

Vertical Low-pressure Pump

Etanorm V

Type Series Booklet



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Type Series Booklet Etanorm V

Original operating manual

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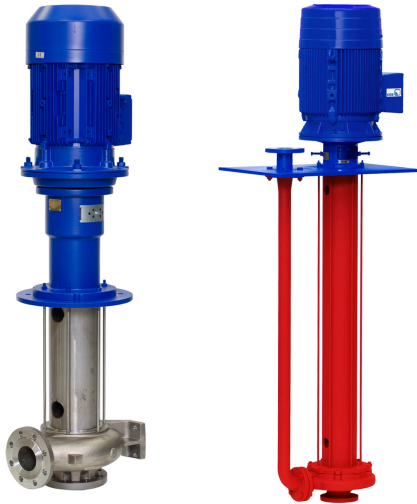
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Vertical Low-pressure Pump

Centrifugal Pumps

Etanorm V



Main applications

Pump for handling neutral degreasing and phosphating solutions

- Supplying lubricating and sealing oils for:
 - Turbines
 - Generators
 - Large compressors
 - Large gear units

Fluids handled

- Water
- Wash water with degreasing agents
- Phosphating solutions and electrophoretic coating paint (e.g. cathaphoretic dip paint)¹⁾
- Lubricating and sealing oils
- Hydraulic oils

Operating data

Operating properties

Characteristic		Value	
		50 Hz	60 Hz
Flow rate	Q [m ³ /h]	≤ 625	≤ 675
Head	H [m]	≤ 100	
Fluid temperature			
	For design D	T [°C]	≤ 70
	For design W	T [°C]	≤ 95

¹⁾ Only for design D
²⁾ Blank

Materials per country

- A = Europe, Middle East, North Africa
 - A1 = Default material variant
 - A2 = Optional material variant

Designation

Example: Etanorm V 050-032-125.1 GG X DDB0422

Designation key

Code	Description
Etanorm V	Type series
050	Nominal suction nozzle diameter [mm]
032	Nominal discharge nozzle diameter [mm]
125.1	Nominal impeller diameter [mm]
G	Casing material
G	Cast iron
C	Stainless steel
G	Impeller material
G	Cast iron
C	Stainless steel
B	Bronze
X	Special design
..2)	Standard
X	Non-standard
D	Version
D	Dry
W	Wet
D	Scope of supply
A	Pump only (Fig. 0)
C	Pump, coupling
D	Pump set
B	Cover plate
B	With cover plate
H	With holder
042	Immersion depth
0 3 7	375 mm
0 3 9	398 mm
0 4 2	425 mm
0 4 4	448 mm
0 5 0	504 mm
0 5 2	529 mm
0 5 3	535 mm
0 7 5	750 mm
1 0 0	1000 mm
1 2 5	1250 mm
1 5 0	1500 mm
1 7 0	1750 mm
2 0 0	2000 mm
2	Shaft unit
2	Shaft unit 25
3	Shaft unit 35
5	Shaft unit 55

Further information on the designation

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Design details

Design

- Volute casing pump
 - For vertical installation in closed tanks under atmospheric pressure
- Single-stage
- Ratings to EN 733
- Rigid connection between pump and motor

Pump casing

- Radially split volute casing
- Volute casing with integrally cast pump feet for:
 - Stainless steel variant
 - Grey cast iron variant with shaft unit WS 55
- Replaceable casing wear rings

Impeller type

- Closed radial impeller with multiply curved vanes

Shaft seal

- Controlled gap

Drive

- KSB surface-cooled IEC frame three-phase current squirrel-cage motor

Winding

- 50 Hz: ≤ 2.20 kW at 220-240 V / 380-420 V
- 50 Hz: ≥ 3.00 kW at 380-420 V / 660-725 V
- 60 Hz: ≤ 2.60 kW at 440-480 V
- 60 Hz: ≤ 3.60 kW at 440-480 V
- Type of construction IM V1
- IP55 enclosure
- Thermal class F with temperature sensor; 3 PTC thermistors
- Mode of operation: continuous operation S1

Contact guard

- Cover plates at bearing lantern³⁾ and drive lantern⁴⁾ to EN 294

Bearings

Design D

- Deep groove ball bearing greased for life in a bearing bracket lantern above the cover plate.
Pump shaft cantilevered below the cover plate.

Design W

- Product-lubricated SiC/SiC plain bearing at the pump end
Rigid coupling between pump shaft and motor shaft

Bearings used

Overview

Shaft unit	Deep groove ball bearing	
	Pump end	Drive end
WS_25	6311 2Z C3	6310 2Z C3
WS_35	6311 2Z C3	6310 2Z C3
WS_55	6413 C3 ⁵⁾	6311 2Z C3

Overview of shaft units

Nominal diameter		Nominal impeller diameter					
[mm]		[mm]					
DN ₁	DN ₂	125	160	200	250	315	400
50	32	WS_25	WS_25	WS_25	WS_25	WS_35	-
65	40	WS_25	WS_25	WS_25	WS_25	WS_35	-
65	50	WS_25	WS_25	WS_25	WS_25	WS_35	-
80	65	WS_25	WS_25	WS_25	WS_35	WS_35	WS_55
100	80	-	WS_25	WS_35	WS_35	WS_35	WS_55
125	100	-	WS_35	WS_35	WS_35	WS_35	WS_55
150	125	-	-	WS_35	-	WS_55	WS_55
200	150	-	-	WS_35	-	WS_55	WS_55

Automation

Automation options:

- PumpDrive
- KSB SuPremE IE4 motor (as per IEC/CD 60034-30 Ed. 2)

For operating an Etanorm V on a frequency inverter which has not been configured via the KSB selection tool consultation with KSB is required.

For operating pump sets at immersion depths > 1000 mm with variable-speed system consultation with KSB is required for the selection.

Coating and preservation

- Coating and preservation to KSB standard

Product benefits

- Improved efficiency and NPSH_{req} by experimentally verified hydraulic design of impellers (vanes)
- Operating costs reduced by trimming the impeller diameter to match the specified duty point
- Cover plate serves as tank cover and for mounting the pump
- Robust deep groove ball bearings greased for life
- Vertical design with small footprint

Special features of design D

- Variable immersion depth up to 535 mm
- V-ring and/or lip seal prevent any ingress of the fluid handled into the deep groove ball bearing.
- Cantilever design does away with the need of an additional bearing, which would be located in the fluid handled.

Special features of design W

- Variable immersion depth up to 2000 mm
- Wear-resistant, product-lubricated SiC/SiC plain bearing
- No rolling element bearing above the cover plate, therefore resistant to short flooding of the cover plate

³⁾ Design D
⁴⁾ Design W
⁵⁾ With Nilos ring AV 6413

Acceptance tests / warranties

Acceptance tests and warranty	Note
Materials testing	▪ Test report 2.2 on request
Final inspection	▪ Inspection certificate 3.1 to EN 10204 on request
Hydraulic test	▪ The duty point of each pump with a delivery address or final destination in Europe is guaranteed to ISO 9906/3B.
The following acceptance tests may be performed at a surcharge:	▪ Performance test to ISO 9906/2B
Other tests (e.g. vibrations, strength) on request.	
Warranty	▪ Warranties are given within the scope of the valid terms and conditions of sale and delivery.

Overview of fluids handled

Table of fluids handled and associated material combinations

X = standard

Fluid handled	Casing/impeller materials		Bearings		Fluid properties			
	Grey cast iron/ grey cast iron	Cast CrNiMo steel/ cast CrNiMo steel	Design W Plain bearing	Design D Cantilever	Specific concentration	Temperature	Density	pH value
					[%]	[°C]	[g/cm ³]	
Water								
Cooling water ⁶⁾ (without antifreeze)	X	-	X	X	-	-	-	-
Cooling water pH ≥ 7.5 (with antifreeze)	X	-	X	X	-	-	-	-
Slightly contaminated water ⁶⁾	X	-	X	X	-	-	-	-
Pure water ⁷⁾	X	-	X	X	-	-	-	-
Untreated water ⁶⁾	X	-	X	X	-	-	-	-
Swimming pool water, fresh water ⁶⁾	X	-	X	X	-	-	-	-
Dam water ⁶⁾⁸⁾	X	-	X	X	-	-	-	-
Partly desalinated water ⁹⁾	X	-	X	X	-	-	-	-
Surface treatment - pre-treatment								
Fully desalinated water, free of solids	-	X	X	X	-	≤ 60	1,0	~ 7,0
Silicate-free, alkaline degreasing or cleaning solution	X	X	X	X	0,3 - 5,0	≤ 80	1,1	8,5 - 13,0
Activation	-	X	X	X	0,3 - 5,0	≤ 40	1,1	7,5 - 10,5
Zinc phosphating solution (bath)	-	X	-	X	~ 5,0	≤ 65	1,05	2,0 - 5,0
Iron phosphating solution (alkaline phosphate solution)	X	-	-	X	~ 5,0	≤ 70	1,05	4,0 - 6,0
Passivation	-	X	X	X	≥ 1,0	≤ 50	1,0	3,0 - 6,0
Sodium hydroxide	X	-	X	X	15 - 20	≤ 20	1,18	14,0
Surface treatment - painting								
Conventional paint on solvent basis	X	-	X	X	10 - 40	25 - 35	~ 1,5	7,0
Cataphoretic dip paint	-	X	-	X	10 - 21	25 - 35	1,05 - 1,1	6,0 - 6,7
Anaphoretic dip paint	-	X	-	X	10 - 15	20 - 30	1,05 - 1,1	7,7
Ultrafiltrate = permeate. Pure filtrate, solids content < 3 %	X	X	X	X	-	20 - 30	1,0	5,5 - 6,0
Recirculated fluid, solids content < 3 %	X	X	X	X	-	20 - 30	1,1	6,0
Paint-laden water containing residues of metal, plastic or wood paints	X	-	X	X	-	20 - 30	1,0 - 1,05	~ 7,0
Anolyte (dialyte) with acetic acid or formic acid, free of solids	-	X	X	X	-	20 - 30	1	2,5 - 3,0
Accelerator (as preparation)	-	X	X	X	-	-	1,05 - 1,1	-

⁶⁾ General evaluation criteria for results of water analysis: pH value ≥ 7; chlorides content (Cl) ≤ 250 mg/kg. Chlorine (Cl₂) ≤ 0.6 mg/kg.

⁷⁾ No ultra-pure water! Conductivity at 25 °C: ≤ 800 µS/cm, neutral with regard to chemical corrosion

⁸⁾ If solids are contained, contact KSB.

