



ROTAN[®] - Lube Oil Pumps

Refrigeration Industry

Industry/Utility

DESMI
Make life flow

ROTAN® Lube Oil Pumps Refrigeration Industry

ROTAN® pumps are manufactured by DESMI, a global company founded in 1834.

The company is one of Denmark's oldest companies with offices around the world and more than 600 employees.

To meet the increasing demands in the refrigeration industry, our standard pumps have been modified over the years in close co-operation with various important customers in the refrigeration industry, to whom DESMI has supplied pumps since 1979.

ROTAN® - One of the World's Leading Internal Gear Pumps

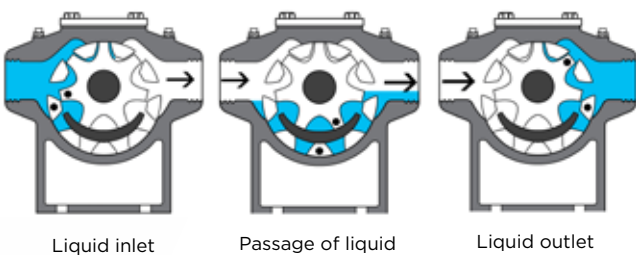
The internal gear pump principle was developed in 1915 by a Danish-American.

In 1921, he licensed a Danish company to manufacture the pumps, which have been continuously marketed worldwide under the ROTAN® name.

The unique, modular concept of ROTAN® pumps is generally recognized as the most advanced internal gear pump design available today.

The ROTAN® internal gear pump provides favourable flow conditions, as the direction of the liquid flow is only changed slightly through the pump.

Method of Operation



This means that superior self-priming capability and gentle liquid handling are achieved, and also that highly viscous liquids can be pumped.

ROTAN® pumps have the following additional advantages:

- Pumping in either direction
- Easy maintenance and inspection based on the modular design
- Sturdy and uncomplicated construction with only two rotating parts and one shaft seal
- Comprehensive choice of configurations available as standard
- Genuine back pull-out design
- End clearance axial adjustment



All ROTAN® pumps are hydrostatically tested.

ROTAN® pumps can be supplied in accordance with the ATEX Directive for use in potentially explosive environments.

The ROTAN® pumps are certified by Physikalisch-Technische Bundesanstalt PTB, Postfach 33 45, 38023 Braunschweig, registration number 03 ATEX D052.

It is DESMI's policy to offer customized solutions developed in co-operation with worldwide leading companies and to follow-up by first class after-sales service.



Civil Refrigeration

The ROTAN® GP pump range is a simple and compact construction making it a low-cost pump unit that has been modified to meet the specific requirements for the closed systems in the refrigeration industry. The pump takes advantage of the benefits of O-rings instead of gaskets and has as a standard balanced bellow type seal. The ROTAN® GP pump range has a direct to motor drive complete with

pump, drive unit, coupling, and integrated baseplate. A close-coupled OEM model is also available

Applications

Pumping of mineral oil, alkyl benzene, polyalfaolifin, polyglycol, polyolester oils with a minor content of coolants (Compatible with gases used in the market)¹



Available test, certification & documentation

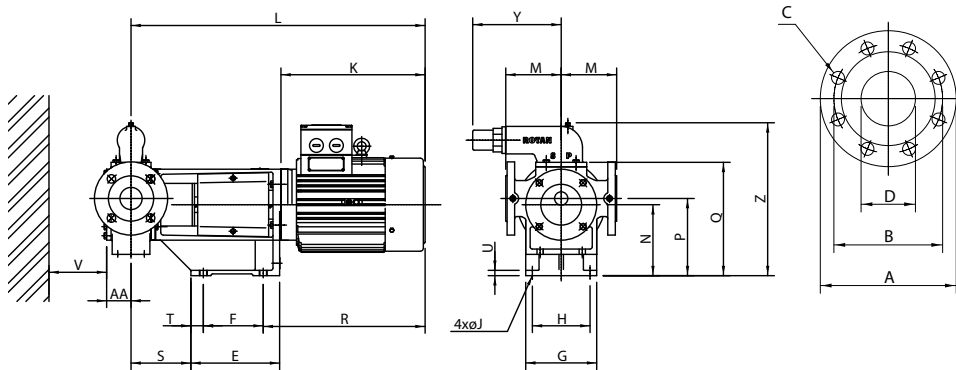
- ATEX Conformity
- Maritime Certification
- Material Certification 2.1 (GG25) & 3.1 GGG40
- Dynamic & Hydrodynamic Test

