

Volute pumps

for hot water up to 207 °C

SIHI *SuperNova*



ZDND 032160 ... 125250

TECHNICAL DATA

Output:	max. 600 m ³ /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	3000	032250	1800	040315
	040160		040250		050315
	050160		050250		050315
	065160		065250		
	080160		080250		
	100160		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

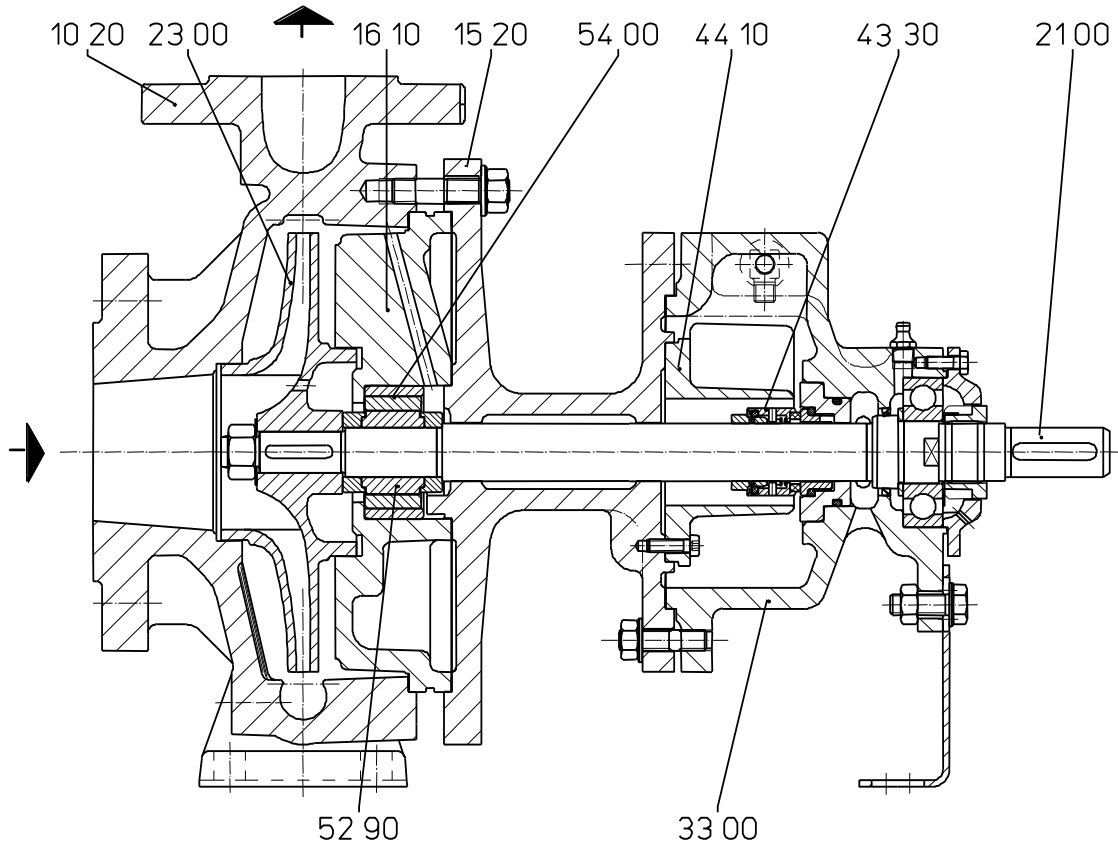
General remarks:

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.

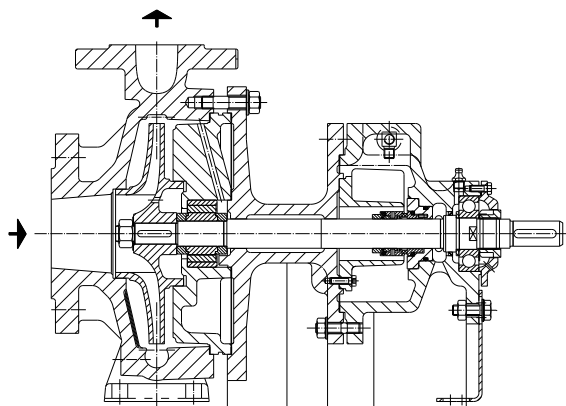
Sectional drawing and nomenclature



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



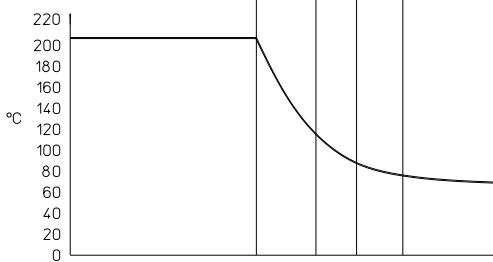
Heat barrier / shaft seal / bearing / feet arrangement

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.

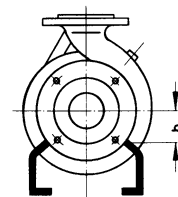
A favourable reduction in temperature is obtained towards the drive side by fitting a double acting heat barrier between the casing cover and the shaft seal housing. See illustration.

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.

