

Volute Centrifugal-Pumps PN 16/PN 25

for Heat Transfer Media

Thermal Oil up to 400 °C

Hot Water up to 207 °C

ALLHEAT®

Series NTWH/CTWH

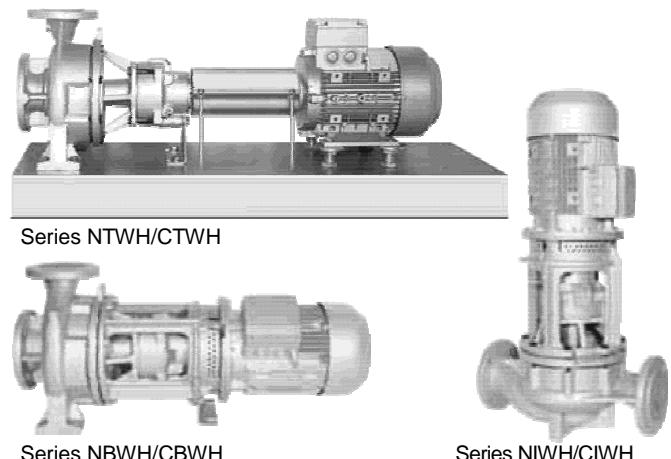
prozess model

Series NBWH/CBWH

block model

Series NIWH/CIWH

in-line model



Application

For circulating heat transfer media such as thermal oil or hot water in heat transfer systems (DIN 4754 and 4752). The media to be pumped may not contain any abrasive constituents or chemically attack the pump material.

Series

The NTWH, NBWH, and NIWH series of pumps are designed for organic and synthetic heat transfer oils up to 350 °C. Series CTWH, CBWH, CIWH can be used up to 400 °C.

The series NTWH, NBWH and NIWH (PN16) can be used with hot water at temperatures of up to 183 °C and series CTWH, CBWH and CIWH (PN25) at temperatures of up to 207 °C. Size CTWH 200-250/81 (ALLHEAT 1000) is approved for pumping heat transfer oils only.

The application limits with regard to temperature, pump series and housing material are specified in the table "Application limits" and in the diagram "Pressure/temperature limits depending on the housing materials".

Design

Series NTWH/CTWH:

Process models of a horizontal volute centrifugal pump. Single-flow, single-stage with optimised bearing support (consisting of housing cover incl. throttle/cooling section and bearing support). Shaft bearing consisting of a silicon carbide or carbon sliding bearing lubricated by the pumped medium on the pump side and a grease-lubricated deep groove ball bearing on the drive side. Volute casing with cast-on pump feet.

Series NBWH/CBWH:

Block model of a volute centrifugal pump. Single-flow, single-stage with optimised bearing support (consisting of housing cover incl. throttle/cooling section and bearing support). Plug-in shaft and motor shaft are rigidly connected to each other. Shaft bearing consisting of a silicon carbide or carbon sliding bearing lubricated by the pumped medium on the pump side and the grease-lubricated deep groove ball bearing of the drive motor. Motors with axial thrust bearings. Spiral casing with cast-on pump feet.

Horizontal or vertical installation, however, not with motor arrangement facing downwards.

Series NIWH/CIWH:

In-line model of volute centrifugal pump, other details as for series NBWH/CBWH.

Shaft sealing

Uncooled, balanced or unbalanced, maintenance-free mechanical seals acc. to DIN EN 12756. The shaft seal is dependent on the direction of rotation.

A safety gland and a subsequent throttle/cooling section are provided upstream of the shaft seal.

Shaft seal

Product code	Material type		Material code DIN EN 12756
U2.11A and U2.13A mechanical seal U3.3A unbalanced mech. seal	Sliding ring	Carbon graphite, antimony impregnated	A*
	Counter ring	SiC, silicone carbide	Q1*
	O-Ring	Rubber fluoride (FPM)	V
	Spring	CrNiMo steel	G
	other design components	CrNiMo steel	G

* U2.13A (ALLHEAT 1000) Sliding ring material, counter ring: SiC-C-Si, material code Q3

Flange

Flange connection dimensions correspond to EN 1092-2, PN 16 or PN 25.

Performance data at 50 Hz

Series	Permissible internal pump pressure $\textcircled{1}$ p [bar]	max. pump output Q [m^3/h]	max. pump head H [m]
NTWH		1250	100
NBWH	≤ 16	270	92
NIWH		220	92
CTWH		1450	100
CBWH	≤ 25	240	63
CIWH		105	58

$\textcircled{1}$ The entry pressure and pressure during zero flow rate must not exceed the specified values. For permissible values per series, see diagram on page 2.

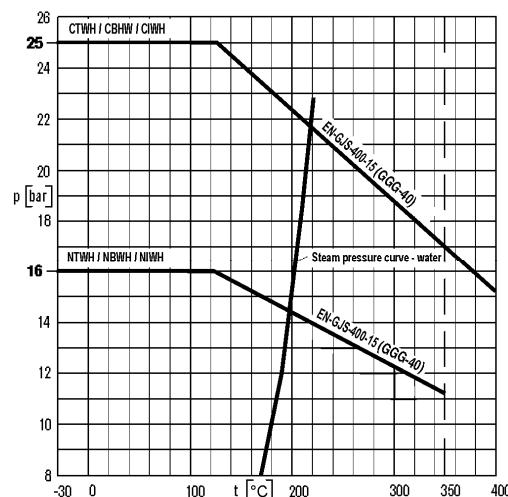
The mentioned performance data are to be considered as a product and performance abstract only. The particular operating limits can be taken from the quotation or order acknowledgement.

Series	Permissible internal pump pressure $p \leq [\text{bar}]$	Application limits					
		Mechanical seal Bearing type		Permissible suction pressure $p \leq [\text{bar}]$		Hot water $\textcircled{1}$ t ≤ [°C]	Thermal oil $\textcircled{2}$ t [°C]
		water	oil	water	oil		
NTWH NBWH NIWH	16	U3.3A - K1		12	8	183	$t = -30$ bis $+350$
		U2.11A - S1					
		U3.3A - K1					
	25	U2.11A - S1	22	15	207	207	$t = -30$ bis $+400$
		U2.13A - K2	-				

$\textcircled{1}$ Requirement to hot water quality: Water with low salt content or deionised water acc. to VdTÜV directive 02.89 TCH 1466 solids content $\leq 5\text{mg/l}$, without settling additives.

$\textcircled{2}$ Toxic thermal oils are not hermetically sealed from the environment. In this case we recommend the use of our magnetically coupled pumps.

Pressure and temperature limits depending on housing materials



Application limits

Ambient temperature: min. – 30 °C up to max. +40 °C
Expansion of operating limits upon request.

Materials *

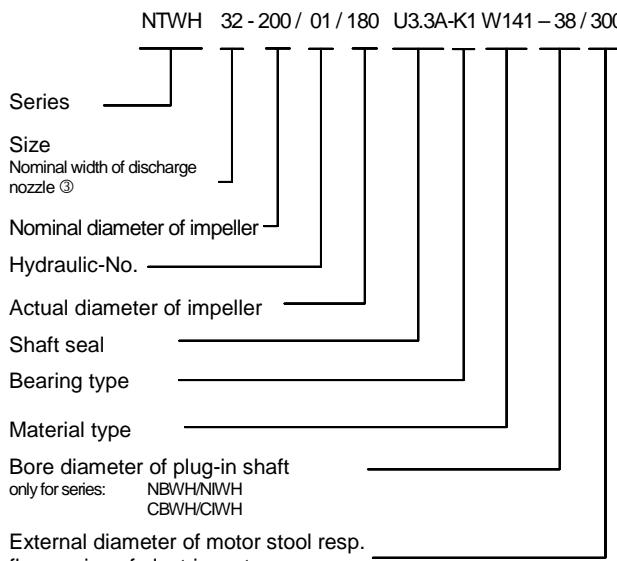
Denomination	Part-No.	Series		
		NTWH CTWH	NBWH CBWH	NIWH CIWH
		Material type		
		W141		
Volute casing ②	102.01	EN-GJS-400-15 (GGG-40)		
Impeller	230.01	EN-GJL-200 (GG-20) ①		
Casing cover	161.01	EN-GJS-400 (GGG-40)		
Shaft	210.01	1.4021		
Plug-in shaft	220.01	1.4021/1.7139		
Bearing bracket	330.01	EN-GJS-400 (GGG-40)		
Motor stool	341.01	EN-GJL-250 (GG-25)		
Intermediate Ring	509.01	EN-GJS-400-15 (GGG-40)		
Bearing sleeve S1	529.01	SSiC		
Bearing sleeve K2	529.01	1.7225 (specially hardened)		
Bearing bush S1	545.01	SSiC		
Bearing bush K1 resp. K2	545.01	carbon/1.4021		

① Material type W143 (ALLHEAT 1000): impeller in EN-GJS-400-15 (GGG-40).

② Volute casing of CTWH 250-315 and 250-400 series in material GS-C25 (W142).

* Other materials available upon request.

Abbreviation



③ For series CIWH ACTUAL width of discharge nozzle

The abbreviation is displayed on the nameplate

Bearing and lubrication

NTWH/CTWH

Pump side: Sliding bearing, lubricated by pumped medium
Drive side: Deep groove ball bearing, grease-lubricated

NBWH/CBWH/NIWH/CIWH

Pump side: Sliding bearing, lubricated by pumped fluid
Drive side: Deep groove ball bearing of drive motor, grease-lubricated

Connections

The following connections are always provided:

FD1	Draining
FD2	Draining
FF2/FV1	Filling/Venting
FF4/FV4	Filling/Venting (only for vertical block and in-line installation)
LO1	Leakage outlet*

* According to DIN 4754 for non-hazardous draining of heat transfer medium leaking from the shaft seal.

Component combinations

The tables on page 5 and 6 show the possible combinations of components for the ALLHEAT sizes.

Due to the modular design, spare parts management is simplified.

Dismantling of insert unit NTWH/CTWH

Where a shaft coupling with a spacer element is used, the insert unit can be removed towards the motor side, whilst the volute casing and the motor may remain on the base plate and the pipes connected to the volute casing.

Dismantling of drive unit NBWH/CBWH/NIWH/CIWH

During dismantling of the drive unit, the volute casing can remain in the pipeline.

Shaft coupling and contact protection

Elastic shaft coupling acc. to DIN 740 with or without spacer element. A coupling protection is supplied as a contact protection acc. to DIN EN 294 (DIN 31001), where the scope of delivery includes a pump, base plate and shaft coupling.

Couplings with spacer element in rotationally flexible, double cardanic design (proper base plate size required).

We recommend the use of double cardanic couplings under the following operating conditions:

- In case of changing temperatures of the pumped medium
- In case of changing ambient temperatures or ventilation
- In case of plants that are sensitive to vibration

When series NTWH and CTWH have impeller diameters 315, 400, and 500 and $t \geq 207$ °C, the double-cardanic coupling is standard. Size CTWH 200-250/81 (ALLHEAT 1000) is available with a double cardanic spacer coupling only.

Base plate series NTWH/CTWH

Two base plate types are available: channel steel, U-profile; and base plates with drip channel made from cast iron or steel, welded (material type depends on size).

The coupling types and base plate versions can be combined with each other.

Use our ALL2CAD interactive system to obtain the installation dimensions.

Accessories

The pump can be equipped with an optional pressureless quench fluid buffer in order to protect the mechanical seal from oxidation with sensitive heat transfer liquids.

Leaks and the bearing can be monitored with ALLWEILER Smart Equipment.

Drive

Surface-cooled IEC three-phase cage motors; model IM B3, protection type IP 55, insulation class F, performances and main dimensions acc. to DIN 42 673.

Attention: Motors provided by the client must generate a cooling airflow in axial direction to the pump side that unimpededly contacts the pump surface. It must also be ensured that any heat can be freely dissipated into the atmosphere.

Block and in-line pumps of series NBWH, CBWH, NIWH, CIWH

Driven by surface-cooled IEC three-phase cage motors with axial thrust bearing, model IM V1, protection type IP55, insulation class F, performances and main dimensions acc. to DIN 42 677.

Attention: Motors provided by the client must contain a axial thrust bearing on the drive side for block or in-line pumps.

Explosion protection

The pump fulfills the requirements according to EU explosion-protection directive 94/9/EC (ATEX 100a) for devices in device class II, category 2 G. Classification into temperature classes according to EN 13463-1 depends on temperature of the pumped liquid. Refer to proposal or order documentation for the maximum permissible temperature of pumped liquid for the respective temperature classes.

Note: When operating the pump in category 2, suitable measures must be provided to prevent impermissible warming of the pump surfaces during disturbance.