⁹⁾ Treatment to VdTÜV 1466; additional requirement: O₂ < 0.02 mg/l

Pressure and temperature limits

Pressure and temperature limits of the pump

Material variant	Fluid temperature	Discharge pressure $p_2^{10)}$	Test pressure ¹¹⁾
G, GB, GC, C	Design D: $\leq 70\text{ °C}$	10 bar	13.5 bar
G, GB, GC, C	Design W: $\leq 95\text{ °C}$	10 bar	13.5 bar

Materials

Overview of available materials

Part No.	Description		Material variant			
			GG	GB	GC	CC
68-3.01	Cover plate	Steel	A1	A1	A1	-
		Stainless steel 1.4408/ A743 Gr CF8 M	A2	A2	A2	A1
102	Volute casing	Grey cast iron EN-GJL-250 / A 48 CL 35B	A1	A1	A1	-
		Stainless steel 1.4408/ A743 Gr CF8 M	-	-	-	A1
146	Intermediate lantern	Grey cast iron EN-GJL-250 / A 48 CL 35B	A1	A1	A1	A1
161	Casing cover	Grey cast iron EN-GJL-250 / A 48 CL 35B	A1	A1	A1	-
		Stainless steel 1.4408/ A743 Gr CF8 M	-	-	-	A1
210	Shaft	Tempered steel C45+N	A1	A1	A1	-
		Duplex stainless steel 1.4462 / UNS 531803	A2	A2	A2	A1
230	Impeller	Grey cast iron EN-GJL-250 / A 48 CL 35B	A1	-	-	-
		Stainless steel 1.4408/ A743 Gr CF8 M	-	-	A1	A1
		Bronze CC480K-GS/ B30 C90700	-	A1	-	-
340	Bearing lantern	Grey cast iron EN-GJL-250 / A 48 CL 35B	A1	A1	A1	A1
341	Drive lantern	Grey cast iron EN-GJL-250 / A 48 CL 35B	A1	A1	A1	A1
350	Bearing housing	Grey cast iron EN-GJL-250 / A 48 CL 35B	A1	A1	A1	A1
381	Plain bearing	SiC / SiC	A1	A1	A1	A1
502.01	Casing wear ring, suction side	Grey cast iron EN-GJL-250 / CI	A1	A1	A1	-
		Stainless steel (CrNiMoST)	A2	-	A2	A1
		Bronze CC495K-GS	-	A2	-	-
		None	-	-	-	A1
502.02	Casing wear ring, discharge side	Grey cast iron EN-GJL-250 / CI	A1	A1	A1	-
		Stainless steel (CrNiMoST)	A2	-	A2	A1
		Bronze CC495K-GS	-	A2	-	-
		None	-	-	-	A1
711	Discharge pipe	Steel	A1	A1	A1	-
		Stainless steel 1.4404	-	-	-	A1
712	Support column	Steel	A1	A1	A1	-
		Stainless steel 1.4404	-	-	-	A1
732	Holder	Steel	A1	A1	A1	A2
		Stainless steel 1.4571	-	-	-	A1
902.01	Stud	Steel 8.8	A1	A1	A1	-
		A4 / AISI 316	A2	A2	A2	A1
903	Screw plug	Steel 8.8	A1	A1	A1	-
		A4 / AISI 316	A2	A2	A2	A1
905	Tie bolt	Steel 8.8	A1	A1	A1	-
		A4 / AISI 316	A2	A2	A2	A1
920.95	Impeller nut	Steel 8.8	A1	A1	-	-
		A4 / AISI 316	A2	A2	A1	A1
940	Key	Steel 8.8	A1	A1	-	-
		A4 / AISI 316	A2	A2	A1	A1

Availability of pump sizes per material variant

Available material variants

Size	G	C
050-032-125.1	X	X
050-032-160.1	X	X
050-032-200.1	X	X

Size	G	C
050-032-250.1	X	X
050-032-125	X	X
050-032-160	X	X
050-032-200	X	X
050-032-250	X	X
065-040-125	X	X

¹⁰⁾ The sum of inlet pressure and shut-off head must not exceed the values indicated in the diagram.

¹¹⁾ The casing components are checked for leakage by means of internal pressure tests to ZN 1650 with water.

Size	G	C
065-040-160	X	X
065-040-200	X	X
065-040-250	X	X
065-040-315	X	X
065-050-125	X	X
065-050-160	X	X
065-050-200	X	X
065-050-250	X	X
065-050-315	X	X
080-065-125	X	X
080-065-160	X	X
080-065-200	X	X
080-065-250	X	X
080-065-315	X	X
100-080-160	X	X
100-080-200	X	X
100-080-250	X	X
100-080-315	X	X
100-080-400	X	X
125-100-160	X	X
125-100-200	X	X
125-100-250	X	X
125-100-315	X	X
125-100-400	X	X
150-125-200	X	X
150-125-250	X	X
150-125-315	X	X
150-125-400	X	X
200-150-200	X	X
200-150-250	X	X
200-150-315	X	X
200-150-400	X	X

Technical data

Technical data

Sizes	Bearing bracket	Number of impeller vanes	Impeller outlet width	Free passage diameter	Impeller inlet diameter	Impeller diameter		Speed limit for immersion depth ≤ 750 mm			
						Maximum	Minimum	Design W		Design D	
								Maximum	Minimum	Maximum	Minimum
						[mm]		[rpm]		[rpm]	
050-032-125.1	WS_25	6	6	6,0	52	139	104	3600	800	3600	800
050-032-160.1	WS_25	6	10	5,4	63	170	136	3600	800	3600	800
050-032-200.1	WS_25	6	7	5,3	62	204	170	3600	800	3600	800
050-032-250.1	WS_25	6	13	5,2	70	254	200	3500	800	3500	800
050-032-125	WS_25	6	7	5,7	52	139	104	3600	800	3600	800
050-032-160	WS_25	6	6	5,8	54	174	136	3600	800	3500	800
050-032-200	WS_25	6	9	6,7	63	209	170	3600	800	3600	800
050-032-250	WS_25	6	14	7,1	74	261	209	3500	800	3500	800
065-040-125	WS_25	6	9	9,6	69	139	104	3500	800	3500	800
065-040-160	WS_25	6	20	11,5	88	174	128	3600	800	3600	800
065-040-200	WS_25	6	17	8,9	87	209	165	3600	800	3600	800
065-040-250	WS_25	6	14	8,0	83	260	200	3500	800	3500	800
065-040-315	WS_35	6	26	7,1	99	326	260	2900	800	2900	800
065-050-125	WS_25	6	6	11,6	58	142	112	3500	800	3500	800
065-050-160	WS_25	6	8	11,6	63	174	128	3600	800	3600	800
065-050-200	WS_25	6	8	11,9	73	219	170	3500	800	3500	800
065-050-250	WS_25	6	8	10,0	75	260	215	3500	800	3500	800
065-050-315	WS_35	6	11	9,5	84	323	265	2900	800	2900	800
080-065-125	WS_25	6	10	12,9	86	141	130	3500	800	3500	800
080-065-160	WS_25	6	21	12,2	92	174	132	3600	800	3600	800
080-065-200	WS_25	6	17	13,3	100	219	175	3500	800	3500	800
080-065-250	WS_35	6	15	14,3	101	260	215	3500	800	3500	800
080-065-315	WS_35	6	32	14,0	124	320	260	2900	800	2900	800
100-080-160	WS_25	6	25	15,1	115	174	154	3500	800	3500	800
100-080-200	WS_35	6	19	15,2	115	219	180	3500	800	3500	800
100-080-250	WS_35	6	38	15,8	135	269	215	3500	800	3500	800
100-080-315	WS_35	6	33	17,8	142	334	269	2900	800	2900	800
100-080-400	WS_55	6	14	14,3	107	398	330	1800	800	1800	800
125-100-160	WS_35	6	19	16,4	115	185	177	3600	800	3600	800
125-100-200	WS_35	6	15	17,9	129	219	179	3500	800	3500	800
125-100-250	WS_35	6	27	18,8	145	269	210	3500	800	3500	800
125-100-315	WS_35	6	23	19,9	142	334	270	2900	800	2900	800
125-100-400	WS_55	6	18	17,1	142	401	329	1800	800	1800	800
150-125-200	WS_35	6	41	21,1	160	224	205	3500	800	3500	800
150-125-250	WS_35	6	37	22,4	162	269	218	2000	800	2000	800
150-125-315	WS_55	6	31	22,6	162	334	270	2300	800	2300	800
150-125-400	WS_55	6	26	20,9	162	419	330	1800	800	1800	800
200-150-200	WS_35	5	60	25,2	179	224	215	1800	800	1800	800
200-150-250	WS_35	6	49	23,0	191	269	220	1800	800	1800	800
200-150-315	WS_55	6	40	26,9	192	334	264	1800	800	1800	800
200-150-400	WS_55	6	33	23,8	191	419	330	1800	800	1800	800

Immersion depths

Pump sets, 50 Hz / 60 Hz, 2-pole

✓	Permissible immersion depth at rated speed
✓ (max. speed)	Permissible immersion depth with PumpDrive (maximum permissible speed for operation on a frequency inverter)
-	Combination impermissible

Overview of immersion depths for 2-pole pump sets

Size	Shaft unit	Motor size	50 Hz, 2-pole							60 Hz, 2-pole						
			P _N [kW]	Immersion depth [mm]						P _N [kW]	Immersion depth [mm]					
				< 1000	1000	1250	1500	1750	2000		< 1000	1000	1250	1500	1750	2000
050-032-125	25	100L	3,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	3,45	✓ (3600)	✓	-	✓	✓	✓
	25	112M	4,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	4,6	✓ (3600)	✓	-	✓	✓	✓
	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3600)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3600)	✓	-	✓	✓	✓
050-032-125.1	25	100L	3,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	3,45	✓ (3600)	✓	-	✓	✓	✓
	25	112M	4,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	4,6	✓ (3600)	✓	-	✓	✓	✓
	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3600)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3600)	✓	-	✓	✓	✓
050-032-160	25	100L	3,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	3,45	✓ (3600)	✓	-	✓	✓	✓
	25	112M	4,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	4,6	✓ (3600)	✓	-	✓	✓	✓
	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3600)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	11	✓ (3600)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3600)	✓	-	✓	✓	✓
050-032-160.1	25	100L	3,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	3,45	✓ (3600)	✓	-	✓	✓	✓
	25	112M	4,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	4,6	✓ (3600)	✓	-	✓	✓	✓
	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3600)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	11	✓ (3600)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3600)	✓	-	✓	✓	✓
050-032-200	25	100L	3,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	-	-	-	-	-	-	-
	25	112M	4,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	4,6	✓ (3600)	✓	-	✓	✓	✓
	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3600)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	11	✓ (3600)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	15	✓ (3600)	✓ (3000)	✓	-	✓	✓	17,3	✓ (3600)	✓	-	✓	✓	✓
050-032-200.1	25	100L	3,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	3,45	✓ (3600)	✓	-	✓	✓	✓
	25	112M	4,0	✓ (3600)	✓ (3000)	✓	✓	✓	✓	4,6	✓ (3600)	✓	-	✓	✓	✓
	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3600)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	11	✓ (3600)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	15	✓ (3600)	✓ (3000)	✓	-	✓	✓	17,3	✓ (3600)	✓	-	✓	✓	✓
050-032-250	25	132S	7,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	11	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	15	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160L	18,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
050-032-250.1	25	112M	4,0	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	132S	5,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	132S	7,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	11	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	15	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
065-040-125	25	100L	3,0	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	112M	4,0	✓ (3500)	✓ (3000)	✓	-	✓	✓	4,6	✓ (3500)	✓	-	✓	✓	✓
	25	132S	5,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3500)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3500)	✓	-	✓	✓	✓
	25	160M	11	✓ (3500)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3500)	✓	-	✓	✓	✓
065-040-160	25	100L	3,0	✓ (3600)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	112M	4,0	✓ (3600)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3600)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	11	✓ (3600)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	15	✓ (3600)	✓ (3000)	✓	-	✓	✓	17,3	✓ (3600)	✓	-	✓	✓	✓
	25	160L	18,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	21,3	✓ (3600)	✓	-	✓	✓	✓
	25	180M	22	✓ (3600)	✓ (3000)	✓	-	✓	✓	24,5	✓ (3600)	✓	-	✓	✓	✓

