NSL

In-line Centrifugal Pump

Vertically & Horizontally installed

DESMI has high quality and well established utility/district energy pumps on the market, with focus on high energy efficiency and long life cycle.

The DESMI NSL pump is suitable for water applications (raw, treated, hot or cool) and meets the special industrial market requirements for:

- High efficiency
- Low NPSH values
- Easy installation/service
- Specific materials
- Compact design
- Standardized to modular design
- Outstanding hydraulic design performance
- Spacer-coupling options for easy maintenance
- Robust shaft design
- High efficiency impeller with low NPSH values
- Self-priming ability with a separate built-on priming pump

NSL - Inline centrifugal pump	
Norminal Diameter (DN)	80 to 350
Flow rate - 50 Hz	Up to 2000 m³/h (8800 US gpm)
Flow rate - 60 Hz	Up to 2400 m³/h (10600 US gpm)
Head	Up to 195 m (640 ft)
Pressure	Up to 25 bar (360 psi)
Temperature	Up to 140°C (284 °F)
Motor	Standard and Ex motor
VFD	Direct or Bulkead/Wall-mounted
ATEX approved	
Applications: District heating/cooling, sea water, water circulation, cooling towers distribution, chiller distribution & diesel transfer up to 500 cSt. scrubber (flue gas cleaning).	

Design Features

The pump is a in-line, radially split, single-stage centrifugal pump with connecting flanges according to international standards. The pump is designed for mounting with electric motors having different international flange dimensions.

The pump casing is equipped with a replaceable sealing ring.

Standard Material Specifications	
Pump casing	Cast Iron
Impeller	NiAl-Bronze
Sealing ring	NiAl-Bronze
Rear cover	Cast Iron
Shaft	Stainless Steel
Shaft seal	Mechanical

Alternative material combinations are available

The impeller is made with double-curved blades to ensure low NPSH-values and high efficiency.

The bearing unit is equipped with sturdy ball bearings and the small types are fitted with lifetime-lubricated bearings. In the larger types the lower bearing is a double bearing for which a lubrication point is provided.
A shaft in stainless steel with mechanical shaft seal of an approved brand is standard.

Alternative materials include:

Cast Iron, Ductile Iron, Bronze, NiAl-Bronze, Stainless Steel, Super Duplex Stainless Steel

