



ZEND Series

End Suction Pumps

For hot water up to 230°C

TECHNICAL DATA

Output:	max. 600 m ³ /h
Delivery head:	max. 90 m
Speed:	max. 3600 rpm
Temperature:	max. 230 °C
Casing pressure:	PN 40
Shaft sealing:	balanced standard mechanical seal uncooled
Flange connections:	material design 1B DIN EN 1092-2 PN 40 2B DIN EN 1092-1 PN 40
Direction of rotation:	clockwise, when looking at the pump from the drive end



APPLICATION

The volute pumps of the series ZEND are part of the overall programme heat transfer and circulation pumps. They are primarily used for circulation of **hot water** in closed pipe and vessel systems.

Therefore their fields of application are

- the energy production
- heat transport and
- the industry

and here mainly in systems where hot water as heat carrier is given preference, despite its high system pressure, over oil as heat carrier.

DESIGN

Horizontal, single-stage* volute pumps with dimensions and nominal ratings to **DIN EN 22858** in back pull out design, with uncooled balanced mechanical seal.

The series **ZEND** has especially been designed for the trouble free handling of hot water up to 230°C and is distinguished by:

- A *double heat barrier* that causes an optimal energy consumption by the pump and reduces the temperature level in the mechanical seal chamber to less than 100 °C without external cooling circuit (see temperature curve on page 3). The service life of the mechanical seal increases considerably.
- A special design that automatically leads accumulation of gas to exhaust. Consequently the dry operation of the mechanical seal can be excluded.
- A programme that comprehends 29 construction sizes and thus guarantees an optimal solution for every operating point.
- The back pull out design, which permits the removal of the complete, bearing unit towards the drive end without removing the pump casing from the pipe work. If a spacer coupling is installed it is also unnecessary to disconnect the motor.

* Except for sizes 031125 to 031250

CONSTRUCTION

Casing pressure

max. 40 bar from	0 °C to 120 °C
max. 35 bar from	120 °C to 200 °C
max. 32 bar from	200 °C to 230 °C

Intermediate values can be obtained by interpolation.

Please note:

Technical rules and safety regulations.
Max. casing pressure = inlet pressure + zero head
max. test pressure = 52 bar

Flanges location:

Axial suction flange, discharge flange radially upwards.

Flanges:

The flanges comply with DIN EN 1092 part 1 and part 2 resp. PN 40.
Flange design to ANSI 300 is possible.

Hydraulic:

Designation of this construction type: A.

Bearing:

One grease-lubricated, reinforced antifriction bearing to DIN 625 and one internal liquid flushed sleeve bearing.
Designation of this construction type: S

Direction of rotation:

Clockwise, when looking at the pump from the drive end.

Shaft sealing:

Code BG3: balanced standard mechanical seal
seal face materials SIC/carbon
elastomer EPDM

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Material design:

Item	Components	Material						Execution	
		EN material-number	EN material-denomination	DIN material-number	DIN material-denomination	US denomination		1B	2B
						ASTM Standard	AISI		
10.20	volute casing *	EN-JS 1025	EN-GJS-400-18-LT	0.7043	GGG-40.3	A 395		X	
15.20	intermediate flange								
16.10	casing cover	1.0619	GP 240 GH	1.0619	GS-C 25	A 216 Gr WCB			X
33.00	bearing bracket								
10.91	intermediate piece **	1.4571	X6 Cr Ni Mo Ti 17 12 2	1.4571	X6 Cr Ni Mo Ti 17 12 2	A 276 Gr316Ti	316 Ti	X	
17.11									
23.00	impeller**								
52.30	shaft sleeve	1.4571	X6 Cr Ni Mo Ti 17 12 2	1.4571	X6 Cr Ni Mo Ti 17 12 2	A 276 Gr316Ti	316 Ti	X	X
21.00	shaft	1.4021	X 20 Cr 13	1.4021	X 20 Cr 13	A 276 Type 420	420	X	X
23.00	impeller casing for mechanical seal	EN-JL 1040	EN-GJL 250	0.6025	GG-25	A 278 Class 30		X	X
44.10									
43.30	mechanical seal	SIC / carbon						X	X
52.90	sleeve bearing	SIC / SIC						X	X
54.00									

* for sizes 065315, 080315, 100315 material volute casing GP 240 GH.

** only for sizes 031125... 031250

Casing gasket:

The casing is sealed by a flat gasket of graphite. Designation of this construction type: 2

Motor power:

Using commercial electric motors, type of construction IM B3.

To determine the drive power we recommend the following safety margin:

Up to 4 kW: 25%

4 up to 7,5 kW: 20%

above 7,5 kW: 15%

The following speeds are to be observed:

max. speed rpm	size	max. speed rpm	size	max. speed rpm	size		
3600	031125	3000	031250	1800	125250		
	040200		100250		040315		
	031160		050160		032250	125200	040315
	100160		040250		050315		
	031200		050200		065250	065315	
	032160		065160		080250	080315	
3000	032200	1800	065250	1800	080315		
	065200		080250		100315		
	040160		080250				
	080160						

The max. speeds result from the permissible peripheral speed of the impeller or from the shaft load admissible at higher temperatures, respectively.

Bearing bracket / pump size:

Bracket 25	031125 031160 031200 031250 032160 032200 040160 040200 050160 050200
Bracket 35	032250 040250 050250 065160 065200 065250 080160 080200 080250 100160 100200 040315 050315
Bracket 45	100250 125200 125250 065315 080315 100315

General remarks:

For equipping hot media systems a complete programme is available for a flow range between 1-600 m³/h consisting of the range:

- ZDN** volute pumps to DIN EN 22858, t_{max} 207 °C PN 25. Hot water design
- ZHN** volute pumps to EN 733, t_{max} 180 °C PN 16. Hot water design.
- ZLI** volute pumps to EN 733 as INLINE construction, t_{max} 150 °C PN 25. Hot water design.
- ZTN** volute pumps to EN 733, t_{max} 350 °C PN 16. Heat transfer oil design.
- ZTK** volute pumps to EN 733 close coupled design, t_{max} 350 °C PN 16. Heat transfer oil.
- ZTI** volute pumps to EN 733 as INLINE construction, t_{max} 350 °C PN 16. Heat transfer oil.

Technical documentation on these programmes will readily be supplied on request.



