

Volute pumps

for heat carrier oils up to 350 °C

SIHI *SuperNova*



ZTND 032-125 . . . 200-500

TECHNICAL DATA

Output:	max. 1000 m ³ /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% 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		
	040160 080160		080250		100315		
	040200 080200		100250		125250		
	050125 100160		125200		150200		
	050160 100200				150250		
t = 350 °C	032125 050200	t = 350 °C	040250	t = 350 °C	040315 150250	t = 350 °C	150315
	032160 065125		050250		050315		150400
	032200 065160		065200		065315		150500
	040125 080200		065250		080315		200250
	040160 100160		080160		100315		200315
	040200		080250		125200		200400
	050125		100200		125250		200500
	050160		100250		150200		

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.

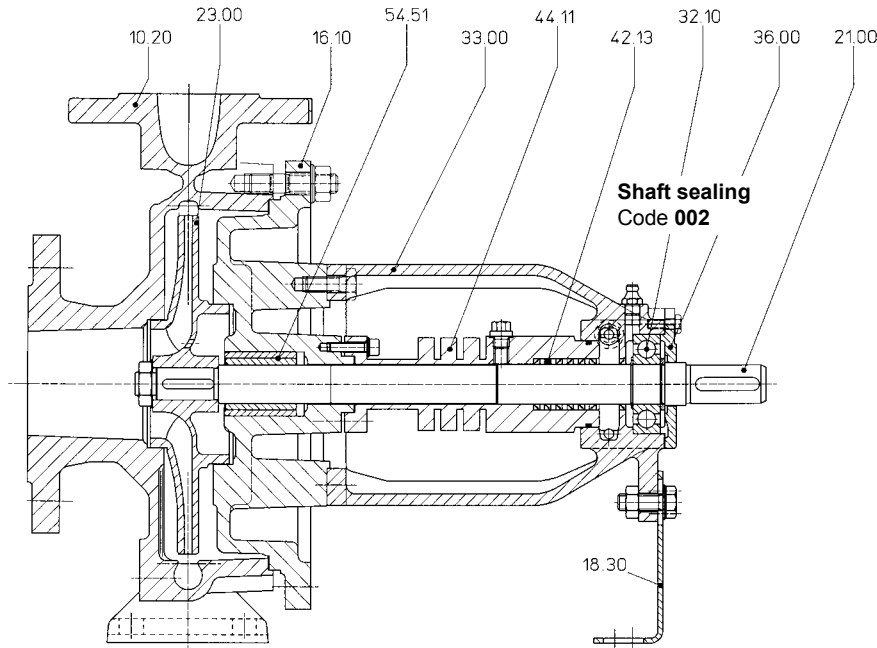
ZDN volute pumps to EN 22858, t_{max} 207 °C PN 25. Hot water design.

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

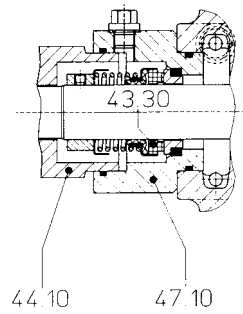
ZLI volute pumps to EN 733 as INLINE construction, t_{max} 150 °C PN 25. Hot water design.

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

SECTIONAL DRAWING AND NOMENCLATURE
ZTN 032125 ... 150250

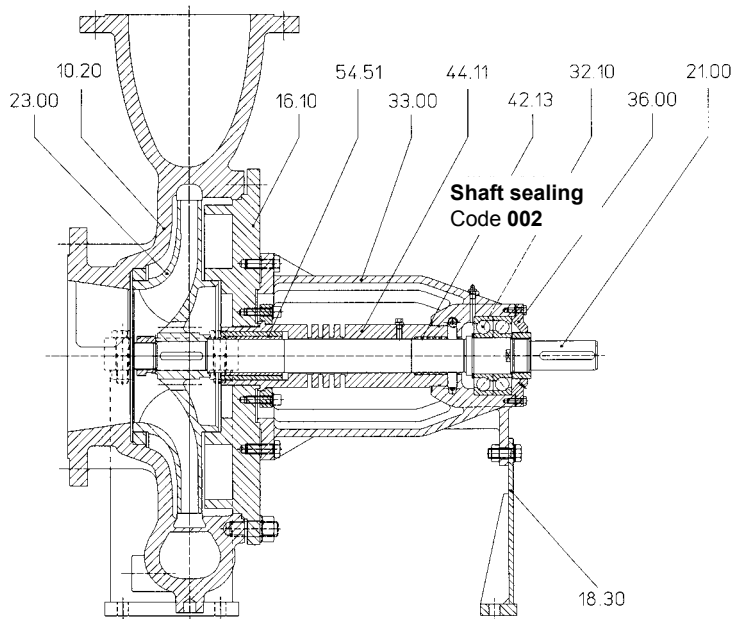


Shaft sealing
Code GBC



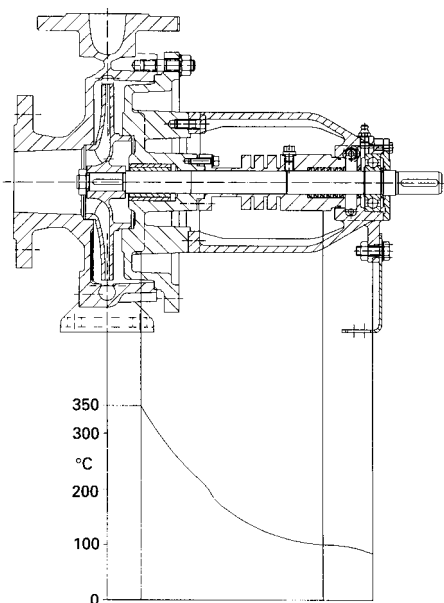
- 10.20 volute casing
- 16.10 casing cover
- 18.30 supporting foot
- 21.00 shaft
- 23.00 impeller
- 32.10 grooved ball bearing
- 33.00 bearing bracket
- 36.00 bearing cover
- 42.13 radial seal ring
- 43.30 mechanical seal
- 44.10 shaft seal casing
- 44.11 shaft seal casing
- 47.10 sealing cover
- 54.51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

ZTN 150315 ... 200500



Shaft sealing
Code 002

Heat barrier / shaft sealing / bearing

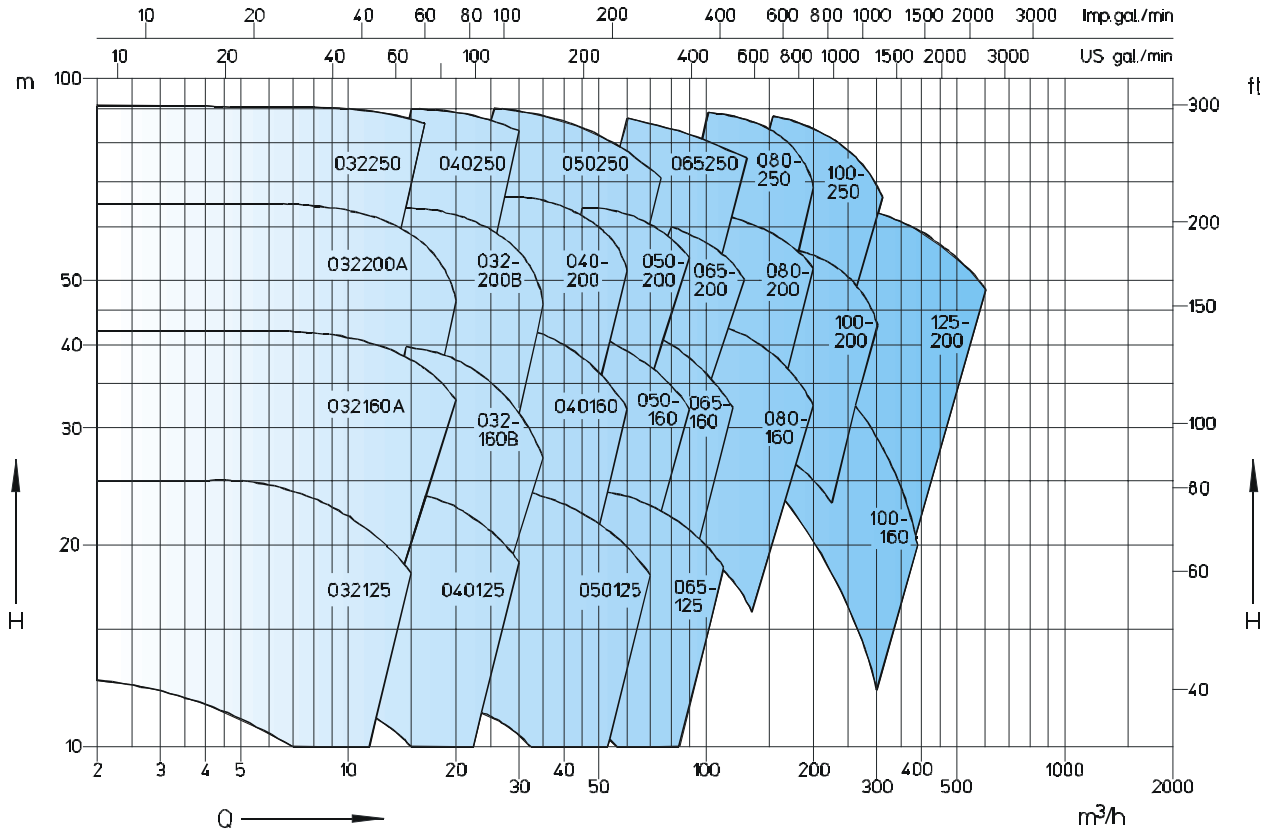


been achieved.