System Pressure	25 bar
Differential Pressure	4 bar
Viscosity	10-200 cSt
Temperature	5-120°C
Seal	Metal Bellow Sealol type 680
Flanges	CL300 or PN40
Construction Material	Grey Cast Iron GG25 (STD) Ductile Cast Iron GGG40 (on request)
O-rings	Neoprene, HNBR, VITON Other materials on request

Flowrate of ROTAN® GP Pumps 50 Hz*				
Pump	Connection	8 Pole	6 Pole	4 Pole
27	DN25/1"	13 l/m	17 l/m	25 l/m
34	DN32/1.25"	23 l/m	30 l/m	45 l/m
42	DN40/1.5"	45 l/m	60 l/m	90 l/m
52	DN50/2"	95 l/m	125 l/m	
67	DN65/2.5"	155 l/m	210 l/m	
82	DN80/3"	300 l/m	410 l/m	
102	DN100/4"	625 l/m		

Flowrate of ROTAN® GP Pumps 60 Hz*				
Pump	Connection	8 Pole	6 Pole	4 Pole
27	DN25/1"	16 l/m	20 l/m	30 l/m
34	DN32/1.25"	28 l/m	36 l/m	54 l/m
42	DN40/1.5"	54 l/m	72 l/m	106 l/m
52	DN50/2"	114 l/m	150 l/m	
67	DN65/2.5"	186 l/m	252 l/m	
82	DN80/3"	355 l/m	485 l/m	
102	DN100/4"	730 l/m		

ROTAN® GP - General Purpose Pumps



Flanger / Flanges / Flanschen	
ISO 2084 / DIN 2501 / BS 4504 : 1969	
Type	Tryktrin / Nominal pressure / Nenndruck
26-81	PN 16
101	PN 10

IEC- / DIN Motorer	
Byggestørrelse / Motor size	Byggeform / Mounting arrangement
80-112	B14
132-160	B5