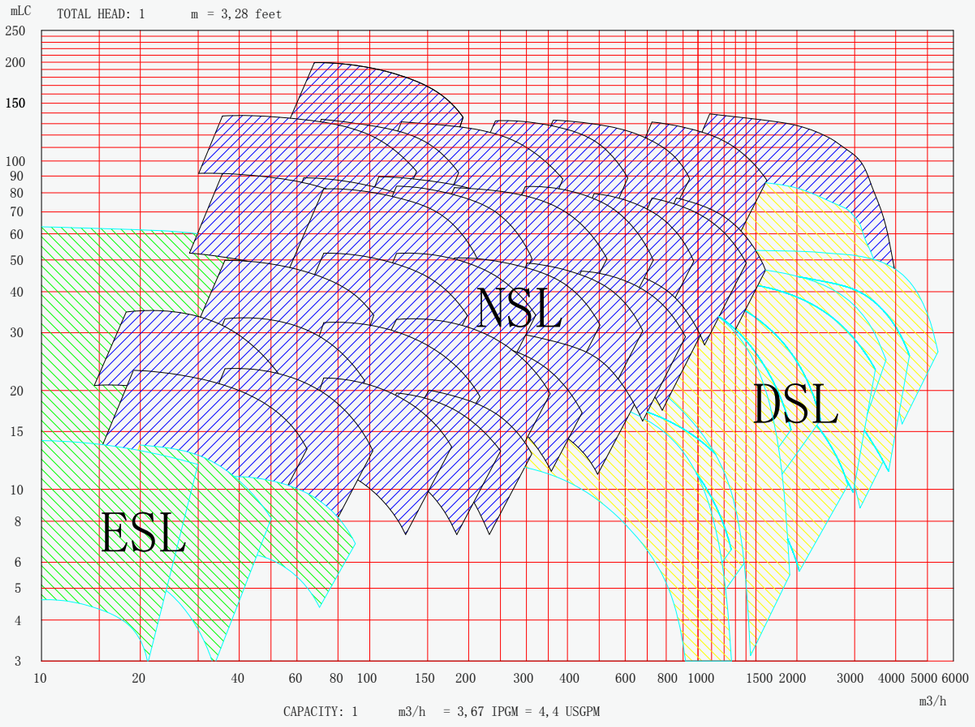
Applications

Within utility/district energy applications the pumps are suitable for district heating, district cooling, water circulation, cooling tower distribution, diesel transfer, etc.

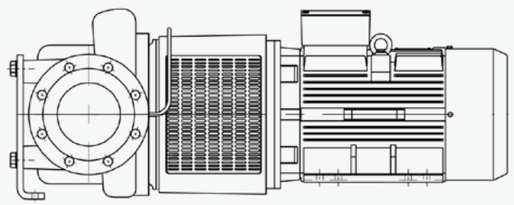
All pump sizes are available as self-priming pumps with a separate built-on priming pump of the water ring type, complete with suction strainer and water feed tank.

The priming pump is equipped with its own electric motor and is suitable for manual or automatic start/stop.

The pump can also be equipped with an air-operated ejetor priming unit.



DESMI performance curves and tests of centrifugal pumps are according to EN/ISO 9906 grade 2B as standard - other grades on request

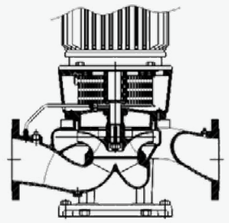


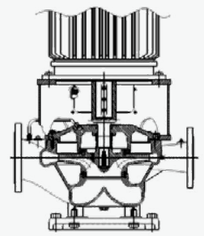
Horizontal mounting is possible on request. The modifications includes pump-bracket (as seen on the picture), baseplate if needed and the motor has to be of B3B5 version motor with foot/flange.

Design Details

Pumps With Ø 215 And Ø 265 Impeller
Suction and discharge flange dimensions are identical. The line through inlet and outlet is flush with the centre line of the shaft. The pumps are mounted with one impeller wear ring.

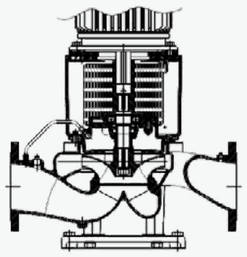
Pumps With Ø 330, Ø 415 and Ø525 Impeller Dimension of the suction flange is one size larger than that of the discharge flange. The line through inlet and outlet is tangential offset in relation to the centre line of the shaft. The pumps have two impeller wear rings.

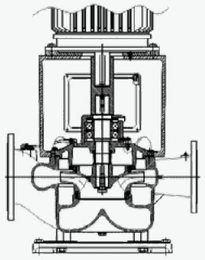




Monobloc Without Bearing

The pump is for small capacities and limited space. This version has no pump bearings, only the ball bearings in the standard electric motor. The power transmission is by rigid coupling. Dismantling of the pump parts is possible without removing the pump casing from the piping.

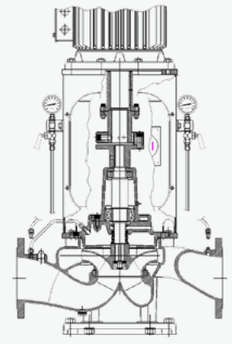


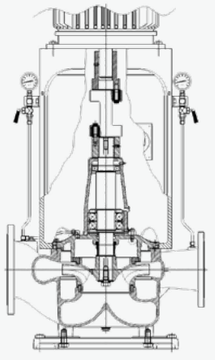


Monobloc With Bearing

The pump is for major capacities and heavy loads, especially recommended where the advantage of the spacer coupling is of no importance and where a small overall height is required.

