



EBARA

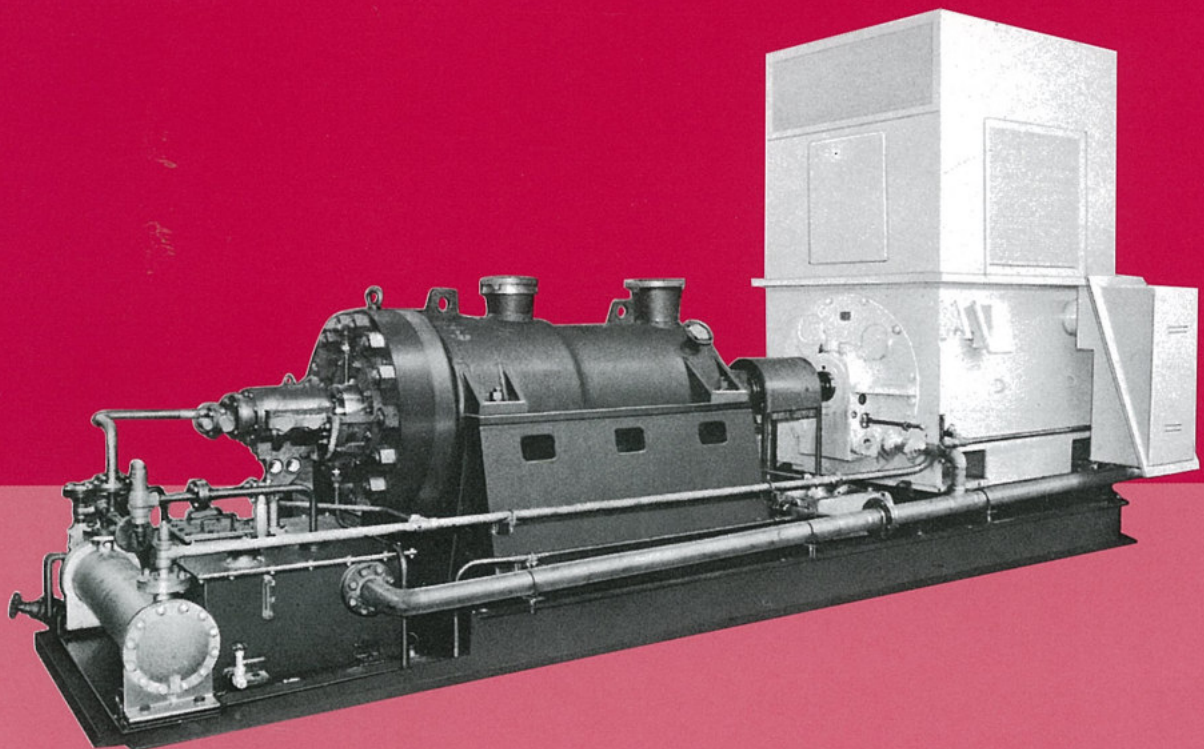
CS1842EE

HORIZONTAL DOUBLE CASE PUMPS

Multi Stage, Ring Section Inner Casing, Diffuser Type For Refineries,
Sea Water Injection, Boiler Feed and Other High Pressure Services

Models

DCS/DCD **API 610**



HORIZONTAL DOUBLE CASE PUMPS

Multi Stage, Ring Section Inner Casing, Diffuser Type For Refinery, Sea Water Injection, Boiler Feed and Other High Pressure Services

Model

DCS/DCD

API 610

EBARA MODEL DCS/DCD HORIZONTAL BARREL PUMPS of multistage, double case, ring section inner casing type have been widely used in refineries, for sea water injection, boiler feed and other high pressure services for many years.

Many improvements have been recently made on this pump to enhance its performance. Our modern tape controlled machines in conjunction with advanced quality control procedures insure that these pumps meet our high manufacturing

standards. Unique original design of this high performance pump provides for superior and extended low-cost operation. Model DCD denotes double suction impeller type.

