

TOE-GA Series

Heat transfer pumps

**for heat transfer oils up to 350 °C and
hot water up to approx. 160 °C**

Close coupled version with mechanical seal

Hydraulic power ratings and

casing dimensions in acc. with EN 733

Volute casing PN 16

Bearing bracket 360

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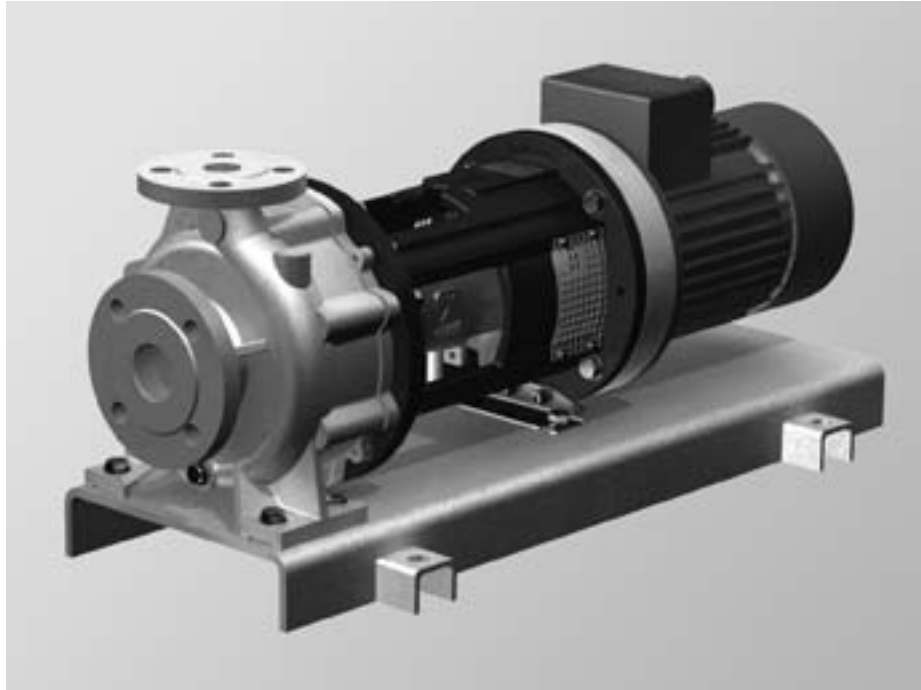
TOE-GA Series

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Close coupled version with mechanical seal

Hydraulic power ratings and casing dimensions in acc. with EN 733

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Usage

Pumps of the TOE-GA series are designed for the transportation and recirculation of liquids on mineral oil or synthetic basis in heat transfer plants in acc. with DIN 4754 and of hot water.

They are suitable for pumped media with little non-abrasive contaminations and pumped media which do not chemically attack the pump materials used.

Main applications

The pumps are mainly used in the following industrial sectors:

t 5 F N Q F J S U I C H M B B L O E D F B T U industry

t # B L E V H O B S S F Z V O B U T F M M as in the production of edible oil and dry mass for the food and feedstu industries

t) F B U J O B H M F B E S T M L Q R U H D the leather and rubber industry

t) F B U J O B H U B O N P S Y J O B O L P S U I Q S P D F F O P M H Q B S J O E lacquers

t) F B U J O B H P L O T U B U J P O B S Z platforms as well as in tank vessels

t) F B U J O S H A T J O O T K P P E O E pulp industry

t ' M B U B S T P E V D U J P O

t 4 P M B S A S B U J P O S P D F T T F T

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Operating data

The pump outlet pressure at the outlet nozzle depends on the operating temperature: up to +350 °C

Standard conditions at site

The pump outlet pressure at the outlet nozzle depends on the operating temperature: up to +350 °C

Deviations from the site conditions specified herein must already be disclosed in the inquiry.

Flow rate

The permissible operating range of centrifugal pumps depends on

The operating range applicable to the TOE-GA series is indicated in the individual characteristic curves and the pump data sheet.

Pump outlet pressure

The pump outlet pressure at the outlet nozzle depends on the operating temperature: up to +350 °C

is calculated using the formula:

With:

outlet pressure [bar]

pressure [bar]

= density of the medium

g = gravitation constant [m/s²]

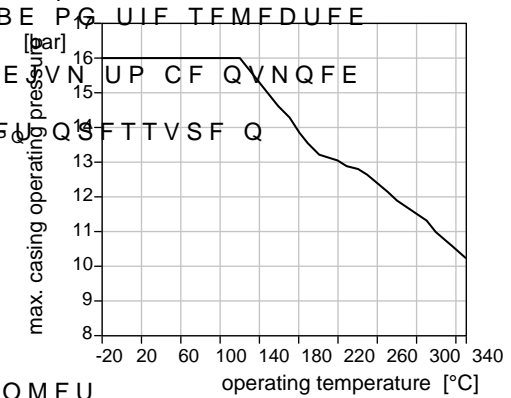
zero flow or at the peak of the pump's characteristic curve at the selected impeller diameter [m]

Pumps must be selected and operated in a pressure of the casing at operating temperature..

This also applies to commissioning while the

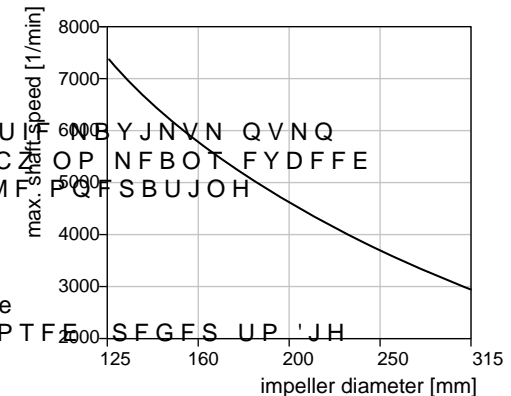
Pressure and temperature limitations

The maximum operating pressure of the volute casing and the casing cover depends on the operating temperature:



Speeds

The operating speed of the pump shaft corresponds to 48 m/s.



Denomination

The denomination of a centrifugal pump of the TOE-GA series with bearing bracket is illustrated

Power transmission on bearing bracket

pumps on bearing bracket 360 is 40 kW.

TOE - G A 32 - 160 / 150

- Actual impeller diameter in mm
- Nominal impeller diameter in mm
- Nominal width of outlet nozzle
- Casing dimensions EN 733
- Mechanical seal
- Denomination of series

TOE-GA

Heat transfer pumps - close coupled version with mechanical seal

Design details

The hydraulic power ratings are in BDDPS & BDF JTTVF

The tolerances of the mating dimensions are subject to the EN 735 standard.

Allocation of components

Pumps of this series are part of a modular TZXINP TFP NQP CFBMTCP used for other pump series.

The complete bearing bracket including the impeller is used in the following series:

TOE-GN - base plate pumps with volute DBTGFBUBSYJGNMFU

TOE-GA - close coupled pumps with volute DBTGFBUBSYJGNMFU

TOE-GI - close coupled pumps with volute casing in inline design

'PSIQRBSUMTMPSEFLPSSHF

Materials

Volute casing	EN-GJS-400-18-1T	EN-GJS-400-18-1T
Casing cover	EN-GJS-400-18-1T	EN-GJS-400-18-1T
Impeller	EN-GJL-250	
Mechanical seal housing	EN-GJS-400-18-1T	EN-GJS-400-18-1T
Shaft	1.4122	
Bracket	EN-GJS-400-18-1T	EN-GJS-400-18-1T
Plain bearing	S SiC	
Mechanical seal	AQ1VGG	

EN-GJS-400-15 = EN-JS1030 = GGG-40
EN-GJS-400-18LT = EN-JS-1025 = GGG-40.3

Tab. 1: Materials

Volute casing

The nominal pressure of the volute casing is 16 bar.

The outlet and inlet nozzles are fitted with flanges to allow for the subsequent connection of pressure gauges. These ports are only drilled upon request of the customer.

The volute casings are self-venting and provided with a plugged drain (G 3/8) as a standard.

Nozzle positions and angles

Inlet nozzle	axial
Outlet nozzle	radial to the top
Flange dimensions	EN 1092-2 (for the corresponding dimensions refer to the dimension chart)

Tab. 2 : Nozzle positions

Casing cover

The casing cover is equipped with torsion-screw segments so that optionally prefabricated insulation segments can be installed.

Shaft and bearing

The coupling half at the pump side is equipped with a plain bearing and the mechanical seal. The hydraulic forces generated during pump operation are compensated in different ways.

The radial reaction forces resulting from the mechanical seal are mainly compensated by the back vanes on the impeller. The residual radial forces are transferred to the ball bearing on the atmospheric side.

The plain bearing is lubricated by the medium to be pumped and has been designed for hydrodynamic lubrication.

The ball bearing is lifetime-lubricated with high-temperature grease and designed for not allow for re-lubrication and should be period of time.

The shaft is sealed against the atmosphere by means of a single-acting mechanical seal in unbalanced design (materials refer to Tab. 1). The function of this sealing depends on the shaft's direction of rotation.

Shaft sealing

The mechanical seal housing features a vent and drain and can be equipped with a check reservoir (refer to chapter „Accessories“). A directed leakage evacuation tube is attached.

Mechanical seal housing

The vent screw has to be opened until oil escapes continuously by hand to release trapped air bubbles.

The coupling half at the pump side is equipped with a plain bearing and the mechanical seal. The hydraulic forces generated during pump operation are compensated in different ways.

Cooling fan

The coupling half at the pump side is equipped with a plain bearing and the mechanical seal. The hydraulic forces generated during pump operation are compensated in different ways.

Utility connections

Refer to the drawings of the pump on pages 8 and 9.