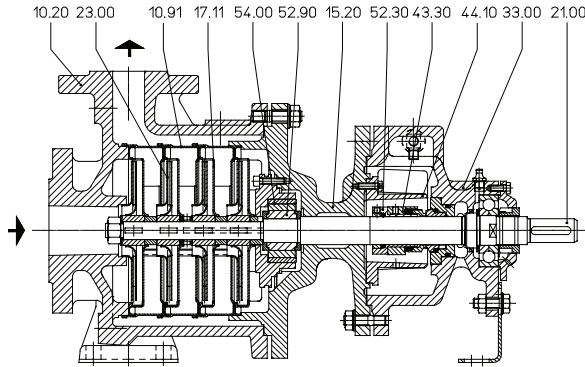
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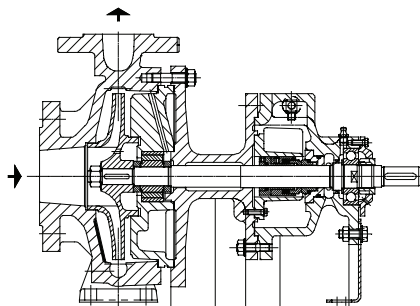
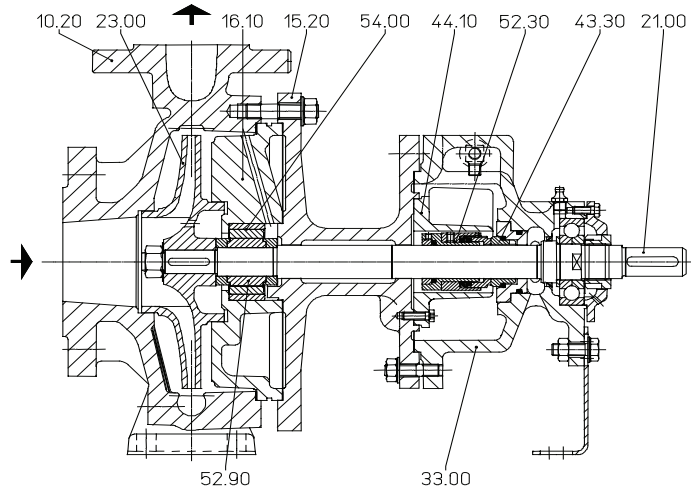
Sectional drawing and nomenclature

ZEND 031125... 031250 AS BG3...



- 10.20 volute casing
- 10.91, 17.11 intermediate piece
- 15.20 intermediate flange
- 16.10 casing cover
- 21.00 shaft
- 23.00 impeller
- 33.00 bearing bracket
- 43.30 mechanical seal
- 44.10 casing for mechanical seal
- 52.30 shaft sleeve
- 52.90, 54.00 sleeve bearing

ZEND 032160... 125250 AS BG3...

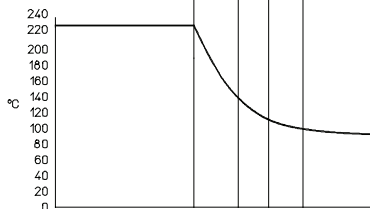


Heat barrier / shaft seal / bearing / feet arrangement

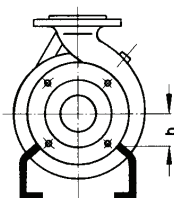
Heat transfer installations have achieved a high level of technical development. Consequently the requirements on the pumps handling heat carriers have increased regarding operating safety, environmental protection, maintenance and operating costs. On the basis of many years' experience and latest technical know-how the ZEND fully complies with these requirements. Special attention was paid to the above technical details.

A favourable reduction in temperature is obtained towards the drive side by fitting a double acting heat barrier between the casing cover and the shaft seal housing. See illustration.

Product-side heat losses are effectively prevented (energy saving). The temperature reduction makes it possible to use safely an **uncooled** mechanical seal up to a pumping medium temperature of **230 °C**.



Curve of temperature decrease



By special constructional shaping of the pump feed, displacements caused by thermal expansion are prevented to a great extent. For the vertical displacement only the measure h is decisive, since the rest of the foot remains cold. The horizontal expansion is taken up by the elastic foot bracings.

