

Volute pumps

for heat carrier oils up to 350 °C

SIHI *SuperNova*



ZTND 032-125 . . . 200-500

TECHNICAL DATA

Output:	max. 1000 m³/h
Delivery head:	max. 95 m
Speed:	max. 3600 rpm
Temperature:	max. 350 °C
Casing pressure:	PN 16
Shaft sealing:	radial seal rings or mechanical seal
Flange connection:	DIN EN 1092-2 PN 16 / 25 ¹⁾
Direction of rotation:	clockwise, when looking at the pump from the drive end

APPLICATION

Volute pumps of the series ZTN have been specially developed for handling of mineral and synthetic heat transfer oils. The pumps may be used in installations with positive or negative suction pressure.

Especially to be emphasised is the application in plants of:

The chemical industry:

heating of agitators, reactors, drying plants, polymerisation plants, plants for conveying high-viscous products and producing plastic materials and synthetic fibres.

The rubber and plastic industry:

heating of calendars, melting pots, power presses for plastics, automatic injection moulding machines, production of PVC adhesive tape.

The food industry:

heating of baking and fish-frying ovens, distillation of fatty acids and glycerine, fat softening plants, production of potato chips and milk powder.

The paper industry and laundries:

calendar rolls, production of corrugated cardboard, heating of washing machines, mangles and dryers.

DESIGN

Horizontal, single-stage volute pumps with the dimensions and nominal ratings to 24255/EN 733 in back pull out design* which permits the removal of the complete bearing unit toward 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.

The programme comprises 38 pump sizes, but only three shaft assemblies are required owing to the unit construction system. Within each shaft assembly, shafts, shaft sealing, impeller fastenings, bearing bracket and bearing covers are interchangeable.

The DIN 4754 regulations are complied with.

Should heat carrier seepage occur from the shaft seal, it is ensured that the leakage will be drained off and collected completely.

1) from size 150315 to 200500

* due to additional sizes the performance range is increased to higher output rates.



CONSTRUCTION

Casing pressure:

Maximal 16 bar from 0 °C to 120 °C
Maximal 13 bar from 120 °C to 300 °C
Maximal 10 bar from 300 °C to 350 °C
Intermediate values can be obtained by interpolation.

Please note:

Technical rules and safety regulations.

Max. Casing pressure = inlet pressure + zero head

Admissible inlet pressure (system pressure) = 5 bar when using shaft sealing 002.

Admissible inlet pressure = admissible casing pressure when using shaft sealing GBC.

Flanges location:

Axial suction flange, discharge flange radially upwards.

Flanges:

The flanges comply with DIN EN1092-2/PN 16, resp. PN 25. Flanges drilled to according to ANSI (previous ASA) 150 can be supplied.

Hydraulic:

Designation of this construction type: A, B, D

Bearing:

One grease-lubricated grooved ball bearing resp. 2 inclined ball bearings (the first grease filling is made in the factory) 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 002: several radial shaft seal rings arranged in series; uncooled

Code GBC: unbalanced bellows mechanical seal
seal face materials cast chromium steel/carbon elastomer FPM (Viton)

Material design:

ITEM	COMPONENTS	MATERIAL						EXECUTION	
		EN	EN	DIN	DIN	US denomination		1B	2B (1)
		mat.-number	mat.- denomination	mat.-number	mat.- denomination	ASTM Standard	AISI		
10.20	Volute casing	EN-JS 1025	EN-GJS-400-18-LT	0.7043	GGG-40.3	A 395		X	
		1.0619	GP 240 GH	1.0619	GS-C 25	A 216 Gr WCB			X
16.10	Casing cover	EN-JS 1025	EN-GJS-400-18-LT	0.7043	GGG-40.3	A 395		X	
		1.0619	GP 240 GH	1.0619	GS-C 25	A 216 Gr WCB			X
21.00	Shaft	1. 1191	C 45 E	1.1191	Ck 45 K + N	A 576 Gr 1045	1045	X	
		1.4021	X 20 Cr 13	1.4021	X 20 Cr 13	A 276 Type 420	420	X (2)	X
23.00	Impeller	EN-JL 1040	EN-GJL 250	0.6025	GG-25	A 278 Class 30		X	X
33.00	Bearing bracket								
36.00	Bearing cover								
42.13	Radial seal rings	FPM (Viton)						X	X
43.30	Mechanical seal	chrome cast / carbon FPM (Viton)						X	X
44.10	Casing for mech. seal	1. 1191	C 45 E	1.1191	Ck 45 K + N	A 576 Gr 1045	1045	X	X
44.11	Seal of the shaft casing								
54.51	Sleeve bearing	carbon						X	X

(1) For sizes 200400 and 200500.

(2) For sizes 150315, 150400, 150500, 200250 and 200315.

Casing gasket:

The casing is sealed by flat gaskets 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%; From 4 to 7,5 kW: 20%; above 7,5 kW: 15%

The following maximum speeds are to be observed:

max. speed n = 3600 rpm	size	max. speed n = 3000 rpm	size	max. speed n = 1800 rpm	size	max. speed n = 1500 rpm	size
t = 120 °C	032125 050200	t = 120 °C	032250	t = 120 °C	040315 150315	t = 120 °C	150500
	032160 065125		040250		050315 150400		200315
	032200 065160		050250		065315 200250		200400
	040125 065200		065250		080315		200500
	040160 080160		080250		100315		
	040200 080200		100250		125250		
	050125 100160		125200		150200		
	050160 100200				150250		
t = 350 °C	032125 065125	t = 350 °C	032250	t = 350 °C	040315	t = 350 °C	150315
	032160 065160		040250		050315		150400
	032200 080200		050250		065315		150500
	040125 100160		065200		080315		200250
	040160		065250		100315		200315
	040200		080160		125200		200400
	050125		080250		125250		200500
	050160 050200		100200		150200		
			100250		150250		

The maximum speeds result from the permissible peripheral speeds of the impellers or from the shaft load admissible at higher temperatures, respectively.

Bearing bracket / pump size:

Bracket 25	032125 032160 032200 032250 040125 040160 040200 040250 050125 050160 050200 050250 065125 065160 065200 080160
Bracket 35	040315 050315 065250 065315 080200 080250 080315 100160 100200 100250 100315 125200 125250 150200 150250
Bracket 45	150315 150400 150500 200250 200315 200400 200500

General remarks:

For horizontal volute pumps CLOSE COUPLED construction with STANDARD motor for nominal performances and flange connections as per EN 733 refer to our series **ZTK**.

For INLINE pumps with the same drive unit, consisting of bearing bracket with bearing, stub shaft and mechanical seal, casing cover, impeller and impeller nut, refer to our series **ZTI**.

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 EN 22858, t_{max} 230 °C PN 40. Hot water design.

ZDN volute pumps to EN 22858, t_{max} 207 °C PN 25. Hot water design.

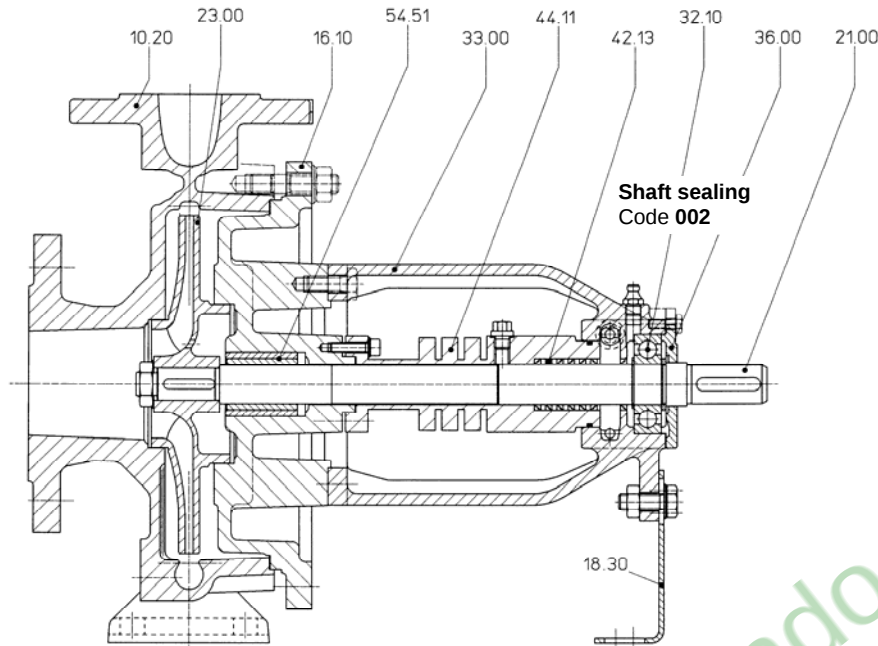
ZHN volute pumps to EN 733, t_{max} 180 °C PN 16. Hot water design.

ZLI volute pumps to EN 733 as INLINE construction, t_{max} 150 °C PN 25. Hot water design.

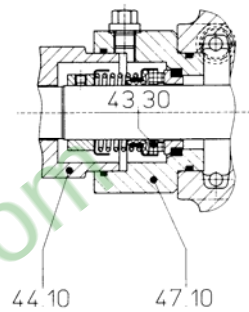
Technical documentation on these programmes will readily be supplied on request.

