



EBARA

HORIZONTAL MULTISTAGE PUMPS

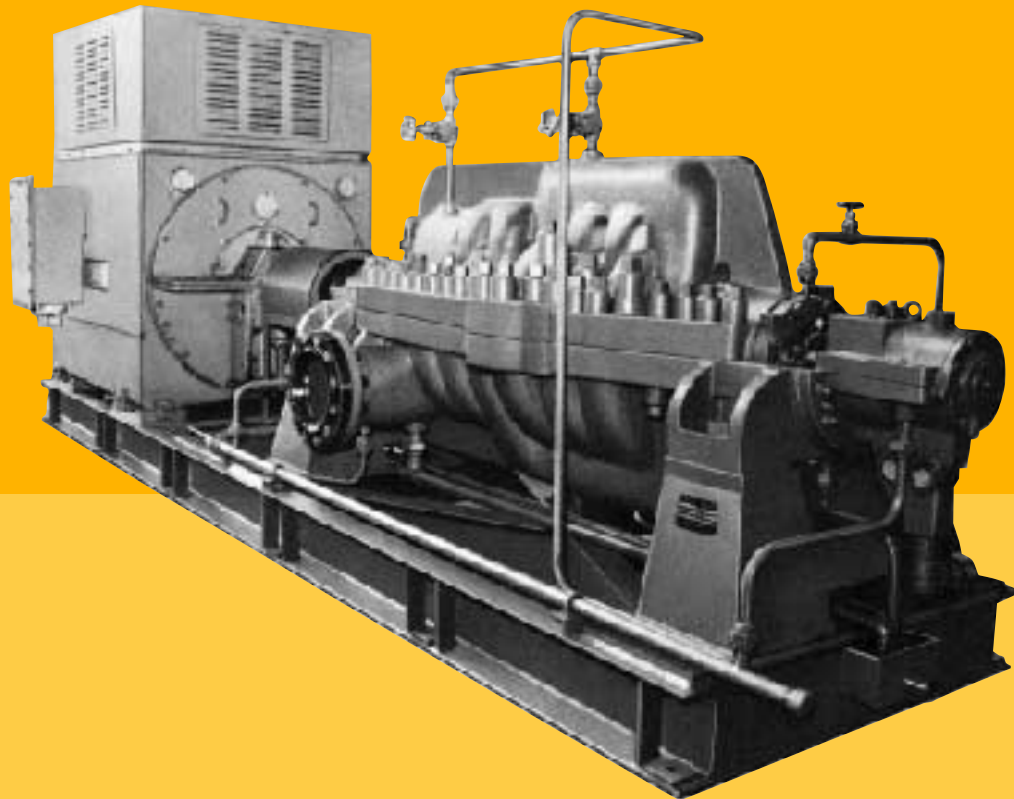
CS1830EJ

Single Case, Axially Split, Volute Type For Refinery, Pipeline, Descaling, Desalination and Other High Pressure Services

Models

SP/SPD **API 610** **API 682**

*[000 type] in this catalog is our model code.



HORIZONTAL MULTISTAGE PUMPS

Single Case, Axially Split, Volute Type For Refinery, Pipeline, Descaling, Desalination and Other High Pressure Services

Models

SP/SPD

API 610 API 682

EBARA MODEL SP/SPD HORIZONTAL MULTI STAGE PUMPS of single case, axially split, volute, and centerline support type have been widely used in refineries, for pipelines, descaling 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 SPD denotes double suction impeller type.