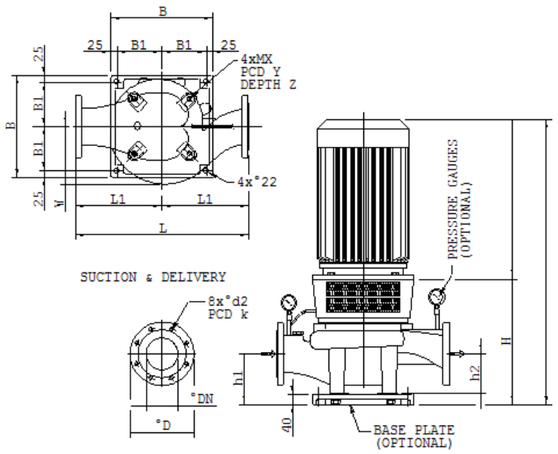
The pump is equipped with a separate rear cover with a ball bearing and a separate motor bracket. Dismantling of the rotating pump parts is possible without removing the pump casing from the piping.



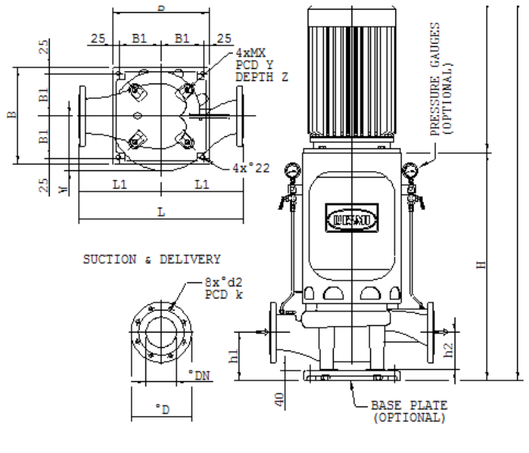


Spacer

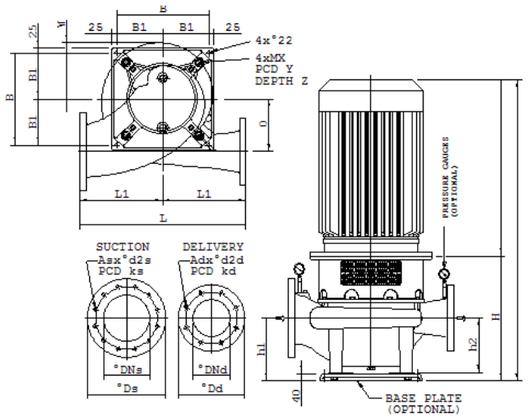
The pump is for high capacities, heavy loads, and high pump speeds. As a special feature the pump is equipped with a spacer coupling which is a combined distance and flexible coupling. This makes it possible to remove the complete bearing housing with shaft, bearings, shaft seal, and impeller without dismantling or loosening the motor or piping. For high capacities and the resulting larger and heavier electric motors we recommend this pump version because of the easy dismantling of the rotating pump parts in connection with inspection and repair. This special feature is often a requirement within the marine industry where installations must be easy to service.