Applications

- Petroleum Refineries
- Petrochemical Industries
- Other Chemical Industries
- Boiler Feed
- Liquid Gas Transfer
- Mine Dewatering
- Sea Water Injection for Oil-wells

Ratings

Capacities	As required
Heads	As required
Discharge pressures	As required
Hydrostatic test pressures	As required
Speeds	Standard 50Hz 2950 min ⁻¹ Standard 60Hz 3550 min ⁻¹
Max. allowable revolutions	7000 min ⁻¹
Rotation	Clockwise viewed from inboard side
Temperatures	~450°C { ~850°F }*
Impeller type	Enclosed
Nozzles	Top-Top
Flanges	~ANSI 2500 lb, other standards also available
Shaft sealing	Mechanical seal, Conventional packing, floating seal & throttle bushing

* This value in parenthesis { } are reference only.

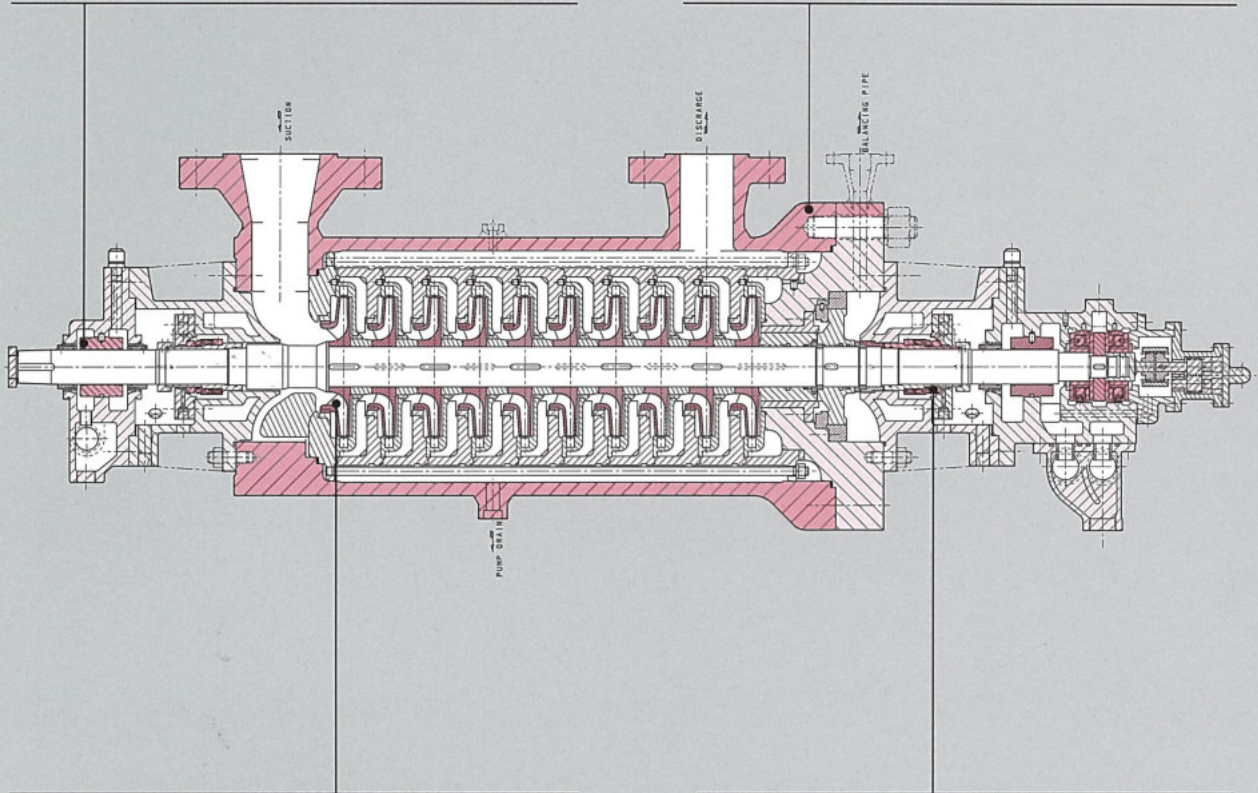
Features

- Centerline support and heavy duty design.
- Double casing, permits removal of the inner casing.
- Full compliance with API 610 specifications.
- Flexibility of design handles wide range of liquids.
- All components have been designed for maximum parts interchangeability.
- Low NPSH performance.