Accessories

Quench reservoir

The task of the quench reservoir is to

Q S F W P Y Z U G F S N B D X J J O I H F F B M J O E J W U E T U B J D I P X F W B S U E F P Q I F F B K M J D N J H J W Q B U G V O - D U J P
ning in the long run.

The quench reservoir has to be filled with cold oil with low viscosity (< 10mm²/s).

The filling level has to be checked in regular intervals. The quench fluid is sealed against the atmosphere by means of a radial lip seal.

Base plate

Optionally: Torsion-resistant profiles with dimensions following manufacturer standard.

Drives

Surface-cooled three-phase asynchronous motors for low voltages with cage rotor

t E F T J H O T . # P S . #
t E F H P S G S P U F * D I U J P O
t J O T V M B B J F O
t Q P X S B S J B O H E J N F O T J B P D X J U I t
DIN 42677 / IEC 72
t N B B D D P S E R V O S H P J D F

Other motor versions are available upon request.

* G I N P U B S C F S P W G U H E V T U P N
a sufficient cooling power of the motor fan must be ensured (> 3 m/s flow rate measured at the motor's bearing shield at the pump side).

Tests

* S F R V J S F P E S U J ä B B D D F U I
DIN 55380-18 can be provided for the leakage. This would result in sedimentation indicated in the order.

Material tests

5 I F F Y B T D U P R G I E F T X I T J W I F G B S
which parts) as well as the type of certificate D F S U J P G D F N U C F M X B Q D F S E F S G B D D F S Z J J O B Q F D E S B O D B U F
must be specified in the order.

Non-specific material tests do not have any impact on the delivery time of the pump.

* G Q F D N B D F S B B S F F R V J S F E
delivery time of the pump depends on the availability of raw materials and will be checked on a case-to-case basis. Tests certificates for specific material tests cannot be provided after the raw materials and/or semi-finished goods have been negotiated.

Gas pressure tests

" M Q S F T T C F B S Q D S F U M
t W P M B T J F O H
t D B T J F O M H F S
t N F D I B O B D M J O H

are subject to a gas pressure test (leakage test).

The gas pressure test is carried out by applying forming gas at 2 bar. The holding U J N F N J O V # Z N F B O G I J F U W F
tightness of the parts is proven.

Hydrostatic pressure test

All pressure bearing parts are subject to B Q S F T U F E S X O J H U I F Z E - S P
static test pressure (ptest) corresponds to 1.3 times the basic design pressure (pN) at C ; S P M M B K S I O D H P N N F O P E U J P O T
prEN 12162. The holding time is 10 minutes.

If pressure tests are to be carried out in acc. X J U P I U I B S J U T F S D I S J U N F S O L B
indicated in the inquiry.

Z N F B O G I J F U W F U S F O B U R
parts is proven.

Hydraulic tests (performance curves)

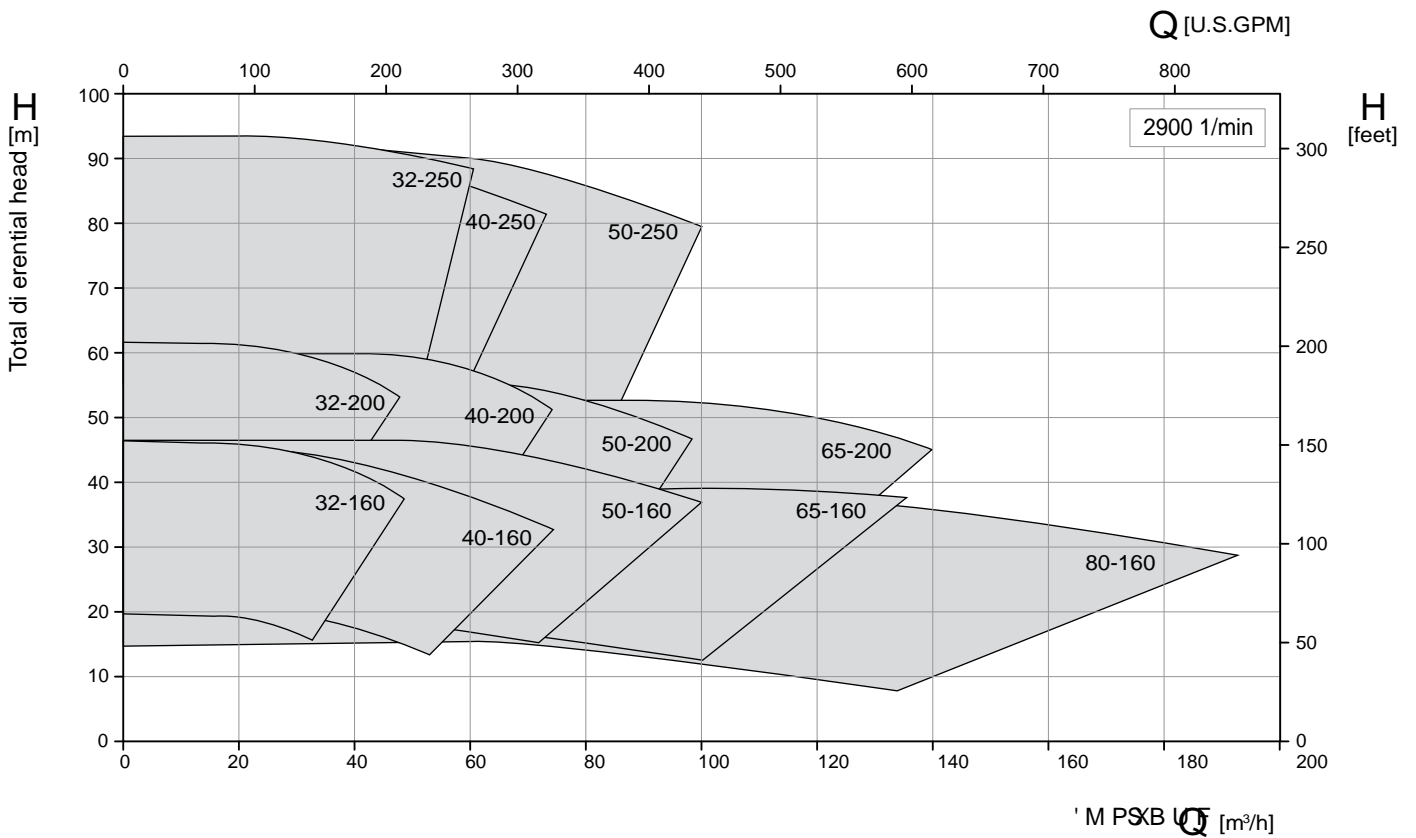
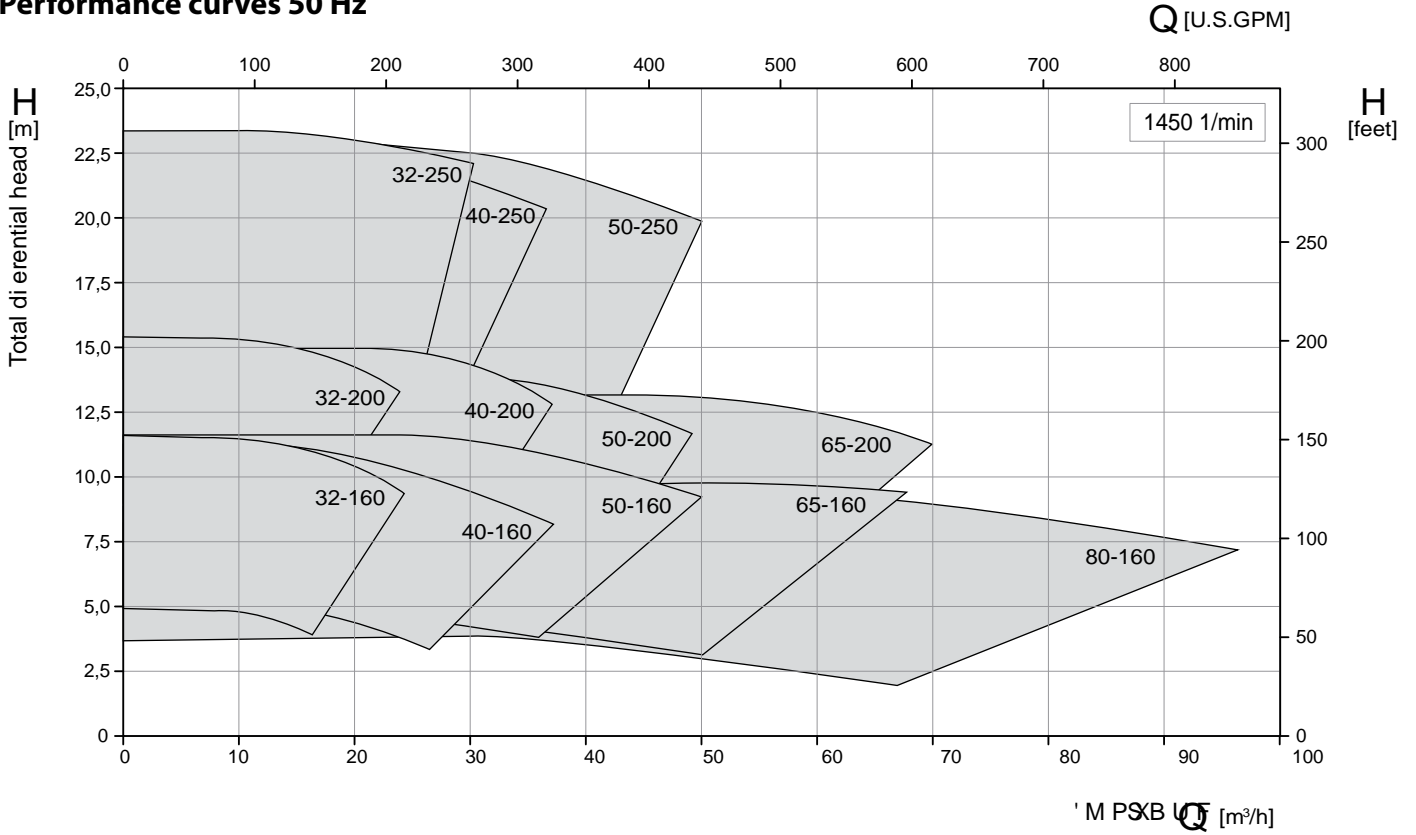
* S F R V J S E S B V M U B D X J U I
* 4 0 C B D V S B M B T B O F N Q M F N F O
ted and the characteristic curves measured for the corresponding impeller diameter documented.