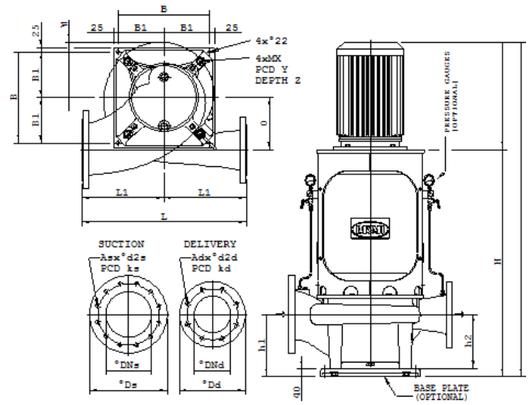
Mono bloc version



Spacer version



Mono bloc version



Spacer version

Impeller size ø215/265

	A02				A12				Spacer				
Type	H [mm/in.]	h1 [mm/"]	h2 [mm/"]	L [mm/"]	H [mm/"]	h1 [mm/"]	h2 [mm/"]	L [mm/"]	H [mm/"]	h1 [mm/"]	h2 [mm/"]	L [mm/"]	DN
NSL80	574/22	200/8	155/6	530/580 21/23	450/17	200/8	155/6	530/580 21/23	900/35	200/8	155/6	530/21	80
NSL100	593/23	200/8	155/6	580/630 23/25	470/18	200/8	155/6	580/630 23/25	920/36	200/8	155/6	580/630 23/25	100
NSL125	640/25	200/8	155/6	630/680 25/27	493/19	200/8	155/6	630/680 26/27	943/37	200/8	155/6	630/680 25/27	125
NSL150	517/20	200/230 8/9	155/185 6/7	680/730 27/29	517/20	200/8	155/6	730/29	967/38	200/230 8/9	155/185 6/7	680/730 27/29	150
NSL200	681/26	260/10	215/8	780/31					1008/40	260/10	215/8	780/31	200
NSL250	727/29	260/10	215/8	800/31					1035/41	260/10	215/8	800/31	250

Weight impeller size ø215/265

Type	A02 [kg/pounds]	D02 [kg/pounds]	A12 [kg/pounds]	D12 [kg/pounds]	Spacer version A-combination [kg/pounds]	Spacer version D-combination [kg/pounds]	DN
NSL80	126/135 278/298	141/152 311/335	100/109 220/240	-	186/195 410/430	201/212 443/467	80
NSL100	137/136 302/300	154/153 340/337	111/120 244/265	-	197/196 434/432	214/213 472/470	100
NSL125	148/154 326/340	163/175 359/386	122/128 269/282	-	208/214 459/472	223/235 492/518	125
NSL150	167/172 368/379	191/197 421/434	141/146 311/322	-	227/232 500/511	251/257 553/567	150
NSL200	207/456	240/529	-	-	267/589	300/661	200
NSL250	301/664	341/752	-	-	346/763	386/851	250

02 versions: Pump casing with pump bearing
12 versions: Pump casing without pump bearing
Spacer versions: Pump casing with a spacer coupling between motor and pump
(The spacer version gives better access to internal parts of the pump).

xx/yy - xx referring to the little impeller
- yy referring to the big impeller

Impeller size ø330/415/525

	A02				A12				Spacer				
Type	H [mm/"]	h1 [mm/"]	h2 [mm/"]	L [mm/"]	H [mm/"]	h1 [mm/"]	h2 [mm/"]	L [mm/"]	H [mm/"]	h1 [mm/"]	h2 [mm/"]	L [mm/"]	DN
NSL80	738/29	260/10	215/8	600/24	499/20	260/10	215/8	600/24	1079/42	260/10	215/8	600/24	80
NSL100	761/30	260/10	215/8	650/700 25/28	547/22	260/10	215/8	650/700 25/28	1107/43	260/10	215/8	650/700 25/28	100
NSL125	799/31	300/10	255/8	700/750 28/29	585/23	300/12	255/10	700/750 28/29	1145/45	300/12	255/10	700/750 28/29	125
NSL150	845/33	300/340 12/13	255/295 10/11	750/800 29/31	631/25	300/340 12/13	255/295 10/11	750/800 29/31	1191/46	300/340 12/13	255/295 10/11	750/800 29/31	150
NSL200	1050/41	340/380 13/15	295/335 11/13	900/35	805/32	340/380 13/14	295/335 11/13	900/35	1515/60	340/380 13/14	295/335 13/14	900/35	200
NSL250	1060/42	380/390 15	335/345 13/14	1000/1100 39/43	815/32	380/390 14	335/345 13	1000/1100 39/43	1283/51	380/14	335/13	1000/39	250
NSL300	1105/44	420/435 16/17	375/390 14/15	1200/47	860/34	420/435 16/17	375/390 15	1200/47					