SECTIONAL DRAWING AND NOMENCLATURE

ZTN 032125 ... 150250

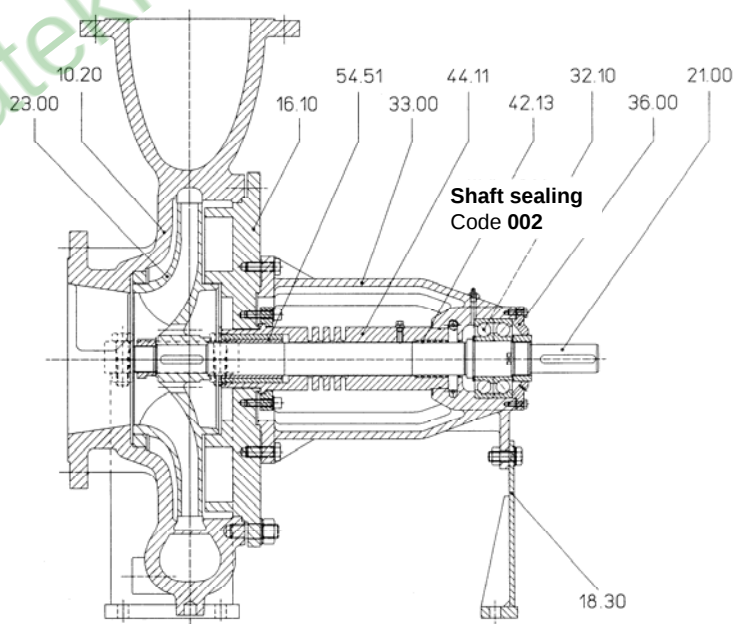


Shaft sealing
Code GBC



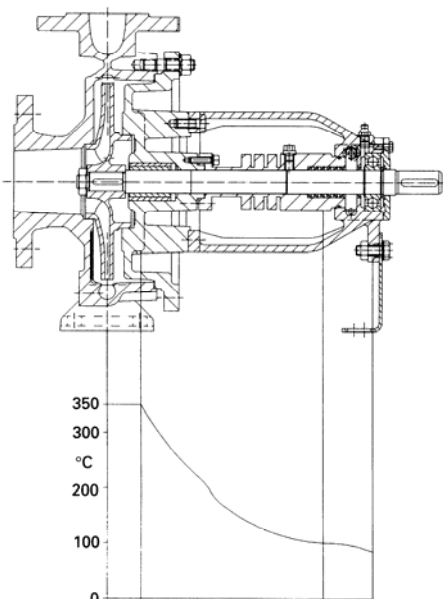
- 10.20 volute casing
- 16.10 casing cover
- 18.30 supporting foot
- 21.00 shaft
- 23.00 impeller
- 32.10 grooved ball bearing
- 33.00 bearing bracket
- 36.00 bearing cover
- 42.13 radial seal ring
- 43.30 mechanical seal
- 44.10 shaft seal casing
- 44.11 shaft seal casing
- 47.10 sealing cover
- 54.51 sleeve bearing

ZTN 150315 ... 200500



Shaft sealing
Code 002

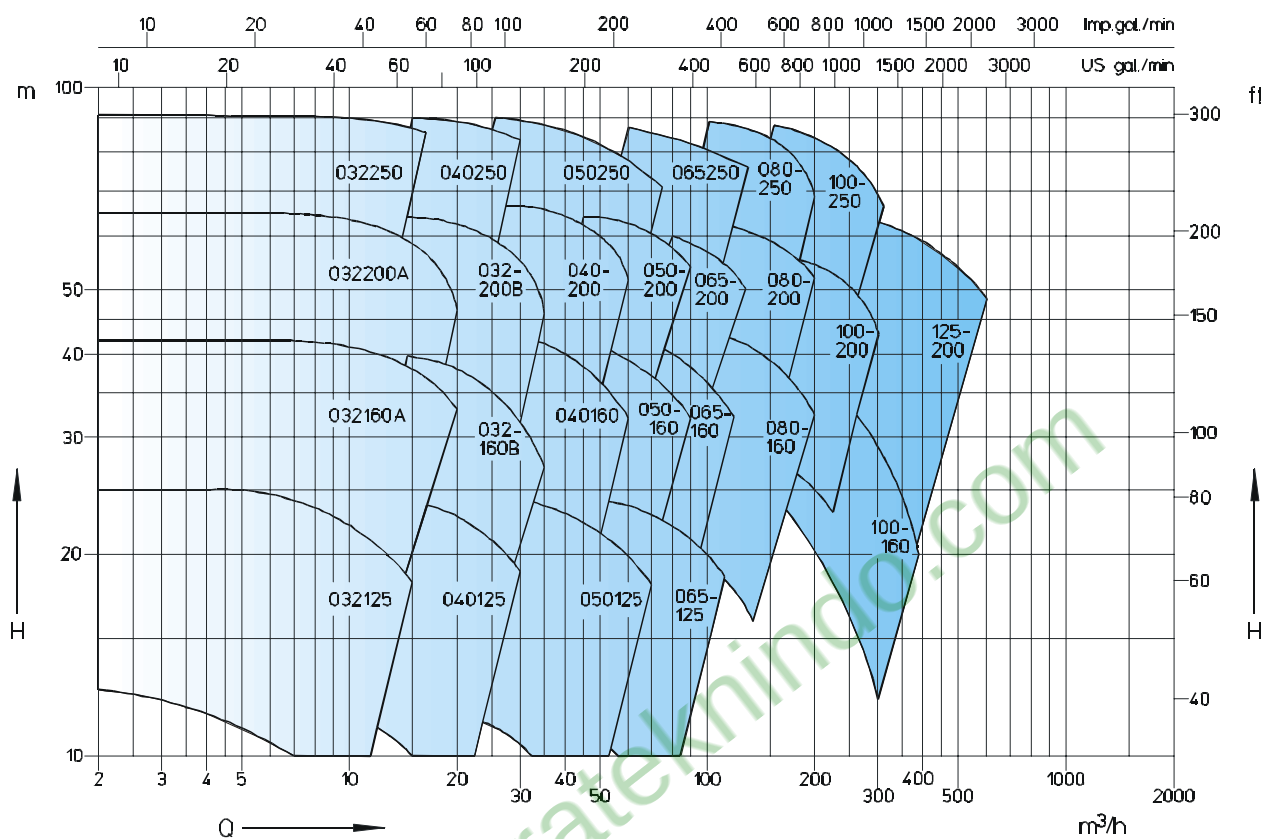
Heat barrier / shaft sealing / bearing



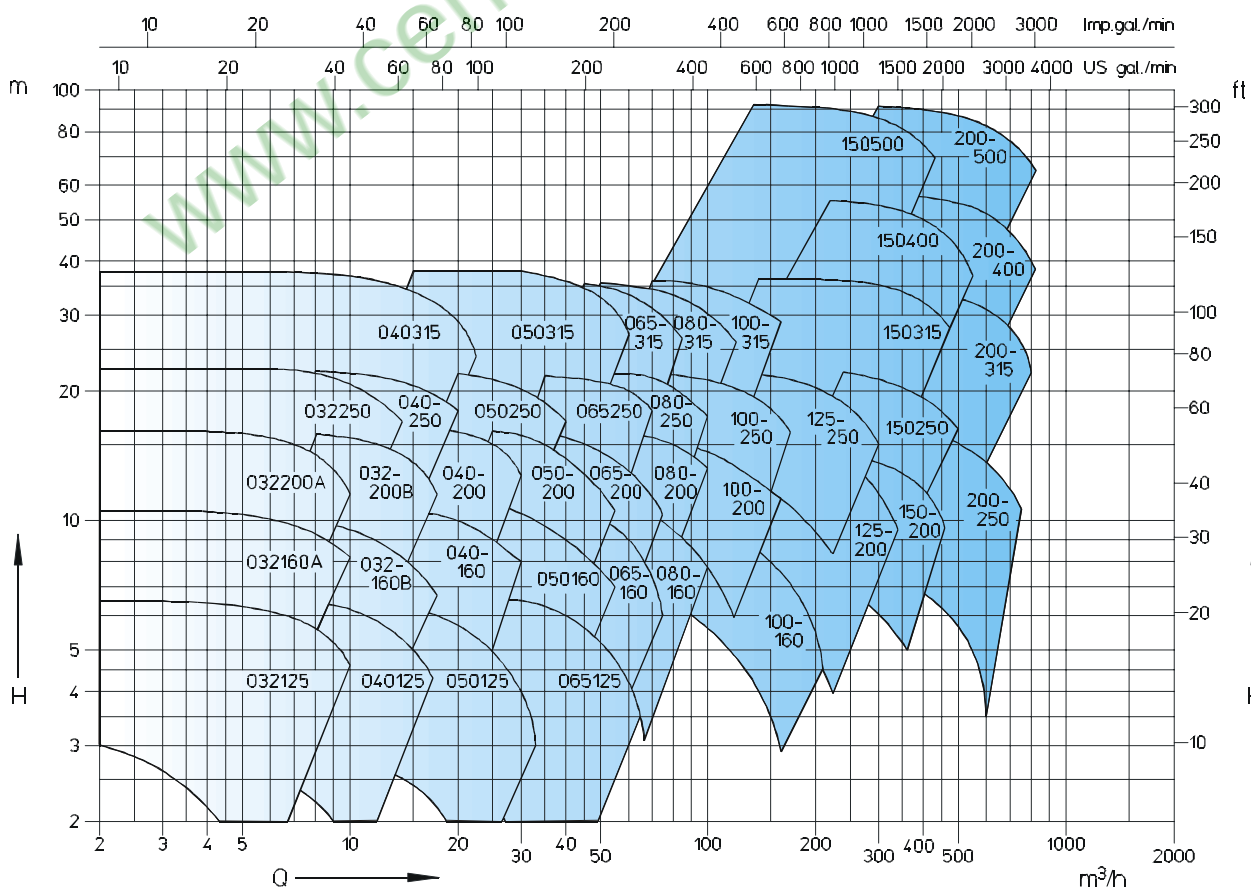
Heat transfer installations have achieved a high level of technical development. Consequently the requirements on pumps handling heat transfer oils have increased regarding operating safety, environmental protection, maintenance and operating costs. The Sterling SIHI ZTN pump, based on many years of experience and on the latest technical know-how, fully complies with these requirements.

By the heat barrier with integrated throttle gab, located behind the cover, a favourable drop in temperature toward the drive side is achieved (see opposite drawing). Heat losses at the product side are effectively prevented (saving of energy). The reduced temperature allows the use of simple, uncooled type of shaft sealing. As the lubricating properties of heat transfer oils for antifriction bearings are not specially good, a liquid flushed sleeve bearing has been fitted at the impeller side and an antifriction bearing, not in contact with the heat carrier, has been fitted behind the shaft sealing. By this arrangement noiseless operation and long working life have been achieved.

