

Volute pumps

for hot water up to 180°C

SIHI *SuperNova*



ZHND 032160 ... 150250

TECHNICAL DATA

Output:	max. 600 m ³ /h
Delivery head:	max. 95 m
Speed:	max. 3600 rpm
Medium temperature:	max. 180 °C
Casing pressure:	PN 16
Shaft sealing:	standard mechanical seal uncooled
Flange connections:	DIN EN 1092-2 PN 16
Sense of rotation:	clockwise, when looking at the pump from the drive end



APPLICATION

The volute pumps of the series ZHND 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 its high system pressure, over oil as heat carrier.

DESIGN

Horizontal, single-stage volute pumps with dimensions and nominal ratings to **EN 733** in back pull out design.

The series **ZHND** has especially designed for the trouble free handling of hot water up to 180 °C and is distinguished by:

- A heat barrier that causes an optimal energy consumption by the pump and reduces the temperature level in the mechanical seal chamber to less than 80 °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 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 16 bar

Please note:

Technical rules and safety regulations.

Max. casing pressure = inlet pressure + zero head

Max test pressure = 21 bar

Flange location:

Axial suction flange, discharge flange radially upwards.

Flanges:

The flanges comply with DIN EN 1092-2 resp. PN 16.

Flanges drilled according to ANSI (previous ASA) 150 can be supplied.

Hydraulic:

Designation of this construction type: A or B

Bearing:

One grease lubricated antifriction 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 BJ3: Unbalanced standard mechanical seal
Seal face materials SIC/carbon
Elastomer EPDM

Material design:

Item	Components	Material						Execution 1B							
		EN material- number	EN material- denomination	DIN material- number	DIN material- denomination	US denomination									
						ASTM Standard	AISI								
10.20 16.10 33.00	volute casing 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	mechanical 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 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	032160	065160	3000	032250	125200	1800	125250
	032200	065200		040250	150200		
	040160	080160		050250	150250		
	040200	080200		065250			
	050160	100160		080250			
	050200	100200		100250			

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	032160 032200 032250 040160 040200 040250 050160 050200 050250 065160 065200 080160
Bracket 35	065250 080200 080250 100160 100200 100250 125200 125250 150200 150250

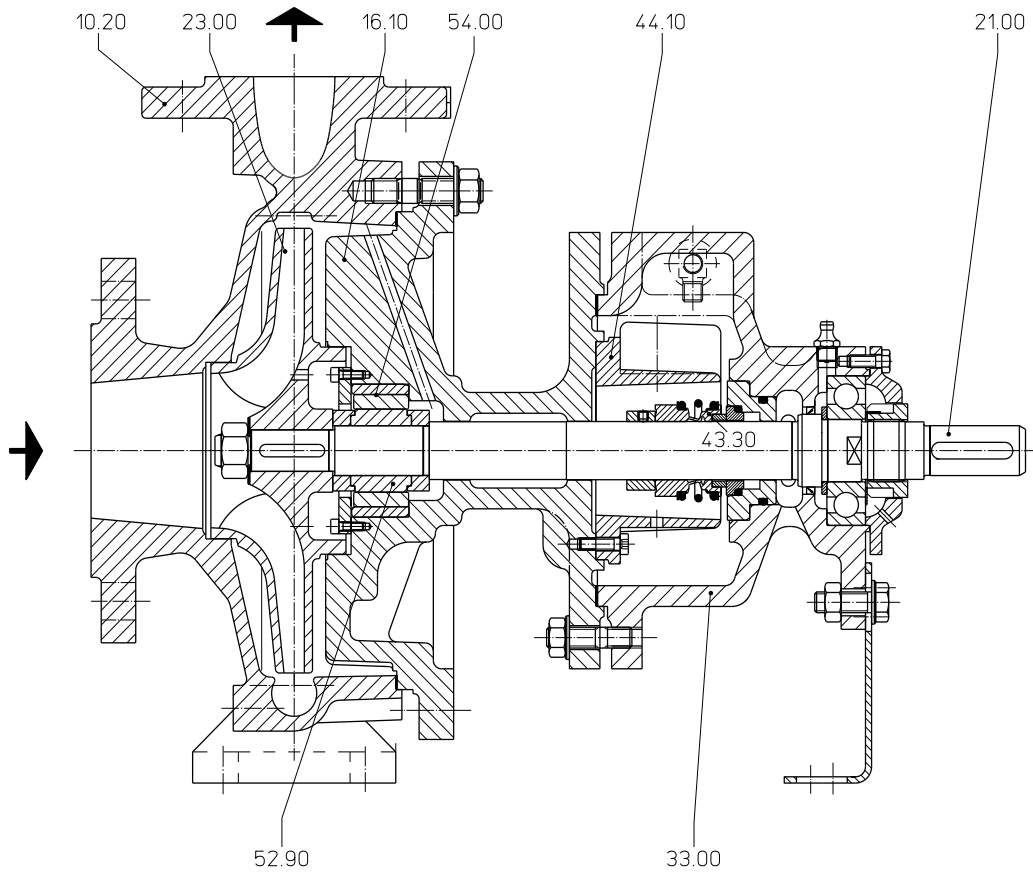
General remarks:

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

- ZEN** volute pumps to DIN EN 22858, t_{max} 230 °C PN 40. Hot water design
- ZDN** volute pumps to DIN EN 22858, t_{max} 207 °C PN 25. 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.

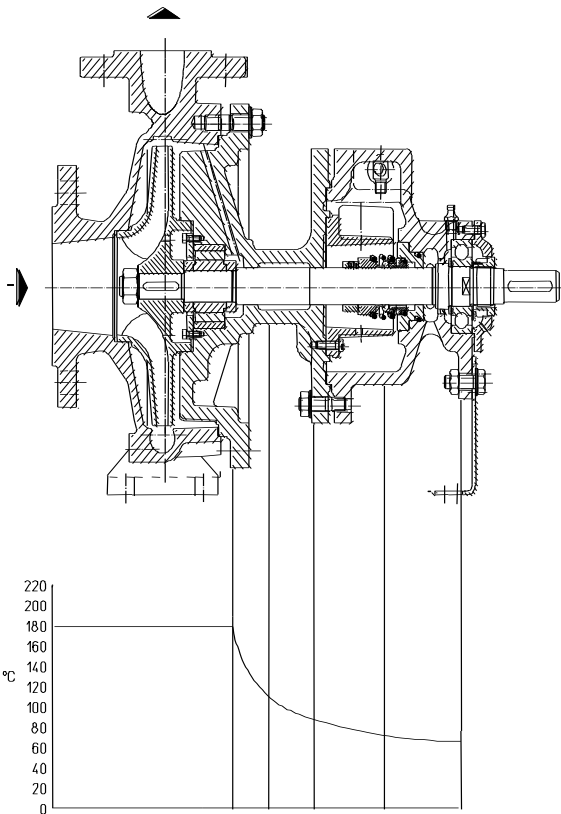
Sectional drawing and nomenclature



10.20 volute casing
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, 5400 sleeve bearing