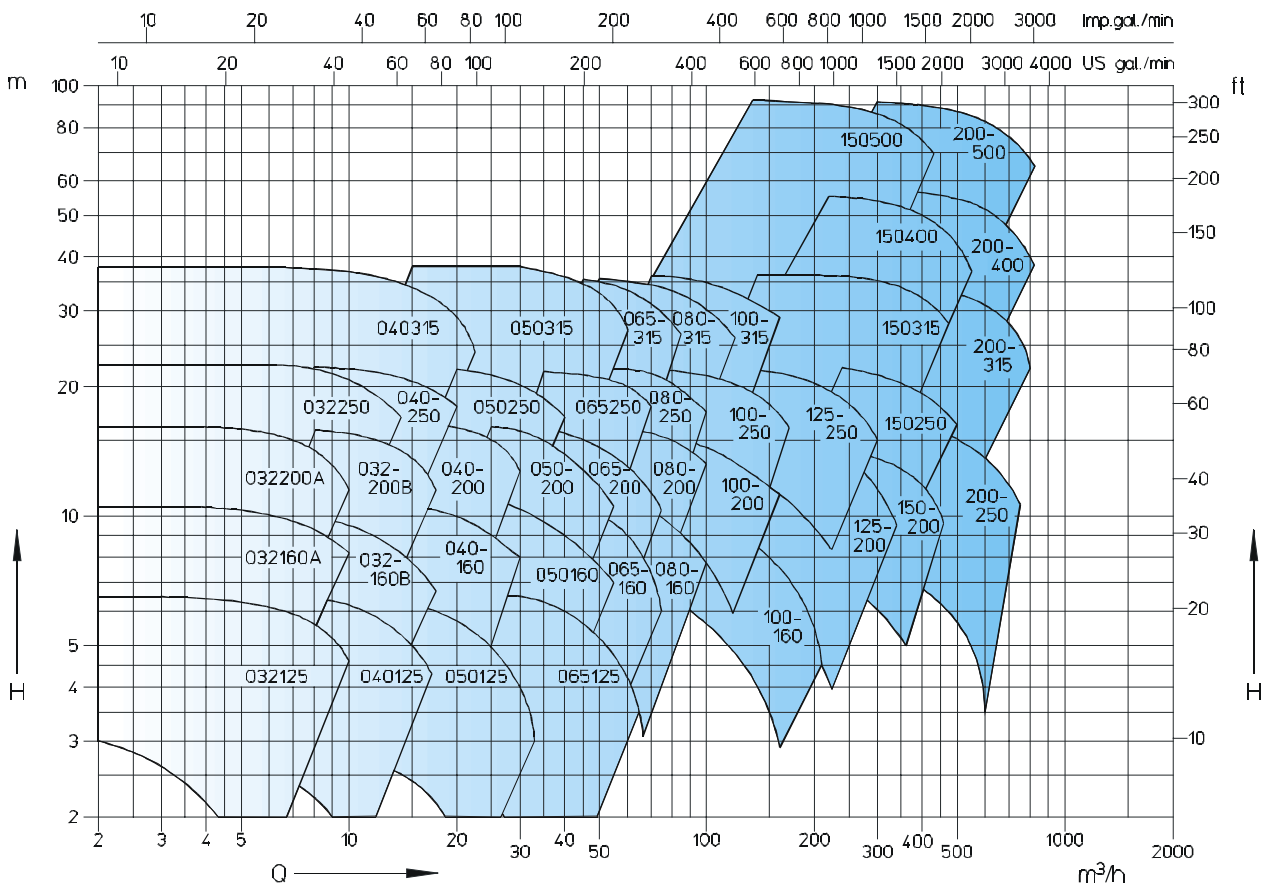
Heat transfer installations have achieved a high level of technical development. Consequently the requirements on pumps handling heat transfer oils have increased regarding operating safety, environmental protection, maintenance and operating costs. The Sterling SIHI ZTN pump, based on many years of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