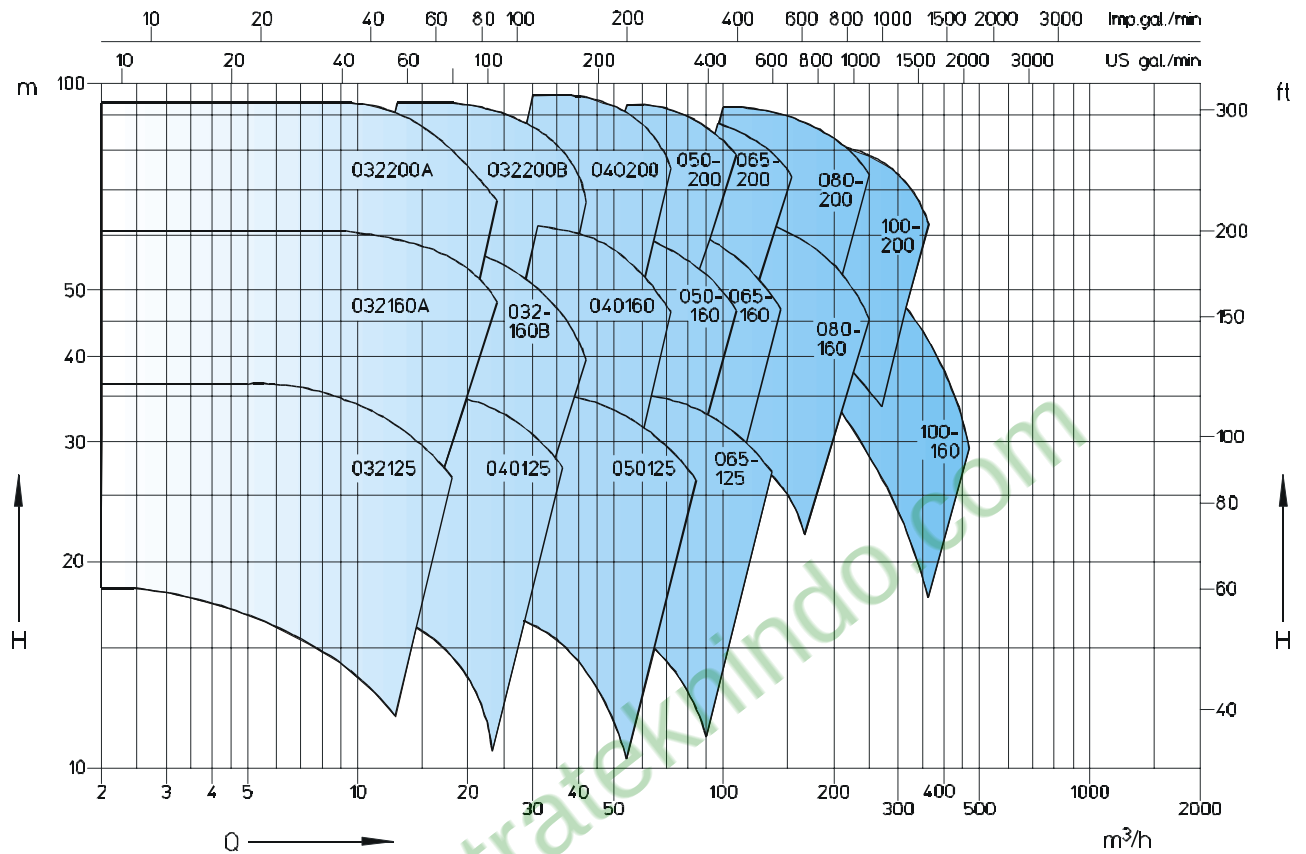
n=2900 1/min



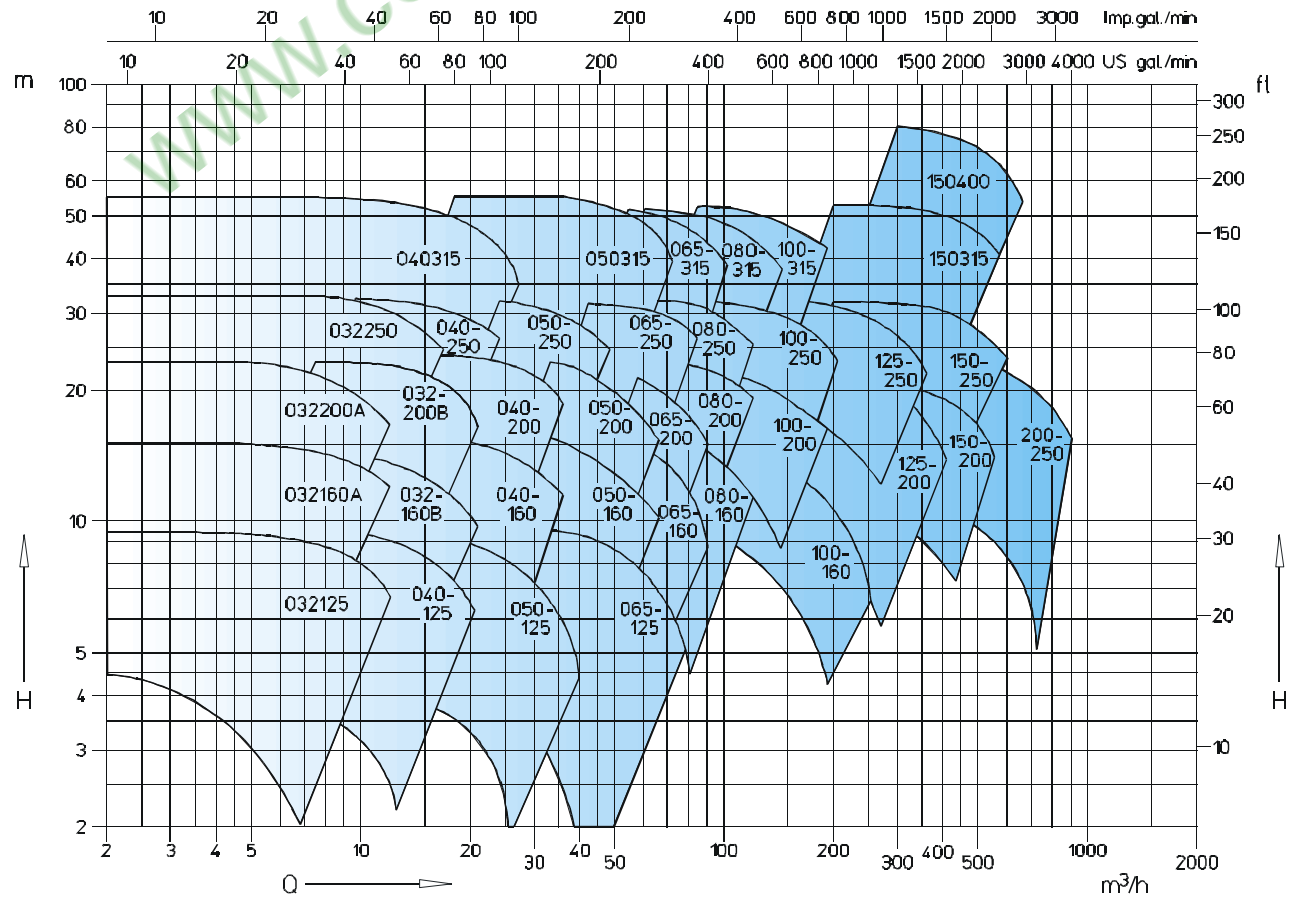
n=1450 1/min



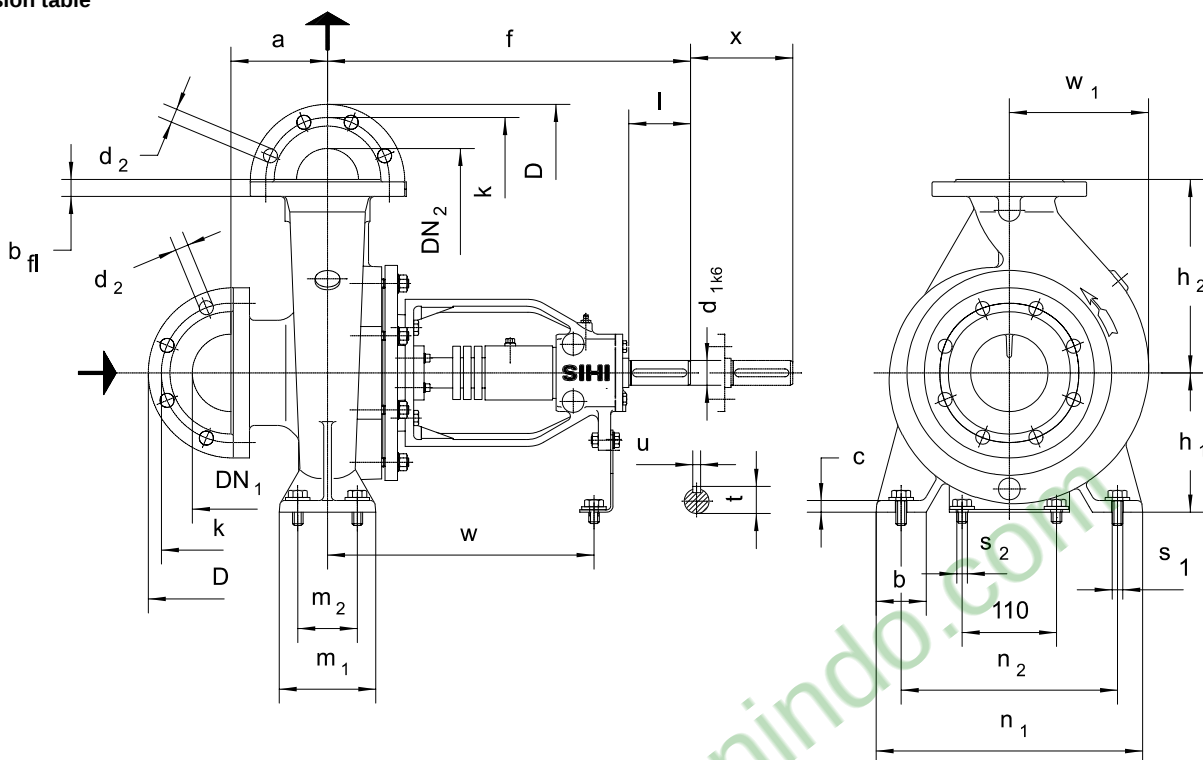
$n=3500$ 1/min



$n=1750$ 1/min



Dimension table



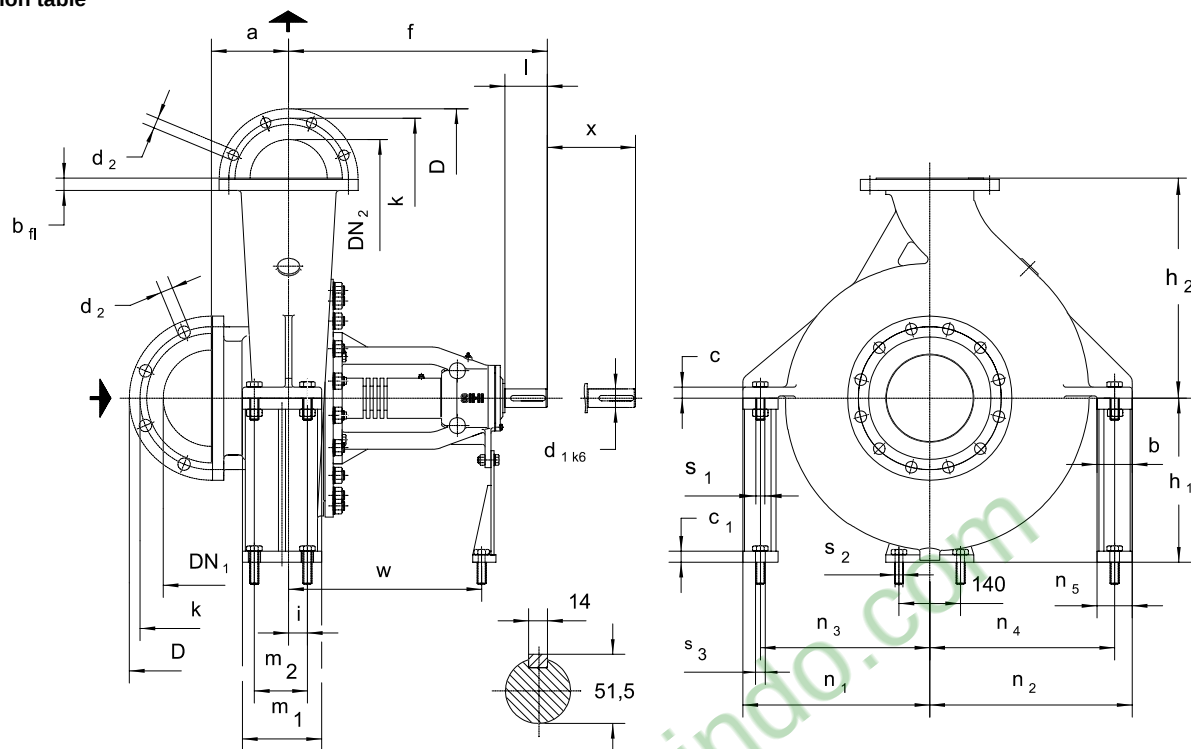
All dimensions in mm.

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
032125	32	50	80	50	15	360	112	140	100	70	190	140	M12		267	105	100	24	50	27	8
032160							132	160			240	190									
032200							160	180			320	250									
032250 ¹⁾							180	225			345	280									
040125	40	65	80	50	18	470	112	140	100	70	210	160	M12		340	204	100	32	80	35	10
040160							132	160			240	190									
040200							160	180			265	212									
040250							180	225			320	250									
040315 ¹⁾							225	250			345	280									
050125	50	65	100	50	15	360	132	160	100	70	240	190	M12		267	120	100	24	50	27	8
050160							160	180			265	212									
050200							180	225			320	250									
050250							225	280			345	280									
050315 ¹⁾							250	315			400	315									
065125	65	80	100	65	15	360	160	180	125	95	280	212	M12		267	140	100	24	50	27	8
065160							180	225			320	250									
065200							200	250			360	280									
065250							225	280			400	315									
065315							250	315			450	350									
080160	80	100	125	65	15	360	180	225	125	95	320	250	M12		267	165	100	24	50	27	8
080200							200	280			345	280									
080250							225	315			400	315									
080315							250	315			450	350									
100160 ¹⁾	100	125	140	80	18	470	200	280	160	120	360	280	M16		340	202	120	32	80	35	10
100200							225	315			400	315									
100250							250	315			450	350									
100315							280	355			500	400									
125200 ¹⁾	125	150	160	100	20		250	315	200	150	400	315	M20		274	140	120	32	80	35	10
