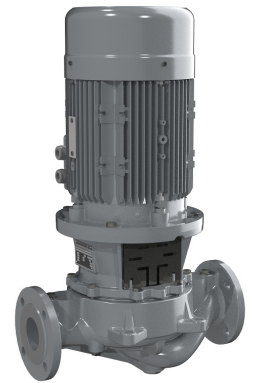


Volute Casing Centrifugal Pumps SERIES NI

Inline Design



Application

For pumping fresh water, industrial water, sea water, condensates, oils, brines, lyes and hot water.
The fluids to be pumped must not contain any abrasive particles nor chemically attack the pump materials.

Main fields of application

In all branches of industry: In cooling and heating systems, in circulating, water supply, water treatment, sea-water desalination, dedusting and spray painting plants as well as in air-conditioning, cooling, swimming pool and industrial engineering.
In shipbuilding: As general-service and fire pump, bilge, ballast and cooling water pump, as drinking-water and seawater sanitation pump and as recirculation pump for heating circuits.

Design and series construction

Volute casing centrifugal pump, single entry, single or two-stage, of inline design. Stub and motor shaft are rigidly coupled together. Shaft bearing in the motor by means of grease-lubricated groove ball bearings. The mating dimensions of the two-stage sizes 2/25–200, 2/32–200, 2/40–250, 2/50–250, except for dimensions f and l depending upon the driving motors, correspond to the single-stage designs.
All screw connections are by means of hexagonal screws and hexagonal nuts so that even after repeated painting (shipbuilding), proper loosening of same will be ensured.

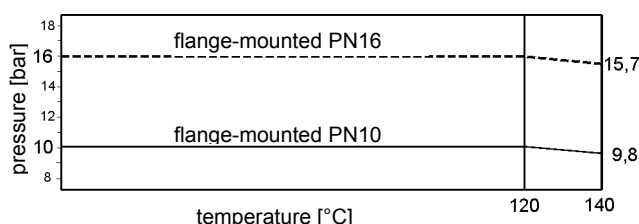
Arrangement and installation

Horizontal or vertical installation, arrangement with motor pointing down is not permitted.
Optional feet permit vertical base arrangement. Pump sizes intended for motor sizes ≥ 225 M must always be equipped with feet. Horizontal installation position is permissible only with motor size ≤ 200 L.

Performance data

Delivery	Q	up to 460 m ³ /h
Delivery head	H	up to 140 m
Temperature of the fluid pumped	t	up to 140 °C
Inlet pressure	p _s	①
Pump discharge pressure	p _d	to 10/16 bar ②

① inlet pressure plus maximum delivery head must not exceed the admissible operating pressure
② Depends on flange version (PN stage, see diagram) and the shaft seal.



Branch position/flanges

Suction and outlet branch opposite in one line.
Flanges: up to DN 150 acc. to EN 1092-2 PN10/PN16
up to DN 200 acc. to EN 1092-2 PN10

Contact protection

The requirements of DIN EN 809 "Contact protection", are met.

Shaft seal

By maintenance-free mechanical seal in unbalanced design (main dimensions acc. to DIN EN 12 756, design K, shape U).

Combination of components

The table on page 3 shows the combination possibilities of components of all NI sizes. The unit assembly system allows reduced stockkeeping of spare parts.

Explosion protection



The pump fulfils the requirements according to Explosion Protection Directive 2014/34/EU (ATEX) for equipment and equipment group II, category 2 G.
Categorisation into temperature classes according to EN 13463-1 depends on the temperature of the pumped medium. The max. permissible temperature of the pumped medium for the respective temperature classes are shown in the specific order data sheet.

Note: In case of the operation of a category 2 pump, the unacceptable heating of the pump surfaces caused by a possible operational fault must be prevented by a control mechanism. In case of an operation with constant parameters (pressure, temperature, speed = const.), a pump performance controller can be supplied with the pump to detect any operational faults.

Drive

Surface-cooled three-phase squirrel-cage induction motors, with locating-type bearing, IM V1 type of construction, enclosure IP55 according to IEC Standard, class F insulation, performances and main dimensions according to DIN EN 50347, up to 2.2 kW 230/400V, from 3 kW 400/690 V.

Attention: Motors provided by customers must also have a locating-type bearing (Driving side AS)!

Dismantling the driving unit

When dismantling the driving unit, the volute casing may remain in the piping.

Connections

The following auxiliary connections are always provided:

FD1 Draining
FV1 Venting
LO Leakage outlet

optional:

FF1 Filling
PM1 Pressure gauge (Suction branch)
PM2 Pressure gauge (Discharge branch)

Shaft seals with temperature and pressure limits

Available for all material designs

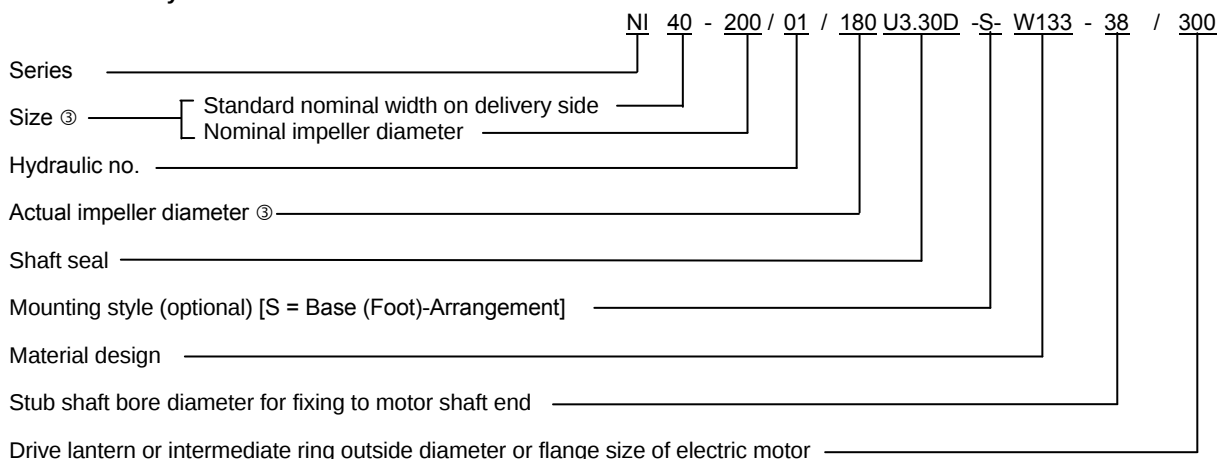
Mechanical seal, uncooled	Unbalanced			
Flushing	Internal self flushing			
Abbreviation	U3.30D	U3.40D	U3.50D	U3.51D
Rotating ring	hard carbon, resin impregnated	silicone carbide	hard carbon, antimony impregnated	
Stationary ring	silicone carbide	silicone carbide	silicone carbide	
Metal parts	CrNiMo steel	CrNiMo steel	CrNiMo steel	
O-rings	HNBR	HNBR	EPDM	FPM
Bellow			-	-
Material code DIN EN 12 756	BQ1XGG	Q1Q1XGG	AQ1EGG	AQ1VGG
Centrifugal pumps at all bearing housing sizes	Admissible temperature (° C) of pumped liquid and pump outlet pressure p _d (bar)			
	° C / bar	° C / bar	° C / bar	
single-stage	110 / 10	110 / 10	140 / 10	140 / 10 ②
two-stage	110 / 16 ③	110 / 16 ③	140 / 16 ③	140 / 16 ②③

② max. 90 °C with water-based liquids

③ with an inlet pressure > 5 bar the use of the shaft sealing type U3.50D/U3.51D is absolutely essential!

Other mechanical seal designs on inquiry.

Abbreviation system



③ The actual impeller diameter of two-stage sizes relates to the second stage. The number of stages is placed in front of the nominal width of the outlet branch, e.g. 2/40-200/...

