

Volute pumps for hot water up to 230 °C

SIHI *SuperNova*



ZEND 031125 ... 125250

TECHNICAL DATA

Output:	max. 600 m³/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 applications 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 systems 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.

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

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 15.20	volute casing* intermediate flange	EN-JS 1025	EN-GJS-400-18-LT	0.7043	GGG-40.3	A 395		X	
16.10 33.00	casing cover bearing bracket	1.0619	GP 240 GH	1.0619	GS-C 25	A 216 Gr WCB			X
10.91 17.11 23.00	intermediate piece** impeller**	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	
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 44.10	impeller casing for mechanical seal	EN-JL 1040	EN-GJL 250	0.6025	GG-25	A 278 Class 30		X	X
43.30	mechanical seal	SIC / carbon						X	X
52.90 54.00	sleeve bearing	SIC / SIC						X	X

* 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	040200	080200	3000	031250	100250		1800	125250		
	031160	050160	100160		032250	125200			040315		
	031200	050200	100200		040250				050315		
	032160	065160			050250				065315		
	032200	065200			065250				080315		
	040160	080160			080250				100315		

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:

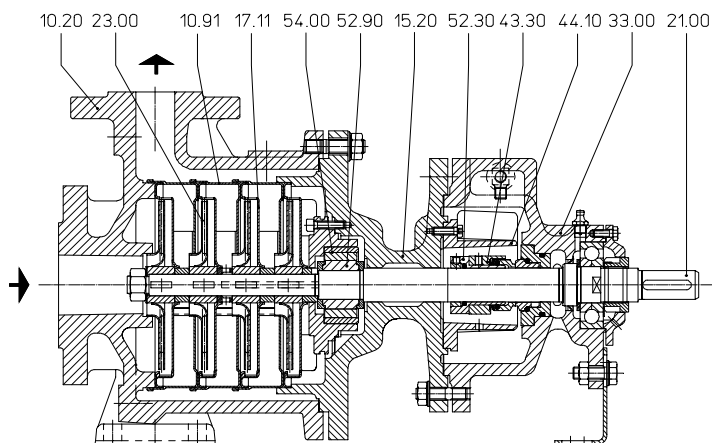
For equipping hot media systems a complete programme is available for a flow range between 1-600 m³/h consisting of the range:

- 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.

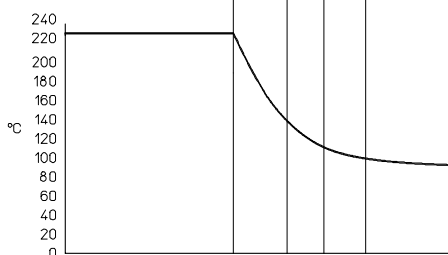
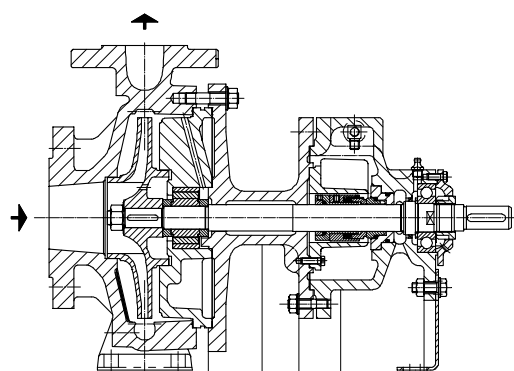
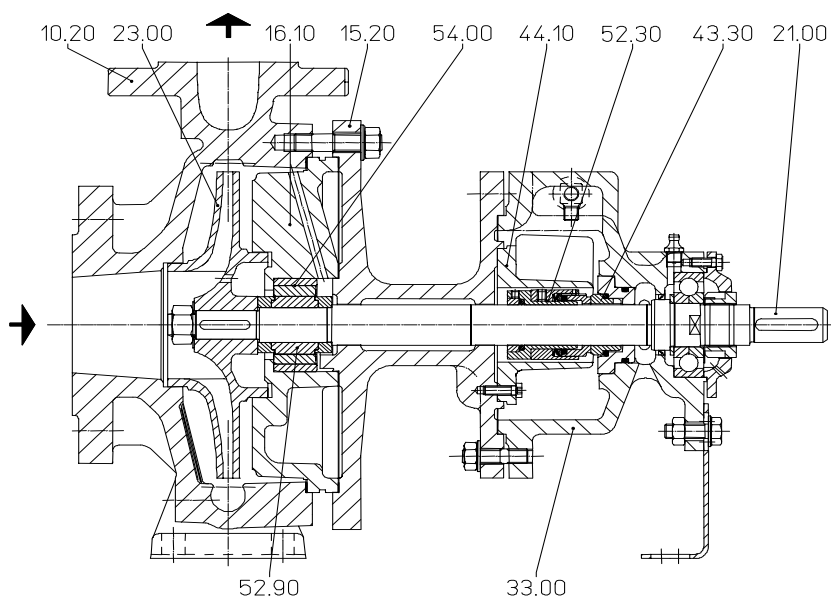
Sectional drawing and nomenclature

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...



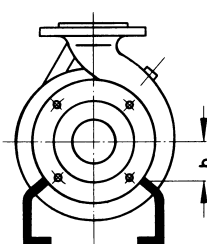
Curve of temperature decrease

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.