curve of temperature decrease

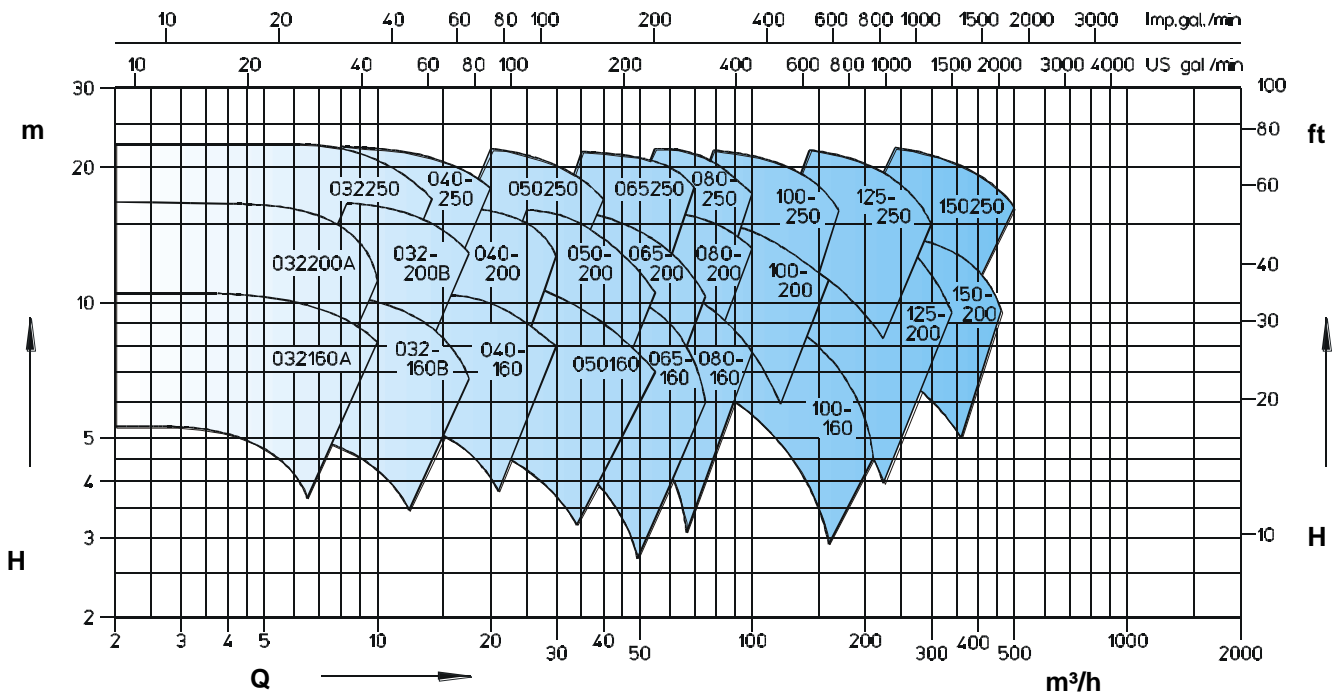
Heat barrier / shaft seal / bearing / feet arrangement

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 ZHND fully complies with these requirements. Special attention was paid to the above technical details.

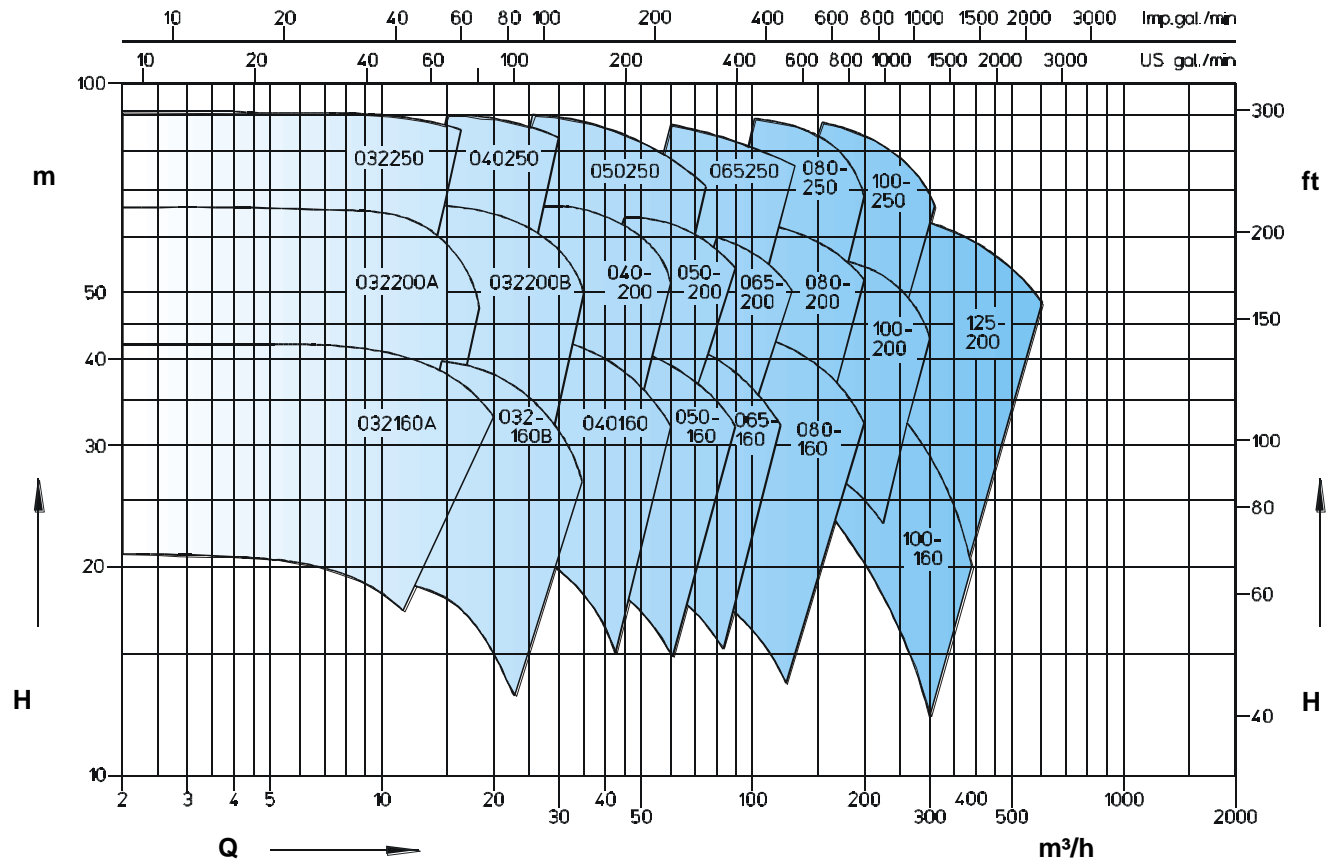
A favourable reduction in temperature is obtained towards the drive side by fitting a heat barrier between the casing cover and the shaft seal housing. See illustration. Product-side heat losses are effectively prevented (energy saving). The temperature reduction makes it possible to use safely an **uncooled** mechanical seal up to a pumping medium temperature of **180 °C**.