Weight impeller size ø330/415/525

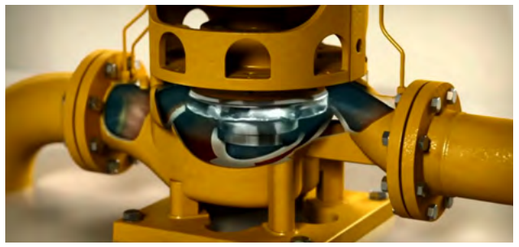
Type	A02 [kg/pounds]	D02 [kg/pounds]	A12 [kg/pounds]	D12 [kg/pounds]	Spacer version A-combination [kg/pounds]	Spacer version D-combination [kg/pounds]	DN
NSL80	256/564	261/575	206/454	211/465	301/664	306/675	80
NSL100	261/379 575/836	267/339 589/747	211/329 465/725	217/349 478/769	311/404 686/891	317/424 699/935	100
NSL125	276/414 608/913	282/434 622/957	226/364 498/891	232/384 511/847	326/439 718/968	332/459 732/1012	125
NSL150	339/454 747/1000	329/474 725/1045	289/404 637/891	279/424 615/935	389/479 858/1056	379/499 836/1100	150
NSL200	409/529/699 402/1166/1541	394/549/789 869/1210/1739	359/479/629 791/1056/1387	344/499/719 758/1100/1585	459/579/829 1012/1276/1828	444/599/919 979/1320/2026	200
NSL250	489/609/809 1078/1348/1783	479/614/924 1056/1353/2037	439/559/739 968/1232/1629	429/564/854 946/1243/1883	539/659/939 1188/1453/2070	529/664/1054 1166/1464/2324	250
NSL300	729/870 1607/1918	729/1005 1607/2216	679/800 1497/1764	679/935 1497/2061	759/1000 1673/2205	759/1135 1673/2502	

02 versions: Pump casing with pump bearing
12 versions: Pump casing without pump bearing
Spacer versions: Pump casing with a spacer coupling between motor and pump
(The spacer version gives better access to internal parts of the pump).

xx/yy - xx referring to the little impeller
- yy referring to the big impeller

Working pressure/max RPM
A02-/A12-/Spacer version working pressure/max RPM

	A02			A12			Spacer		
Type	Max working pressure [bar/psi] Bronze/Cast iron	Max working pressure [bar/psi] Ductile cast iron	Max Rpm 12 & 02 combi-nation	Max working pressure [bar/psi] Bronze/Cast iron	Max working pressure [bar/ psi] Ductile cast iron	Max Rpm 12 & 02 combi-nation	Max working pressure [bar/psi] Bronze/Cast iron	Max working pressure [bar/psi] Ductile cast iron	Max Rpm Spacer version combination
NSL80-215	16/232	25/363	3600	16/232	25/363	3600	16/232	32/464	1800/3600
NSL80-265	14,5/210	25/363	3600	14,5/210	25/363	3600	14,5/210	29/420	1800/3600
NSL80-330	15/218	25/363	3600	15/218	25/363	3600	15/218	30/435	3600/-
NSL100-215	13/189	25/363	3600	13/189	25/363	3600	13/189	26/277	1800/3600
NSL100-265	14,5/210	25/363	3600	14,5/210	25/363	3600	14,5/210	29/420	1800/3600
NSL100-330	8/14, 116/210	25/363	3000	8/14, 116/210	25/363	3000	8/14, 116/210	29/420	1800/-
NSL100-415	10/12,5, 145/181	25/363	1800	10/12,5, 145/181	25/363	1800	10/12,5, 145/181	25/363	1800/-
NSL125-215	10/145	20/290	3600	10/145	20/290	3600	10/145	20/290	1800/3600
NSL125-265	14,5/210	25/363	3600	14,5/210	25/363	3600	14,5/210	29/420	1800/3600
NSL125-330	7/12, 102/174	25/363	3000	7/12, 102/174	25/363	3000	7/12, 102/174	25/363	1800/-
NSL125-415	9/13, 131/189	25/363	1800	9/13, 131/189	25/363	1800	9/13, 131/189	26/377	1800/-
NSL150-215	8/114	16/232	1800	8/114	16/232	1800	8/114	16/232	1800
NSL150-265	7/102	14/203	1800	7/102	14/203	1800	7/102	14/203	1800
NSL150-330	7/13, 102/189	25/363	1800	7/13, 102/189	25/363	1800	7/13, 102/189	27/391	1800
NSL150-415	9/13, 102/189	25/363	1800	9/13, 102/189	25/363	1800	9/13, 102/189	26/377	1800
NSL200-265	9/131	18/261	1800	9/131	18/261	1800	9/131	18/261	1800
NSL200-330	7/13, 102/189	25/363	1800	7/13, 102/189	25/363	1800	7/13, 102/189	26/377	1800
NSL200-415	9/13, 131/18	25/363	1800	9/13, 131/18	25/363	1800	9/13, 131/18	26/277	1800
NSL200-525	14/203	25/363	1800	14/203	25/363	1800	14/203	25/363	1800
NSL250-265	10/145	20/290	1800	10/145	20/290	1800	10/145	20/290	1800
NSL250-330	7/12, 102/174	25/363	1800	7/12, 102/174	25/363	1800	7/12, 102/174	25/363	1800
NSL250-415	9/1274, 131/174	25/363	1800	9/1274, 131/174	25/363	1800	9/1274, 131/174	25/363	1800
NSL250-525	14/203	25/363	1800	14/203	25/363	1800	14/203	25/363	1800
NSL300-415	9/12, 131/	25/363	1800	9/12, 131/	25/363	1800	9/12, 131/	25/363	1800
NSL300-525	14/203	25/363	1800	14/203	25/363	1800	14/203	25/363	1800