Applications

- Petroleum Refineries
- The Petrochemical Industry
- Other Chemical Industries
- Boiler Feed
- Descaling
- Mine Dewatering
- Sea Water Injection for Oil-wells
- Other High Pressure Services

Ratings

Capacity	To 70m ³ /min{18550 USGPM}* [‡]
Head	To 1500m{4920ft}* [‡]
Discharge pressure (Gage)	To 19.6MpaG{2845PSI}* [‡]
Hydrostatic test pressure (Gage)	To 29.4MpaG{4268PSI}* [‡]
Speed	50 Hz 2950 min ⁻¹ 60 Hz 3550 min ⁻¹
Max. allowable speed	To 7000 min ⁻¹
Rotation	Clockwise viewed from inboard side
Temperature	~230°C{445°F}* [‡]
Impeller type	Closed
Nozzle	Side-Side
Flange	~ANSI to 2500lb, other standards also available
Shaft sealing	Mechanical seal, conventional packing, floating seal & throttle bushing

*These value is parenthesis { } are reference only.

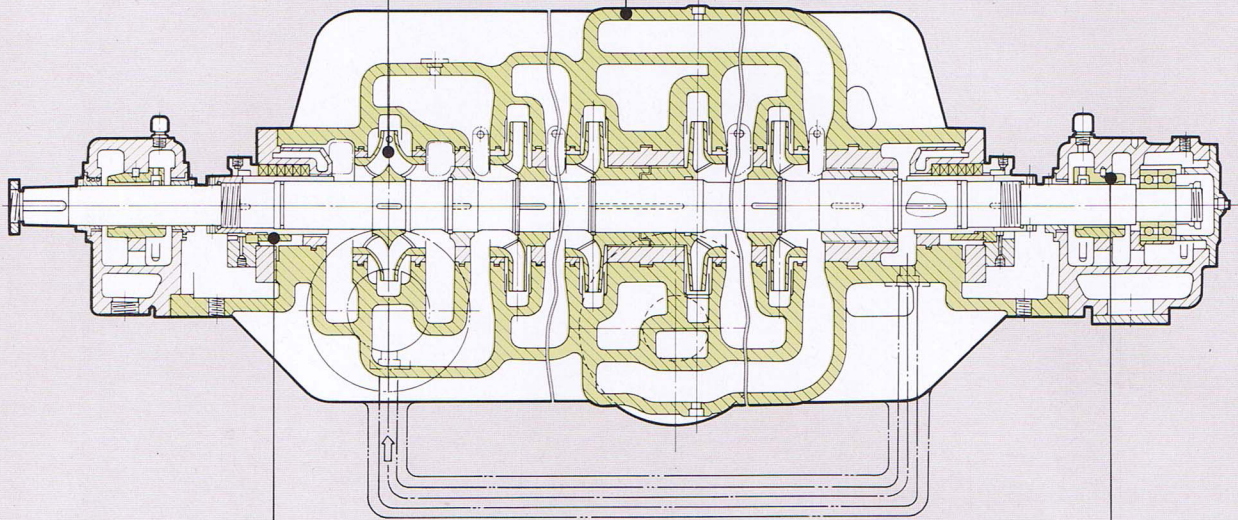
Features

- Centerline support and heavy duty design.
- Axially split, permits removal of top half of case.
- Full compliance with API 610/API 682 specifications.
- Radial and axial balance is assured by volute design and impeller arrangement.
- Flexibility of design handles wide range of liquids.
- All components have been designed for maximum parts interchangeability.
- Low NPSH performance.

Construction

Impellers: Impellers are of the closed type, accurately finished and balanced both statically and dynamically. Impellers of various characteristics, designed to satisfy specific operating conditions, are available. Impellers are keyed to the shaft and mounted with a light shrink fit against fully retained split rings.

Casing: The pump case is of axially split double volute 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. The axially split casing is rigidly held together with studs and cap nuts. Double row bolting is provided with the inner row as close as possible to the pump centerline and between each stage. Pump feet are located as closely as possible to the pump centerline, thus minimizing alignment problems due to temperature changes.



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 stuffing box arrangements are available to satisfy specific customer requirements. Various standard arrangements are conventional packing, mechanical seal and throttle bushing.

Bearings: Bearings are axially split for ease of removal and inspection. The journal bearings are sleeve type and babbitt lined. The thrust bearing is ball or pivot shoe type. Although the pump operates in complete radial and axial balance under normal conditions the thrust bearing has ample capacity to withstand any emergency which might arise during operation.