Performance graph

50 Hz
n = 1450 rpm



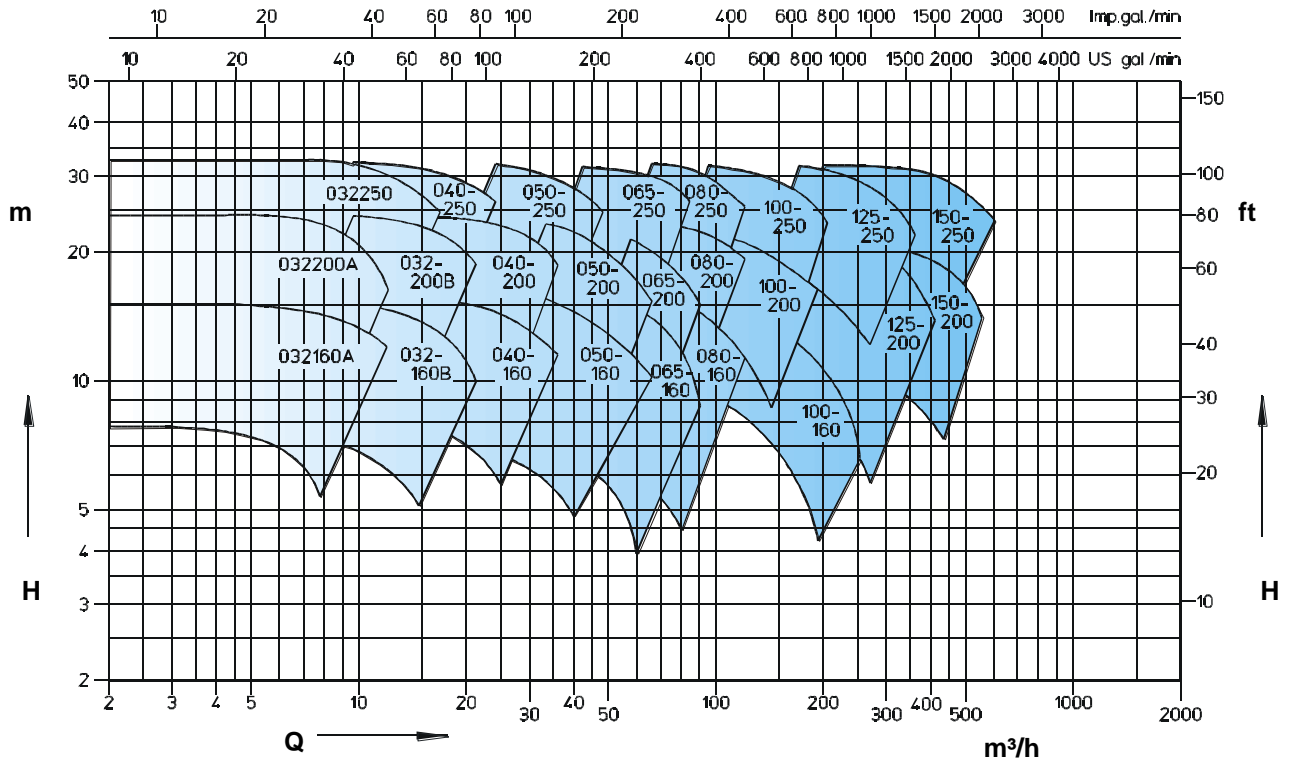
n = 2900 rpm



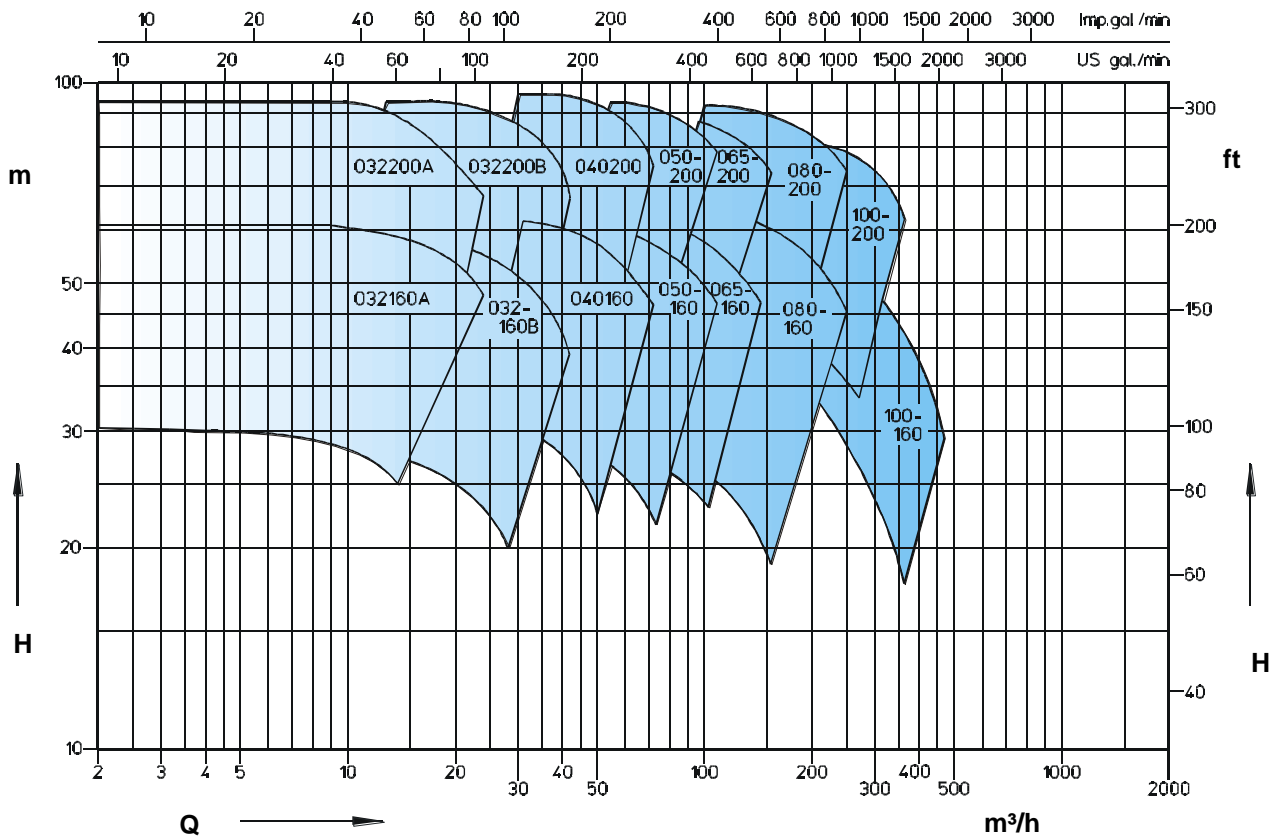
Performance graph

60 Hz

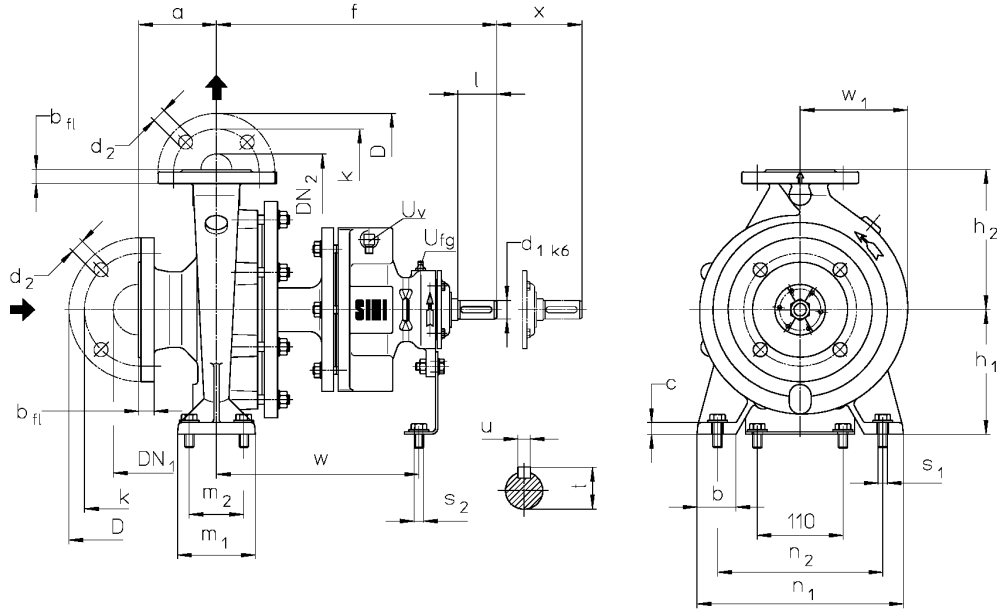
n = 1750 rpm



n = 3500 rpm



Dimension table



u_v = vent connection (G1/8)

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

Dimensions in mm

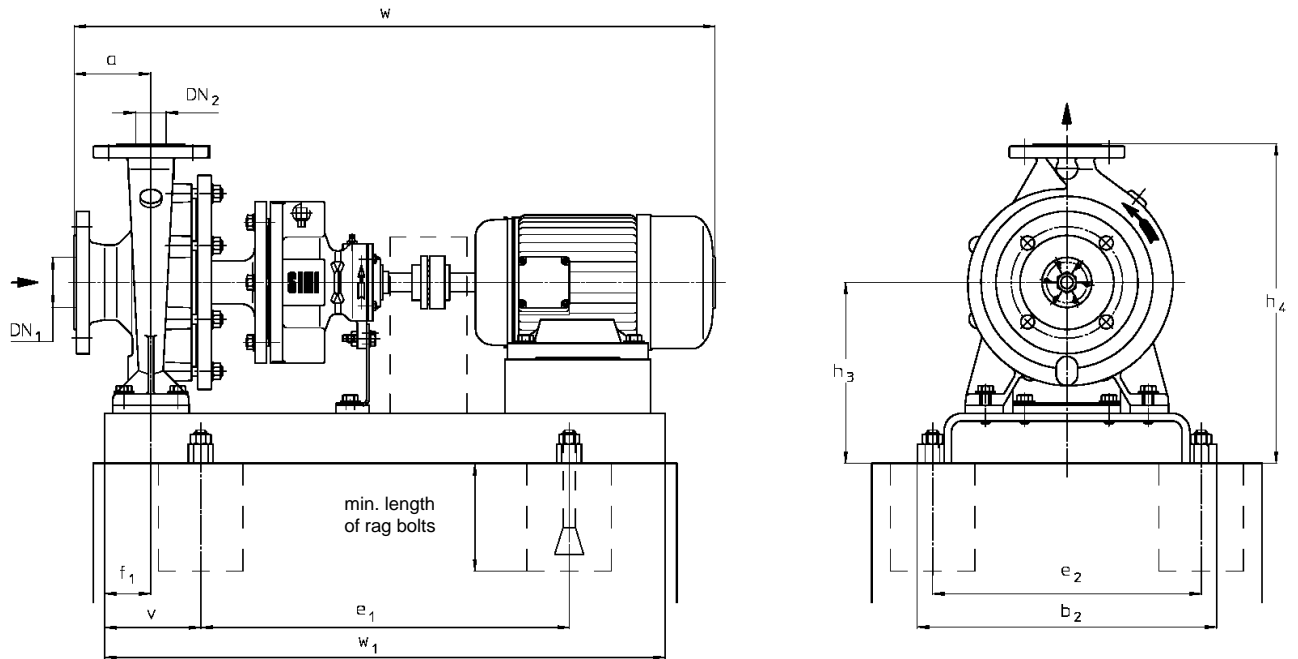
size	DN ₂	DN ₁	a	b	c	f	h ₁	h ₂	m ₁	m ₂	n ₁	n ₂	s ₁ *	s ₂ *	w	w ₁	x	d ₁	l	t	u			
032160	32	50	80	50	15	360	132	160	100	70	240	190	M12	M12	267	120	100	24	50	27	8			
032200			160	180			125	95														320	250	128
032250 ¹⁾			180	225			125	95														320	250	160
040160	40	65	80	50	15	360	132	160	100	70	240	190	M12	M12	267	128	100	24	50	27	8			
040200			160	180			125	95														320	250	140
040250			180	225			125	95														320	250	164
050160	50	100	50	50	15	360	160	180	100	70	265	212	M12	M12	267	130	100	24	50	27	8			
050200			180	225			125	95														320	250	150
050250			180	225			125	95														320	250	169
065160	65	80	65	65	15	360	160	200	125	95	280	212	M12	M12	267	147	100	24	50	27	8			
065200			180	225			125	95														320	250	166
065250			180	225			125	95														320	250	166
080160	80	100	65	65	15	360	180	225	125	95	320	250	M12	M12	267	165	100	24	50	27	8			
080200			250	125		95	345	280														180		
080250			250	125		95	400	315														200		
100160 ¹⁾	100	125	80	80	18	470	200	280	160	120	360	280	M16	M16	340	202	100	32	80	35	10			
100200			225	160			120	400														315	212	120
100250			225	160			120	400														315	242	140
125200 ¹⁾	125	150	140	140	18	470	250	315	160	120	400	315	M16	M16	340	236	100	32	80	35	10			
125250			250	355			160	120														400	315	236
150200 ¹⁾	150	200	160	100	20	470	280	400	200	150	550	450	M20	M20	274	190	100	32	80	35	10			
150250 ¹⁾			280	400			200	150			500	400										274	170	

