

Volute pumps

for hot water up to 207°C

SIHI *SuperNova*



ZDND 032160 ... 125250

TECHNICAL DATA

Output:	max. 600 m³/h
Delivery head:	max. 90 m
Speed:	max. 3600 rpm
Temperature:	max. 207 °C
Casing pressure:	PN 25
Shaft sealing:	balanced standard mechanical seal, uncooled
Flange connections:	DIN EN 1092-2 PN 40
Sense of rotation:	clockwise, when looking at the Pump from the drive end



APPLICATION

The volute pumps of the series ZDHD 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,
- the heat transport and
- the industry

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

DESIGN

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

The series **ZDND** has especially been designed for the trouble free handling of hot water up to 207 °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 90 °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 22 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 side 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 25 bar from 0 °C up to 207 °C

Please note:

Technical rules and safety regulations.

Casing pressure = inlet pressure + zero head

max. test pressure = 33 bar

Flanges location:

Axial suction flange, discharge flange radially upwards.

Flanges:

The flanges comply with DIN EN 1092-2 resp. PN 40.

Flange design to ANSI 300 is possible.

Hydraulics:

Designation of this construction type: A

Bearing:

One grease lubricated antifriction ball bearing to DIN 625 and one internal liquid flushed sleeve bearing.

Designation of this construction type: A

Direction of rotation:

Clockwise when looking at the pump from the drive end.

Shaft sealing:

Code AF3: 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
						ASTM Standard	AISI	
10.20 15.20 16.10 33.00	Volute casing Intermediate flange Casing cover Bearing bracket	EN-JS 1025	EN-GJS-400-18-LT	0.7043	GGG 40.3	A 395		X
21.00	Shaft	1.4021	X 20 Cr 13	1.4021	X 20 Cr 13	A 276 Type 420	420	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
43.30	Shaft seal	SIC / Carbon						X
52.90 54.00	Sleeve bearing	SIC / SIC						X

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 max. speeds are to be observed:

Max. speed rpm	Size		Max. speed rpm	Size		Max. speed rpm	Size	
3600	032160	032200	3000	032250		1800	040315	
	040160	040200		040250			050315	
	050160	050200		050250				
	065160	065200		065250				
	080160	080200		080250				
	100160	100200		100250				
				125200			125250	

The max. speeds results from the admissible peripheral speed of impellers or from the shaft load admissible at higher temperatures, respectively.

Bearing bracket / pump size:

Bracket 25	032160 032200 040160 040200 050160 050200
Bracket 35	032250 040250 040315 050250 050315 065160 065200 065250 080160 080200 080250 100160 100200
Bracket 45	100250 125200 125250

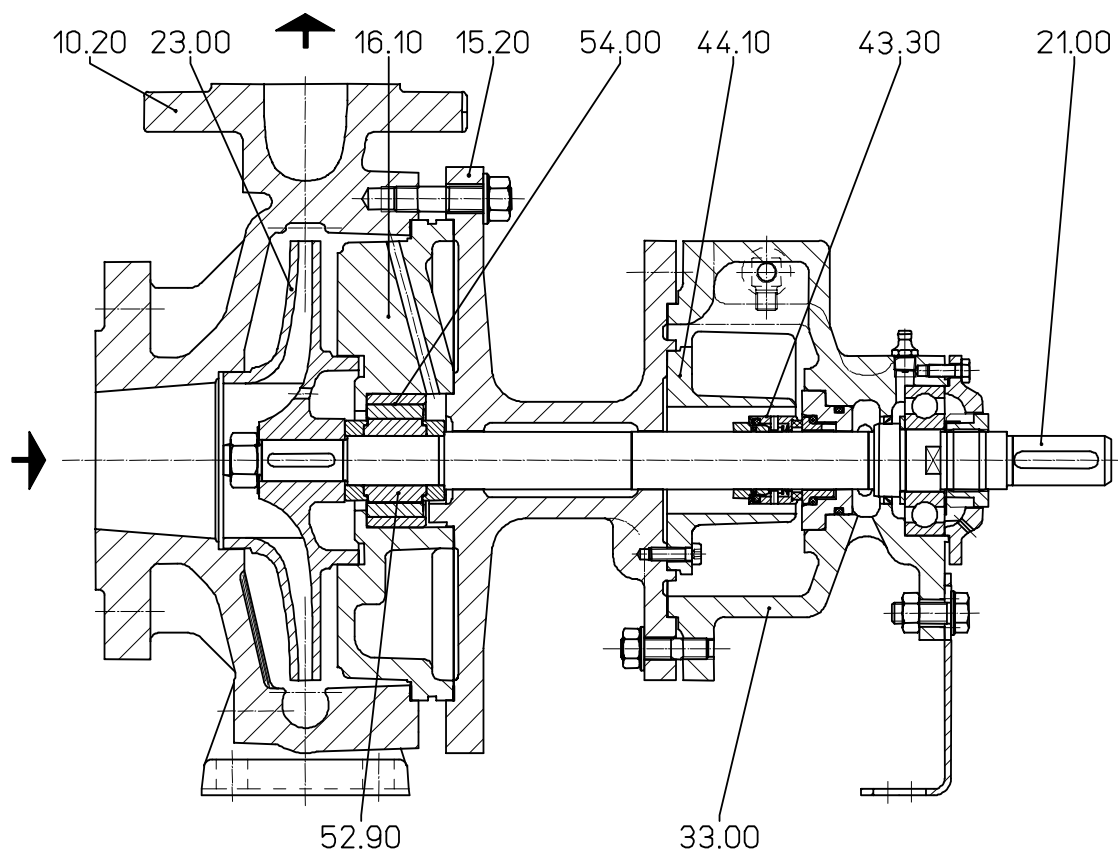
General remarks:

For equipping hot media systems a complete programme is available for a flow range between 1-1000 m³/h consisting of the range:

ZTN	volute pumps to EN 733 design with base plate, t _{max} 350 °C PN 16. Heat transfer oil.
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.
ZEN	volute pumps to DIN EN 22858, t _{max} 230 °C PN 40. 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.