Materials

Denomination	Part No.		Material designs				
	single-stage	two-stage	W 133	W 134	W 135	W 149	W152
Volute casing	102...	102...	CC333G	EN-GJS-400-15	EN-GJS-400-15	EN-GJS-400-18-LT	EN-GJS-400-18-LT
Impeller	230...	-	CC333G	CC333G	EN-GJL-200	CC333G	EN-GJL-200
Impeller 1st stage	-	230...	CC333G	CC333G	EN-GJL-200	CC333G	EN-GJL-200
Impeller 2nd stage	-	230...	CC333G	CC333G	EN-GJL-200	CC333G	EN-GJL-200
Diffuser	-	171...	CC333G	CC333G	EN-GJL-200	CC333G	EN-GJL-200
Stage casing	-	108...	CC333G	EN-GJS-400-15	EN-GJS-400-15	EN-GJS-400-18-LT	EN-GJS-400-18-LT
Casing cover	161...	161...	CC333G	EN-GJS-400-15	EN-GJS-400-15	EN-GJS-400-18-LT	EN-GJS-400-18-LT
Stub shaft	220...	220...	1.4462/1.7139 ④	1.4462/1.7139 ④	1.4462/1.7139 ④	1.4462/1.7139 ⑤	1.4462/1.7139 ④
Drive lantern	341...	341...	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Intermediate ring	509.01	-	CC333G	EN-GJS-400-15	EN-GJS-400-15	EN-GJS-400-18-LT	EN-GJS-400-18-LT
Intermediate ring	509.02	-	EN-GJL-250 or St	EN-GJL-250 or St	EN-GJL-250 or St	EN-GJL-250 or St	EN-GJL-250 oder St

④ in contact with fluids 1.4462 / motor side 1.7139

Other versions available from the factory upon request.

Automatic aspirator

Pump can also delivered with an automatic aspirator.

Combination of components

The following table shows the combination possibilities of components or spare parts of the NI sizes. Within a vertical column, parts with identical numbers are interchangeable.

Shaft diameter at the shaft seal	Pump size	Volute casing	Impeller	Impeller		Diffuser	Stage casing	Intermediate ring	Casing cover	Stub shaft	Drive lantern	Intermediate ring	Foot	Footplate	
	mm			NI	1 st stage					2 nd stage	The allocation to the sizes depends on speed, motor performance and motor design.				
16	20-160	1	1	-	-	-	-	-	1	16-14 16-19 16-24 16-28	16-160 16-200 16-250	-	1	-	
24	32-125	2	2	-	-	-	-	-	2	24-14 24-19 24-24 24-28 24-38 24-42	24-160 24-200 24-250 24-300 24-350	-	2	-	
	40-125	3	3							2					
	50-125	4	4							2					
	65-125	5	5							3					
30	25-200	6	6	-	-	-	-	-	3	30-19 30-24 30-28	30-200 30-250	-	2	-	
	32-160	7	7										2		
	32-200	8	8										2		
	40-160	9	9							2					
	40-200	10	10						3	30-38 30-42 30-48 30-55	30-300 30-350 30-400		3		
	40-250	11	11										4		3
	50-160	12	12										3		2
	50-200	13	13										4		3
	50-250	14	14										3		3
	65-160	15	15										3		3
	65-200	16	16										4		3
	80-160	17	17										3		3
30 two stage	2/25-200	6	-	1	1	1	1	-	5	2/30-19 2/30-24 2/30-28 2/30-38 2/30-42 2/30-48 2/30-55	30-200 30-250 30-300 30-350 30-400	-	2	-	
	2/32-200	8	-							2	2		2		2
	2/40-250	11	-	3											
	2/50-250	14	-	3	3										
40	65-250	18	18	-	-	-	-	-	7	40-28	40-360	280.180.0	4	1	
	65-315	19	19						8			5	2		
	65-400	20	20					3	40-38			280.230.20	6	3	
	80-200	21	21					7		280.250.50		4	1		
	80-250	22	22							8		280.300.50	4	1	
	80-315	23	23						7			280.350.50	5	2	
	100-200	24	24					7				280.350.80	4	1	
	100-250	25	25							8		280.450.80	5	2	
	100-315	26	26						7			280.550.80	4	1	
	125-250	27	27					1							

Commercial standard motors with locating-type bearing, construction IM V1, all types of enclosures and speeds of rotation possible.

Space-saving compact design through direct coupling with stub shaft.

Uncooled, unbalanced mechanical seal for cavities according to DIN EN 12 756, design K, form U.

Negligible axial thrust by fine adaption of the balancing holes.

Horizontal and vertical mounting possible with exception of motor downward.

When dismantling the driving unit (including impeller) the **volute casing remains in the piping**.

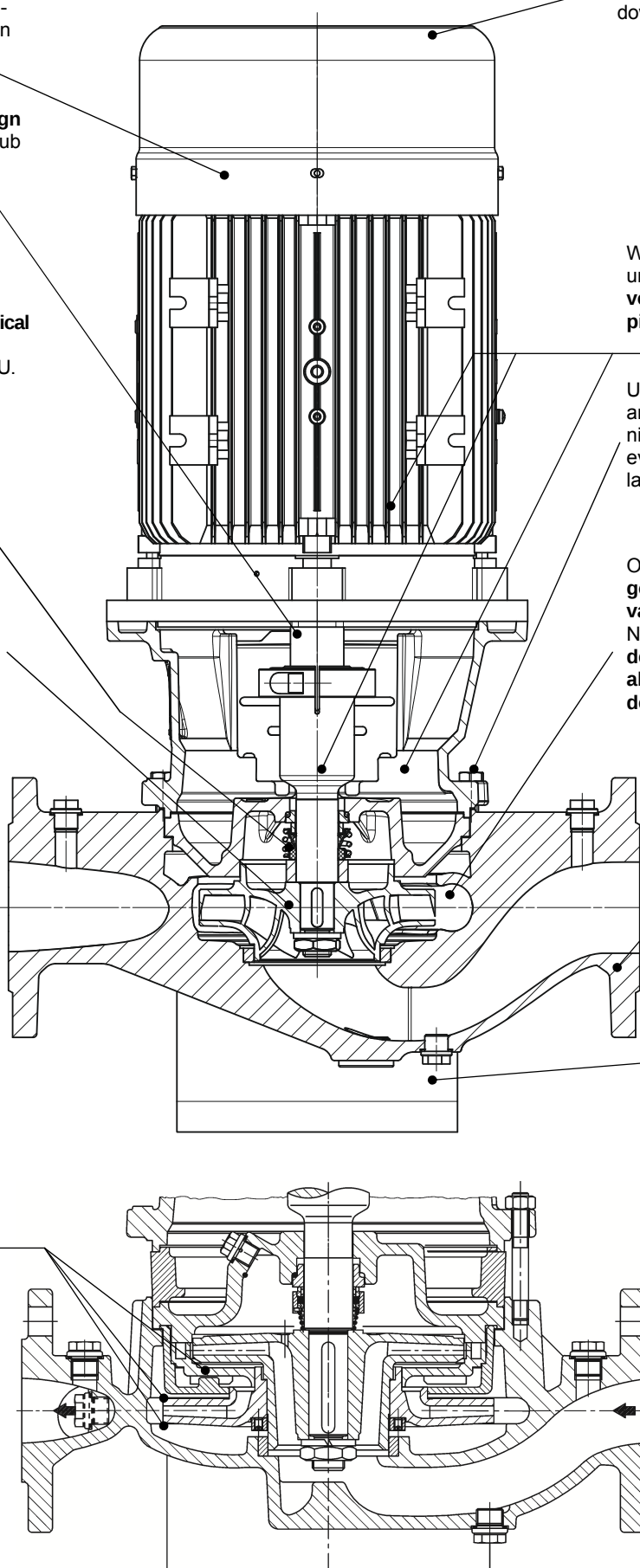
Use of hexagon head bolts and nuts permits easy loosening of screw connections, even when covered in several layers of paint (shipbuilding).