¹⁾ Transnorm pump sizes, not included in EN 733. Flanges drilled according to ANSI 150 can be supplied.

* 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 16									
DN ₂ /DN ₁	32	40	50	65	80	100	125	150	200
D	140	150	165	185	200	220	250	285	340
k	100	110	125	145	160	180	210	240	295
b _{fl}	18	19	19	19	19	19	19	19	20
Tolerances	+4,0 -3,0								
d ₂ x number	19x4	19x4	19x4	19x4	19x8	19x8	19x8	23x8	23x12

Foundation plan



Dimensions in mm

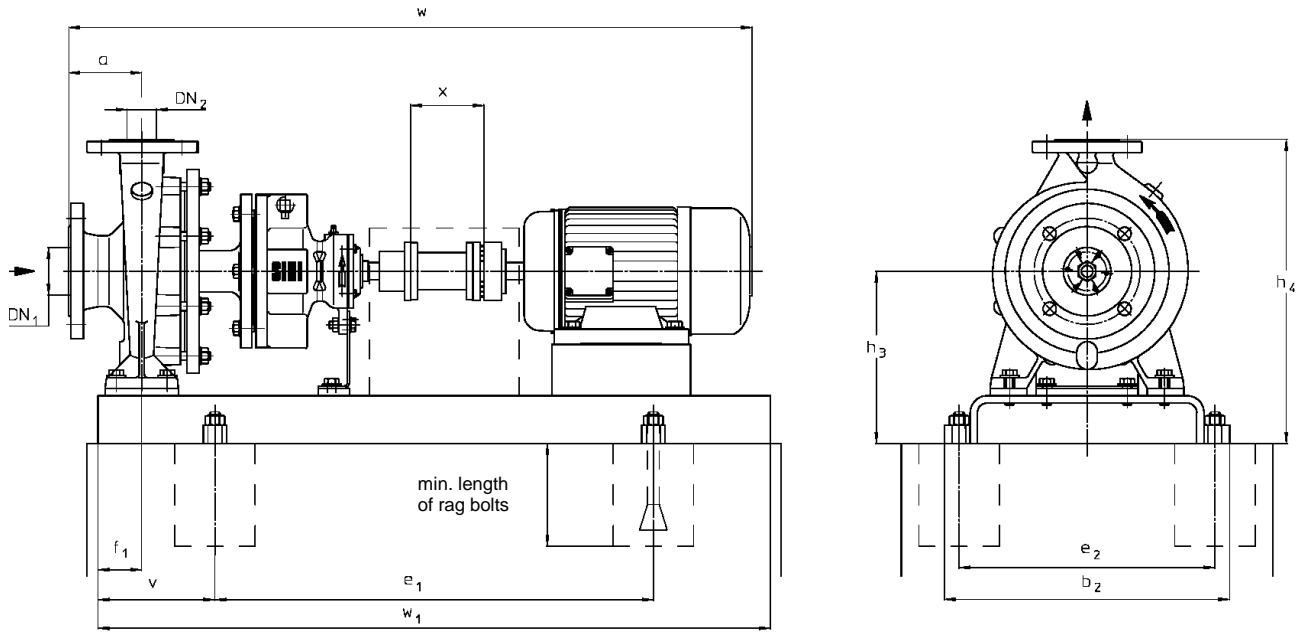
ZHND Size	Motor Speed		Base-plate No.	Coupling	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	Rag bolt size										
	1450 kW	2900 kW			Size	Pump														Unit									
032160	0,37	-	71	S270	B68	50	32	50	80	360	420	320	115	60	197	357	682	650	M16x200										
	0,55	1,10	80														716												
	-	1,50	90S														89												
	-	2,20	90L	S301	B80												91			390	480	350	125	774					
	-	3,00	100L														101							815					
	-	4,00	112M	S342	B95												102			450	540	400	140	212	372	836	820	M20x400	
	-	5,50	132S														139									912			
-	7,50	132S	139			912																							
032200	0,55	-	80	S270	B68	55	32	50	80	360	420	320	115	60	225	405	716	650	M16x200										
	0,75	-	80														86												
	1,10	1,50	90S	S301	B80												93			390	480	350	125	240	420	774			
	1,50	2,20	90L														96									774			
	-	3,00	100L	S342	B95												106			450	540	400	140	240	420	815	820	M20x400	
	-	4,00	112M														107									836			
	-	5,50	132S														144									912			
	-	7,50	132S	S383	B95												144			490	600	440	160	240	420	1030	920	M20x400	
	-	11,00	160M														163									1030			
	-	15,00	160M														163									1030			
-	18,50	160L	191			1150																							
032250	0,75	-	80	S383	B68	56	40	65	100	490	600	440	160	75	260	485	736	920	M20x400										
	1,10	-	90S														110												
	1,50	-	90L														112												
	2,20	-	100L	S383	B80												123			490	600	440	160	75	260	485	794		
	-	7,50	132S														152										835		
	-	11,00	160M	S383	B95												171			490	600	440	160	75	260	485	932	920	M20x400
	-	15,00	160M														171										1050		
040160	0,37	-	71	S270	B68	44	40	65	80	360	420	320	115	60	197	357	682	650	M16x200										
	0,55	-	80														75												
	0,75	1,10	80														75												
	1,10	1,50	90S	S301	B80												83			390	480	350	125	212	372	716			
	-	2,20	90L														85									774			
	-	3,00	100L	S342	B95												95			450	540	400	140	212	372	836	820	M20x400	
	-	4,00	112M														97									912			
	-	5,50	132S														133									912			
	-	7,50	132S	S383	B95												143			490	600	440	160	240	400	1030	920	M20x400	
-	11,00	160M	164			1030																							
-	-	-	164			1030																							
040200	0,55	-	80	S301	B68	46	40	65	100	390	480	350	125	60	225	405	736	730	M16x200										
	0,75	-	80														81												
	1,10	-	90S														81												
	1,50	-	90L														84												
	-	3,00	100L														86												
	-	4,00	112M	S342	B80												97			450	540	400	140	225	405	97			
	-	5,50	132S														98									794			
	-	7,50	132S	S383	B95												135			490	600	440	160	240	420	835	820	M20x400	
	-	11,00	160M														135									856			
	-	15,00	160M														161									932			
	-	-	-	S383	B95												161			490	600	440	160	240	420	1050	920	1050	