Metallurgy

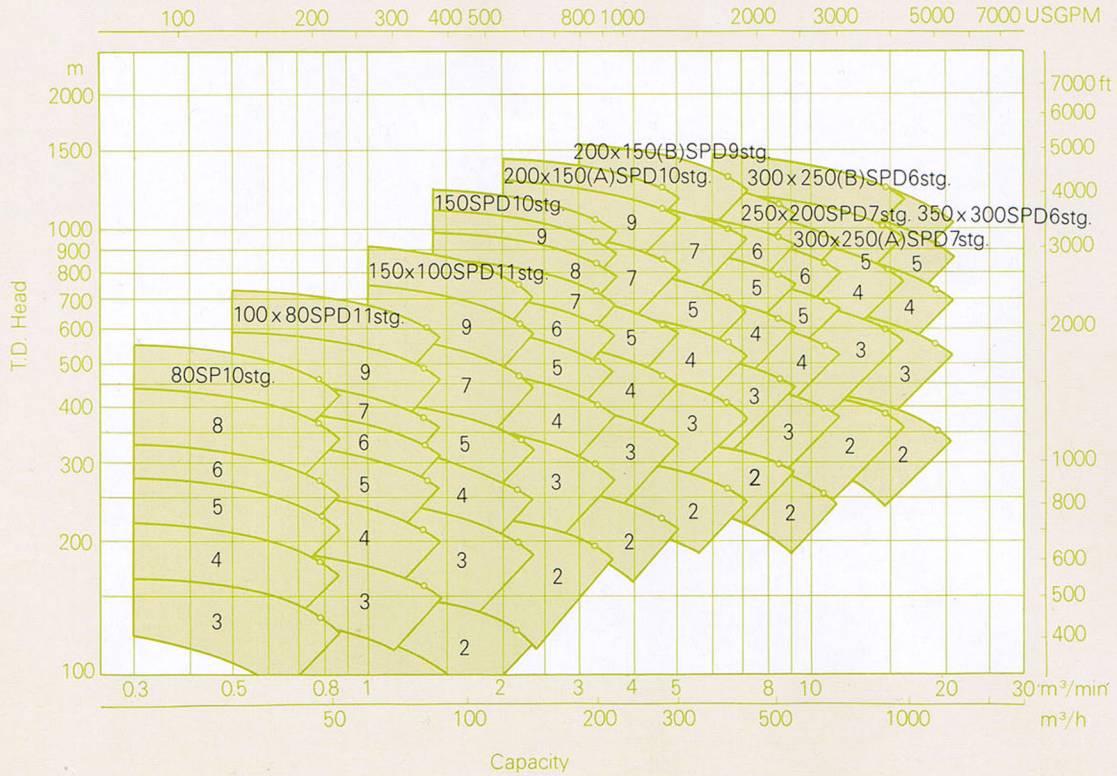
Part Name	Materials JIS/ASTM-AISI		
	C. Steel	13% Cr. Steel	316 S. Steel
Casing	SCPH2/A 216WCB	A487CA6NM	SCS14A/A743CF8M
Impeller	A487CA6NM	A487CA6NM	SCS14A/A743CF8M
Shaft	SUS420J1/AISI420	SUS420J1/AISI420	SUS316/AISI316
Balance Sleeve	SUS420J1/AISI420	SUS420J1/AISI420	SUS316/AISI316
Case Wear Ring	A743CA40	A743CA40	SUS316/AISI316
Sleeve for Packing	SUS420J2/AISI420	SUS420J2/AISI420	SUS316/AISI316
Seal End Plate	SUS304/AISI304	SUS304/AISI304	SUS316/AISI316
Sleeve for Mechanical Seal	SUS304/AISI304	SUS304/AISI304	SUS316/AISI316

Note: Other materials supplied on request such as Duplex Stainless Steel.