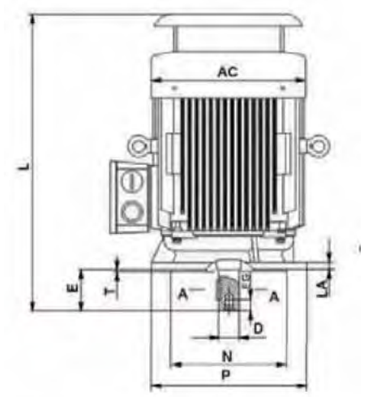


A look into the centrifugal pump

DESMI NSL airvent pipe

DESMI can supply both 2D dimension sketches/3D models for all NSL pumps on request.

Standard motor height



Standard motor type	L-E [mm/"]	Standard motor type	L-E [mm/"]
80M	255/10	200L	735/29
90S	277/11	225S	775/30
90L	310/12	225M2P	800/31
100L	346/14	225M4P	830/33
112M	372/15	250M	895/35
132S	410/16	280S	975/38
132M	441/17	280M	1017/40
160M4A2	505/20	315S	1180/46
160M3D2	620/24	315M	1290/51
180M	650/25	355M	1520/60
180L	690/27	355L	1520/60

Standard motor weight 3000rpm/1500rpm/1000rpm

3000rpm			1500rpm			1000rpm		
Output [kW]	Standard motor Type	Weight (B3) [kg/pounds]	Output [kW]	Standard motor type	Weight (B3) [kg/pounds]	Output [kW]	Standard motor type	Weight (B3) [kg/pounds]
0,75	80 1-2	11/24	0,75	80 2-4	13/29	0,75	90 S-6	16,5/36
1,1	80 2-2	12,5/28	1,1	90 S-4	16,5/36	1,1	90 L-6	21/46
1,5	90 S-2	14,5/32	1,5	90 L-4	20,5/45	1,5	100 L-6	23,5/52
2,2	90 L-2	18/40	2,2	100 L1-4	24/53	2,2	112 M-6	31,5/69
3	100 L-2	21/46	3	100 L2-4	28,5/63	3	132 S-6	40,5/89
4	112 M-2	28/62	4	112 M-4	36,5/80	4	132 M1-6	49/108
5,5	132 S1-2	40,5/89	5,5	132 S-4	48/106	5,5	132 M2-6	64/141
7,5	132 S2-2	46/101	7,5	132 M-4	57/126	7,5	160 M-6	92/111, 203/244
11	160 M1-2	80/119, 176/262	11	160 M-4	86/118, 190/260	11	160 L-6	105/132, 231/291
15	160 M2-2	94/128, 207/282	15	160 L-4	102/139, 225/306	15	180 L-6	176/388
18,5	160 L-2	106/134, 234/295	18,5	180 M-4	186/410	18,5	200 L1-6	222/489
22	180 M-2	134/295	22	180 L-4	197/434	22	200 L2-6	242/534
30	200 L1-2	191/421	30	200 L-4	261/575	30	225 M-6	292/643
37	200 L2-2	237/522	37	225 S-4	308/679	37	250 M-6	369/814
45	225 M-2	254/560	45	225 M-4	337/743	45	280 S-6	511/1127
55	250 M-2	307/677	55	250 M-4	410/404	55	280 M-6	656/1446
75	280 S-2	388/855	75	280 S-4	579/1276	75	315 S-6	851/1876
90	280 M-2	551/1214	90	280 M-4	641/1413	90	315 M-6	973/2145
110	315 S-2	916/2019	110	315 S-4	959/2114	110	315 L1-6	1022/2253
132	315 M-2	954/2103	132	315 M-4	999/2202	132	315 L2-6	1112/2457
160	315 L1-2	1083/2388	160	315 L1-4	1096/2416	160	355 M1-6	1628/3589
200	315 L2-2	1178/2597	200	315 L2-4	1330/2932	200	355 M2-6	1760/3880
250	355 M-2	1611/3552	250	355 M-4	1638/3011	250	355 L-6	1924/4242
315	355 L-2	1801/3971	315	355 L-4	1832/4039			