Sectional drawing – Series NTHW/CTWH

Pressure-containing casing parts in nodular cast iron for high operational reliability

Wear-resistant casing design

Maintenance-friendly design easy to dismantle, pump housing can be remained in pipework

Solid sliding bearing, lubricated with pumped medium, due to low temperature level, no evaporation of pumped medium in, offering a high bearing force capacity, and long service life, available in SSiC/SSiC or carbon/steel

Optimum temperature reduction, due to long thermal barrier and large surface area of the sealing space, no additional cooling is required

Large sealing area, special design, to prevent the rotation of gas bubbles and partial dry running of the mechanical seal

Additional bearing protection by rotary shaft seal

Optimised antifriction bearing offering exceptional operational reliability and long life

Rigid, robust pump shaft for proper mechanical seal and bearing alignment

Optimised modular system as a result of using identical parts for the process, block and in-line models

Low axial thrust on shaft bearing as a result of hydraulically balanced impellers

Thermal isolation of volute casing is allowed up to this line

Impellers with optimised hydraulics and excellent efficiency

Added operational reliability due to safety stuffing box by a throttle and cooling section

High mechanical stability and strength due to optimum stiffening ribs arrangement

Balanced or unbalanced, maintenance-free standard mechanical seal with chambered O-ring, no additional cooling

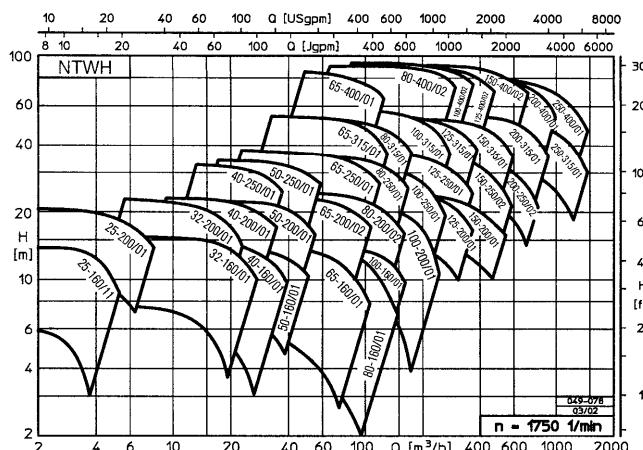
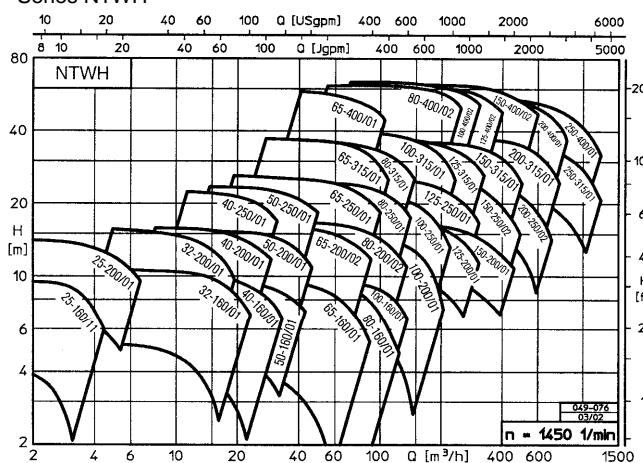
Interchangability of components on bearing bracket sizes 3 up to 5

Parts with the same number are interchangeable within a vertical column.

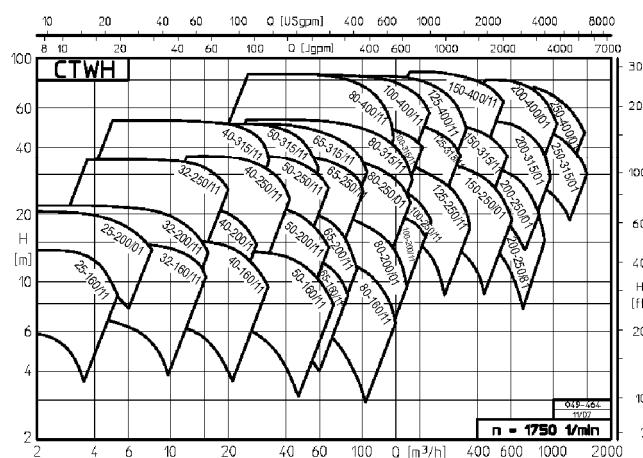
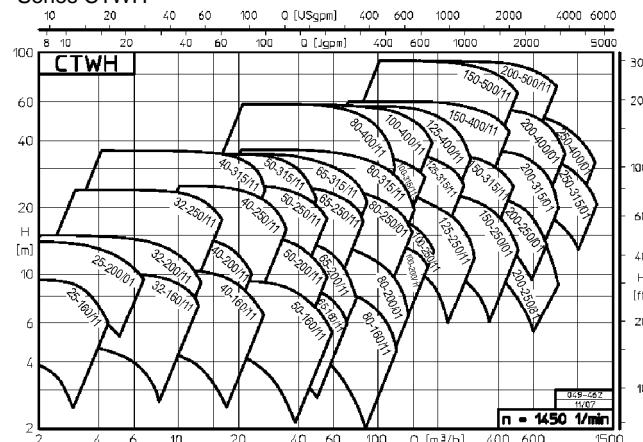
Bearing bracket size	Pump size	Series NTHW	Volute casing	Impeller	Intermediate ring	Casing cover	Bearing bracket	Shaft	Bearing sleeve	Bearing bush	Supporting foot
3	80-400/02	•	1	1		1	1	1	1	1	1
	100-400/02	•	2	2							1
	125-315/01	•	3	3	-						1
	125-400/02	•	4	4	1						2
	150-250/02	•	5	5		2					1
	150-315/01	•	6	6							1
	150-400/02	•	7	7	1						2
	200-250/02	•	8	8	-	2					3
4	200-315/01	•	9	9			2	2	2	2	4
	200-400/01	•	10	10							4
	250-315/01	•	11	11							5
	250-400/01	•	12	12							5
Bearing bracket size	Pump size	Series CTWH	Volute casing	Impeller	Intermediate ring	Casing cover	Bearing bracket	Shaft	Bearing sleeve	Bearing bush	Supporting foot
3	65-315/11	•	13	13			1	1	1	1	6
	80-315/11	•	14	14		1					7
	80-400/11	•	15	15	2						1
	100-250/11	•	16	16		2					6
	100-315/11	•	17	17							7
	100-400/11	•	18	18	2						1
	125-250/11	•	19	19		2					7
	125-315/11	•	20	20							1
	125-400/11	•	21	21	2						2
	150-250/01	•	22	22							1
	200-250/01	•	23	23		2					3
4	150-315/11	•	24	24			3	2	2	2	6
	150-400/11	•	25	25							6
	150-500/11	•	26	26	3						7
	200-315/01	•	27	9							4
	200-400/01	•	28	10							4
	200-500/11	•	29	27	3						8
	250-315/01	•	30	11							5
	250-400/01	•	31	12							5
5	200-250/81	•	32	28	-	4	3	3	3	3	4

Performance graphs

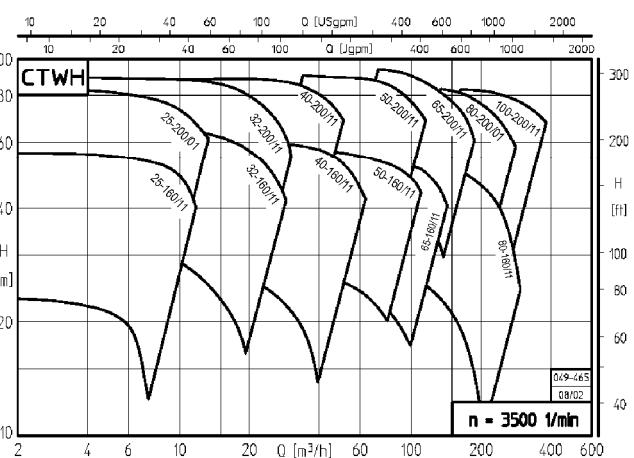
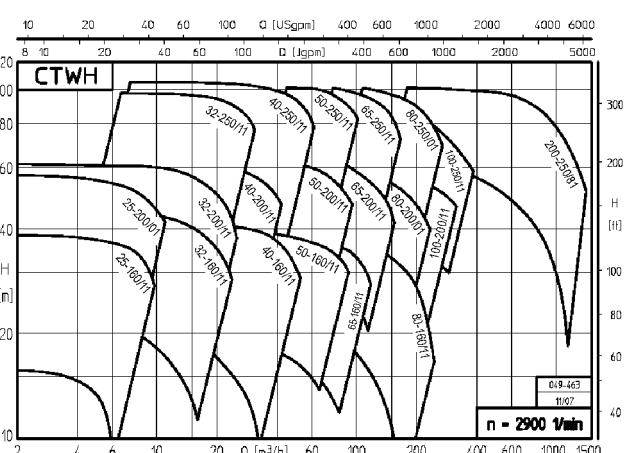
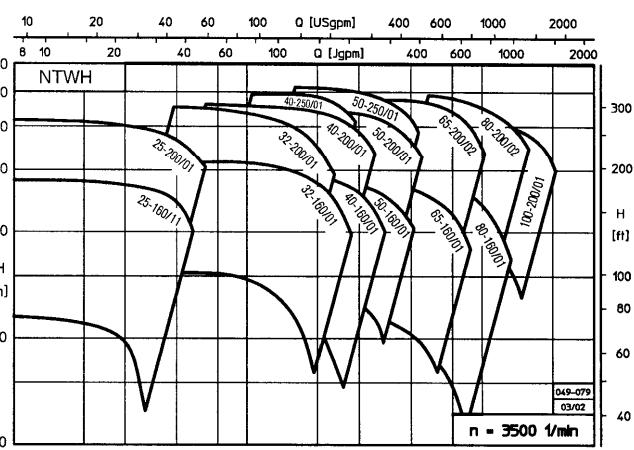
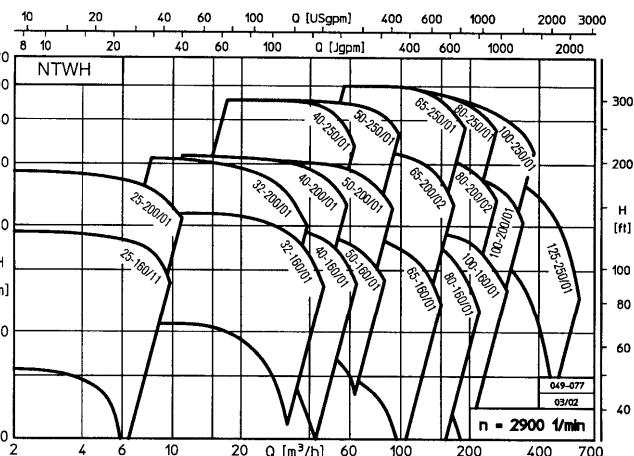
Series NTHW

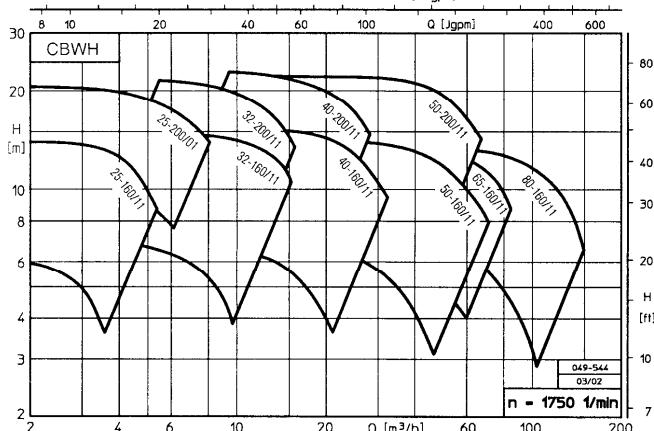
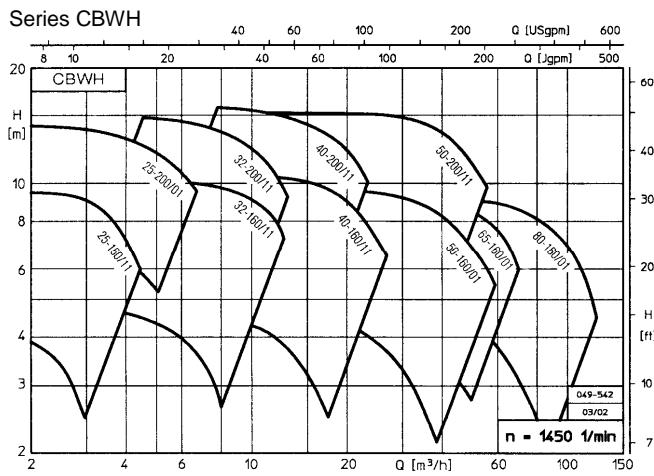
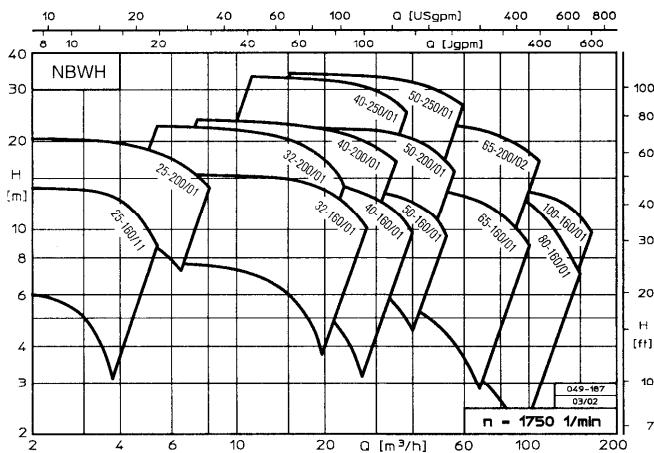
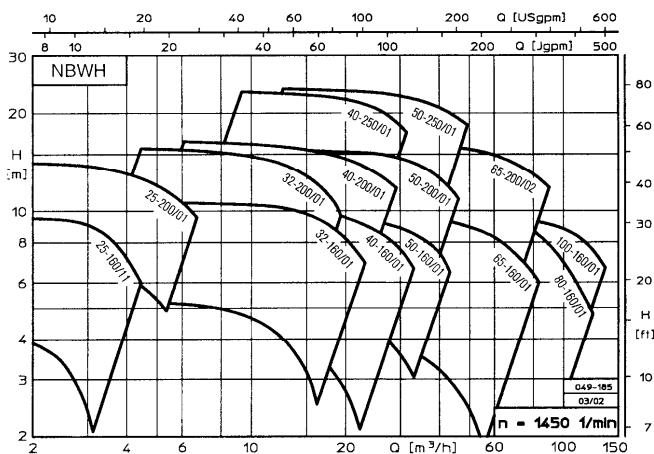