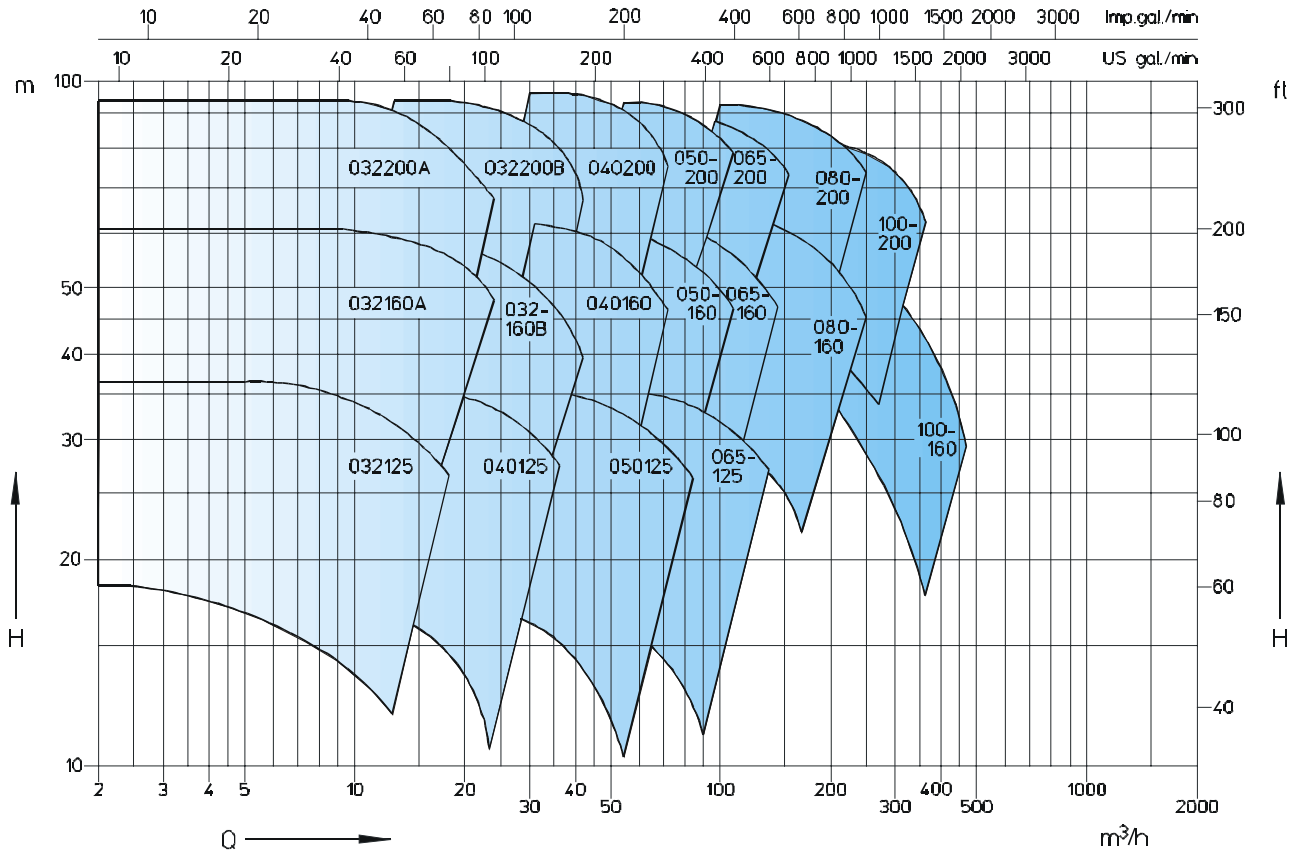
n=2900 1/min



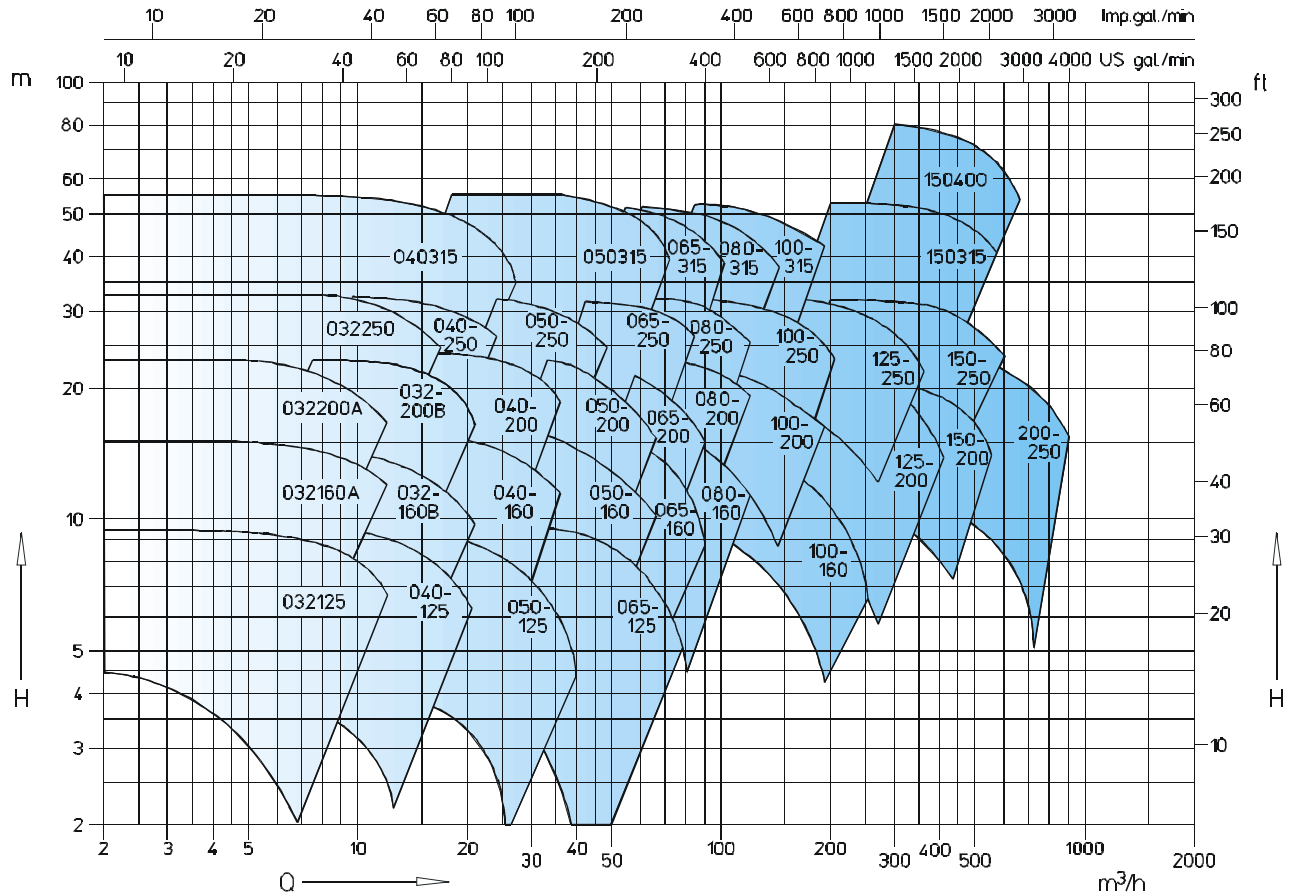
n=1450 1/min



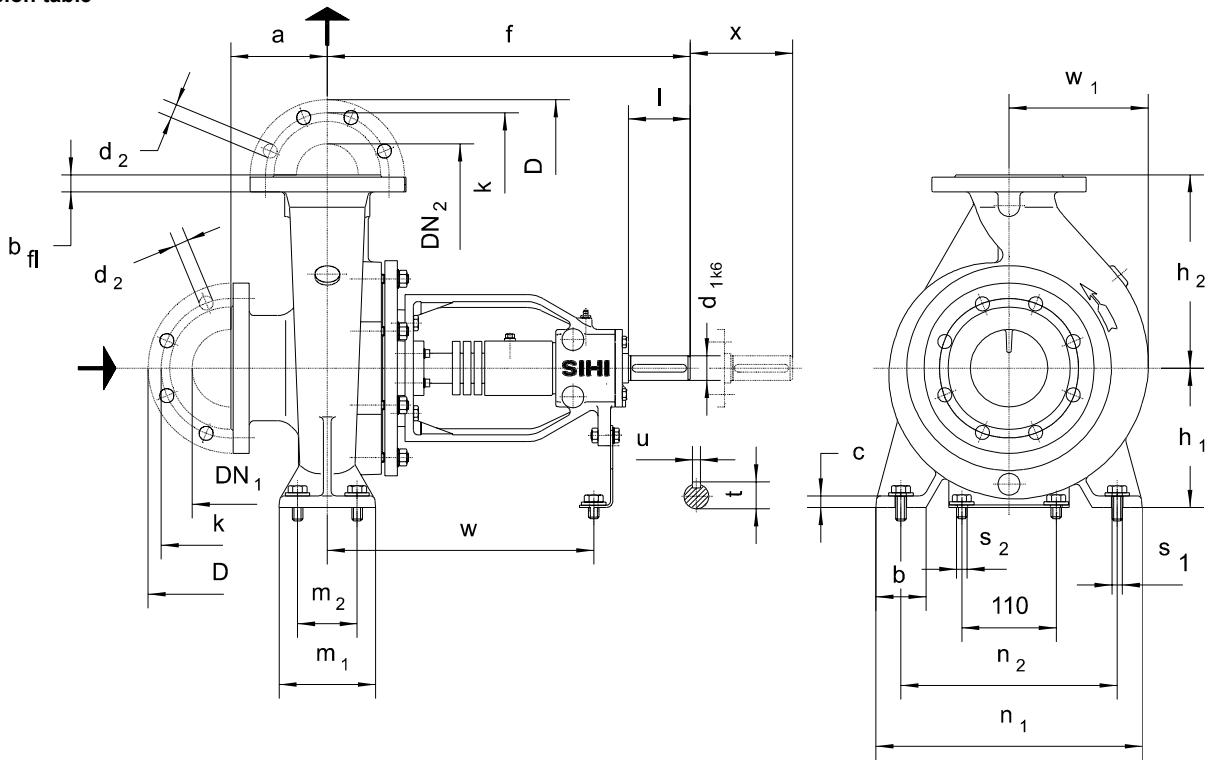
n=3500 1/min



n=1750 1/min



Dimension table



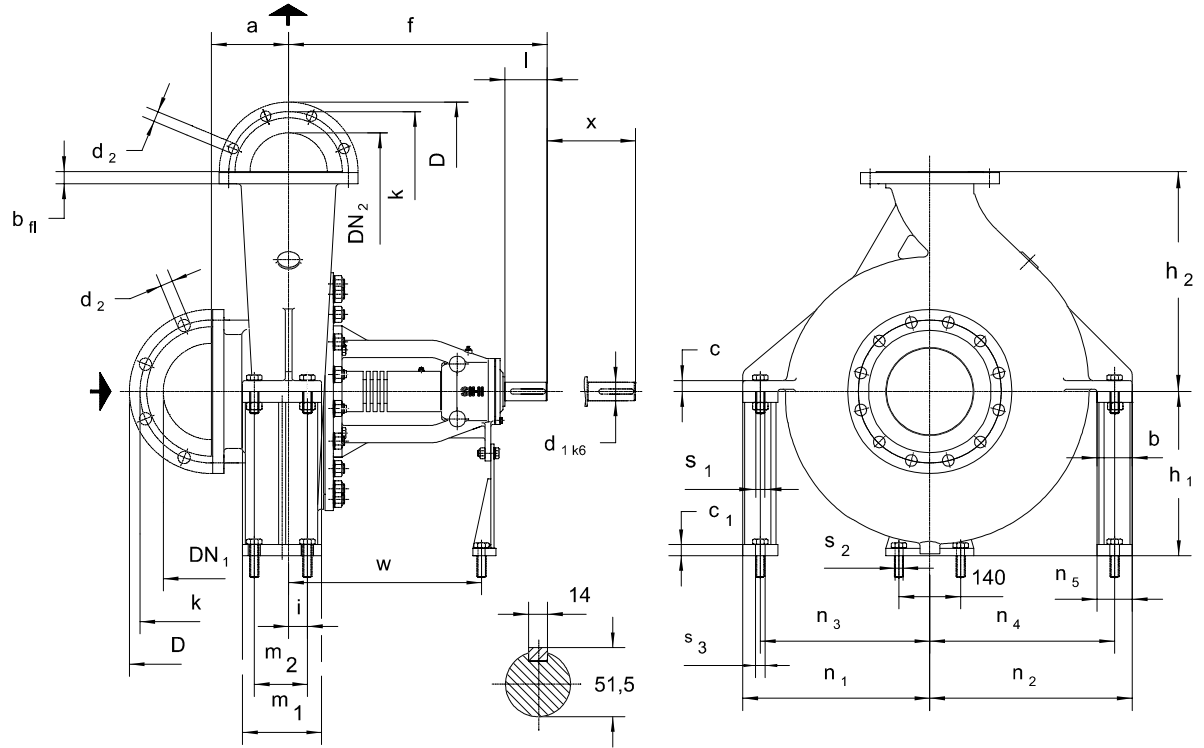
All dimensions in mm.

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														240	190								
032250 ¹⁾			100	65			180	225	125	95	320	250			160																
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⁾			125	65			225	250	125	95	345	280			164																
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	200			320	250																							
050250			180	225			320	250																							
050315 ¹⁾			125	65	17	470	225	280	125	95	345	280			210																
065125	65	80	100	65	15	360	160	180	125	95	280	212	M12		267	140	100	24	50	27	8										
065160							180	200														320	250								
065200			180	225			320	250																							
065250			200	250			360	280																							
065315			80	18	18	470	225	280	160	120	400	315	M16	340	220																
080160	80	100	100	65	15	360	180	225	125	95	320	250	M12		267	165	100	24	50	27	8										
080200							180	250														345	280								
080250			200	280			400	315																							
080315			250	315			400	315																							
100160 ¹⁾	100	125	100	65	18	470	200	280	160	120	360	280	M16		340	202	120	32	80	35	10										
100200							200	280														400	315								
100250			225	315			400	315																							
100315			250	355			400	315																							
125200 ¹⁾	125	150	140	65	18	470	250	315	200	150	550	450	M20		242	140	100	32	80	35	10										
125250							250	355														500	400								
150200 ¹⁾	150	200	160	100			20	280	400	200	150	550										450	M20		274	190	100	32	80	35	10
150250 ¹⁾																															

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.

Dimension table



All dimensions in mm.

