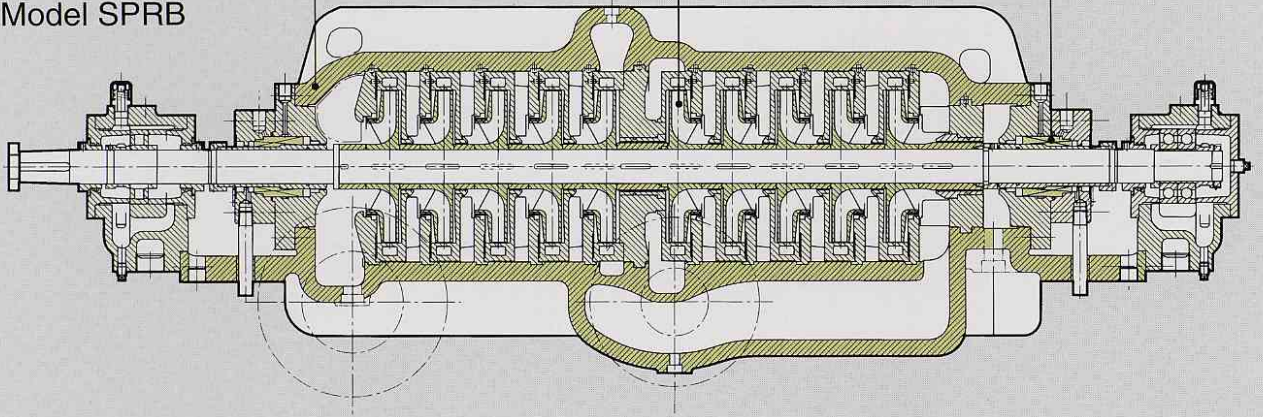


Casing: The pump case is of simple axially split, design. The suction and discharge nozzles are cast integral with the lower half of the case. This permits disassembly of the pump without disturbing the piping connections. Pump feet are located as closely as possible to the pump centerline, thus minimizing alignment problems due to temperature changes.

Impellers: Impellers are of the closed type, accurately finished balanced both statically and dynamically. Impellers of various characteristics, designed to satisfy specific operating conditions, are available.

Shaft Sealing: Both stuffing boxes are subject to suction pressure on standard designs. Pressure at the stuffing box opposite the suction end is reduced to suction pressure by a balance sleeve and pipe. Various standard arrangements are conventional packing mechanical seal and throttle bushing.