Series CTWH

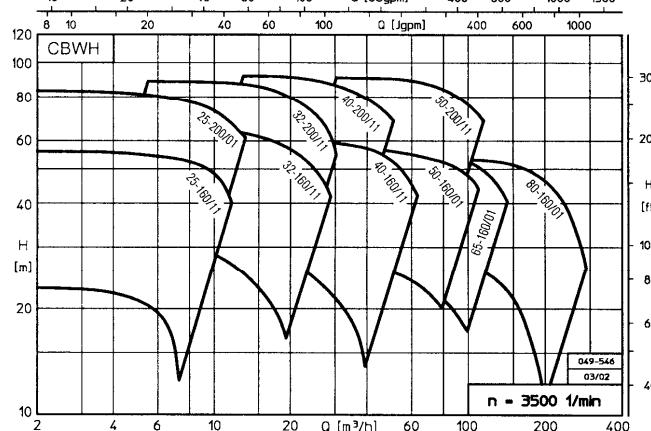
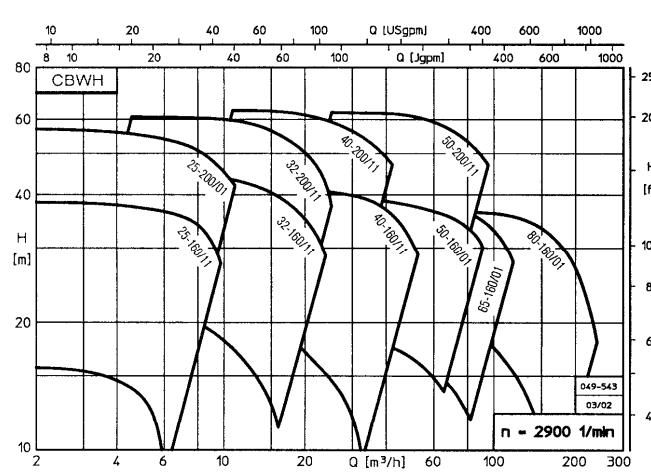
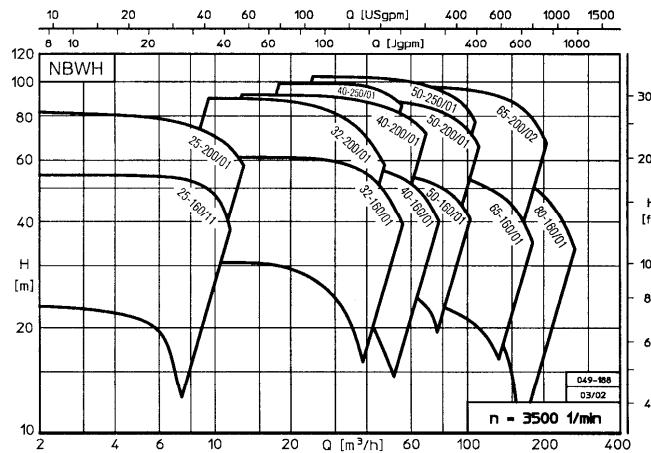
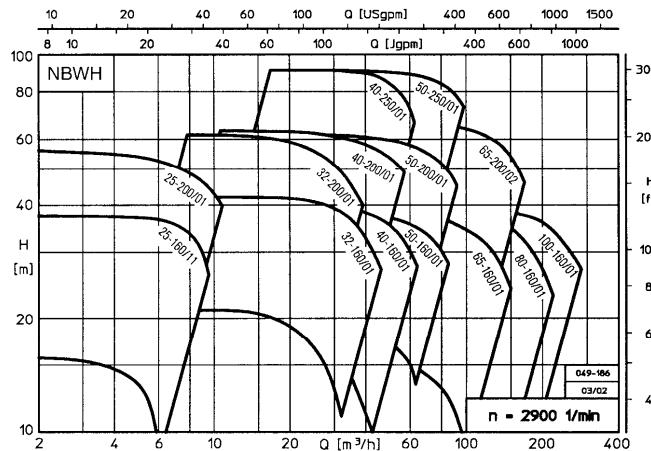


For exact performance data please refer to the individual characteristics.



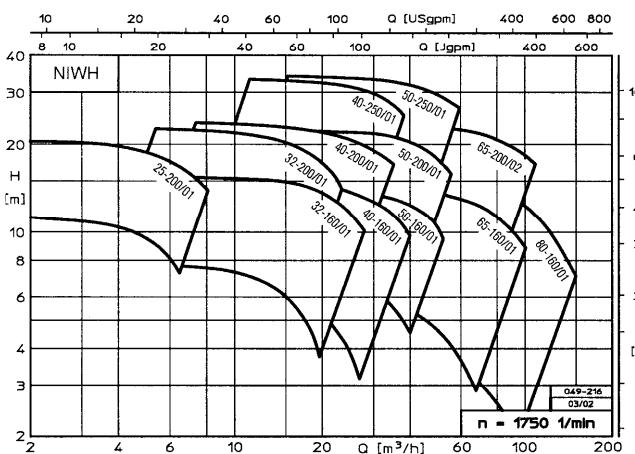
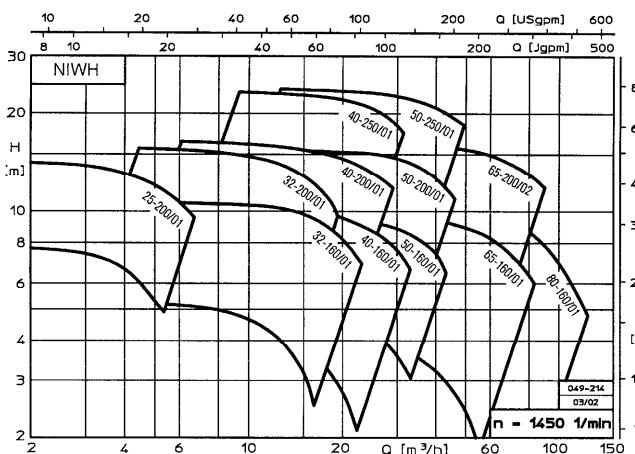
Performance graphs**Series NBWH**

For exact performance data please refer to the individual characteristics.

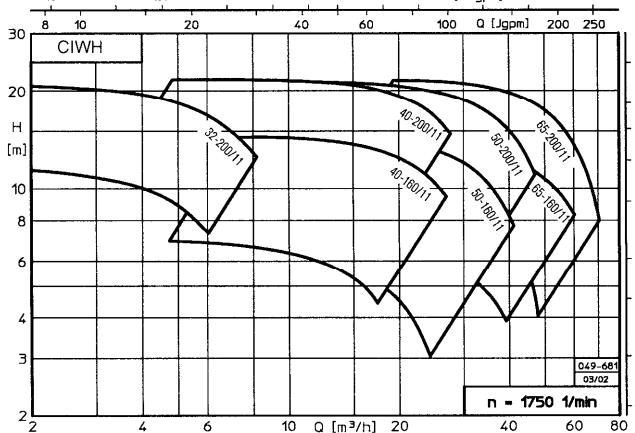
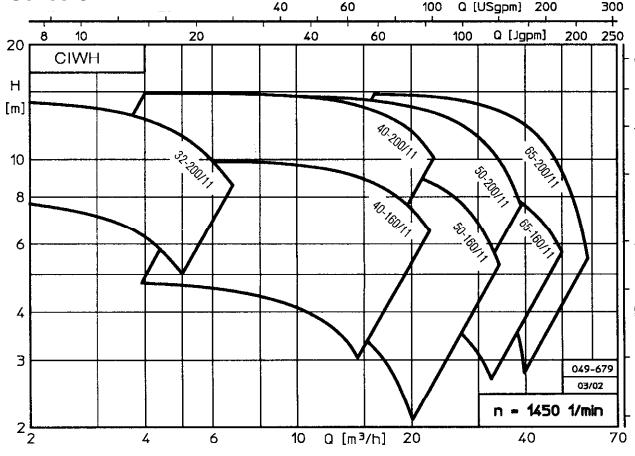


**Performance graphs**

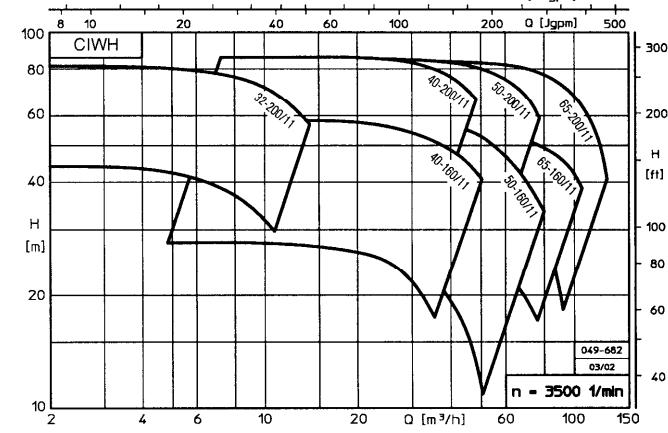
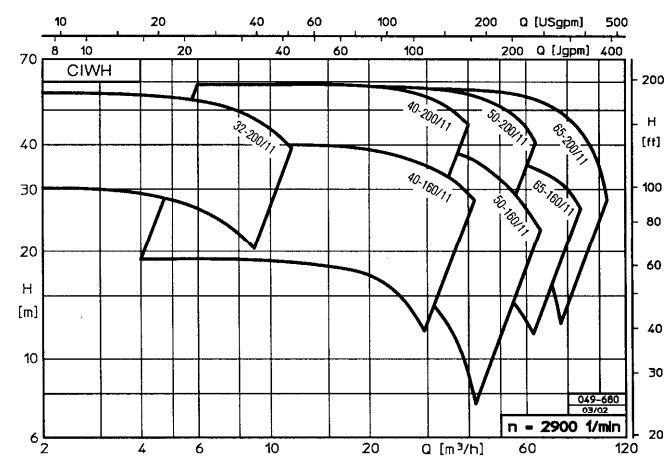
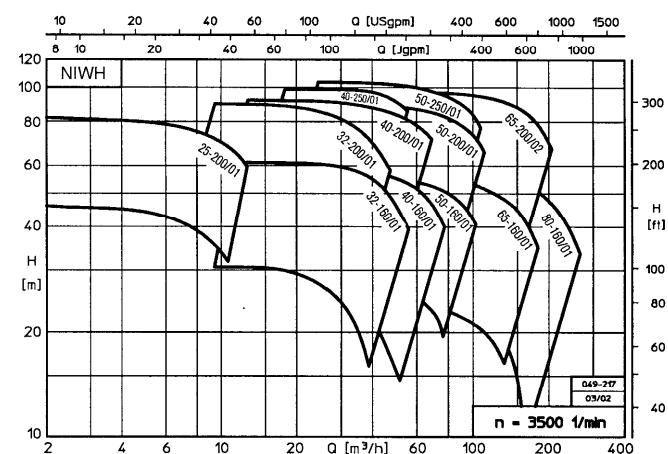
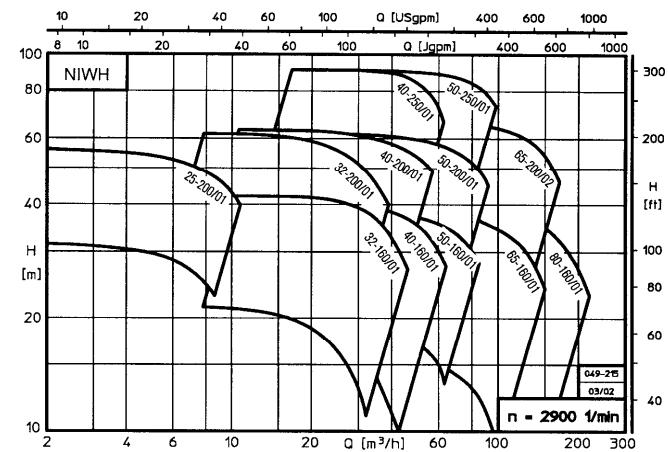
Series NIWH