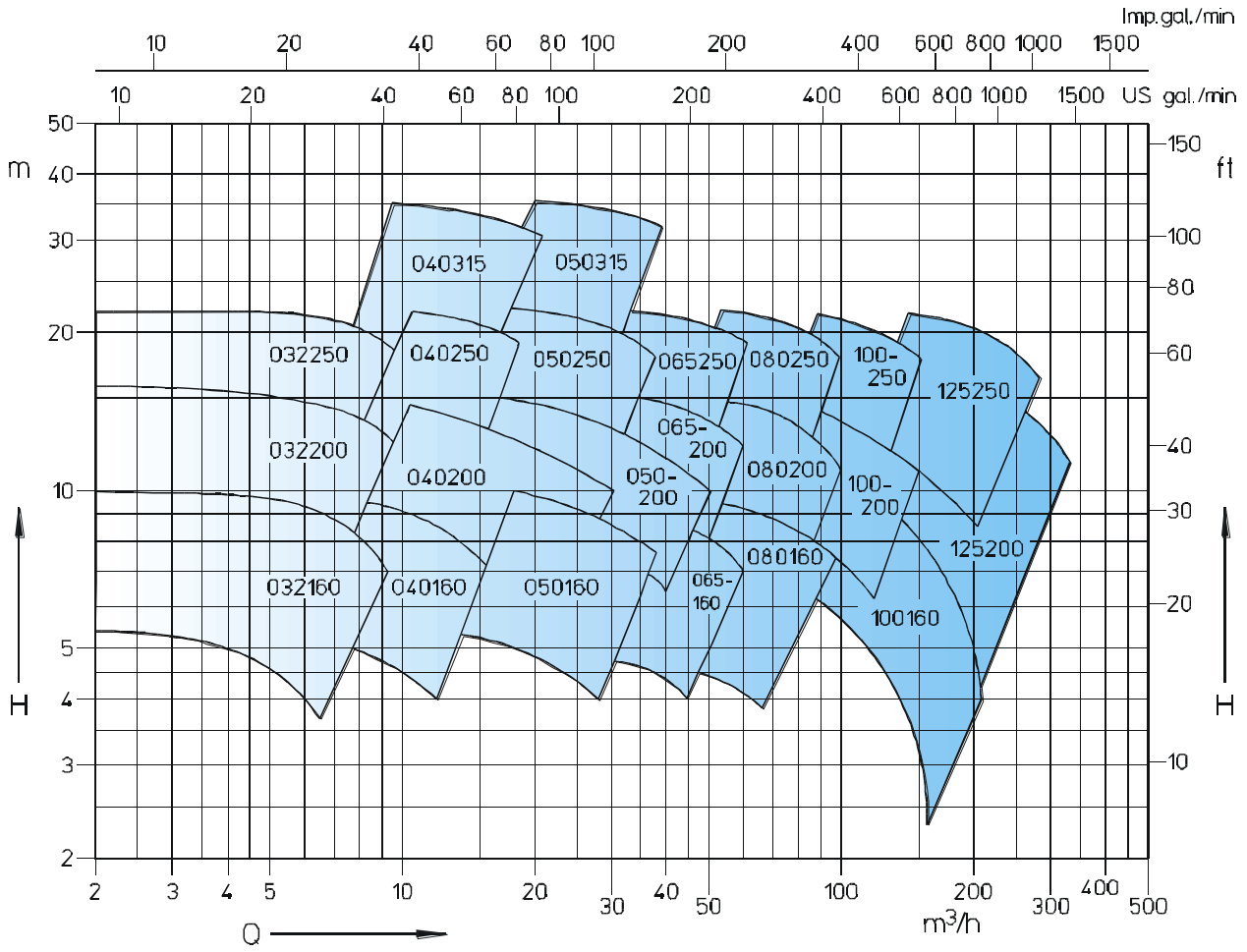


Curve of temperature decrease

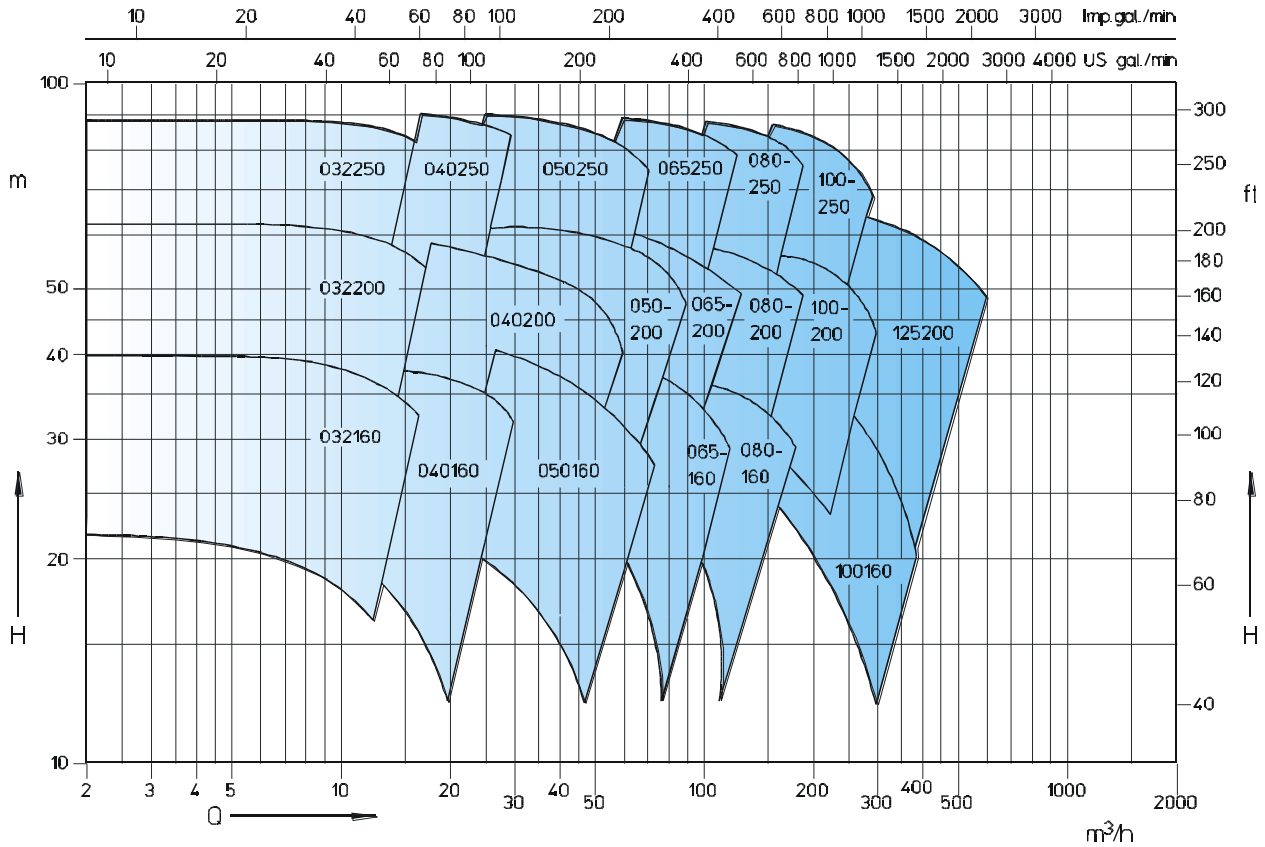


Performance graph

50 Hz
n = 1450 rpm

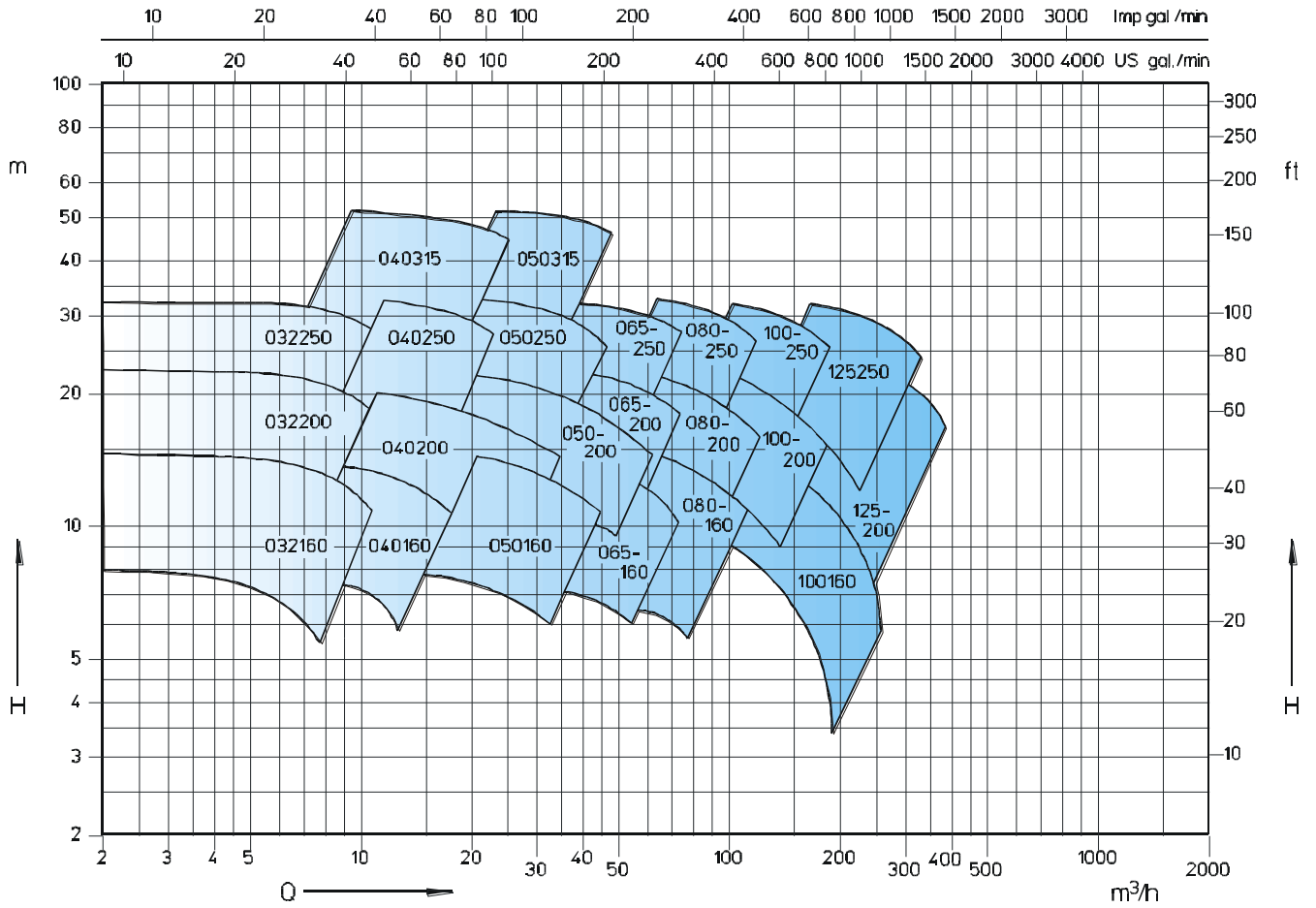


n = 2900 rpm

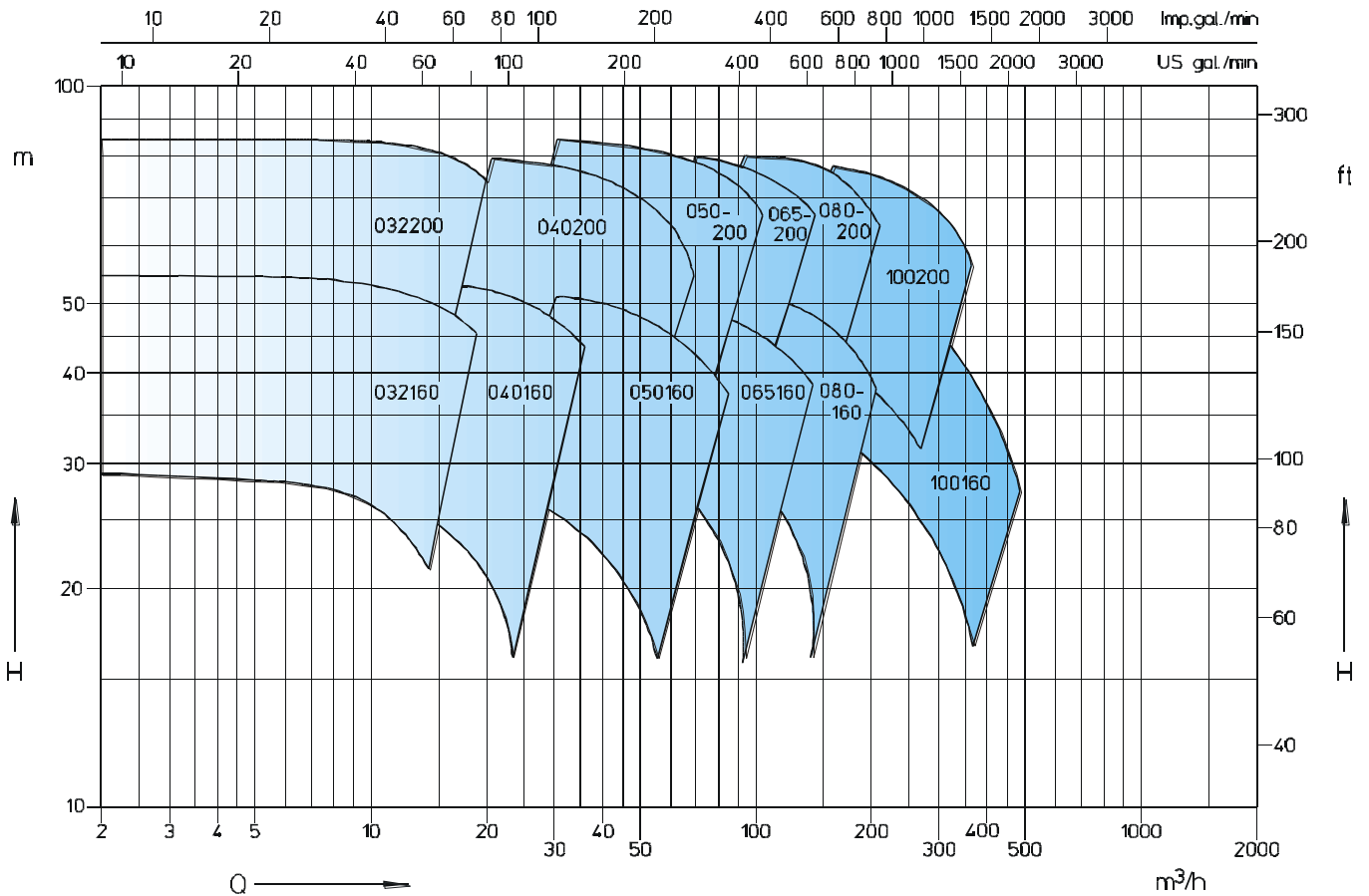


Performance graph

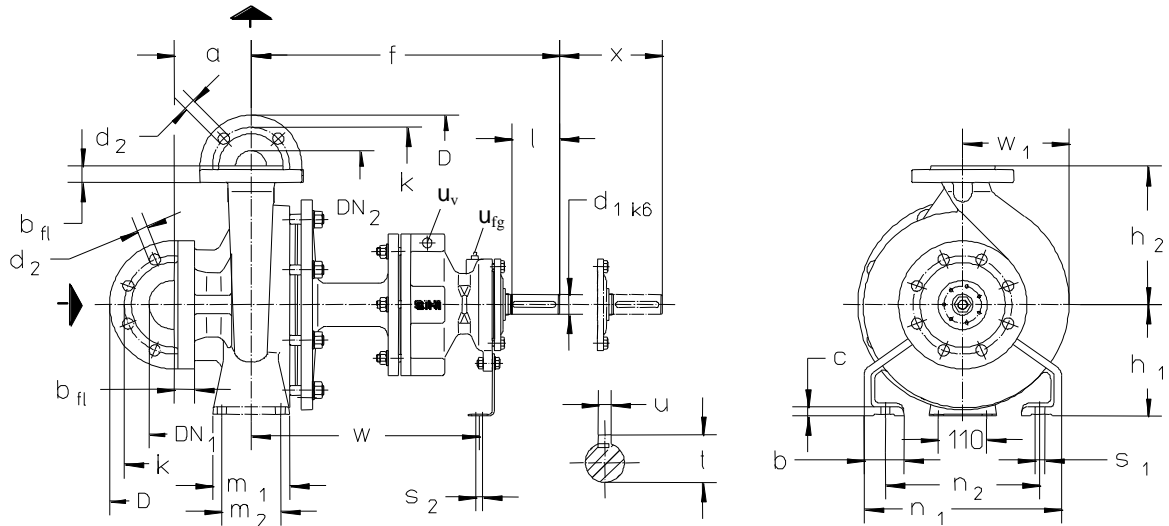
60 Hz
n = 1750 rpm



n = 3500 rpm



Dimension table



u_v = vent connection (G1/8)

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

Dimensions in mm

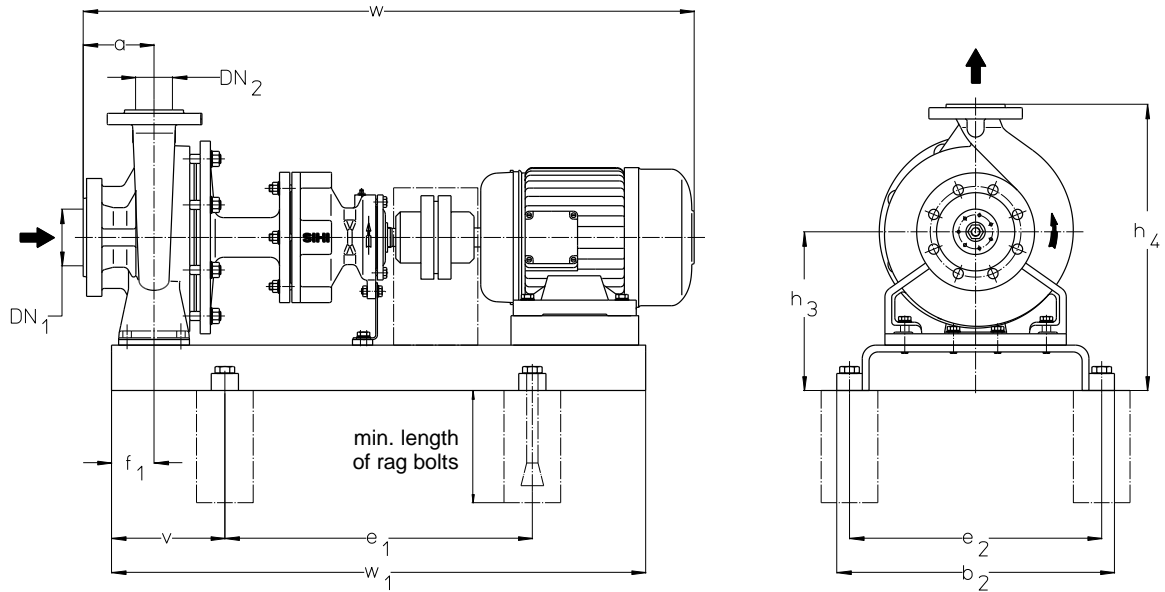
size	DN ₂	DN ₁	a	b	c	f	h ₁	h ₂	m ₁	m ₂	n ₁	n ₂	s ₁ *	s ₂	w	w ₁	x	d ₁	l	t	u								
032160	32	50	80	50	17	385	132	160	100	70	240	190	M12	M12	285	120	100	24	50	27	8								
032200			160	180			32	80								35		10											
032250			100	65			500	180								225		125	95	320	250	370	170	32	80	35	10		
040160	40	65	80	50	17	385	132	160	100	70	240	190	M12	M12	285	125	100	24	50	27	8								
040200			160	180			265	212			24	50				27		8											
040250			100	65			500	180			225	125				95		320	250	370	170	32	80	35	10				
040315			125	65	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																										
050250			125	65			20	180			225	125				95		320	250										
050315							225	280			345	280				215													
065160	65	100	100		17	500	160	200	125	95	280	212	M12	M12	370	155	140	32	80	35	10								
065200			180	225			320	250				175																	
065250			100	80			20	200				250				160						120	360	280	M16	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																										
080250			125					225														400	315	M16	205				
100160 ¹⁾	100	125	140		20	500	200	280	160	120	360	280	M16	M16	370	210	140	42	110	45	12								
100200			125	80			20	225																					
100250			140					225														400	315	M16	215				
125200 ¹⁾	125	150	140		20	530	250	315	160	120	400	315	M16	M16	370	245	140	42	110	45	12								
125250				355																									