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

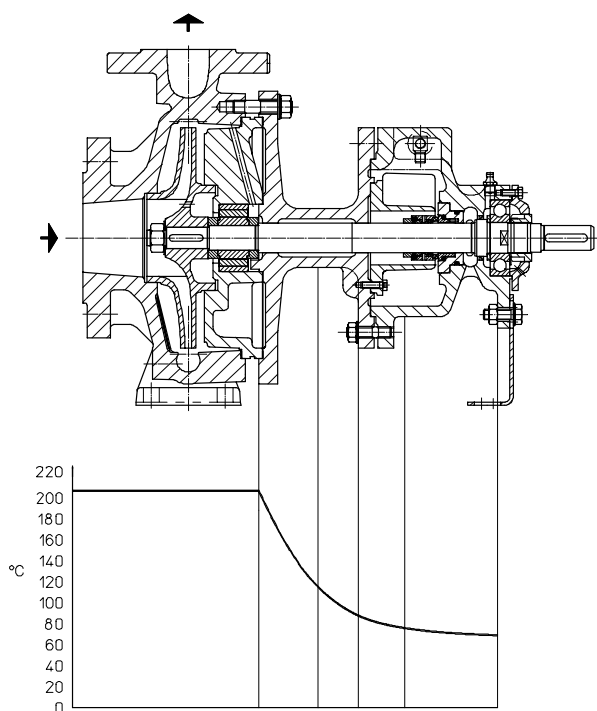
Sectional drawing and nomenclature



10.20 volute casing
15.20 intermediate flange
16.10 casing cover
21.00 shaft

23.00 impeller
33.00 bearing bracket
43.30 shaft seal

44.10 casing for mechanical seal
52.90, 54.00 sleeve bearing



Curve of temperature decrease

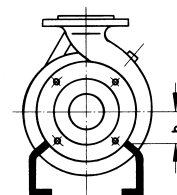
Heat barrier / shaft seal / bearing / feet arrangement

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 ZDND 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.

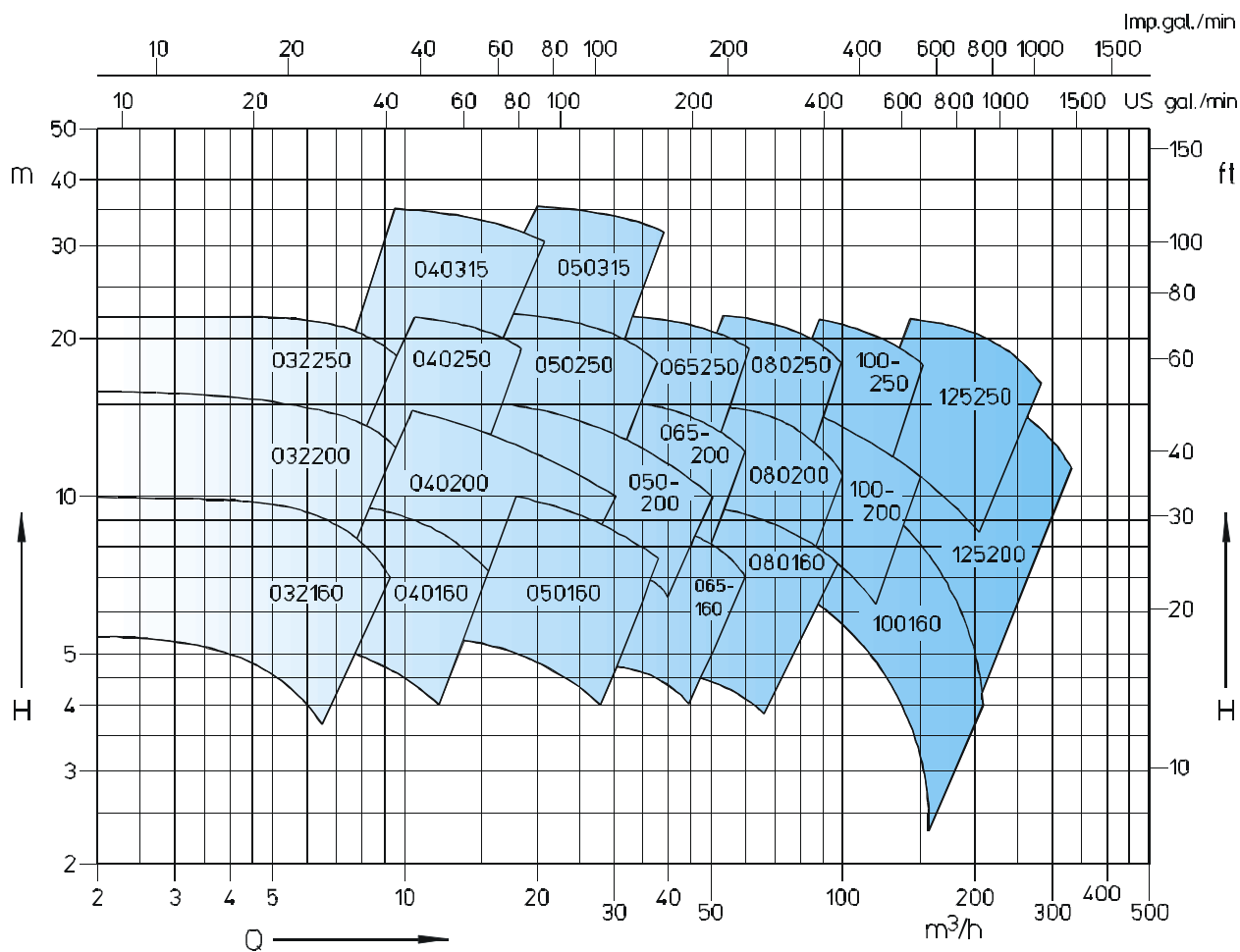
Product-side heat losses are effectively prevented (energy saving). The temperature reduction makes it possible to use safely an **uncooled** mechanical seal up to a pumping medium temperature of **207 °C**.

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.