Type	Motor	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	Y	Z	AA	Weight KG											
																									Pump	Valve										
GP 27	80	115	85	4-Ø14	25	125	65	120	90	12	225	464	60 or 83	112	120	167	297	82	20	10	50	115	243	34	11	2										
	90S										265	484					307	87																		
	90L										290	509					332	86																		
GP 34	80	140	100	4-Ø18	32	125	65	120	90	12	255	468	60 or 83	112	120	167	297	86	20	10	60	115	243	38	12	2										
	90S					130	70	307	91																											
	90L					140	80	332	91																											
	100L					140	80	325	559		132	140					187	368					263													
100XL	325	559	368																																	
GP 42	90S	150	110	4-Ø18	40	150	90	140	110	15	265	519	90 or 100	132	142	207	307	101	20	10	65	156	270	48	20	2										
	90L					290	544				332																									
	100L					325	589				368																									
	100LX					325	589				368																									
	112M6,8					340	604				383																									
112M4	340	604	383																																	
GP 52	100L	165	125	4-Ø19	50	200	135	160	130	15	325	663	125	160	174	261	368	135	25	12	70	199	336	61	50	6										
	100LX										325	663					368																			
	112M4										340	678					383																			
	132S										340	678					383																			
	132SX										390	748					459																			
	132M6,8										220	140					225										195	430	788	200	214	301	490	133	16	376
	132M4, MX6										430	788					490																			
GP 67	100L	190	145	4-Ø19	65	200	135	160	130	15	325	668	125	160	174	261	368	140	25	12	80	199	336	66	55	6										
	100LX										325	668					368																			
	112M2,6,8										340	683					383																			
	112M4										340	683					383																			
	132S										390	753					450																			
	132SX										399	762					459																			
	132M6,8										220	140					225										195	430	793	200	214	30	490	138	16	376
	132M4, MX6										430	793					490																			
	160MX8										250	170					250										22	505	898	225	239	326	565	401		
160M4,6,8	505	898	565																																	
GP 82	132S6,8	210	160	8-Ø19	80	220	140	225	195	15	390	792	150	200	221	325	450	177	25	16	100	226	431	82	80	10										
	132M6										430	832					490																			
	132MX8										430	832					490																			
	160MX8										505	937					565																			
	160M6,8										250	170					250										220	505	937	225	246	350	565			
	160L6,8										560	992					620																			
GP 102	132MX6	229	180	8Ø-19	100	220	140	225	195	15	430	837	180	200	227	347	490	182	25	16	115	226	453	92	105	10										
	132M6,8										430	837					490																			
	160MX8										505	942					565																			
	160M6,8										505	942					565																			
	160L6,8										250	170					250						220				560	997	225	252	372	620	478			
180L6,8	590	1027	650																																	



Oil & Gas Refrigeration

The ROTAN® PD pumps are designed for refinery and petrochemical applications. All pressure containing components are in carbon steel. Design pressure according to ANSI 300 Lbs or PN40.

This makes the ROTAN® PD pump range an ideal pump when working with the refrigeration industry in the Oil & Gas sector. The pump has been modified to meet the specific requirements for the closed systems in the refrigeration industry. The pump takes advantage of the benefits of

O-rings instead of gaskets and has as a standard a balanced bellow type seal. The ROTAN® PD pump is a free-shaft pump mounted on a baseplate either with a gearbox or directly with a motor.

Applications

Pumping of mineral oil, alkyl benzene, polyalfaolifin, polyglycol, polyolester oils with a minor content of coolants (Compatible with gases used in the market)¹



Available test, certification & documentation

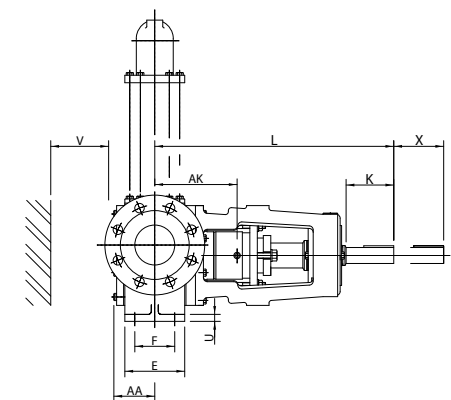
- ATEX Conformity
- Maritime Certification
- API676 meets standard with few deviations
- Material Certification 3.1
- Dynamic & Hydrodynamic Test

System Pressure	30 bar
Differential Pressure	5 bar
Viscosity	10-200 cSt
Temperature	5-120°C
Seal	Metal Bellow Sealol type 680
Flanges	CL300 or PN40
Construction Material	Cast Iron GS 52 3 (STD) Stainless Steel 316 (on request)
O-rings	Neoprene, HNBR, VITON Other materials on request