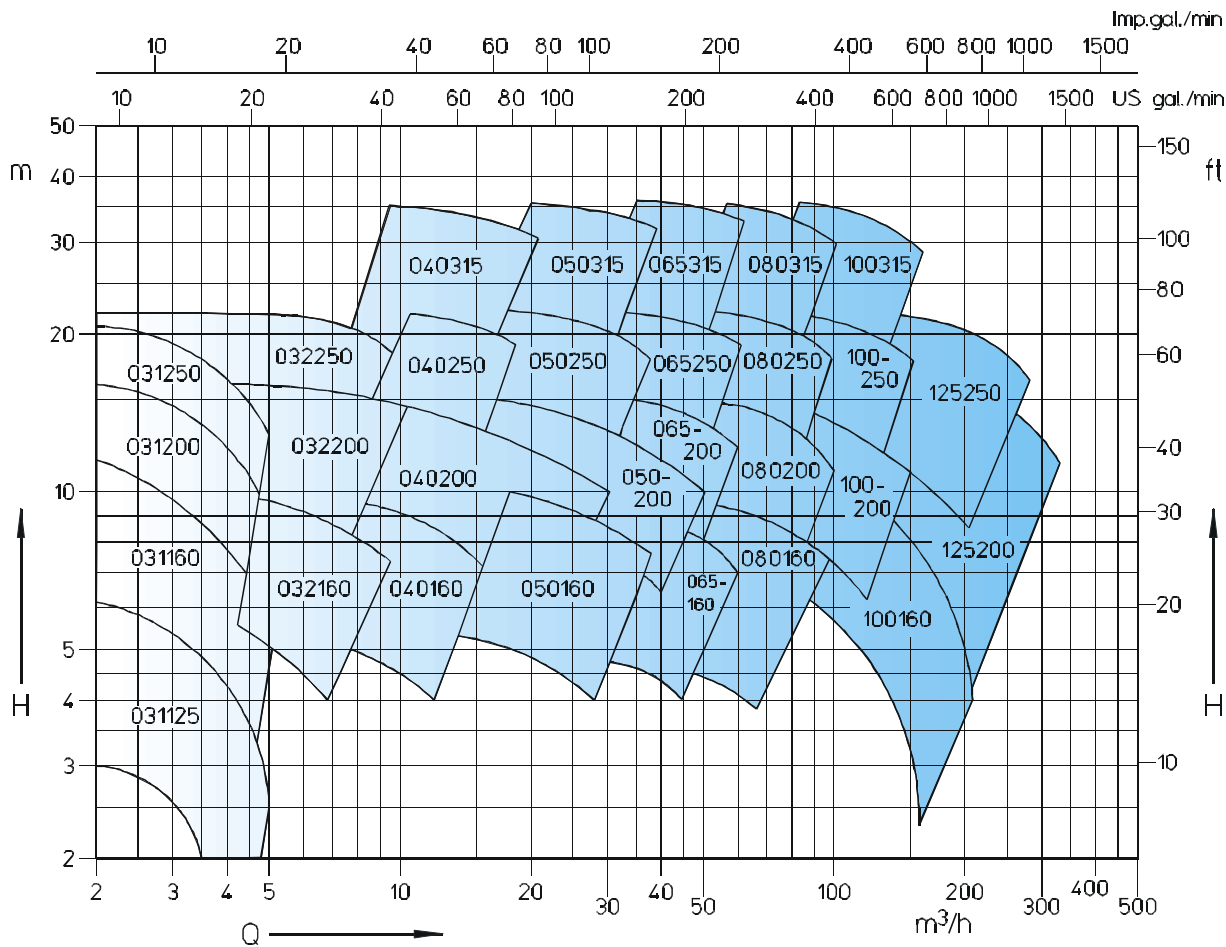
Product-side heat losses are effectively prevented (energy saving). The temperature reduction makes it possible to use safely an **uncooled** mechanical seal up to a pumping medium temperature of **230 °C**.



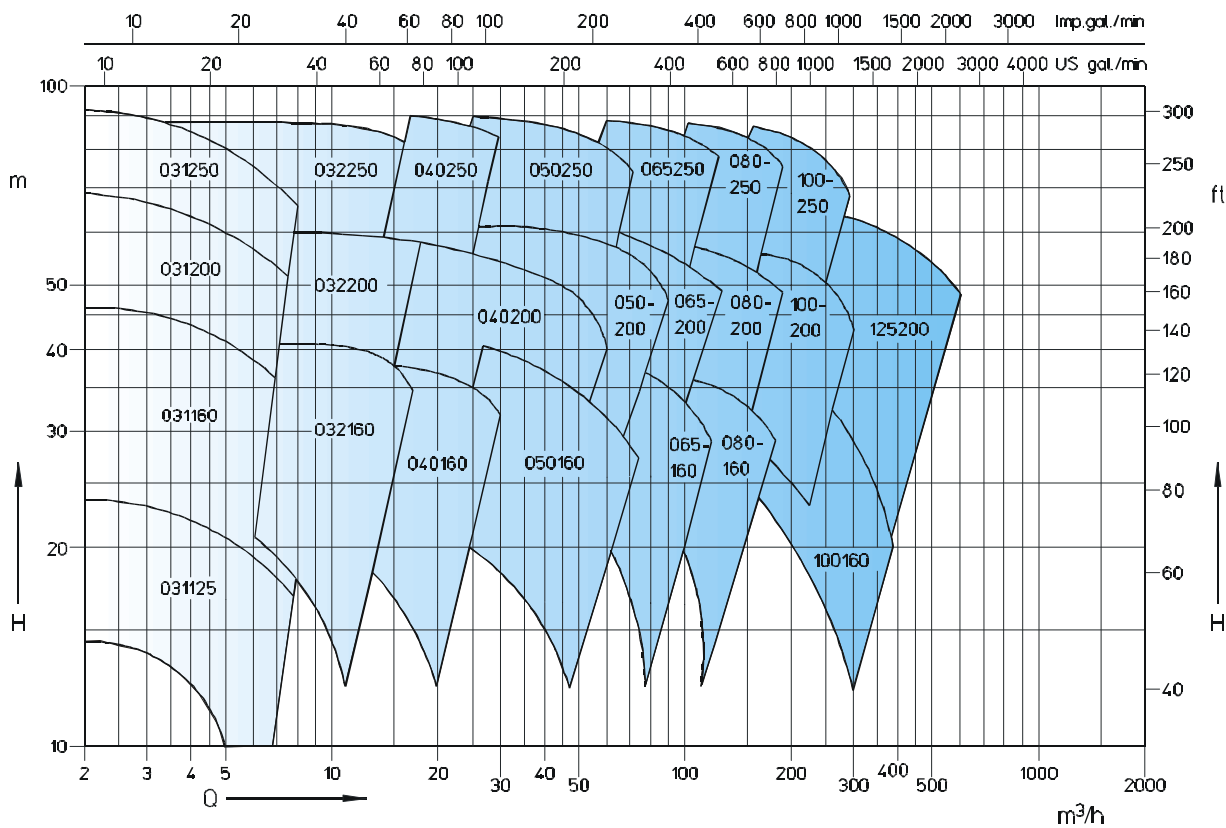
By special constructional shaping of the pump feed, displacements caused by thermal expansion are prevented to a great extent. For the vertical displacement only the measure h is decisive, since the rest of the foot remains cold. The horizontal expansion is taken up by the elastic foot bracings.