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

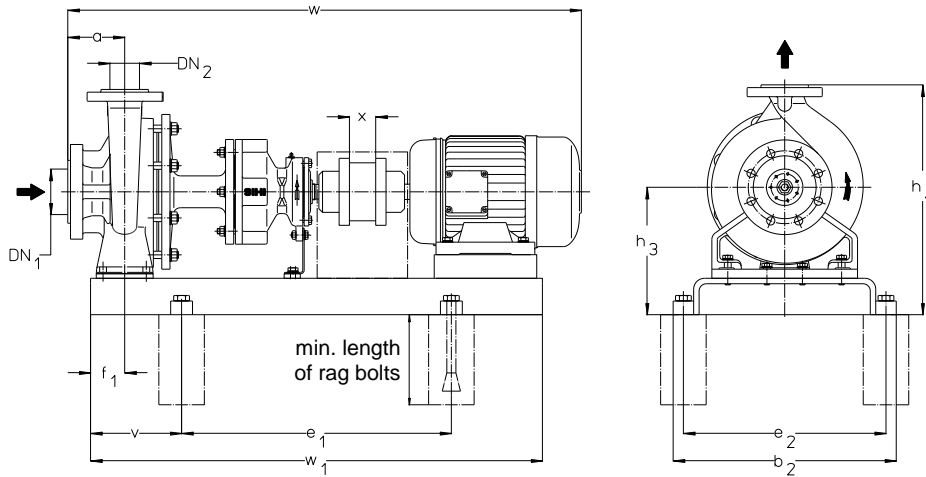
ZDND Size	Motor		Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	Rag bolt size																
	1450 rpm kW	2900 rpm			Size	Pump														Unit															
032160	0,37	-	71	S270	B68	54	32	50	80	360	420	320	140	60	197	357	701	650	M16x200																
	0,55	-	80														86			93															
	-	1,10	80														94			96															
	-	1,50	90S														99			105															
	-	2,20	90L														109			109															
	-	3,00	100L														107			111															
	-	4,00	112M														142			148															
032200	0,55	-	80	S272	B68	56	32	50	80	360	540	320	140	60	225	405	737	820	M16x200																
	0,75	-	80														94			96															
	1,10	-	90S														98			98															
	-	3,00	100L														107			111															
	-	4,00	112M														142			148															
	-	5,50	132S														142			144															
	-	7,50	132S														146			152															
032250	0,75	-	80	S303	B95	89	32	50	100	490	600	440	160	75	260	485	872	920	M20x400																
	1,10	-	90S														142			144															
	1,50	-	90L														146			152															
	2,20	-	100L														152			210															
	-	7,50	132S														254			267															
	-	11,00	160M														254			267															
	-	15,00	160M														254			267															
040160	0,37	-	71	S270	B68	55	40	65	80	360	420	320	140	60	197	357	700	650	M16x200																
	0,55	-	80														85			94															
	0,75	-	80														96			99															
	1,10	1,50	90S														99			102															
	-	2,20	90L														107			125															
	-	3,00	100L														107			125															
	-	4,00	112M														125			143															
	-	5,50	132S														143			143															
	040200	0,75	-														80			S303	B95	56	40	65	100	390	600	350	160	60	225	405	757	730	M16x200
		1,10	-														90S																95		
1,50		-	90L	98	101																														
2,20		-	100L	101	106																														
-		4,00	112M	106	131																														
-		5,50	132S	131	144																														
-		7,50	132S	144	144																														
-		11,00	160M	123	206																														
-		15,00	160M	206	208																														
-		15,00	160M	208	208																														
040250	1,10	-	90S	S383	B80	92	40	65	100	490	600	440	160	75	260	485	900	920	M20x400																
	1,50	-	90L														150			153															
	2,20	-	100L														153			156															
	3,00	-	100L														156			159															
	-	5,50	132S														159			209															
	-	7,50	132S														209			212															
	-	11,00	160M														212			261															
	-	15,00	160M														261			263															
	-	18,50	160L														263			287															
040315	2,20	-	100L	S435	B95	131	40	65	125	540	740	490	200	75	280	530	993	920	M20x400																
	3,00	-	100L														192			196															
	4,00	-	112M														196			202															
	5,50	-	132S														202			257															
050160	0,55	-	80	S301	B68	61	40	65	100	390	480	350	125	60	225	405	757	730	M16x200																
	0,75	-	80														98			100															
	1,10	-	90S														100			103															
	1,50	2,20	90L														103			105															