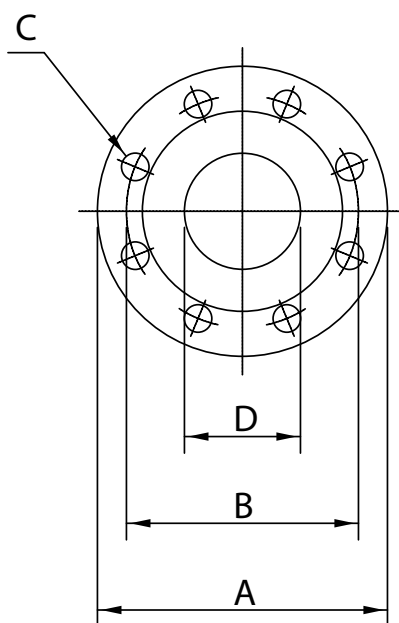
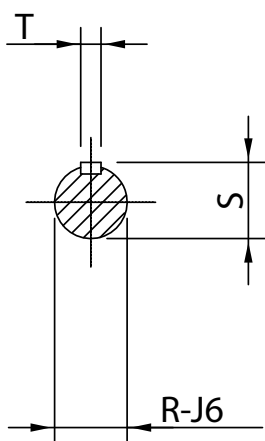
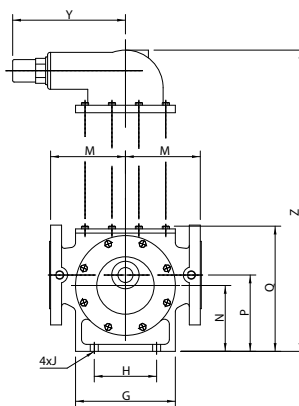
Flowrate of ROTAN® PD Pumps 50 Hz*				
Pump	Connection	8 Pole	6 Pole	4 Pole
27	DN25/1"	13 l/m	17 l/m	25 l/m
34	DN32/1.25"	23 l/m	30 l/m	45 l/m
42	DN40/1.5"	45 l/m	60 l/m	90 l/m
52	DN50/2"	95 l/m	125 l/m	
67	DN65/2.5"	155 l/m	210 l/m	
82	DN80/3"	300 l/m	410 l/m	
102	DN100/4"	625 l/m		

Flowrate of ROTAN® PD Pumps 60 Hz*				
Pump	Connection	8 Pole	6 Pole	4 Pole
27	DN25/1"	16 l/m	20 l/m	30 l/m
34	DN32/1.25"	28 l/m	36 l/m	54 l/m
42	DN40/1.5"	54 l/m	72 l/m	106 l/m
52	DN50/2"	114 l/m	150 l/m	
67	DN65/2.5"	186 l/m	252 l/m	
82	DN80/3"	355 l/m	485 l/m	
102	DN100/4"	730 l/m		

ROTAN® PD - Petrochemical Duty Pumps



EM



Flanger / Flanges / Flanschen				
Type Typ	ISO	DIN	BS	ANSI
27-102	2084-PN16	2501-ND16	4504 1969 PN16	B 16.5 Class 150

Type Typ	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	X	AA	AK	Y	Z	AL	AM	AN	Weight KG	
																													Pump	Valve
PD27	115	85	4/Ø14	25	45	28	90	50	Ø7	40	249	83	71	79	126	Ø12	13.5	4	8	50	70	34	76	115	202	77	57	62	7	2
PD34	140	100	4/Ø18	32	45	28	90	50	Ø7	40	253	83	71	79	126	Ø12	13.5	4	8	60	80	38	80	115	202	81	61	62	10	2
PD42	150	110	4/Ø18	40	70	50	120	65	Ø10	48	293	100	100	100	175	Ø16	18	5	10	65	55	48	89	115	248	94	97	55	18	2
PD52	165	125	4/Ø19	50	85	60	160	95	Ø12	66	357	125	112	126	213	Ø27	30	8	12	70	70	61	116	199	288	124	94	92	36	6
PD67	190	145	4/Ø19	65	95	60	160	95	Ø12	66	362	125	112	126	213	Ø27	30	8	12	80	80	66	118	199	288	127	95	91	43	6
PD82	210	160	4/Ø19	80	120	80	200	125	Ø15	103	488	150	132	153	257	Ø32	35.5	10	14	100	100	82	165	226	363	169	134	111	70	10
PD102	229	180	4/Ø19	100	140	110	245	160	Ø15	103	493	180	160	187	307	Ø32	35.5	10	14	115	115	92	175	226	413	175	144	116	96	10



Special Application

Due to the unique designs of customers products, DESMI has developed a series of pumps specially designed to meet their needs. Most notably is the ROTAN® CC pump series which is based on the ROTAN® GP monobloc pump but has completely removed the support bracket, baseplate and coupling.