125250							280	355			500	400									
150200 ¹⁾	150	200	160	100	20		280	355	200	150	450	350	M20		274	190	170	32	80	35	10
150250 ¹⁾							315	355			500	400									

¹⁾Transnom pump sizes, not included in DIN 24255/ 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.

Dimension table



All dimensions in mm.

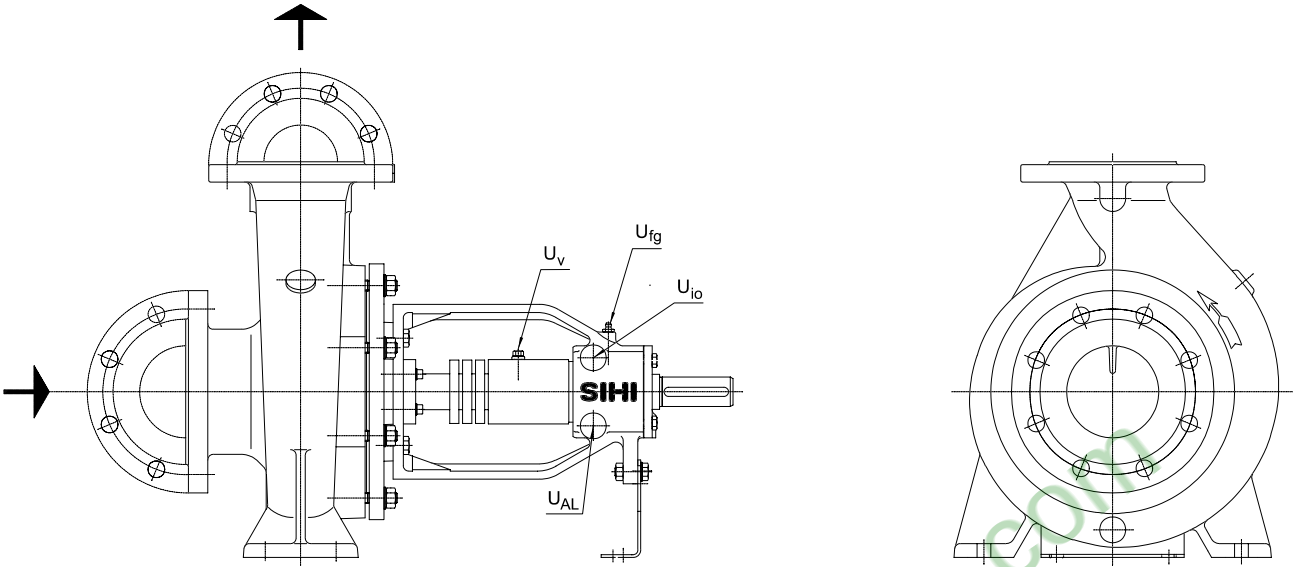
size	DN ₂	DN ₁	a	f	h ₁	h ₂	m ₁	m ₂	i	l	x	d ₁	w	c	c ₁	S ₁	S ₂ *	S ₃ *	n ₁	n ₂	n ₃	n ₄	b,n ₅																												
150315 ¹⁾	150	200	180	670	315	400	160	100	35									M12		320	360	290	330	60																											
150400 ¹⁾					355	450																																													
150500 ¹⁾					400	500																																													
200250 ¹⁾	200	250	250	670	335	425	180	120	45	110	180	48	500	25	23	M20	M12	M20		340	410	300	370	80																											
200315 ¹⁾			200		355	450																																													
200400 ¹⁾					375	500																															35														
200500 ¹⁾					425	560								220			160							50																			30								

¹⁾Transnorm pump sizes, not included in DIN 24255/ 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 Execution material 1B										DIN EN 1092-2 PN 25				
										Execution material 1B			Execution material 2B	
DN ₂ /DN ₁	32	40	50	65	80	100	125	150	200	150	200	250	200	250
D	140	150	165	185	200	220	250	285	340	300	360	425	360	425
k	100	110	125	145	160	180	210	240	295	250	310	370	310	370
b _{fl}	18	19	19	19	19	19	19	19	20	20	22	24,5	30	32
Tolerances										+4,5 -4,0			+1,5 -1,5	
d ₂ x number	19x4	19x4	19x4	19x4	19x8	19x8	19x8	23x8	23x12	28x8	28x12	31x12	26x12	30x12

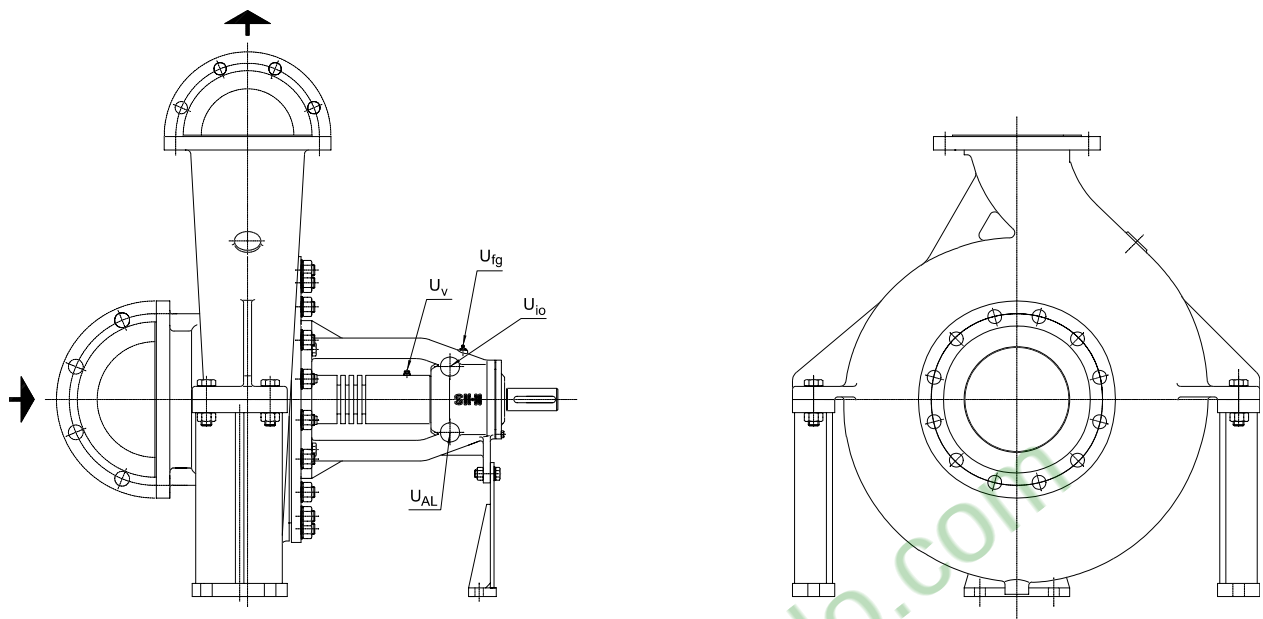
Connections for bearing brackets 25 and 35