Model SPRB



Metallurgy

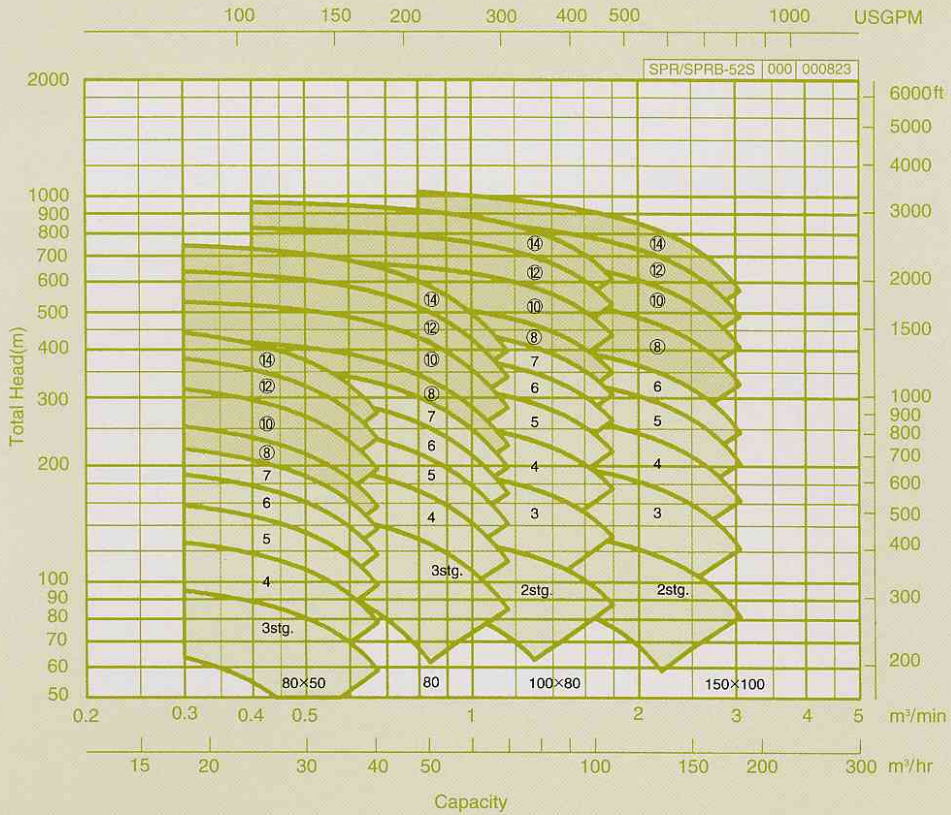
Part Name	Materials JIS / ASTM-AISI		
	C.Steel	12% Cr. Steel	316 S. Steel
Casing	SCPH2 / A216WCB	A487CA6NM	SCS14A / A296CF8M
Impeller	FCD400	A743CA6NM	SUS14A / A296CF8M
Shaft	SCM440 / AISI4140	SUS420J1 / AISI420	SUS316 / AISI316
Balance Sleeve	SUS420J1 / AISI420	SUS420J1 / AISI420	SUS316 / AISI316
Case Wear Ring	SUS420J2 / AISI420	A296CA40	SUS316 / AISI316
Stuffing Box	SCPH2 / A216WCB	SCS1 / A296CA15	SCS14A / A296CF8M
Sleeve for Mechanical Seal	SUS420J1 / AISI420	SUS420J1 / AISI420	SUS316 / AISI316
Sleeve for Packing	SUS420J2 / AISI420	SUS420J2 / AISI420	SUS316 / AISI316

Note: Other materials supplied on request.