The result is a very compact pump that still has all the advantages of the full sized ROTAN® GP pump series. The pump takes advantage of the benefits of the O-rings instead of gaskets and has as a standard balanced bellow type seal. This makes the ROTAN® CC pump an ideal solution for compact refrigeration units where space is a valuable resource.



DESMI ROTAN® pumps fully meet the new standards and requirements, and we can supply.

Available test, certification & documentation

- ATEX Conformity
- Maritime Certification
- Material Certification 2.1 (GG25)
- Dynamic & Hydrodynamic Test

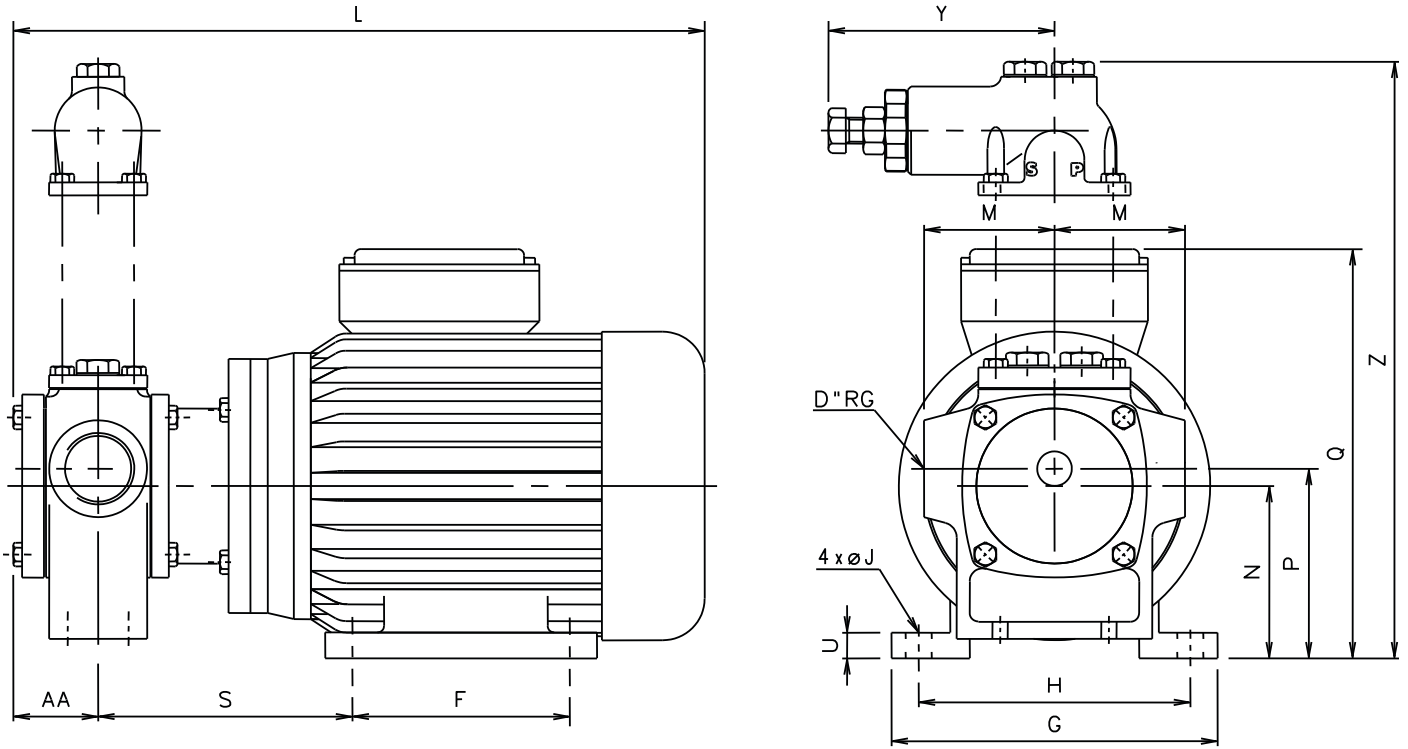
System Pressure	25 bar
Differential Pressure	4 bar
Viscosity	10-200 cSt
Temperature	5-120°C
Seal	Metal Bellow Sealol type 680
Flanges	CL300 or PN40
Construction Material	Grey Cast Iron GG25 (STD) Ductile Cast Iron GGG40 (on request)
O-rings	Neoprene, HNBR, VITON Other materials on request