Performance graph

50 Hz
n= 1450 rpm

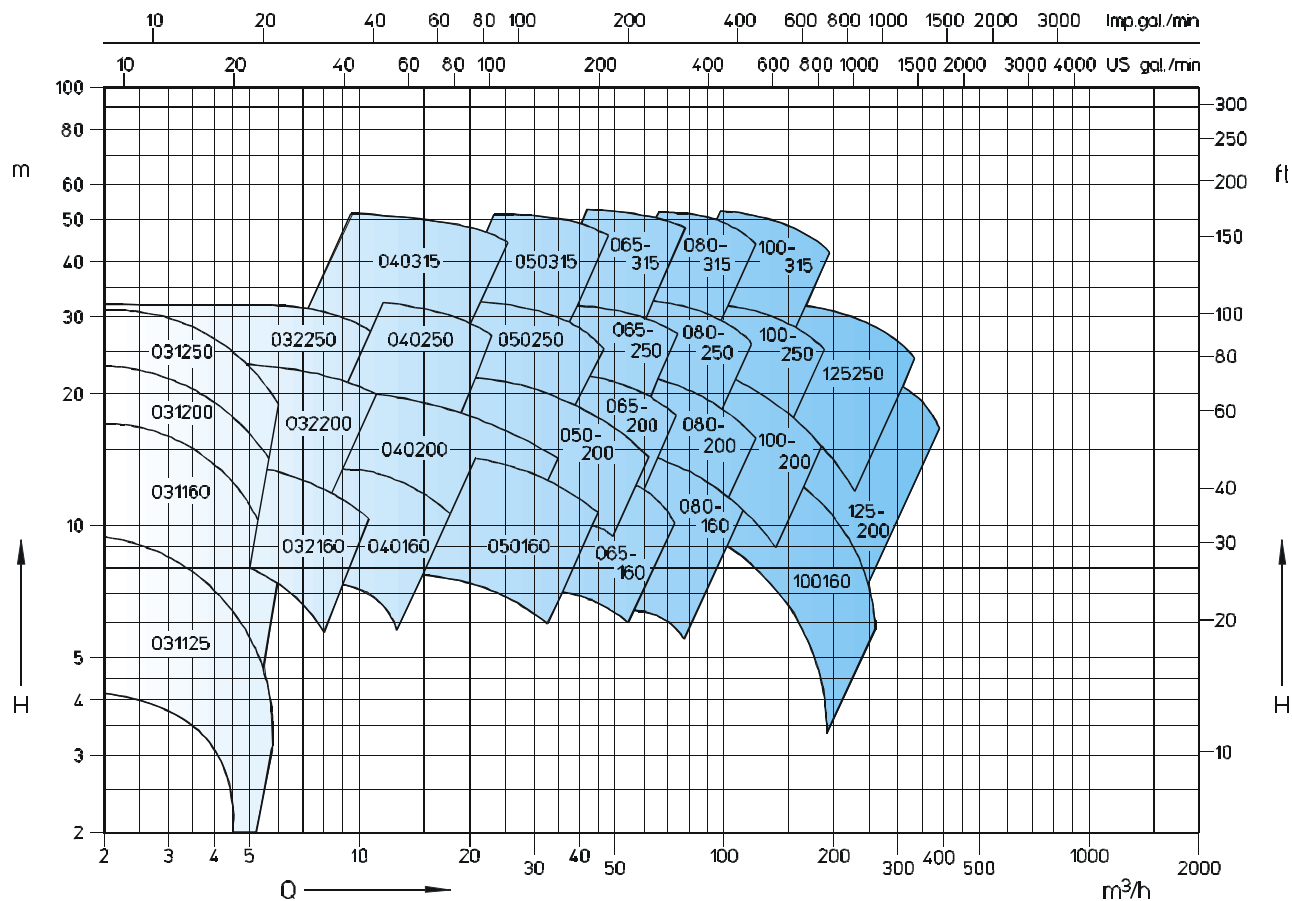


n= 2900 rpm

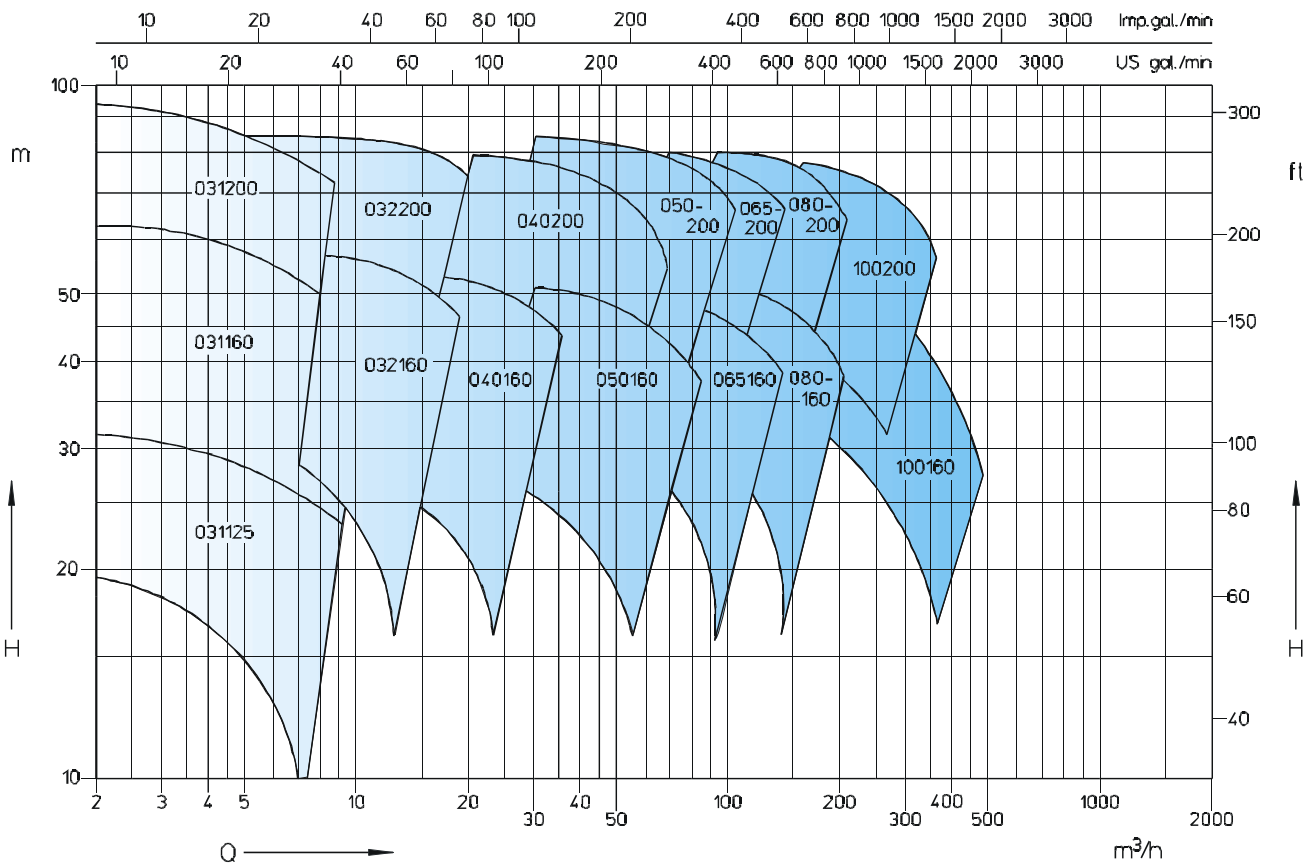


Performance graph

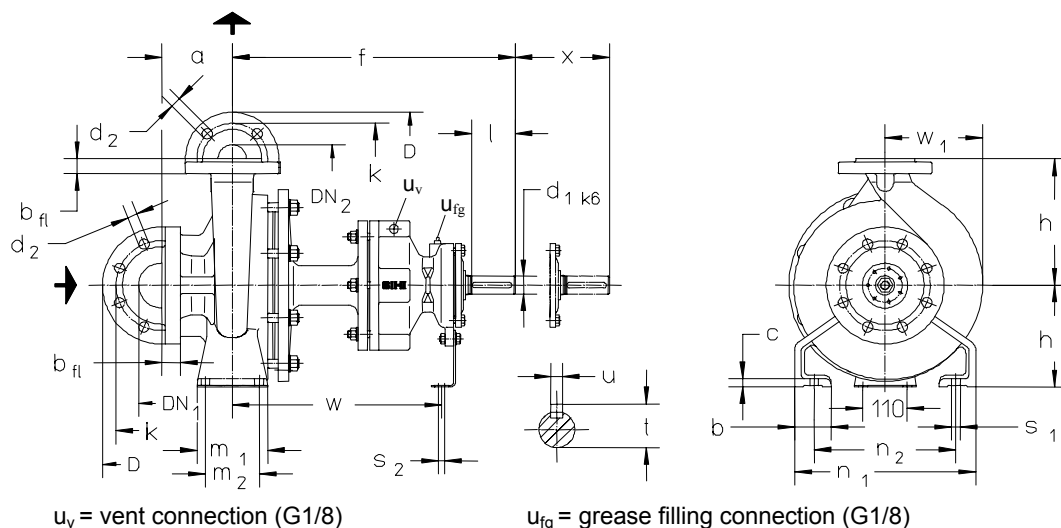
60 Hz
n = 1750 rpm



n = 3500 rpm



Dimension table



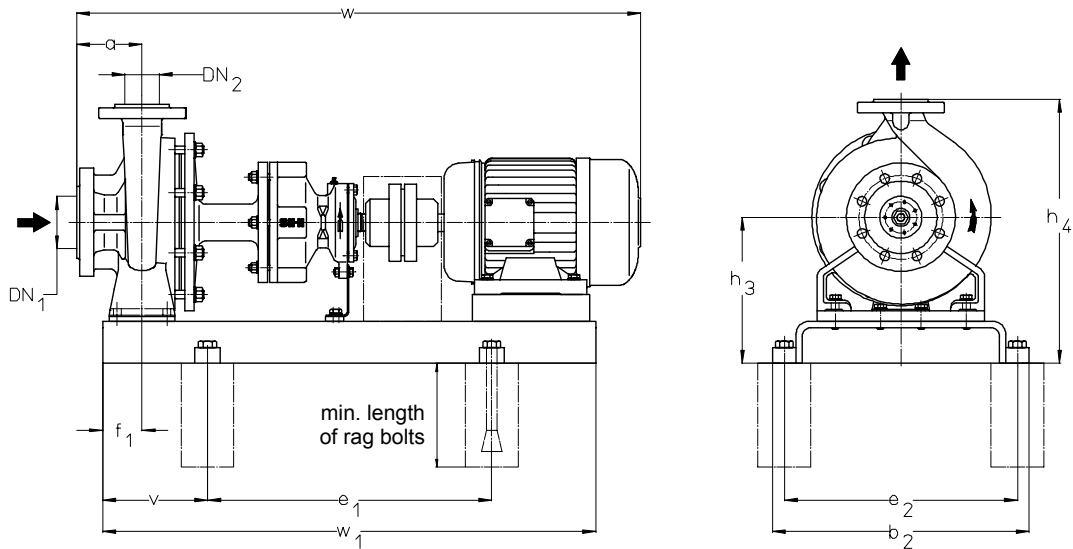
Dimensions in mm

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	M12	350	128	140	24	50	27	8
031160 ¹⁾																					
031200 ¹⁾																					
031250 ¹⁾																					
032160	32	50	80	50	17	385	132	160	100	70	240	190	M12	M12	285	120	100	24	50	27	8
032200							160	180								140					
032250			100	65			500	180								225					
040160	40	65	80	50	17	385	132	160	100	70	240	190	M12	M12	285	125	100	24	50	27	8
040200			100				160	180			265	212				150					
040250			125	65			20	500	180	225	125	95				320		250	370	170	32
040315					200	250			345	280					205						
050160	50	80	100	50	17	385	160	180	100	70	265	212	M12	M12	285	135	100	24	50	27	8
050200							200	320			250	160									
050250			125	65			20	500	180	225	125	95				320		250	370	175	32
050315					225	280			345	280					215						
065160	65	100	100	65	17	500	160	200	125	95	280	212	M12	M12	370	155	100	32	80	35	10
065200							180	225			320	250				175					
065250			125	80			20	530	200	250	160	120				360	280	M16	195	140	42
065315					225	280			400	315					230						
080160	80	125	125	65	17	500	180	225	125	95	320	250	M12	M12	370	170	140	32	80	35	10
080200							250	280			345	280				185					
080250			125	80			20	530	225	280	160	120				400		315	M16	205	42
080315					250	315			400	315					220						
100160 ¹⁾	100	125	140	80	20	500	200	280	160	120	360	280	M16	M12	370	210	140	32	80	35	10
100200			125				530				225	315				400					
100250			140	250				315			255										
100315																					
125200 ¹⁾	125	150	140	80	20	530	250	315	160	120	400		M16	M12	370	245	140	42	110	45	12
125250								355								240					

- Transnom 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 -3,0								+4,5 -1,5								
d ₂ x number	19x4	19x4	19x4	19x8	19x8	23x8	28x8	28x8	18x4	18x4	18x4	18x8	18x8	22x8	26x8	26x8	