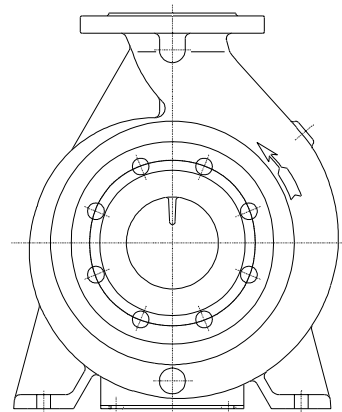
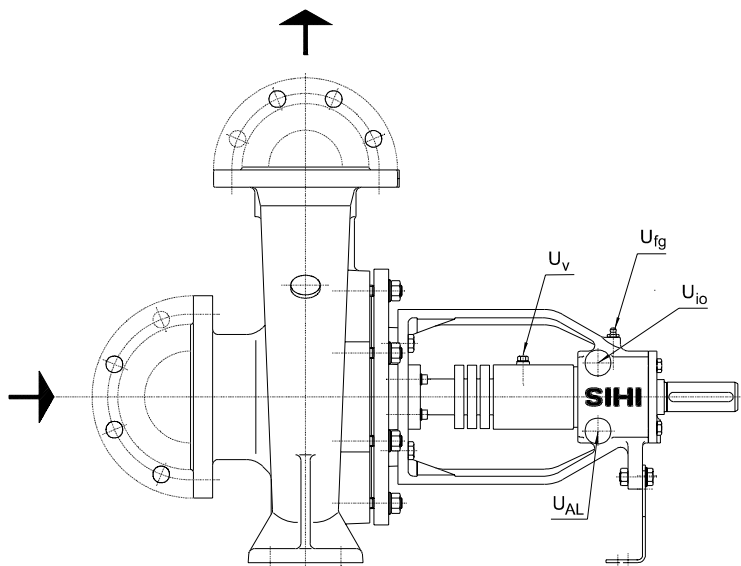
size	DN ₂	DN ₁	a	f	h ₁	h ₂	m ₁	m ₂	i	l	x	d ₁	w	c	c ₁	s ₁	s ₂ *	s ₃ *	n ₁	n ₂	n ₃	n ₄	b, n ₅
150315 ¹⁾	150	200	180	670	315	400	160	100	35	110	180	48	500	25	23	M20	M12	M20	320	360	290	330	60
150400 ¹⁾					355	450													380	420	340	380	
150500 ¹⁾					400	500													425	460	385	420	
200250 ¹⁾	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⁾			355		450	360													420	320	380		
200400 ¹⁾			375		500	400													480	360	440		
200500 ¹⁾			425		560	475													575	425	525		

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					+4,0					+4,5			+1,5	
					-3,0					-4,0			-1,5	
d ₂ x number	19x4	19x4	19x4	19x4	19x8	19x8	19x8	23x8	23x12	28x8	28x12	31x12	26x12	30x12

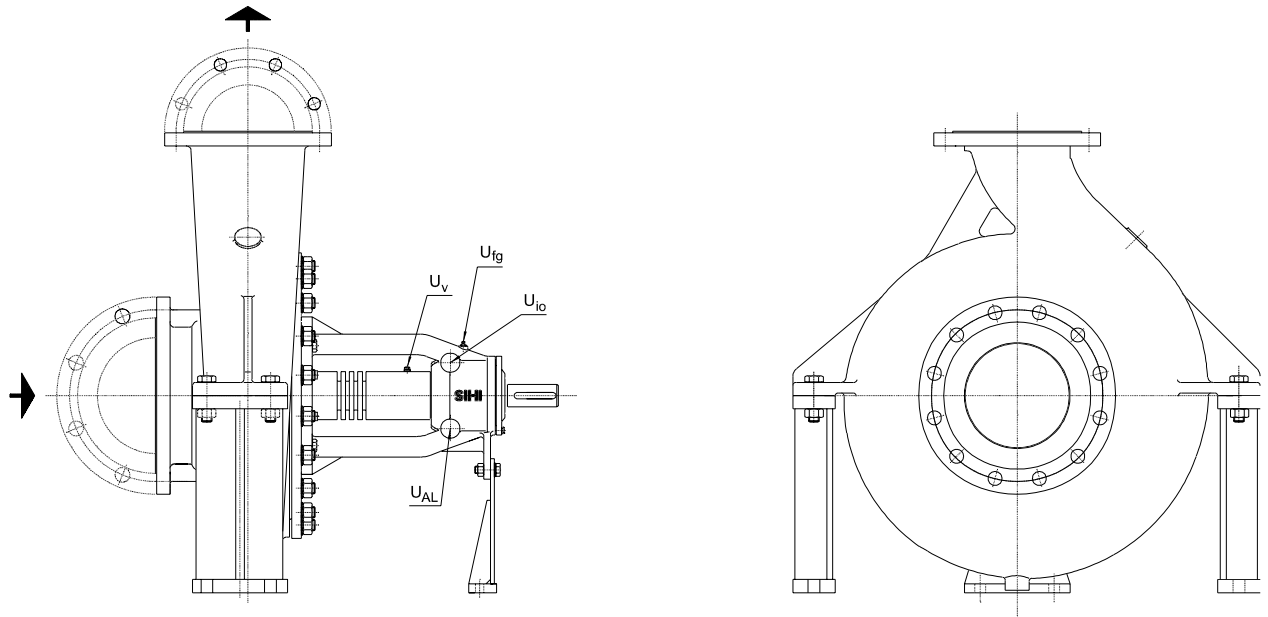
Connections for bearing brackets 25 and 35



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

Connections for bearing bracket 45

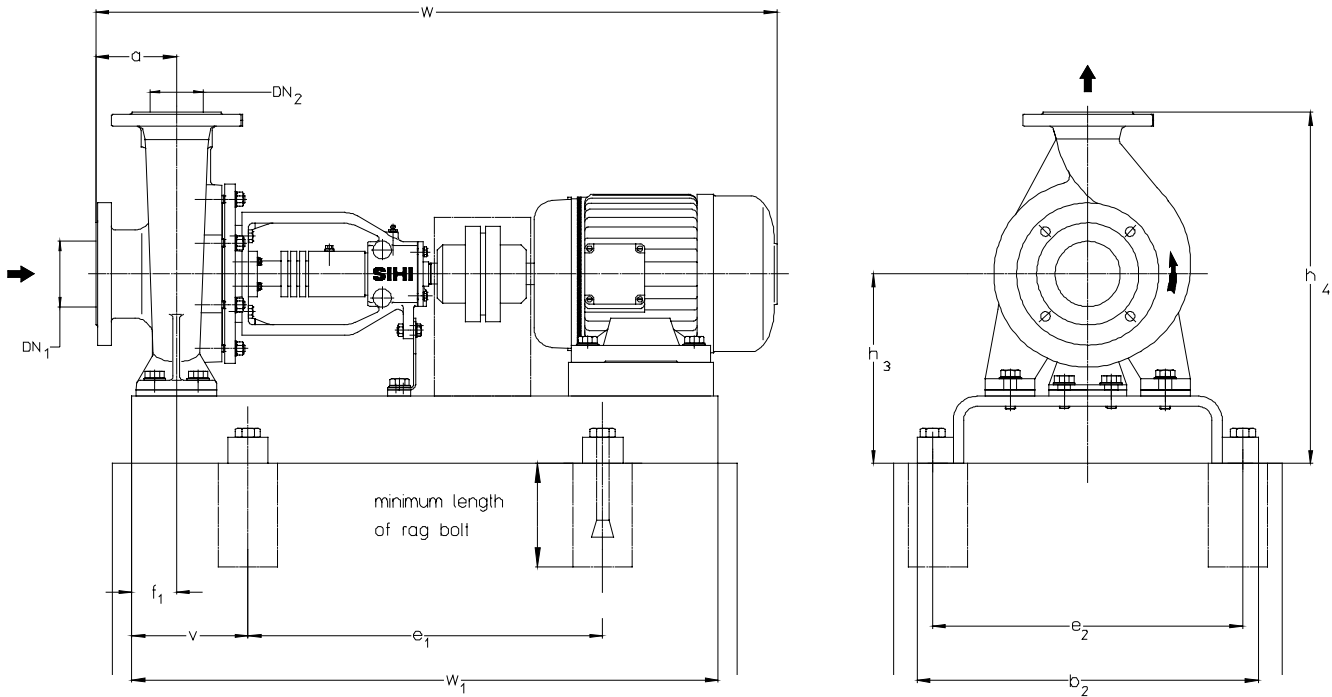


U_{fg} : Grease filling connection.
 U_{io} : Sealing liquid connection.
 U_{AL} : Drainage for leakage.
 U_v : Vent connection.