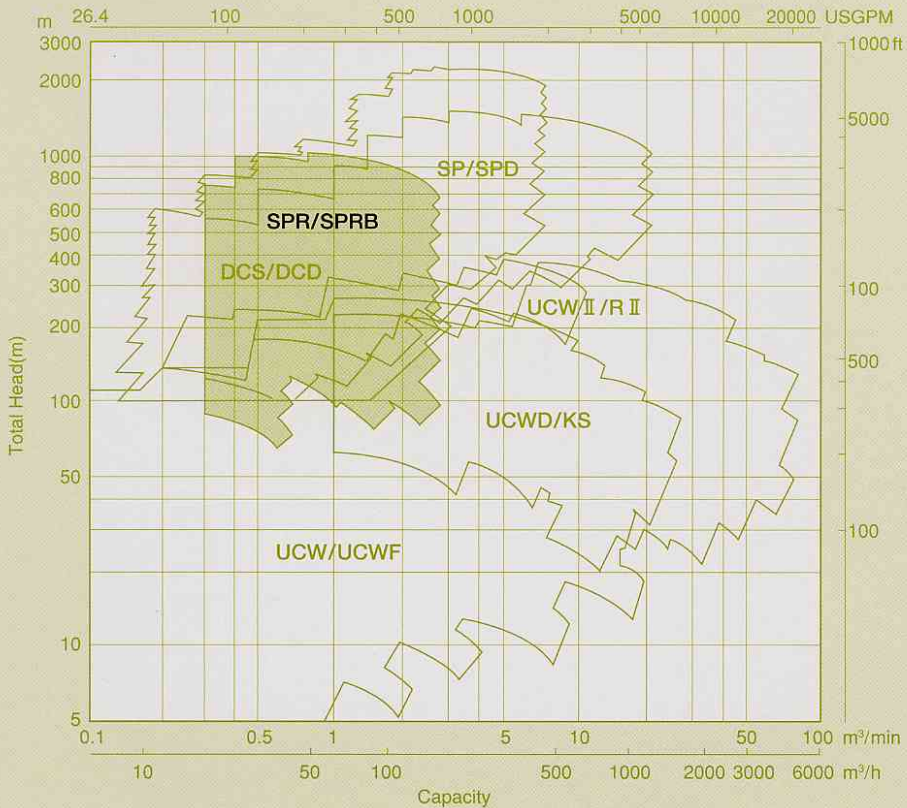
Performance Ranges

Model SPR/SPRB

50Hz



General Process Pumps

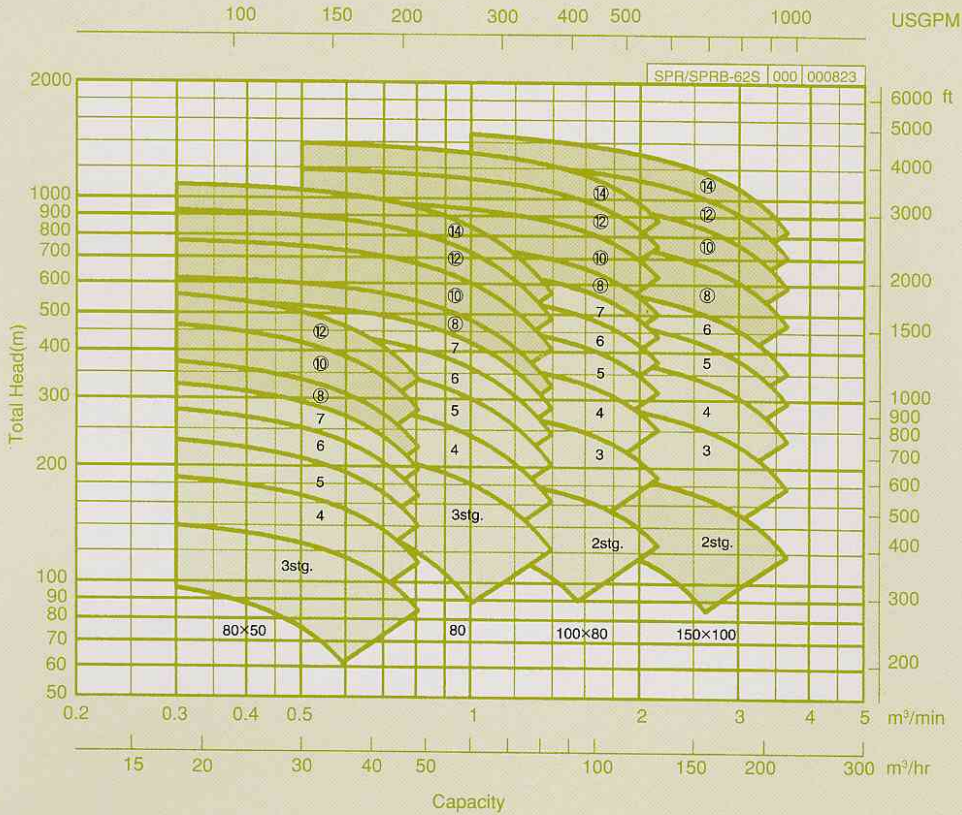


Performance ranges shown on these charts are for preliminary selection only.
 The mark "O" of number of stage shows SPRB type.