Foundation plan

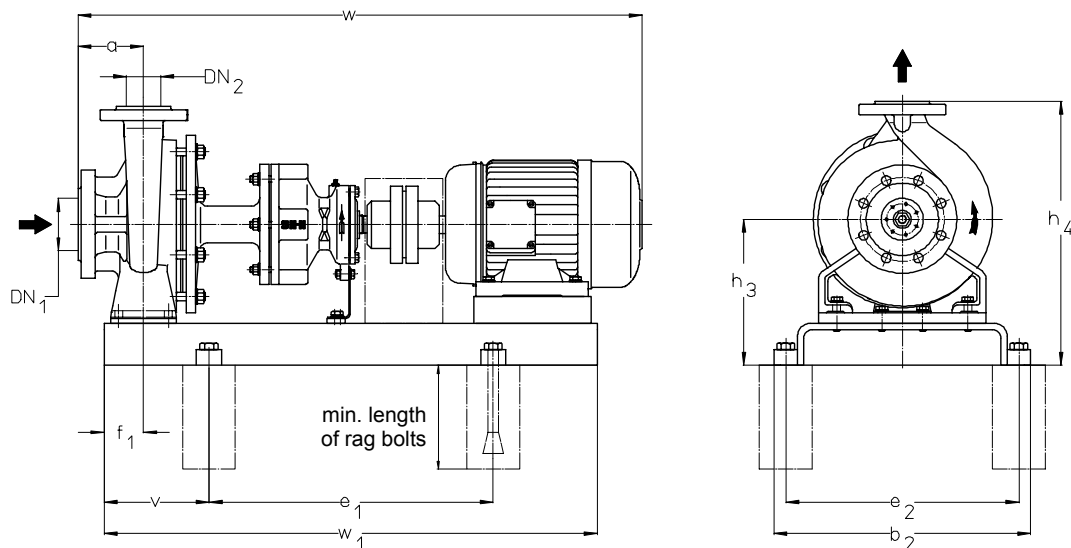


Dimensions in mm

ZEND Size	Motor Speed 1450 2900 kW	Size	Base plate No.	Coupling	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
031125	0,25	-	71a	B68	57	32	50	80	360	540	320	140	60	197	357	766	820	M16x200
	-	2,20	90L													854		
031160	0,37	-	71b	B80	57	32	50	80	360	540	320	140	60	197	357	766	820	M16x200
	-	3,00	100L													898		
031200	0,55	-	80a	B68	57	32	50	80	360	540	320	140	60	197	357	802	820	M16x200
	-	4,00	112M													915		
031250	0,75	-	80b	B68	57	32	50	80	360	540	320	140	60	197	357	802	820	M16x200
	-	5,50	132S													977		
032160	0,37	-	71b	B68	55	32	50	80	360	540	320	140	60	197	357	701	650	M16x200
	-	2,20	90L													737		
	-	1,10	80b	B80	55	32	50	80	360	540	320	140	60	197	357	737	820	M16x200
	-	1,50	90S													764		
	-	2,20	90L	B80	55	32	50	80	360	540	320	140	60	197	357	764	820	M16x200
	-	3,00	100L													833		
	-	4,00	112M	B80	55	32	50	80	360	540	320	140	60	197	357	850	820	M16x200
	-	4,00	112M													850		
032200	0,55	-	80a	B68	57	32	50	80	360	540	320	140	60	225	405	737	820	M16x200
	-	80b														737		
	1,10	-	90S	B80	57	32	50	80	360	540	320	140	60	225	405	764	820	M16x200
	-	3,00	100L													833		
	-	4,00	112M	B80	57	32	50	80	360	540	320	140	60	225	405	850	820	M16x200
	-	5,50	132S													912		
	-	7,50	160M	B95	57	32	50	80	360	540	320	140	60	225	405	912	920	M16x200
	-	7,50	160M													912		
032250	0,75	-	80b	B80	96	40	65	100	490	600	440	160	75	260	485	872	920	M20x400
	-	90S														893		
	1,50	-	90L	B80	96	40	65	100	490	600	440	160	75	260	485	924	920	M20x400
	-	100L														968		
	-	7,50	132S	B95	96	40	65	100	490	600	440	160	75	260	485	1047	920	M20x400
	-	11,00	160M													1188		
	-	15,00	160M	B95	96	40	65	100	490	600	440	160	75	260	485	1188	920	M20x400
	-	15,00	160M													1188		
040160	0,37	-	71b	B68	55	40	65	80	360	540	320	140	60	197	357	700	650	M16x200
	-	2,20	90L													737		
	0,75	-	80b	B80	55	40	65	80	360	540	320	140	60	197	357	737	820	M16x200
	1,10	1,50	90S													767		
	-	2,20	90L	B80	55	40	65	80	360	540	320	140	60	197	357	792	820	M16x200
	-	3,00	100L													833		
	-	4,00	112M	B80	55	40	65	80	360	540	320	140	60	197	357	857	820	M16x200
	-	5,50	132S													912		
	-	7,50	160M	B95	55	40	65	80	360	540	320	140	60	197	357	912	920	M16x200
	-	7,50	160M													912		
040200	0,75	-	80b	B68	63	40	65	100	390	480	350	125	60	225	405	757	730	M16x200
	-	90S														784		
	1,50	-	90L	B80	63	40	65	100	390	480	350	125	60	225	405	809	920	M16x200
	-	100L														870		
	-	4,00	112M	B95	63	40	65	100	390	480	350	125	60	225	405	877	920	M16x200
	-	5,50	132S													932		
	-	7,50	160M	B95	63	40	65	100	390	480	350	125	60	225	405	1073	1020	M20x400
	-	11,00	160M													1073		
	-	15,00	160M	B95	63	40	65	100	390	480	350	125	60	225	405	1073	1020	M20x400
	-	15,00	160M													1073		

* Motor protection type IP 55, dimensions depend on the motor manufacturer. ** Weight higher by 20 % in case of cast steel
Some sizes are not corresponding to the drawing in small details. Foundation plan for 60Hz on request.