Ufg : Grease filling connection.
Uio : Sealing liquid connection.
UAL : Drainage for leakage.
Uv : Vent connection

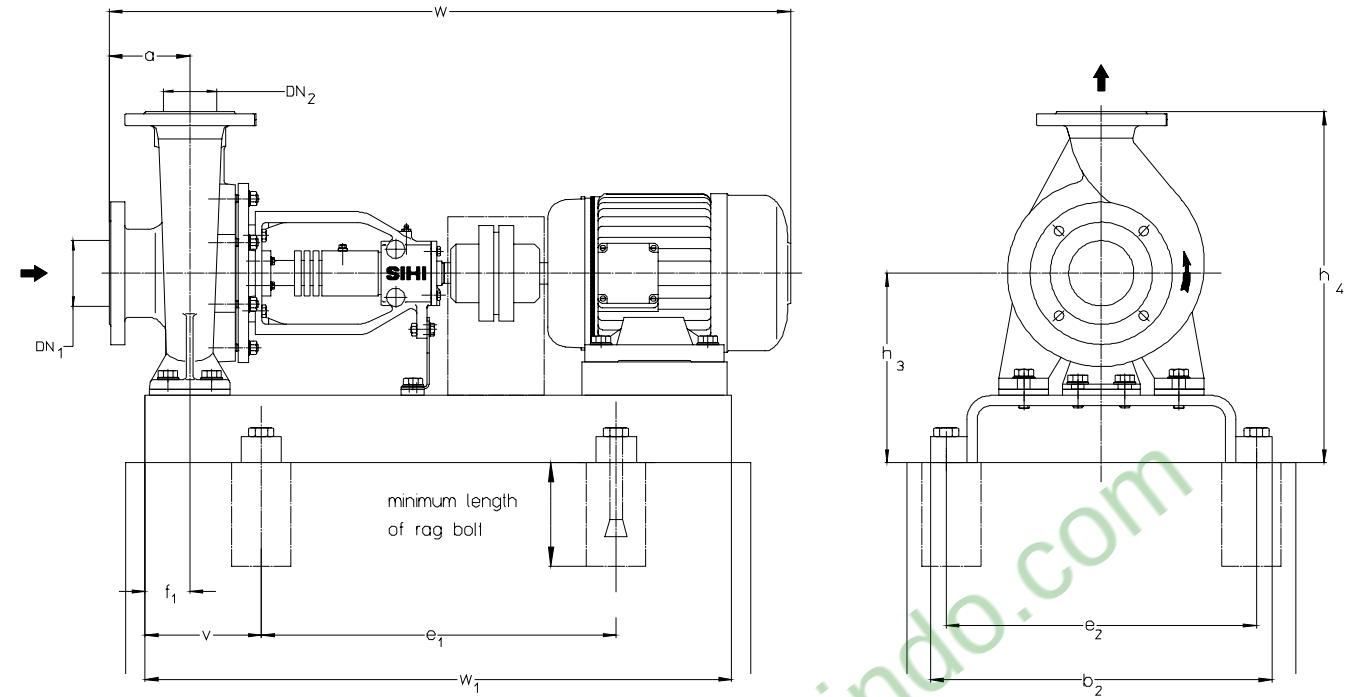
Size	Ufg	Uv	Uio	UAL
032125	G 1/8	G 1/8	G 1/4	G 1/4
032160				
032200				
032250				
040125				
040160				
040200				
040250				
040315				
050125				
050160				
050200				
050250				
050315				
065125				
065160				
065200				
065250				
065315				
080160				
080200				
080250				
080315				
100160				
100200				
100250				
100315				
125200				
125250				
150200				
150250				

Connections for bearing bracket 45



U_{fg} : Grease filling connection.
 U_{io} : Sealing liquid connection.
 U_{AL} : Drainage for leakage.
 U_v : Vent connection.

Size	U_{fg}	U_v	U_{io}	U_{AL}
150315	G 1/8	G 1/8	G 1/4	G 1/4
150400				
150500				
200250				
200315				
200400				
200500				

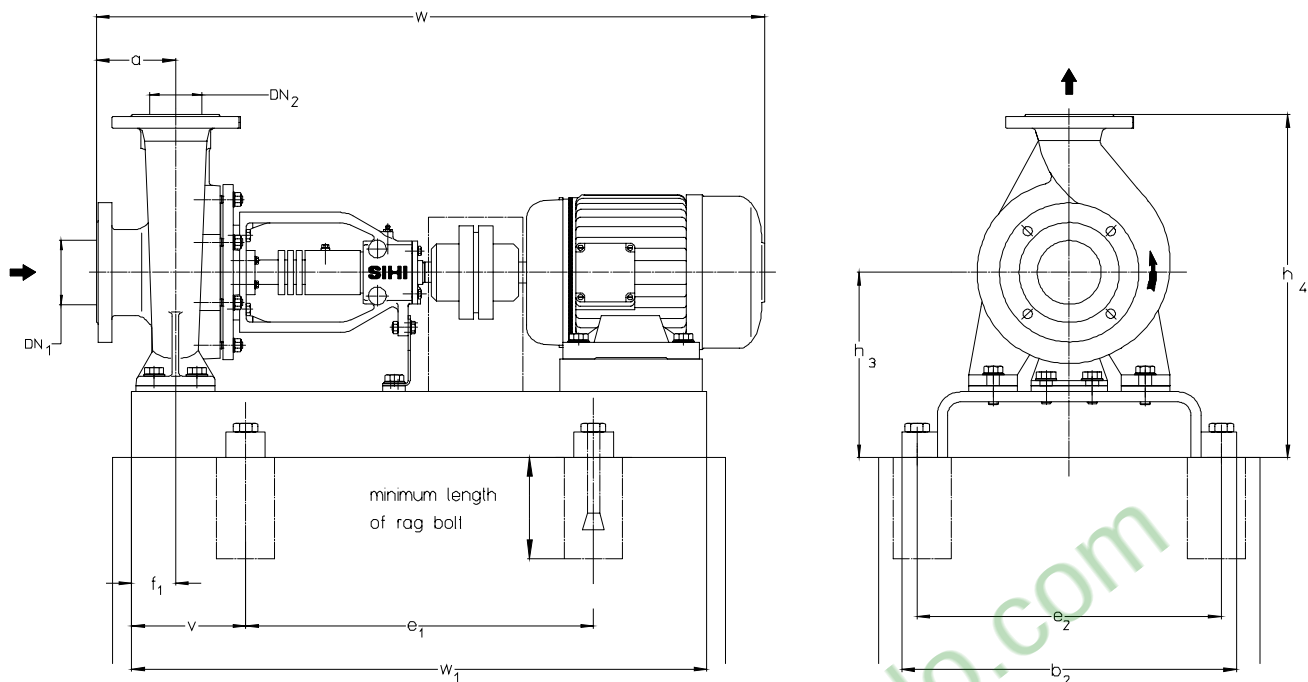


Dimensions in mm.
Dimensional tolerances admissible (base plates) for welded parts according to DIN 8570 B

size	motor		base plate No.	coup- ling **	weight		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	rag bolt DIN 529																			
	size	kW			pump kg	Unit kg																																
032125	71	0.25	S008	B68	32	51	32	50	80	297	400	265	120	60	152	292	682	640	M12x100																			
	71	0.37				52																																
032160	71	0.37	S270		41	69									72	100	490	600	440	160	75	260	485	794	920	M20x400												
	80	0.55				70																																
032200	80	0.55	S301		39	78									80												390	480	350	125	225	405	774	730				
	80	0.75				103																																
	90S	1.10				106																																
	90L	1.50				108																																
032250	80	0.75	S383		52	118			100	490	600	440	160	75	260												485	794	920	M20x400								
	90S	1.10				118																																
	90L	1.50				118																																
	100L	2.20				118																																
040125	71	0.25	S270	B68	34	61	40	65	80	360	420	320	115	60	177	317	682	650	M16x200																			
	71	0.37				62																																
040160	80	0.55			S301	39									65	79	100	390	480	350	125	75	260	485	794	920	M20x400											
	71	0.37													69																							
	80	0.55													70																							
	80	0.75													78																							
040200	90S	1.10			S383	43									82	84												125	490	600	440	160	75	305	555	970	1000	M20x400
	80	0.55													84																							
	80	0.75							111																													
	90S	1.10							113																													
040250	90L	1.50			S383	57			123	153	125	540	660	490	170	75	305	555	970	1000	M20x400																	
	100L	2.20							154																													
	100L	3.00	199																																			
	100L	2.20	199																																			
040315	100L	3.00	S434	B95	87	154	540	660	490	170												75	305	555	970	1000	M20x400											
	112M	4.00				199																																
	132S	5.50				199																																
	132M	7.50				199																																
050125	71	0.37	S270	B68	35	63	50	65	100	360	420	320	115	60	197	357	702	650	M16x200																			
	80	0.55				67																																
050160	80	0.55			S301	44									80	79	125	490	600	440	160	75	305	585	1067	1093	M20x400											
	80	0.75													83																							
	90S	1.10													82																							
	80	0.75													84																							
050200	90S	1.10			S383	43									84	94												125	540	660	490	170	75	305	585	1067	1093	M20x400
	90L	1.50													113																							
	100L	2.20							123																													
	100L	3.00							124																													
050250	112M	4.00			S383	57			157	202	125	540	660	490	170	75	305	585	1067	1093	M20x400																	
	112M	4.00							202																													
	132S	5.50	205																																			
	132M	7.50	205																																			

* 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 60 Hz on request.

n = 2900 rpm



Dimensions in mm.