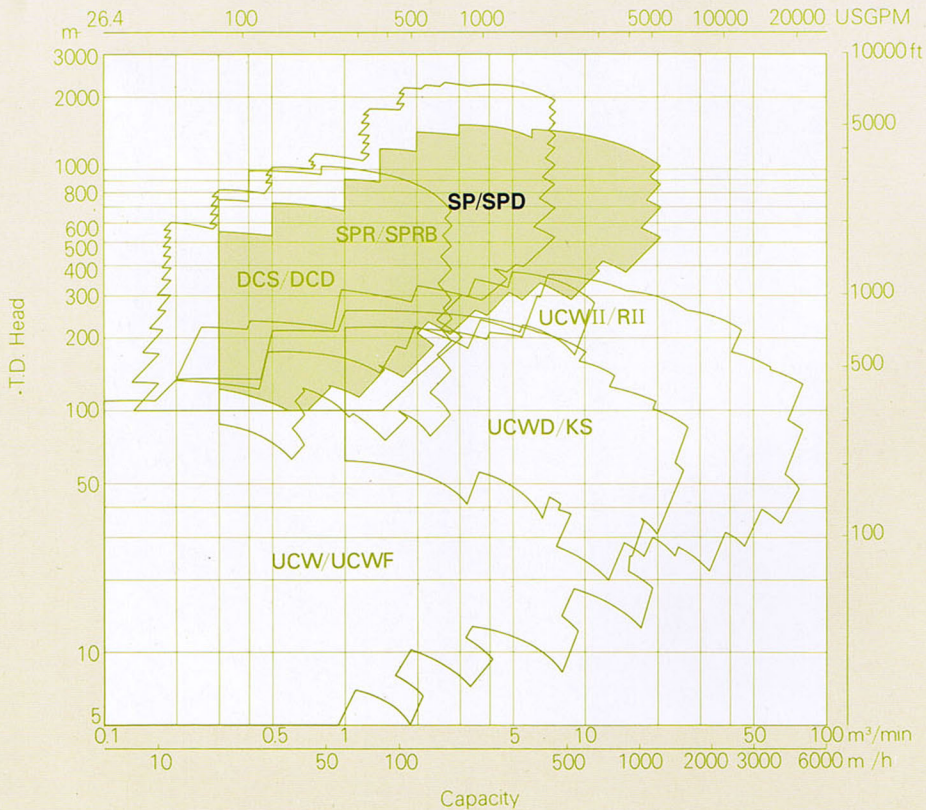
Performance Ranges

Model SP/SPD

50 Hz



General Process Pumps

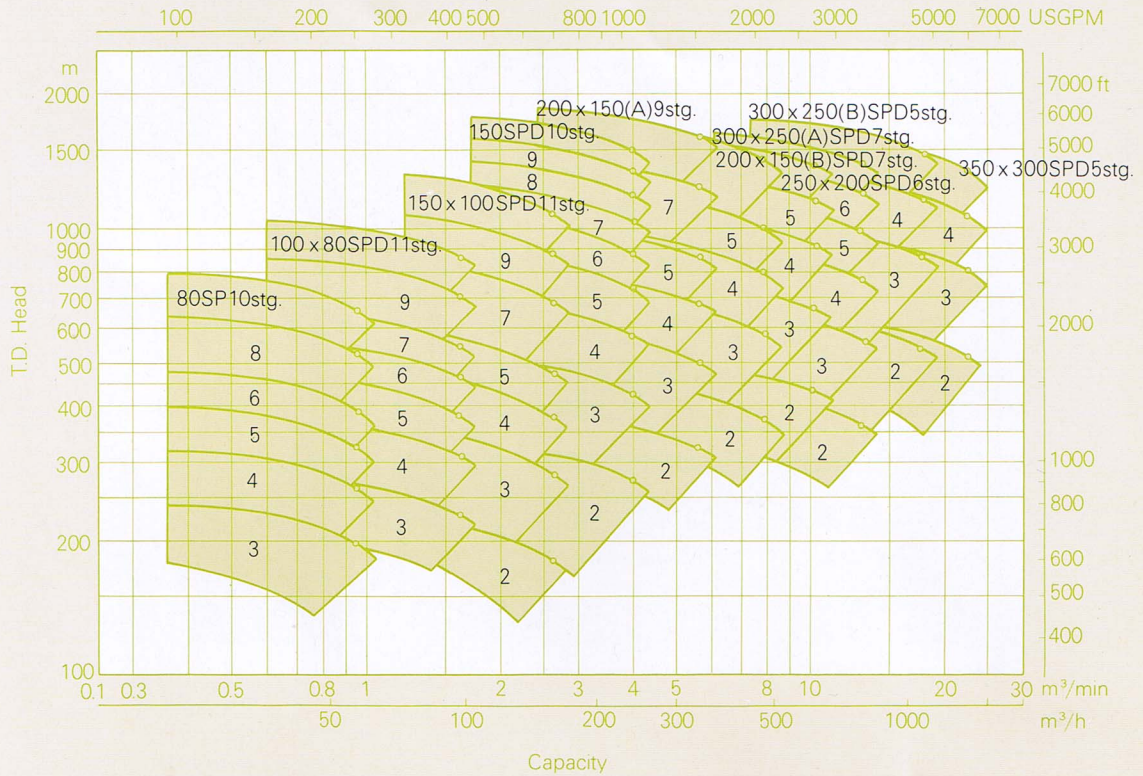


Performance ranges shown on these charts are for preliminary selection only.