Foundation plan



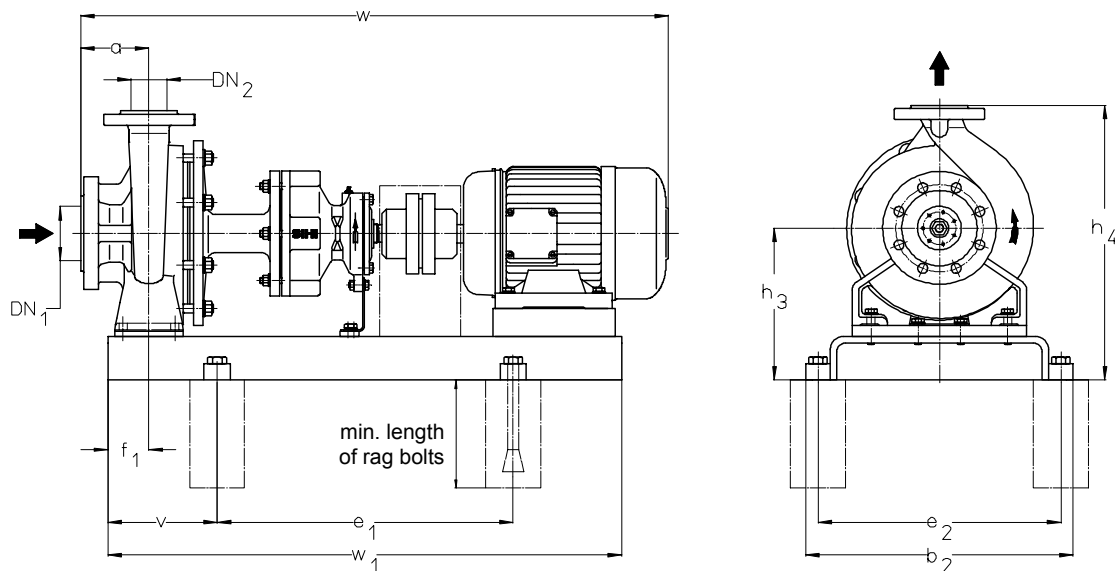
Dimensions in mm

Dimensions in mm																														
ZEND Size	Motor Speed 1450 2900 kW		Size	Base plate No.	Coup- ling	weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w _i	Rag bolt size										
	Pump	Unit																												
040250	1,10	-	90S	S383	B80	98	156	40	65	100	490	600	440	160	75	260	485	900	920	M20x400										
	1,50	-	90L				159											924												
	2,20	-	100L				162											968												
	3,00	-					165																							
	-	5,50	132S	S385	B95		215					740	200	75			260	485	1047		1140									
	-	7,50	218																											
	-	11,00	267				1188																							
	-	15,00	269				1232																							
	-	18,50	160L				293																							
	-	-	-				-												-		-	-	-	-	-	-	-	-	-	-
040315	2,20	-	100L	S383	B80	136	197	40	65	125	490	600	440	160	75	280	530	993	920	M20X400										
	3,00	-	112M				201											160			1010									
	4,00	-	112M	207	160		1072											1140												
	5,50	-	132S	S435	B95		262											540			740	490	200	1072	1140					
050160	0,55	-	80a	S301	B68	61	98	50	80	100	390	480	350	125	60	225	405	757	730	M16x200										
	0,75	-	80b				100											784			812									
	1,10	-	90S				103											853			877									
	1,50	2,20	90L				105											892			932									
	-	3,00	100L	S303	B80		118				600	160	225	405		920	1020	M20x400												
	-	4,00	112M				136																							
	-	5,50	132S				149																							
	-	7,50	132S				152																							
	-	11,00	160M				211																							
	-	-	-				-												-		-	-	-	-	-	-	-	-	-	-
050200	0,75	-	80b	S301	B68	65	104			50	80	100	390	480	350	125	60	225	425	757	730	M16X200								
	1,10	-	90S				107													784			809							
	1,50	-	90L				110													870			932							
	2,20	-	100L				122													1073			1113							
	-	4,00	112M	S303	B80		140						600	160	225	425		920	1020	M20x400										
	-	5,50	132S				157																							
	-	7,50	132S				160																							
	-	11,00	160M				215																							
	-	15,00	160L				217																							
	-	18,50	160L				232																							
050250	1,50	-	90L	S383	B80 B80 B80 B80	101	162					50	80	125	490	600	160	75	260	485	949	920	M20x400							
	2,20	-	100L				164														993			1010						
	3,00	-	112M				168														1072			1213						
	4,00	-	112M				184														1257			1280						
	-	7,50	132S	S385	B95 B95 B95 B95 B110		221								740	200	75		260	485	1140	1270		M20x400						
	-	11,00	160M				264																							
	-	15,00	160M				272																							
	-	18,50	160L				297																							
	-	22,00	180M				324																							
	-	30,00	200L				433																							
050315	4,00	-	112M	S486	B80 B95 B95	140	254							50	80	125	610	840	550	205	75	325	605	1010	1250	M24X400				
	5,50	-	132S				283																	1072			1110			
	7,50	-	132M				295																	1257			1280			
065160	0,75	-	80b	S342	B80	86	134	50	80															100			450	660	400	180
	1,10	-	90S				146										900	924												
	1,50	-	90L				149										968	985												
	2,20	-	100L				152										1047	1188												
	-	4,00	112M	S344	B80		159										740	440	200	75		240	440		1140		M20x400			
	-	5,50	132S				184																							
	-	7,50	132S				187																							
	-	11,00	160M				255																							
	-	15,00	160M				257																							
	-	-	-				-									-					-					-		-	-	-

* Motor protection type IP 55, dimensions depend on the motor manufacturer. ** Weight higher by 20 % in case of cast steel
Some sizes are not corresponding to the drawing in small details. Foundation plan for 60Hz on request.

ZEND Size	Motor Speed 1450 2900 kW		Size	Base plate No.	Coup- ling	weight (kg)															Rag bolt size
	Pump	Unit				DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁				
065200	1,10	-	90S	S344	B80	94	154	65	100	450	660	400	180	75	260	485	900	1020	M20x400		
	1,50	-	90L				157										924				
	2,20	-	100L				160										968				
	3,00	-	100L				163										968				
	4,00	-	112M				179										985				
	-	7,50	132S	S385	B95		214			490	740	440	200		1047	1140					
	-	11,00	160M				263								1213						
	-	15,00	160L				265								1213						
	-	18,50	160L				289								1257						
	-	22,00	180M				317								1280						
	-	30,00	200L	S436	B125		426			840	215	1368	1270								
065250	2,20	-	100L	S434	B80	113	190	65	100	125	540	660	490	170	90	280	530	993	1000	M20x400	
	3,00	-	112M				193											1010			
	4,00	-	132S				208											1072			
	5,50	-	160M				228											1213			
	-	15,00	160M	S435	B95		298											740			200
	-	18,50	160L				313				1280										
	-	22,00	180M				341				1368										
	-	30,00	200L				445				1270										
	-	37,00	200L	S436	B125		461				215	1368	1270								
	-	45,00	225M	S486	B95		504				610	840	550	205		300	550	1425	1250		M24x400
	5,50	-	132S				280									1102					
7,50	-	132M	292			1140															
11,00	-	160M	325			1243															
15,00	-	160L	341			1287															
080160	0,75	-	80b	S383	B80	95	150	80	125	125	490	600	440	160	75	260	485	897	920	M20x400	
	1,10	-	90S				153											924			
	1,50	-	90L				156											949			
	2,20	-	100L				159											993			
	3,00	-	100L				162											1072			
	-	7,50	132S	S385	B95		215				740	440	200	1213		1140					
	-	11,00	160M				264							1257							
	-	15,00	160M				266							1280							
	-	18,50	160L				290							1280							
	-	22,00	180M				318							1280							
	080200	1,50	-	90L	S383		B80				102	162	80	125		125	600	600	160		75
2,20		-	100L	166		993															
3,00		-	100L	169		1010															
4,00		-	112M	185		1072															
5,50		-	132S	S385	B95	226	740	440	200	1213		1140									
-		11,00	160M			266				1257											
-		15,00	160M			273				1280											
-		18,50	160L			297				1280											
-		22,00	180M	S436	B110	325	540	490	215	280		0			1368		1270				
-		30,00	200L			434															
-		37,00	200L			450															
-	37,00	200L	S436																		
080250	3,00	-	100L	S486	B80	125	234	610	840	550	205	90	325	605	993	1250	M24X400				
	4,00	-	112M				251								1010						
	5,50	-	132S				270								1072						
	7,50	-	132M				283								1110						
	-	18,50	160L				347								1225						
	-	22,00	180M				370								1280						
	-	30,00	200L				466								1368						
	-	37,00	200L				482								1368						
	-	45,00	225M	S487	B125		542				940		240	1425	1420						
	-	55,00	250M				642							1493							
	5,50	-	132S				S486							B95		150		293	1102	1250	
7,50	-	132M	305	1140																	
11,00	-	160M	338	1243																	
15,00	-	160L	354	1287																	
100160	2,20	-	100L	S434	B80	126	203	100	125	140	540	660	490	170	90	280	560	1008	1000	M20x400	
	3,00	-	100L				206											1025			
	4,00	-	112M				222											1087			
	5,50	-	132S				241											1272			
	-	18,50	160L	S435	B110		326				740	490	200	1295		1140					
	-	22,00	180M				354														
	-	30,00	200L				458														
	-	37,00	200L				474														