Construction

Bearings: Bearings are horizontally split for ease of removal and inspection. Journal bearings are sleeve type and babbitt lined. The thrust bearing is pivot shoe type. Alternately, a ball bearing can be installed. 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.

Casing: Double casing construction, features a simple cylindrical outer casing and cover with only one circular joint, enclosing this inner casing. The space between the inner and outer casing is filled with the liquid being pumped at full discharge pressure. The outer casing alone withstands the bursting pressure and is subjected to tension stresses, while the inner casing is under compression stress only.



Impellers: The impellers are of the closed type accurately finished and carefully balanced both statically and dynamically. Axial thrust caused by impellers, is balanced by hydraulic balancing devices. Balance drum can be provided instead of balance disk on request. Double suction impeller for first stage is available to reduce NPSH requirements. This feature is available on pump model DCD.

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 with a balancing device and balancing pipe. Various stuffing box arrangements are available to satisfy specific customer requirements. Various standard arrangements are conventional packing, mechanical seal, etc.

Metallurgy

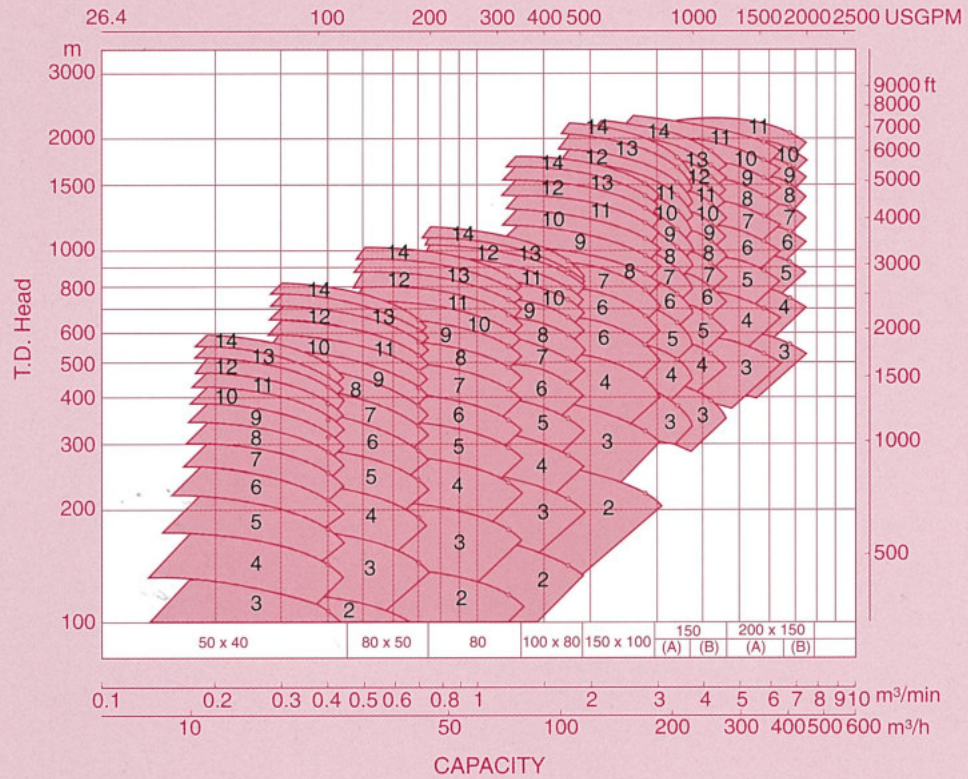
Part Name	Materials JIS/ASTM-AISI		
	C. Steel	13% Cr. Steel	316 S. Steel
Outer Casing	SF440/A105	SF440/A105	SUS316/AISI316
Inner Casing	SF440/A105	SUS420J1/AISI420	SUS316/AISI316
Casing Cover	SF440/A105	SF440/A105	SUS316/AISI316
Inner Casing Cover	S30C/AISI1030	SUS420J1/AISI420	SUS316/AISI316
Impeller	A487CA6NM	A487CA6NM	SCS14A/A743CF8M
Shaft	SCM440/AISI4140	SUS420J1/AISI420	SUS316/AISI316
Shaft Sleeve	SUS420J1/AISI420	SUS420J1/AISI420	SUS316/AISI316
Case Wear Ring	A743CA40	A743CA40	SUS316/AISI316