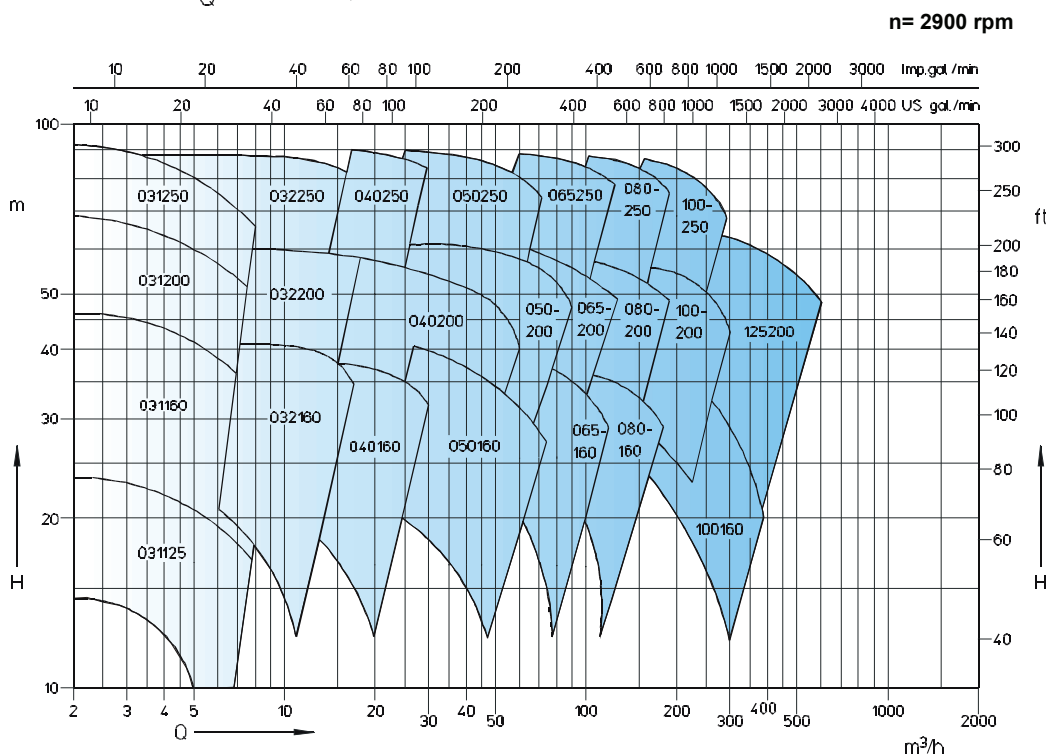
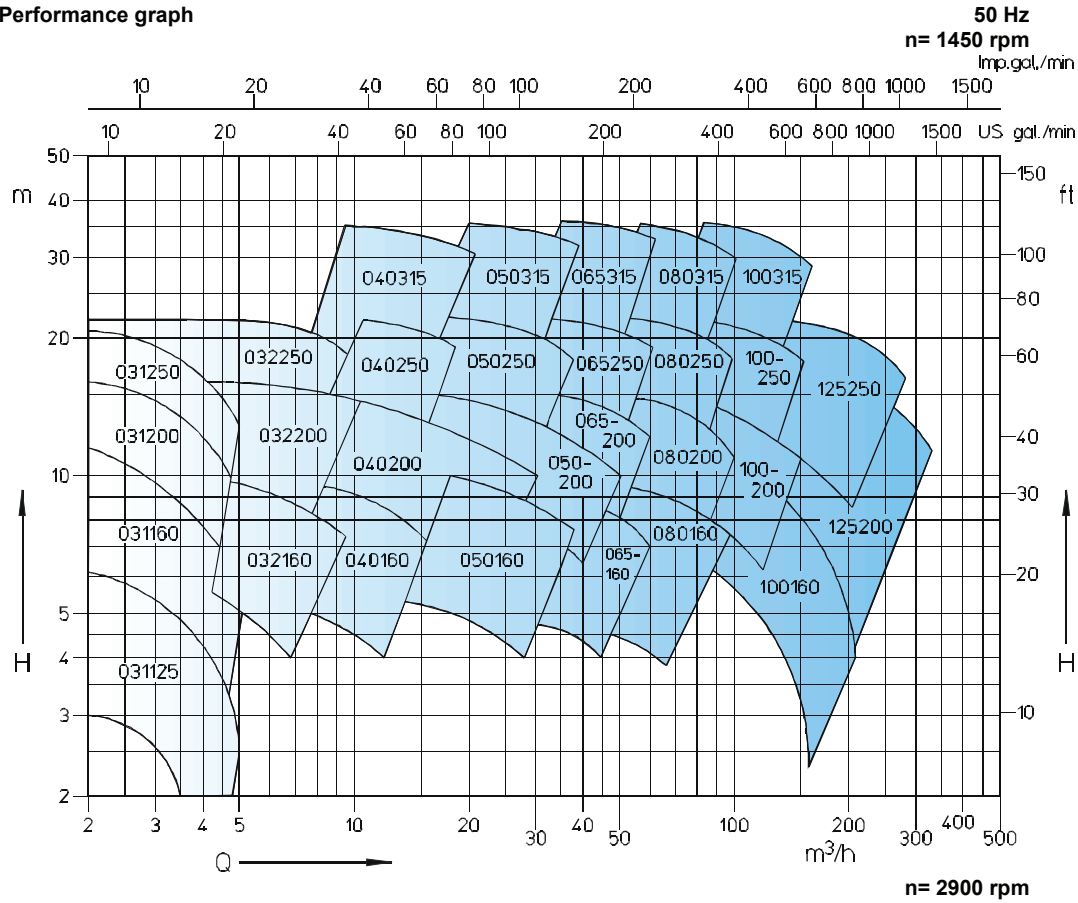
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Performance graph



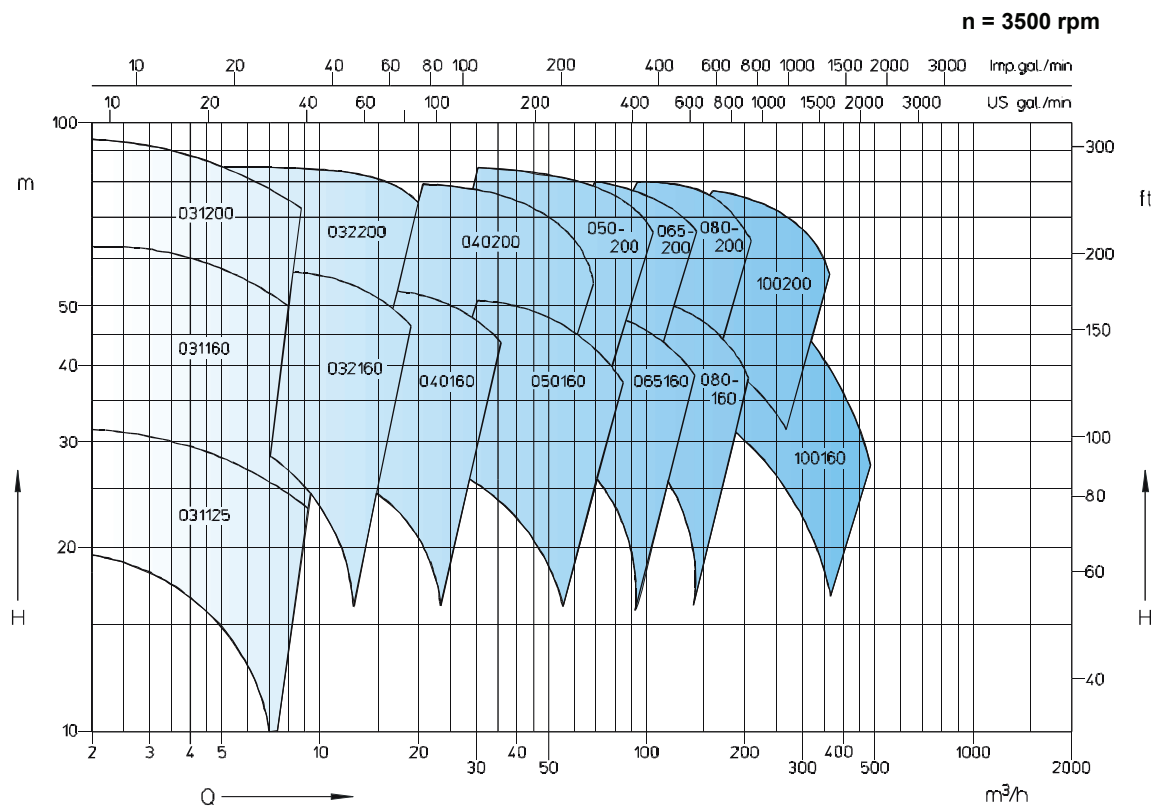
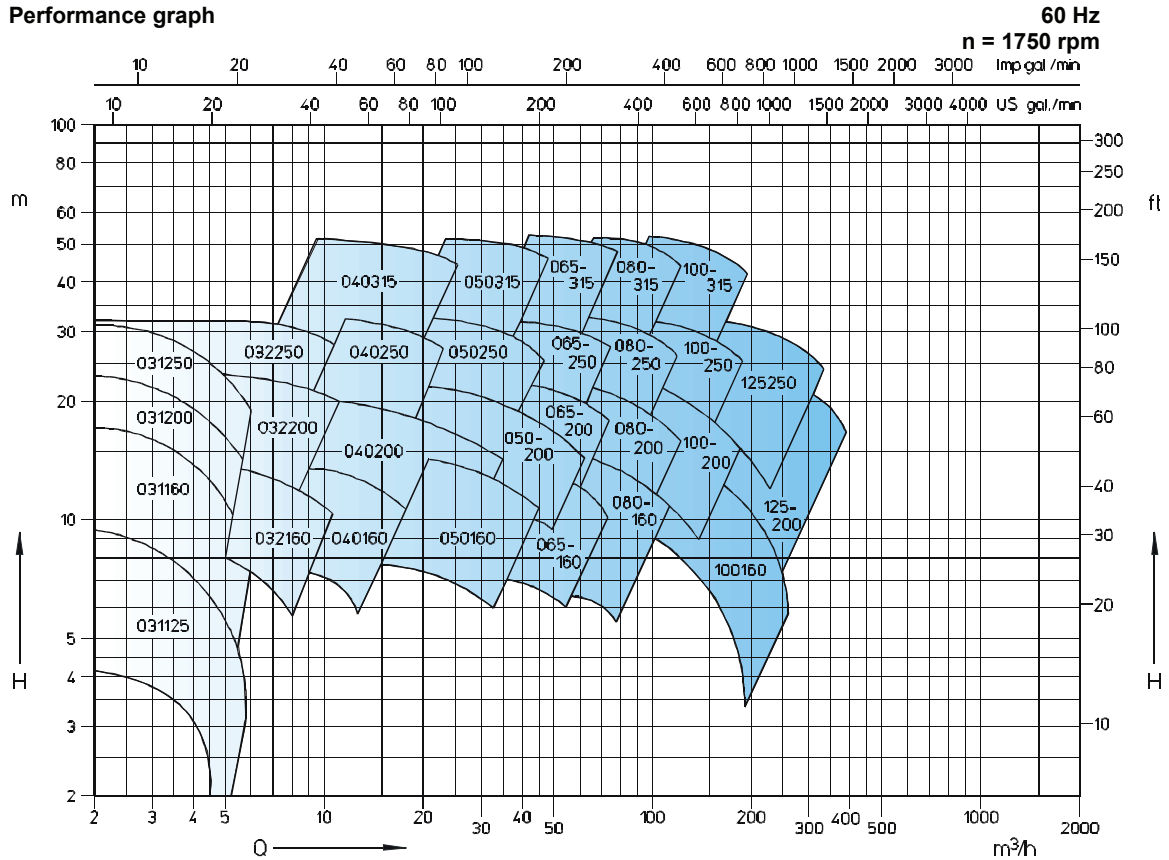
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Performance graph