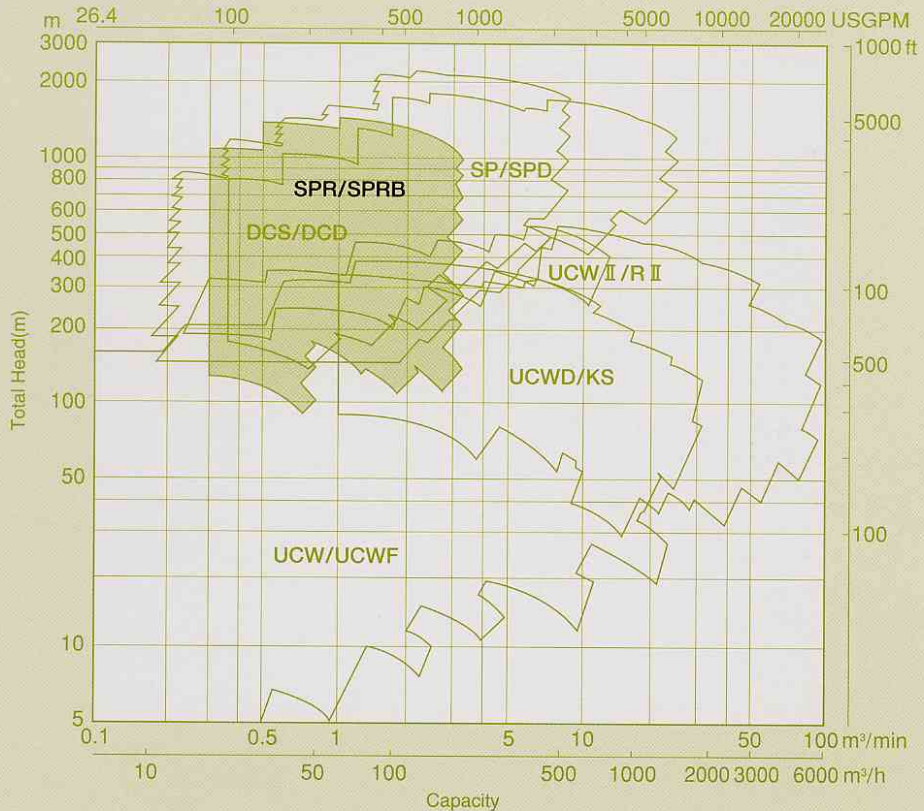
Performance Ranges

Model SPR/SPRB

60Hz



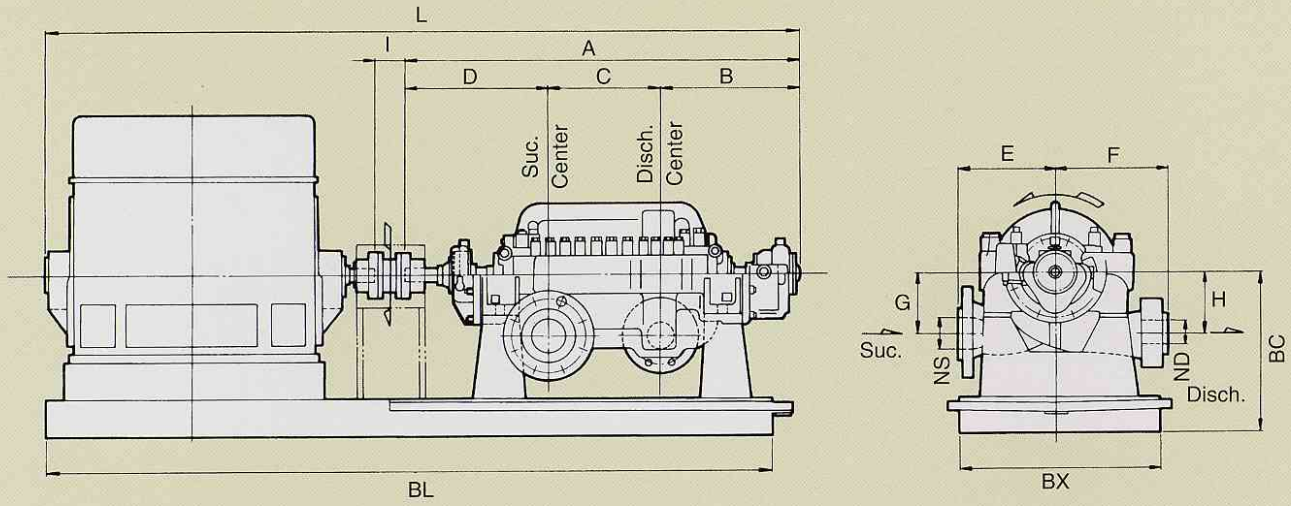
General Process Pumps



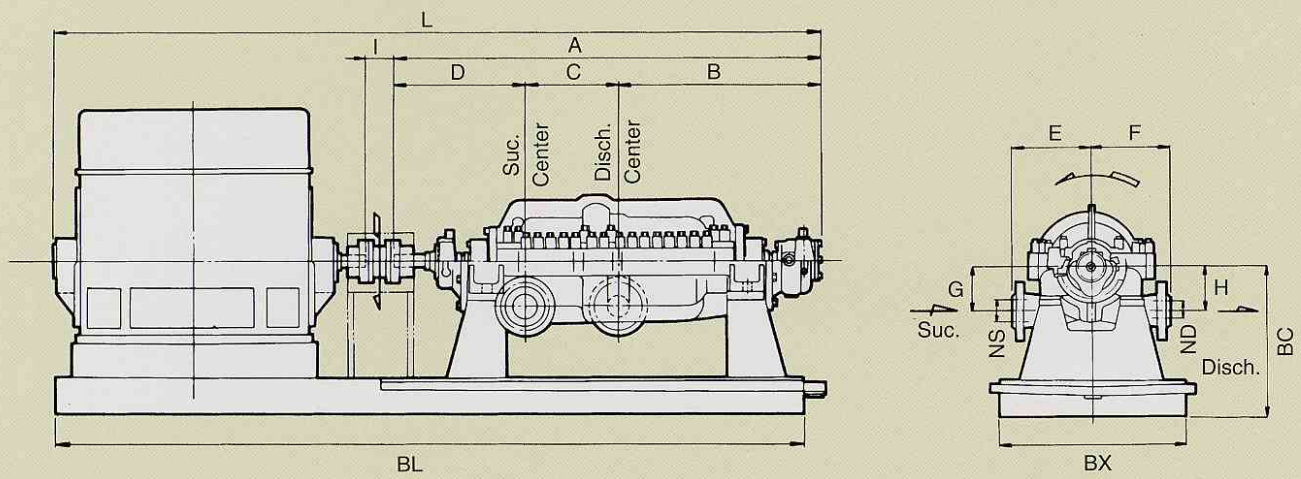
Performance ranges shown on these charts are for preliminary selection only.
 The mark \odot of number of stage shows SPRB type.

Dimensions

Model SPR



Model SPRB



Dimensions

■ Model SPR

Size	Number of Stages	NS	ND	A	B	C	D	E	F	G	H	I	BC	L	BX	BL	Approximate Pump Mass (kg)
80×50 SPR	3			971		164								2400		2300	180
	4			1023		216								2500		2400	195
	5	80	50	1075	372	268	435	260	260	130	130	140	500	2600	640	2500	210
	6			1127		320								2700		2600	225
	7			1179		372								2800		2700	240
80 SPR	3			1036		181								2600		2500	280
	4			1094		239								2700		2600	300
	5	80	80	1152	400	297	455	280	280	150	150	140	550	2800	700	2700	320
	6			1210		355								2900		2800	340
	7			1268		413								3000		2900	360
100×80 SPR	3			1159		200								2800		2700	380
	4			1224		265								2900		2800	410
	5	100	80	1289	444	330	515	290	290	170	170	160	600	3000	800	2900	440
	6			1354		395								3100		3000	470
	7			1419		460								3200		3100	500
150×100 SPR	3			1229		255								2900		2800	580
	4			1309		335								3000		2900	620