Optimized hydraulic with **very good efficiencies and NPSH-values** of the standard series NT acc. to DIN EN 733, **delivery rate partly considerable above the standard demands**.

Easy to assemble, only in the pipe.

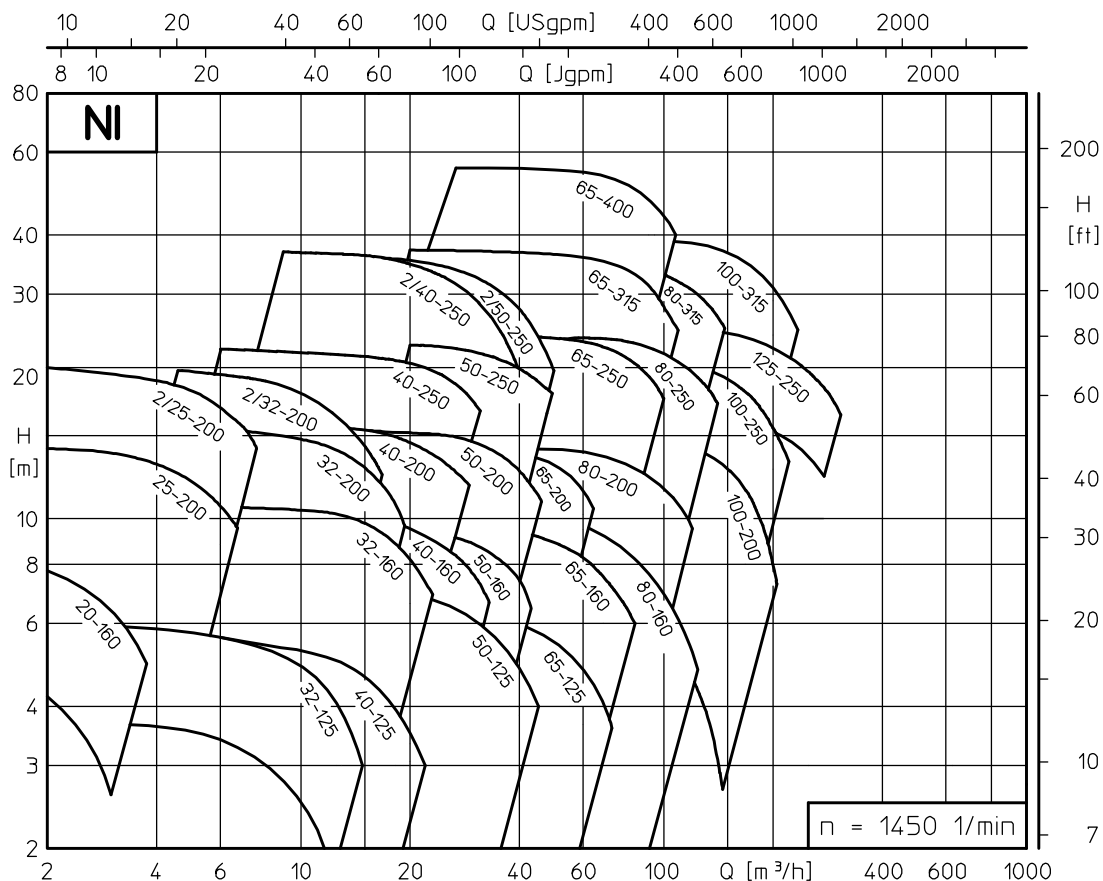
Additional stability and vibration-damping through optional feet for all sizes.

Larger delivery heads with two-stage sizes (2/25-200, 2/32-200, 2/40-250, 2/50-250). The outer dimensions correspond with the single stage design.