Note: Other materials supplied on request.

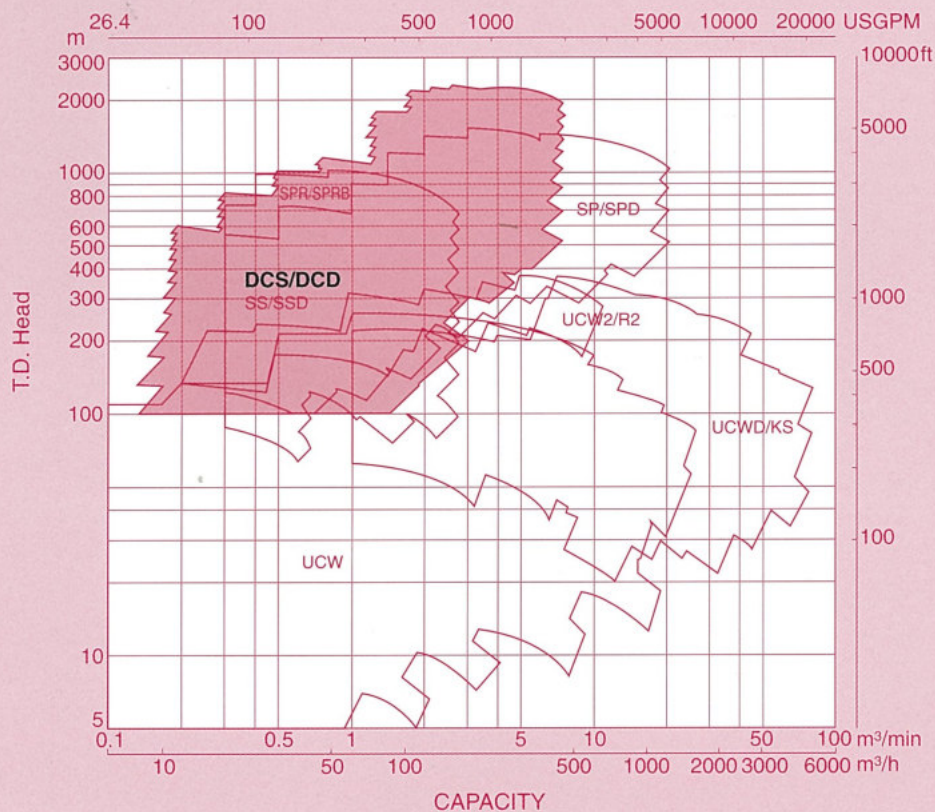
Performance Ranges

50 Hz

Models DCS/DCD



General Process Pumps

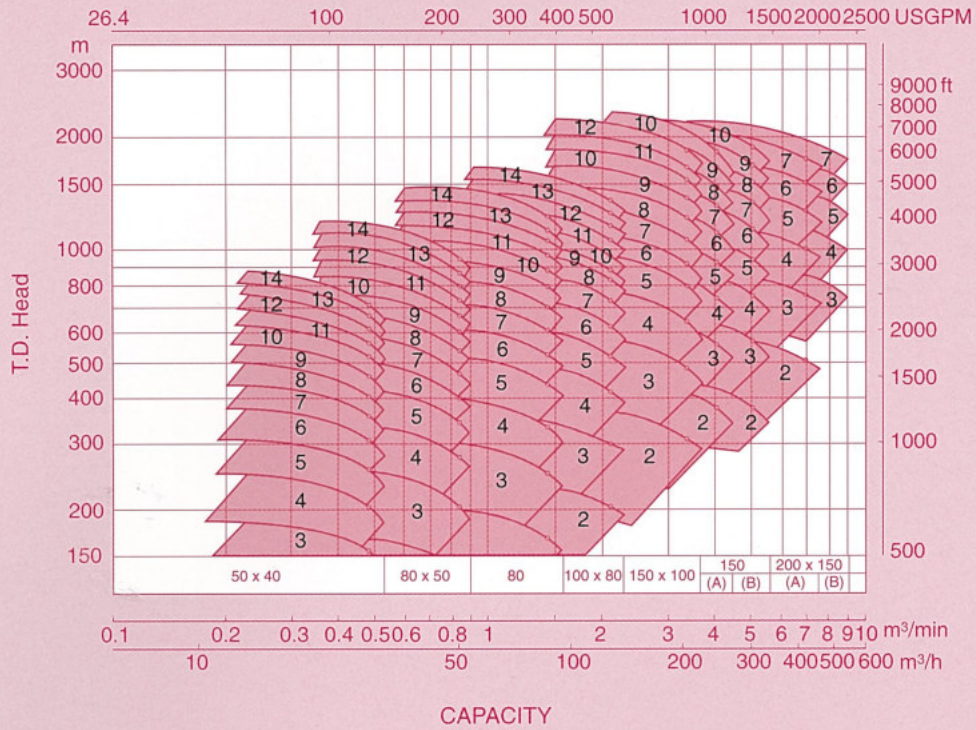


Performance ranges shown on these charts are for preliminary selection only. In case of over 2500m total head requirement, high speed application should be recommended. Please contact to Ebara Corporation International Division Office shown on back page of this catalog.