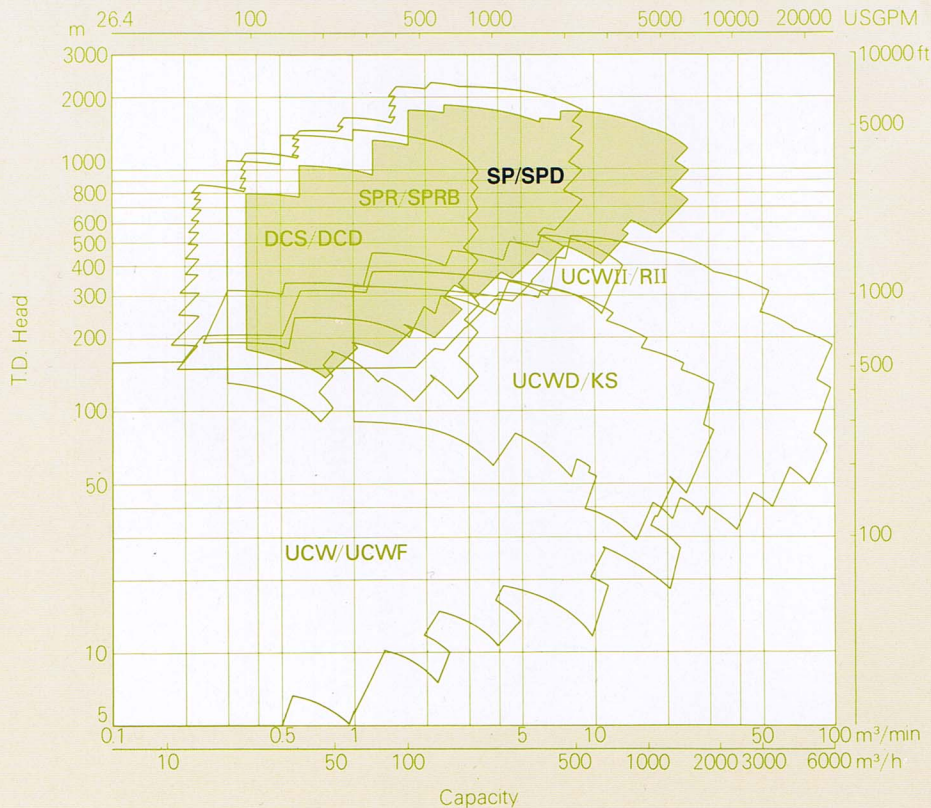
Performance Ranges

60 Hz

Model SP/SPD

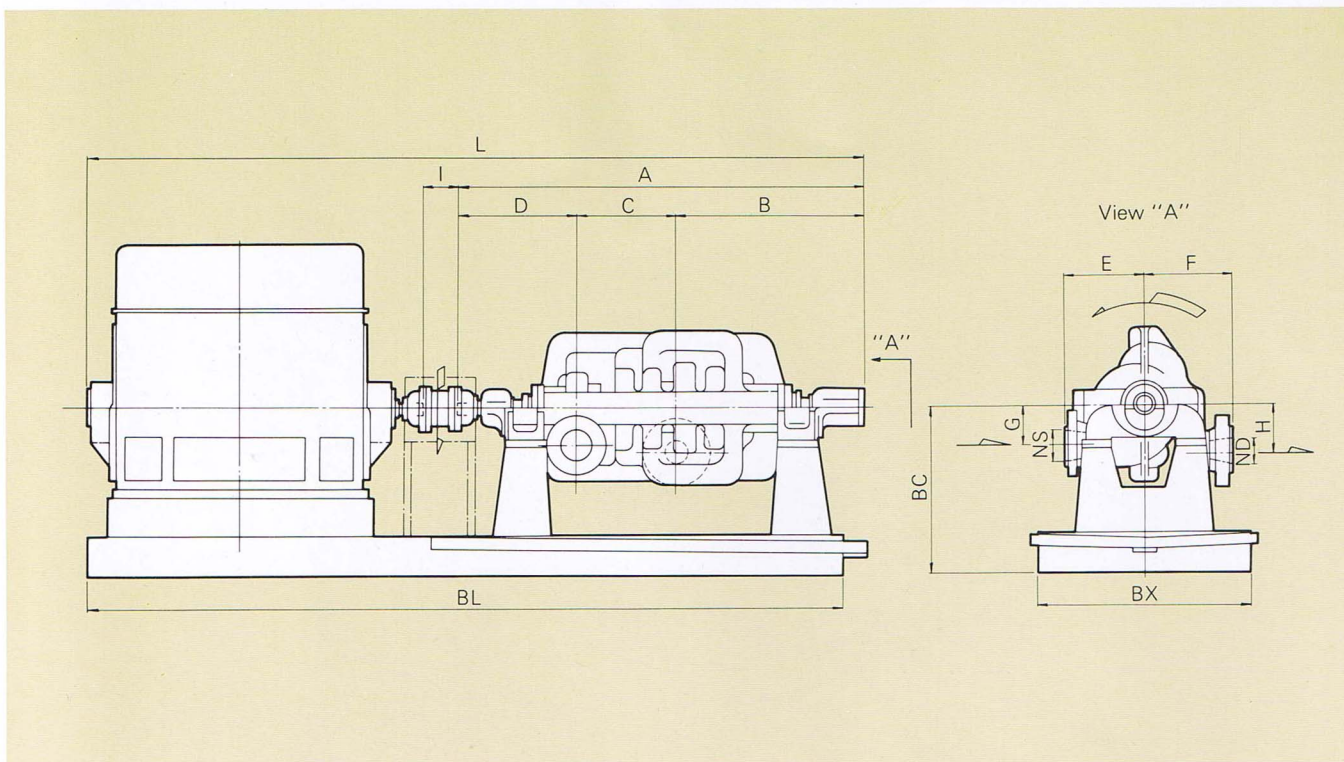


General Process Pumps



Performance ranges shown on these charts are for preliminary selection only.