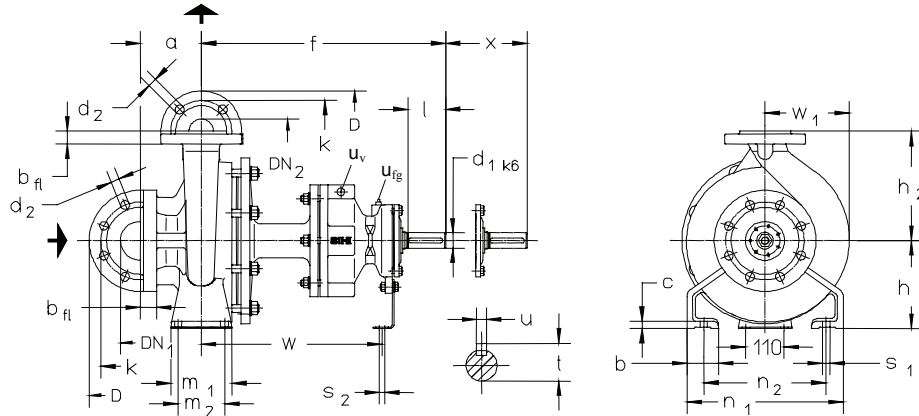


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Dimension table



u_v = vent connection (G1/8)
All dimensions in mm.

u_{ig} = grease filling connection (G1/8)

size	DN ₂	DN ₁	a	b	c	f	h ₁	h ₂	m ₁	m ₂	n ₁	n ₂	s ₁ *	s ₂ *	w	w ₁	x	d ₁	l	t	u																			
031125 ¹⁾	32	50	80	50	17	450	132	160	100	70	240	190	M12		350	128	140	24	50	27	8																			
031160 ¹⁾																																								
031200 ¹⁾																																								
031250 ¹⁾																																								
032160																																								
032200																																								
032250			100	65		500	180	225	125	95	320	250																												
040160	40	65	80	50		385	132	160	100	70	240	190	M12		285	125	100	24	50	27	8																			
040200																																								
040250																																								
040315					100	65		500														180	225	125	95	320	250													
050160	50	80	100	50	17	385	160	180	100	70	265	212	M12		285	135	100	24	50	27	8																			
050200																																								
050250																																								
050315					125	65	20	500														180	225	125	95	345	280													
065160	65	100	100	80	20	500	160	200	160	120	280	250	M16		285	155	100	32	80	35	10																			
065200																																								
065250																																								
065315																																								
080160							80	125														125	65	17	500	180	225	125	95	320	250	M12		370	170	140	32	80	35	10
080200																																								
080250																																								
080315																																								
100160 ¹⁾	100	125	140	80	20	500	200	280	160	120	360	280	M16		210	100	140	32	80	35	10																			
100200																																								
100250																																								
100315																																								
125200 ¹⁾	125	150	140	80	20	530	250	315	160	120	400	315	M16		255	100	140	42	110	45	12																			
125250																																								

¹⁾Transnorm pump sizes, not included in DIN EN 22858.

*Slots suitable for bolts with dimensions indicated. Bolts are not included in the bare shaft pump standard scope of supply.