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

Foundation plan

n = 1450 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																																										
	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		B68	41														69	40	65	80	360	420	320	115	60	197	357	716	650	M16x200																												
	80	0.55																		72																																									
032200	80	0.55	S301			B68														39														70	40	65	80	360	420	320	115	60	197	357	716	650	M16x200														
	80	0.75																																78																											
	90S	1.10																																80																											
032250	90L	1.50	S383																	B80														52														103	40	65	100	490	600	440	160	75	260	485	736	920	M20x400
	90S	1.10																																														106													
	90L	1.50																																														108													
040125	80	0.75	S383	B80			52	118	40	65	100	490	600	440	160	75	260	485	736															920														M20x400													
	90S	1.10						106																																																					
	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			B68	39	65																											40	65	80	360	420	320	115	60	197	357	682	650	M16x200														
	71	0.37						69																																																					
	80	0.55						70																																																					
040200	80	0.75	S301				B68	43												78																													40	65	100	390	480	350	125	60	225	405	736	730	M16x200
	80	0.55																		79																																									
	90S	1.10		82																																																									
040250	90L	1.50	S383	B80				57	84	40	65	100	390	480	350	125	60	225	405	736														730														M16x200													
	90S	1.10							111																																																				
	100L	2.20			113																																																								
040315	100L	3.00	S383		B80			57	123												40	65	100	490	600	440	160	75	260	485	835	920	M20x400																												
	100L	2.20				153																																																							
	100L	3.00				154																																																							
040315	112M	4.00	S434			B95		87	154																										40	65	125	540	660	490	170	75	305	555	970	1000	M20x400														
	132S	5.50					199																																																						
	132S	5.50					199																																																						
050125	71	0.37	S270				B68	35	63																																								40	65	100	360	420	320	115	60	197	357	702	650	M16x200
	80	0.55		67																																																									
	80	0.75		80																																																									
050160	80	0.55	S301	B68				44	83	40	65	100	360	420	320	115	60	197	357	736														650														M16x200													
	80	0.75			80																																																								
	90S	1.10			83																																																								
050200	90L	1.50	S301		B68			43	79												40	65	100	390	480	350	125	60	225	405	736	730	M16x200																												
	80	0.75				82																																																							
	90S	1.10				84																																																							
050250	90L	1.50	S383			B80		57	94																										40	65	100	390	480	350	125	60	225	405	736	730	M16x200														
	100L	2.20					113																																																						
	100L	3.00					123																																																						
050315	112M	4.00	S434				B95	90	124																																								40	65	125	490	600	440	160	75	260	485	835	920	M20x400
	112M	4.00		157																																																									
	132S	5.50		202																																																									
050315	132M	7.50	S434	B95				90	205	40	65	125	540	660	490	170	75	305	585	1067														1000														M20x400													
	132M	7.50			205																																																								

Foundation plan

n = 1450 rpm

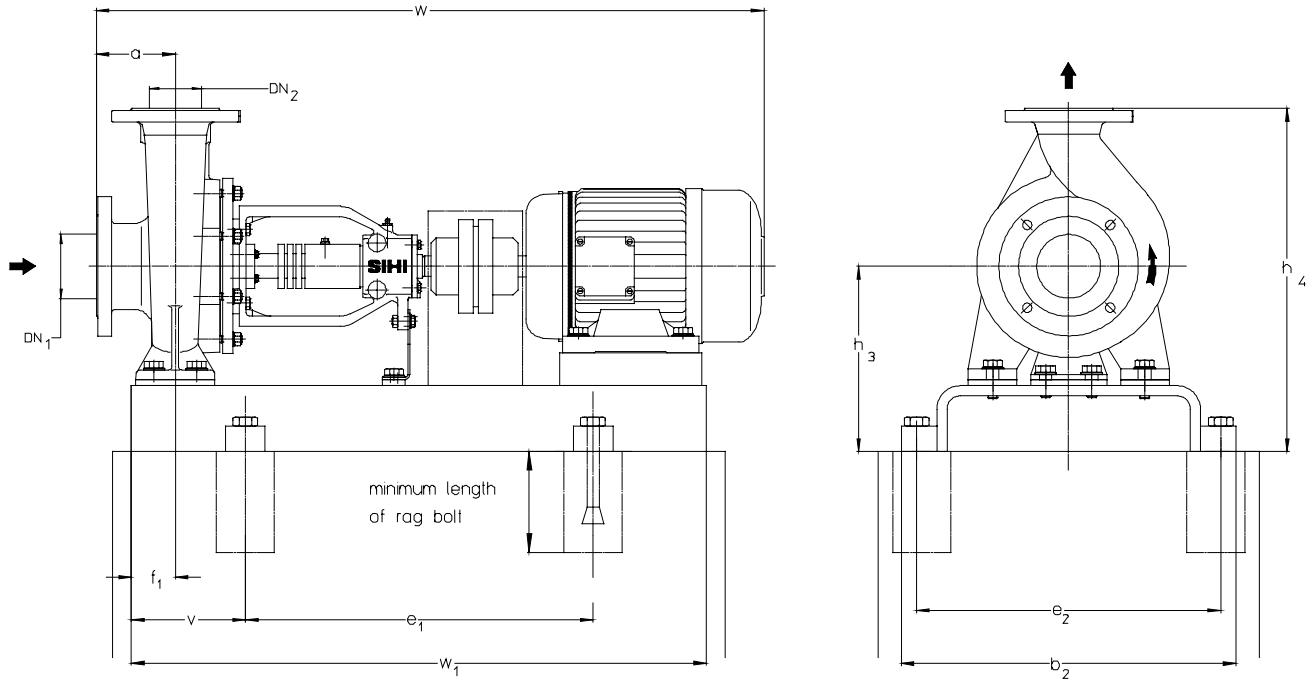
size	motor		base plate No.	coup-ling **	weight		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	rag bolt DIN 529																				
	size	kW			pump kg	Unit kg																																	
065125	80	0.55	S342	B68	39	83	65	80	100	450	540	400	140	60	240	420	736	820	M20x400																				
	80	0.75				86											794																						
	90S	1.10				89											736																						
065160	80	0.75			S383	B80											45			92	490	600	440	160	75	260	485	440	794	920									
	90S	1.10																		94									835										
	90L	1.50																		105									794										
100L	2.20	102	835																																				
90L	1.50	104	856																																				
100L	2.20	114	945																																				
065200	100L	3.00	S434	B80	48	115			540	660	490	170	90	280	530	300	550	945		1000																			
	112M	4.00				161												966																					
	100L	2.20				162												1042																					
	100L	3.00				190	1067																																
065250	100L	2.20			S486	B95	78	231										610	840		550	205	325	605	605	1067	1093	1250											
	100L	3.00						234																			1185												
	112M	4.00	250	1247																																			
	132M	5.50	280	761																																			
065315	132S	5.50	S383	B68			51	102	80	100	75	490	600	440	160	75	260			485							819		920										
	132M	7.50						105																			860												
	160M	11.00			107	929																																	
	160L	15.00			118	970																																	
	100L	3.00			127	991																																	
90L	1.50	137			1067																																		
080160	100L	2.20	S434	B95	71	138	125	610			840	550	205	300	580	350	665	970	1000																				
	100L	3.00				183												970																					
	90L	1.50				192												991																					
	100L	2.20				193												1067																					
	100L	3.00				221												1093																					
112M	4.00	224			1067																																		
080200	112M	4.00	S486	B80	84	241			140	610								840	550	205	350	665	1093	1185	1250														
	132S	5.50				244																		1247															
	100L	3.00				260																		970															
	100L	2.20				290																		991															
080250	100L	3.00			S486	B95																		104		260	100	125	540	660	490	170	90	280	560	1068	1000		
	112M	4.00																								290										1094			
	132S	5.50	198	1068																																			
	132M	7.50	226	1094																																			
080315	132M	7.50	S434	B80			89	229			150	160	730	670	190	110	380							780	1006	1250													
	160M	11.00						245																	1082														
	160M	11.00			262	1108																																	
	160L	15.00			292	1200																																	
100160	160L	15.00			S486	B110	106	304	125	150								160	730	190	110	380	780		1262											1250			
	180M	18.50						320																	1262														
	180L	22.00	242	1108																																			
	132M	7.50	258	1200																																			
100200	132M	7.50	S605	B95			102	288																	150	200	160	730	190	110	380	780	1262	1250					
	160M	11.00						249																									1108						
	160L	15.00			265	1200																																	
	160L	15.00			295	1262																																	
100250	160L	15.00			S606	B110	109	278			150	200	160	730	190	110	380							780									1128		1250				
	180M	18.50						294																									1282						
	180L	22.00	323	1282																																			
	200L	30.00	335	1344																																			
150200	180L	22.00	S605	B125			120	351	150	200								160	730	190	110	380	780										1346	1250					
	200L	30.00						395																									1404						
	160L	15.00			337	1282																																	
	180M	18.50			339	1344																																	
	180L	22.00			377	1402																																	
	200L	30.00			421	1469																																	
150250	225S	37.00	S606	B140	134	467	150	200																	160	730	190	110	380	780	1469	1250							
	225M	45.00				487																									1469								
	150315																																						
	150400																																						
	150500																																						
200250																																							
200315																																							
200400																																							
200500																																							

Foundation plans with base plates and fittings on request

* 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.

Foundation plan

n = 2900 rpm



Dimensions in mm.