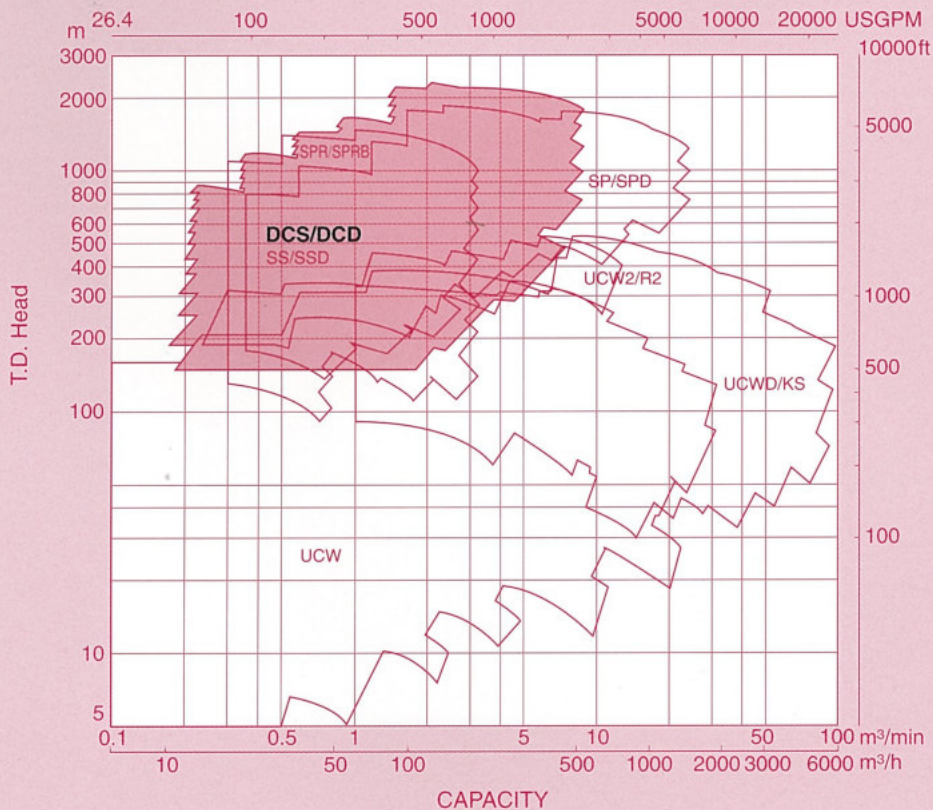
Performance Ranges

60 Hz

Models DCS/DCD

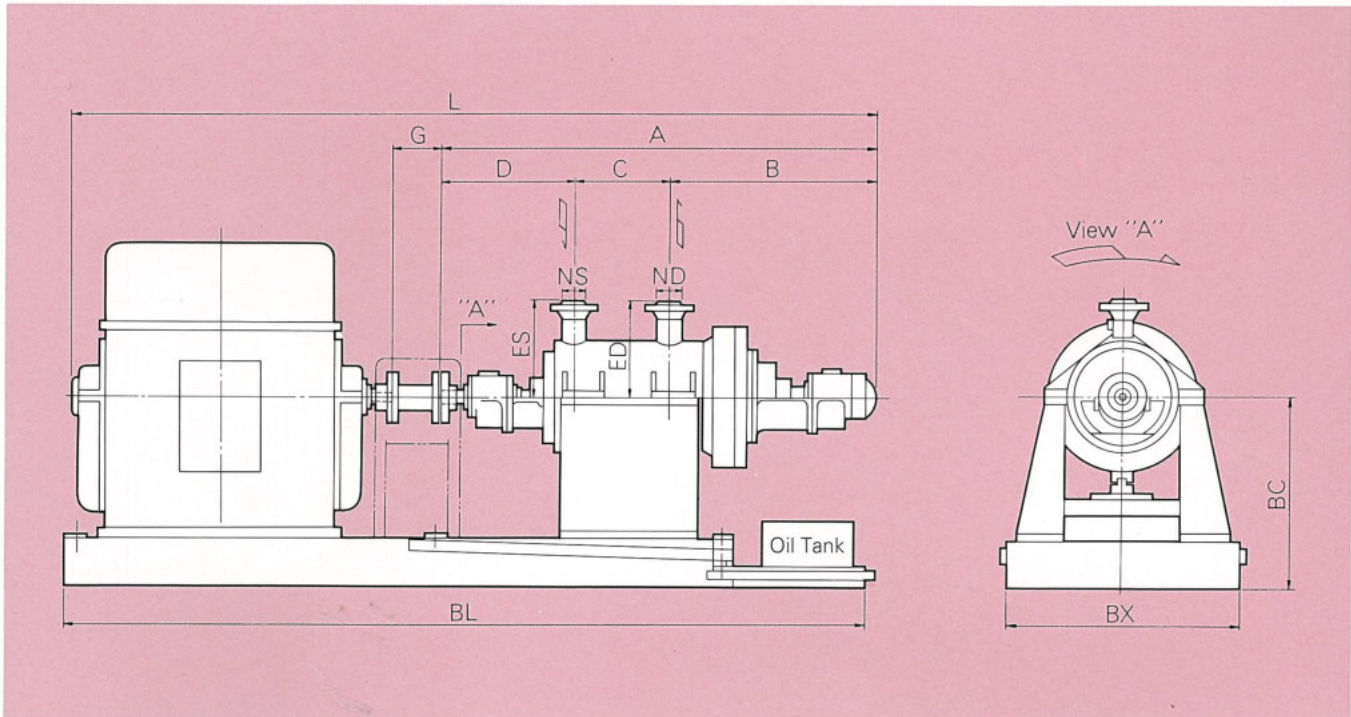


General Process Pumps



Performance ranges shown on these charts are for preliminary selection only. In case of over 2500m total head requirement, high speed application should be recommended. Please contact to Ebara Corporation International Division Office shown on back page of this catalog.