Flange connection according to DIN EN 1092-2 PN 40 execution material 1B										Flange connection acc. to DIN EN 1092-1 PN 40 execution material 2B									
DN ₂ /DN ₁	32	40	50	65	80	100	125	150		32	40	50	65	80	100	125	150		
D	140	150	165	185	200	235	270	300		140	150	165	185	200	235	270	300		
k	100	110	125	145	160	190	220	250		100	110	125	145	160	190	220	250		
b _{fl}	18	19	19	19	19	19	23,5	26		18	18	20	22	24	24	26	28		
Tolerances					+4,0									+4,5					
					-3,0									-1,5					
d ₂ x number	19x4	19x4	19x4	19x8	19x8	23x8	28x8	28x8		18x4	18x4	18x4	18x8	18x8	22x8	26x8	26x8		

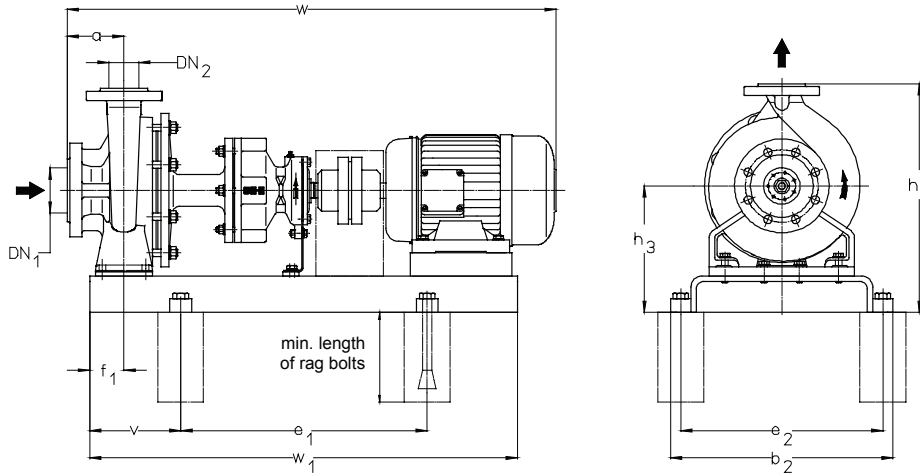
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Foundation plan



Dimensions in mm

ZEND Size	Motor		Size	Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	Rag bolt size			
	1450 rpm kW	2900 rpm				Pump	Unit																
031125	0.25	-	71a	S272	B68	57	93														766		
	-	2.20	90L																		101	854	
031160	0.37	-	71b	S272	B80	57	94				360	540	320	140							766		
	-	3.00	100L																		107	898	
031200	0.55	-	80a	S272	B80	57	95														802		
	-	4.00	112M																		112	915	
031250	0.75	-	80b	S303	B95	57	97														802		
	-	5.50	132S																		143	977	
032160	0.37	-	71b	S272	B68	55	87			80												766	
	-	1.10	80b																			94	737
	-	1.50	90S																			97	737
	-	2.20	90L																			100	764
	-	3.00	100L																			106	764
	-	4.00	112M																			110	833
	-	-	-																			-	850
	-	-	-																			-	820
032200	0.55	-	80a	S272	B80	57	95															737	
	-	0.75	80b																			97	737
	-	1.10	90S																			99	764
	-	3.00	100L																			108	833
	-	4.00	112M																			112	850
	-	5.50	132S																			143	912
	-	-	-																			-	920
	-	-	-																			-	820
032250	0.75	-	80b	S383	B80	96	149			100												872	
	-	1.10	90S																			151	893
	-	1.50	90L																			153	924
	-	2.20	100L																			159	968
	-	-	-																			-	1047
	-	7.50	132S																			217	1188
	-	11.00	160M																			261	1188
	-	15.00	160M																			275	1188
040160	0.37	-	71b	S272	B68	55	85			80												700	
	-	0.55	80a																			94	737
	-	0.75	80b																			96	737
	-	1.10	90S																			99	764
	-	2.20	90L																			102	789
	-	3.00	100L																			107	833
	-	4.00	112M																			125	850
	-	5.50	132S																			143	912
040200	0.75	-	80b	S303	B95	63	102															757	
	-	1.10	90S																			105	784
	-	1.50	90L																			108	809
	-	2.20	100L																			120	870
	-	4.00	112M																			138	877
	-	5.50	132S																			151	932
	-	7.50	132S																			130	932
	-	11.00	160M																			213	1073
040250	1.10	-	90S	S383	B80	98	156															900	
	-	1.50	90L																			159	924
	-	2.20	100L																			162	968
	-	3.00	100L																			165	968
	-	5.50	132S																			215	1047
	-	7.50	132S																			218	1047
	-	11.00	160M																			267	1188
	-	15.00	160M																			269	1188
-	18.50	160L	293	1232																			