Dimensions



Size	Number stage	Frame	NS	ND	A	B	C	D	E	F	G	H	I	BC	L	BX	BL
80 SP	3		80	80	1285	588	217	480	260	250	120	135	140	600	2500	600	2400
	4		80	80	1375	678	217	480	260	250	120	135	140	600	2600	600	2500
	5		80	80	1465	678	307	480	260	250	120	135	140	600	2700	600	2600
	6		80	80	1555	768	307	480	260	250	120	135	140	600	2900	600	2800
	8		80	80	1735	858	397	480	260	250	120	140	140	600	3100	600	3000
	10		80	80	1915	948	487	480	260	250	120	140	140	600	3500	600	3400
100×80 SPD	3		100	80	1405	632	238	535	270	270	140	160	160	600	2600	700	2500
	4		100	80	1501	728	238	535	270	270	140	160	160	600	2800	700	2700
	5		100	80	1597	728	334	535	270	270	140	160	160	600	3200	800	3100
	6		100	80	1693	824	334	535	270	270	140	160	160	600	3300	800	3200
	7		100	80	1789	824	430	535	270	270	140	160	160	600	3400	800	3300
	9		100	80	1981	917	529	535	290	290	140	160	160	600	3700	800	3600
150×100 SPD	11		100	80	2173	1013	625	535	290	290	140	160	160	600	3900	800	3800
	3		150	100	1606	679	307	620	370	330	172	185	185	700	3200	800	3100
	4		150	100	1722	795	307	620	370	330	172	185	185	700	3400	800	3300
	5		150	100	1838	795	423	620	370	330	172	185	185	700	3600	800	3500
	7		150	100	2070	911	539	620	370	380	172	185	185	700	3800	800	3700
	7	H	150	100	2186	985	554	647	370	380	172	185	185	700	4400	800	4300
	9		150	100	2302	1027	655	620	370	380	172	185	185	700	4000	900	3900
	9	H	150	100	2430	1113	670	647	370	380	172	185	185	700	4700	900	4600
	11		150	100	2674	1241	786	647	370	380	172	185	185	700	4400	900	4300
	11	H	150	100	2674	1241	786	647	370	380	172	185	185	700	5100	900	5000
150 SPD	3		150	150	1691	735	316	640	400	400	200	210	185	750	3400	900	3300
	4		150	150	1805	849	316	640	400	400	200	210	185	750	3500	900	3400
	5		150	150	1936	856	440	640	400	400	200	210	185	750	3700	900	3600
	5	H	150	150	1968	872	456	640	400	400	200	210	185	750	3900	1000	3800
	6		150	150	2055	975	440	640	400	400	200	210	185	750	3800	900	3700
	6	H	150	150	2095	999	456	640	400	400	200	210	185	750	4200	1000	4100