Dimensions



Unit (mm)

Size	Number stages	NS	ND	A	B	C	D	(Suction) ES	(Discharge) ED	G	BC	L	BX	BL	
50 x 40 DCS	6	50	40	1169	451	248	470	200	240	160	450	2400	600	2200	
	7	50	40	1221	451	300	470	200	240	160	450	2400	600	2200	
	8	50	40	1273	451	352	470	200	240	160	450	2500	600	2300	
	9	50	40	1325	451	404	470	200	240	160	450	2500	600	2300	
	10	50	40	1377	451	456	470	200	240	160	450	2600	600	2400	
	11	50	40	1398	445	508	445	200	240	160	450	2600	600	2400	
	12	50	40	1450	445	560	445	200	240	160	450	2700	600	2500	
	13	50	40	1502	445	612	445	200	240	160	450	2800	600	2600	
	14	50	40	1554	445	664	445	200	240	160	450	2900	600	2700	
	80 x 50 DCS	5	80	50	1169	452	238	479	230	270	160	450	2400	700	2200
		6	80	50	1225	452	294	479	230	270	160	450	2400	700	2200
		7	80	50	1281	452	350	479	230	270	160	450	2600	700	2400
		8	80	50	1337	452	406	479	230	270	160	450	2700	700	2500
		9	80	50	1393	452	462	479	230	270	160	450	2800	700	2600
10		80	50	1449	452	518	479	230	270	160	500	3000	700	2800	
11		80	50	1505	452	574	479	245	285	160	500	3100	700	2900	
12		80	50	1561	452	630	479	245	285	160	500	3200	700	3000	
13		80	50	1617	452	686	479	245	285	160	500	3200	700	3000	
14		80	50	1673	452	742	479	245	285	160	500	3300	700	3100	
80 DCS	4	80	80	1147	466	197	484	260	300	160	500	2500	700	2300	
	5	80	80	1211	466	261	484	260	300	160	500	2600	700	2400	
	6	80	80	1275	466	325	484	260	300	160	500	2900	700	2700	
	7	80	80	1339	466	389	484	260	300	160	500	2900	700	2700	
	8	80	80	1403	466	453	484	260	300	160	550	3100	800	2900	
	9	80	80	1552	514	517	521	280	320	160	550	3200	800	3000	
	10	80	80	1616	514	581	521	280	320	160	550	3300	800	3100	
	11	80	80	1680	514	645	521	280	320	160	550	3400	800	3200	
	12	80	80	1744	514	709	521	280	320	160	550	3400	800	3200	
	13	80	80	1808	514	773	521	280	320	160	550	3500	800	3300	
	14	80	80	1872	514	837	521	280	320	160	550	3600	800	3400	

Dimensions

Unit (mm)