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ZEND Size	Motor			Base plate No.	Cplg.	Weight (kg) Pump	DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	Rag bolt size												
	rpm 1450	rpm 2900	Size																												
040315	2.20	-	100L	S383	B80	136	40	65	125	490	600	440	160	75	280	530	993	920	M20x400												
	3.00	-	100L														1010														
	4.00	-	112M														1072			1140											
	5.50	-	132S														1072			1140											
050160	0.55	-	80a	S301	B68	61	50	80	100	390	480	350	125	60	225	405	757	730	M16x200												
	0.75	-	80b														100														
	1.10	-	90S														103														
	1.50	2.20	90L														105														
	-	3.00	100L	118																											
	-	4.00	112M	136																											
	-	5.50	132S	149																											
	-	7.50	132S	152																											
	-	11.00	160M	211																											
	-	-	-	104	S303												B80	65		50	80	100	390	600	160	60	225	425	1073	920	M16x200
	0.75	-	80b	107																											
	1.10	-	90S	110																											
1.50	-	90L	122																												
2.20	-	100L	140																												
4.00	-	112M	157																												
5.50	-	132S	160																												
7.50	-	132S	215																												
11.00	-	160M	217																												
15.00	-	160M	232																												
18.50	-	160L	232																												
-	-	-	162	S344	B95	101	50	80	125	450	660	400	60	240	420	1073	1020		M20x400												
0.75	-	80b	164																												
1.10	-	90S	168																												
1.50	-	90L	184																												
2.20	-	100L	221																												
4.00	-	112M	264																												
-	7.50	132S	272																												
-	11.00	160M	297																												
-	15.00	160M	324																												
-	18.50	160L	433																												
-	-	-	162	S383	B80					140	50	80				125	490	600		160	60	260	485	949	920	M20x400					
2.20	-	100L	164																												
3.00	-	100L	168																												
4.00	-	112M	184																												
-	7.50	132S	221																												
-	11.00	160M	264																												
-	15.00	160M	272																												
-	18.50	160L	297																												
-	22.00	180M	324																												
-	30.00	200L	433																												
-	-	-	162	S385	B95	140	50	80	125				490	740	200		60	325	605	993				1250	M24x400						
2.20	-	100L	164																												
3.00	-	100L	168																												
4.00	-	112M	184																												
-	7.50	132S	221																												
-	11.00	160M	264																												
-	15.00	160M	272																												
-	18.50	160L	297																												
-	22.00	180M	324																												
-	30.00	200L	433																												
-	-	-	162	S436	B125					140	50	80	125	540	840	490				60	325	605	1280	1270		M24x400					
2.20	-	100L	164																												
3.00	-	100L	168																												
4.00	-	112M	184																												
-	7.50	132S	221																												
-	11.00	160M	264																												
-	15.00	160M	272																												
-	18.50	160L	297																												
-	22.00	180M	324																												
-	30.00	200L	433																												
-	-	-	162	S486	B80	140	50	80	125					610	840	550	60	325	605				1010	1250	M24x400						
4.00	-	112M	254																												
5.50	-	132S	283																												
7.50	-	132M	295																												
-	-	-	134	S342	B80					86	50	80	100	450	660	400				75	240	440	872	820		M20x400					
0.75	-	80b	146																												
1.10	-	90S	149																												
1.50	-	90L	152																												
2.20	-	100L	159																												
-	4.00	112M	184																												
-	5.50	132S	187																												
-	7.50	132S	255																												
-	11.00	160M	257																												
-	15.00	160M	257																												
-	-	-	154	S344	B80	94	50	80	100					450	660	400	75	260	485				900	1020	M20x400						
1.10	-	90S	157																												
1.50	-	90L	160																												
2.20	-	100L	163																												
3.00	-	100L	179																												
4.00	-	112M	214																												
-	7.50	132S	263																												
-	11.00	160M	265																												
-	15.00	160M	289																												
-	18.50	160L	317																												
-	22.00	180M	426																												
-	30.00	200L	426																												
-	-	-	190	S434	B80	113	50	80	125	540	660	170	90	280	530	993	1000	M24x400													
2.20	-	100L	193																												
3.00	-	100L	208																												
4.00	-	112M	228																												
5.50	-	132S	298																												
-	15.00	160M	313																												
-	18.50	160L	341																												
-	22.00	180M	445																												
-	30.00	200L	461																												
-	37.00	200L	504																												
-	45.00	225M	504																												
-	-	-	280	S436	B125					146	50	80				125	610		840	550	60	325	605	1102	1270	M24x400					
5.50	-	132S	292																												
7.50	-	132M	325																												
11.00	-	160M	341																												
15.00	-	160L	341																												
-	-	-	150	S383	B80	95	50	80	125				490	600	160		75	260	485	897				920	M20x400						
0.75	-	80b	153																												
1.10	-	90S	156																												
1.50	-	90L	159																												
2.20	-	100L	162																												
3.00	-	100L	215																												
-	7.50	132S	264																												
-	11.00	160M	266																												
-	15.00	160M	290																												
-	18.50	160L	318																												
-	22.00	180M	318																												
-	-	-	162	S383	B80					102	50	80	125	600	600	160				75	510	510	949	920		M20x400					
1.50	-	90L	166																												
2.20	-	100L	169																												
3.00	-	100L	169																												

ZEND Series

End Suction Pumps

For hot water up to 230°C



ZEND Size	Motor		Base plate No.	Cplg.	Weight (kg) Pump Unit	DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	Rag bolt size						
	rpm	kW																	Size					
080200	4,00	-	112M	S383	B80	102	185	80	125	490	600	160	75	260	510	1010	920	M20x400						
	5,50	-	132S	S385	B95														226	440	200	1140	1072	
	-	11,00	160M																266				1213	
	-	15,00	160M																273					1213
	-	18,50	160L	B110	297														1257					
	-	22,00	180M		325															1280				
	-	30,00	200L	S436	B125														434		215	1270	1368	
-	37,00	200L	450			280	530	1368																
080250	3,00	-	100L	S486	B80	125	234	80	125	610	840	205	325	605	993	1010	1250	M24x400						
	4,00	-	112M																B95	251	550	240	1420	1072
	5,50	-	132S																	270				1493
	7,50	-	132M	B110	283														940	240	1420	1110		
	-	18,50	160L		347																	1420	1493	
	-	22,00	180M	B125	370														240	1420	1225			
	-	30,00	200L		466																1420	1493		
	-	37,00	200L	482	1420														1493					
	-	45,00	225M	S487																B140	542	240	1420	1425
	-	55,00	250M		642														1493					
080315	5,50	-	132S	S486	B95	150	293	100	125	840	205	350	665	1102	1250	1140	1250	M20x400						
	7,50	-	132M																305					
	11,00	-	160M																338					
	15,00	-	160L																354					
100160	2,20	-	100L	S434	B80	126	203	125	140	540	660	170	280	560	1008	1000	1140	M20x400						
	3,00	-	100L																B95	206	490	200	1140	1008
	4,00	-	112M																	222				740
	5,50	-	132S	S435	B110														241	740	215	1270	1087	
	-	18,50	160L																326				840	215
	-	22,00	180M	354	940														240	1425	1295			
	-	30,00	200L	S436																	B125	458	240	1420
-	37,00	200L	474		350	630	1538																	
100200	2,20	-	100L	S434	B80	118	195	100	125	540	660	170	280	560	993	1000	1140	M20x400						
	3,00	-	100L																B95	198	490	200	1140	993
	4,00	-	112M																	213				740
	5,50	-	132S	S435	B110														233	740	215	1270	1072	
	7,50	-	132M																246				940	240
	-	18,50	160L	318	940														240	1420	1257			
	-	22,00	180M	346																	940	240	1420	1280
	-	30,00	200L	450	940														240	1420				1368
	-	37,00	200L	466																	350	630	1538	
100250	4,00	-	112M	S486	B95	132	259	100	140	610	840	205	325	605	1055	1250	1250	M24X400						
	5,50	-	132S																B125	277	550	205	1250	1117
	7,50	-	132M																	290				665
	11,00	-	160M	B140	328														940	240	1420	1258		
	-	30,00	200L		473																	940	240	1420
	-	37,00	200L	499	940														240	1420	1413			
	-	45,00	225M	543																	940	240	1420	1470
	-	55,00	250M	658	350														630	1538				
	-	75,00	280S	858	380														660	1660				
100315	11,00	-	160M	S486	B95	153	311	100	140	610	840	205	350	665	1155	1250	1250	M24X400						
	15,00	-	160L																B110	368	550	205	1250	1302
	18,50	-	180M																	397				665
	22,00	-	180L																B125	414	940	240	1420	
125200	7,50	-	132M	S487	B95	142	300	100	125	150	940	240	350	665	1155	1420	1420	M24X400						
	11,00	-	160M																B110	338	550	205	1250	1258
	15,00	-	160L																	361				665
	-	45,00	225M																B125	575	940	240	1420	
	-	55,00	250M																B140	668				940
-	75,00	280S	B160	868	350	660	1660																	
125250	7,50	-	132M	S486	B95	147	305	100	125	150	840	205	350	705	1155	1250	1250	M24X400						
	11,00	-	160M																B110	343	550	205	1250	1302
	15,00	-	160L																	366				665
	18,50	-	180M																391	940	240	1420	1470	

* Motor protection type IP 55, dimensions depend on the motor manufacturer.