This option has to be indicated accordingly in the order. The purpose of this test is to verify that the duty point of the manufactured pump complies with the contractual duty point.

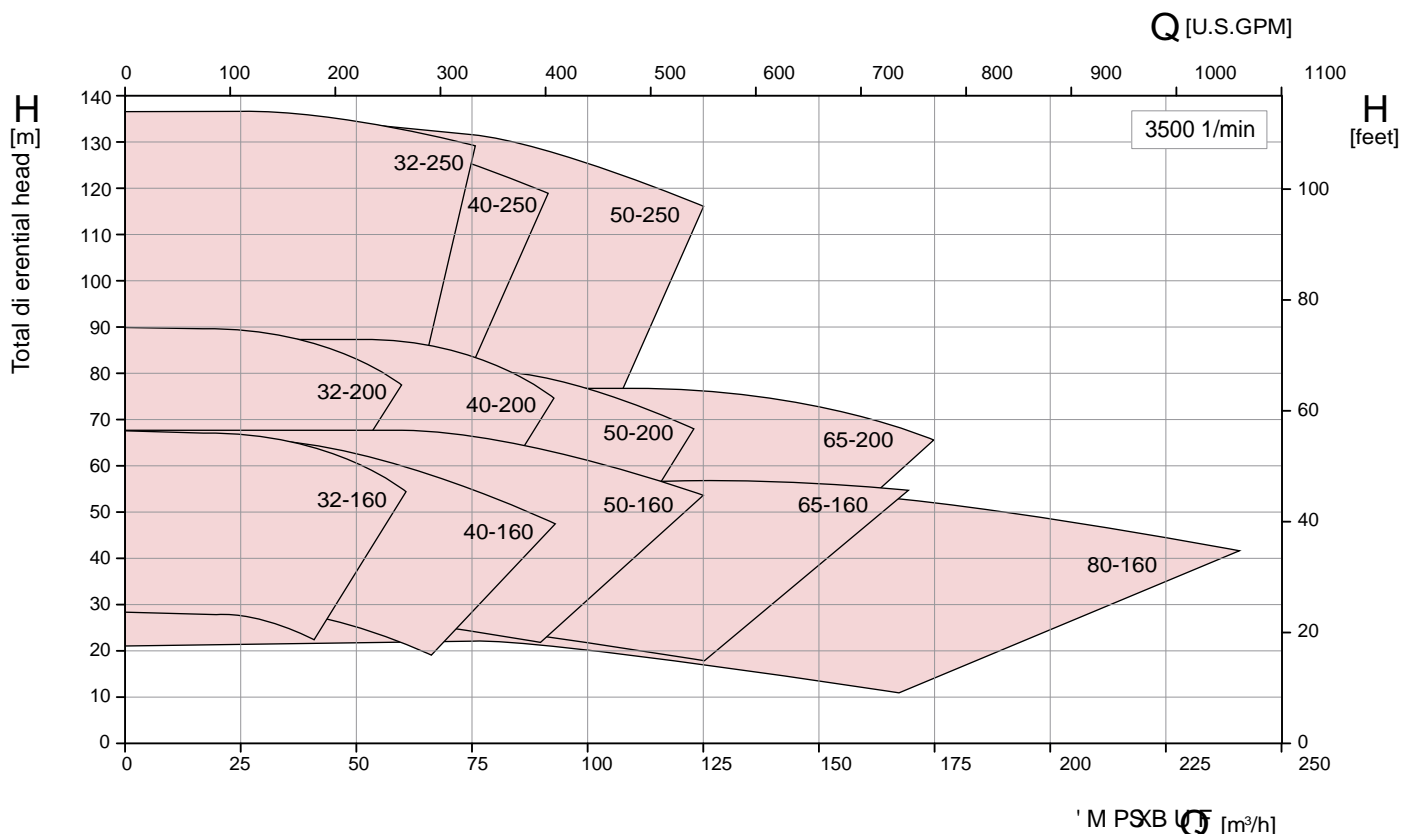
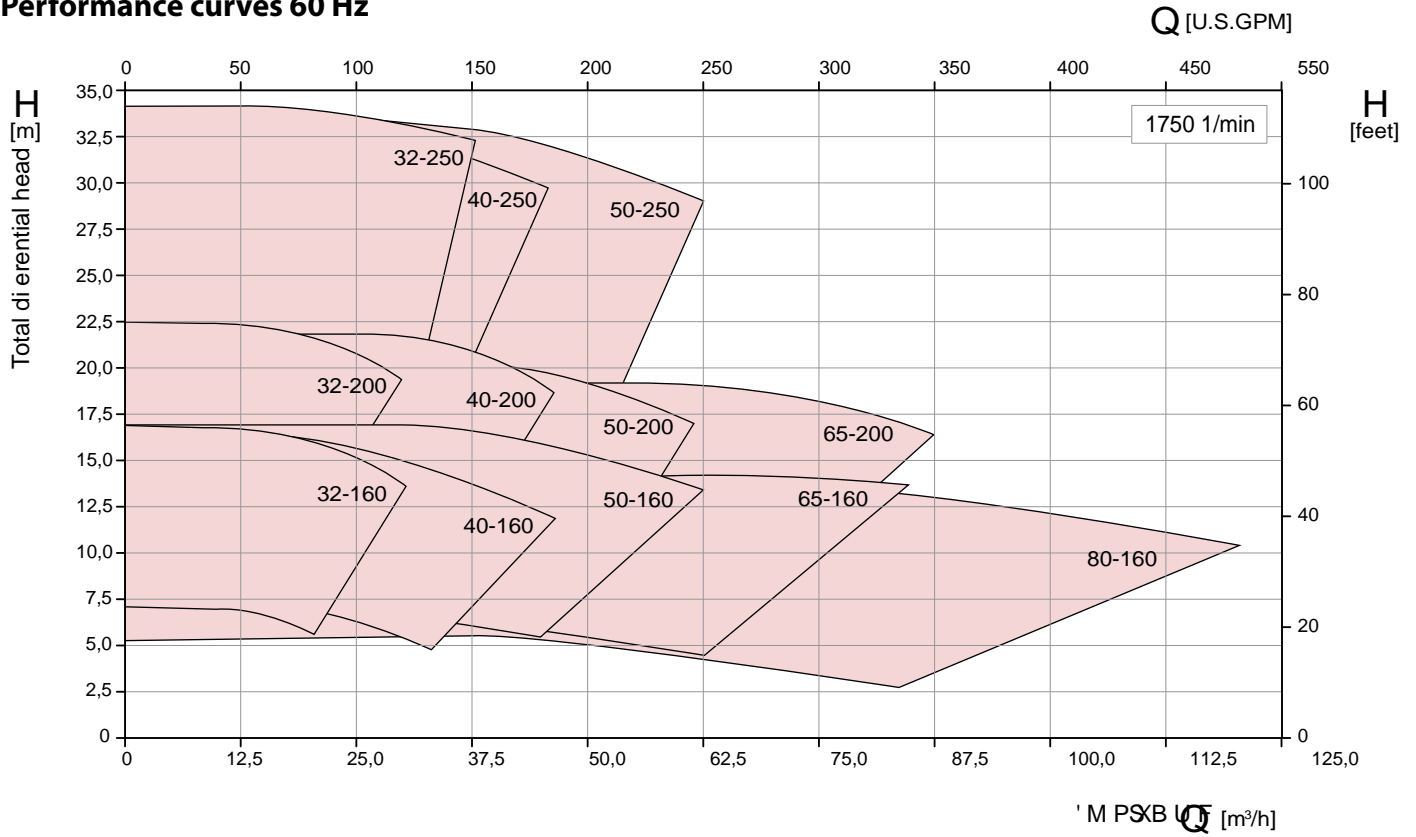
Painting

The pumps are coated with highly heat-resistant T J T X B O B M V N J O B V O R M P R S F
3 " -