Size	Shaft unit	Motor size	50 Hz, 2-pole							60 Hz, 2-pole						
			P _N [kW]	Immersion depth [mm]						P _N [kW]	Immersion depth [mm]					
				< 1000	1000	1250	1500	1750	2000		< 1000	1000	1250	1500	1750	2000
065-040-200	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	11	✓ (3600)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	15	✓ (3600)	✓ (3000)	✓	-	✓	✓	17,3	✓ (3600)	✓	-	✓	✓	✓
	25	160L	18,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	21,3	✓ (3600)	✓	-	✓	✓	✓
	25	180M	22	✓ (3600)	✓ (3000)	✓	-	✓	✓	24,5	✓ (3600)	✓	-	✓	✓	✓
	25	200L	30	✓ (3600)	✓ (3000)	✓	-	✓	✓	33,5	✓ (3600)	✓	-	✓	✓	✓
065-040-250	25	160M	11	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	15	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160L	18,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	180M	22	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	200L	30	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
065-050-125	25	100L	3,0	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	112M	4,0	✓ (3500)	✓ (3000)	✓	-	✓	✓	4,6	✓ (3500)	✓	-	✓	✓	✓
	25	132S	5,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3500)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3500)	✓	-	✓	✓	✓
	25	160M	11	✓ (3500)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3500)	✓	-	✓	✓	✓
065-050-160	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	11	✓ (3600)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	15	✓ (3600)	✓ (3000)	✓	-	✓	✓	17,3	✓ (3600)	✓	-	✓	✓	✓
	25	160L	18,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	21,3	✓ (3600)	✓	-	✓	✓	✓
	25	180M	22	✓ (3600)	✓ (3000)	✓	-	✓	✓	24,5	✓ (3600)	✓	-	✓	✓	✓
	25	200L	30	✓ (3600)	✓ (3000)	✓	✓	-	✓	33,5	✓ (3600)	✓	✓	-	✓	✓
	25	200L	37	✓ (3600)	✓ (3000)	✓	✓	-	✓	41,5	✓ (3600)	✓	✓	-	✓	✓
065-050-200	25	160M	11	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	15	✓ (3500)	✓ (3000)	✓	-	✓	✓	17,3	✓ (3500)	✓	-	✓	✓	✓
	25	160L	18,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	21,3	✓ (3500)	✓	-	✓	✓	✓
	25	180M	22	✓ (3500)	✓ (3000)	✓	-	✓	✓	24,5	✓ (3500)	✓	-	✓	✓	✓
	25	200L	30	✓ (3500)	✓ (3000)	✓	✓	-	✓	33,5	✓ (3500)	✓	✓	-	✓	✓
	25	200L	37	✓ (3500)	✓ (3000)	✓	✓	-	✓	41,5	✓ (3500)	✓	✓	-	✓	✓
065-050-250	25	160M	15	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160L	18,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	180M	22	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	200L	30	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	200L	37	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
080-065-125	25	112M	4,0	✓ (3500)	✓ (3000)	✓	✓	✓	✓	-	-	-	-	-	-	-
	25	132S	5,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	6,3	✓ (3500)	✓	-	✓	✓	✓
	25	132S	7,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	8,6	✓ (3500)	✓	-	✓	✓	✓
	25	160M	11	✓ (3500)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3500)	✓	-	✓	✓	✓
	25	160M	15	✓ (3500)	✓ (3000)	✓	-	✓	✓	17,3	✓ (3500)	✓	-	✓	✓	✓
080-065-160	25	132S	5,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	132S	7,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	11	✓ (3600)	✓ (3000)	✓	-	✓	✓	12,6	✓ (3600)	✓	-	✓	✓	✓
	25	160M	15	✓ (3600)	✓ (3000)	✓	-	✓	✓	17,3	✓ (3600)	✓	-	✓	✓	✓
	25	160L	18,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	21,3	✓ (3600)	✓	-	✓	✓	✓
	25	180M	22	✓ (3600)	✓ (3000)	✓	-	✓	✓	24,5	✓ (3600)	✓	-	✓	✓	✓
	25	200L	30	✓ (3600)	✓ (3000)	✓	✓	-	✓	33,5	✓ (3600)	✓	✓	-	✓	✓
	25	200L	37	✓ (3600)	✓ (3000)	✓	✓	-	✓	41,5	✓ (3600)	✓	✓	-	✓	✓
080-065-200	25	160M	11	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	15	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160L	18,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	21,3	✓ (3500)	✓	-	✓	✓	✓
	25	180M	22	✓ (3500)	✓ (3000)	✓	-	✓	✓	24,5	✓ (3500)	✓	-	✓	✓	✓
	25	200L	30	✓ (3500)	✓ (3000)	✓	✓	-	✓	33,5	✓ (3500)	✓	✓	-	✓	✓
080-065-250	35	180M	22	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	35	200L	30	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	35	200L	37	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	35	225M	45	✓ (3500)	✓ (3000)	✓	✓	-	✓	-	-	-	-	-	-	-
100-080-160	25	160M	11	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160M	15	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-
	25	160L	18,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	21,3	✓ (3500)	✓	-	✓	✓	✓
	25	180M	22	✓ (3500)	✓ (3000)	✓	-	✓	✓	24,5	✓ (3500)	✓	-	✓	✓	✓
	25	200L	30	✓ (3500)	✓ (3000)	✓	✓	-	✓	33,5	✓ (3500)	✓	✓	-	✓	✓

Size	Shaft unit	Motor size	50 Hz, 2-pole							60 Hz, 2-pole							
			P _N [kW]	Immersion depth [mm]						P _N [kW]	Immersion depth [mm]						
				< 1000	1000	1250	1500	1750	2000		< 1000	1000	1250	1500	1750	2000	
	25	200L	37	✓ (3500)	✓ (3000)	✓	✓	-	✓	✓	41,5	✓ (3500)	✓	✓	-	✓	✓
100-080-200	35	160L	18,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-	-
	35	180M	22	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-	-
	35	200L	30	✓ (3500)	✓ (3000)	✓	-	✓	✓	33,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	✓
	35	200L	37	✓ (3500)	✓ (3000)	✓	-	✓	✓	41,5	✓ (3500)	✓ (3000)	✓	-	✓	✓	✓
	35	225M	45	✓ (3500)	✓ (3000)	✓	✓	-	✓	51	✓ (3500)	✓ (3000)	✓	-	✓	✓	✓
	35	250M	55	✓ (3500)	✓ (3000)	✓	✓	-	✓	63	✓ (3500)	✓ (3000)	✓	-	✓	✓	✓
		35	280S	75	✓ (3500)	✓ (3000)	✓	✓	-	✓	84	✓ (3500)	✓ (3000)	✓	-	✓	✓
100-080-250	35	200L	30	✓ (3500)	✓ (2900)	✓	-	✓	✓	-	-	-	-	-	-	-	-
	35	200L	37	✓ (3500)	✓ (2900)	✓	-	✓	✓	-	-	-	-	-	-	-	-
	35	225M	45	✓ (3500)	✓ (2900)	✓	✓	-	✓	-	-	-	-	-	-	-	-
	35	250M	55	✓ (3500)	✓ (2900)	✓	✓	-	✓	-	-	-	-	-	-	-	-
	35	280S	75	✓ (3500)	✓ (2900)	✓	✓	-	✓	-	-	-	-	-	-	-	-
125-100-160	35	180M	22	✓ (3600)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-	-
	35	200L	30	✓ (3600)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-	-
	35	200L	37	✓ (3600)	✓ (3000)	✓	-	✓	✓	41,5	✓ (3600)	✓ (3000)	✓	-	✓	✓	✓
	35	225M	45	✓ (3600)	✓ (3000)	✓	✓	-	✓	51	✓ (3600)	✓ (3000)	✓	-	✓	✓	✓
	35	250M	55	✓ (3600)	✓ (3000)	✓	✓	-	✓	63	✓ (3600)	✓ (3000)	✓	-	✓	✓	✓
	35	280S	75	✓ (3600)	✓ (3000)	✓	✓	-	✓	84	✓ (3600)	✓ (3000)	✓	-	✓	✓	✓
125-100-200	35	200L	30	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-	-
	35	200L	37	✓ (3500)	✓ (3000)	✓	-	✓	✓	-	-	-	-	-	-	-	-
	35	225M	45	✓ (3500)	✓ (3000)	✓	✓	-	✓	51	✓ (3500)	✓ (3000)	✓	-	✓	✓	✓
	35	250M	55	✓ (3500)	✓ (3000)	✓	✓	-	✓	63	✓ (3500)	✓ (3000)	✓	-	✓	✓	✓
	35	280S	75	✓ (3500)	✓ (3000)	✓	✓	-	✓	84	✓ (3500)	✓ (3000)	✓	-	✓	✓	✓
	35	280M	90	✓ (3500)	✓ (3000)	✓	✓	-	✓	101	✓ (3500)	✓ (3000)	✓	-	✓	✓	✓
125-100-250	35	225M	45	✓ (3500)	✓ (3000)	✓ (3000)	✓	-	✓	-	-	-	-	-	-	-	-
	35	250M	55	✓ (3500)	✓ (3000)	✓ (3000)	✓	-	✓	-	-	-	-	-	-	-	-
	35	280S	75	✓ (3500)	✓ (3000)	✓ (3000)	✓	-	✓	-	-	-	-	-	-	-	-
	35	280M	90	✓ (3500)	✓ (3000)	✓ (3000)	✓	-	✓	-	-	-	-	-	-	-	-
150-125-200	35	225M	45	✓ (3500)	✓ (3500)	✓ (3000)	✓	-	✓	-	-	-	-	-	-	-	-
	35	250M	55	✓ (3500)	✓ (3500)	✓ (3000)	✓	-	✓	-	-	-	-	-	-	-	-
	35	280S	75	✓ (3500)	✓ (3500)	✓ (3000)	✓	-	✓	84	✓ (3500)	✓ (3500)	✓	-	✓	✓	✓
	35	280M	90	✓ (3500)	✓ (3500)	✓ (3000)	✓	-	✓	101	✓ (3500)	✓ (3500)	✓	-	✓	✓	✓

Pump sets, 50 Hz / 60 Hz, 4-pole

✓	Permissible immersion depth at rated speed
✓ (max. speed)	Permissible immersion depth with PumpDrive (maximum permissible speed for operation on a frequency inverter)
-	Combination impermissible