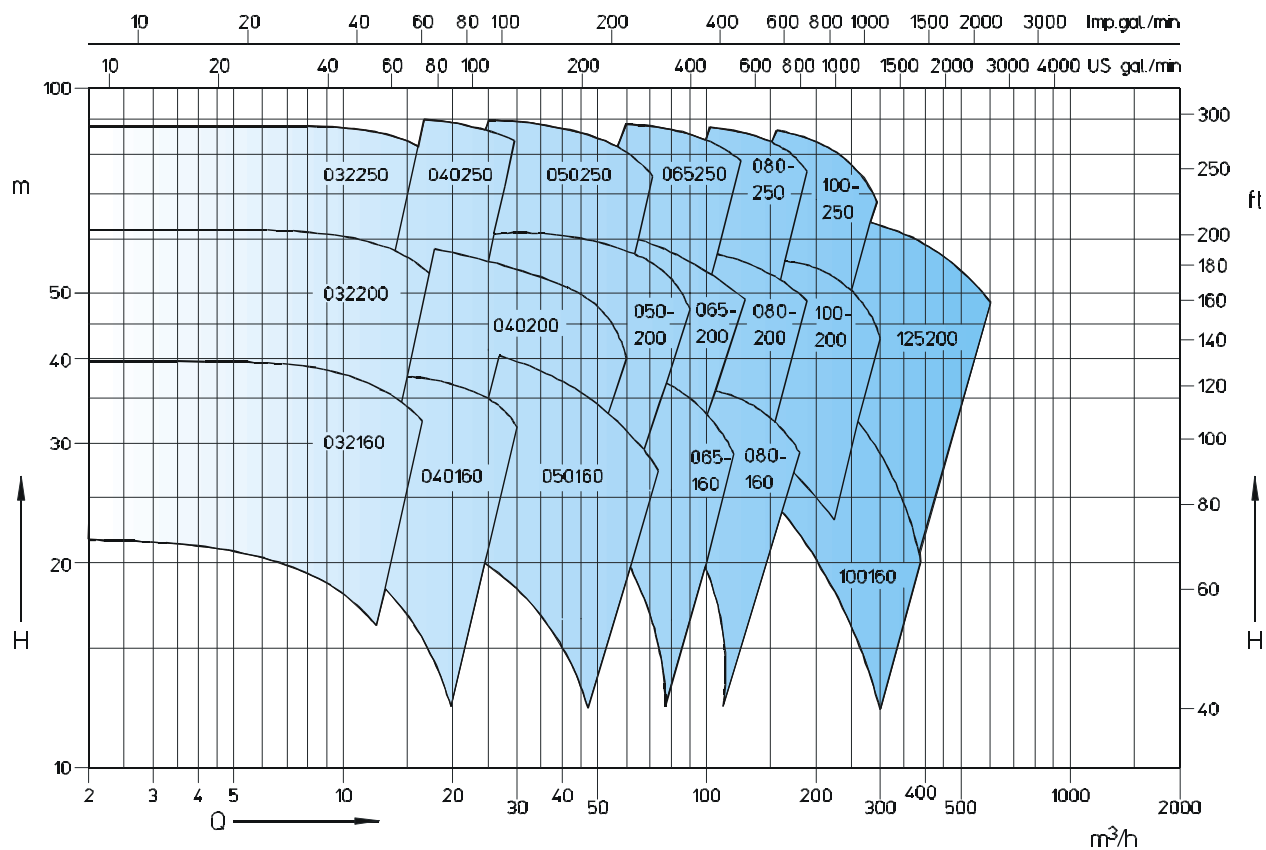


Performance graph

50 Hz
n = 1450 rpm

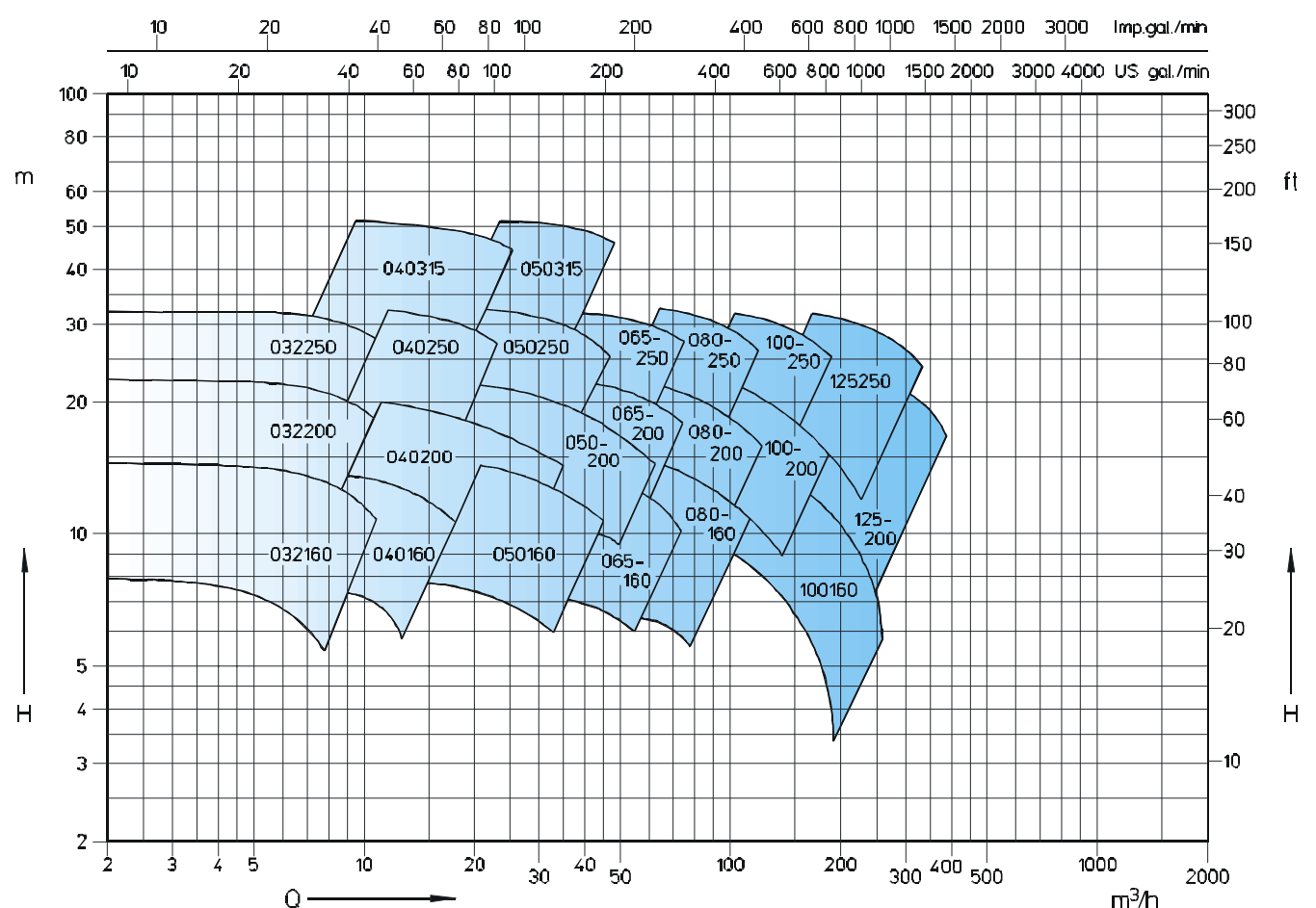


n = 2900 rpm

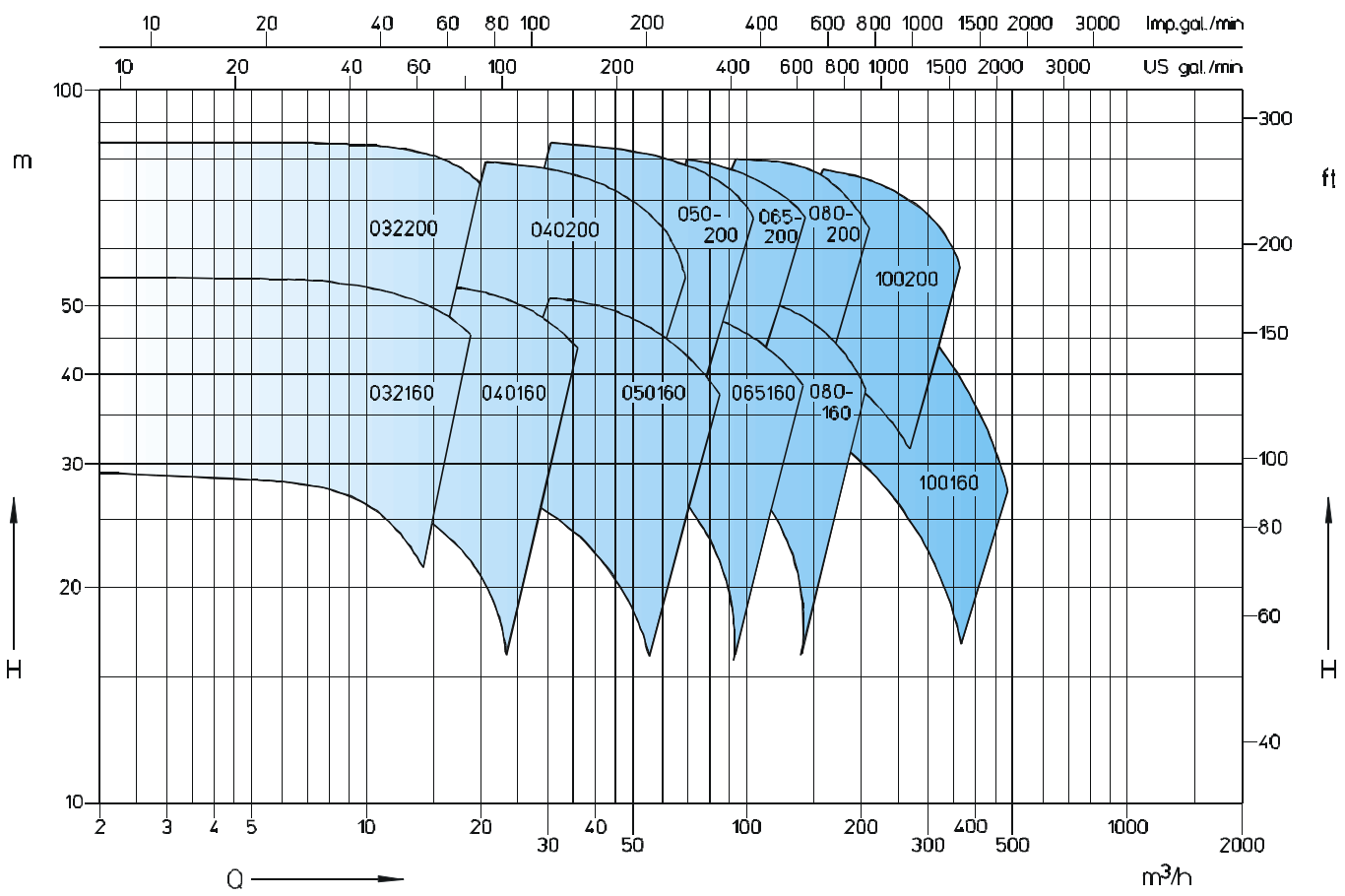


Performance graph

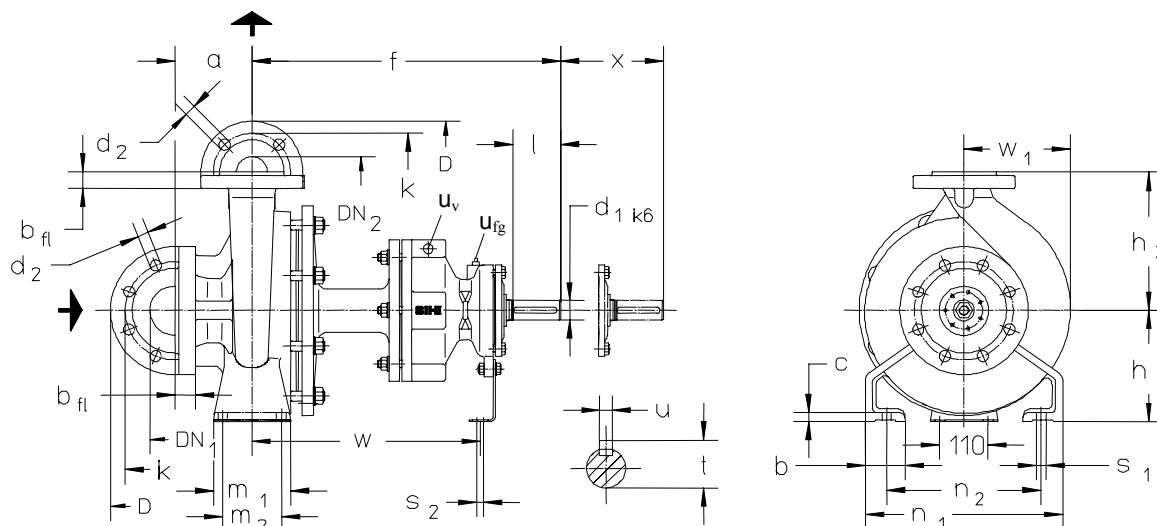
60 Hz
n = 1750 rpm



n = 3500 rpm



Dimension table



u_v = vent connection (G1/8)

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

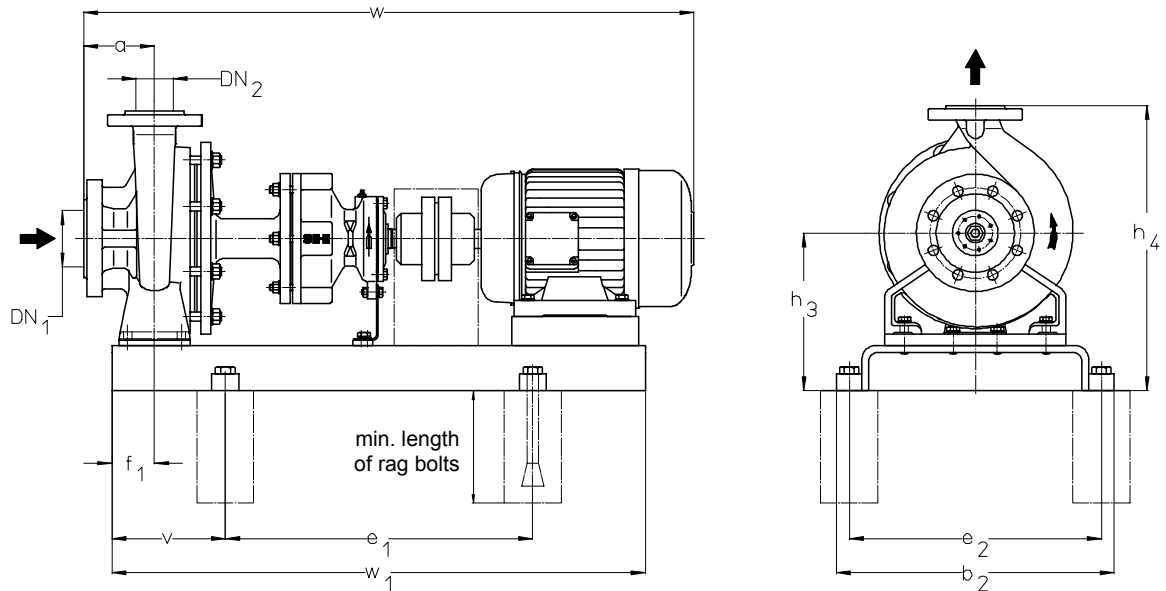
size	DN ₂	DN ₁	a	b	c	f	h ₁	h ₂	m ₁	m ₂	n ₁	n ₂	s ₁ *	s ₂	w	w ₁	x	d ₁	l	t	u
032160	32	50	80	50	17	385	132	160	100	70	240	190	M12	M12	285	120	100	24	50	27	8
032200							160	180								140					
032250			100	65		500	180	225								370					
040160	40	65	80	50	17	385	132	160	100	70	240	190	M12	M12	285	125	100	24	50	27	8
040200			100				160	180								150					
040250				65		500	180	225								170					
040315			125		20		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								160					
050250			125	65		500	180	225								175					
050315					20		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								175					
065250			125	80			200	250			360	280				195					
080160	80	125	125	65	17	500	180	225	125	95	320	250	M12	M12	370	170	140	32	80	35	10
080200								250								185					
080250				80			225	280			400	315				205					
100160 ¹⁾	100	125	140		20	500	200	280	160	120	360	280	M16	M12	370	210	140	32	80	35	10
100200			125	80												215					
100250			140				530	225			400	315									
125200 ¹⁾	125	150	140	80	20	530	250	315	160	120	400	315	M16	M12	370	245	140	42	110	45	12
125250								355								240					