Size	Number stages	NS	ND	A	B	C	D	(Suction) ES	(Discharge) ED	G	BC	L	BX	BL	
100 × 80 DCS	3	100	80	1202	516	160	526	310	350	200	500	2800	800	2500	
	4	100	80	1272	516	230	526	310	350	200	500	2900	800	2600	
	5	100	80	1342	516	300	526	310	350	200	550	3100	800	2800	
	6	100	80	1412	516	370	526	310	350	200	550	3100	800	2800	
	7	100	80	1482	516	440	526	310	350	200	550	3200	800	2900	
	8	100	80	1552	516	510	526	310	350	200	550	3300	800	3000	
	9	100	80	1622	516	580	526	310	350	200	550	3400	800	3100	
	10	100	80	1692	516	650	526	310	350	200	550	3400	900	3100	
	11	100	80	1762	516	720	526	310	350	200	550	3500	900	3200	
	12	100	80	1832	516	790	526	310	350	200	550	3600	900	3300	
	13	100	80	2021	574	887	560	370	410	200	550	3800	900	3500	
	14	100	80	2093	574	959	560	370	410	200	550	3800	900	3500	
	150 × 100 DCS	6	150	100	1605	565	475	565	390	430	200	550	3300	900	3000
		7	150	100	1690	565	560	565	390	430	200	550	3400	900	3100
8		150	100	2164	906	658	600	410	450	200	600	4100	900	4600	
9		150	100	2249	906	743	600	410	450	200	600	4200	900	4700	
10		150	100	2394	915	828	651	410	450	200	600	4500	1000	5000	
11		150	100	2479	915	913	651	410	450	200	650	4700	1000	5200	
12		150	100	2564	915	998	651	410	450	200	650	4800	1000	5300	
13		150	100	2649	915	1083	651	410	450	200	650	4900	1100	5400	
150 (A) DCS	5	150	150	2212	1022	450	740	540	580	220	850	4000	1200	4500	
	6	150	150	2300	1022	538	740	540	580	220	850	4100	1200	4600	
	7	150	150	2388	1022	626	740	540	580	220	850	4100	1200	4600	
	8	150	150	2476	1022	714	740	540	580	220	850	4600	1200	5100	
	9	150	150	2564	1022	802	740	540	580	220	850	4800	1200	5300	
	10	150	150	2652	1022	890	740	540	580	220	850	4900	1200	5400	
	11	150	150	2710	1022	978	710	545	585	220	850	5100	1200	5600	
	12	150	150	2798	1022	1066	710	545	585	220	850	5100	1200	5600	
	13	150	150	2886	1022	1154	710	545	585	220	850	5300	1200	5800	
	14	150	150	2974	1022	1242	710	545	585	220	850	5400	1200	5900	
	150 (B) DCS	5	150	150	2194	1022	450	722	540	580	220	850	4200	1200	4700
		6	150	150	2282	1022	538	722	540	580	220	850	4400	1200	4900
		7	150	150	2370	1022	626	722	540	580	220	850	4600	1200	5100
		8	150	150	2458	1022	714	722	540	580	220	850	4700	1200	5200
9		150	150	2546	1022	802	722	545	585	220	850	4800	1200	5300	
10		150	150	2634	1022	890	722	545	585	220	850	5100	1200	5600	
11		150	150	2722	1022	978	722	545	585	220	850	5200	1200	5700	
12		150	150	2810	1022	1066	722	545	585	220	850	5300	1200	5800	
13		150	150	2898	1022	1154	722	545	585	220	850	5400	1200	5900	
14		150	150	2986	1022	1242	722	545	585	220	850	5500	1200	6000	
200 × 150 (A) DCS		4	200	150	2136	1006	395	735	670	710	220	900	4500	1300	5000
		5	200	150	2231	1006	490	735	670	710	220	900	4600	1300	5100
		6	200	150	2326	1006	585	735	670	710	220	950	4800	1300	5300
		7	200	150	2421	1006	680	735	670	710	220	950	4900	1300	5400
	8	200	150	2516	1006	775	735	670	710	220	950	5000	1300	5500	
	9	200	150	2611	1006	870	735	670	710	220	950	5100	1300	5600	
	10	200	150	2706	1006	965	735	670	710	220	1000	5200	1300	5700	
	11	200	150	2801	1006	1060	735	670	710	220	1000	5500	1300	6000	
	200 × 150 (B) DCS	5	200	150	2271	1006	530	735	670	710	220	950	4800	1300	5300
		6	200	150	2376	1006	635	735	670	710	220	950	4900	1300	5400
		7	200	150	2481	1006	740	735	670	710	220	950	5000	1300	5500
8		200	150	2586	1006	845	735	670	710	220	950	5100	1300	5600	
9		200	150	2691	1006	950	735	670	710	220	950	5400	1300	5900	
10		200	150	2796	1006	1055	735	670	710	220	1000	5500	1300	6000	
11		200	150	2901	1006	1160	735	670	710	220	1000	5600	1300	6100	

Notes: Dimensions are in mm and, for guidance only.

Certified drawings will be provided in all cases of actual construction. Motor dimensions are approximate for a given IEC.



EBARA CORPORATION

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Bangkok Office (Bangkok Thailand)

Manila Office (Metro Manila, Philippines)

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Hong Kong Office (Hong Kong)

Ho Chi Minh City Representative Office

(Ho Chi Minh City, Socialist Republic of Vietnam)

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☆Consolidated subsidiary

Elliott Energy Systems, Inc. (FL 34997, U.S.A)

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Ebara Pumps Europe S.p.A. (Trento, Italy)

Sumoto S.r.l. (Vicenza, Italy)

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