ZHND Size	Motor			Base-plate No.	Coupling	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
	Speed 1450 2900 kW	Size	Pump			Unit														
040250	1,10	-	90S	S383	B68	58	40	40			490	600	440	160	75	260	485	794	920	M20x400
	1,50	-	90L															794		
	2,20	-	100L		835															
	3,00	-	100L		835															
	-	7,50	132S		932															
	-	11,00	160M		1050															
	-	15,00	160M		1050															
-	18,50	160L	1112	1000																
050160	0,55	-	80	S301	B68	48	65	65			390	480	350	125	60	225	405	736	730	M16x200
	0,75	-	80															736		
	1,10	-	90S		794															
	-	2,20	90L		794															
	-	3,00	100L		835															
	-	4,00	112M		856															
	-	5,50	132S		932															
-	7,50	132S	932	820																
-	11,00	160M	1050	920																
050200	0,75	-	80	S301	B68	46	50	50			390	480	350	125	60	225	425	736	730	M16x200
	1,10	-	90S															794		
	1,50	-	90L		794															
	2,20	3,00	100L		835															
	-	4,00	112M		856															
	-	5,50	132S		932															
	-	7,50	132S		932													820		
-	11,00	160M	1050	920																
-	15,00	160M	1050	1020																
-	18,50	160L	1112	1020																
050250	1,50	-	90L	S383	B68	58	100	100			490	600	440	160	75	260	485	794	920	M20x400
	2,20	-	100L															835		
	3,00	-	100L		835															
	4,00	-	112M		856															
	-	11,00	160M		1050															
	-	15,00	160M		1050															
	-	18,50	160L		1112													1000		
-	22,00	180M	1174	1000																
-	30,00	200L	1232	1140																
065160	0,75	-	80	S342	B68	54	65	80			450	540	400	140	60	240	440	736	820	M20x400
	1,10	-	90S															794		
	1,50	-	90L		794															
	2,20	-	100L		835															
	-	5,50	132S		932															
	-	7,50	132S		932													820		
	-	11,00	160M		1050													820		
-	15,00	160M	1050	920																
065200	1,10	-	90S	S383	B68	63	65	80			490	600	440	160	75	260	485	794	920	M20x400
	1,50	-	90L															794		
	2,20	-	100L		835															
	3,00	-	100L		835															
	4,00	-	112M		856															
	-	11,00	160M		1050															
	-	15,00	160M		1050															
-	18,50	160L	1112	1000																
-	22,00	180M	1174	1000																
-	30,00	200L	1232	1140																
065250	2,20	-	100L	S434	B80	90	100	100			540	660	490	170	90	280	530	945	1000	M24x400
	3,00	-	100L															945		
	4,00	-	112M		966															
	5,50	-	132S		1042															
	-	18,50	160L		1222															
	-	22,00	180M		1284															
	-	30,00	200L		1342															
-	37,00	200L	1342	1270																
-	45,00	225M	413	610	550	205	325	575	1372	1250										
080160	0,75	-	80	S383	B68	55	80	100			490	600	440	160	75	260	485	761	920	M20x400
	1,10	-	90S															819		
	1,50	-	90L		819															
	2,20	-	100L		860															
	3,00	-	100L		860															
	-	7,50	132S		957															
	-	11,00	160M		1075															
-	15,00	160M	1075	1000																
-	18,50	160L	1137	1000																
-	22,00	180M	1199	1000																
080200	1,50	-	90L	S383	B80	91	80	100			490	600	440	160	75	260	510	929	920	M20x400
	2,20	-	100L															970		
	3,00	-	100L		970															
	4,00	-	112M		991															
	5,50	-	132S		1067															
	-	15,00	160M		1185															
	-	18,50	160L		1247															
-	22,00	180M	1309	1140																
-	30,00	200L	1367	1270																
-	37,00	200L	1367	1270																