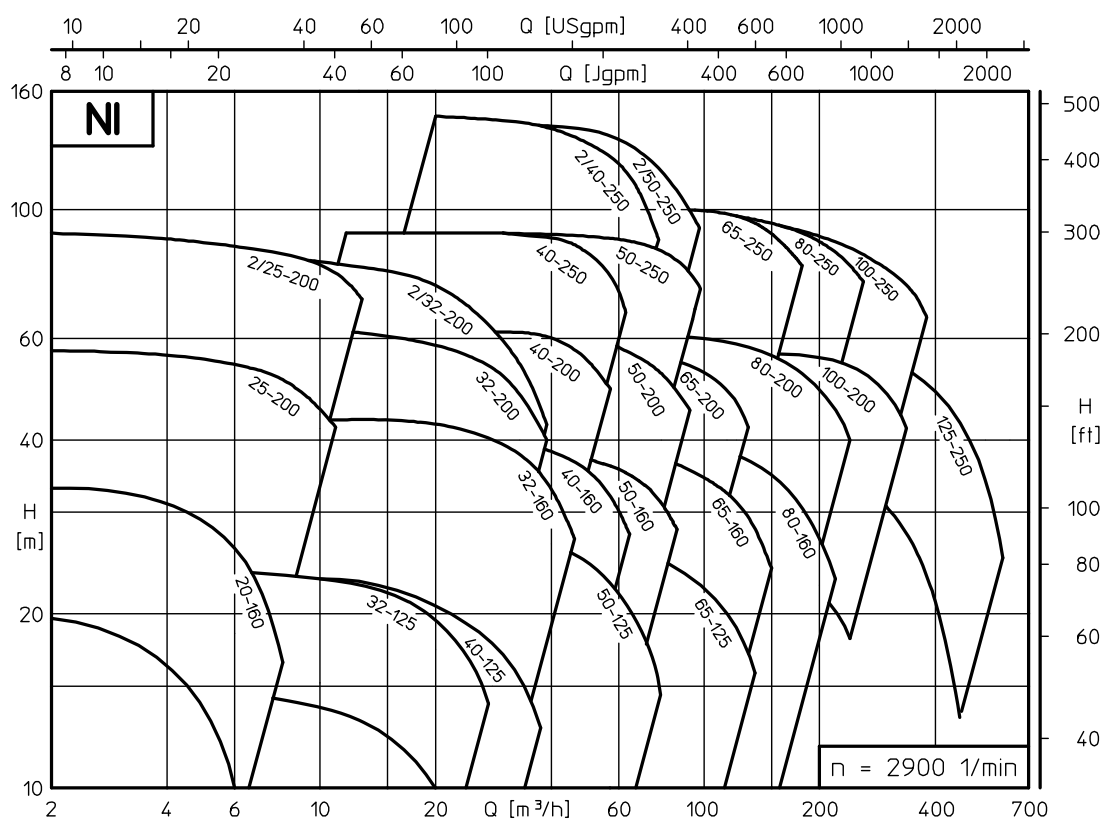


Performance graphs

n = 1450 1/min



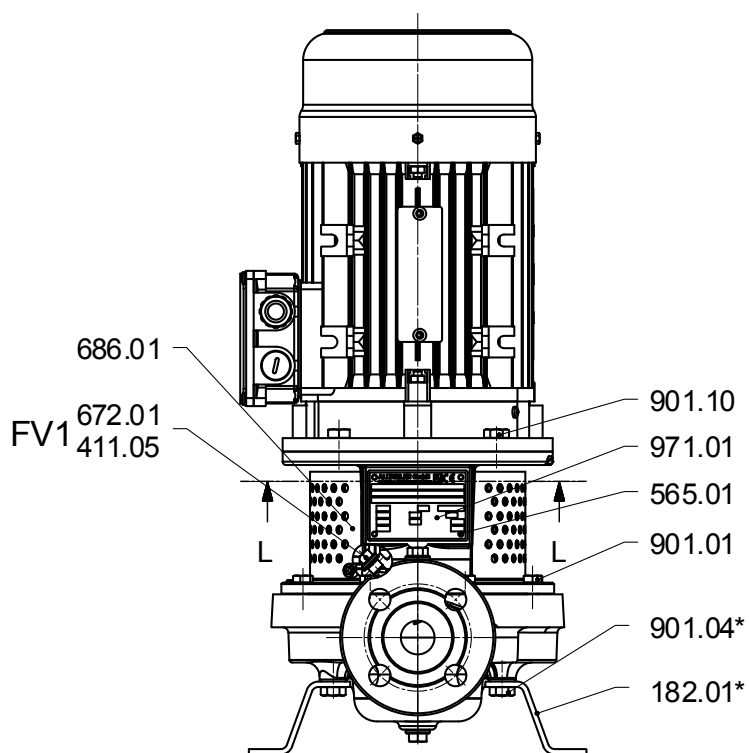
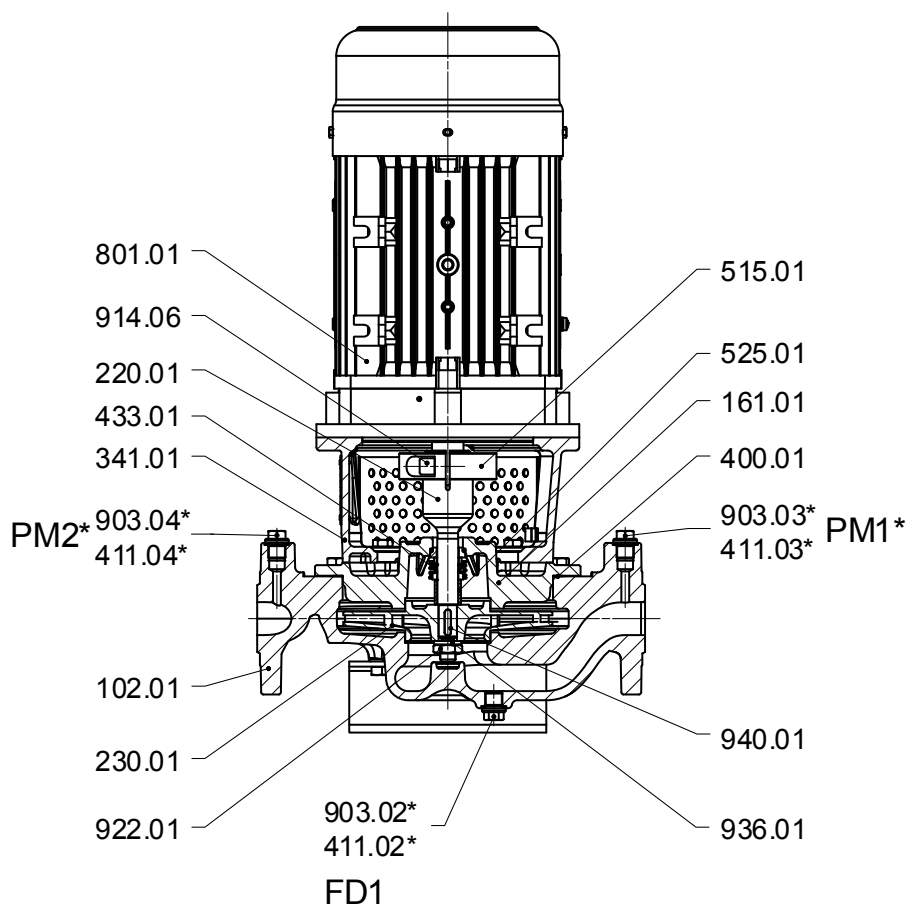
n = 2900 1/min



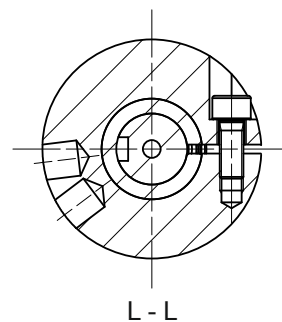
For exact performance data, please refer to the individual characteristics of current hydraulic selection program.
Valid for $\rho = 1 \text{ kg/dm}^3$ and $\nu = 1 \text{ mm}^2/\text{s}$.

Sectional drawing

Single-stage sizes with shaft diameter 16 at the shaft seal.

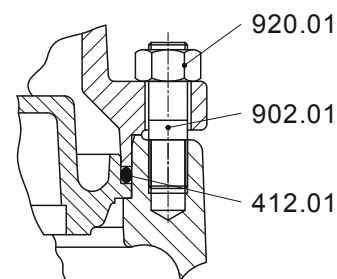
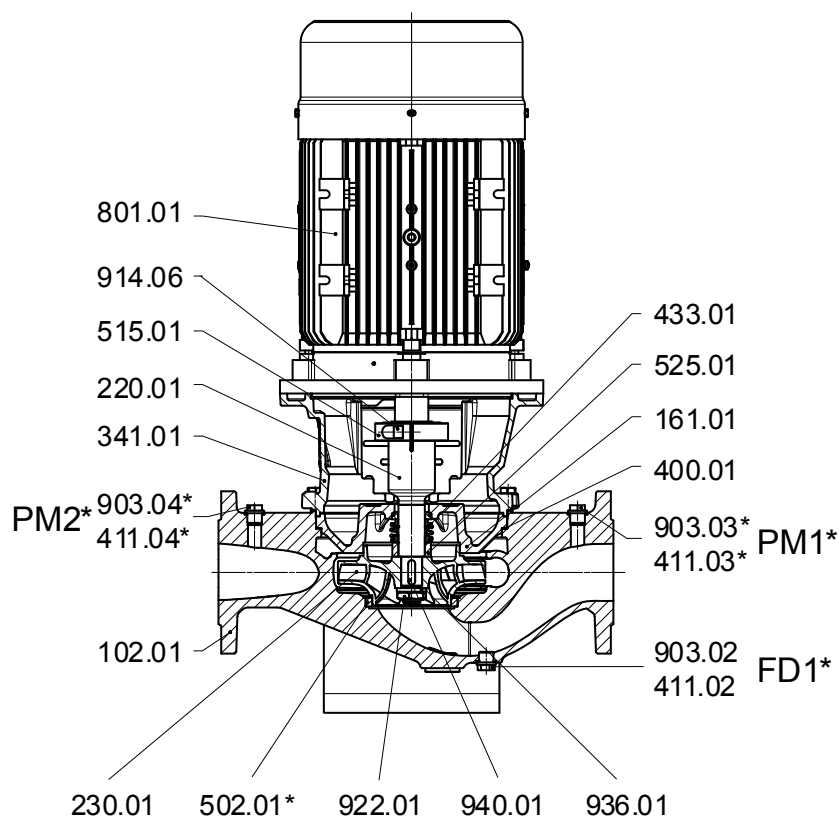