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 connections to DIN EN 1092-2 PN 40								
DN ₂ /DN ₁	32	40	50	65	80	100	125	150
D	140	150	165	185	200	235	270	300
k	100	110	125	145	160	190	220	250
b _{fl}	18	19	19	19	19	19	23,5	26
Tolerance	+4,0 -3,0							
d ₂ x number	19x4	19x4	19x4	19x8	19x8	23x8	28x8	28x8

Foundation plan



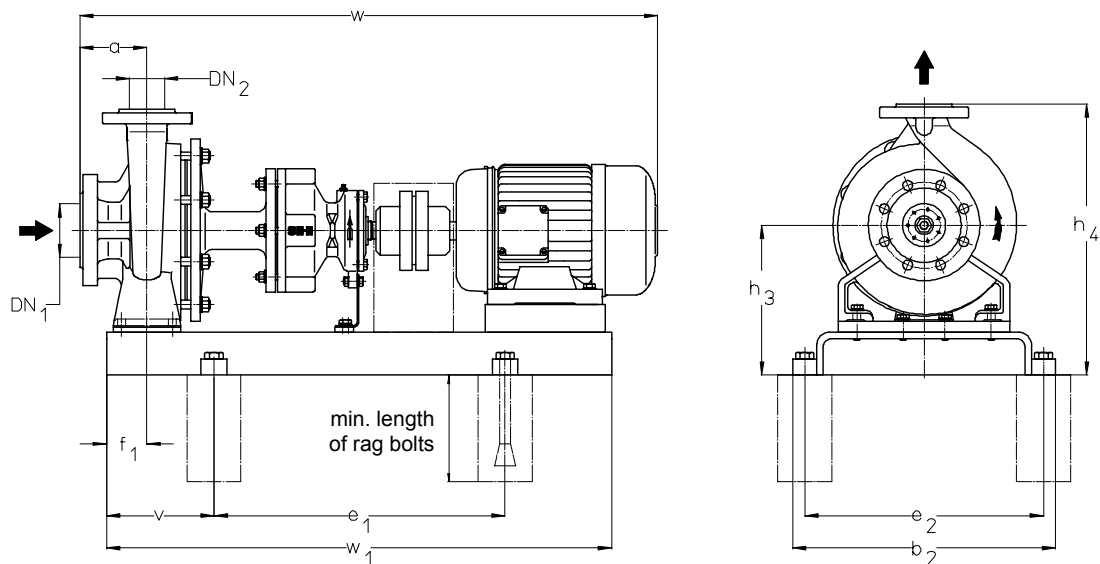
Dimensions in mm

ZDND Size	Motor Speed 2900 kW		Size	Base plate No.	Coup- ling	Weight (kg) Pump Unit															Rag bolt size
	DN ₂	DN ₁					a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁					
032160	0,37	-	71	S272	B80	54	86	32	50	80	360	420	320	115	60	197	357	701	650	M16x200	
	0,55	-	80				93					737									
	-	1,10					94					737									
	-	1,50	90S				96					764									
	-	2,20	90L				99					764									
	-	3,00	100L				105					833									
	-	4,00	112M				109					850									
032200	0,55	-	80		B68	56	94					737		M16x200							
	0,75	-					96					737									
	1,10	-	90S				98					764									
	-	3,00	100L		B80		107					833									
	-	4,00	112M				111					850									
	-	5,50	132S				142					912									
	-	7,50	132S				148					912									
032250	0,75	-	80	S383	B80	89	142			100	490	600	440	160	75	260	485	872	920	M20x400	
	1,10	-	90S				144											893			
	1,50	-	90L				146											924			
	2,20	-	100L				152											968			
	-	7,50	132S	S385			B95					210		1047							
	-	11,00	160M									254		1188							
	-	15,00										267		1188				1140			
040160	0,37	-	71	S270	B68	55	85	40	65	80	360	420	320	115	60	197	357	700	650	M16x200	
	0,55	-	80	94			737														
	0,75	-		96			765														
	1,10	1,50	90S	99			792														
	-	2,20	90L	102			833														
	-	3,00	100L	107			857														
	-	4,00	112M	125			912					920									
040200	0,75	-	80	S301	B68	56	95			390	600	350	160	125	60	225	405	757	920	M16x200	
	1,10	-	90S				98											784			
	1,50	-	90L				101											809			
	2,20	-	100L	S303			B80						106					870			
	-	4,00	112M										131					877			
	-	5,50	132S										144					932			
	-	7,50	132S										123					1073	1020		
040250	1,10	-	90S	S383	B80	92	150			100	490	740	440	200	75	260	485	900	920	M20x400	
	1,50	-	90L				153											924			
	2,20	-	100L				156											968			
	3,00	-					159											1047			
	-	5,50	132S				209											1188			
	-	7,50	132S				212											1232			
	-	11,00	160M				261											993			
040315	-	15,00	160L	S385	B95	263	1010														
	-	18,50	160L			287	1072														
	2,20	-	100L			S383	B80			131	192	125	540	740	490	200	280	530	993	920	
	3,00	-	-								196										
4,00	-	112M	202	1010																	
5,50	-	132S	257	1072	1140																

* 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.