Performance curves 50 Hz



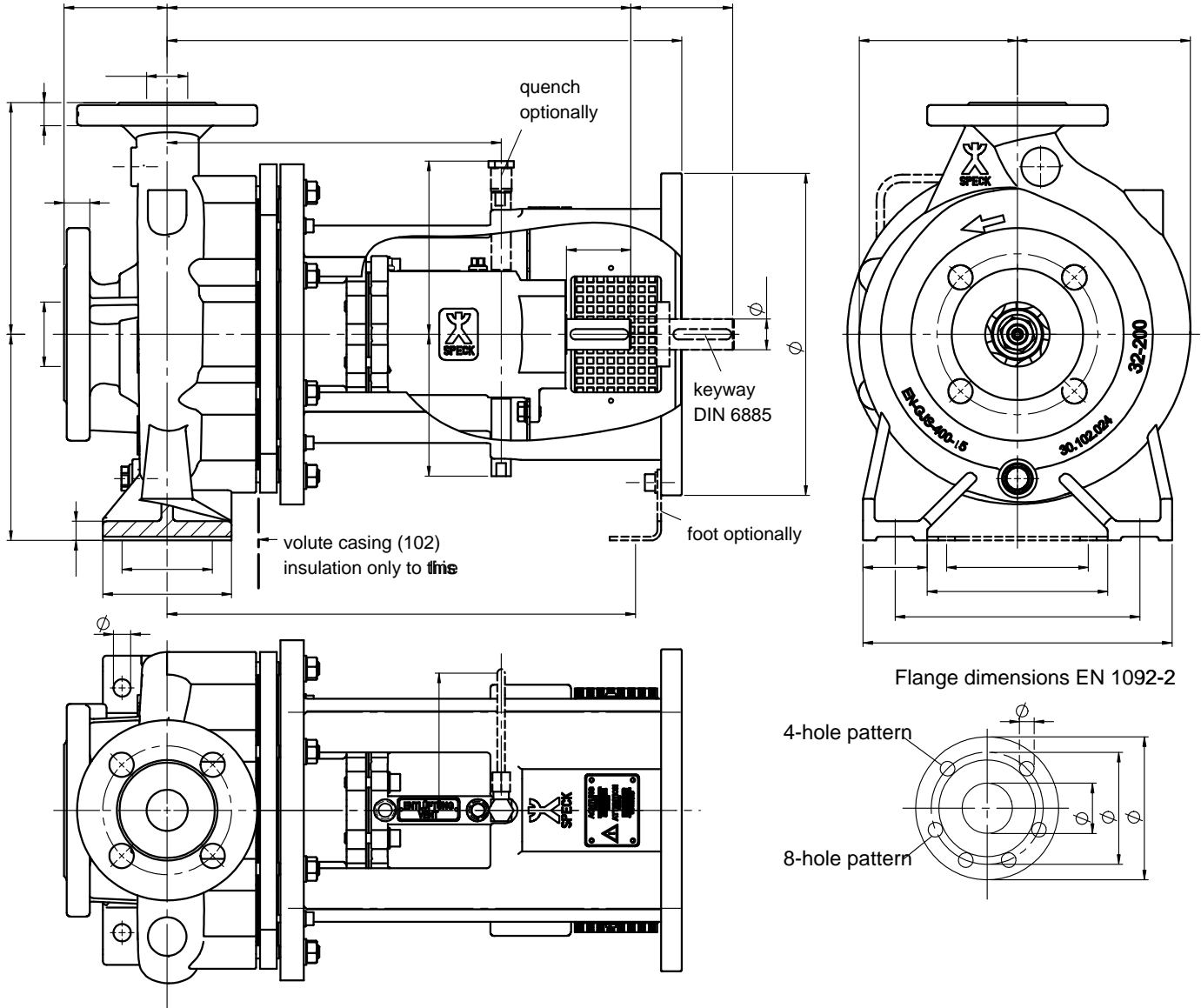
Performance curves 60 Hz



TOE-GA

Heat transfer pumps - close coupled version with mechanical seal

Pump Dimensions



Pump	Pump Dimensions							Foot Dimensions					Pull-out
Size	DNS	DND	a	bL	bR	h1	h2	b	m1	m2	n1	n2	x
32-160			80	123	123	132	160	50	100	70	240	190	110
32-200	50	32			135	160	180						
32-250			100	152	163	180	225	65	125	95	320	250	
40-160			80	123	129	132	160	50	100	70	240	190	
40-200		40		127	141	160	180						
40-250				151	160	180	225	65	125	95	320	250	
50-160	65			123	136	160	180	50	100	70	265	212	
50-200		50	100	130	148		200						
50-250				157	170	180	225				320	250	
65-160				124	151	160	200	65	125	95	280	212	
65-200	80	65		136	164		180						225
80-160	100	80	125	139	174								

Utility connections and flange dimensions

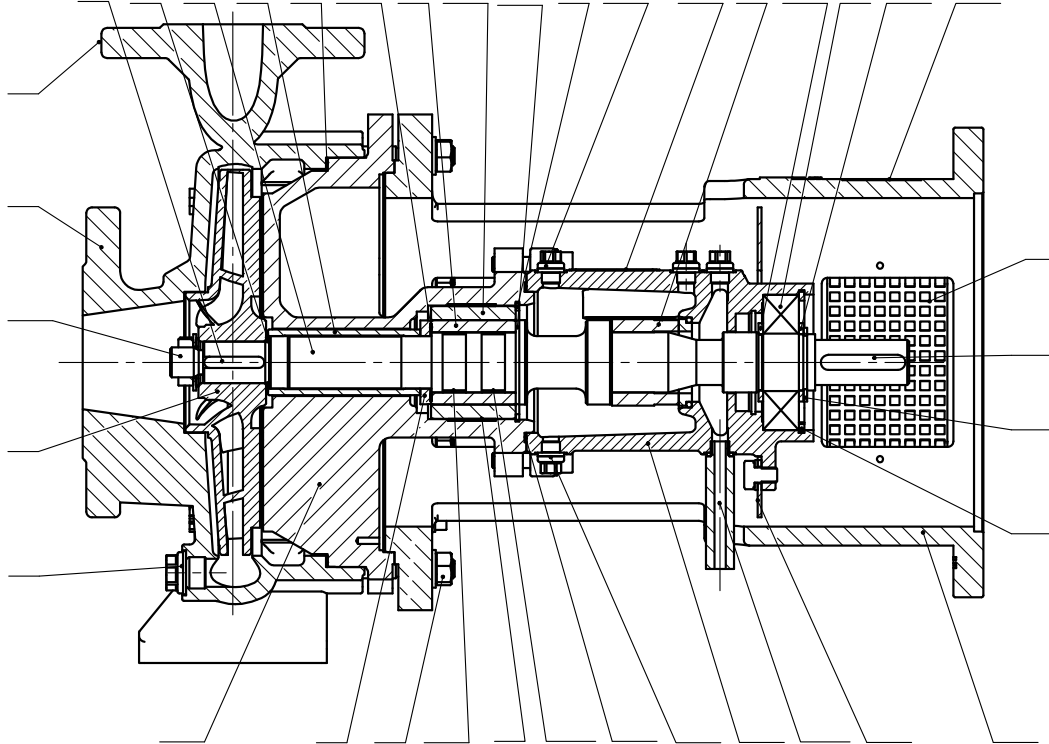
Utility connections

P1	Outlet pressure indicator connection (not drilled)	G 1/4
P2	Inlet pressure indicator connection (not drilled)	G 1/8
V1	Mechanical seal housing vent (at horizontal installations)	G 1/8
V2	Mechanical seal housing vent (at vertical installations)	G 1/8
D1	Volute casing drain	G 3/8
D2	Mechanical seal housing drain	G 1/8
QE	Mechanical seal leakage tube / Quench inlet	G 1/8
QA	Quench outlet	G 1/8

Flange dimensions in acc. with DIN EN 1092-2

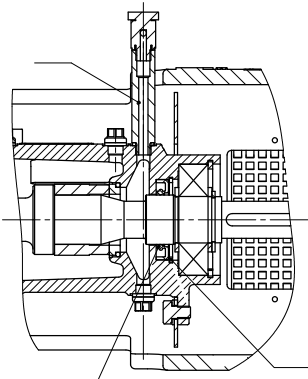
øDN	øD2	øD1	t	øD3	Qt. holes
32	140	100	18	19	4
40	150	110	18		
50	165	125	20		
65	185	145	20		
80	200	160	22		8
100	220	180	24		

Cross-sectional drawing and part list



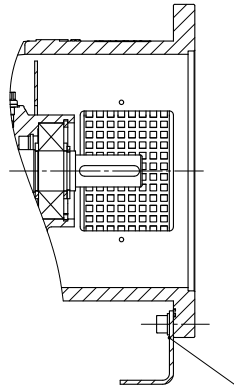
Standard design with nominal impeller diameter 160 and 200 mm

047	Mechanical seal	506	Retaining ring	901	Hexagon head cap screw
102	Volute casing	515-515.1	Tolerance ring	902, 902.2	Stud
161	Casing cover	523	Shaft bushing	903-903.2	Screwed plug
211	Shaft	550-550.2	Washer	914	Socket head cap screw
230	Impeller	551-551.1	Shim washer	920, 920.2, 920.3	Hexagon nut
310, 310.1	Plain bearing	552	Disk spring	931	Lock washer
320	Ball bearing	561	Grooved pin	932-932.2	Lock ring
341	Motor bracket	565	Rivet	940-940.1	Key
400, 400.2, 400.3	Flat gasket	681, 681.1	Coupling protection	970-970.2	Plate
411-411.2	Ring gasket	710	Tube		
441	Mechanical seal housing	900	Screw		



