

High-pressure In-line Pumps 50 Hz

Movitec VCF

Fields of Application

Movitec VCF are employed for hot water recirculation. They are installed in boiler feed circuits or other high temperature applications where thermal pipe expansions may occur.

Design

Multi-stage, vertical (horizontal installation on request) high-pressure centrifugal pumps, with suction and discharge nozzles of identical nominal diameters arranged opposite to each other (in-line design).

Materials

Standard variants:

VCF: Pump casing is made of cast iron and all other hydraulic components are made of stainless steel AISI 304

Bearings

All VCF pumps are supplied with tungsten carbide plain bearing at the hydraulic rotor.

Shaft Seal

Single-acting, uncooled mechanical seal in accordance with EN 12756.

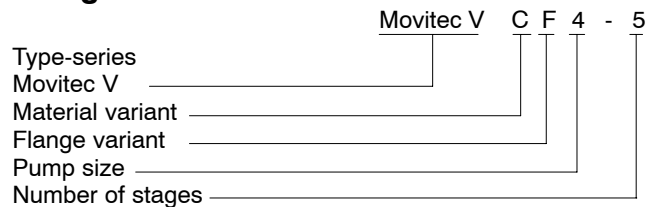
Drive

Electric motor, 50 Hz, air-cooled, 2- and 4-pole, standard KSB motor with main dimensions to IEC. Other motor makes subject to prior consultation with KSB.

Movitec VCF with PTC resistors for 3 kW and above.

Variants: single-phase a.c. motor, frequency-controlled drives.

Designation



Material variants: C

Flange variants/connections: F = round flange

Operating Data

Movitec VCF

Capacities	Q	up to 75 m ³ /h, (21 l/s)
Heads	H	up to 228 m
Operating pressures	p _d	up to 25 bar ¹⁾
Operating temperatures	t	-15 °C to +120 °C

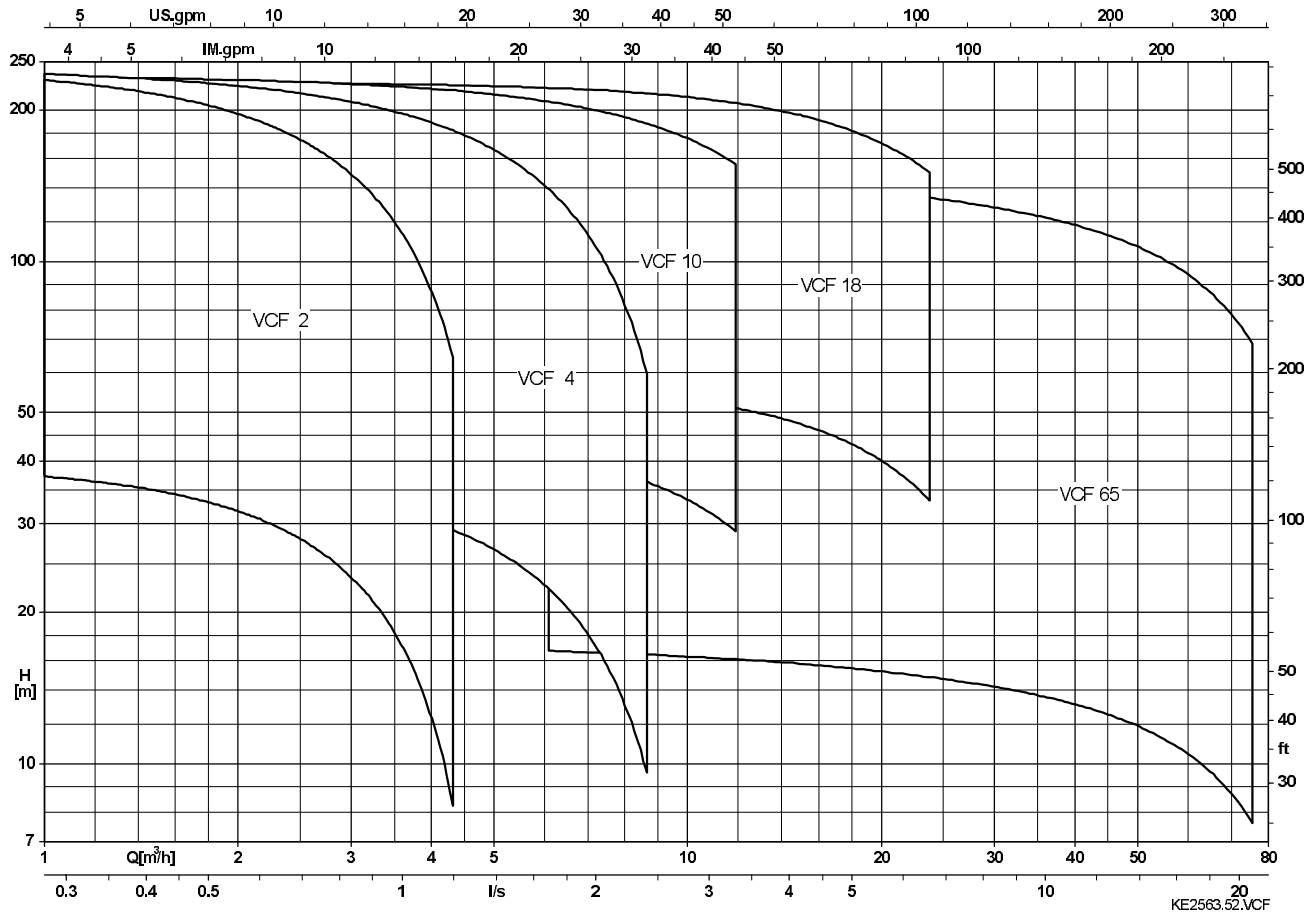
¹⁾ The sum of inlet pressure and head at zero flow point must not exceed the value stated.