Foundation plan



Dimensions in mm

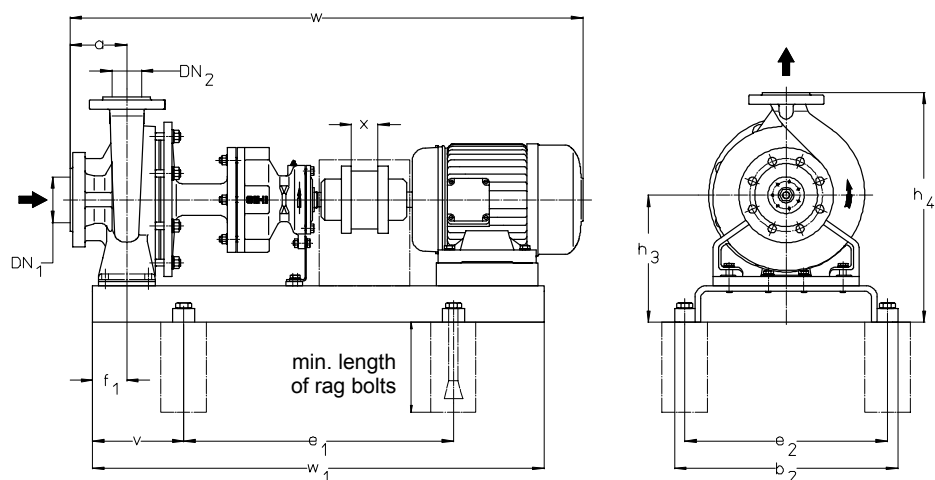
ZDND Size	Motor Speed		Size	Base plate No.	Coup- ling	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	Rag bolt size		
	1450 kW	2900 kW				Pump	Unit															
050160	0,55	-	80	S301	B68	61	98	50	80	100	390	480	350	125	60	225	405	757	730	M16x200		
	0,75	-					100											784				
	1,10	-					103											812				
	1,50	2,20					105											853				
	-	3,00	100L	S303	B80		118					600	160	877		920	932					
	-	4,00	112M				136							932								
	-	5,50	132S				149							1073			1020	M20x400				
	-	7,50	160M				151							1073			1020	M20x400				
	-	11,00	160M	S344	B95		211					450	660	400		180	240	420	1073		1020	M20x400
	050200	0,75	-	80			S301					B68	104	100		390	480	350	125		60	225
1,10	-	90S	107	784																		
1,50	-	90L	110	809																		
2,20	-	100L	115	870																		
-	4,00	112M	S303	B80	140	600	160	932	920	M16x200												
-	5,50	132S			155			1073			1020	M20x400										
-	7,50	160M			160			1113			1020	M20x400										
-	11,00	160M			215			1073			1020	M20x400										
-	15,00	160L	S344	B95	217	450	660	400	180		240	440	1073		1020		M20x400					
-	18,50	160L			232	1113	1020	M20x400														
050250	1,50	-			90L	S383	B80	156	125		490	600	440	160	75	260	485	949	920	M20x400		
2,20	-	100L			158			993														
3,00	-	112M	162	1010																		
4,00	-	112M	178	1072																		
-	7,50	132S	S385	B95	215	740	200	1072		1140		M20x400										
-	11,00	160M			265			1213														
-	15,00	160M			267			1257														
-	18,50	160L			291			1280														
-	22,00	180M	S436	B110	318	540	840	490		215			1368	1270		1270	M24x400					
-	30,00	200L			427	610	840	550		205			1010	1072				1250				
050315	4,00	-	112M	S486	B80	135	249	65	100	100	610		840	550	205	75		325	605	1110	1250	M24x400
5,50	-	132S	278				1072															
7,50	-	132M	290				1110															
065160	0,75	-	80	S342	B80	81	129	65	100	100	450		540	400	140	75		240	440	872	1020	M20x400
	1,10	-	90S				141					900										
	1,50	-	90L				144					924										
	2,20	-	100L				147					968										
	-	4,00	112M	S344	B95		154				660	180	985	1140	M20x400							
	-	5,50	132S				179						1047									
	-	7,50	160M				182						1188									
	-	11,00	160M				250						1188				1140					
	-	15,00	160L	S385	B95		252				490	740	440	200			1188	1140	1140	M20x400		
	065200	1,10	-				90S				S344	B80	148	65			100	100			450	
1,50	-	90L	151	924																		
2,20	-	100L	154	968																		
3,00	-	112M	157	985																		
4,00	-	112M	S385	B95	173	490	740	440	200	1047	1140	M20x400										
-	7,50	132S			208					1213												
-	11,00	160M			257					1257												
-	15,00	160L			259					1280												
-	18,50	160L	S436	B110	283	540	840	490	215	1368	1270		1270		M20x400							
-	22,00	180M			311	1368																
-	30,00	200L	S436	B125	420	540	840	490	215	1368	1270		1270	M20x400								

* 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.

ZDND Size	Motor		Size	Base plate No.	Coup- ling	Weight (kg)															Rag bolt size		
	Speed 1450 kW	2900				Pump	Unit	DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁				
065250	2,20	-	100L	S434	B80	113	190	65	100	125	540	660	490	170	90	280	530	993	1000	M20x400			
	3,00	-					193											1010					
	4,00	-					208											1072					
	5,50	-					228											1213					
	-	15,00	160M	S435	B95		298				740	490	200	1257		1280	1140						
	-	18,50	160L				313																
	-	22,00	180M				341																
	-	30,00	200L				445																
	-	37,00	200L	S436	B125		461				840	215	1368	1270									
	-	45,00	225M				S486									504	610	550	205		300	550	1425
080160	0,75	-	80	S383	B80	89	144	80	125	125	600	160	75	260	485	897	920	M20x400					
	1,10	-	90S				147									924							
	1,50	-	90L				150									949							
	2,20	-	100L				153									993							
	3,00	-		209	1072																		
	-	7,50	132S	S385	B95		258				740	440		200	1213	1140							
	-	11,00	160M				260								1257								
	-	15,00	160L				284								1280								
	-	18,50	160L				312																
	080200	1,50	-	90L	S383		B80				96	156		80	125	125	600		160	75	260	510	949
2,20		-	100L	160		993																	
3,00		-	112M	163		1010																	
4,00		-	132S	179		1072																	
5,50		-	132S	S385	B95	220	740	490	200	1213		1140											
-		11,00	160M			260				1257													
-		15,00	160L			291				1280													
-		18,50	180M			319																	
-		22,00	180M	S436	B125	428	540	840	490	215		280	530				1368	1270					
-		30,00	200L			444																	
-	37,00																						
080250	3,00	-	100L	S486	B80	120	229	610	840	550	205	90	325	605	993	1250	M24x400						
	4,00	-	112M				246								1010								
	5,50	-	132S				265								1072								
	7,50	-	132M				278								1110								
	-	18,50	160L	S486	B95		342								610	550		205	90	325	605	1225	1250
	-	22,00	180M				365															1280	
	-	30,00	200L				461															1368	
	-	37,00	200L				477															1425	
	-	45,00	225M	S487	B125		537								940	550		240	380	660	1660	1420	
	-	55,00	250M				B140																637
100160	2,20	-	100L	S434	B80	120	197	100	125	140	660	170	90	280	560	1008	1000	M20x400					
	3,00	-	112M				200									1025							
	4,00	-	132S				216									1087							
	5,50	-	160L				235									1272							
	-	18,50	160L	S435	B95		320				740	490		200	325	605	1250						
	-	22,00	180M				348												1295				
	-	30,00	200L				452												1383				
	-	37,00	200L				468												1425				
100200	2,20	-	100L	S434	B80	112	189	100	125	540	660	490	90	280	560	993	1000	M20x400					
	3,00	-	112M				192									1010							
	4,00	-	132S				207									1072							
	5,50	-	132M				227									1110							
	7,50	-	132M	S435	B95		240			740	490	200		325	605	1250							
	-	18,50	160L				312										1257						
	-	22,00	180M				340										1280						
	-	30,00	200L				444										1368						
-	37,00	200L	S436	B125	460	940	550	240	380	660	1660	1420											
-	45,00	225M			494																		
100250	4,00	-	112M	S486	B95	132	259	140	610	840	550	205	325	605	1055	1250	M24x400						
	5,50	-	132S				277								1117								
	7,50	-	132M				290								1155								
	11,00	-	160M				328								1258								
	-	30,00	200L	S487	B125		473			940	550	240		350	630	1538		1420					
	-	37,00	225M				499												1470				
	-	45,00	225M				543												1538				
	-	55,00	250M				658												1660				
-	75,00	280S	B160	858																			
125200	7,50	-	132M	S486	B95	142	300	125	150	140	610	550	240	90	350	665	1155	1250	M24x400				
	11,00	-	160M				338										1258						
	15,00	-	160L				361										1302						
	-	45,00	225M	S487	B140		575				940	550	240			665	1470	1538		1420			
	-	55,00	250M				668														1660		
-	75,00	280S	B160	868																			
125250	7,50	-	132M	S486	B95	147	305	147	150	140	840	550	205	90	350	705	1155	1250	M24x400				
	11,00	-	160M				343										1258						
	15,00	-	160L		B110		366				1302												
	18,50	-	180M				391				1325												