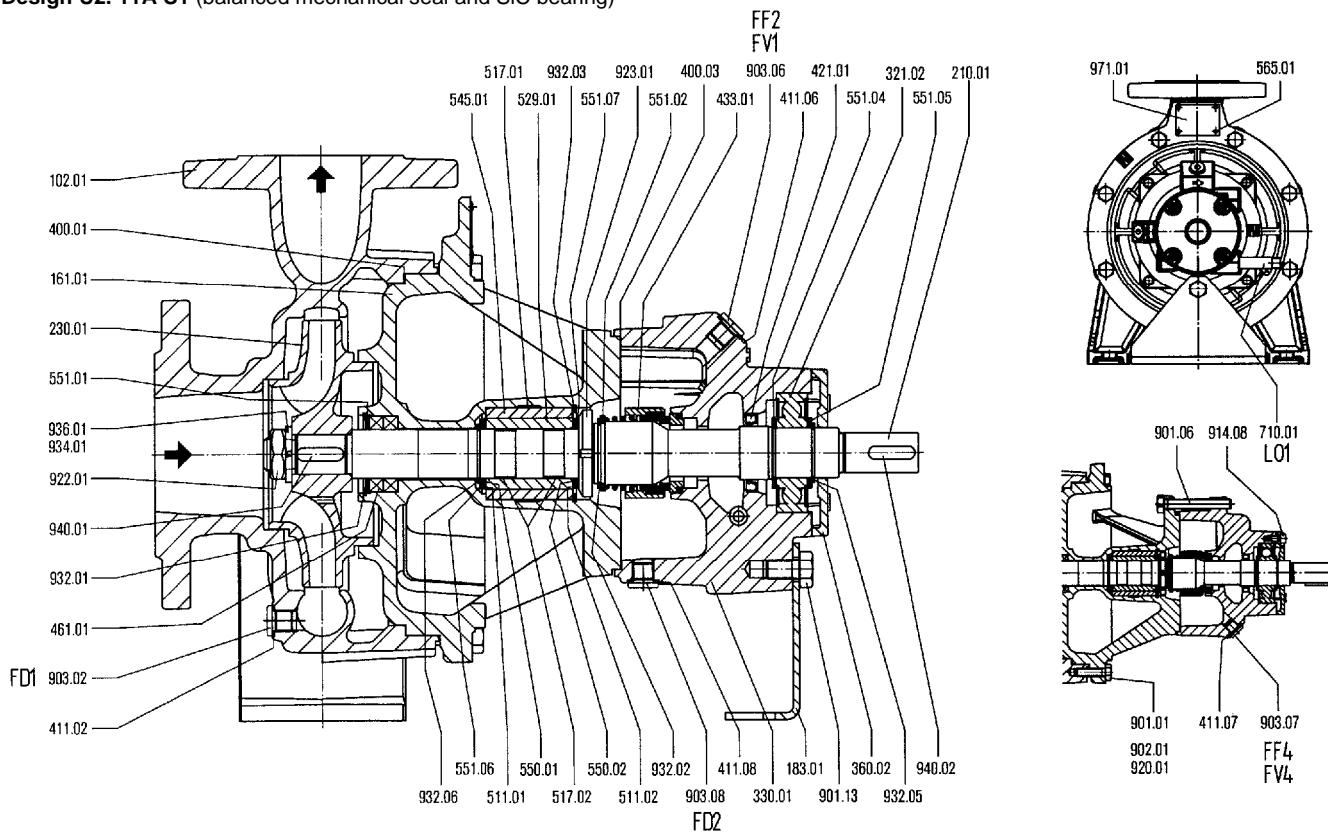
Series CIWH



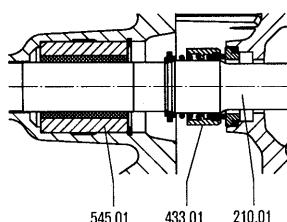
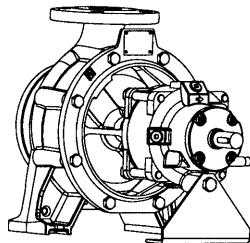
For exact performance data please refer to the individual characteristics.



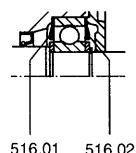
Sectional drawing - Series NTHW/CTWH on bearing bracket size 1, 2, 3 and 4
Design U2. 11A-S1 (balanced mechanical seal and SiC bearing)



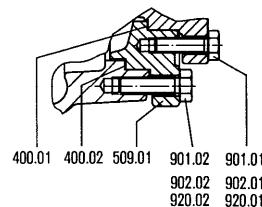
Design U3.3A-K1
 (unbalanced mechanical seal and carbon bearing)



Design of bearing with
bearing bracket size 3
and 4



Design with intermediate ring

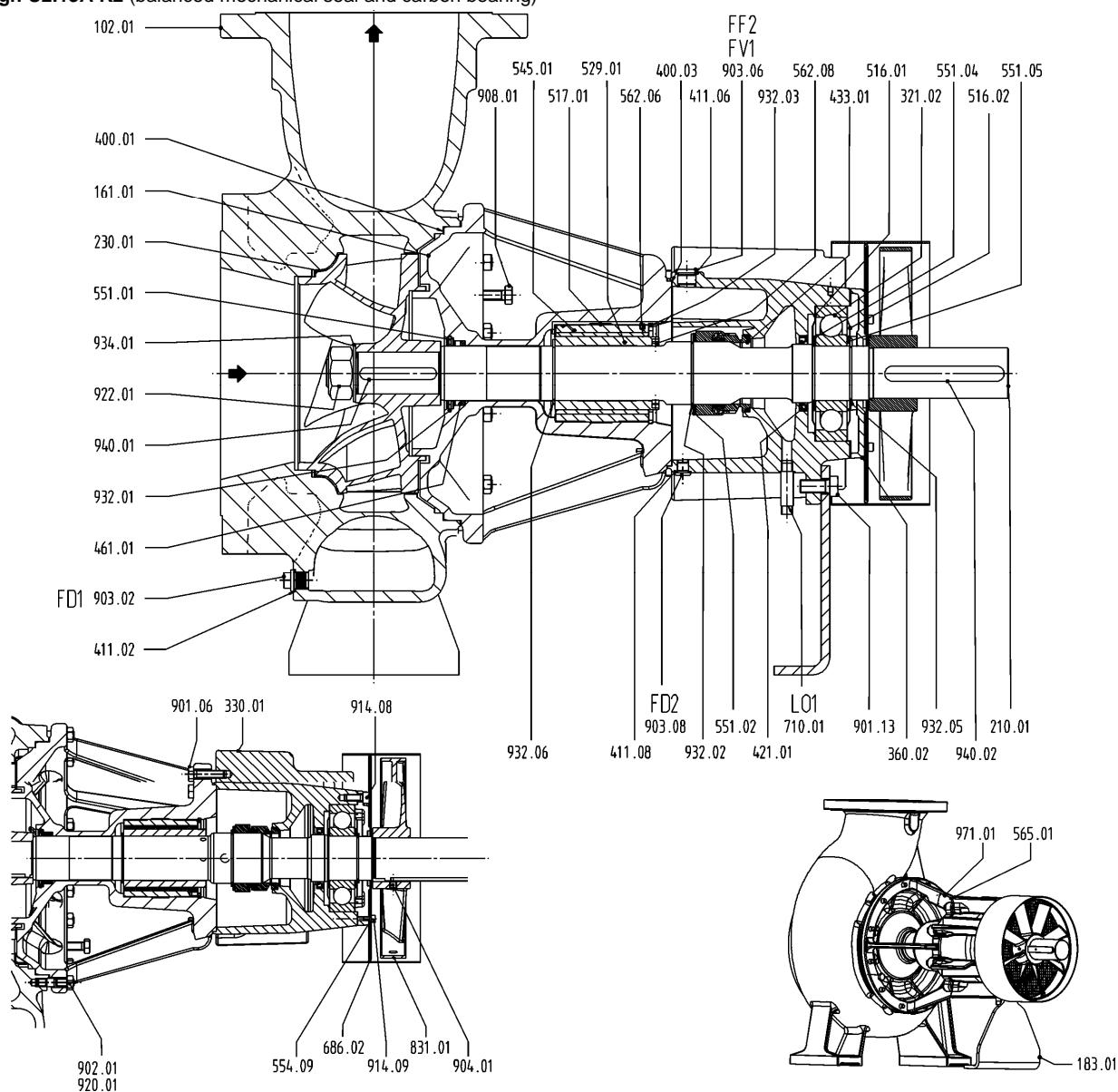


Denomination	Part-No.	Denomination	Part-No.	Denomination	Part-No.
Volute casing	102.01	Bearing sleeve	①529.02	Impeller nut	922.01
Casing cover	161.01	Bearing bush	545.01	Bearing nut	①923.01
Supporting foot	183.01	Disc	①550.01	Circlip	932.01
Shaft	210.01	Disc	①550.02	Circlip	932.02
Impeller	230.01	Disc spacer	551.01	Circlip	932.03
Groove ball bearing	321.02	Disc spacer	551.02	Circlip	932.05
Bearing bracket	330.01	Disc spacer	551.04	Circlip	①932.06
Bearing cover	360.02	Disc spacer	551.05	Spring disc	④934.01
Gasket	400.01	Disc spacer	①551.06	Spring ring	936.01
Gasket	400.02	Disc spacer	①551.07	Key	940.01
Seal ring	411.02	Rivet	565.01	Key	940.02
Seal ring	411.06	Pipe	710.01	Name plate	971.01
Seal ring	411.07	Hexagon screw	901.01	① not present on version with carbon bearing	
Seal ring	411.08	Hexagon screw	901.02	② only with series NTHW bearing bracket s. 4	
Radial shaft seal ring	421.01	Hexagon screw	901.06	③ only with series CTWH	
Mechanical seal	433.01	Stud bolt	②③902.01	④ only with bearing bracket size 3 and 4	
Stuffing box packing	461.01	Stud bolt	③902.02		
Intermediate ring	509.01	Screw plug	903.02		
Centering ring	①511.01	Screw plug	903.06	FD1	Draining
Centering ring	①511.02	Screw plug	903.07	FD2	Draining
Nilos ring	④516.01	Screw plug	903.08	FF2/FV1	Filling/Venting
Nilos ring	④516.02	Socket-head cap screw	914.08	FF4/FV4	Filling/Venting
Flexible damp ring	517.01	Nut	②③920.01	only for vertical block and in-line installations	
Flexible damp ring	①517.02	Nut	③920.02	LO1	Leakage outlet

Anschlüsse

FD1	Draining
FD2	Draining
FF2/FV1	Filling/Venting
FF4/FV4	Filling/Venting
	only for vertical block and in-line installations
LO1	Leakage outlet

**Sectional drawing - Series CTWH 200-250/81 on bearing bracket size 5
Design U2.13A-K2 (balanced mechanical seal and carbon bearing)**



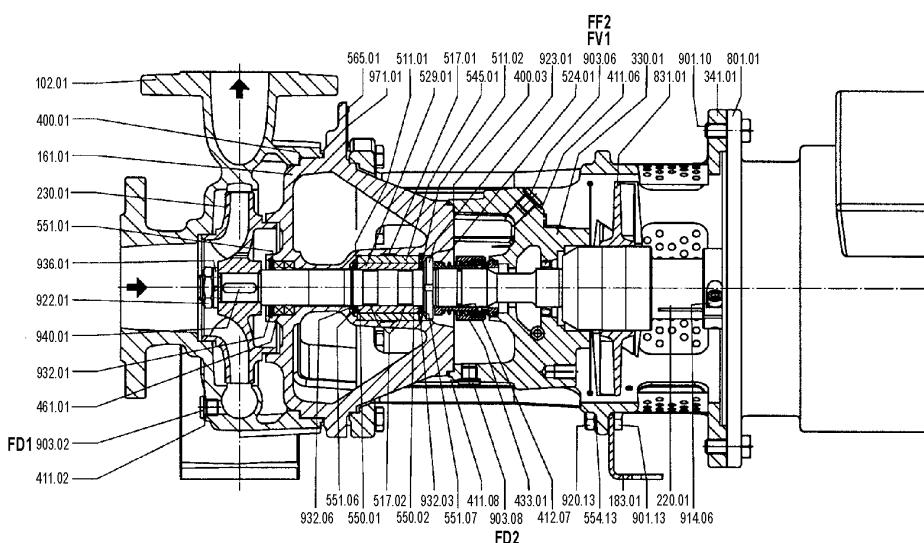
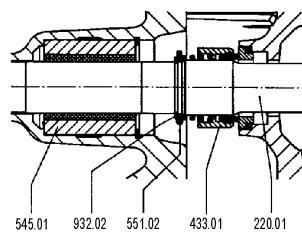
Denomination	Part-No.	Denomination	Part-No.	Denomination	Part-No.
Volute casing	102.01	Disc	554.09	Key	940.01
Casing cover	161.01	Spring dowel pin	562.06	Key	940.02
Supporting foot	183.01	Cylindrical pin	562.08	Name plate	971.01
Shaft	210.01	Rivet	565.01		
Impeller	230.01	Protective grid	686.02		
Groove ball bearing	321.02	Pipe	710.01		
Bearing bracket	330.01	Fan	831.01		
Bearing cover	360.02	Hexagon Screw	901.06		
Gasket	400.01	Hexagon Screw	901.13		
Gasket	400.03	Stud bolt	902.01		
Seal ring	411.02	Screw plug	903.02		
Seal ring	411.06	Screw plug	903.06		
Seal ring	411.08	Screw plug	903.08		
Radial shaft seal ring	421.01	Setscrew	904.01		
Mechanical seal	433.01	Hexagon Screw	908.01		
Packing ring	461.01	Socket-head cap screw	914.08		
Nilos-ring	516.01	Socket-head cap screw	914.09		
Nilos-ring	516.02	Nut	920.01		
Flexible damp ring	517.01	Nut	922.01		
Bearing sleeve	529.01	Circlip	932.01		
Bearing bush	545.01	Circlip	932.02		
Disc spacer	551.01	Circlip	932.03		
Supporting disc	551.02	Circlip	932.05		
Supporting disc	551.04	Circlip	932.06		
Supporting disc	551.05	Spring disc	934.01		