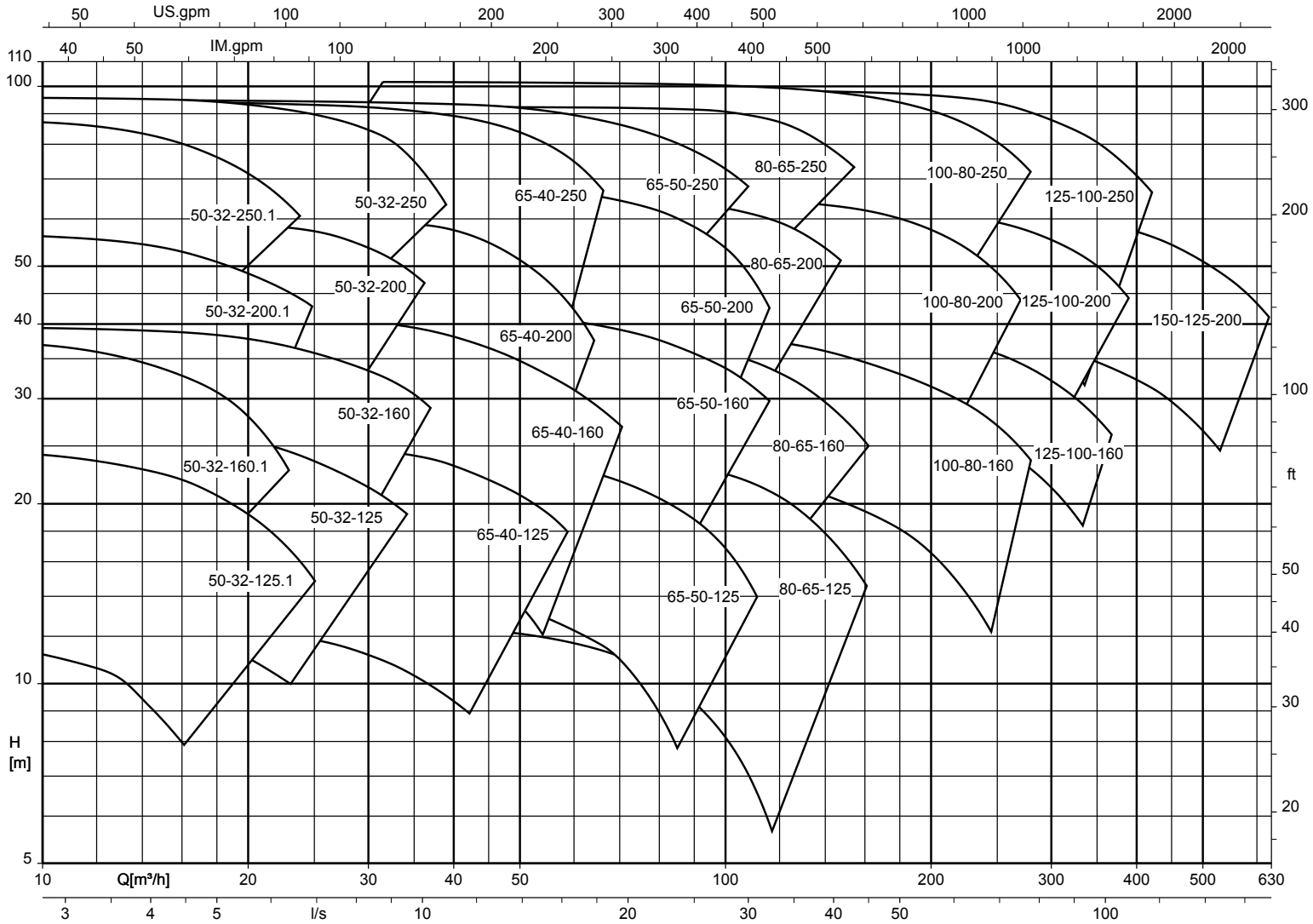
Overview of immersion depths for 4-pole pump sets

Size	Shaft unit	Motor size	50 Hz, 4-pole							60 Hz, 4-pole							
			P _N [kW]	Immersion depth [mm]						P _N [kW]	Immersion depth [mm]						
				< 1000	1000	1250	1500	1750	2000		< 1000	1000	1250	1500	1750	2000	
050-032-125	25	100M	2,2	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	2,55	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
	25	100L	3,0	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	3,45	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
050-032-125.1	25	100M	2,2	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	2,55	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
	25	100L	3,0	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	3,45	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
050-032-160	25	100M	2,2	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	2,55	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
	25	100L	3,0	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	3,45	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
050-032-160.1	25	100M	2,2	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	2,55	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
	25	100L	3,0	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	3,45	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
050-032-200	25	100M	2,2	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	2,55	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
	25	100L	3,0	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	3,45	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
	25	112M	4,0	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	4,6	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
050-032-200.1	25	100M	2,2	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	2,55	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓
	25	100L	3,0	✓ (3600)	✓ (3000)	✓ (1800)	✓ (1500)	✓	-	3,45	✓ (3600)	✓ (3000)	✓ (1800)	✓	-	✓	✓

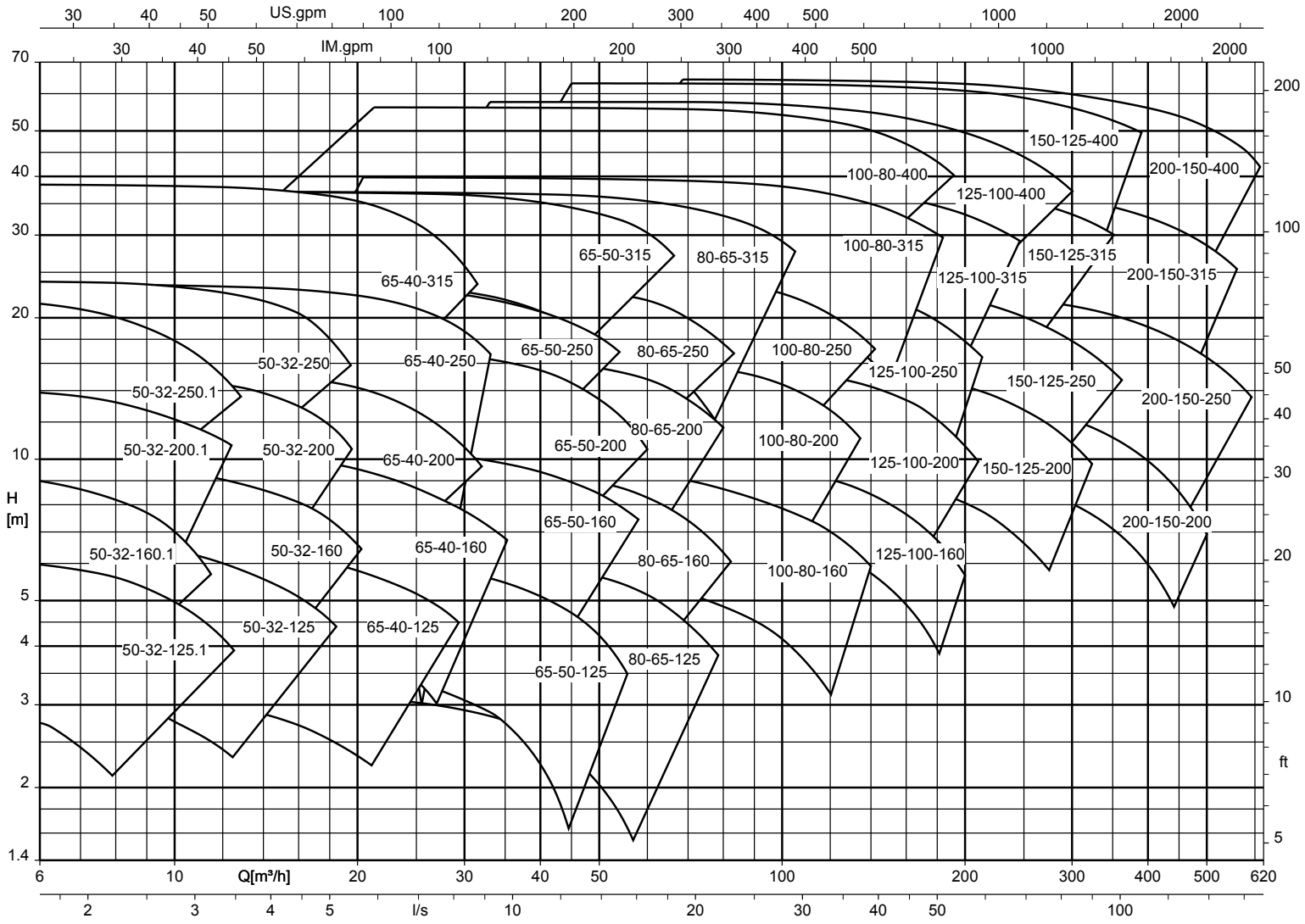
Size	Shaft unit	Motor size	50 Hz, 4-pole							60 Hz, 4-pole						
			P _N	Immersion depth [mm]						P _N	Immersion depth [mm]					
			[kW]	< 1000	1000	1250	1500	1750	2000	[kW]	< 1000	1000	1250	1500	1750	2000
200-150-315	55	180L	22	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	-	-	-	-	-	-	-
	55	200L	30	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	-	-	-	-	-	-	-
	55	225S	37	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	42,5	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)
	55	225M	45	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	52	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)
	55	250M	55	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	63	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)
	55	280S	75	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	86	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)
	55	280M	90	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	104	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)
200-150-400	55	225M	45	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	-	-	-	-	-	-	-
	55	250M	55	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	-	-	-	-	-	-	-
	55	280S	75	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	86	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)
	55	280M	90	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	104	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)	✓ (1800)