Flowrate of ROTAN® CC Pumps 50 Hz*				
Pump	Connection	8 Pole	6 Pole	4 Pole
27	DN25/1"	13 l/m	17 l/m	25 l/m
34	DN32/1.25"	23 l/m	30 l/m	45 l/m
42	DN40/1.5"	45 l/m	60 l/m	90 l/m

Flowrate of ROTAN® CC Pumps 60 Hz*				
Pump	Connection	8 Pole	6 Pole	4 Pole
27	DN25/1"	16 l/m	20 l/m	30 l/m
34	DN32/1.25"	28 l/m	36 l/m	54 l/m
42	DN40/1.5"	54 l/m	72 l/m	106 l/m

ROTAN® CC - Close Coupled

T1421
D.04-10-99 LN

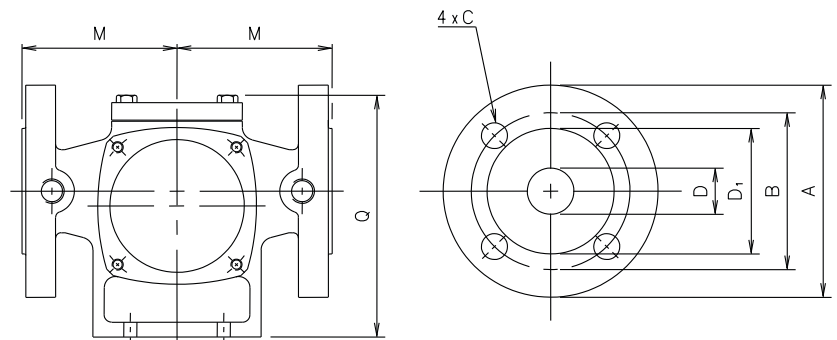


Type	D	F	G	H	J	L	N	P	Q	S	U	Y	Z	AA
CC26-IEC 80	1"	100	155	125	10	343	80	88	190	120	9	104	187	39
CC26-IEC 90-S	1"	100	180	140	10	373	90	98	203	126	12	104	197	39
CC26-IEC 90-L	1"	125	180	140	10	403	90	98	203	126	12	104	197	39
CC33-IEC 80	1 ¼"	100	155	125	10	351	80	88	190	124	9	104	187	43
CC33-IEC 90-S	1 ¼"	100	180	140	10	381	90	98	203	130	12	104	197	43
CC33-IEC 90-L	1 ¼"	125	180	140	10	411	90	98	203	130	12	104	197	43
CC41-IEC 112	1 ½"	140	204	160	10	448	100	110	233	157	14	104	245	48
CC41-IEC 100	1 ½"	140	236	190	10	458	112	124	257	164	15	104	259	48

All numbers from D to AA are in mm

Flange Dimensions

Type	A	B	C	D ₁	D	M	Q
CC26	ø115	ø85	ø14	ø68	ø25	83	128
CC33	ø140	ø100	ø18	ø78	ø32	83	128
CC41	ø150	ø110	ø18	ø88	ø40	100	174



Advantages of ROTAN® Pumps in Lube Oil Systems

To meet the increasing demands in the refrigeration industry, our standard pumps have been modified over the years in close co-operation with various important customers in the refrigeration industry, whom DESMI ROTAN® has provided with pumps since 1979.