*=optional

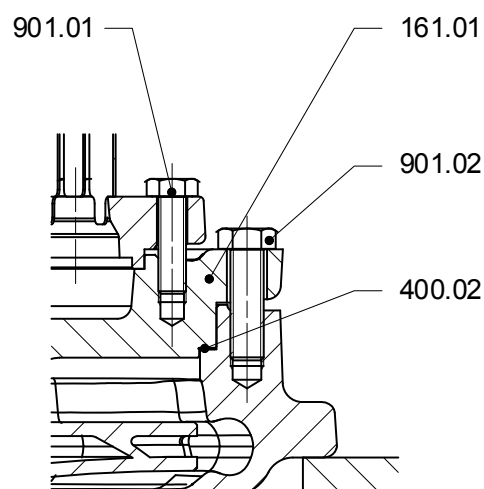


Sectional drawing

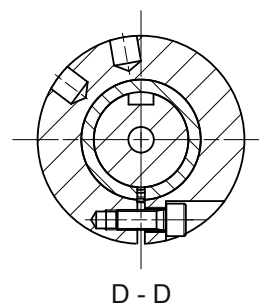
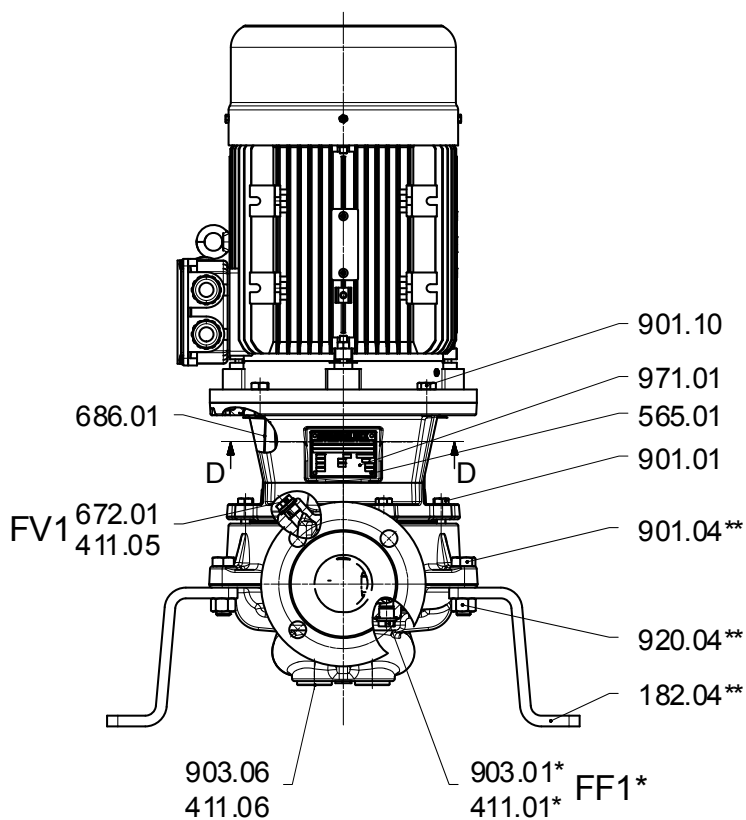
Single-stage sizes with shaft diameters 24 and 30 at the shaft seal.



Sizes with shaft diameter 24 mm at the shaft seal



Design of size
40-250, 50-250, 65-200

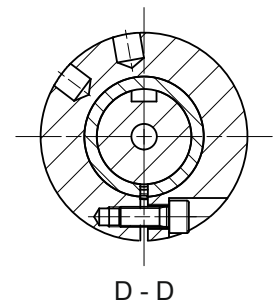
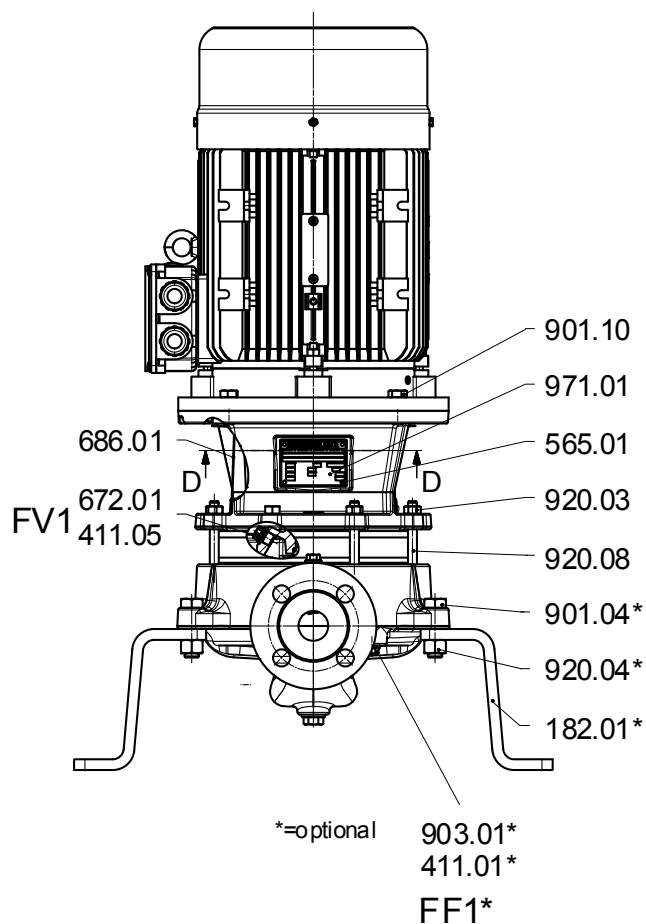
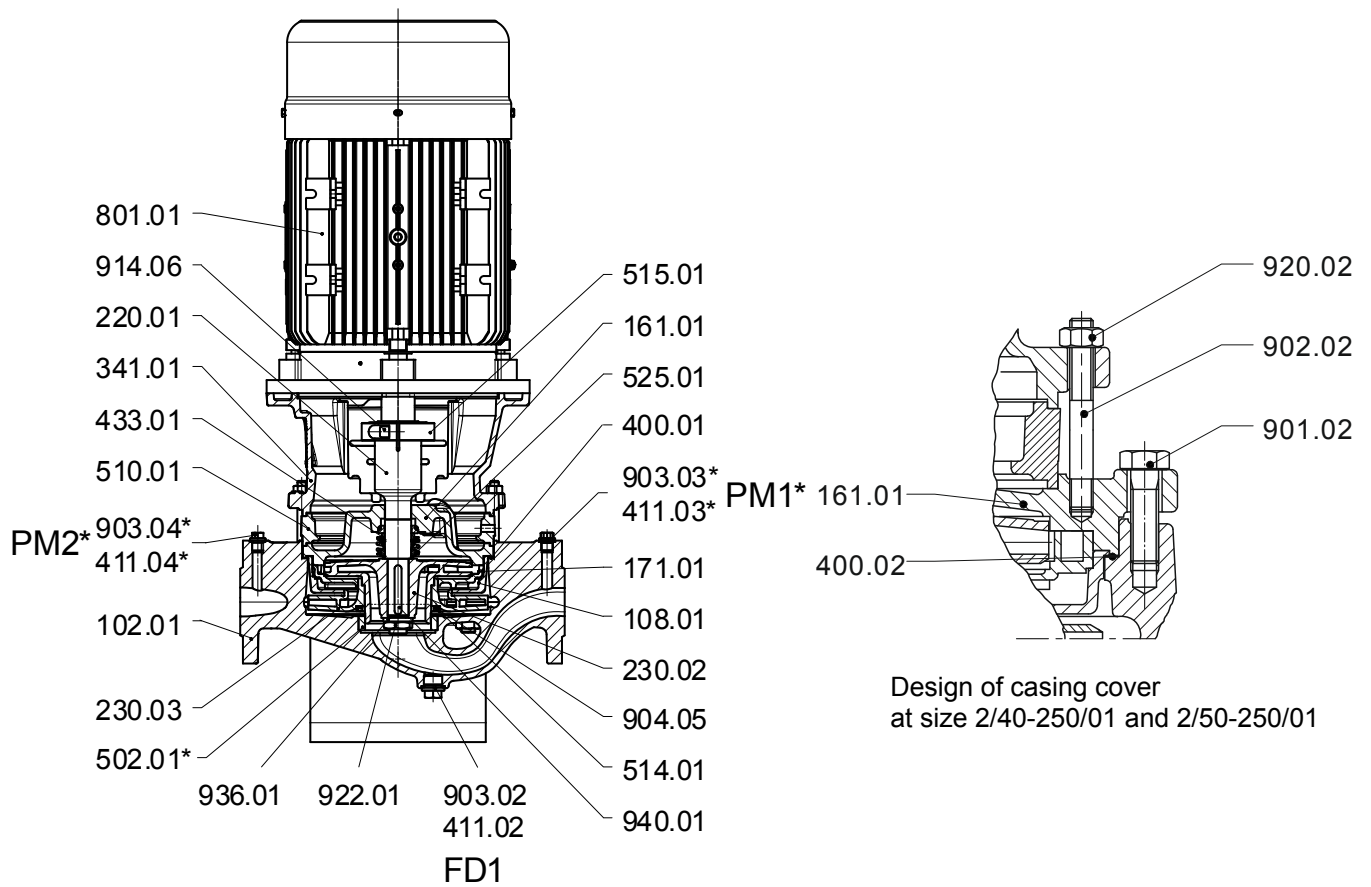