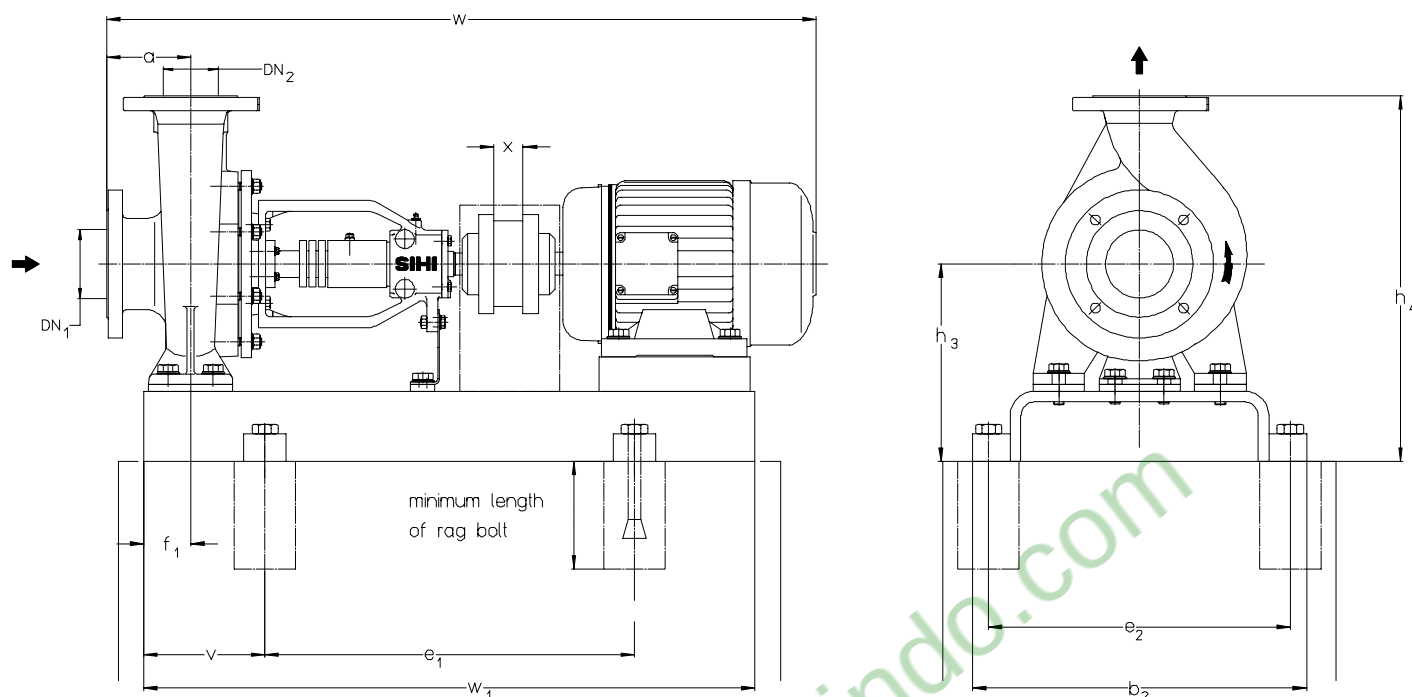
Dimensional tolerances admissible (base plates) for welded parts according to DIN 8570 B

size	motor		base plate No.	coup- ling **	weight		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	rag bolt DIN 529											
032125	71	0.55	S008	B68	32	52	32	50	80	297	400	265	120	60	152	292	682	640	M12x100											
	80	0.75				55											716													
	80	1.10				67											774													
	90S	1.50	69			774																								
	90L	2.20	72			716				730	M16x200																			
032160	80	1.10	S270		41	80						360	420		320	115	197	357	815	820	M20x400									
	90S	1.50	82			836																								
	90L	2.20	92			895																								
	100L	3.00	93			912																								
	112M	4.00	130			815				212	372	815	730		M16x200															
	132S	5.50	80	815																										
	132S	7.50	80	815																										
	132S	7.50	91	836																										
032200	90L	2.20	S301	B68	39	80				390	480	350	125		225	405	774	730	M16x200											
	100L	3.00				90											815													
	112M	4.00				91											836													
	132S	5.50	S342	B95		128											450			540	400	140	240	420	912	820	M20x400			
	132S	7.50																							147			1088	920	
	160M	11.00							175					1150											1020					
	160M	15.00							175					1150														1020		
	160L	18.50							175					1150											1020					
160L	18.50	175	1150		1020																									
032250	132S	7.50	S383						52	148	100	490	600	440	160	75		260	485						932			920	M20x400	
	160M	11.00			167					1050																				
	160M	15.00		167	1050																									
	160M	15.00		167	1050																									
040125	80	1.10	S270	B68	34	65	40	65	80	360	420	320	115	60	177	317	716	650	M16x200											
	90S	1.50	70			774																								
	90L	2.20	71			815																								
	100L	3.00	82			836																								
040160	90S	1.50	S301	B80	39	78				390	480	350	125		212	372	197	357		776	730	820	M20x400							
	90L	2.20				80														815										
	100L	3.00				90														836										
	112M	4.00				91														912										
	132S	5.50	S342	B95		128					450	540	400				140	212		372	197	357		895	820	M20x400				
	132S	7.50																						138			895			
	160M	11.00																						159			1030	920		
	160M	15.00																						159			1030		920	
040200	100L	3.00	S301	B80	43	94			390	480	350	125	225	405	240	420	817	730	M20x400											
	112M	4.00				95											856													
	132S	5.50				132											932			820										
	132S	7.50	158			1050																								
	160M	11.00	S383			B95											57			153	490	600	440	160	75	260	485	932	920	M20x400
	160M	15.00																		172								1050		
160M	15.00	216		1112	1000																									
160L	18.50	S434	1112	1000																										

Foundation plan

n = 2900 rpm

size	motor		base plate No.	coup- ling **	weight		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	rag bolt DIN 5298																											
050125	90S	1,50	S301	B68	35	74	50	65	100	390	480	350	125	60	197	357	794	730	M16x200																											
	90L	2,20				76				835	820																																			
	100L	3,00	S272	B80		86				856																																				
	112M	4,00				87				932																																				
	132S	5,50	S342	B95		124				932	M20x400																																			
050160	90L	2,20	S301	B68	44	85				50	65	100	390		480	350	125	60	225	405	794	730	M16x200																							
	100L	3,00				B80							95		835	856																														
	112M	4,00	S342	B95									96		856																															
	132S	5,50				133							932		820	M20x400																														
	132S	7,50				159							1050		920																															
	160M	11,00				S383							159	1050	920																															
050200	100L	3,00	S301	B80	43	94							50	65	100	390	480		350	125	60	225	425	817	730	M16x200																				
	112M	4,00				95										858	858																													
	132S	5,50	S342	B95		132										932			820	M20x400																										
	132S	7,50				158										1050	920																													
	160M	11,00				163										1112	1000																													
	160M	15,00				172										1232	1140																													
050250	160M	11,00	S383	B110	57	216										50	65	100	490			600	440	160	75	260	485	1112	1000	M24x400																
	160M	15,00				229													1174			1000																								
	160L	18,50	S434	B125		296													1232			1140																								
	180M	22,00				296	1232	1140																																						
	200L	30,00				296	1232	1140																																						
065125	100L	3,00	S342	B80	39	99	65	80	100										450	540	400	140	60	240		420	835	820	M20x400																	
	112M	4,00				100																					856																			
	132S	5,50				128																					932																			
	132S	7,50				134				1050	920																																			
	132S	7,50				160				1112	1000																																			
065160	160M	11,00	S383	B95	45	160				65	80	100							490	600	440	160		75	260	485	1112	1000		M24x400																
	160M	15,00				207																					1232	1140																		
	160M	11,00				220																					1282	1140																		
	160M	15,00				287																					1342	1270																		
	160L	18,50				401							1372	1250																																
065200	160L	18,50	S434	B110	48	207							65	80	100				540	740	490	200	75		260	485	1112	1000	M24x400																	
	180M	22,00				220																					1174	1000																		
	200L	30,00				287																					1232	1140																		
	160L	18,50				244																					1282	1140																		
	180M	22,00				257																					1342	1270																		
065250	200L	30,00	S436	B125	78	324										65	80	100	540	840	490	215		90	280	530	1342	1270		M24x400																
	200L	37,00				401																					1372	1250																		
	225M	45,00				401																					1372	1250																		
	225M	45,00				401																					1372	1250																		
	225M	45,00				401																					1372	1250																		
080160	132S	7,50	S383	B95	51	147													80	100	125	490	600		440	160	75	260	485		957	920	M20x400													
	160M	11,00				166																									1075	1000														
	160M	15,00				210																									1137	1140														
	160L	18,50				223																									1199	1140														
	180M	22,00				202																									1185	1140														
080200	160M	15,00	S435	B95	71	237																80	100	125	540	740		490	200	75	280	530		1247	1140	M24x400										
	160L	18,50				250																												1309	1140											
	180M	22,00				317																												1367	1270											
	200L	30,00				317																												1367	1270											
	200L	37,00				317																												1367	1270											
080250	200L	37,00	S436	B125	84	317																			80	100		125	610		840	550	205	90	300		580	1309	1250	M24x400						
	180M	22,00				342																																1367	1250							
	200L	30,00				407																																1397	1250							
	225M	45,00				629																																1412	1400							
	250M	55,00				S607																																B140	629		1412	1400				
100160	160L	18,50	S435	B95	80	246																					100		125		140	540	740		490	200	90	280	560		1247	1140	M20x400			
	180M	22,00				259																																			1309	1140				
	200L	30,00				326																																			1367	1270				
	200L	37,00				326																																			1367	1270				
100200	160L	18,50	S435	B95	79	245																										100	125		140	540		740	490		200	90		325	605	1397
	180M	22,00				258																								1412										1400						
	200L	30,00				325	1412	1400																																						
	200L	37,00				402	1412	1400																																						
	225M	45,00				402	1412	1400																																						
100250	200L	30,00	S486	B125	89	347	100	125	140																					610						840		550	205	90	350			630	1397	1250
	200L	37,00				412																												1412									1400			
	225M	45,00				634				1412	1400																																			
	250M	55,00				903				1412	1400																																			
	280S	75,00				S609A				B160	903	1412																		1400																
125200	250M	55,00	S609A	B160	102	647				100	125	150																		730				940		670		230	90		380		660	1542	1400	M24x400
	280S	75,00				916																															1542							1400		
	280M	90,00				966							1542	1400																																



Dimensions in mm.