DESMI is a global company specialising in the development and manufacture of pumps and pumping solutions incl. environmental equipment for oil spill seaweed and clean waterways for marine, industry, defence & fuel, and utility both locally and globally. Our product range - supplemented with agency products from other leading world-class manufacturers - is complemented by related services such as the design and installation of pumping systems, oil spill recovery packages, and a first class after-sales service which can include full technical support, commissioning and product training.

DESMI equipment is sold to more than 100 countries via a network of subsidiaries and distributors on six continents.

MARINE & OFFSHORE

Thousands of DESMI pumps are at work on the seven seas, and these pumping solutions are living proof that our customers are satisfied with the performance of our products. For more than 50 years we have supplied marine pumps to the world's fleet - from the largest container ships to the smallest fishing vessels. Regardless the size of the ship we know the owners' demands for many years of trouble-free operation. In recent years we have also taken on the supply for offshore installations worldwide.

INDUSTRY

The key factors in all areas of the process industry are reliability, productivity and performance of the production plant. These are precisely the parameters addressed by the DESMI range of products, systems and services for the industry segment.

ENVIRO-CLEAN

The EnviRo-Clean solutions from DESMI are trusted throughout the industry. Whether the requirement is for offshore, or nearshore, the Arctic or Equatorial environment, we continue to deliver proven solutions for all spill conditions including seaweed and clean waterways. Our efficient eqipment is easy-to-use and durable and meets the needs of any community at the best life cycle costsue to deliver proven solutions for all spill conditions at the best life cycle costs.

DEFENCE & FUEL

Utilising products from other world class equipment suppliers to complement the extensive DESMI pump range, DESMI designs and builds liquid handling solutions used by military forces around the globe. Based on many years' experience with systems suitable for working in austere conditions and environments we provide total liquid management – from project management and system integration to procurement and logistics planning.

UTILITY

DESMI provides pumps and pump solutions for the supply of domestic water, district heating/cooling and waste water. Operational reliability, energy optimization and service-friendliness are essential headlines for a business that services cities, buildings and not least, people.