Foundation plan for units with spacer coupling



Dimensions in mm

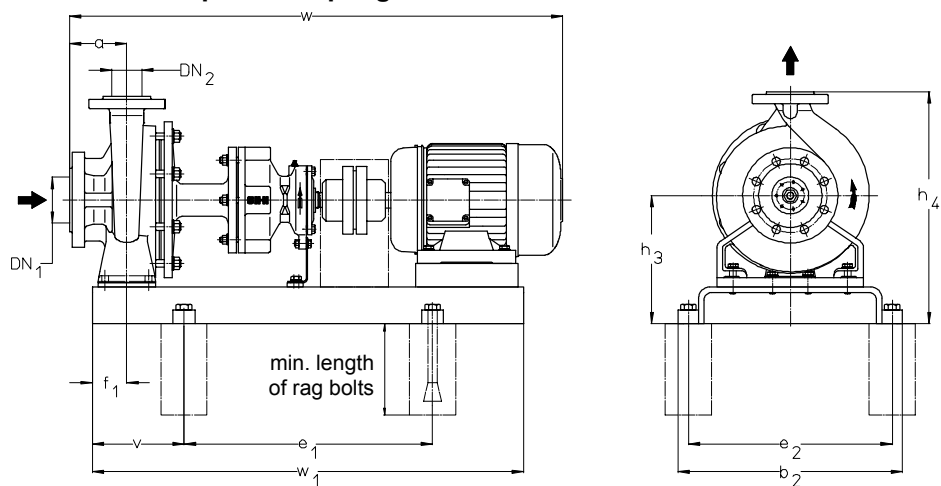
Dimensions in mm																													
ZDND Size	Motor Speed		Size	Base- plate No.	Coup- ling	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	Rag bolt size								
	1450 KW	2900 KW				Pump	Unit																						
032160	0,37	-	71	S272	H80	54	94	32	50	80	360	540	320	140	60	197	357	100	801	820	M16x200								
	0,55	-	80				95																						
	-	1,10	90S				96																						
	-	1,50	90L				99																						
	-	2,20	100L				102																						
	-	3,00	100L				112																						
	-	4,00	112M				117																						
032200	0,55	-	80	S272	H80	56	97				80	360	540	320		140	60		225	405		100	837	820	M16x200				
	0,75	-	90S				99																						
	1,10	-	90S				101																						
	-	3,00	100L				114																						
	-	4,00	112M				119																						
	-	5,50	132S				145																						
	-	7,50	132S				152																						
032250	0,75	-	80	S383	H80	89	147			100		490	740	440	200	75			260	485	75		972	1140		M20x400			
	1,10	-	90S				168																						
	1,50	-	90L				170																						
	2,20	-	100L				174																						
	-	7,50	132S				213																						
	-	11,00	160M				270																						
	-	15,00	160M				282																						
040160	0,37	-	71	S272	H80	55	94				40	65	80	360	540		320		140	60		197	357	100	800		820	M16x200	
	0,55	-	80				97																						
	0,75	-	90S				99																						
	1,10	1,50	90S				102																						
	-	2,20	90L				105																						
	-	3,00	100L				114																						
	-	4,00	112M				133																						
040200	-	5,50	132S	S303	H80	56	146			100				390	600	350	160		60		225	405	100		857	920	M16x200		
	0,75	-	80				104																						
	1,10	-	90S				107																						
	1,50	-	90L				110																						
	2,20	-	100L				115																						
	-	4,00	112M				135																						
	-	5,50	132S				147																						
040250	-	7,50	132S	S344	H95	92	150						100	450	660	400	180			75	240	420			100	1032		1020	M20x400
	-	11,00	160M				209																						
	-	15,00	160M				209																						
	1,10	-	90S				172																						
	1,50	-	90L				175																						
	2,20	-	100L				180																						
	3,00	-	100L				183																						
040315	-	5,50	132S	S385	H80	131	214	125	490	740				440	200	280	530	1140	1106		1140	M20x400							
	-	7,50	132S				217																						
	-	11,00	160M				264																						
	-	15,00	160L				266																						
	-	18,50	160L				303																						
	2,20	-	100L				220																						
	3,00	-	112M				227																						
040315	4,00	-	112M	S385	H80	131	227		125	490			740	440	200		280		530	1140	1125		1140		M20x400				
	5,50	-	132S				255																						
	-	-	-				255																						

* 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.