ZDND Size	Motor			Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	Rag bolt size													
	rpm	kW	Size			Pump	Unit																										
050160	-	3,00	100L	S303	B80	61	118	50	80	100	390	600	350	160	60	225	405	853	920	M16x200													
	-	4,00	112M				136											877															
	-	5,50	132S	149	932																												
	-	7,50	132S	151	932																												
050200	-	11,00	160M	S344	B95	65	211	50	80	100	450	660	400	180	60	240	420	1073	1020	M20x400													
	0,75	-	80	S301			B68											104			390	480	350	125	225	425	757						
	1,10	-	90S		107													784															
	1,50	-	90L	S303	B80		110											600			600	160	60	225	425	809							
	2,20	-	100L				115																			870							
	-	4,00	112M	S303	B80		140											490			740	440	200	75	260	485	870						
	-	5,50	132S				155																				870						
	-	7,50	132S	S344	B95		160											450			660	400	180	60	240	440	932						
	-	11,00	160M				215																				1073						
	-	15,00	160M	S344	B95		217											610			840	550	205	75	325	605	1073						
-	18,50	160L	232			1113																											
050250	1,50	-	90L	S383	B80	95	156	65	100	125	490	740	440	200	75	260	485	949	920	M20x400													
	2,20	-	100L				S385											B95			158	540	840	490	215	75	325	605	993				
	3,00	-	100L	162	993																												
	4,00	-	112M	S385	B95		178											610			840	550	205	75	325	605	1010						
	-	7,50	132S				215																				1072						
	-	11,00	160M	S385	B95		265											490			740	440	200	75	260	485	1213						
	-	15,00	160M				267																				1213						
	-	18,50	160L	S436	B110		291											540			840	490	215	75	325	605	1257						
	-	22,00	180M				318																				1280						
	-	30,00	200L	S436	B125		427											610			840	550	205	75	325	605	1368						
4,00	-	112M	249			1010																											
050315	5,50	-	132S	S486	B95	135	278	65	100	100	490	740	440	200	75	260	485	1072	1250	M24x400													
	7,50	-	132M				290											1110															
	0,75	-	80				S342											B80			81	129	65	100	125	490	740	440	200	75	260	485	872
1,10	-	90S	S344	141	900																												
1,50	-	90L		144	924																												
2,20	-	100L	S344	B80	147	450	660	400	180	75	240	440	485	968	985	1047	1047	1188	1188														
-	4,00	112M			154															968													
-	5,50	132S	S385	B95	179	490	740	440	200	75	260	485	968	985	1047	1047	1188	1188															
-	7,50	132S			182														1047														
-	11,00	160M	S385	B95	250	490	740	440	200	75	260	485	968	985	1047	1047	1188	1188															
-	15,00	160M			252														1188														
-	18,50	160L	S436	B125	420	540	840	490	215	75	300	550	1425	1250	1368	1270	1368	1270															
1,10	-	90S			148														900														
1,50	-	90L	S344	B80	151	450	660	400	180	75	260	485	968	985	1047	1047	1188	1188															
2,20	-	100L			154														924														
3,00	-	100L	S385	B95	157	490	740	440	200	75	260	485	968	985	1047	1047	1188	1188															
4,00	-	112M			173														968														
-	7,50	132S	S385	B95	208	490	740	440	200	75	260	485	968	985	1047	1047	1188	1188															
-	11,00	160M			257														1047														
-	15,00	160M	S385	B95	259	490	740	440	200	75	260	485	968	985	1047	1047	1188	1188															
-	18,50	160L			283														1213														
-	22,00	180M	S436	B110	311	540	840	490	215	75	300	550	1425	1250	1368	1270	1368	1270															
-	30,00	200L			420														1368														
065160	2,20	-	100L	S434	B80	113	190	65	100	125	540	660	490	170	90	280	530	993	1000	M20x400													
	3,00	-	100L				S435											B95			193	540	740	490	200	90	280	530	993				
	4,00	-	112M	208	1010																												
	5,50	-	132S	S435	B95		228											610			840	550	205	90	300	550	1425	1250	1368	1270	1368	1270	
	-	15,00	160M				298																										1072
	-	18,50	160L	S436	B110		313											540			740	490	200	90	280	530	993	993	1010	1072	1213	1257	1280
	-	22,00	180M				341																										
	-	30,00	200L	S436	B125		445											610			840	550	205	90	300	550	1425	1250	1368	1270	1368	1270	
	-	37,00	200L				461																										1368
	-	45,00	225M	S486	B125		504											610			840	550	205	90	300	550	1425	1250	1368	1270	1368	1270	
080160	0,75	-	80	S383	B80	89	144	80	125	125	490	600	440	200	75	260	485	897	920	M20x400													
	1,10	-	90S				S385											B95			147	490	740	440	200	75	260	485	924				
	1,50	-	90L	150	949																												
	2,20	-	100L	S385	B95		153											490			740	440	200	75	260	485	993						
	3,00	-	100L				156																				993						
	-	7,50	132S	S385	B95		209											490			740	440	200	75	260	485	1072						
	-	11,00	160M				258																				1213						
	-	15,00	160M	S385	B95		260											490			740	440	200	75	260	485	1213						
	-	18,50	160L				284																				1257						
	-	22,00	180M	S385	B110		312											490			740	440	200	75	260	485	1280						
1,50	-	90L	156			949																											
2,20	-	100L	S383	B80	160	490	740	440	200	75	260	485	993																				
3,00	-	100L			163								993																				
4,00	-	112M	S385	B95	179	490	740	440	200	75	260	485	1010																				
5,50	-	132S			220								1072																				
-	11,00	160M	S385	B95	260	490	740	440	200	75	260	485	1213																				
-	15,00	160M			267								1213																				
-	18,50	160L	S436	B125	291	490	740	440	200	75	260	485	1257																				
-	22,00	180M			319								1280																				
-	30,00	200L	S436	B125	428	540	840	490	215	90	325	605	1368																				
-	37,00	200L			444								1368																				
080250	3,00	-	100L	S486	B80	120	229	80	125	125	610	840	550	205	90	325	605	993	1250	M24x400													
	4,00	-	112M				S486											B95			246	610	840	550	205	90	325	605	1010				
	5,50	-	132S	265	1072																												
	7,50	-	132M	S486	B95		278											610			840	550	205	90	325	605	1110						
	-	18,50	160L				342																				1225						
	-	22,00	180M	S486	B110		365											610			840	550	205	90	325	605	1280						
	-	30,00	200L				461																				1368						
	-	37,00	200L	S486	B125		477											610			840	550	205	90	325	605	1368	1270	1368	1270			