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

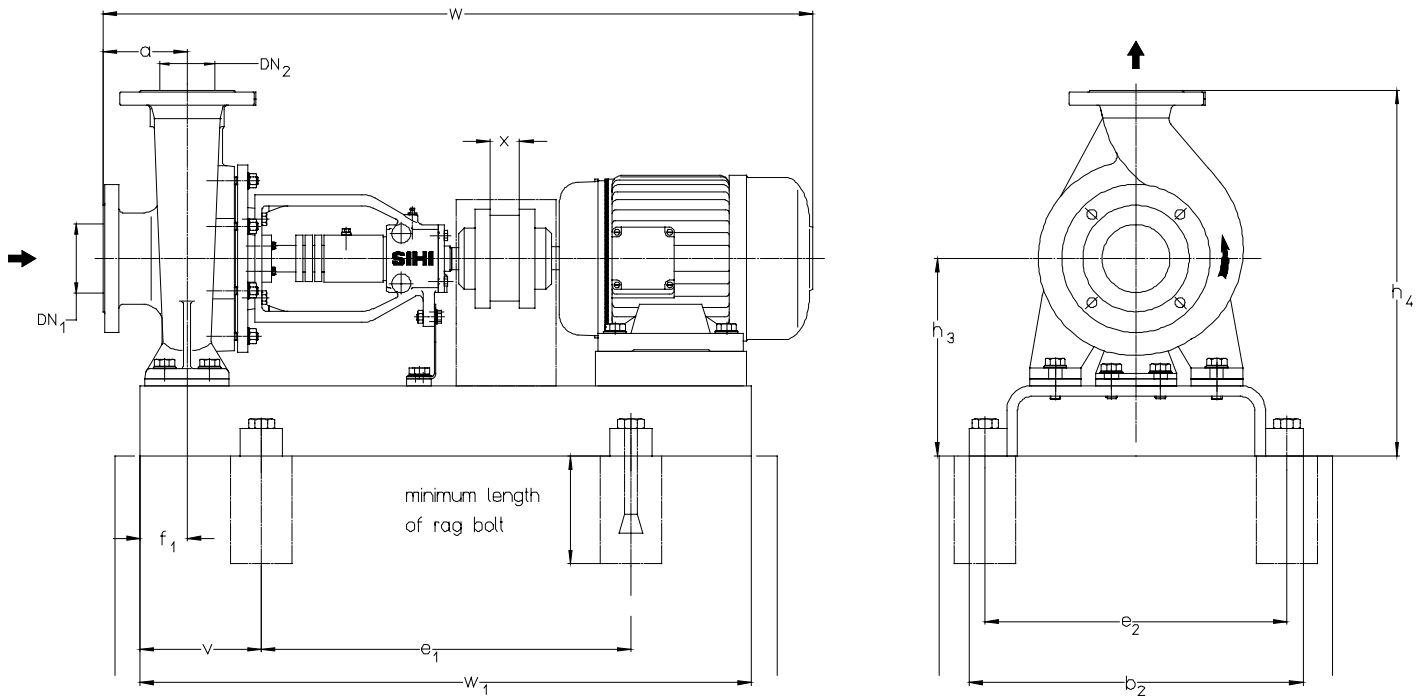
size	motor		base plate No.	coupling **	weight		DN ₂	DN ₁	a	b ₂	e ₁	e ₂	v	f ₁	h ₃	h ₄	w*	w ₁	rag bolt DIN 529
	size	kW			pump kg	Unit kg													
032125	71	0.55	S008	B68	32	52	32	50	80	297	400	265	120	60	152	292	682	640	M12x100
	80	0.75				55											716		
	80	1.10				67											774		
	90S	1.50	69			836													
	90L	2.20	72			895													
032160	80	1.10	S270	B80	41	80	40	65	80	360	420	320	115	60	197	357	716	730	M16x200
	90S	1.50	82			774													
	90L	2.20	88			836													
	100L	3.00	92			895													
	112M	4.00	93			912													
	132S	5.50	130			974													
	132S	7.50	147			1036													
	160M	11.00	175			1100													
	160M	15.00	192			1164													
	160L	18.50	216			1232													
032200	90L	2.20	S301	B95	39	80	40	65	80	390	480	350	125	60	225	405	774	730	M16x200
	100L	3.00				90											836		
	112M	4.00				91											895		
	132S	5.50	S342			128											974		
	132S	7.50	147			1036													
	160M	11.00	S383			175											1100		
	160M	15.00	S344			192											1164		
032250	132S	7.50	S383	B95	52	148	40	65	100	490	600	440	160	75	260	485	932	920	M20x400
	160M	11.00				167											1050		
	160M	15.00				184											1114		
	160M	18.50				201											1178		
040125	80	1.10	S270	B68	34	65	40	65	80	360	420	320	115	60	177	317	716	730	M16x200
	90S	1.50	70			774													
	90L	2.20	71			836													
	100L	3.00	82			895													
	100L	3.00	82			957													
040160	90S	1.50	S241	B80	39	78	40	65	80	330	480	290	125	60	197	357	776	820	M20x400
	90L	2.20				80											836		
	100L	3.00				90											895		
	112M	4.00	S301			91											957		
	132S	5.50	S342			128											1019		
	132S	7.50				138											1081		
	160M	11.00				159											1143		
160M	15.00	179		1205															
040200	100L	3.00	S301	B80	43	94	40	65	100	390	480	350	125	60	225	405	817	730	M16x200
	112M	4.00				95											879		
	132S	5.50	S342			132											941		
	132S	7.50				152											1003		
	160M	11.00				172											1065		
040250	160M	15.00	S383	B95	57	153	40	65	100	490	600	440	160	75	260	485	932	920	M20x400
	132S	7.50				172											1050		
	160M	11.00				191											1112		
	160M	15.00				210											1174		
	160L	18.50				S434											230		

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						
	size	kW			pump kg	unit kg																			
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											360		540	320	140	856			
	112M	4.00				87												450				400	212	372	932
	132S	5.50	S342	B95		124											450	540	400	140	225	405	794	730	M16x200
90L	2.20	S301	B68	44	85	65	80	140	60	390	480	350	125	60	225	405	794	730	M16x200						
100L	3.00				95												360	540		320	140	835	820		
112M	4.00	S342	B95		96														450			540		400	140
132S	5.50				133												490	600		440	160		1050		
132S	7.50	S383	B95		159												490	600	440	160	240	440	932	820	M20x400
160M	11.00	S301	B80	43	94	50	65	100	60	390	480	350	125	60	225	425	817	730	M16x200						
100L	3.00				95												360	540		320	140	858	820		
112M	4.00	S342	B95		132														450			540		400	140
132S	5.50				158												490	600		440	160		1050		
160M	11.00	S383	B95		163												490	600	440	160	240	440	932	820	M20x400
160M	15.00	S344	B95	57	172	65	80	140	75	490	600	440	160	75	260	485	1050	1020	M20x400						
160L	18.50				216												360	540		320	140	1112	1000		
180M	22.00	S434	B110		229														540			660		490	170
200L	30.00	S435	B125		296												740	200		280	505		1232		
100L	3.00	S342	B80		39												99	65	80	140	60	450	540	400	140
112M	4.00			100		360	540	320	140	856	820														
132S	5.50	128	450	540						400		140	240	440	932	820									
132S	7.50	134				490	600	440	160		260				485		1050								
132S	5.50	S383	B95	160						490		600	440	160		260	485								
132S	7.50			207	540	740	490	200	260		485				1174			1000							
160M	11.00	S434	B110	220						540		740	490	200	260	485	1232		1140						
160M	15.00	S435	B95	287	540	740	490	200	260		485						1284	1140							
160L	18.50			B110						B125		244	540	740	490	200	260		485	1342	1270				
180M	22.00	S436	B125	257	540	740	490	200	260	485	1397	1400													
200L	30.00	S436	B125	324							610		840	550	205	280	530	1342	1270						
225M	45.00	S486	B125	401	610	840	550	205	325	575	1372	1250	M24x400												
132S	7.50	S383	B95	51	147	65	80	100	75	490	600	440	160	75	260	485	957	920	M20x400						
160M	11.00				166												360			540	320	140	1075	1000	
160M	15.00	210	540		740													490	200				260		485
160L	18.50	S434															B110			223	540	740		490	
180M	22.00	S435	B95		202												540	740	490	200			260		485
160M	15.00			B110	B125	237	540	740	490	200	260	485	1309	1140											
160L	18.50	S436	B125	250	540	740							490		200	260	485	1397	1400						
200L	30.00	S436	B125	317			540	740	490	200	260	485		1397				1400							
200L	37.00			B110	B125	282							540	740	490	200	260		485	1397	1400				
200L	30.00	S486	B125	342	540	740	490	200	260	485	1397	1400													
200L	37.00	S486	B125	407							540		740	490	200	260	485	1397	1400						
225M	45.00			629	540	740	490	200	260	485		280						530		1367	1270				
250M	55.00	S607	B140	629							610		840	550	205	300	580		1367	1250					
160L	18.50	S435	B95	80	246	65	80	100	125	490	600	440	160	75	260	485	1247	1140	M20x400						
180M	22.00				B110												259			360	540	320	140	1309	1140
200L	30.00	S436	B125		326												540	740	490					200	
200L	37.00				B95															B125	245	540	740		490
160L	18.50	S435	B110		258												540	740	490	200	260			485	
180M	22.00	S436	B125	402	540	740	490	200	260	485	1367	1270													
200L	30.00			B125							B125		347	540	740	490	200	260	485	1367	1270				
200L	37.00	S486	B125	412	540	740	490	200	260	485	1367	1270													
225M	45.00			634							540		740	490	200	260	485	280	560	1382	1250				
250M	55.00	S607	B140	634	610	840	550	205	325	605		1382								1250					
280S	75.00	S609A	B160	89	903	65	80	100	140	730	940	670	230	90	350	630	1542	1400	M24x400						
280M	90.00				953												360			540	320	140	1412	1400	
250L	30.00	S486	B125		347													540	740				490		200
200L	37.00	S486	B125		412												540			740	490	200		260	
225M	45.00				634													540	740				490		200
250M	55.00	S607	B140	634	610	840	550	205	325	605	1382	1250													
280S	75.00	S609A	B160	89	903	65	80	100	140	730	940	670	230	90	350	630	1542	1400	M24x400						
280M	90.00				953												360			540	320	140	1412	1400	
250L	30.00	S486	B125		347													540	740				490		200
200L	37.00	S486	B125		412												540			740	490	200		260	
225M	45.00				634													540	740				490		200
250M	55.00	S607	B140	634	610	840	550	205	325	605	1382	1250													
280S	75.00	S609A	B160	102	647	65	80	100	140	730	940	670	230	90	350	665	1542	1400	M24x400						
280M	90.00				916												360			540	320	140	1412	1400	
250L	30.00	S607	B140		647													540	740				490		200
280S	75.00	S609A	B160		916												540			740	490	200		260	
280M	90.00				966													360	540				320		140