Some sizes are not corresponding to the drawing in small details.

Foundation plan for 60Hz on request.

** Weight higher by 20 % in case of cast steel

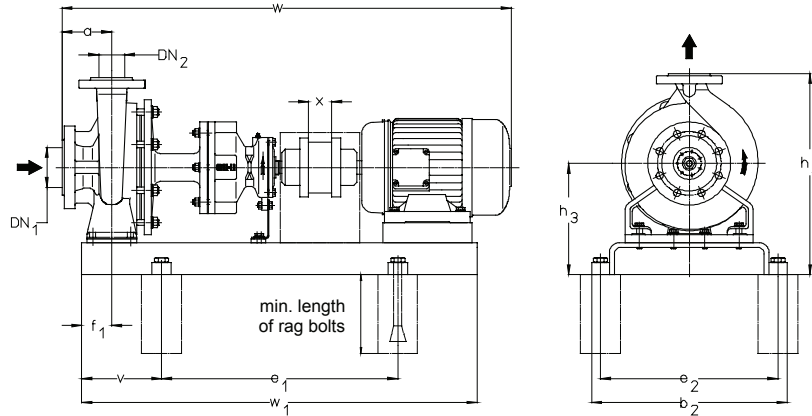
ZEND Series

End Suction Pumps

For hot water up to 230°C



Foundation plan for units with spacer coupling



Dimensions in mm.

ZEND Size	Motor		Size	Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	Rag bolt size		
	1450 rpm	2900 rpm				pump	unit																
031125	0,25	-	71a	S303	H80	57	101	32	50	80	390	600	350	160	60	197	357	140	906	920	M16X200		
	-	2,20	90L	S344																		120	450
031160	0,37	-	71b	S303	H80	57	102	32	50	80	390	600	350	160	60	197	357	140	906	920	M16X200		
	-	3,00	100L	S344																		127	450
031200	0,55	-	80a	S303	H80	57	103	32	50	80	390	600	350	160	60	197	357	140	906	920	M16X200		
	-	4,00	112M	S344																		130	450
031250	0,75	-	80b	S303	H80	57	105	32	50	80	390	600	350	160	60	197	357	140	906	920	M16X200		
	-	5,50	132S	S344																		155	450
032160	0,37	-	71b	S272	H80	55	95	32	50	80	360	540	320	140	60	197	357	140	801	820	M16x200		
	0,55	-	80a																			96	837
	-	1,10	80b																			97	837
	-	1,50	90S																			100	864
	-	2,20	90L																			103	864
	-	3,00	100L																			113	933
032200	0,55	-	80a	S272	H80	57	98	32	50	80	360	540	320	140	60	197	357	140	801	820	M16x200		
	0,75	-	80b																			100	837
	1,10	-	90S																			102	864
	-	3,00	100L																			115	933
	-	4,00	112M																			120	950
	-	5,50	132S																			146	1012
032250	0,75	-	80b	S383	H80	96	155	32	50	100	490	740	440	200	75	260	485	140	972	1140	M20X400		
	1,10	-	90S																			175	993
	1,50	-	90L																			177	1024
	2,20	-	100L																			181	1068
	-	7,50	132S																			220	1147
	-	11,00	160M																			277	1288
040160	0,37	-	71b	S272	H80	55	94	32	50	80	360	540	320	140	60	197	357	140	800	820	M16x200		
	0,55	-	80a																			97	837
	0,75	-	80b																			99	837
	1,10	1,50	90S																			102	864
	-	2,20	90L																			105	889
	-	3,00	100L																			114	933
040200	0,75	-	80b	S303	H80	63	111	32	50	80	390	600	350	160	60	225	405	140	857	920	M16x200		
	1,10	-	90S																			114	884
	1,50	-	90L																			117	909
	2,20	-	100L																			122	970
	-	4,00	112M																			142	977
	-	5,50	132S																			154	1032
040250	1,10	-	90S	S385	H80	98	178	32	50	100	490	740	440	200	75	260	485	140	1000	1140	M20x400		
	1,50	-	90L																			181	1024
	2,20	-	100L																			186	1068
	3,00	-	100L																			189	1068
	-	5,50	132S																			220	1147
	-	7,50	132S																			223	1147