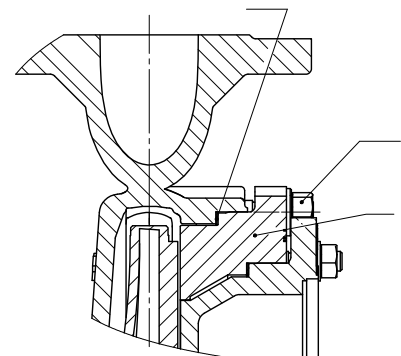
Execution with quench

411.2	Ring gasket
421	Radial shaft seal
710-710.1	Tube
731	Screw joint
932.3	Lock ring



Execution with foot

182	Pump foot
550.7	Disk
914.9	Socket head cap screw



Execution with nom. impeller diameter 250 mm

400.1	Flat gasket
550.1	Disk
720	Adapter flange
902.1	Stud
920.1	Hexagon nut

Interchangeability of parts in between TOE-GN / GA / GI series

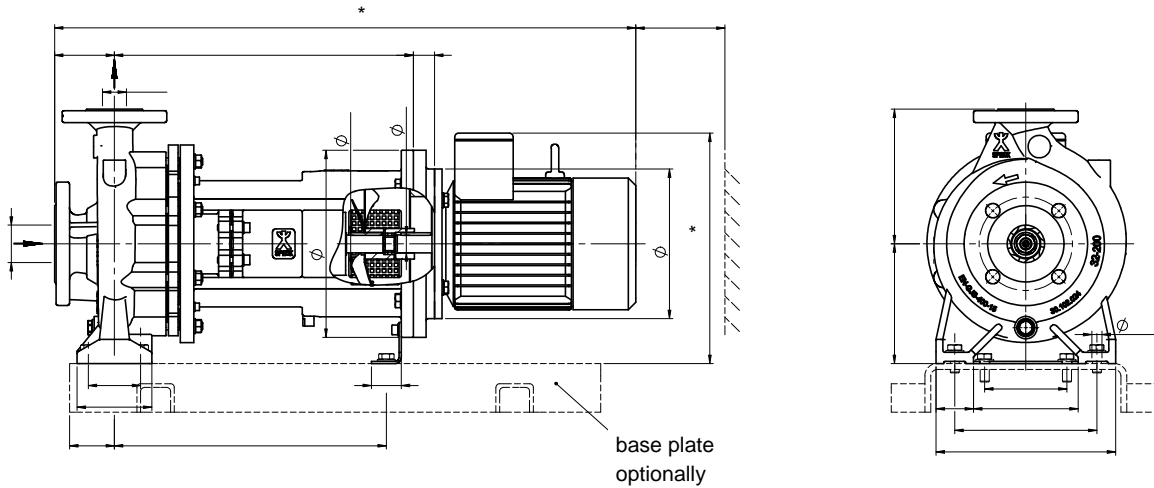
Part	Position	Series	Pump Size											
			32-160	32-200	32-250	40-160	40-200	40-250	50-160	50-200	50-250	65-160	65-200	80-160
Mechanical seal	147	TOE-GN / GA / GI	1											
Volute casing	102	TOE-GN / GA	1	2	3	4	5	6	7	8	9	10	11	12
		TOE-GI	0			1	2	0		3	0		4	0
Casing cover	161	TOE-GN / GA / GI	1											
Shaft	211	TOE-GN / GA / GI	1											
Impeller	230	TOE-GN / GA / GI		2	3	4	5	6	7	8	9	10	11	12
Bracket	341	TOE-GN	0											
		TOE-GA / GI	1											
Adapter flange	720	TOE-GN / GA / GI	0	1	0	1	0	1	0	1	0			
Flat gasket	400	TOE-GN / GA / GI	1											
Flat gasket	400.3	TOE-GN / GA / GI	0	1	0	1	0	1	0	1	0			
Socket head cap screw	914.2	TOE-GN / GA / GI	1	2	1	2	1	2	1	2	1			
Other parts		TOE-GN / GA / GI	1											

TOE-GA

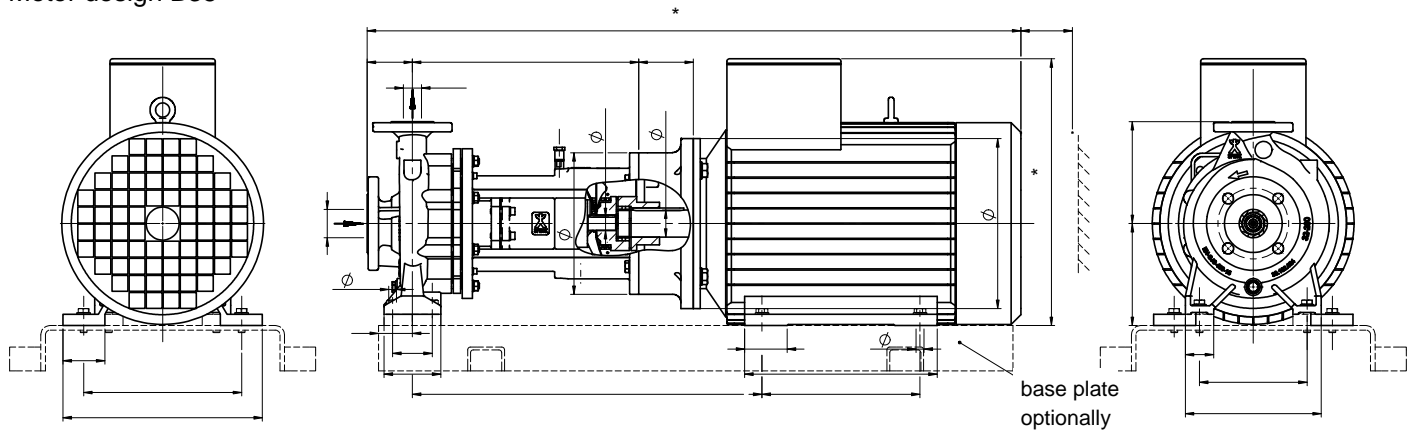
Heat transfer pumps - close coupled version with mechanical seal

Dimensional drawing

Motor design B5



Motor design B35



Pump		Motor	Power kW		Pump dimensions							Pump set dimensions																			
Size	Size	De sign	øP	4-pole 1450/1750	2-pole 2900/3500	DN	NDa	h2	b	n1	n2	m1	m2	G1	G5*	L4	w1	B	BB	BA	A	AA	AB	øK	øD	o	z*	g			
32-160	80	B5	200	0,55/0,75	0,75/1,1										261										1916,5	751	30				
			250																												
	90 S	B5	200	1,1	1,5																								752		
			250													280	-	-	-	-	-	-	-	-	-	-	2428,5		35		
	90L	B5	200	1,5	2,2										132														777		
			250																												
	100L	B5	250	2,2/3	3											287														821	
			250	4	4											300										2838,5		50			
	132 S	B35	250	5,5	5,5/7,5	50	32	80	132	250	240	190	100	70		320	60														
			300													160	348		140												
	132M	B35	250	7,5	-											132	320	549	218	88	216	55	256	12	38	60,5	945				
			300													160	348		178												
160 M	B35	300	11	11/15											160	410													100		
		350													180	430		210	260												
160 L	B35	300	15	18,5											160	410	604		62	254	69	320	14	42	96,5	1093					
		350													180	430		254	304												

*Dimensions can differ depending on the motor supplier.

Heat transfer pumps - close coupled version with mechanical seal

Pump		Motor		Power kW		Pump dimensions						Pump set dimensions																									
Size	Size	De sign	øP	4-pole 1450/1750	2-pole 2900/3500	D	S	N	D _a	h ₂	b	n ₁	n ₂	m ₁	m ₂	G1	G5*	L4	w1	B	BB	BA	A	AA	AB	øK	øD	o	z*	g							
32-200	80		200	0,55/0,75	0,75/1,1													289													1916,5	751	30				
			250																																		
	90 S	B5	200	1,1	1,5																													752			
			250																																35		
	90L		200	1,5	2,2																													777			
			250																																		
	100L			250	2,2/3	3												160	315														2838,5	821	50		
	112M			250	4	4												328															838				
	132 S			250	5,5	5,5/7,5																140															
				300																																	
	132M			250	7,5	-				50	32	80	160	50	240	190	100	70			348	60	549														
				300																																	
160 M	B35		300	11	11/15													410																			
			350																	180	430																
160 L			300	15	18,5																604																
			350																																		
180 M			300	18,5	22																																
			350																																		
180L			300	22	-																399,5																
			350																																		
32-250	90 S	B5	200	1,1	1,5																														772		
			250																																		
	90L		200	1,5	2,2																																
			250																																		
	100L			250	2,2/3	3																														841	
	112M			250	4	4																														858	
	132 S			250	5,5	5,5/7,5																140															
				300																																	
	132M			250	7,5	-				50	32	100	180	65	320	250	125	95																			
				300																																	
	160 M	B35		300	11	11/15																															
				350																																	
160 L			300	15	18,5																																
			350																																		
180 M			300	18,5	22																																
			350																																		
180L			300	22	-																																
			350																																		
200 L			350	30	30/37																																
			400																																		

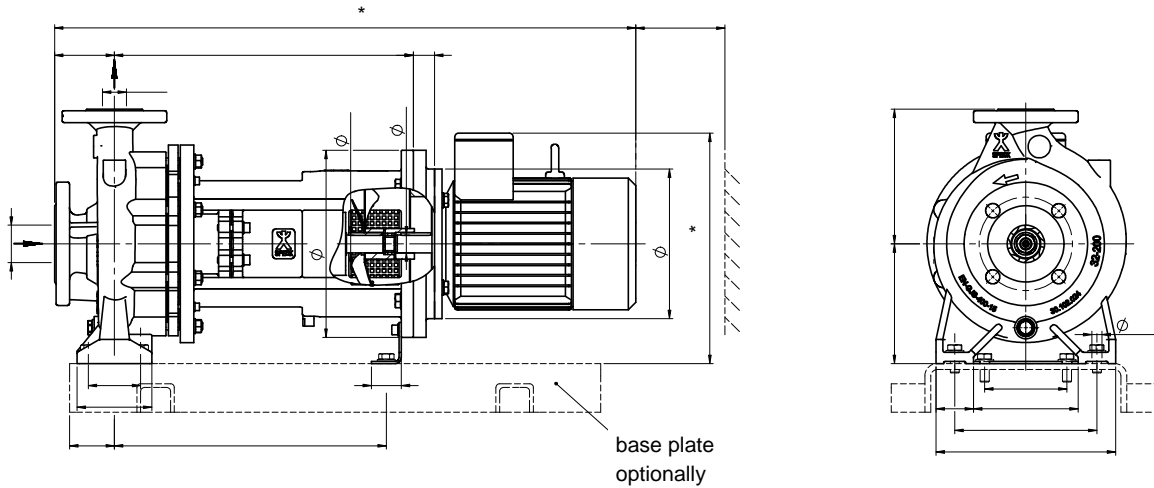
*Dimensions can differ depending on the motor supplier.