Foundation plan

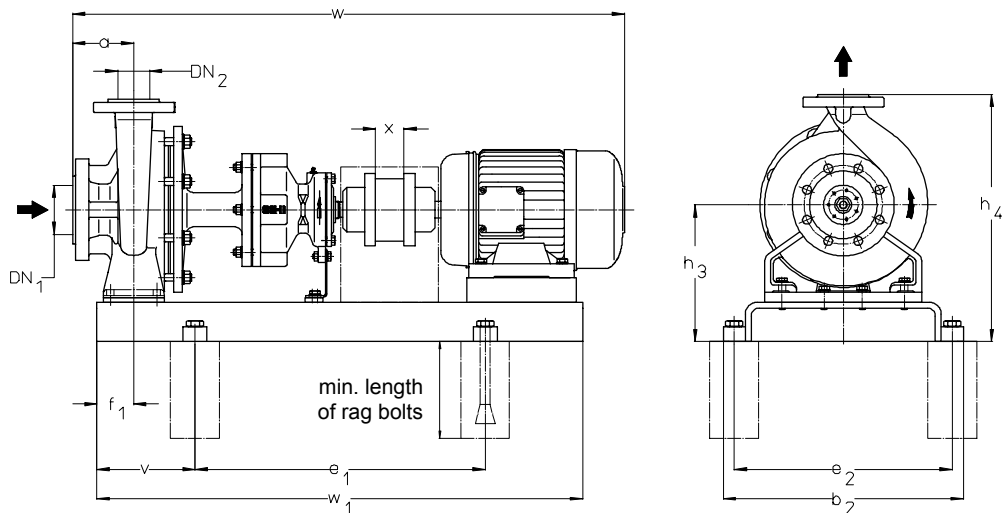


Dimensions in mm

ZEND Size	Motor Speed 1450 2900 kW		Size	Base plate No.	Coup- ling	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
	Pump	Unit																		
100200	2,20	-	100L	S434	B80	118	195	100	125	125	540	660	490	170	90	280	560	993	1000	M20x400
	3,00	-					198											1010		
	4,00	-	112M				213					1072								
	5,50	-	132S				233					1110								
	7,50	-	132M	S435	B95		246				740	200	1257	1140						
	-	18,50	160L				318						1280							
	-	22,00	180M				346						1368							
	-	30,00	200L	S436	B110		450				840	215	1425	1270						
	-	37,00	200L				466						1368							
	-	45,00	225M				500						1425							
100250	4,00	-	112M	S486	B95	132	259	125	140	610	840	550	205	90	325	605	1055	1250	M24x400	
	5,50	-	132S				277										1117			
	7,50	-	132M				290										1155			
	11,00	-	160M				328										1258			
	-	30,00	200L				473										1413			
	-	37,00	200L	S487	B125		499			940	240	1470	1420							
	-	45,00	225M				543					1538								
	-	55,00	250M				658					1660								
	-	75,00	280S				858					1660								
	-	75,00	280S				858					1660								
100315	11,00	-	160M	S486	B95	153	311	125	150	140	610	840	550	205	90	350	665	1258	1250	M24x400
	15,00	-	160L		B110		368											1302		
	18,50	-	180M		B110		397											1325		
	22,00	-	180L		B125		414											1363		
	-	-	-		-		-											-		
125200	7,50	-	132M	S486	B95	142	300	125	150	140	610	840	550	205	90	350	665	1155	1250	M24x400
	11,00	-	160M		B110		338											1258		
	15,00	-	160L		B125		361											1302		
	-	45,00	225M	S487	B125		575					1470		1420						
	-	55,00	250M		B140		668					1538								
	-	75,00	280S		B160		868					1660								
	-	-	-		-		-					-								
125250	7,50	-	132M	S486	B95	147	305	125	150	140	610	840	550	205	90	350	705	1155	1250	M24x400
	11,00	-	160M		B110		343											1258		
	15,00	-	160L		B110		366											1302		
	18,50	-	180M		B110		391											1325		
	-	-	-		-		-											-		

* Motor protection type IP 55, dimensions depend on the motor manufacturer. ** Weight higher by 20 % in case of cast steel
Some sizes are not corresponding to the drawing in small details. Foundation plan for 60Hz on request.