Selection charts

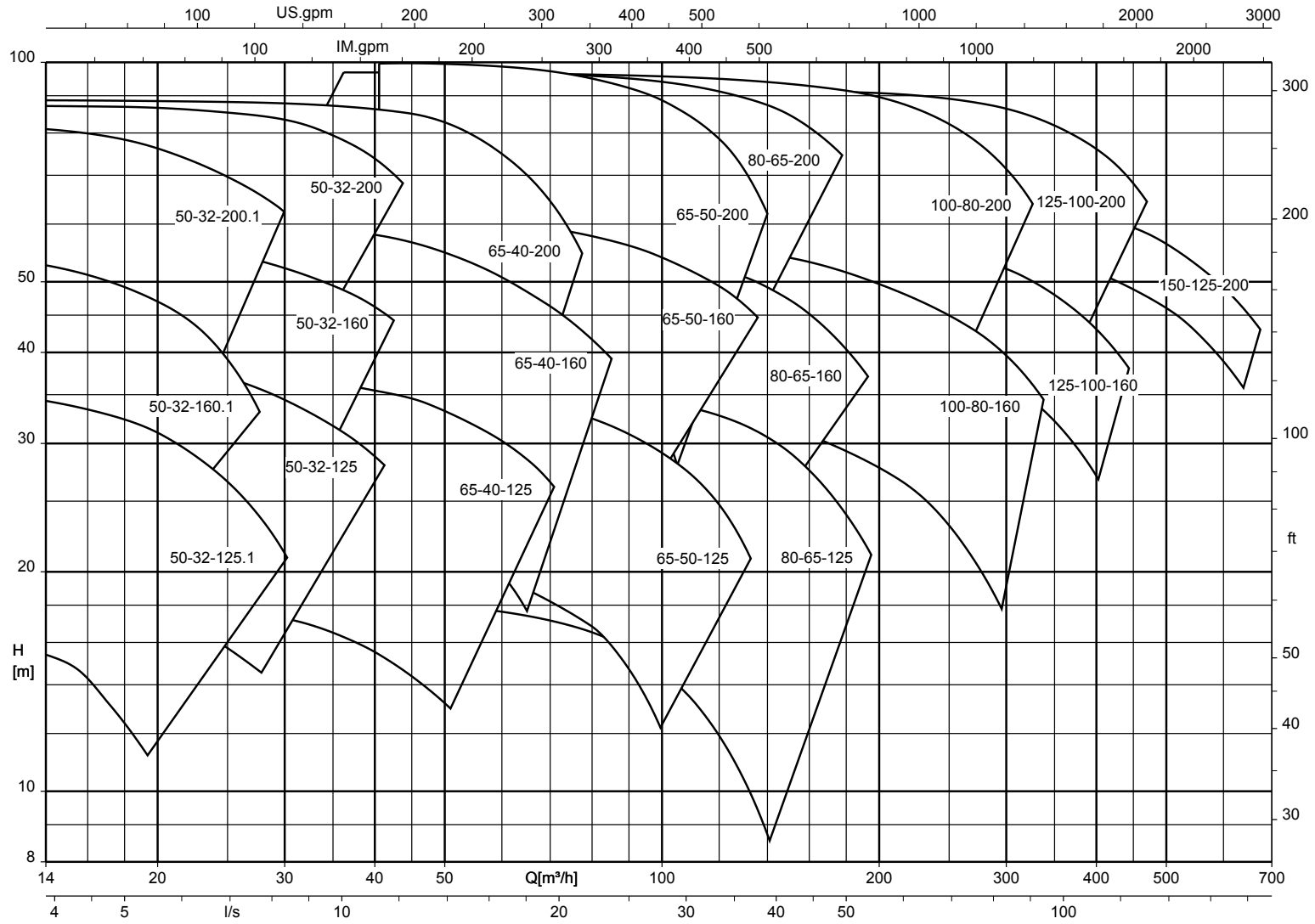
Etanorm V, n = 2900 rpm



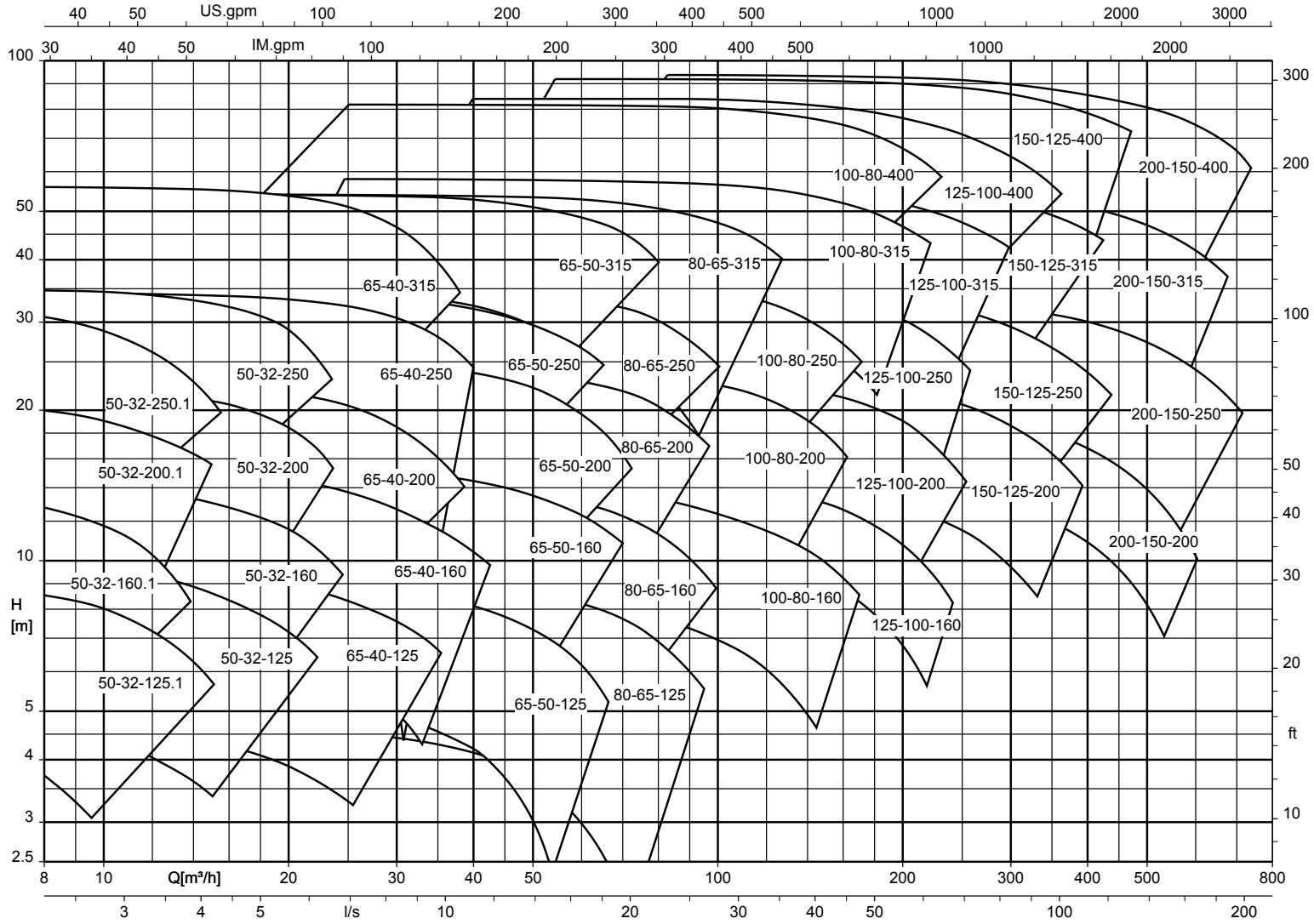
Etanorm V, n = 1450 rpm



Etanorm V, n = 3500 rpm

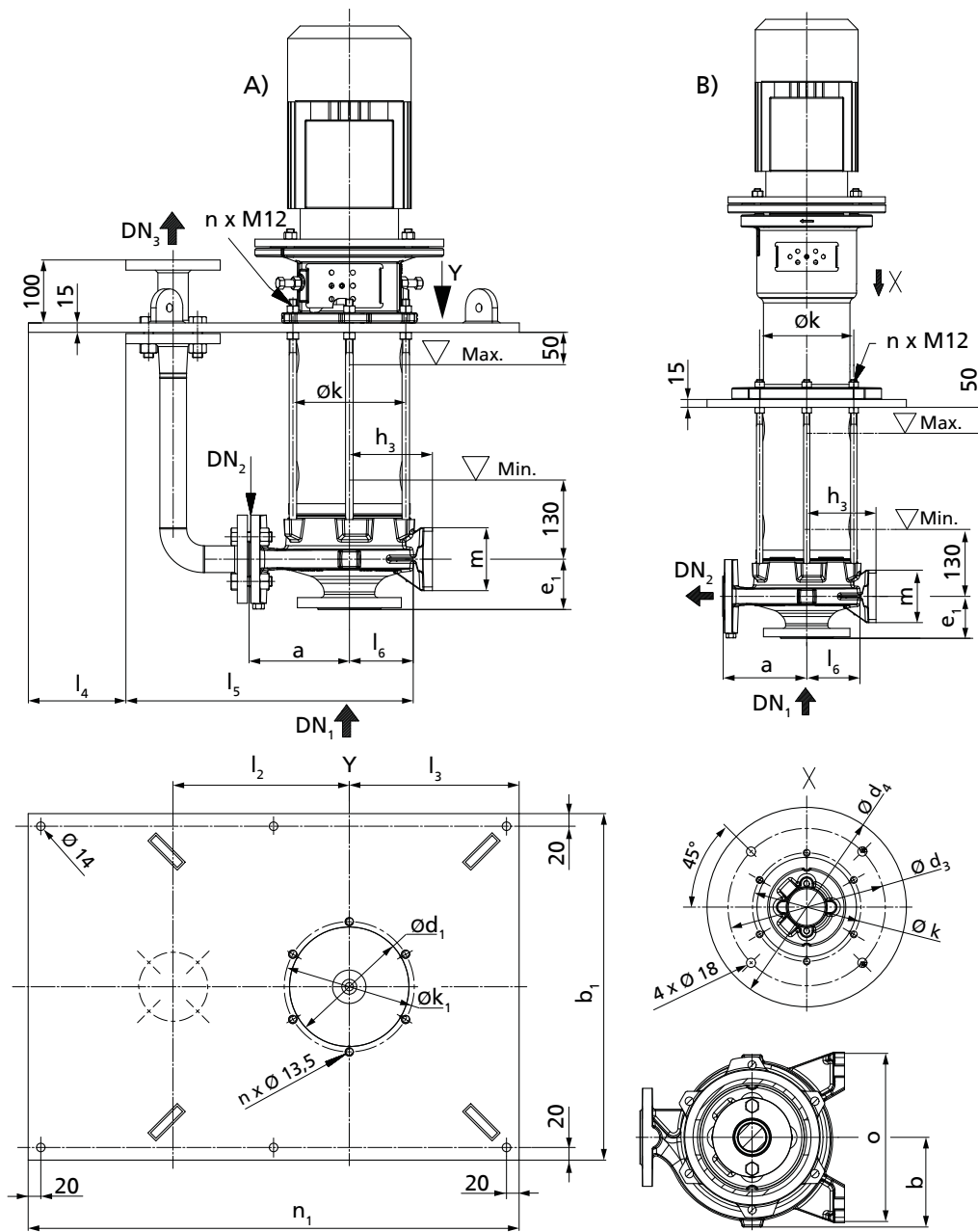


Etanorm V, n = 1750 rpm



Dimensions

Pump dimensions



Dimensions [mm]
A) Design W
B) Design D

i Flanges of DN 65 come with 4 bolt holes; all other sizes come with 8 bolt holes.

Dimensions [mm]

Size	Shaft unit	DN ₁	DN ₂	DN ₃	a	b	b ₁	d ₁	d ₃	d ₄	e ₁	h ₃	k	l ₂	l ₃	l ₄	l ₅	l ₆	m	n	n ₁	o
050-032-125.1	WS_25	50	32	40	140	116	550	190	300	380	80	112	207	280	270	155	455	100	100	6	780	190
050-032-160.1	WS_25	50	32	40	160	116	550	190	300	380	80	132	207	280	270	155	466	111	100	6	780	240
050-032-200.1	WS_25	50	32	40	180	142	550	190	300	380	80	160	207	280	270	155	491	136	100	6	780	240