Connections

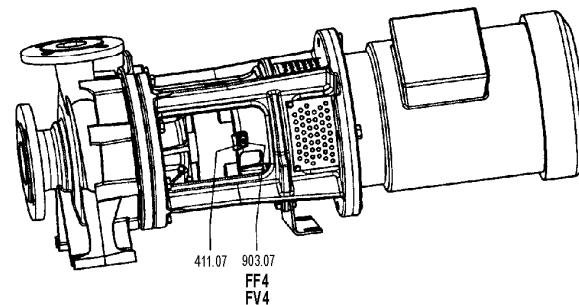
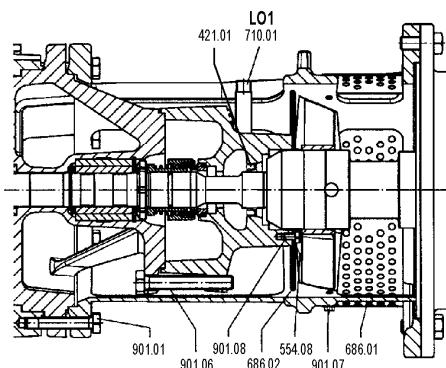
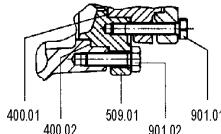
FD1	Draining
FD2	Draining
FF2/FV1	Filling/Venting
FF4/FV4	Filling/Venting only for vertical block and in-line installations
L01	Leakage outlet

Sectional drawing - Series NBWH/CBWH

Design U2.11A-S1 (balanced mechanical seal and SiC bearing)

Design U3.3A-K1
(unbalanced mechanical seal and carbon bearing)

Design with Intermediate ring



Denomination	Part-No.	Denomination	Part-No.	Denomination	Part-No.
Volute casing	102.01	Bearing bush	545.01	Screw plug	903.08
Casing cover	161.01	Disc	①550.01	Socket-head cap screw	914.06
Supporting foot	183.01	Disc	①550.02	Nut	920.13
Plug-in shaft	220.01	Disc spacer	551.01	Impeller nut	922.01
Impeller	230.01	Disc spacer	②551.02	Bearing nut	①923.01
Bearing bracket	330.01	Disc spacer	①551.06	Circlip	932.01
Motor stool	341.01	Disc spacer	①551.07	Circlip	②932.02
Gasket	400.01	Washer	554.08	Circlip	932.03
Gasket	400.02	Washer	554.13	Circlip	①932.06
Gasket	400.03	Rivet	565.01	Spring ring	936.01
Seal Ring	411.02	Guard plate	686.01	Key	940.01
Seal Ring	411.06	Protective grid	686.02	Name plate	971.01
Seal Ring	411.07	Pipe	710.01		
Seal Ring	411.08	Flange motor	801.01	① not present on version with carbon bearing	
O-ring	①412.07	Fan	831.01	② not present on version with SiC-bearing	
Radial shaft seal ring	421.01	Hexagon screw	901.01		
Mechanical seal	433.01	Hexagon screw	901.02		
Stuffing box packing	461.01	Hexagon screw	901.06		
Intermediate ring	509.01	Hexagon screw	901.07		
Centering ring	①511.01	Hexagon screw	901.08		
Centering ring	①511.02	Hexagon screw	901.10		
Flexible clamp ring	517.01	Hexagon screw	901.13		
Flexible clamp ring	①517.02	Screw plug	903.02		
Shaft sleeve	①524.01	Screw plug	914.06		
Bearing sleeve	①529.01	Screw plug	903.07		

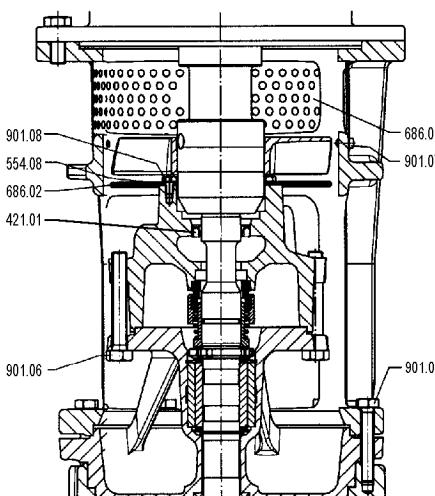
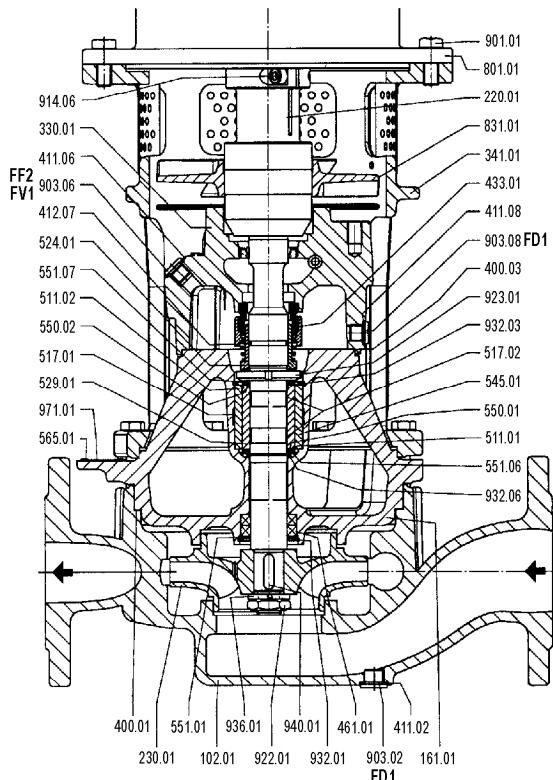
① not present on version with carbon bearing
② not present on version with SiC-bearing

Connections

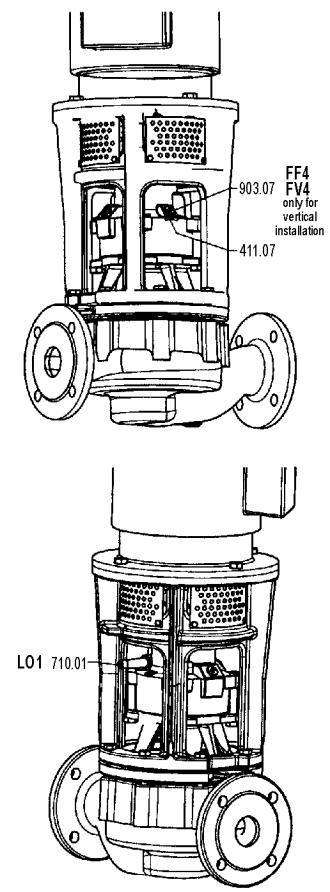
FD1	Draining
FD2	Draining
FF2/FV1	Filling/Venting
FF4/FV4	Filling/Venting
	only for vertical block and in-line installations
LO1	Leakage outlet



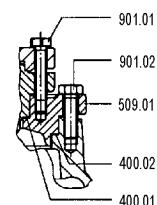
Sectional drawing - Series NIWH/CIWH
Design U2.11A-S1 (balanced mechanical seal and SiC bearing)



Design U3.3A-K1
(unbalanced mechanical seal and carbon bearing)



Design with intermediate ring

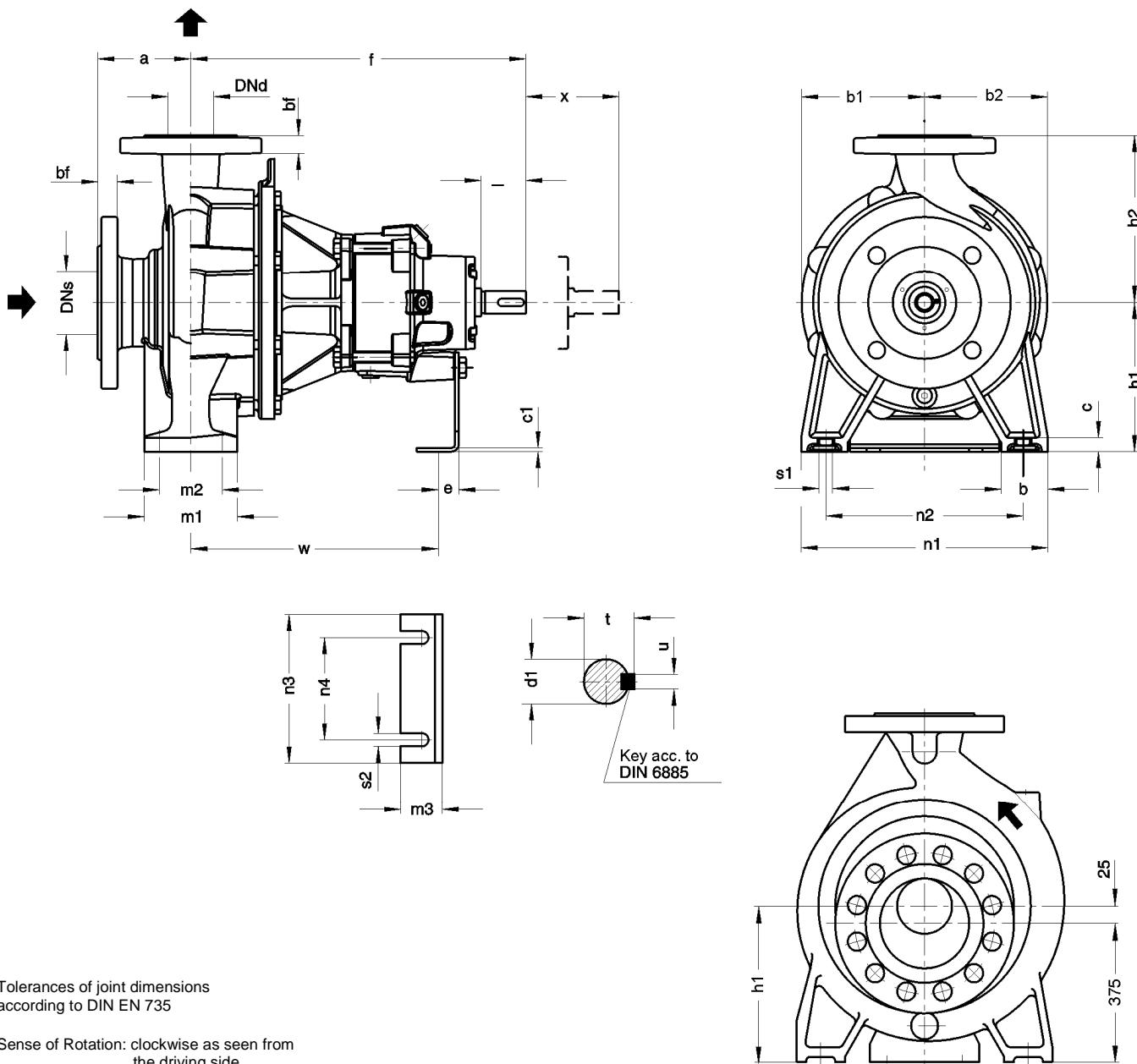


Denomination	Part-No.	Denomination	Part-No.	Denomination	Part-No.
Volute casing	102.01	Disc	①550.01	Bearing nut	①923.01
Casing cover	161.01	Disc	①550.02	Circlip	932.01
Plug-in shaft	220.01	Disc spacer	551.01	Circlip	②932.02
Impeller	230.01	Disc spacer	②551.02	Circlip	932.03
Bearing bracket	330.01	Disc spacer	①551.06	Circlip	①932.06
Motor stool	341.01	Disc spacer	①551.07	Spring ring	936.01
Gasket	400.01	Washer	554.08	Key	940.01
Gasket	400.02	Rivet	565.01	Name plate	971.01
Gasket	400.03	Guard plate	686.01		
Seal Ring	411.02	Protective grid	686.02		
Seal Ring	411.06	Pipe	710.01		
Seal Ring	411.07	Flange motor	801.01		
Seal Ring	411.08	Fan	831.01		
O-ring	①412.07	Hexagon Screw	901.01		
Radial shaft seal ring	421.01	Hexagon Screw	901.02		
Mechanical seal	433.01	Hexagon Screw	901.06		
Stuffing box packing	461.01	Hexagon Screw	901.07		
Intermediate ring	509.01	Hexagon Screw	901.08		
Centering ring	①511.01	Hexagon Screw	901.10	Connections	
Centering ring	①511.02	Screw plug	903.02	FD1	Draining
Flexible clamp ring	517.01	Screw plug	914.06	FD2	Draining
Flexible clamp ring	①517.02	Screw plug	903.07	FF2/FV1	Filling/Venting
Shaft sleeve	①524.01	Screw plug	903.08	FF4/FV4	Filling/Venting
Bearing sleeve	①529.01	Socket-hed cap screw	914.06		only for vertical installation
Bearing bush	545.01	Impeller nut	922.01	LO1	Leakage outlet