* 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 size	motor kW	base-plate No.	coupling **	weight pump kg	weight 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				80															350	197	357							
032160	71	0.37	S301		41	76				80	360	540	320		140	75		260	485		814	820	834	892	920	M20x400				
	80	0.55				81																					110	872	933	
032200	80	0.55	S272		39	78				83	100	490	600		440	160		75	260		485	814	820	834	892	920	M20x400			
	80	0.75				105																						110	872	933
	90S	1.10				108																						110	872	933
	90L	1.50				110																						120	872	933
032250	80	0.75	S383		52	105				108	100	490	600		440	160		75	260		485	814	820	834	892	920	M20x400			
	90S	1.10				108																						110	872	933
	90L	1.50		110		120	872	933																						
	100L	2.20		120		120	872	933																						
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				73															360	540	320	140	197	357				
040160	80	0.55	S272		39	78			81	100	450	540	400		140	75		260	485		814	820	834	892	920	M20x400				
	80	0.75				89																					390	480	350	125
040200	80	0.55	S342		43	89			92	100	450	540	400		140	75		260	485		814	820	834	892	920	M20x400				
	80	0.75				92																					94	872	933	
	90S	1.10				94																					113	872	933	
	90L	1.50				113																					115	872	933	
040250	90S	1.10	S383		57	113			115	100	490	600	440		160	75		260	485		814	820	834	892	920	M20x400				
	90L	1.50				115																					125	872	933	
	100L	2.20		125		125	872	933																						
	100L	3.00		125		125	872	933																						
040315	100L	2.20	S434	87	171	172	125	540	660	490	170	75	305	555	1068	1000	1089	1165	1140	M20x400										
	100L	3.00			172																740	200	1089	1165						
	112M	4.00			207																740	200	1089	1165						
	132S	5.50			207																740	200	1089	1165						
050125	71	0.37	S301	H80	35	70	50	65	80	390	480	350	125	60	197	357	100	800	730	M16x200										
	80	0.55				74															360	320	140	197	357					
050160	80	0.75	S272		44	90			93	100	450	540	400		140	75		260	485		814	820	834	892	920	M20x400				
	80	0.55				89																					390	480	350	125
050200	80	0.75	S342		43	89			92	100	450	540	400		140	75		260	485		814	820	834	892	920	M20x400				
	80	0.55				93																					94	872	933	
	90S	1.10				94																					104	872	933	
	90L	1.50				104																					115	872	933	
050250	90L	1.50	S383		57	115			125	100	490	600	440		160	75		260	485		814	820	834	892	920	M20x400				
	100L	2.20				125																					126	872	933	
	100L	3.00		126		126	872	933																						
	112M	4.00		126		126	872	933																						
050315	112M	4.00	S434	90	210	213	125	540	660	490	170	75	305	585	1089	1000	1165	1191	1140	M20x400										
	132S	5.50			210																740	200	1165	1191						
	132M	7.50			213																740	200	1165	1191						
	132M	7.50			213																740	200	1165	1191						

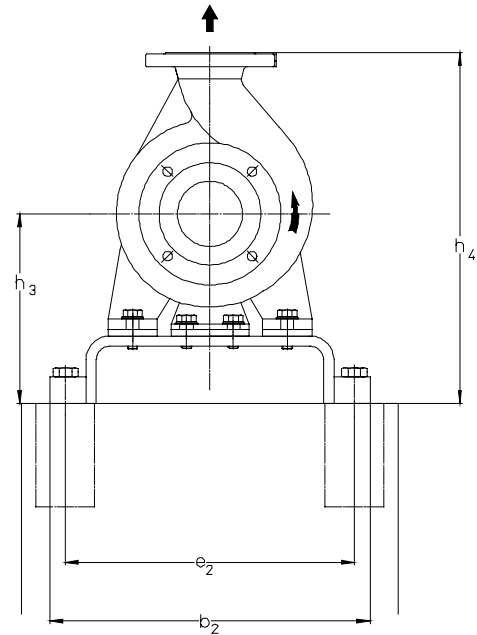
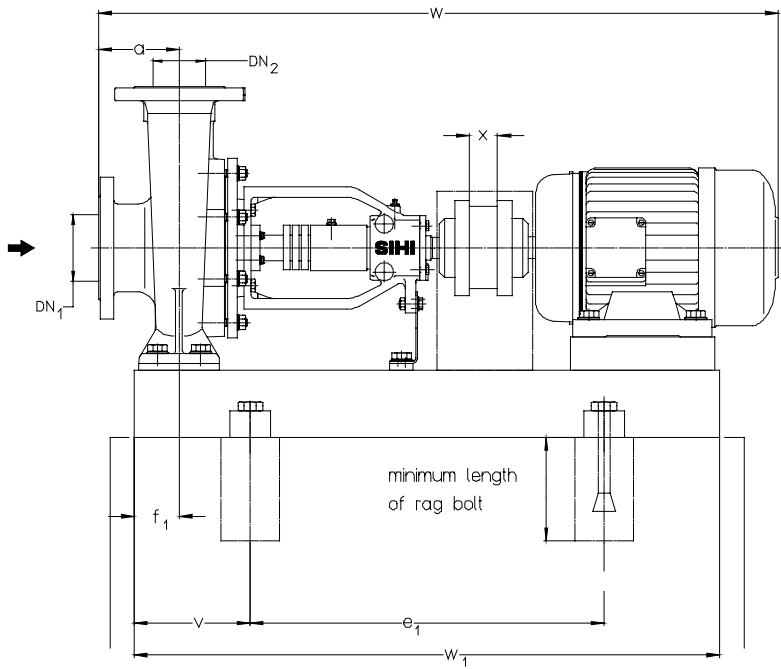
Foundation plan for units with spacer type coupling

n = 1450 rpm

size	motor		base plate No.	coupling **	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			S383	H80												45			94	80	100	100	450	540	400	140	60	240	440	100	892	820	M20x400
	90S	1,10																			96												892		
	90L	1,50																			106												933		
	100L	2,20	104																																
065200	90L	1,50	S383	H80	48	106	65	80	100	490	600	440	160	75	260	485	100	932	920	M20x400															
	100L	2,20				116												973																	
	100L	3,00				117												994																	
	112M	4,00				162																													
065250	100L	2,20	S434	H80	78	162	65	80	100	540	660	490	170	90	280	530	100	1083	1000	M20x400															
	112M	4,00				198												1104																	
	132S	5,50				233												1180																	
	132S	5,50				236												1205																	
065315	132S	5,50	S486	H95	94	236	65	80	100	610	840	550	205	90	325	605	100	1231	1250	M24x400															
	160M	11,00				252												1323																	
	160L	15,00				282												1385																	
	132S	5,50				104												899																	
080160	80	0,75	S383	H80	51	104	65	80	100	490	600	440	160	75	260	485	100	957	920	M20x400															
	90S	1,10				107												998																	
	90L	1,50				109												1067																	
	100L	2,20				119												1108																	
	100L	3,00				144												1129																	
080200	90L	1,50	S434	H80	71	155	65	80	100	540	660	490	170	90	300	580	100	1205	1140	M20x400															
	100L	2,20				156												1205																	
	100L	3,00				191												1108																	
	112M	4,00				194												1129																	
080250	132S	5,50	S435	H95	84	194	65	80	100	610	840	550	205	90	300	580	100	1205	1140	M20x400															
	100L	3,00				195												1231																	
	112M	4,00				223												1205																	
	132S	5,50				226												1231																	
080315	132M	7,50	S486	H95	104	243	65	80	100	610	840	550	205	90	350	665	100	1205	1250	M24x400															
	132S	5,50				246												1231																	
	132M	7,50				262												1323																	
	160M	11,00				292												1385																	
100160	100L	2,20	S434	H80	80	164	65	80	125	540	660	490	170	90	280	560	100	1108	1000	M20x400															
	100L	3,00				165												1129																	
	112M	4,00				200												1205																	
	132S	5,50				200												1205																	
100200	100L	2,20	S434	H80	79	163	65	80	125	540	660	490	170	90	280	560	100	1108	1000	M20x400															
	100L	3,00				164												1129																	
	112M	4,00				199												1205																	
	132S	5,50				202												1231																	
100250	132M	7,50	S435	H95	89	202	65	80	125	540	660	490	170	90	280	560	100	1205	1140	M20x400															
	132M	7,50				200												1144																	
	160M	11,00				228												1220																	
	160M	11,00				231												1246																	
100315	160M	11,00	S486	H95	106	247	65	80	125	610	840	550	205	90	325	605	100	1338	1250	M24x400															
	160M	11,00				264												1400																	
	160L	15,00				294												1462																	
	180M	18,50				306												1462																	
125200	180L	22,00	S486	H125	106	323	65	80	125	610	840	550	205	90	350	665	100	1246	1250	M24x400															
	132M	7,50				244												1246																	
	160M	11,00				260												1338																	
	160L	15,00				290												1400																	
125250	132M	7,50	S486	H95	102	251	65	80	150	610	840	550	205	90	350	665	100	1246	1250	M24x400															
	160M	11,00				267												1338																	
	160L	15,00				297												1400																	
	132M	7,50				279												1266																	
150200	132M	7,50	S605	H95	120	279	65	80	150	160	730	670	205	110	380	780	100	1358	1400	M24x400															
	160M	11,00				306												1423																	
	160L	15,00				337												1482																	
	180M	18,50				349												1482																	
150250	160L	15,00	S606	H110	134	351	65	80	150	160	730	670	230	110	380	780	100	1420	1250	M24x400															
	180M	18,50				363												1482																	
	180L	22,00				392												1482																	
	200L	30,00				436												1540																	
150315																																			
150400																																			
150500																																			
200250																																			
200315																																			
200400																																			
200500																																			