*=optional

**=optional, from motor size 225
absolutely necessary

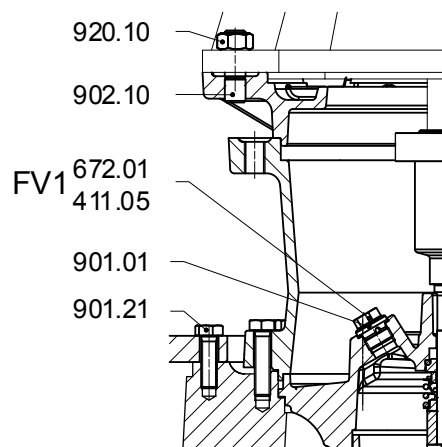
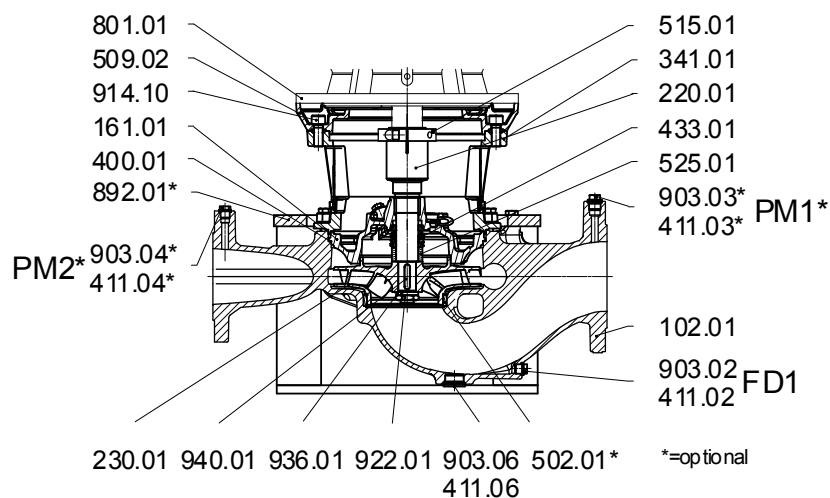
Sectional drawing

Two-stage sizes with shaft diameter 30 at the shaft seal.

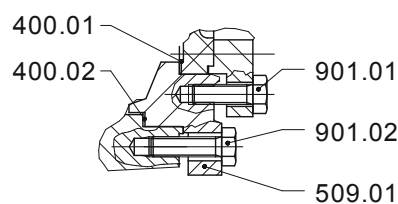


Sectional drawing

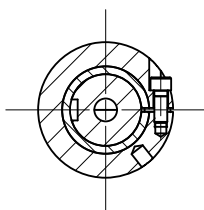
Sizes with shaft diameter 40 at the shaft seal.



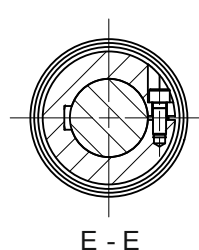
Design by adapter ring
size 65-400
view rotated 90°



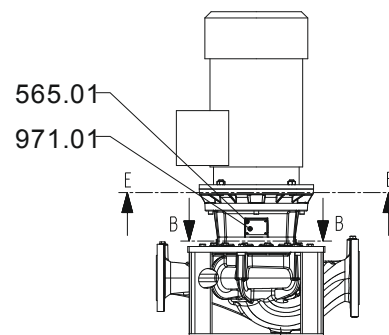
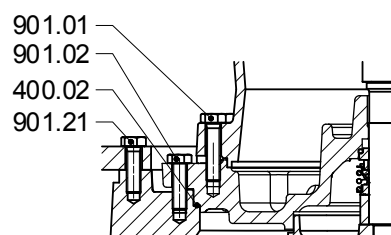
Motor shaft dia. up to 55



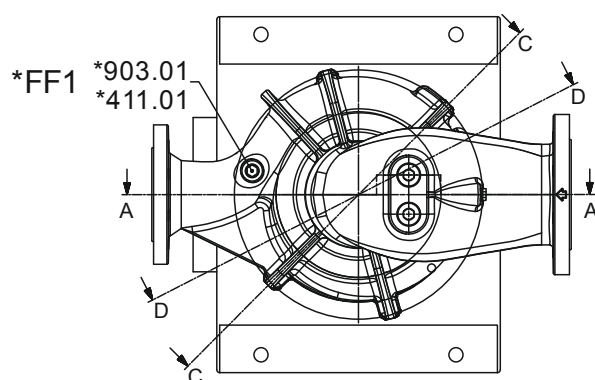
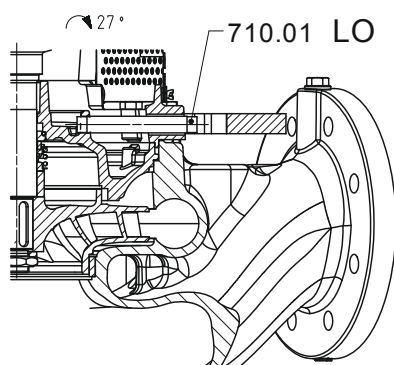
Motor shaft dia. > 55