TOE-GA

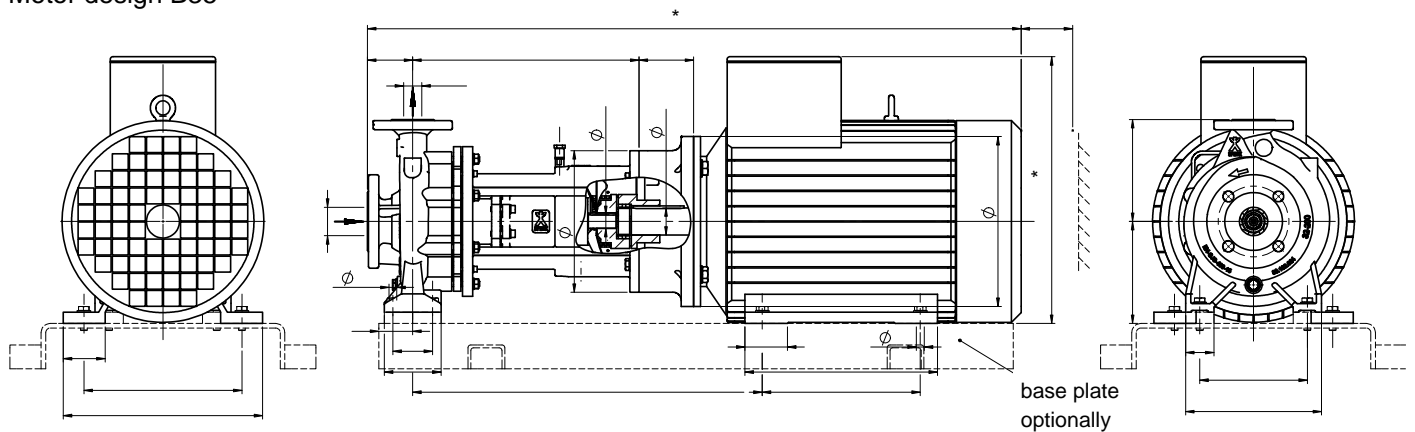
Heat transfer pumps - close coupled version with mechanical seal

Dimensional drawing

Motor design B5



Motor design B35



Pump Size	Motor Size	De sign	øP	Power kW		Pump dimensions										Pump set dimensions														
				4-pole 1450/1750	2-pole 2900/3500	DN	ND	a	h2	b	n1	n2	m1	m2	G1	G5*	L4	w1	B	BB	BA	A	AA	AB	øK	øD	o	z*	g	
40-160	80	B5	200	0,55/0,75	0,75/1,1											261											1916,5	751	30	
			250																											
			200	1,1	1,5																									752
			250																											
	90 S	B5	200													132	280	-	-	-	-	-	-	-	-	-	-	2428,5		35
			250																											
	90 L	B5	200	1,5	2,2																								777	
			250																											
	100 L			250	2,2/3	3										287													821	
	112 M			250	4	4										300											2838,5		50	
	132 S	B5	250	5,5	5,5/7,5											320		140												
			300			65	40	80	13	250	240	190	100	70	160348	60	549	21888	21655	256	12	38	60,5	5945						
250			7,5	-												132320		178												
300																160348													100	
160 M	B35	300	11	11/15											160410		210	260												
		350														180430	604			62	254	69	320	14	42	96,5	1093			
160 L	B35	300	15	18,5											160410		254	304												
		350														180430														
180 M	B35	300	18,5	22													24	1300												
		350																												
180 L	B35	300	22	-											180471	399,5			75	279	74	352	14	48	96,5	154	10			
		350																												

*Dimensions can differ depending on the motor supplier.

Heat transfer pumps - close coupled version with mechanical seal

Pump		Motor		Power kW		Pump dimensions						Pump set dimensions																
Size	Size	De sign	øP	4-pole 1450/1750	2-pole 2900/3500	DN	DNda	h2	b	n1	n2	m1	m2	G1	G5*L4	w1	B	BB	BA	A	AA	AB	øK	øD	o	z*	g	
40-200	80		200	0,55/0,75	0,75/1,1										289										1916,5	771	30	
			250																									
	90 S	B5	200	1,1	1,5																						772	
			250																							2428,5		35
	90L		200	1,5	2,2																						797	
			250																									
	100L			250	2,2/3	3									160	315										2838,5		50
	112M			250	4	4									328												841	858
	132 S			250	5,5	5,5/7,5												140										
				300													348	549	218	88	216	55	256	12	38	60,5	965	
	132M			250	7,5	-	65	40	100	160	50	26	52	121	00	70		60	178									
				300																								
160 M			300	11	11/15										410												100	
			350													180	430	604		62	254	69	320	14	42	96,5	113	
160 L	B35		300	15	18,5										160	410												
			350													180	430	254	304									
180 M			300	18,5	22																							
			350													180	471	459,5		75	279	74	352	14	48	96,5	174	10
180L			300	22	-																							
			350																									
200 L			350	30	30/37																							
			400													200	491	629	305	380	95	318	99,5	403	18	55	96,5	224
40-250	90 S	B5	200	1,1	1,5																						772	
			250																									
	90L		200	1,5	2,2																						797	
			250																									
	100L			250	2,2/3	3									335										2838,5		50	
	112M			250	4	4									348											841	858	
	132 S			250	5,5	5,5/7,5												140										
				300													368	549	218	88	216	55	256	12	38	60,5	965	
	132M			250	7,5	-	65	40	100	180	65	32	250	125	95	180		70	178									
				300																								
	160 M			300	11	11/15																						100
				350													430	604		62	254	69	320	14	42	96,5	113	
160 L	B35		300	15	18,5																							
			350																									
180 M			300	18,5	22																							
			350													471	469,5		75	279	74	352	14	48	96,5	174	10	
180L			300	22	-																							
			350																									
200 L			350	30	30/37																							
			400													200	491	629	305	380	95	318	99,5	403	18	55	96,5	224

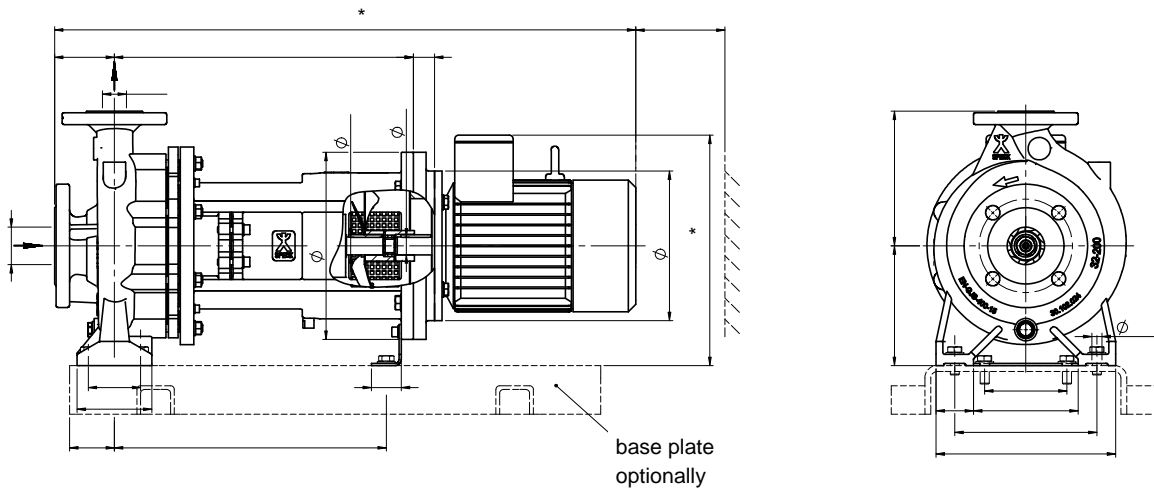
*Dimensions can differ depending on the motor supplier.