Foundation plans with base plates and fittings on request

* 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.	coupling **	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				72												814														
	80	1.10				75												872														
	90S	1.50				77												814														
	90L	2.20				80												872														
032160	80	1.10	S272	H80	41	83	32	50	80	360	540	320	140	60	197	357	100	913	820	M16x200												
	90S	1.50				85												872														
	90L	2.20				83												913														
	100L	3.00	S303	H95	41	95												390	600		350	160	60	225	405	100	240	420	100	934	920	M20x400
	112M	4.00				96																								872		
	132S	5.50				98																								913		
	132S	7.50				127																								934		
032200	90L	2.20	S272	H80	39	83	40	65	100	360	540	320	140	60	225	405	100	1010	920	M20x400												
	100L	3.00				93												1128														
	112M	4.00				94												1190														
	132S	5.50	S303	H95	39	127												390	600		350	160	60	240	420	100	240	420	100	1030	920	M20x400
	132S	7.50				149																								1030		
	160M	11.00				158																								1128		
032250	160M	15.00	S385	H95	52	203	40	65	100	450	660	400	180	60	240	420	100	1148	1000	M20x400												
	132S	7.50				149												1030														
	160M	11.00				184												1148														
040125	80	1.10	S272	H80	34	73	40	65	80	360	540	320	140	60	177	317	100	814	820	M16x200												
	90S	1.50				76												872														
	90L	2.20				78												913														
	100L	3.00				88												872														
	90S	1.50				81												913														
040160	90L	2.20	S272	H80	39	83	40	65	80	360	540	320	140	60	197	357	100	872	820	M16x200												
	100L	3.00				93												913														
	112M	4.00				94												872														
	132S	5.50	S303	H95	39	127												390	600		350	160	60	240	400	100	240	420	100	1010	920	M20x400
	132S	7.50				162																								1030		
	160M	11.00				162																								1128		
	160M	15.00				104																								1190		
040200	100L	3.00	S342	H80	43	104	40	65	100	450	540	400	140	60	225	405	100	933	820	M16x200												
	112M	4.00				105												954														
	132S	5.50	S303	H95	43	131												390	600		350	160	60	240	420	100	240	420	100	1030	920	M20x400
	132S	7.50				160																								1148		
	160M	11.00				154																								1030		
040250	160M	15.00	S383	H95	57	189	40	65	100	450	660	490	170	60	240	420	100	1030	920	M20x400												
	160M	11.00				219												1148														
	160M	15.00				189												1030														
040250	160L	18.50	S385	H95	57	219	40	65	100	490	740	440	200	60	260	485	100	1210	1140	M20x400												
	160L	18.50				219												1210														

Foundation plan for units with spacer type coupling

n = 2900 rpm

size	motor		base plate No.	coupling **	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																																							
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												933	920	M12x100																									
	100L	3,00	89			954																																							
	112M	4,00	90			1030												920	M16x200																										
	132S	5,50	123																	1030																									
050160	90L	2,20	S342	H80	44	95	65	100	100	450	540	400	140	60	225	405	100	892	820	M20x400																									
	100L	3,00				105												933	820	M20x400																									
	112M	4,00				106															954																								
	132S	5,50	S303			H95												43	132	65	100	100	390	600	350	160	60	225	405	100	1030	920	M16x200												
	132S	7,50																	161												1030	920	M16x200												
160M	11,00	S344	160	1148	1020		M20x400																																						
100L	3,00	S342	H80	43	104			65	100	100	450	660	400	180	60	240	440		100												1148	1020	M20x400												
112M	4,00				105		933																								820	M20x400													
132S	5,50	S303			H95	43												131		65	100	100	390	600	350	160	60	225	425	100			1030	920	M16x200										
132S	7,50						160											1030													920	M16x200													
160M	11,00	S344					195																										1148	1000	M20x400										
160M	15,00	S385	H95	43			189	65	100	100	490	740	440	200	60	240	440	100	1210												1140	M20x400													
160L	18,50						S385												219												1148		1000												
160M	15,00	S434			H95	43	189												65	100	100	540	660	490	170	60	260	485	100	1210	1140	M20x400													
160L	18,50						S385																							238	1210		1140												
180M	22,00	S435					H110																							43	238	65	100	100	540	740	490	200	60	280	505	100	1272	1140	M20x400
200L	30,00		H25	299				1330	1140																																				
065125	100L	3,00	S342	H80				39	100	65	80	100	450	540	400	140	60	240													420												100	933	820
	112M	4,00			101	933			820										M20x400																										
	132S	5,50	136		1030															920	M20x400																								
	132S	7,50	S383			H95	45		142										65			80	100	490	600	440	160	60	240	440		100	1030	920											
132S	5,50	162		1148	1020																																								
132S	7,50	S344	H95	45	162			65	80	100	450	660	400	180	60	240	440	100		1148	1020																								
160M	11,00				182															1188	1140																								
160M	15,00	S385			H95	45	210												65	80	100	490	740	440	200	60	260	485	100	1250	1140														
160L	18,50						229																							1312	1370														
180M	22,00	S435	H110	48			229	65	80	100	540	840	490	215	60	280	505	100												1360	1270														
200L	30,00						H125																							297	1422	1480	1420												
160L	18,50	S436			H95	78	252												65	80	100	610	940	550	240	60	300	550	100	1360	1270														
180M	22,00						H110																							266	1422	1480	1420												
200L	30,00	S487	H125	78			362	65	80	100	730	940	550	230	60	325	575	100												1422	1480														
200L	37,00						445																							1510	1400														
225M	45,00	S607			445	1510	1400																																						
080160	132S	7,50			S434	H95	51												164	65	80	100	540	660	490	170	60	260	485	100	1095	1000	M20x400												
	160M	11,00	165	1213				1140	M20x400																																				
	160M	15,00	S385		H95					51	213	65	80	100	490	740	440	200	60												260	485	100	1213	1140										
	160L	18,50		232				1275	1337																																				
	180M	22,00	S435	H110				51	232		65																							80	100	540	840	490	215	60	260	485	100	1337	1270
160M	15,00	210				1323	1385																																						
160L	18,50	S436	H95			71	244		65											80	100	540	840	490	215	60	260	485	100	1385														1270	
180M	22,00				H110		258			1447		1505	1420																																
200L	30,00	S487			H125		71			354		65	80	100	610	940	550	240	60											300	550	100	1447											1250	
200L	37,00			284				1505		1420																																			
080250	180M	22,00		S486				H110		84	284																						65	80	100	610	840	550	205	60	300	580	100	1447	1250
	200L	30,00	S487			H125			368		1505									1420																									
	200L	37,00	S487	H125		84			368		65									80	100	730	940	670	230	60	325	605	100															1535	1400
	225M	45,00			S607		H125		451			1535	1400																																
	250M	55,00	S608		H140		651		1665			1600																																	
100160	160L	18,50	S436		H95		80	254	65	80		100	540	840	490	215	60	280	560											100	1385	1270	M20x400												
	180M	22,00						H110																							268	1447		1505	1420										
	200L	30,00	S487	H125		80		364			65									80	100	610	940	550	240	60	300	580	100		1505	1420													
	200L	37,00						253																							1385	1447													
100200	160L	18,50	S436		H95		79	253	65	80		100	540	840	490	215	60	280	560											100	1385	1270	M20x400												
	180M	22,00						H110																							267	1447		1505	1420										
	200L	30,00	S487	H125		79		363			65									80	100	610	940	550	240	60	300	580	100		1505	1420													
	200L	37,00						446																							1535	1400													
225M	45,00	S607	446		1535		1400																																						
100250	200L	30,00	S487		H125		89	373	65	80		100	610	940	550	240	60	325	605											100	1520	1420	M24x400												
	200L	37,00		456		1550		1400																																					
	225M	45,00	S607	H140		89		456			65									80	100	730	1060	670	230	60	350	630	100		1550	1400													
	250M	55,00						S608																							656	1680	1600												
	280S	75,00	S609A					H160																							89	909	65	80	100	744	1200	696	300	60	380	660	100	1780	1800
	280M	90,00																														959												1780	1800
125200	250M	55,00	S608		H140		102		669	65		80	100	730	1060	670	270	60	350											665		100												1680	1600
	280S	75,00							S609A																																			H160	922
	280M	90,00	972	1780		1800																																							

* 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

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	alternatively 002 GBC	1B	2
	032160			
	032160			
	032200			
	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			
150315				
150400				
150500				
200250				
200315				
200400				
200500	DA		2B	

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