ZHND Size	Motor Speed			Base-plate No.	Coupling	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	1900	2900			Pump	Unit																							
080250	3,00	-	100L	S486	B80	97	80	100	610	840	550	205	300	580	325	605	1367	1250	M24x400											
	4,00	-	112M																	205	206	235	238	295	355	355	420	970	991	1067
	5,50	-	132S																	238	295	355	420	970	991	1067	1093	1309	1367	
	7,50	-	180M																	238	295	355	420	970	991	1067	1093	1309	1367	
	-	30,00	200L		B125															355	355	420	970	991	1067	1093	1309	1367		
	-	37,00	200L																	355	355	420	970	991	1067	1093	1309	1367		
	-	45,00	225M																	355	355	420	970	991	1067	1093	1309	1367		
	-	55,00	250M																	355	355	420	970	991	1067	1093	1309	1367		
-	-	-	S607	B140	642	730	940	670	230	350	630	1527	1400																	
100160	2,20	-	100L	S434	B80	94	100	125	540	660	490	170	280	560	350	630	1367	1000	M20x400											
	3,00	-	100L																	177	177	178	206	260	340	340	970	970	991	
	4,00	-	112M																	177	177	178	206	260	340	340	970	970	991	
	5,50	-	132S		S435															B95	206	260	340	340	970	970	991	1067		
	-	18,50	160L																		260	340	340	970	970	991	1067	1247	1140	
	-	22,00	180M																		273	340	340	970	970	991	1067	1309	1367	
	-	30,00	200L																		340	340	340	970	970	991	1067	1367	1367	
-	37,00	200L	S436	B125	340	340	340	340	970	970	991	1067																		
-	-	-			340	340	340	970	970	991	1067	1367	1367																	
100200	2,20	-	100L	S434	B80	92	100	125	540	660	490	170	280	560	350	630	1367	1000	M20x400											
	3,00	-	100L																	175	175	176	204	207	258	271	338	338	415	
	4,00	-	112M																	175	175	176	204	207	258	271	338	338	415	
	5,50	-	132S																	204	207	258	271	338	338	415	970	970	991	
	7,50	-	132M		S435															B95	207	258	271	338	338	415	970	970	991	
	-	18,50	160L																		258	271	338	338	415	970	970	991	1067	
	-	22,00	180M																		271	338	338	415	970	970	991	1067	1093	
	-	30,00	200L																		338	338	415	970	970	991	1067	1247	1140	
-	37,00	200L	S436	B125	338	338	415	970	970	991	1067	1093																		
-	45,00	225M			338	338	415	970	970	991	1067	1367	1367																	
100250	4,00	-	112M	S486	B80	103	100	140	610	840	550	205	325	605	350	630	1412	1250	M24x400											
	5,50	-	132S																	212	241	244	259	361	361	426	1006	1082	1108	
	7,50	-	132M																	241	244	259	361	361	426	1006	1082	1108	1200	
	11,00	-	160M																	244	259	361	361	426	1006	1082	1108	1200		
	-	30,00	200L		S607															B140	361	426	648	917	1108	1200	1200	1382		
	-	37,00	200L																		361	426	648	917	1108	1200	1200	1382	1382	
	-	45,00	225M																		426	648	917	1108	1200	1200	1382	1382	1412	
	-	55,00	250M																		648	917	1108	1200	1200	1382	1382	1412	1542	
-	75,00	280S	S609A	B160	917	744	1200	696	300	380	660	1642	1800																	
125200	7,50	-	132M	S486	B95	117	125	150	140	610	840	550	205	350	665	1108	1250	M24x400												
	11,00	-	160M																258	274	303	662	931	1108	1200	1262				
	15,00	-	160L																274	303	662	931	1108	1200	1262	1542	1400			
	-	55,00	250M		S607														B140	662	931	1108	1200	1262	1542	1400				
	-	75,00	280S																	931	1108	1200	1262	1542	1400					
125250	7,50	-	132M	S486	B95	124	125	150	140	610	840	550	205	350	705	1108	1250	M24x400												
	11,00	-	160M																281	310	1108	1200	1262							
	15,00	-	160L																281	310	1108	1200	1262							
150200	7,50	-	132M	S605	B95	128	150	200	160	730	740	670	190	110	380	780	1120	M24x400												
	11,00	-	160M																286	302	332	344	351	353	390	1128	1220			
	15,00	-	160L		302														332	344	351	353	390	1128	1220	1282				
	18,50	-	180M		344														351	353	390	1128	1220	1282	1344	1344				
150250	15,00	-	160L	S606	B125	147	150	200	160	730	740	670	190	110	380	780	1120	M24x400												
	18,50	-	180M																351	353	390	1128	1220	1282	1344					
	22,00	-	180L																351	353	390	1128	1220	1282	1344					
30,00	-	200L	390	434	434	1128	1220	1282	1344	1402	1402																			

* 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 for units with spacer coupling



Dimensions in mm

ZHND Size	Motor Speed		Size	Base plate No.	Coupling	Weight (kg) Pump unit	DN2	DN1	a	b2	e1	e2	v	f1	h3	h4	x	w*	w1	Rag bolt size				
	1450	2900																			KW			
032160	0,37	-	71	S301	H80	50	32	50	80	390	480	350	125	60	197	357	100	780	730	M16x200				
	0,55	1,10	80	S272						89	360	540	320					140	814		820			
	-	1,50	90S							92									872					
	-	2,20	90L							94									872					
	-	3,00	100L	S303	H95	104			390	600	350	160	913	920										
	-	4,00	112M			105							1010											
	-	5,50	132S			107							1010											
	-	7,50	132S			107							1010											
032200	0,55	-	80	S272	H80	55	32	50	80	94	360	540	320	140	60	225	405	814	820	M16x200				
	0,75	-	80							94								814						
	1,10	1,50	90S							97								872						
	1,50	2,20	90L							99								872						
	-	3,00	100L	S303	H95				109	390	600	350	160	1010	920									
	-	4,00	112M						110					1010										
	-	5,50	132S						143					1128										
	-	7,50	132S						143					1128										
	-	11,00	160M	S344	H95				174	450	660	400	180	1128	1020									
	-	15,00	160M						174					1128										
-	18,50	160L	S385		219	740	200	1190	1140															
032250	0,75	-	80	S383	H80	56	40	65	100	109	490	600	440	160	75	260	485	834	920	M20x400				
	1,10	-	90S							112								892						
	1,50	-	90L							114								892						
	2,20	-	100L							124								892						
	-	7,50	132S	S434	H95				153	540	660	490	170	1030	1000									
	-	11,00	160M						188					1148										
	-	15,00	160M						188					1148										
040160	0,37	-	71	S301	H80	44	40	65	80	79	390	480	350	125	60	197	357	780	730	M16x200				
	0,55	-	80	S272						83								360	540		320	140	814	820
	0,75	1,10	80							83													814	
	1,10	1,50	90S							86													872	
	-	2,20	90L	S303	H95				88	390	600	350	160	872	920									
	-	3,00	100L						98					913										
	-	4,00	112M						99					934										
	-	5,50	132S						132					1010										
-	7,50	132S	S344	H95	132	660	180	60	240	400	1010	1020												
-	11,00	160M			167						1128													
040200	0,55	-	80	S342	H80	46	40	65	100	92	450	540	400	140	60	240	420	834	820	M20x400				
	0,75	-	80							92								834						
	1,10	-	90S							95								892						
	1,50	-	90L							97								892						
	-	3,00	100L	S303	H95				107	390	600	350	160	107	920									
	-	4,00	112M						108					1030										
	-	5,50	132S						134					1030										
	-	7,50	132S						134					1030										
	-	11,00	160M	S344	H95				163	450	660	400	180	1148	1020									
	-	15,00	160M						163					1148										

ZHND Size	Motor			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	
	Speed 1450 2900 KW	Size	Size			Pump	unit															
040250	1,10	-	90S	S383	H80	58	40								75	260	485	100	892	920	M20x400	
	1,50	-	90L																114			892
	2,20	-	100L																116			892
	3,00	-	100L																126			933
	-	7,50	132S	126	933																	
	-	11,00	160M	155	1030																	
	-	15,00	160M	190	1148																	
-	18,50	160L	220	1148																		
-			220	1210																		
				1140																		
050160	0,55	-	80	S342	H80	48												100	834	820	M16x200	
	0,75	-	80																94			834
	1,10	-	90S																94			892
	-	2,20	90L																97			892
	-	3,00	100L	99	933																	
	-	4,00	112M	109	954																	
	-	5,50	132S	110	1030																	
-	7,50	132S	136	1030																		
-	11,00	160M	136	1148																		
-			165	1020																		
			165	1148																		
			165	1020																		
			165	1148																		
			165	1210																		
			165	1140																		
050200	0,75	-	80	S342	H80	46									60	240	440	100	834	820	M20x400	
	1,10	-	90S																92			892
	1,50	-	90L																95			892
	2,20	3,00	100L																97			933
	-	4,00	112M	107	954																	
	-	5,50	132S	108	1030																	
	-	7,50	132S	134	1030																	
-	11,00	160M	134	1148																		
-	15,00	160M	163	1020																		
-	18,50	160L	163	1148																		
-			198	1210																		
			198	1140																		
			198	1140																		
			198	1140																		
			198	1140																		
			198	1330																		
050250	1,50	-	90L	S383	H80	58												100	892	920	M16x200	
	2,20	-	100L																116			933
	3,00	-	100L																126			933
	4,00	-	112M																127			954
	-	11,00	160M	190	1148																	
	-	15,00	160M	190	1148																	
	-	18,50	160L	220	1210																	
-	22,00	180M	239	1272																		
-	30,00	200L	300	1330																		
			300	1330																		
			300	1330																		
			300	1330																		
			300	1330																		
			300	1330																		
			300	1330																		