Conformity Marks

CE

Selection Charts

$n \approx 2900$ 1/min



Materials

Part No.	Description	Material
		Movitec VCF
101	Pump casing	JL 1040
108	Stage casing	1.4301
160	Cover	1.4301
171	Diffuser	1.4301
10-6	Pump shroud	1.4301
210	Shaft	1.4305
230	Impeller	1.4301
341	Motor stool	JL 1040
412	O-ring	EPDM E425
525	Spacer sleeve	1.4301
529	Bearing sleeve	Tungsten-carbide
1)	Bearing	Ceramic
890	Baseplate	JL 1040
905	Tie bolt	1.4057
920	Nut	1.4301
932	Circlip	1.4571

1) Rigidly connected to stage casing 108 or diffuser 171

Legend of materials

Description	Code and material no.	Standard	to ASTM
Cast iron	JL1040 / GJL-250	EN 1561	A48:40B
Nickel chrome steel	1.4301 / X5CrNi18-10	EN 10088	A276:304
Nickel chrome molybdenum steel	1.4571 / X6CrNiMoTi17-12-2	EN 10088	A276:316
Nickel chrome steel	1.4057+QT800 / X17CrNi16-2-QT800	EN 10088-3	A276:431
	1.4305 / X8CrNiS 18-9	EN 10088	A276:303

Please note: The indication of the material designations to ASTM / AISI is not binding.

Material Codes

Mechanical seal	Description	Code letter to EN 12756	Material
	Spring-loaded ring	U3	Tungsten carbide (CrNiMo-binder)
	Seat ring	B	Resin-impregnated carbon graphite
	Elastomer	E	EPDM (Ethylene Propylene rubber)
	Spring	G	CrNiMo steel
	Other metal parts	G	CrNiMo steel
	Code number 18	U3BEGG	Tungsten carbide/Carbon/EPDM (HP seal)

Pressure and Temperature Limits

Temperature of medium pumped t ²⁾	Flange variant / Connection	Material variant	Max. operating pressure p _s ¹⁾	Code number Mechanical seal
- 15 °C to + 120 °C	VCF = round flange ³⁾	Movitec VCF	up to 25 bar	18

1) The sum of inlet pressure and head at zero flow point must not exceed the value stated.

2) Subject to application limits (see List of Media Handled)