Design with size
65-315, 80-315, 100-315



D - D

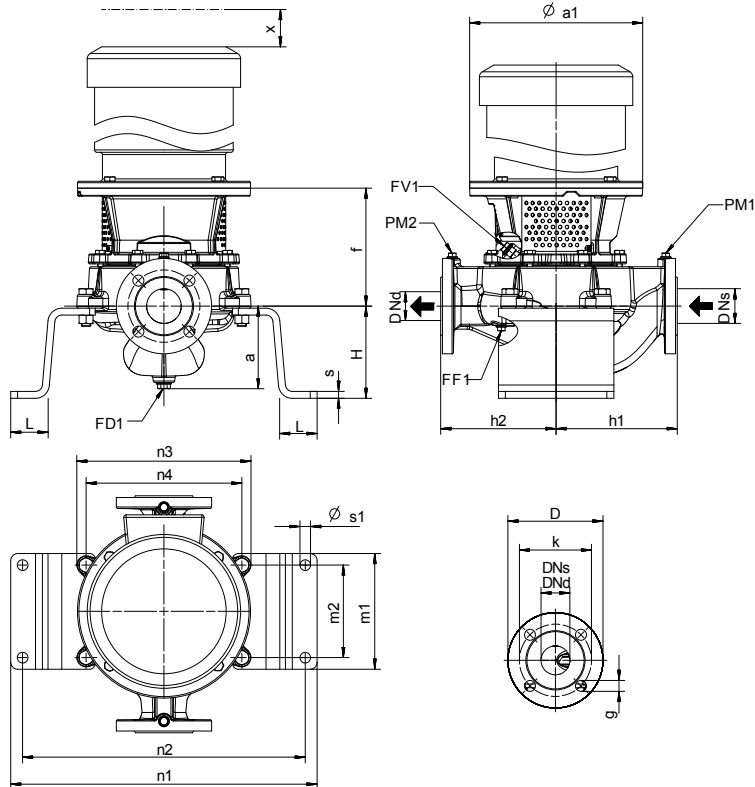


686.01
Fixing of guard sheet
to the motor bracket

List of components

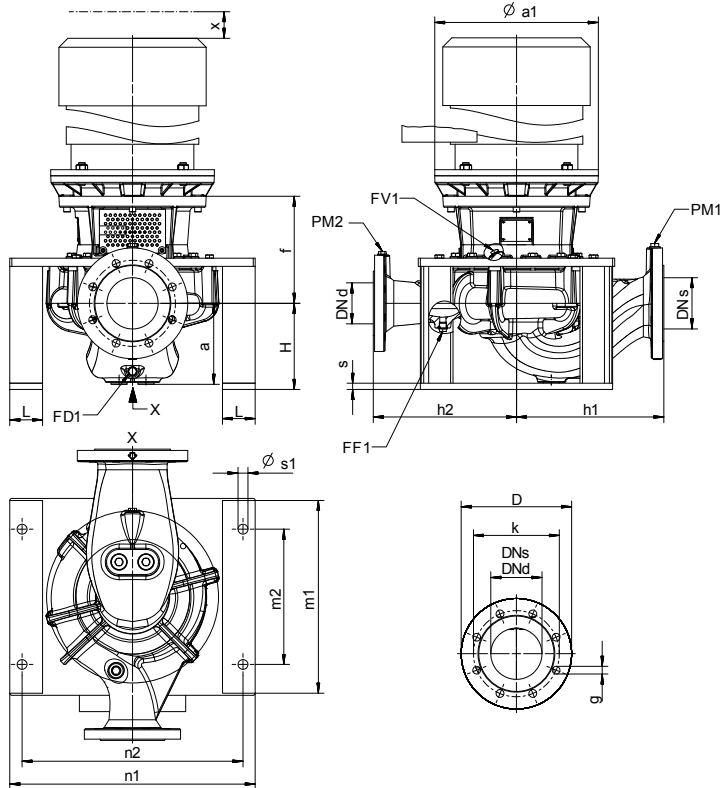
Denomination	Part No.	Denomination	Part No.	Denomination	Part No.
Volute casing	102.01	Rivet	565.01	Key	940.01
Stage casing	108.01	Bleeder screw	672.01	Rating plate	971.01
Casing cover	161.01	Guard plate	686.01		
Diffuser	171.01	Pipe	710.01		
Foot	182.01	Flange-mounted motor	801.01		
Stub shaft	220.01	Foot plate	892.01		
Impeller	230.01	Hexagonal screw	901.01		
Impeller 1 st stage	230.02	Hexagonal screw	901.02		
Impeller 2 nd stage	230.03	Hexagonal screw	901.04		
Drive lantern	341.01	Hexagonal screw	901.10		
Gasket	400.01	Hexagonal screw	901.21		
Gasket	400.02	Stud bolt	902.01		
Joint ring	411.01	Stud bolt	902.08		
Joint ring	411.02	Stud bolt	902.10		
Joint ring	411.03	Screwed plug	903.01		
Joint ring	411.04	Screwed plug	903.02		
Joint ring	411.05	Screwed plug	903.03		
Joint ring	411.06	Screwed plug	903.04		
O-ring	412.01	Screwed plug	903.06		
Mechanical seal	433.01	Grub screw	904.05		
Wear ring	502.01	Socket head cap screw	914.06	Connections	
Intermediate ring	509.01	Socket head cap screw	914.10	FD1	Drainage
Intermediate ring	509.02	Hexagonal nut	920.03	FF1	Filling
Spacer ring	510.01	Hexagonal nut	920.04	FV1	Venting
Threaded ring	514.01	Hexagonal nut	920.10	LO	Leakage outlet
Clamping ring	515.01	Impeller nut	922.01	PM1	Pressure gauge
Spacer sleeve	525.01	Spring washer	936.01	PM2	Pressure gauge

Aggregate dimensions: Sizes with shaft diameters 16, 24 and 30 at the shaft seal.



Flanges up to DN 150 according to DIN EN 1092-2 PN10/PN16 DN 200 according to DIN EN 1092-2 PN10					
DN _d DN _s	D	bf	k	g	Hole pattern
25	115	16	85	14	4
32	140	18	100	19	
40	150		110		
50	165	20	125		
65	185		145		
80	200	22	160	8	
100	220	24	180		23
125	250	26	210		
150	285		240		
200	340		295		

Aggregate dimensions: Sizes with shaft diameters 40 at the shaft seal.



Tolerances of companion dimensions
acc. to DIN EN 735

Sense of rotation: clockwise as seen
from the driving side

Dimensions in mm
without commitment

mm	Shaft diameter at shaft seal	Pumps size	Motorsize 2+4 pole*	Aggregate dimensions																							
				Pump dimensions														Connections					Motor dimension	Extension dimensions	Allocation stub shaft / drive lantern contained in abbreviation v. page 2		
				Flanges														Draining	Filling	Venting	Pressure measurement						
				DNs	DNd	a	f	h1	h2	s	s1	L	H	n1	n2	n3	n4	m1	m2	FD1	FF1	FV1	PM1	PM2	a1	x	
16		20-160	71	25	25	75	118	150	145	8	14,5	27	94	250	225	155	125	150	100	G 1/4	-	G 1/8	G 1/4	G 1/4	160	62	14/160
			80				138																		200		19/200
			90S				148																		250		24/200
			100L																								
			112M																								
24		32-125	71	40	40	84	148	180	160	12	18,5	54	160	461	420	230	200	200	160	G 1/2	G 3/8	G 1/4	G 3/8	G 3/8	160	89	14/160
			80				200																		19/200		
			90S				24/200																				
			100L				28/250																				
			112M				38/300																				
		40-125	71	50	50	95	148	205	170	12	18,5	54	160	491	450	260	230	200	160	G 1/2	G 3/8	G 1/4	G 3/8	G 3/8	160	89	14/160
			80				200																		19/200		
			90S				24/200																				
			100L				28/250																				
			112M				38/300																				
		50-125	71	65	65	105	148	220	180	12	18,5	54	160	521	480	290	260	200	160	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	160	89	14/160
			80				200																		19/200		
			90S				24/200																				
			100L				28/250																				
			112M				38/300																				
		65-125	71	80	80	109	148	250	200	12	18,5	84	160	641	570	320	290	300	200	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	160	95	14/160
			80				200																		19/200		
			90S				24/200																				
			100L				28/250																				
			112M				38/300																				
30		25-200	80	32	32	110	149	190	180	12	18,5	54	160	531	490	300	270	200	160	G 1/2	G 1/4	G 1/4	G 1/4	G 1/4	200	102	19/200
			90S				24/200																				
			100L				28/250																				
			112M				38/300																				
			132S				42/350																				
		2/25-200	80	32	32	110	183	190	180	12	18,5	54	160	531	490	300	270	200	160	G 1/2	G 1/4	G 1/4	G 1/4	G 1/4	200	102	19/200
			90S				24/200																				
			100L				28/250																				
			112M				38/300																				
			132S				42/350																				
			160M																								
			160L																								

When using special motors note that different outputs are assigned to the individual sizes depending on the degree of protection. The main dimensions change accordingly. Binding motor dimension sheets are required for firm orders.

* Assignment of motor sizes and speed according to current hydraulic selection program.