ZHND Size	Motor Speed		Size	Base plate No.	Coupling	Weight (kg) Pump	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																																							
080250	3,00	-	100L	S486	H80	97	80	100		610	840	550	205		300	580		1108	1250	M24x400																					
	4,00	-	112M		H95													207			208	236	239	297	1231	1447	1505	1505	1420												
	5,50	-	132S		H110													208			236	239	297	1231	1447	1505	1505	1420													
	7,50	-	132M		H125													207			208	236	239	297	1231	1447	1505	1505	1420												
	-	22,00	180M	S487	H140													97			80	100		610	840	550	205		300	580		1505	1400	M24x400							
	-	30,00	200L																													240			1505	1505	1420				
	-	37,00	200L																													230			1535	1505	1400				
	-	45,00	225M																													270			1665	1600	1600				
-	55,00	250M	S608	H140	97	80	100		730	1060	670	230	270	325	605	350	630		1665	1600												1600									
100160	2,20	-	100L	S434	H80	94				540	660	490	170		280	560			1108	1000												M20x400									
	3,00	-	100L		H95														178																178	179	214	268	1108	1108	1000
	4,00	-	112M		H110														179																178	179	214	268	1108	1108	1000
	5,50	-	132S		H125													214	268		1108	1108	1000																		
	-	18,50	160L	S436	H110													94					540	660	490	170		280	560		1385		1270	M24x400							
	-	22,00	180M																												215				1447	1505	1505	1420			
	-	30,00	200L																												266				1505	1505	1420				
	-	37,00	200L																												280				1505	1505	1420				
-	30,00	200L	S487	H125	92	100	125		610	940	550	240		300	580		378			1420											M24x400										
-	37,00	200L															378															1505			1505	1420					
-	45,00	225M															378															1505			1505	1420					
-	55,00	250M															459															1505			1505	1420					
100200	2,20	-	100L	S434													H80	92	100		125		540	660	490	170		280	560			1108	1000	M20x400							
	3,00	-	100L														H95															176			176	177	212	266	1108	1108	1000
	4,00	-	112M														H110															177			176	177	212	266	1108	1108	1000
	5,50	-	132S														H125															212			266	1108	1108	1000			
	7,50	-	132M	S436	H110	92	100	125		540	660	490	170		280	560				1231											1140	M20x400									
	-	18,50	160L																	215															1231	1385	1385	1270			
	-	22,00	180M																	266															1385	1385	1270				
	-	30,00	200L																	280															1385	1385	1270				
-	30,00	200L	S487	H125	92													100	125		610	940	550	240		300	580		376	1420			M24x400								
-	37,00	200L																											376					1505	1505	1420					
-	45,00	225M																											376					1505	1505	1420					
-	55,00	250M																											459					1505	1505	1420					
100250	4,00	-	112M	S486		H80	103				610	840	550	205		325	605														1144	1250		M24x400							
	5,50	-	132S			H95																									214				242	245	261	387	1220	1220	1250
	7,50	-	132M			H110																									245				242	245	261	387	1220	1220	1250
	11,00	-	160M			H125																									261				245	245	261	387	1220	1220	1250
	-	30,00	200L	S487	H125	103															610	840	550	205		325	605			387	1420		M24x400								
	-	37,00	200L																											387					1520	1520	1400				
	-	45,00	225M																											470					1550	1550	1400				
	-	55,00	250M																											670					1680	1680	1600				
-	55,00	250M	S608	H140	103					730	1060	670	230		350	630													459	1600		M24x400									
-	75,00	280S																											923					1780	1800	1800					
-	75,00	280S																											S609A					H160	923	1780	1800	1800			
-	75,00	280S																											S609A					H160	923	1780	1800	1800			
125200	7,50	-	132M	S486		H95												117				610	840	550	205		350	665			1246		1250	M24x400							
	11,00	-	160M			H110																									259				275	305	684	1338	1338	1250	
	15,00	-	160L			H140																									305				275	305	684	1338	1338	1250	
	-	55,00	250M			H160																									684				937	937	744	1200	696	300	380
125250	7,50	-	132M	S486	H95	124				610	840	550	205		350	705		1246	1250	M24x400																					
	11,00	-	160M		H110													266			282	312	744	1200	696	300	380	660	1780	1800											
	15,00	-	160L		H140													282			312	312	744	1200	696	300	380	660	1780	1800											
150200	7,50	-	132M	S605	H95	128				740			190					1266	1120	M24x400																					
	11,00	-	160M		H110													287			314	345	357	411	1358	1358	1250														
	15,00	-	160L		H125													314			345	345	357	411	1358	1358	1250														
	18,50	-	180M		H140													357			411	411	357	411	1358	1358	1250														
150250	15,00	-	160L	S607	H110	147				730	840	670	205	110	380	780		1482	1400	M24x400																					
	18,50	-	180M		H125													411			436	462	564	1482	1482	1400															
	22,00	-	180L		H140													436			462	462	564	1482	1482	1400															
-	30,00	200L	S607	H125	147					940		230					1540	1400	1400																						

* 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 desing	Casing gasket	
	A hydraulic 1 B hydraulic 2 A grease lubricated reinforced antifriction bearing and one internal liquid flushed sleeve bearing	BJ3 unbalanced standard mechanical seal	1B main parts of spheroidal cast iron	2 confined flat gasket of graphite with A4 insertion	
ZHND	032160	BJ3	1B	2	
	032160				
	032200				
	032200				
	032250				
	040160				
	040200				
	040250				
	050160				
	050200				
	050250				
	065160				
	065200				
	065250				
	080160				AA
	080200				
	080250				
	100160				
	100200				
	100250				
125200					
125250					
150200					
150250					

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

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