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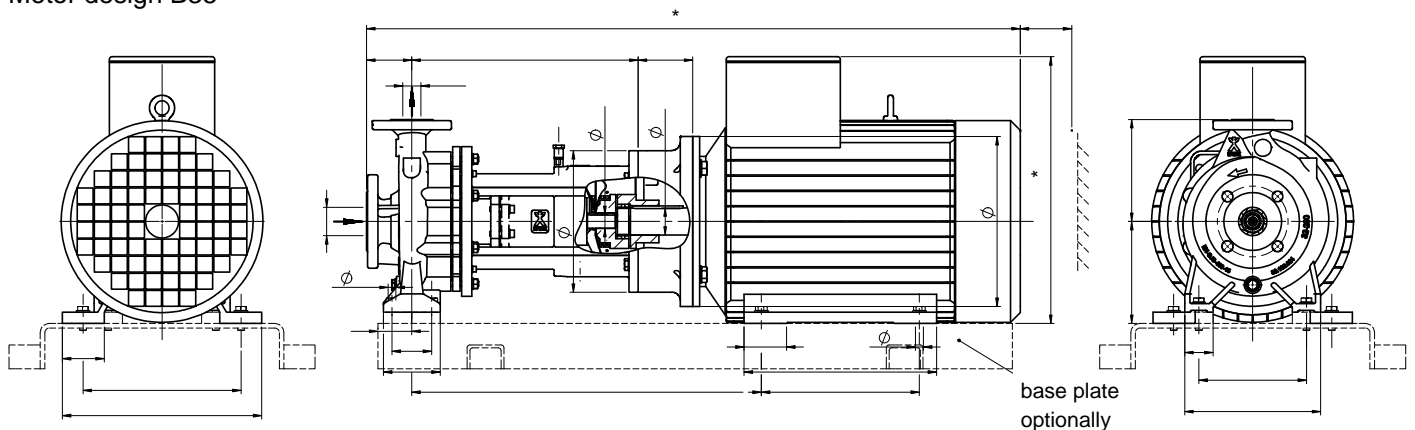
Heat transfer pumps - close coupled version with mechanical seal

Dimensional drawing

Motor design B5



Motor design B35



Pump		Motor	Power kW		Pump dimensions							Pump set dimensions																	
Size	Size	De sign	øP	4-pole 1450/1750	2-pole 2900/3500	DN	NDa	h2	b	n1	n2	m1	m2	G1	G5*	L4	w1	B	BB	BA	A	AA	AB	øK	øD	o	z*	g	
	80	B5	200	0,55/0,75	0,75/1,1										289										1916,5	771	30		
	90 S		200	1,1	1,5											308										2428,5		35	772
	90L		200	1,5	2,2																								797
	100L		250	2,2/3	3										160315											2838,5		50	841
	112M		250	4	4										328														858
	132 S		250	5,5	5,5/7,5													140											
50-160	132M	300	7,5	-		65	50	100	160	50	265	212	100	70	348	60	549	218	88	216	55	256	12	3860,5			5965		
	160 M	300	11	11/15										410														100	
	160 L	350	15	18,5										180430			604			62	254	69	320	14	4296,5			113	
	180 M	300	18,5	22										160410															
	180L	350	22	-										180471			459,5			75	279	74	352	14	4896,5			174	
	200 L	350	30	30/37										200491			629	305	380	95	318	99,5	403	18	5596,5			224	
		400																											

*Dimensions can differ depending on the motor supplier.

Heat transfer pumps - close coupled version with mechanical seal

Pump		Motor		Power kW		Pump dimensions						Pump set dimensions																					
Size	Size	De sign	øP	4-pole 1450/1750	2-pole 2900/3500	DN	DN _a	h ₂	b	n ₁	n ₂	m ₁	m ₂	G1	G5*	L4	w1	B	BB	BA	A	AA	AB	øK	øD	o	z*	g					
50-200	80		200	0,55/0,75	0,75/1,1																												
			250																												289	1916,5	771
	90 S	B5	200	1,1	1,5																												
			250																														308
	90L	B5	200	1,5	2,2																												
			250																														308
	100L			250	2,2/3	3																											
	112M			250	4	4																											
	132 S			250	5,5	5,5/7,5																											
				300																													348
	132M			250	7,5	-	65	50	100	160	50	26	52	121	00	70																	
				300																													
160 M			300	11	11/15																												
			350																														410
160 L	B35	300	15	18,5																													
		350																															180430
180 M			300	18,5	22																												
			350																														180471
180L			300	22	-																												
			350																														180471
200 L			350	30	30/37																												
			400																														200491

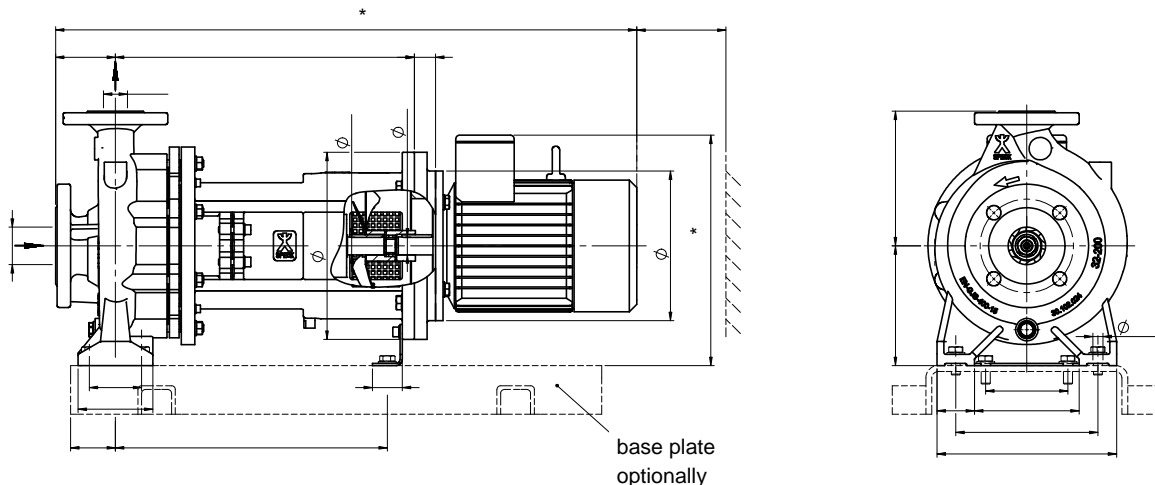
*Dimensions can differ depending on the motor supplier.

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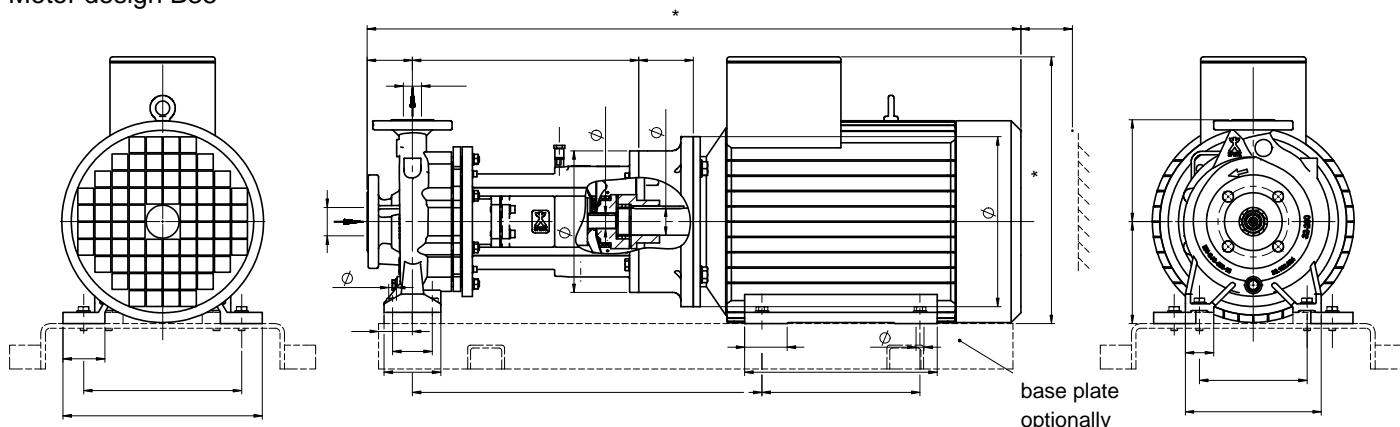
Heat transfer pumps - close coupled version with mechanical seal

Dimensional drawing

Motor design B5



Motor design B35



Pump		Motor	Power kW		Pump dimensions							Pump set dimensions																	
Size	Size	De sign	øP	4-pole 1450/1750	2-pole 2900/3500	DN	NDa	h2	b	n1	n2	m1	m2	G1	G5*	L4	w1	B	BB	BA	A	AA	AB	øK	øD	o	z*	g	
	80	B5	200	0,55/0,75	0,75/1,1										289										1916,5	771	30		
	90 S		200	1,1	1,5											308										2428,5		35	772
	90L		200	1,5	2,2																								797
	100L		250	2,2/3	3										160315											2838,5		50	841
	112M	250	4	4										328														858	
	132 S	250	5,5	5,5/7,5													140												
65-160	132M	300	7,5	-		80	65	100	160	65	280	212	125	95	70		549	218	88	216	55	256	12	3860,5			5965		
	160 M	300	11	11/15										410														100	
	160 L	350	15	18,5										180430			604			62	254	69	320	14	4296,5			113	
	180 M	350	18,5	22										160410															
	180L	350	22	-										180471			469,5			75	279	74	352	14	4896,5			174	
	200 L	400	30	30/37										200491			629	305	380	95	318	99,5	403	18	5596,5			224	

*Dimensions can differ depending on the motor supplier.