Size	Shaft unit	DN ₁	DN ₂	DN ₃	a	b	b ₁	d ₁	d ₃	d ₄	e ₁	h ₃	k	l ₂	l ₃	l ₄	l ₅	l ₆	m	n	n ₁	o
050-032-250.1	WS_25	50	32	40	225	168	550	190	300	380	100	180	207	280	270	155	521	166	125	6	780	320
050-032-125	WS_25	50	32	40	140	115	550	190	300	380	80	112	207	280	270	155	455	100	100	6	780	190
050-032-160	WS_25	50	32	40	160	118	550	190	300	380	80	132	207	280	270	155	470	115	100	6	780	240
050-032-200	WS_25	50	32	40	180	142	550	190	300	380	80	160	207	280	270	155	492	137	100	6	780	240
050-032-250	WS_25	50	32	40	225	169	550	190	300	380	100	180	207	280	270	155	521	166	125	6	780	320
065-040-125	WS_25	65	40	50	140	117	550	190	300	380	80	112	207	270	270	157	460	107	100	6	780	210
065-040-160	WS_25	65	40	50	160	119	550	190	300	380	80	132	207	290	270	137	492	119	100	6	780	240
065-040-200	WS_25	65	40	50	180	142	550	190	300	380	100	160	207	310	270	117	534	141	100	6	780	265
065-040-250	WS_25	65	40	50	225	169	550	190	300	380	100	180	207	295	270	132	544	166	125	6	780	320
065-040-315	WS_35	65	40	50	250	207	550	241	300	380	125	225	260	320	270	107	607	204	125	6	780	345
065-050-125	WS_25	65	50	65	160	117	550	190	300	380	100	132	207	310	270	107	515	112	100	6	780	240
065-050-160	WS_25	65	50	65	180	128	550	190	300	380	100	160	207	330	270	87	556	133	100	6	780	265
065-050-200	WS_25	65	50	65	200	144	550	190	300	380	100	160	207	290	270	127	533	150	100	6	780	265
065-050-250	WS_25	65	50	65	225	170	550	190	300	380	100	180	207	315	270	102	580	172	125	6	780	320
065-050-315	WS_35	65	50	65	280	207	550	241	350	380	125	225	260	370	270	47	666	203	125	6	780	345
080-065-125	WS_25	80	65	80	180	117	550	190	300	380	100	160	207	350	270	60	577	127	125	6	780	280
080-065-160	WS_25	80	65	80	200	132	550	190	300	380	100	160	207	370	270	40	610	140	125	6	780	280
080-065-200	WS_25	80	65	80	225	155	550	190	300	380	100	180	207	335	270	75	596	161	125	6	780	320
080-065-250	WS_35	80	65	80	250	179	550	241	350	380	100	200	260	360	270	50	645	185	160	8	780	360
080-065-315	WS_35	80	65	80	280	209	550	241	350	380	125	225	260	390	270	49	674	213	160	8	780	400
100-080-160	WS_25	100	80	100	225	138	550	190	300	380	125	180	207	355	270	145	618	153	125	6	880	320
100-080-200	WS_35	100	80	100	250	159	550	241	350	380	125	180	260	380	270	120	660	170	125	8	880	345
100-080-250	WS_35	100	80	100	280	183	550	241	350	380	125	200	260	410	270	90	712	192	160	8	880	400
100-080-315	WS_35	100	80	100	315	218	550	241	350	380	125	250	260	445	270	55	782	227	160	8	880	400
100-080-400	WS_55	100	80	100	355	257	700	241	420	445	125	280	260	485	355	200	-	-	160	8	1150	435
125-100-160	WS_35	125	100	100	280	178	550	241	350	380	125	200	260	450	270	68	741	199	160	8	880	360
125-100-200	WS_35	125	100	125	280	173	550	241	350	380	125	200	260	450	270	68	731	189	160	8	880	360
125-100-250	WS_35	125	100	125	280	188	550	241	350	380	140	225	260	450	270	68	742	200	160	8	880	400
125-100-315	WS_35	125	100	125	315	225	550	241	350	380	140	250	260	485	260	43	814	237	160	8	880	400
125-100-400	WS_55	125	100	125	355	255	700	241	420	445	140	280	260	525	355	145	-	-	200	8	1150	500
150-125-200	WS_35	150	125	150	315	189	600	241	350	380	140	250	260	520	330	157	875	212	160	8	1150	400
150-125-250	WS_35	150	125	150	355	226	600	241	350	380	140	250	260	560	330	117	951	248	160	8	1150	400
150-125-315	WS_55	150	125	150	355	243	700	241	420	445	140	280	260	560	355	92	-	-	200	8	1150	500
150-125-400	WS_55	150	125	150	400	277	700	241	420	445	140	315	260	605	355	47	-	-	200	8	1150	500
200-150-200	WS_35	200	150	200	400	240	600	241	350	380	160	280	260	645	330	43	1054	277	200	8	1150	550
200-150-250	WS_35	200	150	200	400	230	600	241	350	380	160	280	260	645	330	43	1039	262	200	8	1150	500
200-150-315	WS_55	200	150	200	400	255	700	241	420	445	160	280	260	645	330	43	-	-	200	8	1150	550
200-150-400	WS_55	200	150	200	450	289	700	241	420	445	160	315	260	690	345	43	-	-	200	8	1210	550

Motor dimensions

Design D

The dimensions used refer to a standard motor. For the exact motor-related dimensions refer to the general arrangement drawing.

Drawing	Motor size	h	h ₁			h ₂		
		[mm]	[mm]			[mm]		
			WS_25	WS_35	WS_55	WS_25	WS_35	WS_55
	100	382	0	0	-	354	354	-
	112	371	0	0	-	354	354	-
	132	441	20	20	-	354	354	-
	160	552	50	50	0	354	354	631
	180	610	50	50	0	354	354	631
	200	669	50	50	0	354	354	631
	225	755	-	80	30	-	354	631
	250	817	-	0	30	-	434	631
	280	980	-	0	30	-	434	631

Design W

The dimensions used refer to a standard motor. For the exact motor-related dimensions refer to the general arrangement drawing.

Drawing	Motor size	h	h ₂		
		[mm]	[mm]		
			WS_25	WS_35	WS_55
	100	382	98	95	-
	112	371	98	95	-
	132	441	121	118	-
	160	552	154	151	151
	180	610	154	151	151
	200	669	154	151	151
	225	755	-	182	182
	250	817	-	194	194
	280	980	-	194	194

Dimensions of immersion depths

Design D

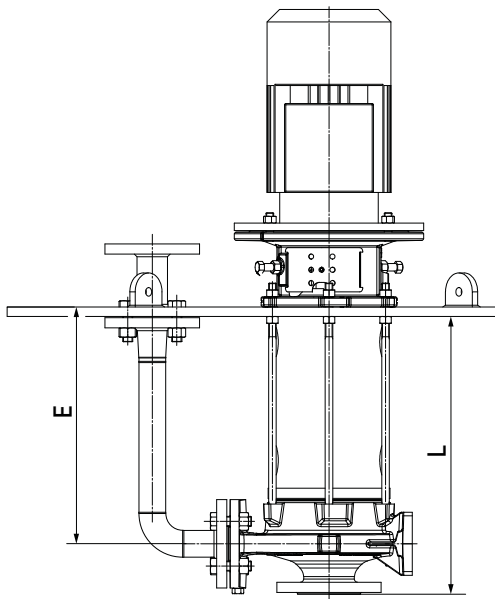
Overview of immersion depths [mm] per shaft unit

Shaft unit	Immersion depth
WS_25	375, 425, 504
WS_35	398, 448, 529
WS_55	535

Design W

Overview of immersion depths [mm] per shaft unit

Shaft unit	Immersion depth
WS_25	375, 425, 504, 750, 1000, 1250, 1500, 1750, 2000
WS_35	398, 448, 529, 750, 1000, 1250, 1500, 1750, 2000
WS_55	535, 750, 1000, 1250, 1500, 1750, 2000



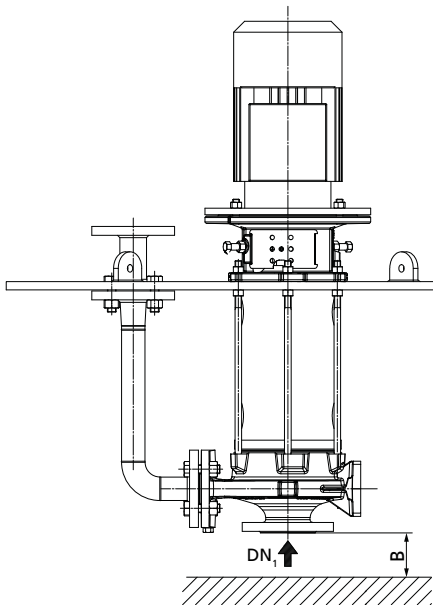
Dimension of the immersion depth

Overview of dimension L [mm] depending on the immersion depth [mm]

Size	Bearing bracket	Immersion depth E													
		375	398	425	448	504	529	535	750	1000	1250	1500	1750	2000	
		Dimension L													
050-032-125.1	WS_25	440	-	490	-	569	-	-	815	1065	1315	1565	1815	2065	
050-032-160.1	WS_25	440	-	490	-	569	-	-	815	1065	1315	1565	1815	2065	
050-032-200.1	WS_25	440	-	490	-	569	-	-	815	1065	1315	1565	1815	2065	
050-032-250.1	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085	
050-032-125	WS_25	440	-	490	-	569	-	-	815	1065	1315	1565	1815	2065	
050-032-160	WS_25	440	-	490	-	569	-	-	815	1065	1315	1565	1815	2065	
050-032-200	WS_25	440	-	490	-	569	-	-	815	1065	1315	1565	1815	2065	
050-032-250	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085	
065-040-125	WS_25	440	-	490	-	569	-	-	815	1065	1315	1565	1815	2065	
065-040-160	WS_25	440	-	490	-	569	-	-	815	1065	1315	1565	1815	2065	
065-040-200	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085	
065-040-250	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085	
065-040-315	WS_35	-	508	-	558	-	639	-	860	1110	1360	1610	1860	2110	
065-050-125	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085	
065-050-160	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085	
065-050-200	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085	
065-050-250	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085	
065-050-315	WS_35	-	508	-	558	-	639	-	860	1110	1360	1610	1860	2110	

Size	Bearing bracket	Immersion depth E												
		375	398	425	448	504	529	535	750	1000	1250	1500	1750	2000
		Dimension L												
080-065-125	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085
080-065-160	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085
080-065-200	WS_25	460	-	510	-	589	-	-	835	1085	1335	1585	1835	2085
080-065-250	WS_35	-	483	-	533	-	614	-	835	1085	1335	1585	1835	2085
080-065-315	WS_35	-	508	-	558	-	639	-	860	1110	1360	1610	1860	2110
100-080-160	WS_25	485	-	535	-	614	-	-	860	1110	1360	1610	1860	2110
100-080-200	WS_35	-	508	-	558	-	639	-	860	1110	1360	1610	1860	2110
100-080-250	WS_35	-	508	-	558	-	639	-	860	1110	1360	1610	1860	2110
100-080-315	WS_35	-	508	-	558	-	639	-	860	1110	1360	1610	1860	2110
100-080-400	WS_55	-	-	-	-	-	-	645	860	1110	1360	1610	1860	2110
125-100-160	WS_35	-	508	-	558	-	639	-	860	1110	1360	1610	1860	2110
125-100-200	WS_35	-	508	-	558	-	639	-	860	1110	1360	1610	1860	2110
125-100-250	WS_35	-	523	-	573	-	654	-	875	1125	1375	1625	1875	2125
125-100-315	WS_35	-	523	-	573	-	654	-	875	1125	1375	1625	1875	2125
125-100-400	WS_55	-	-	-	-	-	-	660	875	1125	1375	1625	1875	2125
150-125-200	WS_35	-	523	-	573	-	654	-	875	1125	1375	1625	1875	2125
150-125-250	WS_35	-	523	-	573	-	654	-	875	1125	1375	1625	1875	2125
150-125-315	WS_55	-	-	-	-	-	-	660	875	1125	1375	1625	1875	2125
150-125-400	WS_55	-	-	-	-	-	-	660	875	1125	1375	1625	1875	2125
200-150-200	WS_35	-	543	-	593	-	674	-	895	1145	1395	1645	1895	2145
200-150-250	WS_35	-	543	-	593	-	674	-	895	1145	1395	1645	1895	2145
200-150-315	WS_55	-	-	-	-	-	-	680	895	1145	1395	1645	1895	2145
200-150-400	WS_55	-	-	-	-	-	-	680	895	1145	1395	1645	1895	2145