VM 527 GB/2019.05 – Ident No. 795249

Shaft diameter at shaft seal		Pumps size		Motors size 2+4 pole*		Aggregate dimensions																					
						Pump dimensions														Connections				Motor dimension	Extension dimensions	Allocation stub shaft / drive lantern contained in abbreviation v. page 2	
						Flanges														Draining	Filling	Venting	Pressure measurement				
mm				DNs	DNd	a	f	h1	h2	s	s1	L	H	n1	n2	n3	n4	m1	m2				FD1	FF1	FV1	PM1	PM2
30	2/40-250	100L	50	50	107	183	240	225	12	18,5	84	160	661	590	340	310	300	200	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	250	85	28/250	
		112M				238																		300		38/300	
		132S				253																		350		42/350	
		132M																						400		48/350	
		160M																								55/400	
		160L																									
		180M																									
	50-160	80	65	65	114	149	230	220	12	18,5	54	160	531	490	300	270	200	160	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	200	102	19/200	
		90S				204																		250		28/250	
		90L				219																		300		38/300	
		100L																						350		42/350	
		112M																								48/350	
		132S																								55/400	
		160M																									
	50-200	80	65	65	106	149	240	225	12	18,5	84	160	641	570	320	290	300	200	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	200	102	19/200	
		90S				204																		250		28/250	
		90L				219																		300		38/300	
		100L																						350		42/350	
		112M																								48/350	
		132S																								55/400	
		160M																									
	50-250	90L	65	65	106	149	265	245	12	18,5	84	160	701	630	380	350	300	200	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	200	85	24/200	
		100L				204																		250		28/250	
		112M				219																		300		38/300	
		132S																						350		42/350	
		132M																								48/350	
		160M																								55/400	
		160L																									
	2/50-250	100L	65	65	106	183	265	245	12	18,5	84	160	701	630	380	350	300	200	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	250	85	28/250	
		112M				238																		300		38/300	
		132S				253																		350		42/350	
		132M																						400		48/350	
		160M																								55/400	
		160L																									
		180M																									
	65-160	80	80	80	114	149	270	230	12	18,5	84	160	681	610	360	330	300	200	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	200	102	19/200	
		90S				204																		250		28/250	
		90L				219																		300		38/300	
		100L																						350		42/350	
		112M																								48/350	
		132S																								55/400	
		132M																									
160M																											
160L																											

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* Assignment of motor sizes and speed according to current hydraulic selection program.

mm	Shaft diameter at shaft seal	Pumps size	Motorsize 2+4 pole*	Aggregate dimensions																							
				Pump dimensions														Connections				Motor dimension	Extension dimensions	Allocation stub shaft / drive lantern contained in abbreviation v. page 2			
				Flanges														Draining	Filling	Venting	Pressure measurement						
DNs	DNd	a	f	h1	h2	s	s1	L	H	n1	n2	n3	n4	m1	m2	FD1	FF1				FV1	PM1	PM2	a1	x		
30	65-200	90S	80	80	122	149	275	235	12	18,5	84	160	701	630	380	350	300	200	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	200	102	24/200	
		90L																								28/250	
		100L																								38/300	
		112M																								42/350	
		132S																								48/350	
		132M																								55/400	
		160M																									
		160L																									
		180M																									
		200L																									
	80-160	80	100	100	123	149	204	275	245	12	18,5	84	160	701	630	380	350	300	200	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8	200	102	19/200
		90S																									24/200
		90L																									28/250
		100L																									38/300
		112M																									42/350
		132S																									48/350
		132M																									55/400
		160M																									
		160L																									
		180M																									
40	65-250	100L	100	80	146	261	281	355	350	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	250	123	28/250
		112M																									38/300
		132S																									42/350
		132M																									48/350
		160M																									55/400
		160L																									55/450
		180M																									60/550
		200L																									
		225M																									
		250M																									
	65-315	112M	100	80	164	261	281	385	375	15	24	80	185	650	590	-	-	580	380	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	250	105	28/250
		132S																									38/300
		132M																									42/350
		160M																									48/350
		160L																									55/400
		180M																									55/450
		180L																									60/550
		200L																									
		225M																									
		250M																									
65-400	132M	100	80	150	281	311	425	415	15	24	80	155	720	655	-	-	615	430	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	300	105	38/300	
	160M																									42/350	
	160L																									48/350	
	180M																									55/400	
	180L																									55/450	
	200L																									60/550	
	225M																										
250M																											
80-200	100L	125	100	198	261	281	360	350	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	250	123	28/250	
	112M																									38/300	
	132S																										
	132M																										
	160M																										

Shaft diameter at shaft seal		mm	Pumps size		Motors size 2+4 pole*	Aggregate dimensions																																					
						Pump dimensions																Connections				Motor dimension	Extension dimensions	Allocation stub shaft / drive lantern contained in abbreviation v. page 2															
						Flanges																Draining	Filling	Venting	Pressure measurement																		
DNs	DNd	a	f	h1	h2	s	s1	L	H	n1	n2	n3	n4	m1	m2	FD1	FF1	FV1	PM1	PM2	a1				x																		
40	80-200	160L	125	100	198	311	360	350	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	350	123	42/350																	
		180M																						400		48/350																	
		200L																						450		55/400																	
		225M																						550		60/550																	
		250M																								65/550																	
		280S																																									
	80-250	112M	125	100	198	261	360	350	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	250	123	28/250																	
		132S				281																		38/300																			
		132M				311																		360		350	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	350	42/350
		160M																																								48/350	
		160L																																								400	55/400
		180M																																								450	60/550
		180L				550																		65/550																			
		200L																																									
		225M																																									
		250M																																									
	280S																																										
	280M																																										
	80-315	132S	125	100	156	281	390	375	15	24	80	185	650	590	-	-	580	380	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	300	105	38/300																	
		132M				311																		390		375	15	24	80	185	650	590	-	-	580	380	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	350	42/350
		160M																																								48/350	
		160L																																								400	55/400
		180M																																									
		180L																																									
	200L																																										
	100-200	100L	150	125	173	261	380	350	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	250	133	28/250																	
		112M				281																		38/300																			
		132M				311																		380		350	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	350	42/350
		160M																																								48/350	
		160L																																								400	55/400
		180M																																								450	60/550
		180L				550																		65/550																			
		200L																																									
		225M																																									
		250M																																									
		280S																																									
		280M																																									
	100-250	112M	150	125	178	261	400	350	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	250	133	28/250																	
		132S				281																		38/300																			
		132M				311																		400		350	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	350	42/350
		160M																																								48/350	
		160L																																								400	55/400
		180M																																								450	60/550
		180L				550																		65/550																			
		200L																																									
		225M																																									
		250M																																									
		280S																																									
		280M																																									
		315S																																									
100-315		132M				150																		125		180	281	425	420	15	24	80	185	650	590	-	-	580	380	G 3/8	G 3/8	G 3/8	G 1/2
	160M	311	425	420	15		24	80	185	650	590	-	-	580	380	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	350	42/350																					
	160L																				48/350																						
	180M																																										
	180L																																										

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mm	Shaft diameter at shaft seal	Pumps size	Motors size 2+4 pole*	Aggregate dimensions																									
				Pump dimensions														Connections				Motor dimension	Extension dimensions	Allocation stub shaft / drive lantern contained in abbreviation v. page 2					
				Flanges														Draining	Filling	Venting	Pressure measurement								
DNs	DNd	a	f	h1	h2	s	s1	L	H	n1	n2	n3	n4	m1	m2	FD1	FF1				FV1	PM1	PM2	a1	x				
40	100-315	200L	150	125	180	311	425	420	15	24	80	185	650	590	-	-	580	380	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	400	112	55/400			
		225M				341																		450		55/450			
		250M				341																		550		60/550			
	125-250	132M	200	150	205	281	440	355	15	24	80	210	600	540	-	-	470	330	G 3/8	G 3/8	G 3/8	G 1/2	G 3/8	300	143	38/300			
		160M				311																		350		42/350			
		160L																									48/350		
		180M																										400	55/400
		180L																											
		200L				550																		60/550					
		225S																								55/450			
		225M																									60/550		
		250M																										65/550	
		280S				65/550																							
																								65/550					
	65/550																												

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* Assignment of motor sizes and speed according to current hydraulic selection program.

Notes:

Subject to technical alterations.



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