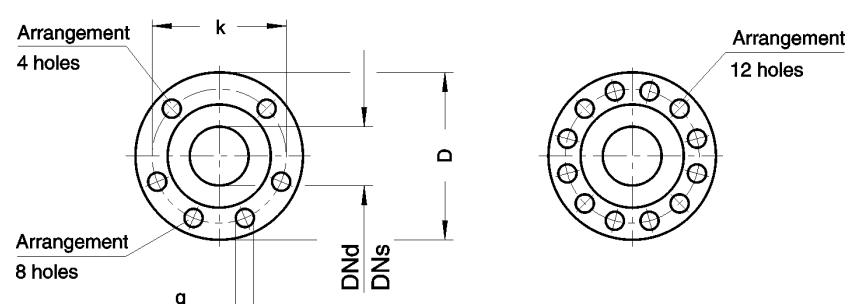
① not present on version with carbon bearing
② not present on version with SiC-bearing

Connections

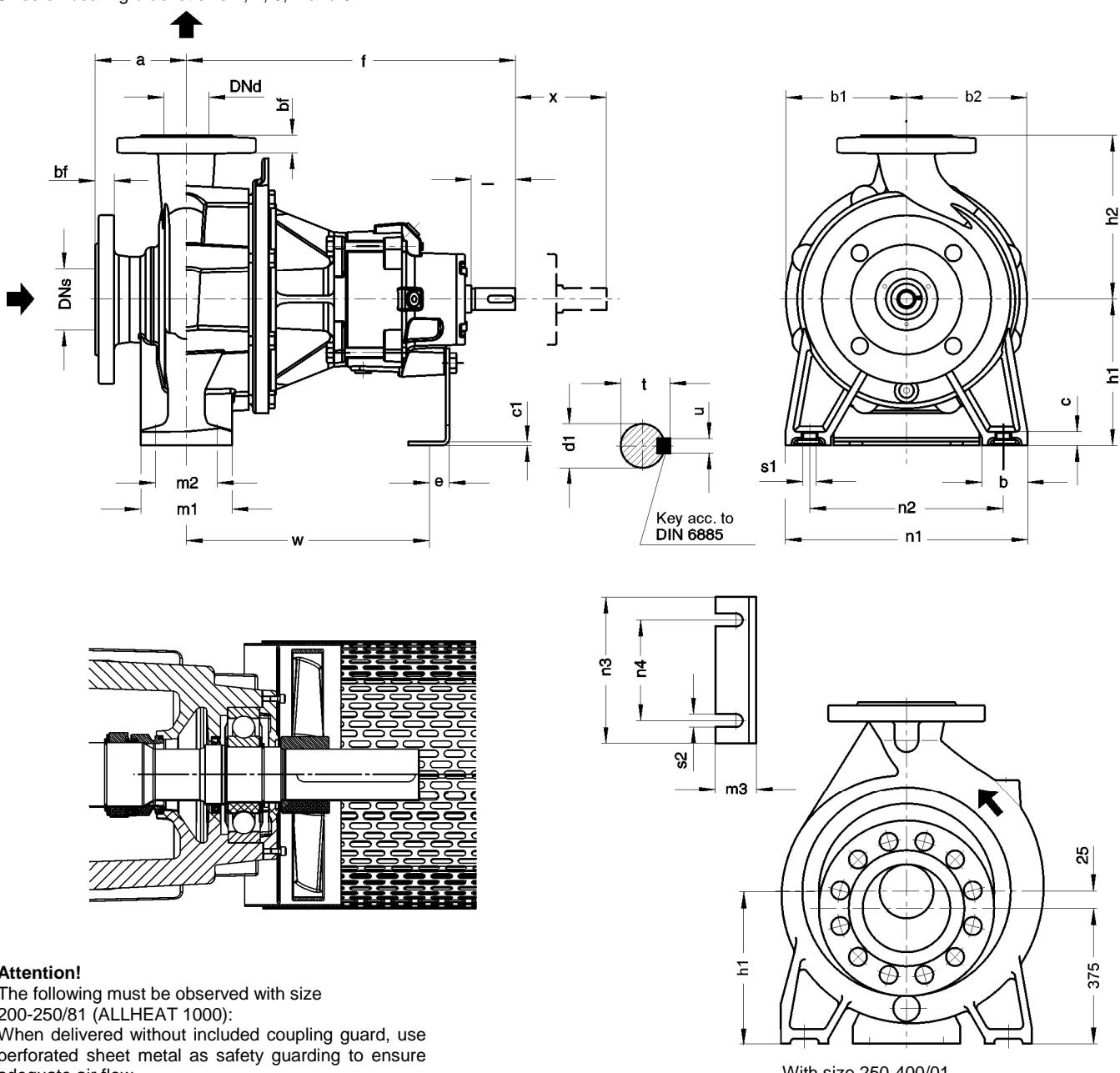
Pump dimensions - Series NTHW
Sizes on bearing bracket sizes 1, 2, 3 and 4



Flanges acc. to EN 1092-2 PN 16					
DNs/DNd	D	bf	k	G	No. of holes
25	115	16	85	14	4
32	140	18	100	19	4
40	150	18	110	19	4
50	165	20	125	19	4
65	185	20	145	19	4
80	200	22	160	19	8
100	220	24	180	19	8
125	260	26	210	19	8
150	285	26	240	23	8
200	340	30	295	23	12
250	405	32	355	28	12
300	460	32	410	28	12



Pump dimensions – Series CTWH
Sizes on bearing bracket size 1, 2, 3, 4 and 5

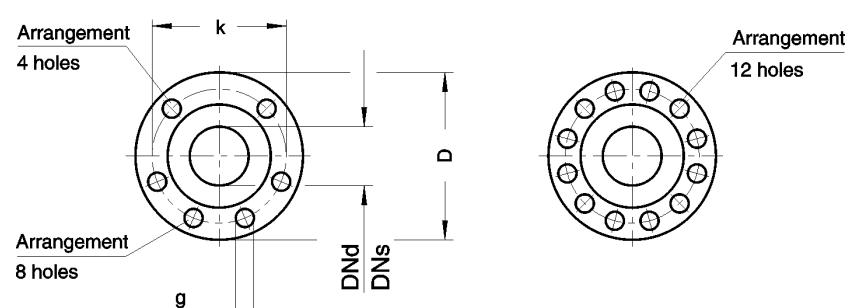
**Attention!**

The following must be observed with size
200-250/81 (ALLHEAT 1000):
When delivered without included coupling guard, use
perforated sheet metal as safety guarding to ensure
adequate air flow.

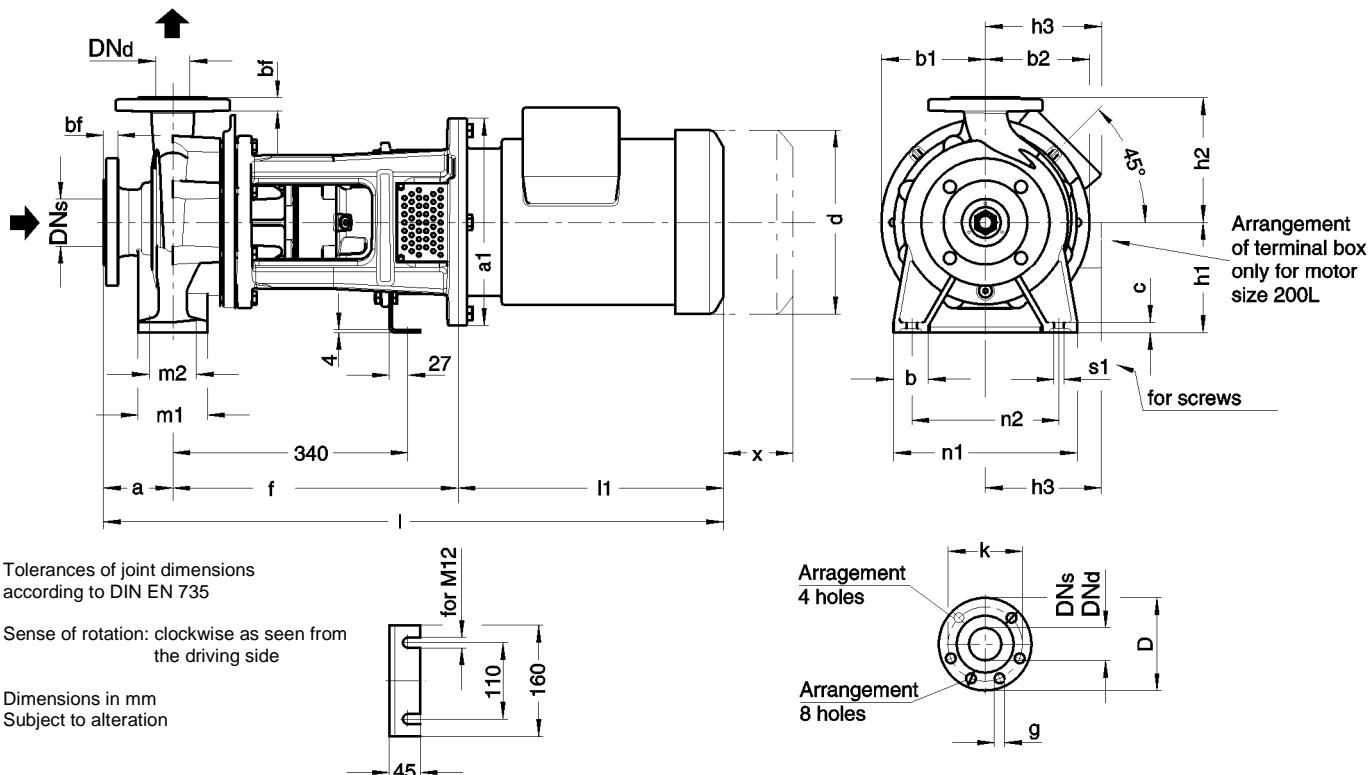
Tolerances of joint dimensions according to DIN EN 735
Sense of Rotation: clockwise as seen from the driving side

Dimensions in mm
Subject to alteration

Flanges acc. to EN 1092-2 PN 25					
DNs/DNd	D	bf	k	g	No. of holes
25	115	18	85	14	4
32	140	20	100	19	4
40	150	20	110	19	4
50	165	22	125	19	4
65	185	24	145	19	8
80	200	26	160	19	8
100	235	28	190	23	8
125	270	30	220	28	8
150	300	34	250	28	8
200	360	34	310	28	12
250	425	36	370	31	12
300	485	40	430	31	16



Unit dimensions - Series NBWH/CBWH
Sizes with a shaft diameter of 32 at the shaft seal



Tolerances of joint dimensions according to DIN EN 735

Sense of rotation: clockwise as seen from the driving side

Dimensions in mm
Subject to alteration

Series NBWH

Flanges acc.to EN 1092-2 PN 16					
DNs/DNd	D	bf	k	g	No. of holes
25	115	16	85	14	4
32	140	18	100	19	4
40	150	18	110	19	4
50	165	20	125	19	4
65	185	20	145	19	4
80	200	22	160	19	8
100	220	24	180	19	8
125	250	26	210	19	8

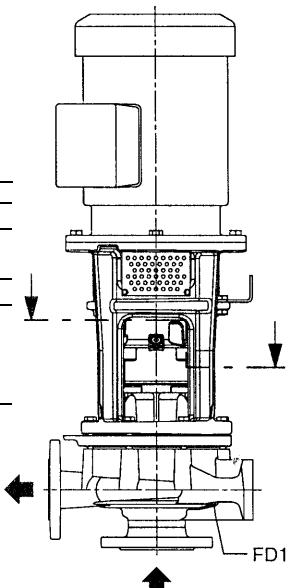
Connections					
Draining		Filling/ Venting		Leakage outlet	
FD1	FD2	FF2 / FV1	FF4 / FV4	LO1	
G 1/4	G 1/4	G 1/4	G 1/4 only for vertical installation	G 1/4	