ZDND Size	Motor		Size	Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	Rag bolt size		
	1450 rpm kW	2900 kW				Pump	Unit															
080250	-	45,00	225M	S487	B125		537														M24x400	
	-	55,00	250M		B140		637															
100160	2,20	-	100L	S434	B80	120	197	100	125	140	610	940	550	240	90	325	605	1425				
	3,00	-	100L		B80		200											1008				
	4,00	-	112M	S434	B80		216											1008				
	5,50	-	132S		B95		235											1025				
	-	18,50	160L	S435	B110		320											1087				
	-	22,00	180M		B125		348											1272				
	-	30,00	200L	S436	B125		452											1295				
	-	37,00	200L		B125		468											1383				
100200	2,20	-	100L	S434	B80	112	189	100	125	125	540	660	490	170	280	560	993					
	3,00	-	100L		B80		192										993					
	4,00	-	112M	S434	B80		207										1010					
	5,50	-	132S		B95		227										1072					
	7,50	-	132M	S435	B110		240										1110					
	-	18,50	160L		B125		312										1257					
	-	22,00	180M	S436	B125		340										1280					
	-	30,00	200L		B125		444										1368					
	-	37,00	200L	B125	460		1368															
	-	45,00	225M	B125	494		1425															
100250	4,00	-	112M	S486	B95	132	259	125	150	140	610	840	550	205	90	325	605	1055				
	5,50	-	132S		B95		277											1117				
	7,50	-	132M	S486	B95		290											1155				
	11,00	-	160M		B125		328											1258				
	-	30,00	200L	S487	B140		473											1413				
	-	37,00	200L		B160		499											1413				
	-	45,00	225M	B140	543		1470															
	-	55,00	250M	B160	658		1660															
-	75,00	280S	B160	858	1660																	
125200	7,50	-	132M	S486	B95	142	300	125	150	140	610	840	550	205	350	665	1155					
	11,00	-	160M		B110		338										1258					
	15,00	-	160L	S487	B125		361										1302					
	-	45,00	225M		B140		575										1470					
	-	55,00	250M	B160	668		1538															
	-	75,00	280S	B160	868		1660															
125250	7,50	-	132M	S486	B95	147	305	125	150	140	610	840	550	205	350	705	1155					
	11,00	-	160M		B110		343										1258					
	15,00	-	160L		B110		366										1302					
	18,50	-	180M				391															

* 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

ZDND Size	Motor			Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	Rag bolt size		
	rpm	KW	Size			pump	unit																
032160	0,37	-	71	S272	H80	54	94	32	50	80	360	540	320	140	60	197	357				801	820	M16x200
	0,55	-	80				95														837		
	-	1,10	80				96														837		
	-	1,50	90S				99														864		
	-	2,20	90L				102														889		
	-	3,00	100L				112														933		
032200	-	4,00	112M	S303	H80	56	117	32	50	80	390	600	350	160	60	225	405				920	820	M16x200
	0,55	-	80				97														837		
	0,75	-	80				99														837		
	1,10	-	90S				101														864		
	-	3,00	100L				114														933		
	-	4,00	112M				119														950		
032250	-	5,50	132S	S303	H95	56	145	32	50	80	390	600	350	160	60	225	405				920	820	M16x200
	-	7,50	132S				152														1012		
	0,75	-	80				147														1012		
	1,10	-	90S				168														972		
	1,50	-	90L				170														1000		
	2,20	-	100L				174														1024		
040160	-	7,50	132S	S383	H80	89	213	32	50	100	490	740	440	200	75	260	485				1140	1140	M20x400
	-	11,00	160M				270														1068		
	-	15,00	160M				282														1147		
	0,37	-	71				94														1288		
	0,55	-	80				97														1288		
	0,75	-	80				99														800		
040200	1,10	1,50	90S	S303	H80	56	102	32	65	80	360	540	320	140	60	197	357				820	820	M16x200
	-	2,20	90L				105														837		
	-	3,00	100L				114														837		
	-	4,00	112M				133														864		
	-	5,50	132S				146														889		
	-	7,50	132S				150														933		
040250	-	11,00	160M	S344	H95	56	209	32	65	100	390	600	350	160	60	225	405				920	820	M16x200
	0,75	-	80				104														857		
	1,10	-	90S				107														884		
	1,50	-	90L				110														909		
	2,20	-	100L				115														970		
	-	4,00	112M				135														977		
040315	-	5,50	132S	S385	H80	92	147	32	65	100	450	660	400	180	75	240	420				1020	1140	M20x400
	-	7,50	132S				150														1032		
	-	11,00	160M				209														1032		
	-	15,00	160M				209														1173		
	1,10	-	90S				172														1173		
	1,50	-	90L				175														1000		
050160	2,20	-	100L	S385	H80	131	180	32	65	100	490	740	440	200	75	260	485				1140	820	M16x200
	3,00	-	100L				183														1068		
	4,00	-	112M				214														1068		
	5,50	-	132S				217														1068		
	-	11,00	160M				264														1147		
	-	15,00	160M				266														1147		
040315	-	18,50	160L	S436	H95	92	303	32	65	100	490	740	440	200	75	260	485				1270	1140	M20x400
	2,20	-	100L				216														1332		
	3,00	-	100L				220														1106		
	4,00	-	112M				227														1106		
	5,50	-	132S				255														1125		
	0,55	-	80				107														1185		
050160	0,75	-	80	S303	H80	61	109	32	65	100	390	600	350	160	60	225	405				920	820	M16x200
	1,10	-	90S				112														857		
	-	2,20	90L				116														884		
	-	2,20	90L				116														909		