Dimensional tolerances admissible (base plates) for welded parts according to DIN 8570 B

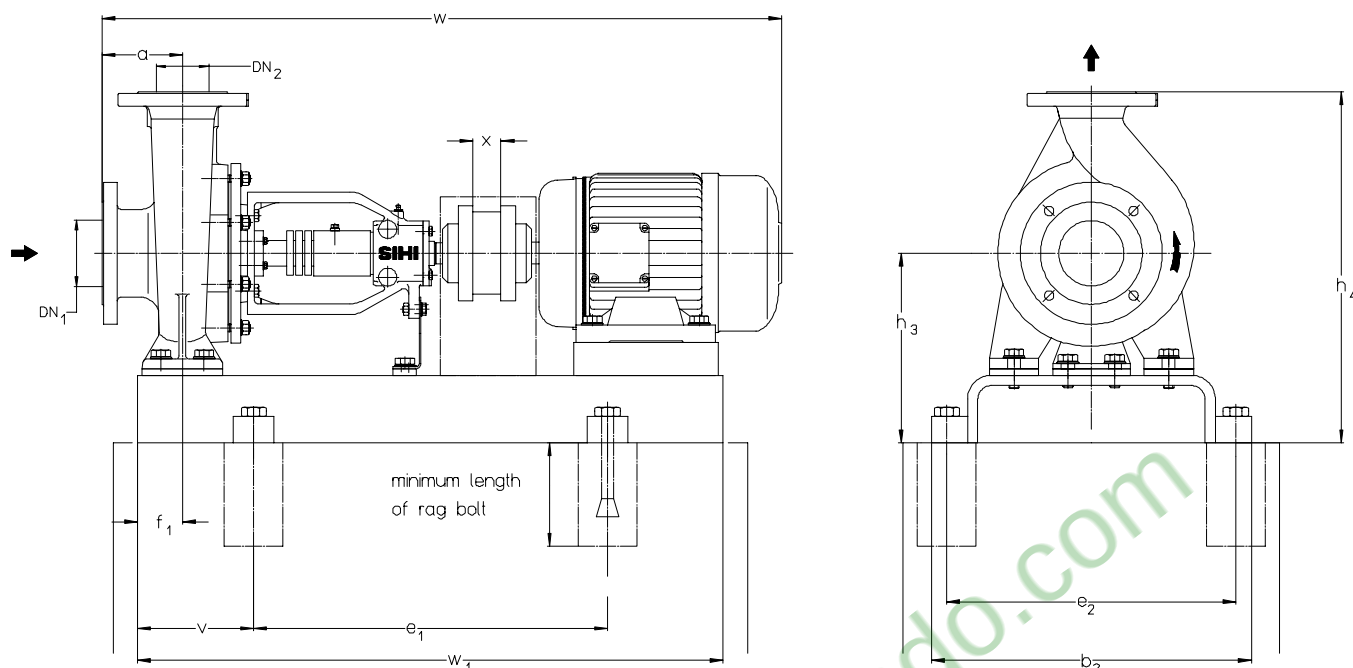
size	motor size	kW	base- plate No.	coup- ling **	weight pump kg	unit kg	DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	rag bolt DIN 529												
032125	71	0.25	S241	H80	32	63	32	50	80	330	480	290	125	60	177	317	100	780	730	M16x200												
	71	0.37	S301		41	76				390		350			197	357																
032160	71	0.37																														
	80	0.55																														
032200	80	0.55	S272		39	78			360	540	320	140	225	405	814	820																
	80	0.75										872																				
	90S	1.10																														
	90L	1.50				83									834			M20x400														
032250	80	0.75	S383		52	105			100	490	600	440	160	75	260	485			892	920												
	90S	1.10																														
	90L	1.50												933																		
	100L	2.20																														
040125	71	0.25	S241	H80	34	65	40	65	80	330	480	290	125	60	177	317	100	780	730	M16x200												
	71	0.37	S272		39	73				360	540	320	140					814	820													
040160	71	0.37				S301				74	390	480	350		125	197		357	780		730											
	80	0.55	S272		39	78				360		320						814														
	80	0.75														872																
040200	90S	1.10														834		820														
	80	0.55	S342		43	89			100	450	540	400	140	240	420	892		920	M20x400													
	80	0.75																														
	90S	1.10																														
	90L	1.50																														
040250	90S	1.10	S383		57	113			125	490	600	440	160	75	260	485		933	920	M20x400												
	90L	1.50																														
	100L	2.20																														
	100L	3.00																														
040315	100L	2.20	S434	87	171	125	540	660	490	170	75	305	555	1068	1000	M20x400																
	100L	3.00																														
	112M	4.00																														
	132S	5.50			S435												H95	207		740		200										
050125	71	0.37	S301	H80	35	70	50	65	100	390	480	350	125	60	197	357	100	800	730	M16x200												
	80	0.55	S272		44	74				360		320						834														
050160	80	0.75																	892		820											
	80	0.55	S342		43	90				450	540	400	140		240	440		892	834		820	M20x400										
	80	0.75																														
050200	90S	1.10																					93									
	80	0.75																					89									
	90S	1.10				92																										
	90L	1.50				94																										
050250	100L	2.20	S383		57	104				125	490	600	440		160	75		260	485	933	920	M20x400										
	90L	1.50																														
	100L	2.20																														
	100L	3.00																														
050315	112M	4.00	S434		H95	90				126	125	540	660		490	170		305	585	933	920	M20x400										
	112M	4.00																														
	132S	5.50		S435																												
	132M	7.50																														

Foundation plan for units with spacer type coupling

n = 1450 rpm

size	motor		base plate No.	coup- ling **	weight		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	rag bolt DIN 529															
	size	kW			pump kg	unit kg																													
065125	80	0,55	S342	H80	39	85	65	80	100	450	540	400	140	60	240	420	100	834	820	M20x400															
	80	0,75				88												892																	
	90S	1,10				91												834																	
065160	80	0,75			45	94										440		892			933														
	90S	1,10																				96													
	90L	1,50																				104													
	100L	2,20	106																																
	90S	1,10	106																																
	90L	1,50	116																																
065200	100L	2,20	48		117	932			973	994																									
	100L	3,00									117																								
	112M	4,00									162																								
	065250	100L		2,20	78		163	540	660		490	170	280	530	1083	1000																			
		100L		3,00													198																		
		112M		4,00													233																		
065315	132S	5,50	94	236	610	840	550	205	325	605	1205	1231	1250	M24x400																					
	132M	7,50													252																				
	160M	11,00													282																				
	160L	15,00													104																				
	080160	80													0,75	51	107	490	600	440	160	75	260	485	899	920	M20x400								
		90S													1,10													109							
90L		1,50	119																																
100L		2,20	144																																
080200		100L	3,00	71	155	540	660	490	170	200	510	1067	1108	1000	M20x400																				
		100L	3,00														156																		
	112M	4,00	191																																
	080250	132S	5,50		84											194	610	840	550	205	300	580	1205	1231	1250	M24x400									
		100L	3,00																								195								
		112M	4,00																								223								
080315		132S	5,50	104		226	610	840	550	205	350	665	1231	1205	1250	M24x400																			
		132M	7,50																								243								
		160M	11,00																								246								
	160L	15,00	262																																
	100160	100L	2,20		80	164											540	660	490	170	200	280	560	1108	1000	M20x400									
		100L	3,00																								165								
112M		4,00	200																																
100200		132S	5,50	79		163	540	660	490	170	200	280	560	1108	1000	M20x400																			
		100L	2,20																								164								
		100L	3,00																								199								
	100250	112M	4,00		89	202											610	840	550	205	325	605	1231	1205	1250	M24x400									
		132S	5,50																								200								
		132M	7,50																								228								
100315		160M	11,00	106		231	610	840	550	205	350	665	1246	1338	1400	1250											M24x400								
		160M	11,00																									247							
		160L	15,00																									264							
	125200	180M	18,50		109	294											610	840	550	205	350	665	1400	1462	1250	M24x400									
		180L	22,00																									306							
		200L	30,00																									323							
125250		132M	7,50	102		244	125	150	160	730	670	110	380	780	1246	1338											1400	1250	M24x400						
		160M	11,00																											260					
		160L	15,00																											290					
	150200	132M	7,50		109	251											150	200	160	730	670	110	380	780	1246	1338				1400	1250	M24x400			
		160M	11,00																														267		
		160L	15,00																														297		
150250		132M	7,50	134		279	150	200	160	730	670	110	380	780	1266	1358											1423	1482	1250				M24x400		
		160M	11,00																															306	
		160L	15,00																															337	
	150315	180M	18,50		H110	349											150	200	160	730	670	110	380	780	1423	1482				1400	1250	M24x400			
		180L	22,00																															351	
		200L	30,00																															363	
150400		180M	18,50	H125		392	150	200	160	730	670	110	380	780	1482	1400											1250	M24x400							
		180L	22,00																										392						
		200L	30,00																										436						
	150500	132M	7,50		H95	120											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		160M	11,00																														306		
		160L	15,00																														337		
200250		180M	18,50	S606		134	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		180L	22,00																																349
		200L	30,00																																351
	200315	180M	18,50		S607	H110											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		180L	22,00																																392
		200L	30,00																																436
200400		132M	7,50	H95		120	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		160M	11,00																																306
		160L	15,00																																337
	200500	180M	18,50		S606	134											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		180L	22,00																																349
		200L	30,00																																351
200500		180M	18,50	H110		134	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		180L	22,00																																392
		200L	30,00																																436
	200500	132M	7,50		H95	120											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		160M	11,00																																306
		160L	15,00																																337
200500		180M	18,50	S606		134	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		180L	22,00																																349
		200L	30,00																																351
	200500	180M	18,50		H110	134											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		180L	22,00																																392
		200L	30,00																																436
200500		132M	7,50	H95		120	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		160M	11,00																																306
		160L	15,00																																337
	200500	180M	18,50		S606	134											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		180L	22,00																																349
		200L	30,00																																351
200500		180M	18,50	H110		134	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		180L	22,00																																392
		200L	30,00																																436
	200500	132M	7,50		H95	120											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		160M	11,00																																306
		160L	15,00																																337
200500		180M	18,50	S606		134	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		180L	22,00																																349
		200L	30,00																																351
	200500	180M	18,50		H110	134											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		180L	22,00																																392
		200L	30,00																																436
200500		132M	7,50	H95		120	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		160M	11,00																																306
		160L	15,00																																337
	200500	180M	18,50		S606	134											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		180L	22,00																																349
		200L	30,00																																351
200500		180M	18,50	H110		134	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		180L	22,00																																392
		200L	30,00																																436
	200500	132M	7,50		H95	120											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		160M	11,00																																306
		160L	15,00																																337
200500		180M	18,50	S606		134	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		180L	22,00																																349
		200L	30,00																																351
	200500	180M	18,50		H110	134											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		180L	22,00																																392
		200L	30,00																																436
200500		132M	7,50	H95		120	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		160M	11,00																																306
		160L	15,00																																337
	200500	180M	18,50		S606	134											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		180L	22,00																																349
		200L	30,00																																351
200500		180M	18,50	H110		134	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		180L	22,00																																392
		200L	30,00																																436
	200500	132M	7,50		H95	120											150	200	160	730	670	110	380	780	1266	1358			1423	1482	1250	M24x400			
		160M	11,00																																306
		160L	15,00																																337
200500		180M	18,50	S606		134	150	200	160	730	670	110	380	780	1266	1358											1423	1482					1250	M24x400	
		180L	22,00																																349
		200L	30,00																																351

* 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 60 Hz on request



Dimensions in mm.