Dimensions

Size	Number stage	Frame	NS	ND	A	B	C	D	E	F	G	H	I	BC	L	BX	BL
150 SPD	7		150	150	2179	975	564	640	400	410	200	210	185	750	3900	900	3800
	7	H	150	150	2227	999	588	640	400	450	200	210	185	750	4400	1100	4300
	8		150	150	2316	1112	564	640	400	410	200	210	185	800	4300	1000	4200
	8	H	150	150	2372	1144	588	640	400	450	200	210	185	800	4700	1100	4600
	9		150	150	2440	1112	688	640	400	410	200	210	185	800	4500	1000	4400
	9	H	150	150	2504	1144	720	640	400	450	200	210	185	800	4800	1200	4700
	10		150	150	2559	1231	688	640	400	450	200	210	185	800	4700	1000	4600
	10	H	150	150	2631	1271	720	640	400	450	200	210	185	800	5000	1200	4900
200 × 150 (A) SPD	3		200	150	2140	1052	368	720	420	480	230	250	210	900	3900	900	3800
	4		200	150	2288	1200	368	720	420	480	230	250	210	900	4000	900	3900
	4	H	200	150	2508	1323	405	780	400	510	230	250	210	900	4500	1000	4400
	5		200	150	2436	1200	516	720	420	480	230	250	210	900	4400	1000	4300
	5	H	200	150	2668	1323	565	780	400	510	230	250	210	900	4900	1100	4800
	7		200	150	2752	1368	664	720	420	480	230	250	210	900	5000	1100	4900
	7	H	200	150	2988	1483	725	780	400	510	230	250	210	900	5400	1200	5300
	9		200	150	3048	1516	812	720	420	480	230	250	210	900	5300	1200	5200
200 × 150 (B) SPD	3		200	150	2144	1064	390	690	500	500	250	250	210	1000	4100	1000	4000
	4		200	150	2304	1224	390	690	500	500	250	250	210	1000	4600	1000	4500
	4	H	200	150	2349	1224	390	735	500	500	250	250	210	1000	4800	1200	4700
	5		200	150	2464	1224	550	690	500	500	250	250	210	1000	4800	1000	4700
	5	H	200	150	2509	1224	550	735	500	500	250	250	210	1000	5000	1300	4900
	7		200	150	2865	1420	710	735	500	500	250	250	210	1000	5300	1200	5200
	7	H	200	150	2913	1444	734	735	500	500	250	250	210	1000	5400	1400	5300
	9		200	150	3185	1580	870	735	500	500	250	250	210	1000	5700	1300	5600
250 × 200 SPD	3		250	200	2053	864	444	745	550	550	260	300	260	1100	4300	1100	4200
	4		250	200	2221	1032	444	745	550	550	260	300	260	1100	4600	1200	4500
	4	H	250	200	2221	1032	444	745	550	550	260	300	260	1100	4800	1300	4700
	5		250	200	2557	1200	612	745	550	550	260	300	260	1100	5000	1200	4900
	5	H	250	200	2573	1208	620	745	550	550	260	300	260	1100	5100	1400	5000
	6		250	200	2788	1431	612	745	550	550	260	300	260	1100	5300	1300	5200
	6	H	250	200	2812	1447	620	745	550	550	260	300	260	1100	5600	1400	5500
300 × 250 (A) SPD	3		300	250	2485	1150	545	790	600	600	310	340	260	1150	4700	1100	4600
	4		300	250	2730	1395	545	790	600	600	310	340	260	1150	5200	1100	5100
	5		300	250	2975	1395	790	790	600	600	310	340	260	1150	5500	1300	5400
	5	H	300	250	3065	1425	790	850	600	600	310	340	260	1150	5800	1400	5700
	6		300	250	3220	1640	790	790	600	600	310	340	260	1150	6000	1300	5900
	6	H	300	250	3325	1670	805	850	600	600	310	340	260	1150	6100	1400	6000
	7		300	250	3525	1640	1035	850	600	600	310	340	260	1150	6000	1400	5900
300 × 250 (B) SPD	3		300	250	2550	1200	550	800	550	520	300	320	260	1150	5300	1400	5200
	4		300	250	2795	1445	550	800	550	520	300	320	260	1150	5600	1400	5500
	4	H	300	250	2810	1460	550	800	550	520	300	320	260	1150	—	—	—
	5		300	250	3040	1445	795	800	550	520	300	320	260	1150	—	—	—
	5	H	300	250	3120	1460	810	850	550	520	300	320	260	1150	—	—	—
	6		300	250	3335	1690	795	850	550	520	300	320	260	1150	—	—	—
350 × 300 SPD	3		350	300	2670	1200	595	875	650	650	310	350	280	1200	5300	1400	5200
	4		350	300	2920	1450	595	875	650	650	310	350	280	1200	5600	1400	5500
	4	H	350	300	2940	1470	595	875	650	650	310	350	280	1200	—	—	—
	5		350	300	3170	1450	845	875	650	650	310	350	280	1200	—	—	—
	5	H	350	300	3210	1470	865	875	650	650	310	350	280	1200	—	—	—
	6		350	300	3420	1700	845	875	650	650	310	350	280	1200	—	—	—

Notes: Dimensions are in mm and for guidance only.

Certified drawings will be provided for actual construction. Motor dimensions are approx. for a given IEC.



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* [○○○ type] in this catalog is our model code.

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