ZDND Size	Motor rpm		Size	Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	Rag bolt size	
	1450	2900				KW	pump															unit
050160	-	3,00	100L	S303	H80	61	120	50	80	390	450	600	350	160	60	225	405	100	953	920	M20x400	
	-	4,00	112M																970		M16x200	
	-	5,50	132S																1032			
	-	7,50	132S	1032																		
	-	11,00	160M	S344	H95														1173		1020	M20x400
050200	0,75	-	80	S303	H80	65	110	50	80	100	390	600	350	160	60	225	425	100	857	920	M16x200	
	1,10	-	90S																884			
	1,50	-	90L																909			
	2,20	-	100L																953			
	-	4,00	112M																970			
	-	5,50	132S	1032																		
	-	7,50	132S	1032																		
	-	11,00	160M	S344	H95														1173		1020	M20x400
	-	15,00	160M	1173																		
	-	18,50	160L	1213																		
1,50	-	90L	1049																			
2,20	-	100L	1093																			
3,00	-	100L	1093																			
4,00	-	112M	202																			
-	7,50	132S	239																			
-	11,00	160M	280																			
-	15,00	160M	282																			
-	18,50	160L	306																			
-	22,00	180M	H110	335																		
-	30,00	200L	H125	432																		
4,00	-	112M	S486	H80	135	252	50	80	125	490	740	440	200	60	260	485	100	1110	1140	M20x400		
5,50	-	132S	183																			
7,50	-	132M	186																			
0,75	-	80	S344	H80	81	139	65	100	125	450	660	400	180	75	240	440	140	857	1020	M20x400		
1,10	-	90S																142				
1,50	-	90L																145				
2,20	-	100L																150				
-	4,00	112M																176				
-	5,50	132S	201																			
-	7,50	132S	204																			
-	11,00	160M	S385	H95														266				
-	15,00	160M	S436	268																		
1,10	-	90S	S344	H80														88		149	65	100
1,50	-	90L			152																	
2,20	-	100L			157																	
3,00	-	100L			160																	
4,00	-	112M			176																	
-	7,50	132S	224																			
-	11,00	160M	S436	H95	273																	
-	15,00	160M	279																			
-	18,50	160L	299																			
-	22,00	180M	H110	328																		
-	30,00	200L	S487	H125	455																	
2,20	-	100L	S435	H80	113	206	65	100	125	540	740	490	200	90	280	530	140	1133	1140	M20x400		
3,00	-	100L																209				
4,00	-	112M																225				
5,50	-	132S																238				
-	15,00	160M																S436			H95	309
-	18,50	160L	324																			
-	22,00	180M	H110	353																		
-	30,00	200L	480																			
-	37,00	200L	S487	H125														495				
-	45,00	225M	531																			
0,75	-	80	S344	H80	89	147	65	100	125	450	660	400	180	75	260	485	140	1037	1020	M20x400		
1,10	-	90S																150				
1,50	-	90L																153				
2,20	-	100L																158				
3,00	-	100L																161				
-	7,50	132S	S385	H95														212				
-	11,00	160M	274																			
-	15,00	160M	S436	276																		
-	18,50	160L	300																			
-	22,00	180M	H110	329																		
1,50	-	90L	S385	H80	96	180	65	100	125	490	740	440	200	75	300	550	140	1089	1140	M20x400		
2,20	-	100L																184				
3,00	-	100L																187				
4,00	-	112M																203				
5,50	-	132S																215				
-	11,00	160M	S436	H95														276				
-	15,00	160M	283																			
-	18,50	160L	307																			
-	22,00	180M	H110	336																		
-	30,00	200L	S487	H125														463				
-	37,00	200L	472																			
3,00	-	100L	S486	H80	120	230	65	100	125	610	840	550	205	90	325	605	140	1133	1250	M24x400		
4,00	-	112M																249				
5,50	-	132S																262				
7,50	-	132M																264				
-	18,50	160L																S487			H95	367
-	22,00	180M	H110	390																		

ZDND Size	Motor		Size	Base plate No.	Cplg.	Weight (kg)		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	Rag bolt size							
	rpm 1450 2900	KW				pump	unit																					
080250	-	30,00	200L	S487	H125	120	487	80	125	610	940	550	240	90	325	605	1508	1420	M24x400									
	-	37,00	200L																	496								
	-	45,00	225M																	535								
	-	55,00	250M	S538	H140															666	660	1060	600	280	350	630	1633	1620
100160	2,20	-	100L	S435	H80	120	213	140	540	740	490	200	90	280	560	1148	1140	M20x400										
	3,00	-	100L																216									
	4,00	-	112M																232									
	5,50	-	132S	245																								
	-	18,50	160L	S436	H95														332	840	215	1412	1270					
	-	22,00	180M	H110	358																							
	-	30,00	200L	S487	H125														487	610	940	550	240	300	580	1523	1420	M24x400
	-	37,00	200L																497									
100200	2,20	-	100L	S435	H80	112	205	125	540	740	490	200	90	280	560	1133	1140	M20x400										
	3,00	-	100L																208									
	4,00	-	112M																224									
	5,50	-	132S	237																								
	7,50	-	132M	S436	H95														239	840	215	1397	1270					
	-	18,50	160L	H110	324																							
	-	22,00	180M	S487	H125														352	940	240	1508	1420					
	-	30,00	200L																489									
-	37,00	200L	489																									
-	45,00	225M	S487	H125	528	660	1060	600	280	350	630	1540	1620															
100250	4,00	-	112M	S486	H95	132	262	140	610	840	550	205	90	325	605	1195	1250	M24x400										
	5,50	-	132S																274									
	7,50	-	132M																276									
	11,00	-	160M	S487	H125														329	940	240	1553	1420					
	-	30,00	200L	515																								
	-	37,00	200L	509																								
	-	45,00	225M	S538	H140														553	660	1060	600	280	350	630	1678	1620	
	-	55,00	250M	H160	679																							
-	75,00	280S	S538	H160	880	380	660	1800	1620																			
125200	7,50	-	132M	S486	H95	142	286	125	150	140	610	840	550	205	350	665	1295	1250	M24x400									
	11,00	-	160M																	339								
	15,00	-	160L	S487	H110															362	940	240	1398	1442				
	-	45,00	225M	H125	613																							
	-	55,00	250M	S538	H140															706	660	1060	600	280	350	665	1678	1620
	-	75,00	280S	H160	890																							
125250	7,50	-	132M	S486	H95	147	291	125	150	140	610	840	550	205	350	705	1295	1250	M24x400									
	11,00	-	160M																	344								
	15,00	-	160L	S487	H110															367	940	240	1398	1442				
	18,50	-	180M	392																								

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

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 of graphite with A4 insertion
ZDND 032160 032200 032250 040160 040200 040250 040315 050160 050200 050250 050315 065160 065200 065250 080160 080200 080250 100160 100200 100250 125200 125250	AA	AF3	1B	2

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

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