Connection FD1 in size 25-160/11 and 25-200/01 each G 1/2

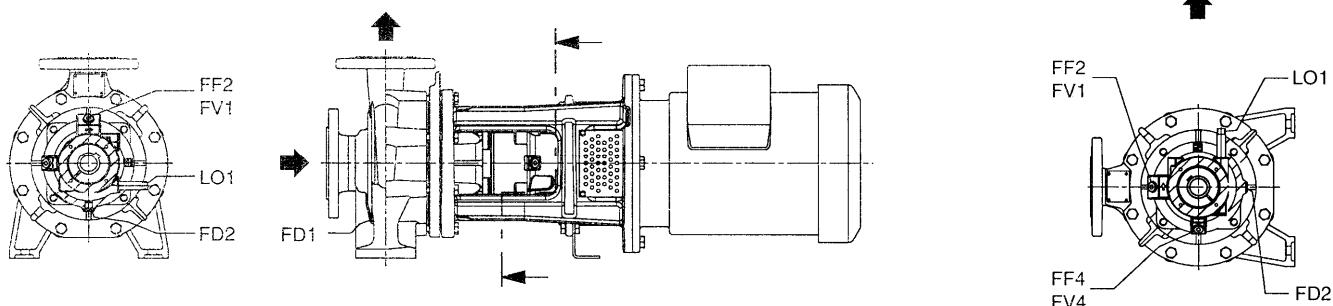
Series CBWH

Flanges acc.to EN 1092-2 PN 25					
DNs/DNd	D	bf	k	g	No. of holes
25	115	18	85	14	4
32	140	20	100	19	4
40	150	20	110	19	4
50	165	22	125	19	4
65	185	24	145	19	8
80	200	26	160	19	8
100	235	28	190	23	8
125	270	30	220	28	8

Connections					
Draining		Filling/ Venting		Leakage outlet	
FD1	FD2	FF2 / FV1	FF4 / FV4	LO1	
G 1/2	G 1/4	G 1/4	G 1/4 only for vertical installation	G 1/4	



Connections for horizontal and vertical installation



Unit dimensions - Series NWH

The motor dimensions as indicated are approximate values.
Exact data depend on the motor make.

When using special motors, it must be noted that depending upon the enclosure, different performances are allocated to the individual sizes. The main dimensions are changed accordingly.

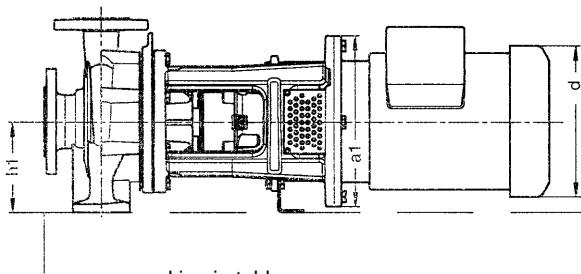
Attention: Motors provided by the client must also contain a axial thrust bearing on the drive side!

Binding motor dimension information must be submitted with each order.

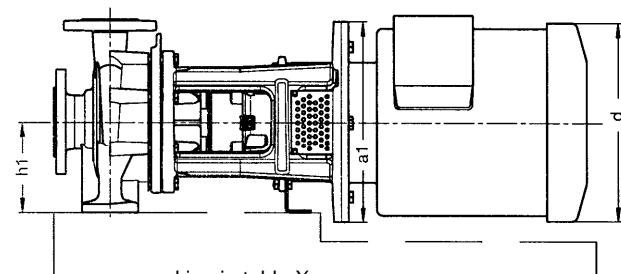
$$\begin{array}{c} a_1 \\ h1 > \frac{—}{2} \text{ or } \frac{d}{2} \end{array}$$

Base plate and/or foundation design

$$\begin{array}{c} a_1 \\ h1 \leq \frac{—}{2} \text{ or } \frac{d}{2} \end{array}$$



marking in table •

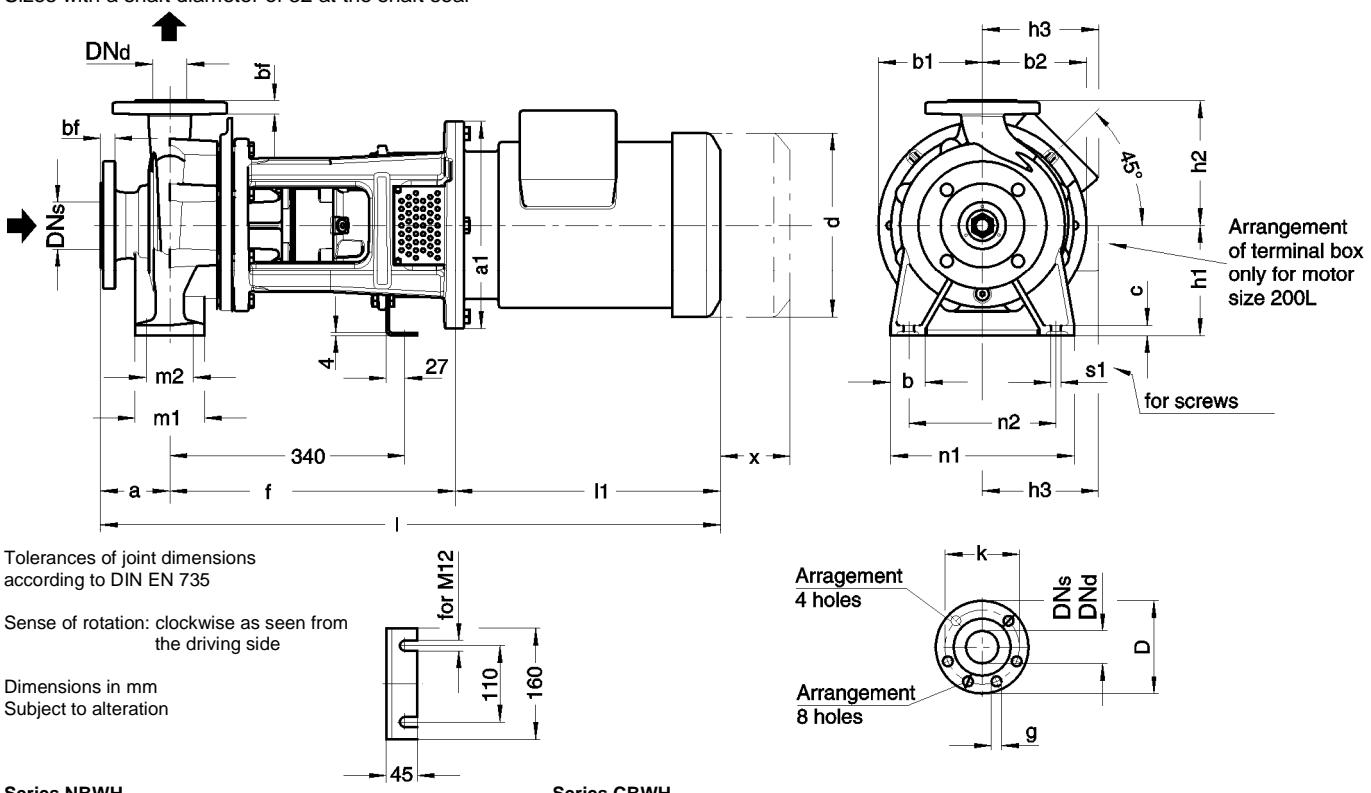


marking in table X

n = 1450 / 1750 1/minDimensions in mm
Subject to alteration

Pump size	Motor size	Base plate and/or foundation design see above	Performance	Unit dimensions																			Dismantling dim.	Assignment plug-in shaft/motor stool		
				Pump																						
				Flanges						Foot																
KW	DNs	DNd	a	f	b1	b2	h1	h2	b	c	m1	m2	n1	n2	s1	a1	d	h3	l1	l	x					
25-160/11	80	•	0.55	0.75	40	25	80	371	128	128	132	160	50	15	100	70	240	190	M 12	200	162	124	234	685	102	19/200
25-200/01	80	•	0.55	0.75	40	25	80	371	132	132	160	180	50	15	100	70	240	190	M 12	200	162	124	234	685	102	19/200
	90 S	•		1,1																	181	130	282	733	24/200	
	80	•	0.55	0.75																	162	124	234	685	102	19/200
32-160/01	90 S	•		1,1	50	32	80	371	123	123	132	160	50	15	100	70	240	190	M 12	200	181	130	282	733	102	24/200
	90 L	•		1,5																	181	130	282	733	24/200	
	100 L	•		2,2	3															250	203	158	312	763	28/250	
	80	•	0.55	0.75																	162	124	234	685	102	19/200
32-200/01	90 S	•		1,1	50	32	80	371	124	130	160	180	50	15	100	70	240	190	M 12	200	181	130	282	733	102	24/200
	90 L	•		1,5																181	130	282	733	24/200		
	100 L	•		2,2	3															250	203	158	312	763	28/250	
	80	•	0.55	0.75																162	124	234	685	102	19/200	
40-160/01	90 S	•		1,1	65	40	80	371	123	123	132	160	50	15	100	70	240	190	M 12	200	181	130	282	733	102	24/200
	90 L	•		1,5																181	130	282	733	24/200		
	100 L	•		2,2	3															250	203	158	312	763	28/250	
	80	•	0.55	0.75																162	124	234	685	102	19/200	
40-200/01	90 S	•		1,1	65	40	100	371	125	135	160	180	50	15	100	70	265	212	M 12	200	181	130	282	753	102	24/200
	90 L	•		1,5																181	130	282	753	24/200		
	100 L	•		2,2	3															250	203	158	312	783	28/250	
	80	•	0.55	0.75																162	124	234	705	102	19/200	
40-250/01	90 S	•		1,1	65	40	100	371	150	156	180	225	65	15	125	95	320	250	M 12	200	181	130	282	705	102	24/200
	90 L	•		1,5																181	130	282	705	24/200		
	100 L	•		2,2	3															250	203	158	312	783	28/250	
	112 M	•		4																228	171	335	806	85	28/250	
	132 S	•		5,5																300	266	196	375	887	38/300	

Unit dimensions – Series NBWH/CBWH
Sizes with a shaft diameter of 32 at the shaft seal

**Series NBWH**

Flanges acc. to EN 1092-2 PN 16					
DNs/DNd	D	bf	k	g	No. of Holes
25	115	16	85	14	4
32	140	18	100	19	4
40	150	18	110	19	4
50	165	20	125	19	4
65	185	20	145	19	4
80	200	22	160	19	8
100	220	24	180	19	8
125	250	26	210	19	8

Connections

Draining		Filling/Venting		Leakage outlet
FD1	FD2	FF2 / FV1	FF4 / FV4	LO1
G 1/4	G 1/4	G 1/4	G 1/4 only for vertical installation	G 1/4

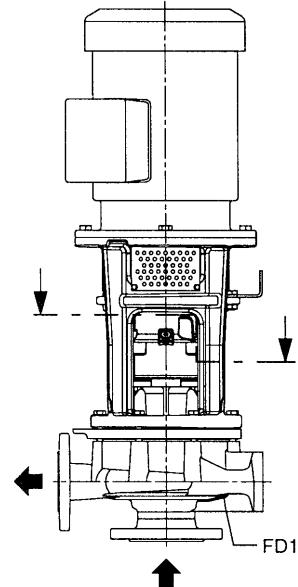
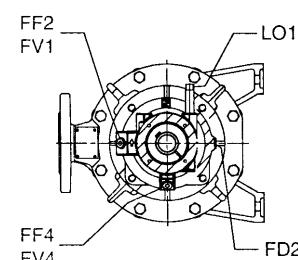
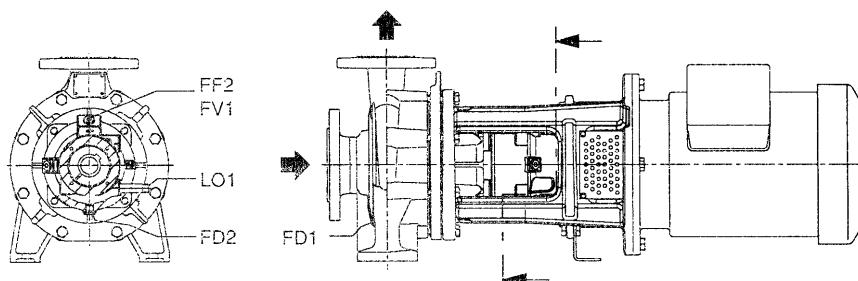
Connection FD1 in size 25-160/11 and 25-200/01 each G 1/2