ZEND Series

End Suction Pumps

For hot water up to 230°C



ZEND Size	Motor rpm		Size	Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	Rag bolt size
	1450	2900				KW	pump														
040315	2.20	-	100L	S385	H80	136	40	65	125	490	740	440	200	75	280	530			1106	1140	M20x400
	3.00	-	100L																225		
	4.00	-	112M		232																
	5.50	-	132S		260																
050160	0.55	-	80a	S303	H80	61	50	80	100	390	600	350	160		225	405			857	920	M16x200
	0.75	-	80b																109		
	1.10	-	90S																112		
	1.50	2.20	90L																116		
	-	3.00	100L																120		
	-	4.00	112M																139		
	-	5.50	132S		153																
	-	7.50	132S		155																
	-	11.00	160M		214																
					S344					H95		450	660	400	180	240	420	1173	1020	M20x400	
050200	0.75	-	80b	S303	H80	65	50	80	100	390	600	350	160		225	425			857	920	M16x200
	1.10	-	90S																113		
	1.50	-	90L																116		
	2.20	-	100L																124		
	-	4.00	112M																143		
	-	5.50	132S		156																
	-	7.50	132S		159																
	-	11.00	160M		218																
	-	15.00	160M		220																
	-	18.50	160L		235																
			S344	H95		450	660	400	180	240	440	1173	1020	M20x400							
050250	1.50	-	90L	S385	H80	101	50	80	125	490	740	440	200		260	485			1049	1140	M20x400
	2.20	-	100L																189		
	3.00	-	100L																192		
	4.00	-	112M																208		
	-	7.50	132S																245		
	-	11.00	160M		286																
	-	15.00	160M		288																
	-	18.50	160L		312																
	-	22.00	180M		341																
	-	30.00	200L		438																
			S436	H95		540	840	490	215	280	505	1468									
050315	4.00	-	112M	S486	H80	140	50	80	125	610		550	205		325	605			1125	1250	M24x400
	5.50	-	132S																286		
	7.50	-	132M		297																
065160	0.75	-	80b	S344	H80	86	65	100	100	450	660	400	180		240	440			857	1020	M20x400
	1.10	-	90S																147		
	1.50	-	90L																150		
	2.20	-	100L																155		
	-	4.00	112M																181		
	-	5.50	132S		206																
	-	7.50	132S		209																
	-	11.00	160M		271																
	-	15.00	160M		273																
					S385					H95		490	740	440	200			1147	1140		
065200	1.10	-	90S	S344	H80	94	65	100	100	450	660	400	180		260	485			1039	1020	M20x400
	1.50	-	90L																158		
	2.20	-	100L																163		
	3.00	-	100L																166		
	4.00	-	112M																182		
	-	7.50	132S		230																
	-	11.00	160M		279																
	-	15.00	160M		281																
	-	18.50	160L		305																
	-	22.00	180M		334																
			S436	H95		540	840	490	215			1425									
065250	2.20	-	100L	S435	H80	113	65	100	125	540	740	490	200		280	530			1133	1140	M20x400
	3.00	-	100L																209		
	4.00	-	112M																225		
	5.50	-	132S																238		
	-	15.00	160M																309		
	-	18.50	160L		324																
	-	22.00	180M		353																
	-	30.00	200L		480																
	-	37.00	200L		495																
	-	45.00	225M		531																
			S436	H95		940	940	550	240	300	550	1420	1420								
065315	5.50	-	132S	S486	H95	146	65	100	125	610	840	550	205		325	605			1252	1250	M24x400
	7.50	-	132M																309		
	11.00	-	160M		366																
	15.00	-	160L		391																
			S487	H110		940			240			575									
080160	0.75	-	80b	S344	H80	95	80	125	125	450	660	400	180		260	485			1037	1020	M20x400
	1.10	-	90S																156		
	1.50	-	90L																159		
	2.20	-	100L																164		
	3.00	-	100L		167																
	-	7.50	132S		218																
	-	11.00	160M		280																
	-	15.00	160M		282																
-	18.50	160L	306																		
-	22.00	180M	335																		
			S436	H95		540	840	490	215			1397	1270								
080200	1.50	-	90L	S385	H80	102	80	125	125	490	740	440	200		510			1089	1140	M20x400	
	2.20	-	100L															190			
	3.00	-	100L															193			

ZEND Series

End Suction Pumps

For hot water up to 230°C



ZEND Size	Motor		Size	Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	Rag bolt size	
	1450 rpm	2900 rpm				pump	unit															
080200	4,00	-	112M	S385	H80	102					490	740	440	200	75		260	510		1150	1140	M20x400
	5,50	-	132S																	1212		
	-	11,00	160M	282																		
	-	15,00	160M	289																		
	-	18,50	160L	313																		
	-	22,00	180M	342																		
	-	30,00	200L	469																		
	-	37,00	200L	478																		
080250	3,00	-	100L	S486	H80	125	80	125	125	610		840	550	205		325	605		235	1250	M24x400	
	4,00	-	112M																254			
	5,50	-	132S	267																		
	7,50	-	132M	269																		
	-	18,50	160L	372																		
	-	22,00	180M	395																		
	-	30,00	200L	492																		
	-	37,00	200L	501																		
	-	45,00	225M	540																		
	-	55,00	250M	671																		
080315	5,50	-	132S	S486	H95	150				610	840	550	205		350	665		296	1250	M24x400		
	7,50	-	132M															307				
	11,00	-	160M	342																		
	15,00	-	160L	389																		
100160	2,20	-	100L	S435	H80	126				140	540	740	490	200		280	560		219	1140	M20x400	
	3,00	-	100L																222			
	4,00	-	112M	238																		
	5,50	-	132S	251																		
	-	18,50	160L	338																		
	-	22,00	180M	364																		
	-	30,00	200L	493																		
	-	37,00	200L	503																		
100200	2,20	-	100L	S435	H80	118	100	125	125	540	740	490	200	90		280	560	140	211	1140	M20x400	
	3,00	-	100L																214			
	4,00	-	112M	230																		
	5,50	-	132S	243																		
	7,50	-	132M	245																		
	-	18,50	160L	330																		
	-	22,00	180M	358																		
	-	30,00	200L	495																		
	-	37,00	200L	495																		
	-	45,00	225M	534																		
100250	4,00	-	112M	S486	H95	132				610	840	550	205		325	605		262	1250	M24x400		
	5,50	-	132S															274				
	7,50	-	132M	276																		
	11,00	-	160M	329																		
	-	30,00	200L	515																		
	-	37,00	200L	509																		
	-	45,00	225M	553																		
	-	55,00	250M	679																		
	-	75,00	280S	880																		
	100315	11,00	-	160M	S486													H95			153	
15,00		-	160L	392																		
18,50		-	180M	424																		
22,00		-	180L	443																		
125200	7,50	-	132M	S486	H95	142	125	150		610	840	550	205		350	665		286	1250	M24x400		
	11,00	-	160M															339				
	15,00	-	160L	362																		
	-	45,00	225M	613																		
	-	55,00	250M	706																		
	-	75,00	280S	890																		
125250	7,50	-	132M	S486	H95	147				610	840	550	205		350	705		291	1250	M24x400		
	11,00	-	160M															344				
	15,00	-	160L	367																		
	18,50	-	180M	392																		

* Motor protection type IP 55, dimensions depend on the motor manufacturer.
Some sizes are not corresponding to the drawing in small details.
Foundation plan for 60Hz on request.

** Weight higher by 20 % in case of cast steel.

ZEND Series

End Suction Pumps

For hot water up to 230°C



Data regarding pump size

Type + Pump size	Hydraulic + Bearing	Shaft sealing	Material desing	Casing gasket				
	A hydraulic 1 S grease lubricated reinforced antifriction bearing and one internal liquid flushed sleeve bearing	BG3 balanced standard mechanical seal	1B main parts of spheroidal cast iron 2B main parts of cast steel	2 confined flat gasket of graphite with A4 insertion				
ZEND	AS	BG3	1B	2				
			alternative 1B 2B					
			031125					
			031160					
			031200					
			031250					
			032160					
			032200					
			032250					
			040160					
			040200					
			040250					
			040315					
			050160					
			050200					
			050250					
			050315					
			065160					
			065200					
			065250					
			065315					
			080160					
			080200					
080250								
080315								
100160								
100200								
100250								
100315								
125200								
125250								

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