Dimensions: distance from the floor

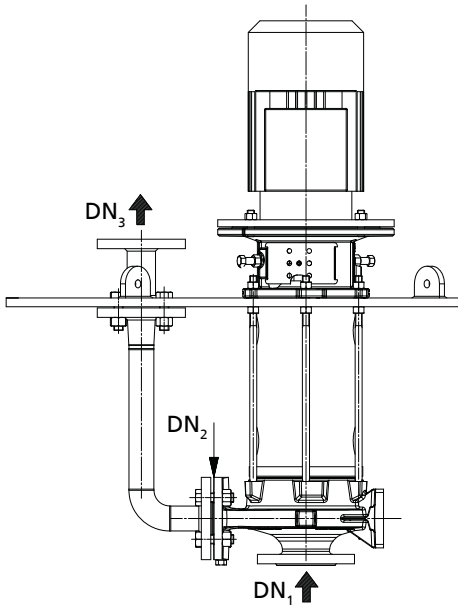


Distance from the floor

Distance from the floor in [mm]

DN ₁	B
50	80
65	80
80	100
100	100
125	100
150	150
200	150

Flange variant



Flange designation

Flange variants

	Suction side DN ₁	Discharge side DN ₂	Discharge side DN ₃
Standard	DIN EN 1092-2 for material variant G DIN EN 1092-1 for material variant C		
Flange position	Axial		
Pressure class	PN 16, from size DN 200: PN 10	PN 16	PN 10
Flange design	RF	RF	FF
Flange type	21-B	21-B	01-A

Flange sizes

Size	Suction side DN ₁	Discharge side DN ₂	Discharge side DN ₃
050-032-125.1	DN 50	DN 32	DN 40
050-032-160.1	DN 50	DN 32	DN 40
050-032-200.1	DN 50	DN 32	DN 40
050-032-250.1	DN 50	DN 32	DN 40
050-032-125	DN 50	DN 32	DN 40
050-032-160	DN 50	DN 32	DN 40
050-032-200	DN 50	DN 32	DN 40
050-032-250	DN 50	DN 32	DN 40
065-040-125	DN 65 ¹²⁾	DN 40	DN 50
065-040-160	DN 65 ¹²⁾	DN 40	DN 50
065-040-200	DN 65 ¹²⁾	DN 40	DN 50
065-040-250	DN 65 ¹²⁾	DN 40	DN 50
065-040-315	DN 65 ¹²⁾	DN 40	DN 50
065-050-125	DN 65 ¹²⁾	DN 50	DN 65 ¹²⁾
065-050-160	DN 65 ¹²⁾	DN 50	DN 65 ¹²⁾
065-050-200	DN 65 ¹²⁾	DN 50	DN 65 ¹²⁾
065-050-250	DN 65 ¹²⁾	DN 50	DN 65 ¹²⁾
065-050-315	DN 80	DN 50	DN 65 ¹²⁾
080-065-125	DN 80	DN 65 ¹²⁾	DN 80
080-065-160	DN 80	DN 65 ¹²⁾	DN 80
080-065-200	DN 80	DN 65 ¹²⁾	DN 80

¹²⁾ Flange with 4 bolt holes

Size	Suction side DN ₁	Discharge side DN ₂	Discharge side DN ₃
080-065-250	DN 80	DN 65 ¹²⁾	DN 80
080-065-315	DN 80	DN 65 ¹²⁾	DN 80
100-080-160	DN 100	DN 80	DN 100
100-080-200	DN 100	DN 80	DN 100
100-080-250	DN 100	DN 80	DN 100
100-080-315	DN 100	DN 80	DN 100
100-080-400	DN 100	DN 80	DN 100
125-100-160	DN 125	DN 100	DN 125
125-100-200	DN 125	DN 100	DN 125
125-100-250	DN 125	DN 100	DN 125
125-100-315	DN 125	DN 100	DN 125
125-100-400	DN 125	DN 100	DN 125
150-125-200	DN 150	DN 125	DN 150
150-125-250	DN 150	DN 125	DN 150
150-125-315	DN 150	DN 125	DN 150
150-125-400	DN 150	DN 125	DN 150
200-150-200	DN 200	DN 150	DN 200
200-150-250	DN 200	DN 150	DN 200
200-150-315	DN 200	DN 150	DN 200
200-150-400	DN 200	DN 150	DN 200

Flange material variants

Material variant	Standard	Pressure class
G, GB, GC	EN 1092-2	PN 16
C	EN 1092-1	PN 16

Sets of spare parts

Etanorm V in design D

Overview of spare parts sets

Spare assembly	Comprises the following parts	
210 - shaft	210	Shaft
	550.95 ¹³⁾	Disc
	920.95	Nut
	930.95	Safety device
	940.01	Key
	940.02	Key
102 - volute casing	102	Volute casing
	502.01	Casing wear ring
	902.01 ¹⁴⁾	Stud
	903.01	Screw plug
	903.03	Screw plug
	920.01 ¹⁴⁾	Nut

Etanorm V in design W

Overview of spare parts sets

Spare assembly	Comprises the following parts	
210 - shaft	210	Shaft
	515	Locking ring
	550.95 ¹⁵⁾	Disc
	840	Coupling
	914.24	Hexagon socket head cap screw
	920.95	Nut
	930.95	Safety device

¹³⁾ For shaft unit 25 only

¹⁴⁾ For bolted casing cover only

¹⁵⁾ For shaft unit 25 only

Spare assembly	Comprises the following parts	
	940.01	Key
211 - pump shaft	211	Pump shaft
	515	Locking ring
	550.95 ¹⁵⁾	Disc
	561.29	Grooved pin
	914.24	Hexagon socket head cap screw
	920.95	Nut
	930.95	Safety device
	940.01	Key
102 - volute casing	102	Volute casing
	502.01	Casing wear ring
	902.01 ¹⁶⁾	Stud
	903.01	Screw plug
	903.03	Screw plug
	920.01 ¹⁶⁾	Nut
161 - casing cover	161	Casing cover
	502.02	Casing wear ring
515 - locking ring	515	Locking ring
	914.24	Hexagon socket head cap screw
381 - bearing cartridge	381.01	Bearing cartridge
	412.24	O-ring
	504 ¹⁷⁾	Spacer ring
	529.16	Bearing sleeve
	550.80 ¹⁸⁾	Disc
	561.29	Grooved pin
	932.41 ¹⁸⁾	Circlip
	932.42 ¹⁹⁾	Circlip
341 - drive lantern	68-3.02	Cover plate
	341	Drive lantern
	902.11	Stud
	920.11	Nut

Scope of supply

Depending on the model, the following items are included in the scope of supply:

- Pump
- Drive
- Cover plate
- Discharge pipe

¹⁶⁾ For bolted casing cover only

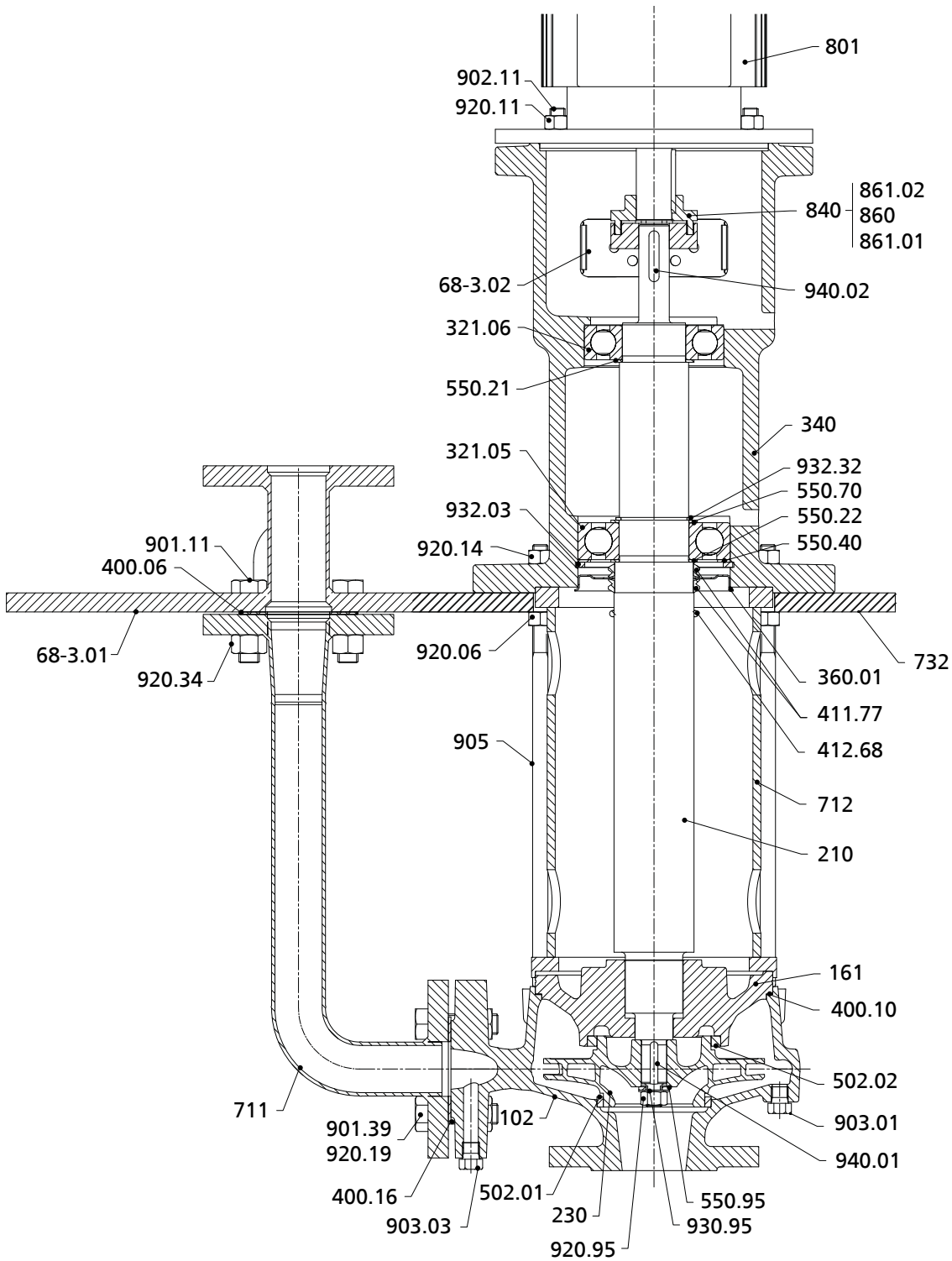
¹⁷⁾ Only for Etanorm V, in stainless steel, design W, shaft unit 55