	5	150	100	1389	454	415	520	320	320	200	200	160	700	3100	820	3000	660
	6			1469		495								3200		3100	700
	7			1549		575								3300		3200	740

■ Model SPRB

Size	Number of Stages	NS	ND	A	B	C	D	E	F	G	H	I	BC	L	BX	BL	Approximate Pump Mass (kg)
80×50 SPRB	8			1254	583	256								3000		2300	340
	10			1306	635	308								3100		3000	420
	12	80	50	1358	687	360	415	260	260	130	130	160	550	3200	800	3100	500
	14			1410	739	412								3300		3200	580
80 SPRB	8			1375	635	285								3100		3000	500
	10			1491	693	343								3200		3100	550
	12	80	80	1607	751	401	455	300	300	150	150	180	600	3300	800	3200	600
	14			1723	809	459								3400		3300	650
100×80 SPRB	8			1530	695	320								3300		3200	690
	10			1660	760	385								3400		3300	770
	12	100	80	1790	825	450	515	320	340	170	170	200	700	3500	850	3400	850
	14			1920	890	515								3600		3500	930
150×100 SPRB	8			1669	754	395								3400		3300	1000
	10			1829	834	475								3500		3400	1100
	12	150	100	1989	914	555	520	360	340	200	200	200	700	3600	900	3500	1200
	14			2149	994	635								3700		3600	1300

Dimensions are in mm and for guidance only. Certified Drawings will be provided in all cases of actual construction. Motor dimensions are approximate for given IEC.



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