Dimensional tolerances admissible (base plates) for welded parts according to DIN 8570 B

size	motor		base plate No.	coupp- ling **	weight		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	rag bolt Din 529											
	size	kW			pump kg	unit kg																									
032125	71	0.55	S241	H80	32	64	32	50	80	330	480	290	125	60	177	317	100	780	730	M16x200											
	80	0.75	S272			72				360	540	320	140					814													
	80	1.10				75													872												
	90S	1.50				77													814												
	90L	2.20				80													872												
032160	80	1.10	S272	H80	41	83				360	540	320	140		197	357		814	820												
	90S	1.50				85												872													
	90L	2.20				85												913													
	100L	3.00				95												934													
	112M	4.00	96	993																											
	132S	5.50	S303	H95	98	390				600	350	160	1012		920																
	132S	7.50	S272	H80	39	83				360	540	320	140		225	405		872	820												
	90L	2.20				93												913													
100L	3.00	94				934																									
112M	4.00	127				390												600			350	160	1010	920							
032200	132S	5.50	S303	H95	39	158				450	660	400	180		240	420		1128	1020		M20x400										
	160M	11.00	203			490												740	440			200	1190	1140							
	160M	15.00	203																						490	740	440	200	1030	920	
	160L	18.50	S385																												490
	132S	7.50	S383	490	740					440	200	1030	920																		
	160M	11.0	S434			490			740					440	200	1030		920													
	160M	15.0	S434																490	740	440	200	1030	920							
	160M	15.0	S434																						490	740	440	200	1030	920	
040125	80	1.10	S272	H80	34					73	80	360	540																		320
	90S	1.50				76			872																						
	90L	2.20				78			913																						
	100L	3.00				88			872																						
	90S	1.50				81			872																						
040160	90L	2.20	S272	H80	39	83			360	540				320	140	197		357	913	820											
	100L	3.00				93													913												
	112M	4.00				94													934												
	132S	5.50				127													390		600	350	160	1010	920						
	132S	7.50	S303	H95	162	450			660	400				180	1128	1020															
	160M	11.00	S344	H95	39	104			450	540				400	140	240		420	933	820											
	100L	3.00	105			390													600		350	160	954								
	112M	4.00	131			390													600		350	160	1030	920							
132S	5.50	S303	H95			43													160		450	660	400	180	1148	1020					
160M	11.00	S344		H95	43				154	490				600	440	160		1030	920												
160M	15.00	S434							H95	57				189	540	660		490	170	1148	1000										
160L	18.50	S385												H95	57	219		490	740	440	200	1210	1140								

size	motor		base plate No.	coup- ling **	weight		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	x	w*	w ₁	rag bolt DIN 529													
050125	90S	1,50	S272	H80	35	77	50	65	100	360	540	320	140	60	197	357	100	892	820	M16x200													
	90L	2,20	79			361				600	325	160	182		342	933		920	M12x100														
	100L	3,00	89													954			M16x200														
	112M	4,00	90													1030			M20x400														
	132S	5,50	S303													H95			123	197	357	892	820	M20x400									
050160	90L	2,20	S342	H80	44	95				450	540	400	140	240	420	933		820	M20x400														
	100L	3,00				105				390	600	350	160	225	405	954		820	M20x400														
	112M	4,00				106										1030		920	M16x200														
	132S	5,50				S303										H95		132	240	420	1148	1020											
	132S	7,50				S344										161		660	180	1148	1020												
050200	160M	11,00	S342	H80	43	104				450	540	400	140	240	440	933		820	M20x400														
	100L	3,00				105				390	600	350	160	225	420	954		820	M20x400														
	112M	4,00				131										240		440	1030	920	M16x200												
	132S	5,50				S303										H95		160	450	660	400	180	240	440	1148	1020							
	132S	7,50				S344										195		490	740	440	200	225	425	1030	920	M16x200							
050250	160M	11,00	S342	H95	57	189				540	660	490	170	75	260	485		1030	920	M16x200													
	160M	15,00				219				540	660	490	170		260	485		1148	1000														
	160L	18,50				S385				238	540	740	490		200	280		505	1210	1140													
	180M	22,00				S435				H110	299	540	740		490	200		280	505	1272	1140												
	200L	30,00				H110				H25	299	540	740		490	200		280	505	1330	1140												
065125	100L	3,00	S342	H80	39	100				65	80	125	450	540	400	140		60	240	440	140	933	820	M20x400									
	112M	4,00	101			490	600	440	160				240	440	954	820																	
	132S	5,50	136												1030	920																	
	132S	7,50	S383												142	1148	1020																
	132S	5,50	S344												H95	45	162					450	660		400	180	1148	1020					
132S	7,50	182		490	740	440	200	260	485				1188	1140																			
160M	11,00	210		75	260	485	1250	1312	1370				1270																				
160M	15,00	229					540	840	490				215	280			530	1360	1422														
160L	18,50	S435	H110				297	540	840				490	215	280	530	1422	1480	1420	M24x400													
200L	30,00	S436	H95				252	610	940				550	240	300	550	1480	1420															
065160	160L	18,50	S344	H125	78	362	610	940	550				240	90	300	550	1480	1420	M24x400														
	180M	22,00				266	610	940	550				240		300	550	1480	1420															
	200L	30,00				445	730	1060	670				230		325	575	1510	1400															
	200L	37,00				445	730	1060	670				230		325	575	1510	1400															
	225M	45,00				S607	H125	445	730				1060		670	230	325	575	1510	1400													
080160	132S	7,50	S434	H95	51	164	80	100	125				540	660	490	170	75	260	485	140		1095	1000	M20x400									
	160M	11,00	165			490							740	440	200	260						485	1213		1140								
	160M	15,00	213																				1275		1337	1323	1385	1270					
	160L	18,50	232																				540		840	490	215	300	580	1447	1505	1420	
	180M	22,00	S435																				H110		244	540	840	490	215	300	580	1447	1505
080200	160M	15,00	S436	H95	71	210							540	840	490	215	90	300	580			550	1505	1420	M24x400								
	160L	18,50				244				610	840	550	205	325	605	1535					1400												
	180M	22,00				258				610	840	550	205	325	605	1535					1400												
	200L	30,00				S487				H125	354	610	840	550	205	325					605		1535	1400									
	200L	37,00				S487				H125	354	610	840	550	205	325					605		1535	1400									
080250	180M	22,00	S486	H110	84	284				610	840	550	205	90	300	580	550	1505	1420		M24x400												
	200L	30,00	S487	H125		368				610	840	550	205					325	605			1535	1400										
	200L	37,00	S487	H125		451				610	840	550	205					325	605			1535	1400										
	225M	45,00	S607	H125		651				730	1060	670	230					325	605			1535	1400										
	250M	55,00	S608	H140		651				730	1060	670	230					325	605			1535	1400										
100160	160L	18,50	S436	H95	80	254				100	125	140	540	840	490	215	90	280	560		140	1385	1270	M20x400									
	180M	22,00	268			610							940	550	240	300						580	1447	1505	1420								
	200L	30,00	364																				540	840	490	215	280	560	1385	1270			
	200L	37,00	S487																				H125	253	540	840	490	215	280	560	1447	1505	1420
	225M	45,00	S487																				H125	267	540	840	490	215	280	560	1447	1505	1420
100200	160L	18,50	S436	H95	79	253							610	940	550	240	90	300	580			550	1505	1420	M24x400								
	180M	22,00				267	610	940	550				240	280	560	1385				1270													
	200L	30,00				363	610	940	550				240	280	560	1385				1270													
	200L	37,00				S487	H125	446	610				940	550	240	280				560			1385	1270									
	225M	45,00				S607	H125	446	610				940	550	240	280				560			1385	1270									
100250	200L	30,00	S487	H125	89	373	610	940	550				240	90	325	605	605	1535	1400	M24x400													
	200L	37,00				456	610	940	550				240					325	605			1535	1400										
	225M	45,00				S607	H140	656	610				940					550	240			325	605	1535	1400								
	250M	55,00				S608	H140	909	610				940					550	240			325	605	1535	1400								
	280S	75,00				S609A	H160	959	610				940					550	240			325	605	1535	1400								
125200	250M	55,00	S608	H140	102	669	125	150	140				730	1060	670	270	90	350	665	1680		1600	M24x400										
	280S	75,00	S609A	H160		922							730	1060	670	270								350	665	1680	1600						
	280M	90,00	S609A	H160		972							730	1060	670	270								350	665	1680	1600						

Data regarding pump size

Type + Pump size		Hydraulics + Bearing	Shaft sealing	Material	Casing gasket
		A: hydraulic A B: hydraulic B D: transnorm size with double volute -A one ball bearing respectively two inclined ball bearing grease lubricated and one liquid flushed sleeve bearing	002 radial shaft seal rings GBC unbalanced standard mechanical seal	1B main parts of sperdial cast 2B main parts of cast steel	2 confined flat gasket of graphite with A4 insertion
ZTND	032125	AA	alternatively 002 GBC	1B	2
	032160				
	032160	BA			
	032200	AA			
	032200	BA			
	032250				
	040125				
	040160				
	040200				
	040250				
	040315				
	050125				
	050160				
	050200				
	050250				
	050315				
	065125				
	065160				
	065200				
	065250	AA			
	065315				
	080160				
	080200				
	080250				
	080315				
	100160				
	100200				
	100250				
	100315				
	125200				
	125250				
	150200				
	150250				
	150315				
	150400				
	150500				
	200250				
	200315				
	200400				
	200500	DA		2B	

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