The demand to phase out the use of chlorine-containing refrigerants causing damage to the ozone layer has led to new refrigerants and lubricating oils, which make special calls on the pumps, such as:

- The materials in the refrigerating installation, particularly the elastomers, must be compatible with the new

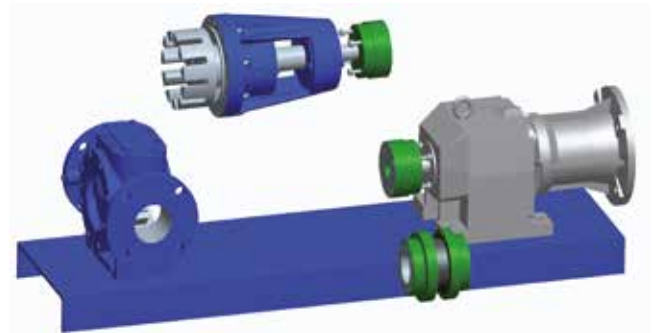
refrigerants and lubes. Mechanical seals and static sealing must be able to withstand vacuum suction, as more of the new refrigerants are hygroscopic, i.e. absorbing water from the air.

- This makes it necessary to evacuate aqueous vapour, if any, from the installation before filling up with oil.
- New refrigerants often demand higher design pressure.

Flexibility across Range

Our DESMI ROTAN® GP pump range has integrated pump, coupling, baseplate, and drive unit and is offered in grey cast iron GG25 or nodular cast iron GGG40.

Picture below shows the ROTAN® GP in details.



Additional Features for all DESMI ROTAN® Pump Types:

- ROTAN® pumps are made with “back-pull-out” system, which allows inspection/repair of the rotating cartridge without disturbing the piping or coupling alignment

O-rings over gaskets

- Superior at high system pressures.
- Flexibility in material combinations (Neoprene, HNBR, Viton, other materials on request)
- Ultimate protection against leakage

Local & Global

DESMI has specialised in the development, manufacture, sale and service of pump solutions for marine, industry, oil spill response, defence & fuel, and utility, operating globally, but acting locally.