Foundation plan for units with spacer coupling

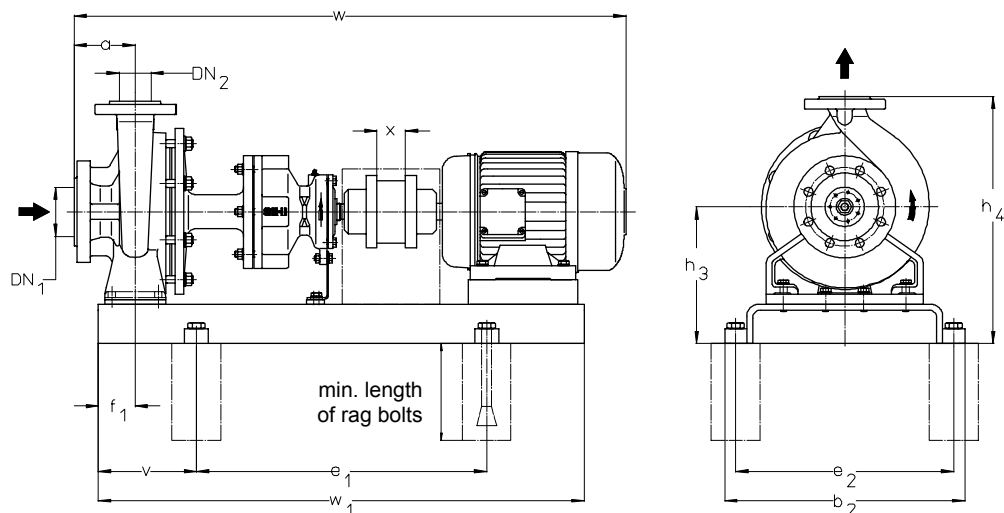


Dimensions in mm

ZEND Size	Motor Speed 1450 2900 kW		Size	Base ling No.	Coup- ling	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		
	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	660	400	180		212	372		994	1020	M20X400		
031160	0,37	-	71b	S303			102				390	600	350	160		197	357		906	920	M16X200		
	-	3,00	100L	S344			127				450	660	400	180		212	372		1038	1020	M20X400		
031200	0,55	-	80a	S303			103				390	600	350	160		197	357		542	920	M16X200		
	-	4,00	112M	S344			130				450	660	400	180		212	372		1055	1020	M20X400		
031250	0,75	-	80b	S303			105				390	600	350	160		197	357		542	920	M16X200		
	-	5,50	132S	S344			155				450	660	400	180		212	372		1117	1020	M20X400		
032160	0,37	-	71b	S272	H80	55	95	32	50	80	360	540	320	140	60	197	357	100	801	820	M16x200		
	0,55	-	80a				96												837				
	-	1,10	80b				97												864				
	-	1,50	90S				100												889				
	-	2,20	90L				103												933				
	-	3,00	100L				113												950				
	-	4,00	112M	118			920																
032200	0,55	-	80a	S272			H80				57	98	32	50		80	360		540	320		140	60
	0,75	-	80b		100	864																	
	1,10	-	90S		102	933																	
	-	3,00	100L		115	950																	
	-	4,00	112M		120	1012																	
	-	5,50	132S		146	920																	
	-	7,50	132S	153	972																		
032250	0,75	-	80b	S383	H80	96		155	32	50		100			490		740	440	200	75	260	485	
	1,10	-	90S	175			1024																
	1,50	-	90L	177			1068																
	2,20	-	100L	181			1147																
	-	7,50	132S	220			1288																
	-	11,00	160M	277			1270																
	-	15,00	160M	289																			
040160	0,37	-	71b	S272			H80	55			94		40	65	80	360	540	320	140		60	197	357
	0,55	-	80a		97	837																	
	0,75	-	80b		99	864																	
	1,10	1,50	90S		102	889																	
	-	2,20	90L		105	933																	
	-	3,00	100L		114	950																	
	-	4,00	112M	133	1012																		
040200	-	5,50	132S	S303	H80	63			146	40	65	100				390	600	350	160	60		225	405
	0,75	-	80b				111	884															
	1,10	-	90S				114	909															
	1,50	-	90L				117	970															
	2,20	-	100L				122	970															
	-	4,00	112M				142	1032															
	-	5,50	132S	S303			H95	154	450				660	400	180	240	420	1173	1020		M20x400		
	-	7,50						157															
	-	11,00			216																		
	-	15,00	160M	S344			218																

* Motor protection type IP 55, dimensions depend on the motor manufacturer. ** Weight higher by 20 % in case of cast steel
Some sizes are not corresponding to the drawing in small details. Foundation plan for 60Hz on request.

Foundation plan for units with spacer coupling



Dimensions in mm

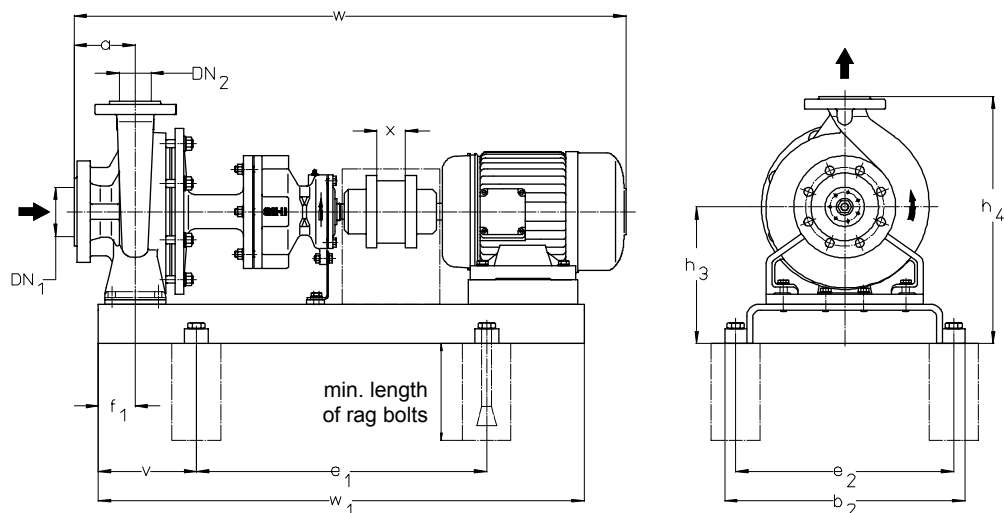
Dimensions in mm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
ZEND Size	Motor Speed		Size	Base ling No.	Coup- ling	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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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040250	1,10	-	90S	S385	H80	98	178	40	65	100	490	740	440	200	75	260	485	100	1000	1140	M20x400																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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	040315	2,20	-	100L	S385	H80	136			221	125	490	740	440		200	280		530	1106		1140																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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* Motor protection type IP 55, dimensions depend on the motor manufacturer. ** Weight higher by 20 % in case of cast steel
Some sizes are not corresponding to the drawing in small details. Foundation plan for 60Hz on request.

Dimensions in mm

ZEND Size	Motor Speed		Size	Base ling No.	Coup- ling	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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Foundation plan for units with spacer coupling



Dimensions in mm

ZEND Size	Motor Speed		Size	Base ling No.	Coup- ling	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 kW	2900 kW				Pump	Unit																					
100250	4,00	-	112M	S486	H95	132	262	100	125	140	610	840	550	205	90	325	605	140	1195	1250	M24x400							
	5,50	-	132S				274												1257									
	7,50	-	132M				276												1295									
	11,00	-	160M				329												1398									
	-	30,00	200L	S487	H125		515												660	1060		600	280	240	1553	1420		
	-	37,00	225M				509																		1678			
	-	45,00	250M				553				1800																	
	-	55,00	280S				679				1408																	
	-	75,00	280S	S538	H160		880				610	940	550	240		350	630								1452	1420		
	11,00	-	160M				346									380	660								1475			
15,00	-	160L	392				350									665	1408		1250									
18,50	-	180M	424														1452		1420									
22,00	-	180L	S487	H110	443		610				940	550	240	350		665	1475		1420									

* Motor protection type IP 55, dimensions depend on the motor manufacturer. ** Weight higher by 20 % in case of cast steel
Some sizes are not corresponding to the drawing in small details. Foundation plan for 60Hz on request.

Data regarding pump size

Type + Pump size	Hydraulic + Bearing	Shaft sealing	Material design	Casing gasket
	A = hydraulic 1 S = grease lubricated bearing	BG3 = balanced standard mechanical seal	1B = main parts of spherodial cast iron 2B = main parts of cast steel	2 = confined flat gasket of graphite with A4 insertion
ZEND	031125	BG3	1B	2
	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			
			AS	

Any changes in the interest of the technical development are reserved.

Sterling SIHI GmbH

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