¹⁸⁾ Only for Etanorm V, in cast iron, design W, shaft unit 55

¹⁹⁾ Only for Etanorm V, in cast iron, design W, shaft units 25, 35 and 55

General assembly drawings

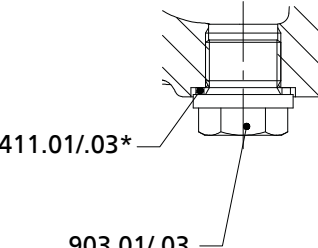
Etanorm V, design D



General assembly drawing Etanorm V, design D

Detail drawing Etanorm V, design D

<p>230</p>	<p>930.95 920.95</p>
<p>Impeller, unbalanced 50-32-125.1 50-32-160.1 50-32-125 65-40-125</p>	<p>Impeller fastening Material variants GG / CC; shaft units WS 35 / 55</p>
	<p>902.01 920.01 161 102</p>
<p>Drawing without casing wear ring Material variant CC</p>	<p>Bolted casing cover Material variants GG / CC; shaft units WS 25 / 35 / 55</p>
<p>500 360.01** 412.01 421 901.36 411.77</p>	<p>902.11 920.11 801 146 914.83 340</p>
<p>Ball bearing Material variants GG / CC; ** Only for shaft unit WS 55</p>	<p>Intermediate lantern, for the following shaft units: WS_25: motor 132 / 160 / 180 WS_35: motor 132 / 160 / 180 / 200 / 225 WS_55: motor 225 (4 poles) / 250 (4 poles) / 280 (4 poles)</p>

 <p>411.01/.03*</p> <p>903.01/.03</p>	
<p>Drain plug * For material variant CC only</p>	

List of components

Part No.	Description	Part No.	Description
68-3.01/.02	Cover plate	711	Discharge pipe
102	Volute casing	712	Support column
146	Intermediate lantern	732 ²⁰⁾	Holder
161	Casing cover	801	Flanged motor
210	Shaft	840	Coupling
230	Impeller	860	Coupling part
321.05/.06	Radial ball bearing	861.01/.02	Coupling half
340	Bearing lantern	901.11/.36 ²¹⁾ /.39	Hexagon head bolt
360.01	Bearing cover	902.01/.11	Stud
400.06/.10/.16	Gasket	903.01/.03	Screw plug
411.01/.03/.77	Joint ring	905	Tie bolt
412.01 ²¹⁾ /.68	O-ring	914.83	Hexagon socket head cap screw
421 ²¹⁾	Lip seal	920.01/.06/.11/.14/.19/.34/.95	Nut
500 ²¹⁾	Ring	930.95	Safety device
502.01/.02	Casing wear ring	932.03/.32	Circlip
550.21/.22/.40/.70/.95 ²²⁾	Disc	940.01 ²³⁾ /.02	Key

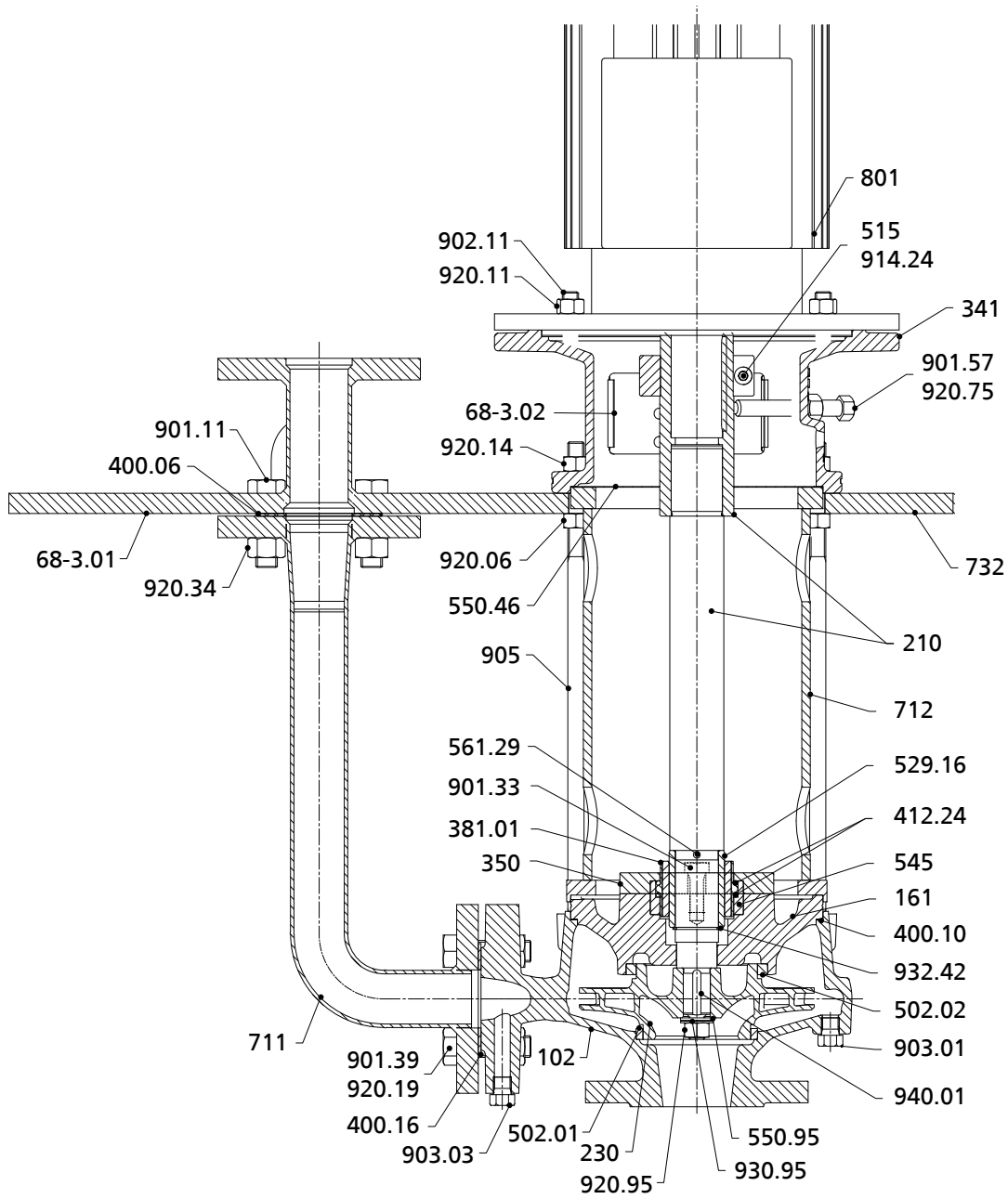
²⁰⁾ On pumps without cover plate only

²¹⁾ For WS_55 only

²²⁾ For WS_25 only

²³⁾ 2x for WS_55

Etanorm V, design W



General assembly drawing Etanorm V, design W

Detail drawings Etanorm V, design W

<p>230</p>	<p>930.95 920.95</p>
<p>Impeller, unbalanced 50-32-125.1 50-32-160.1 50-32-125 65-40-125</p>	<p>Impeller fastening Material variants GG / CC; shaft units WS 35 / 55</p>
<p>161 525 230</p>	<p>529.16 525 230</p>
<p>Spacer sleeve Material variant GG; shaft units WS 35 / 55</p>	<p>Spacer sleeve and bearing sleeve Material variant CC; shaft units WS 25 / 35 / 55</p>
<p>801 515 914.24 211</p>	<p>902.01 920.01 161 102</p>
<p>Motor connection Material variants GG / CC; shaft units WS 25 / 35; motors 100 / 112</p>	<p>Bolted casing cover Material variants GG / CC; shaft units WS 25 / 35 / 55</p>

<p>Fig.1_ WS55 Material variant GG; * For shaft unit WS 55 only</p>	<p>Fig.2_ WS55 Material variant CC; shaft unit WS 55</p>
<p>Drain plug * For material variant CC only</p>	<p>Drawing without casing wear ring Material variant CC</p>

List of components

Part No.	Description	Part No.	Description
68-3.01/02	Cover plate	545	Bearing bush
102	Volute casing	550.46/80 ²⁴⁾ /95 ²⁵⁾	Disc
161	Casing cover	561.29	Grooved pin
210	Shaft	711	Discharge pipe
211	Pump shaft	712	Support column
230	Impeller	732 ²⁶⁾	Holder
341	Drive lantern	801	Flanged motor
350	Bearing housing	901.11/33/39/57 ²⁷⁾	Hexagon head bolt
381.01	Bearing cartridge	902.01/11	Stud
400.06/10/16	Gasket	903.01/03	Screw plug
411.01/03	Joint ring	905	Tie bolt
412.24	O-ring	914.24	Hexagon socket head cap screw
502.01/02	Casing wear ring	920.01/06/11/14/19/34/75 ²⁷⁾ /95	Nut
504 ²⁴⁾	Spacer ring	930.95	Safety device
515	Locking ring	932.41 ²⁴⁾ /42	Circlip

24) For WS_55 only

25) For WS_25 only

26) On pumps without cover plate only

27) Assembly aid or transport lock

Part No.	Description	Part No.	Description
525	Spacer sleeve	940.01 ²⁸⁾	Key
529.16	Bearing sleeve		

²⁸⁾ 2x for WS_55

Detailed designation

Designation example

Position																																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
E	T	N	V	0	5	0	-	0	3	2	-	1	2	5	1	G	G		W	D	B	1	5	0	2	0	0	7	5	2	B	P	D	2	E
See name plate and data sheet																								See data sheet											

Designation key

Position	Code	Description
1-4	Pump type	
	ETNV	Etanorm V
5-16	Size	
	0 5 0	Nominal suction nozzle diameter [mm]
	0 3 2	Nominal discharge nozzle diameter [mm]
	1 2 5 1	Nominal impeller diameter [mm]
17	Pump casing material	
	G	EN-GJL 250 / A48 CL35B
	C	1.4408 / A743 CF8M
18	Impeller material	
	G	EN-GJL 250 / A48 CL35B
	C	1.4408 / A743 CF8M
	B	CC480K-GS / B30 C90700
19	Special design	
	_)29)	Standard
	X	Non-standard BT3D, BT3
20	Version	
	D	Dry
	W	Wet
21	Scope of supply	
	A	Pump only (Fig. 0)
	C	Pump, coupling
	D	Pump set
22	Cover plate	
	B	With cover plate
	H	With holder
23-25	Immersion depth	
	0 3 7	375 mm
	0 3 9	398 mm
	0 4 2	425 mm
	0 4 4	448 mm
	0 5 0	504 mm
	0 5 2	529 mm
	0 5 3	535 mm
	0 7 5	750 mm
	1 0 0	1000 mm
	1 2 5	1250 mm
1 5 0	1500 mm	
1 7 0	1750 mm	
2 0 0	2000 mm	
26	Shaft unit	
	2	Shaft unit 25
	3	Shaft unit 35
	5	Shaft unit 55
27-30	Motor rating	
	1 3 2 0	132 kW
	0 0 7 5	7.5 kW
	0 0 0 7	0.75 kW
	_)2)	Without motor
31	Number of poles	
	2	2 poles

29) Blank

Position	Code	Description
	4	4 poles
	6	6 poles
	8	8 poles
	..2)	Without motor
32	Product generation	
	B	Product generation Etanorm V / 04/2015
33-36	PumpDrive	
	P D B	PumpDrive 1st generation, Basic
	P D A	PumpDrive 1st generation, Advanced
	P D 2	PumpDrive 2nd generation
	P D 2 E	PumpDrive 2nd generation, Eco
	..2)	Without PumpDrive



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