Series CBWH

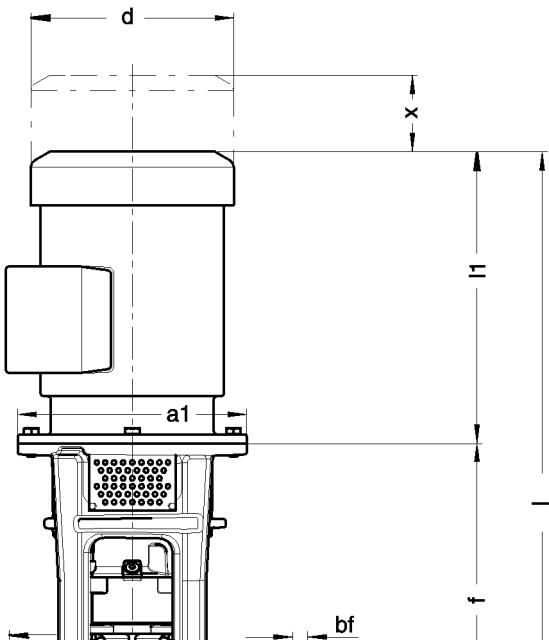
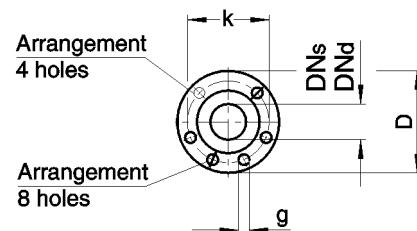
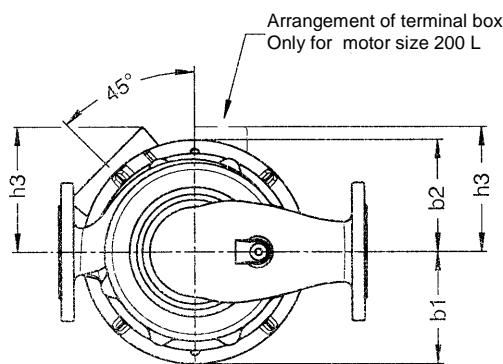
Flanges acc. to EN 1092-2 PN 25					
DNs/DNd	D	bf	k	g	No. of holes
25	115	18	85	14	4
32	140	20	100	19	4
40	150	20	110	19	4
50	165	22	125	19	4
65	185	24	145	19	8
80	200	26	160	19	8
100	235	28	190	23	8
125	270	30	220	28	8

Connections

Draining		Filling/Venting		Leakage outlet
FD1	FD2	FF2 / FV1	FF4 / FV4	LO1
G 1/2	G 1/4	G 1/4	G 1/4 only for vertical installation	G 1/4

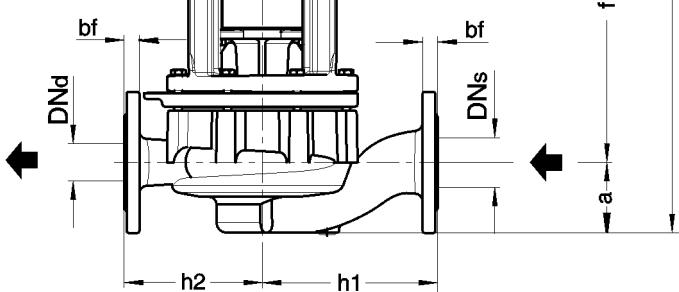
**Connections for horizontal and vertical installation**

Unit dimensions – Series NIWH
Sizes with a shaft diameter of 32 at the shaft seal

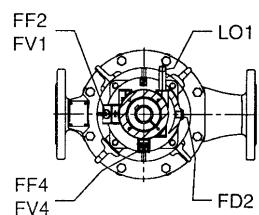
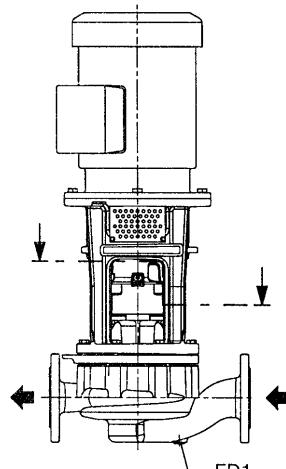
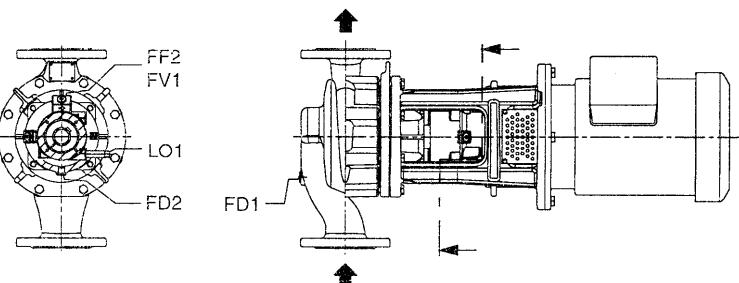


Flanges acc. to EN 1092-2 PN 16					
DNs/DNd	D	bf	k	g	No. of holes
32	140	18	100	19	4
40	150	18	110	19	4
50	165	20	125	19	4
65	185	20	145	19	4
80	200	22	160	19	8
100	220	24	180	19	8

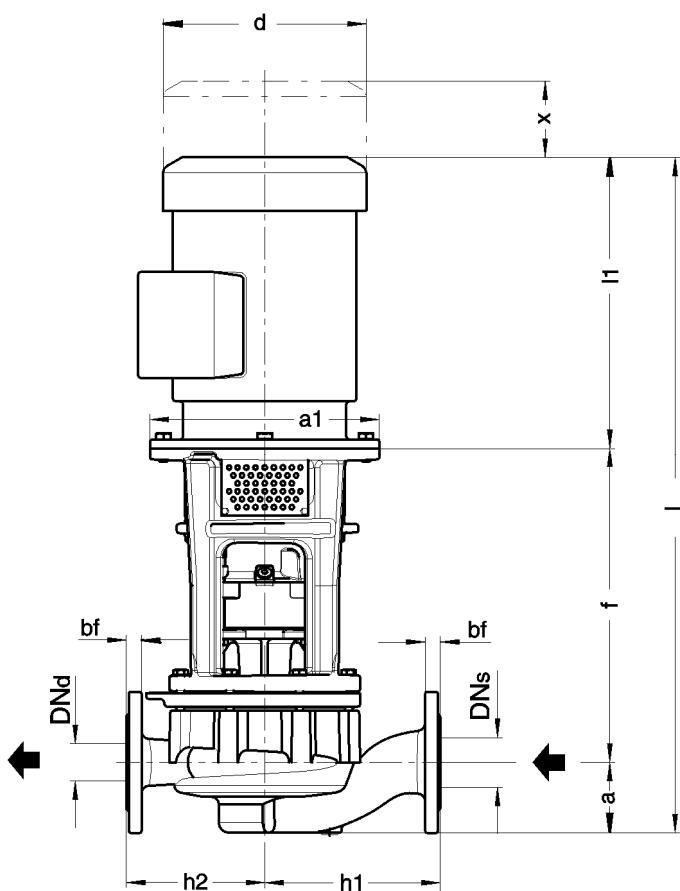
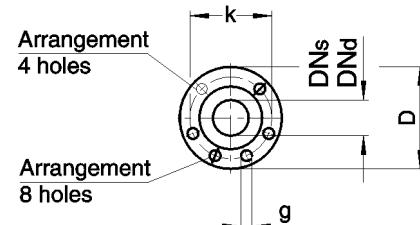
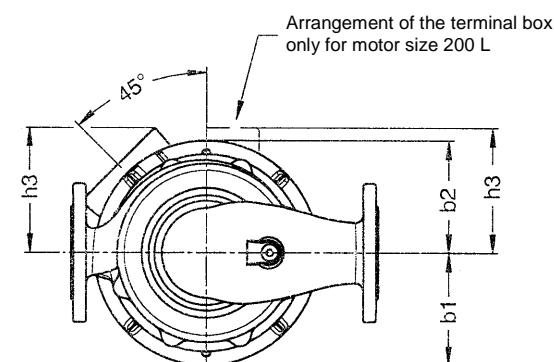
Connections					
Draining		Filling/Venting		Leakage outlet	
FD1	FD2	FF2 / FV1	FF4 / FV4	L01	
G 3/8	G 1/4	G 1/4	G 1/4 only for vertical installation	G 1/4	



Connections for horizontal and vertical installation



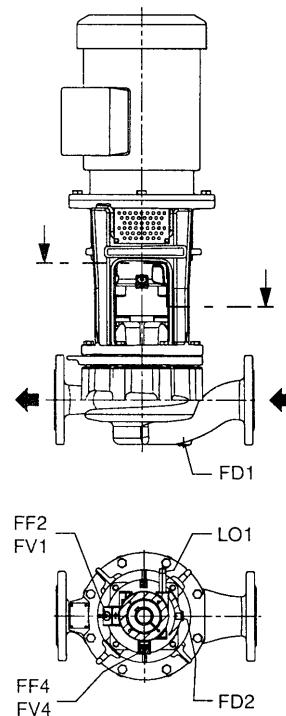
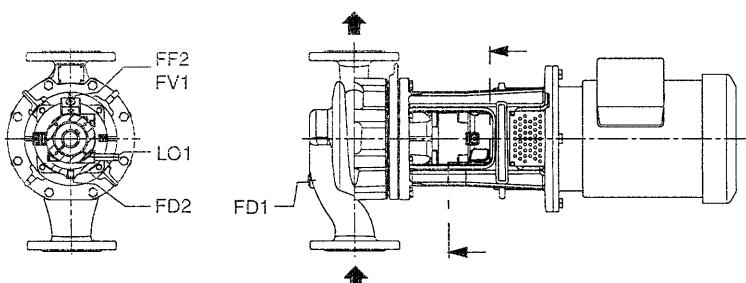
Unit dimensions – Series CIWH
Sizes with a shaft diameter 32 at the shaft seal



Flange acc. to EN 1092-2 PN 25					
DNs/DNd	D	bf	k	g	No. of holes
32	140	20	100	19	4
40	150	20	110	19	4
50	165	22	125	19	4
65	185	24	145	19	8

Connections				
Draining		Filling/ Venting		Leakage outlet
FD1	FD2	FF2 / FV1	FF4 / FV4	L01
G 1/2	G 1/4	G 1/4	G 1/4 only for vertical installation	G 1/4

Connections for horizontal and vertical installation



Unit dimensions - Series CIWH

The motor dimensions as indicated are approximate values.
Exact data depend on the motor make.

When using special motors, it must be noted that depending upon the enclosure, different performances are allocated to the individual sizes. The main dimensions are changed accordingly.

Attention: Motors provided by the client must also contain a axial thrust bearing on the drive side!

Binding motor dimension information must be submitted with each order.

Tolerances of joint dimensions
similar to DIN EN 735

n = 1450 / 1750 1/min

Sense of rotation: clockwise as seen from
the driving side

Dimensions in mm
Subject to alteration

Pump size	Motor size	Performance	Unit dimensions											Assignment plug-in shaft/ motor stool				
			Pump							Motor dimensions approximated, depending on manufacturer								
			Flange		KW	DNs	DNd	a	f	b1	b2	h1	h2	a1	d	h3	l1	l
32-200/11	80	0,55 0,75	32	32	91	371	132	132	190	190	200	162	124	234	694	102	19/200	
	90 S	1,1															24/200	
40-160/11	80	0,55 0,75	40	40	99	371	130	130	200	190	200	162	124	234	702	102	19/200	
	90 S	1,1															24/200	
	90 L	1,5															24/200	
40-200/11	80	0,55 0,75	40	40	95	371	130	135	200	190	200	162	124	234	698	102	19/200	
	90 S	1,1															24/200	
	90 L	1,5															24/200	
	100 L	2,2 3															28/250	
50-160/11	80	0,55 0,75	50	50	105	371	130	130	210	200	200	162	124	234	708	102	19/200	
	90 S	1,1															24/200	
	90 L	1,5															24/200	
	100 L	2,2 3															28/250	
50-200/11	80	0,55 0,75	50	50	105	371	130	135	220	205	200	162	124	234	708	102	19/200	
	90 S	1,1															24/200	
	90 L	1,5															24/200	
	100 L	2,2 3															28/250	
	112 M	4										250	203	158	312	786	102	28/250
65-160/11	80	0,55 0,75	65	65	114	371	130	130	230	220	200	162	124	234	717	102	19/200	
	90 S	1,1															24/200	
	90 L	1,5															24/200	
	100 L	2,2 3															28/250	
	112 M	4										250	203	158	312	795	102	28/250
65-200/11	80	0,55 0,75	65	65	114	371	134	148	240	225	200	162	124	234	717	102	19/200	
	90 S	1,1															24/200	
	90 L	1,5															24/200	
	100 L	2,2 3															28/250	
	112 M	4										250	203	158	312	795	102	28/250
	132 S	5,5															38/300	

Subject to technical alterations.



A Colfax Business Unit

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The mentioned performance data and additionally all standard references are to be considered as a product and performance abstract only. The particular operating limits can be taken from the quotation or order acknowledgement.