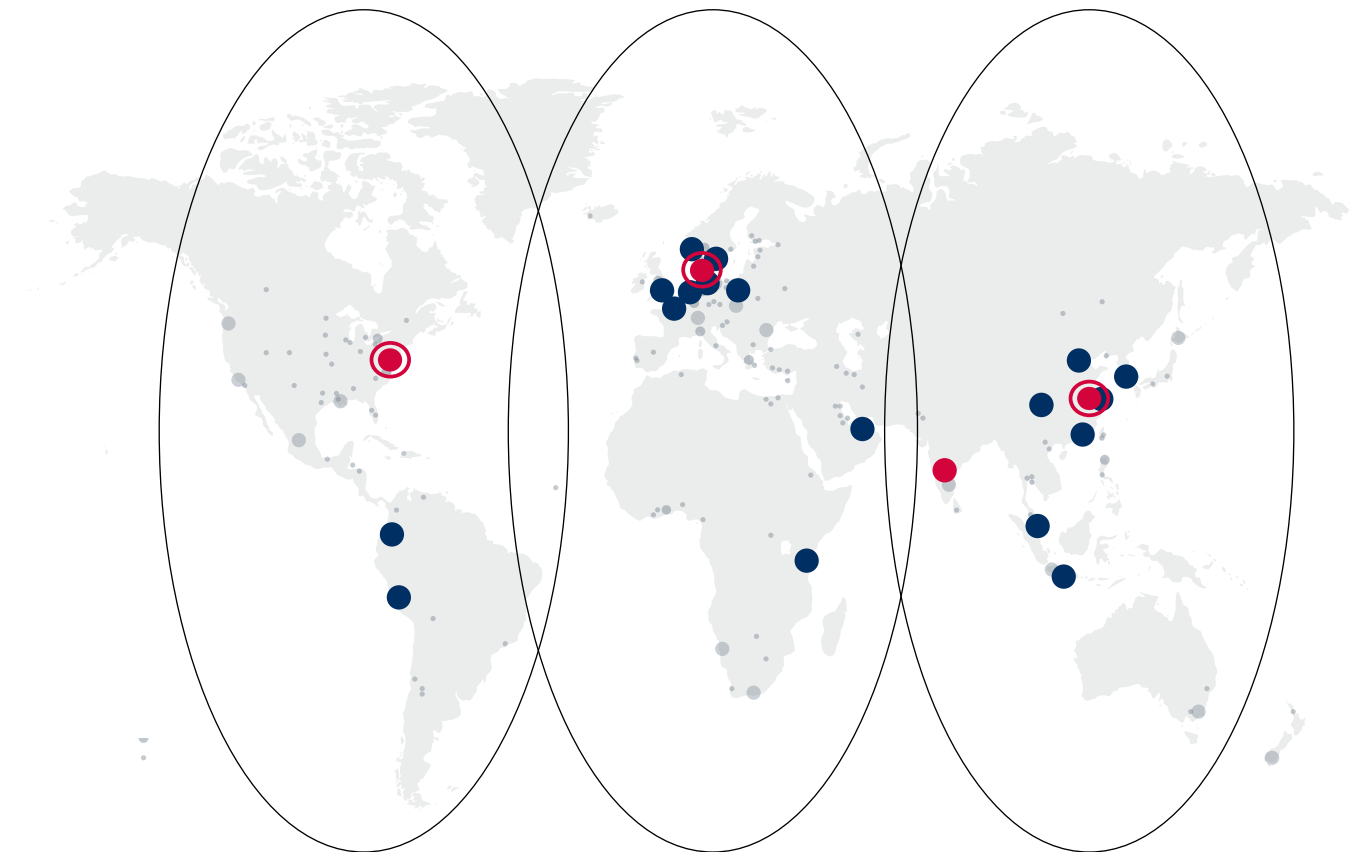
Our product range - completed by products from other leading, world-class manufacturers - is complemented by related services such as design and installation of pump systems and after sales service through our network of service centres.

DESMI pumps and systems are sold to more than 100

countries via a worldwide network of subsidiaries and distributors.

In order to meet the customers' demands for more complete systems, we are providing solutions and systems as well as single standard pumps and components.

For more detailed information please visit our website www.desmi.com



DESMI systems are marketed worldwide

- DESMI group companies
- ⊙ DESMI distribution centres
- DESMI factories
- DESMI foundry
- DESMI dealers/agents

We exist to keep your business flowing

At DESMI, we work closely with system designers, plant engineers, and other industry stakeholders to deliver critical flow processes for a long list of production tasks at small to large-scale industry sites – even in complex applications with challenging media.

Everything we do is about pushing the boundaries of what we can do for you. Our pump solutions are trusted worldwide for superior performance, unmatched reliability, and high efficiency, and our products are just the start: We build flow solutions around you with the expertise and aftermarket support you need.

Founded in Denmark in 1834, we have provided the solutions our customers need for nearly two centuries. We help you operate more efficiently and reliably, enabling your ambitions for performance, compliance, and growth whilst helping you reduce your climate impact.

Together, we can make a difference, whatever the future holds. Because we, like you, are here to **make life flow**.

For more information, visit desmi.com

DESMI A/S

Tagholm 1
DK-9400 Nørresundby
Tel.: +45 96 32 81 11