ZDND Size	Motor Speed		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	x	w*	w ₁	Rag bolt size
	1450 KW	2900 KW				Pump	Unit														
050160	0,55	-	80	S303	H80	61	50	80	100	390	600	350	160	60	225	405	100	857	920	M16x200	
	0,75	-																			107
	1,10	-																			109
	1,50	2,20																			112
	-	3,00	90S																		116
	-	4,00	100L																		120
	-	5,50	112M																		139
	-	7,50	132S																		153
050200	-	11,00	160M	S344	H95	65	50	80	100	390	600	350	160	60	225	425	100	857	920	M16x200	
	0,75	-	80																		110
	1,10	-	90S																		113
	1,50	-	90L																		114
	2,20	-	100L																		124
	-	4,00	112M																		143
	-	5,50	132S																		156
	-	7,50	160M																		159
050250	-	11,00	160M	S385	H80	95	50	80	125	490	740	440	200	75	260	485	100	857	1140	M20x400	
	-	15,00	160L																		218
	-	18,50	200L																		220
	1,50	-	90L																		235
	2,20	-	100L																		178
	3,00	-	112M																		183
	-	7,50	132S																		186
	-	11,00	160M																		202
050315	-	15,00	160L	S436	H95	135	65	100	125	540	840	490	215	75	280	505	100	857	1270	M24x400	
	-	18,50	180M																		282
	-	22,00	200L																		306
	4,00	-	112M																		239
	5,50	-	132S																		280
	7,50	-	132M																		282
	-	11,00	160M																		335
	-	15,00	160M																		432
065160	4,00	-	112M	S486	H80	81	65	100	100	450	660	400	180	75	240	440	100	857	1020	M20x400	
	5,50	-	132S																		142
	7,50	-	132M																		145
	1,10	-	90S																		145
	1,50	-	90L																		150
	2,20	-	100L																		176
	-	4,00	112M																		201
	-	5,50	132S																		204
065200	-	7,50	132S	S385	H95	88	65	100	100	490	740	440	200	75	260	485	100	857	1140	M20x400	
	-	11,00	160M																		266
	-	15,00	160M																		268
	1,10	-	90S																		149
	1,50	-	90L																		152
	2,20	-	100L																		157
	3,00	-	112M																		160
	4,00	-	132S																		176
065250	-	7,50	132S	S436	H95	113	65	125	125	540	740	490	200	90	280	530	140	857	1270	M24x400	
	-	11,00	160M																		224
	-	15,00	160L																		273
	-	18,50	180M																		279
	-	22,00	200L																		299
	-	30,00	225M																		328
	2,20	-	100L																		455
	3,00	-	112M																		206
080160	4,00	-	112M	S487	H125	89	80	125	125	610	940	550	240	75	300	525	140	857	1420	M24x400	
	5,50	-	132S																		209
	7,50	-	132M																		225
	1,10	-	90S																		238
	1,50	-	90L																		309
	2,20	-	100L																		324
	-	4,00	112M																		353
	-	5,50	132S																		480
080200	-	7,50	132S	S385	H95	95	65	100	100	490	740	440	200	75	260	485	100	857	1270	M24x400	
	-	11,00	160M																		274
	-	15,00	160L																		276
	-	18,50	180M																		300
	-	22,00	200L																		329
	2,20	-	100L																		147
	3,00	-	112M																		150
	4,00	-	132S																		153
080250	-	11,00	160M	S436	H110	105	65	125	125	540	740	490	215	75	260	485	100	857	1270	M24x400	
	-	15,00	160L																		158
	-	18,50	180M																		161
	-	22,00	200L																		212
	-	30,00	225M																		274
	2,20	-	100L																		276
	3,00	-	112M																		300
	4,00	-	132S																		329

Foundation plan for units with spacer coupling



Dimensions in mm

ZDND Size	Motor Speed		Size	Base- plate No.	Coup- ling	Weight (kg) Pump Unit	Dimensions in mm											Rag bolt size										
	1450 KW	1900 KW					DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x		w*	w ₁								
080200	1,50	-	90L	S385	H80	96	180	80	125	125	490	740	440	200	75	260	510	140	1089	1140	M20x400							
	2,20	-	100L				184												1133									
	3,00	-					187												1150									
	4,00	-					112M												203			1212						
	5,50	-	132S				215												1420									
	-	11,00	160M	S436	H95		540				840	490	215	300		550	1425		1420									
	-	15,00	160M														276											
	-	18,50	160L														283											
	-	22,00	180M														307											
	-	30,00	200L														336											
-	37,00	200L	S487	H125	463	472	1508	1420																				
080250	3,00	-	100L	S486	H80	120	230	100	125	140	610	840	550	205	90	325	605	140	1133	1250	M24x400							
	4,00	-	112M				249												1150									
	5,50	-	132S				262												1212									
	7,50	-	132M				264												1250									
	-	18,50	160L				367												1420									
	-	22,00	180M	S487	H110		940				240	350	630	1633		1620												
	-	30,00	200L														390											
	-	37,00	200L														487											
	-	45,00	225M														496											
	-	55,00	250M														535											
			S538	H140	666	660	1060	600	280																			
100160	2,20	-	100L	S435	H80	120	213	100	125	140	540	740	490	200	90	280	560	140	1148	1140	M24x400							
	3,00	-	112M				216												1165									
4,00	-	112M	232				1227																					
	5,50	-	132S	S436	H95		610				840	550	240	300		580	1523		1420									
	-	18,50	160L																	245		1412						
	-	22,00	180M																	332		1435						
	-	30,00	200L	358	1523																							
	-	37,00	200L	S487	H125															487		497						
100200	2,20	-	100L	S435	H80		112				205	100	125	125		540	740		490	200		90	280	560	140	1133	1140	M20x400
	3,00	-	100L								208															1150		
	4,00	-	112M			224		1212																				
	5,50	-	132S			237		1250																				
	7,50	-	132M			239		1397																				
	-	18,50	160L	S436	H95	840		215	300	580	1508				1420													
	-	22,00	180M													324	1420											
	-	30,00	200L													352	1508											
	-	37,00	200L	S487	H125	660		1060	600	240	380				660	1800	1620											
	-	45,00	225M															489	1540									
			489				1540																					
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		940				240	350	630	1553		1420												
	-	37,00	200L														509											
	-	45,00	225M														553											
	-	55,00	250M	S538	H140		679				380	660	1678	1620														
	-	75,00	280S				880				1800																	
	125200	7,50	-	132M	S486		H95				142	286	125	150		140	610		840	550		205	90	350	665	140	1295	1250
11,00		-	160M	339		1398		1420																				
15,00		-	160L	362		1442		1420																				
-		45,00	225M	S538	H125	660	1060	600	280	1678		1620																
-		55,00	250M												613		1675	1620										
-		75,00	280S												706		1800	1620										
125250	7,50	-	132M	S486	H95	147	291	125	150	140	610	840	550	205	90	350	705	140	1295	1250	M24x400							
	11,00	-	160M				344												1398			1420						
	15,00	-	160L	S487	H110		940				240	350	630	1553		1420												
	18,50	-	180M																367	1442		1420						

* 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.

Data regarding pump size

Type + Pump size		Hydraulic + Bearing	Shaft sealing	Material	Casing gasket
		A= Hydraulic 1 A= One grease lubricated antifriction ball bearing and one internal liquid flushed sleeve bearing	AF3= Balanced standard mechanical seal SiC/Carbon/EPDM	1B= Pressure loaded parts in ductile iron GGG-40.3	2= Confined flat gasket gasket of graphite with A4 insertion
ZDND	032160	AA	AF3	1B	2
	032200				
	032250				
	040160				
	040200				
	040250				
	040315				
	050160				
	050200				
	050250				
	050315				
	065160				
	065200				
	065250				
	080160				
	080200				
	080250				
	100160				
	100200				
	100250				
	125200				
	125250				

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