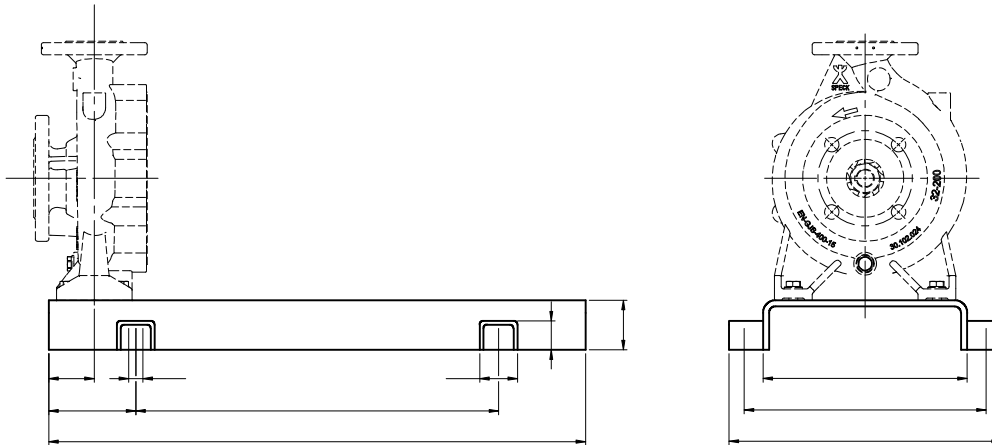
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Heat transfer pumps - close coupled version with mechanical seal

Allocation of coupling and base plate

Motor size Pump size		80	90S	90L	100L	112M	132S	132M	160M	160L	180M	180L	200L
32-160	Coupling Base plate	-											
32-200	Coupling Base plate												-
40-160	Coupling Base plate	-											
40-200	Coupling Base plate												-
50-160	Coupling Base plate	-											
50-200	Coupling Base plate												-
65-160	Coupling Base plate	-											
65-200	Coupling Base plate												-
80-160	Coupling Base plate	-											
32-250	Coupling Base plate												-
40-250	Coupling Base plate	-											
50-250	Coupling Base plate												-

Base plate dimensions



Pump size	L4	Base plate	B1	B2	B3	G2	G3	R1	L5	L1	L2	L3
32-160	60	1-270	270	360	320	65	38	19	50	710	115	480
32-200	60	2-270	270	360	320	65	38	19	50	800	130	540
32-250	70	1-300	300	390	350	65	38	19	50	710	115	480
40-160	60	2-300	300	390	350	65	38	19	50	800	130	540
40-200	60	3-300	300	390	350	65	38	19	50	900	150	600
40-250	70	1-340	340	450	400	80	42	24	65	710	115	480
50-160	60	2-340	340	450	400	80	42	24	65	800	130	540
50-200	60	3-340	340	450	400	80	42	24	65	900	150	600
50-250	70	2-380	380	490	440	80	42	24	65	800	130	540
65-160	70	3-380	380	490	440	80	42	24	65	900	150	600
65-200	70	5-380	380	490	440	80	42	24	65	1120	190	740
80-160	70	5-430	430	540	490	80	42	24	65	1120	190	740
		6-480	480	610	550	100	42	28	65	1250	205	840

Pump data sheet

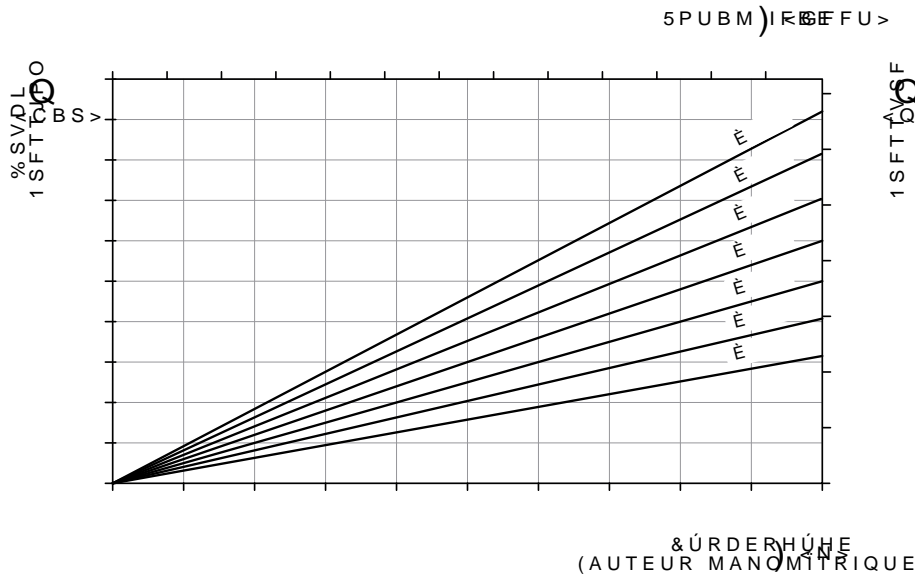
		Heat Transfer Pump Technical Data Sheet Pump Model			Quotation Date Item	
SPECK PUMPEN Systemtechnik GmbH Regensburger Ring 6 - 8 D-91154 Roth Tel.: 09171/809-0 Fax: 09171/809-10 www.speck-pumps.de						
1	Pump Model:	Quantity:				
2	Customer	Location			Page:	of: pages
3	Phone	Fax			Iss. / Dpt.:	
4	Contact	E-Mail			Phone:	
5	PO	dated			Fax:	
6	Project	Pump No.			E-Mail	
Installation / Environment						
7	Building / Outside	Altitude	m		Amb. temp	Start-up temp. rel. Humidity
8	under roof yes/no	Hazardous area	-		min.: max:	min.: °C %
Operating (Contractual) Data						
9	Fluid	Flow rate	rated	m ³ /h		Reference Speed
10	corrosive matters	Wght.-%	min / max	m ³ /h		direction of rotation 1)
11	abrasive matters	Wght.-%	Pressure	Inlet	bar (ü)	
12	Solid content	Wght.-%		Disch.	bar (ü)	
13	Oper. Temp. tA	°C	Tot. Diff. Head rated		m	
14	Density @ tA	kg/m ³	pressure differential		bar	
15	Kin. viscosity @tA	mm ² /s	NPSH	available	m	
16	Vapor press. @ tA	bar (a)		required	m	
Duty point data to DIN EN ISO 9906 Cl. 2						
Pump design						
17	Impeller-Ø	mm	Inlet- nozzle	nom. diam. DN	Bearings	
18	No of stages	-		location	impeller side coupling side	
19	nom. pressure PN	bar	machined to		Type	
20	max. all. Cas. press. @ tA	bar	Outlet- nozzle	nom. diam. DN	Lubrication	
21	Cooling 'C' / Heating 'H'			location	Shaft seal Mechanical seal	
22	Volute casing	Casing cover		machined to		Type
23	-	-	Sound pressure level 2)		Size	
Accessories						
24	AC Electric Motor	Power	kW	Frame	Ex-protection	
25		Frequency	Hz	Enclos.	Make	
26		Voltage	V	Construct.	Delivered by	
27		Nom. Speed	1/min	Current	mounted by	
Coupling Size/Spacer / mm Make Type Baseplate						
Materials						
28	Volute casing	bearing bracket		containm. shell		
29	Casing cover	motor lantern		sleeve bearing		
30	Impeller	cas. wear ring		coupl.+guard		/
31	Shaft	imp. wear ring		Baseplate		
Tests and Inspections						
32	1. Material Tests:	Kind of Test	Test Certificate 3)	4. Other Tests Tests:	Witnessed by:	Test Certif.
33	1.1 volute casing			4.1 Hydrost. Pressure Test 4)		
34	1.2 Cas. Cover			4.2 Gas Pressure Test		
35	1.3 Bearing frame			4.3 Performance curve 5)		
36	1.4 Impeller			4.4 Final check		
37	1.5 Shaft			4.5		
38	1.6			4.6		
Shipping data 6)						
39	Total net weight appr.	kg	/ Total gross weight appr.		kg	
Documentation						
40	Dimensional drwg.	Cross sect. drwg	Performance curve	Oper. & Instruct. Man.	Other (see attached)	fold
41						Language
Remarks						
42	= min. information required for quotation					
43	1) = seen from driver to pump 2) = calcul. to EUROPUMP					
44	3) = acc. to EN 10204 4) = volute casing & casing cover					
45	5) = without NPSH-Test 6) = scope of supply see price sheet					
46	Revision:	Issued:			Date:	

Substance data of heat transfer media

Temperature [°C]	Water		Marlotherm SH		Syltherm XLT		Galden HT 200	
	Density [kg/m³]	Kinematic viscosity [mm²/s]	Density [kg/m³]	Kinematic viscosity [mm²/s]	Density [kg/m³]	Kinematic viscosity [mm²/s]	Density [kg/m³]	Kinematic viscosity [mm²/s]
-40	-	-	-	-	-	-	1935	80,00
0	1000	1,789	1058	321,00	862	2,40	1845	5,20
40	992	0,658	1030	16,50	827	1,34	1755	1,80
100	958	0,294	987	3,10	769	0,73	1625	0,86
150	917	0,201	951	1,60	714	0,50	1520	0,41
160			944	1,40	702	0,48	1490	0,38
180			930	1,20	678	0,43	1445	0,36
200			915	0,92	652	0,40		
220			901	0,77	624	0,37		
240			887	0,65	595	0,35		
260			873	0,57	563	0,34		
280			858	0,50				
300			844	0,45				
320			830	0,40				
340			815	0,36				

Conversion

Reference between height and pressure at different gravities



More information?

51FO WJTJU PVS XFCTJUF XIFS catalogues can be downloaded.

Speck Pumpen
Production Program

Peripheral Impeller Pumps

- t 4NBMM \$FOUSJGVHBM 1VNQT
- t)FBU 5SBOTGFS 1VNQT
- t 4VCNFSTJCMF 1VNQT

Radial Impeller Pumps

- t 4NBMM \$FOUSJGVHBM 1VNQT
- t)FBU 5SBOTGFS 1VNQT with mechanical seal
- t)FBU 5SBOTGFS 1VNQT with magnetic coupling
- t #PJMFS 'FFE 1VNQT

Side Channel Pumps

- t 1VNQT 4UBOEBSE &/
- t 8JUI /14) 4UBHF
- t 4NBMM 1VNQT

Displacement Pumps

- t 3PMMFS 7BOF 1VNQT
- t (FBS 1VNQT
- t 0TDJMMBUJOH 1JTUPO 1VNQ

Liquid Ring Vacuum Pumps

- t \$MPTF \$PVQMFE 7FSTJPO
- t #BTF 1MBUF 7FSTJPO

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www.ivt-pumpen.de

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www.klausunion.it

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