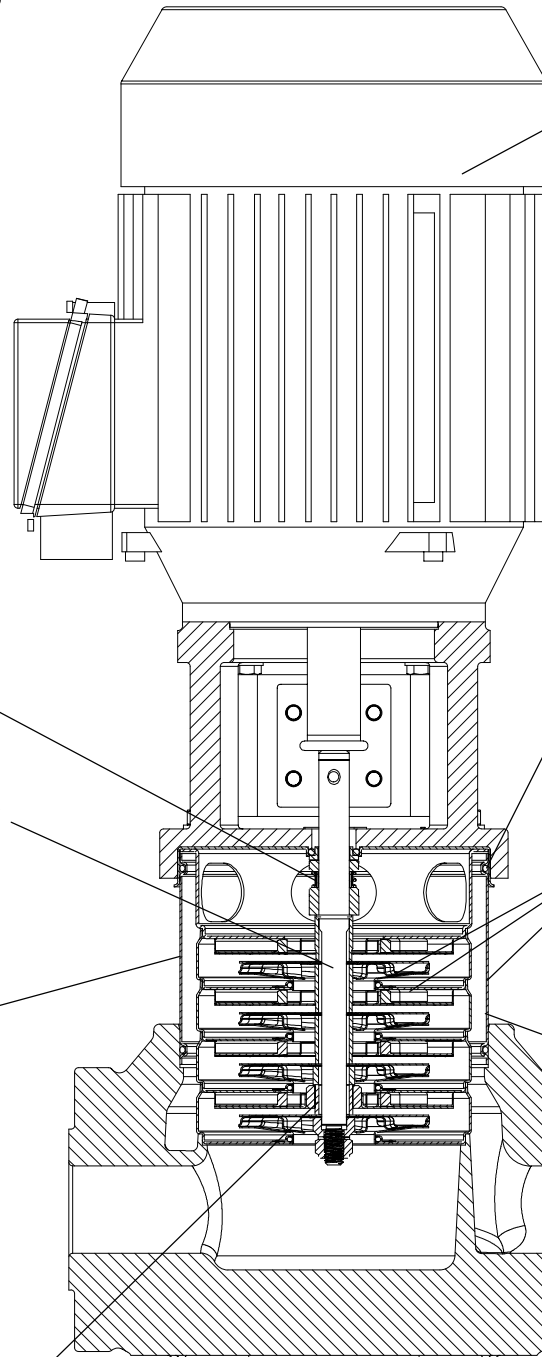
3) Drilled to EN 1092-2 PN 25

Design Features Movitec VCF

Universal high-pressure pump
up to 25 bar

- -15 °C to 120 °C
- also for chemically aggressive media

Space-saving vertical design



Easy-to service, robust three-phase motor

- multi-range voltage / frequency
- type of enclosure IP 55
- insulation class F
- with PTC resistor for 3 kW and above

Leak-free and resistant to thermal shocks

- thanks to pump shroud
- due to confined O-rings

Reliable, easy-to-service shaft seal

- standardized mechanical seal to EN 12756

Easy-to-fit shaft of high-alloy steel with two flat faces for strong shaft/impeller construction

Corrosion-resistant:

- hydraulic parts and pump shroud of high-alloy stainless steel

Low noise, since the flow noise is dampened by water-filled shroud

High operating reliability ensured by torsion-proof pump shroud

- no partition lines on the outside
- only 2 seal elements

Highly wear-resistant and maintenance-free **plain bearing of tungsten carbide / ceramic** lubricated by the medium

- self-cleaning by forced flushing

Simple installation and piping layout thanks to in-line design

- insusceptible to outside nozzle forces and moments

Casing

Cast iron pump casing with suction and discharge nozzles of identical nominal diameters arranged opposite to each other (in-line design).

Shaft Seal

The shaft seal is an uncooled, maintenance-free mechanical seal to EN 12756.

Drive

Standard for VCF:

- Electric motor, 50 Hz, air-cooled, 2- and 4-pole, standard KSB motor with main dimensions to IEC. Other motor makes subject to prior consultation with KSB, up to 2.2 kW 220-240 V/380-420 V, 3 kW and above 380-420 V/660-725 V, type of enclosure IP 55, insulation class F, up to 4 kW design V18, 5.5 kW and above design V1, all motors with PTC resistor for 3 kW and above.

Approved variants:

- Explosion-proof motor II 2 G Eexd/Eexe T3/T4, design V1/V18, make acc. to our choice.
- Motor for 500 V mains voltage, design V1/V18, make acc. to our choice.
- Motor make acc. to customer's choice (upon request).
- PTC thermistor for motors < 3 kW.

Direction of rotation:

Clockwise, seen from the drive side (see arrow indicating direction of rotation on the motor stool).

Installation

Vertical installation (horizontal installation on request)

Coating

Cast iron pump casing with powder coating.
Stainless steel parts without any additional protective coating.

Tests

Standard:

Pressure test according to EN 809.
Leak test with water.

Approved variant (upon request):

Hydraulic test evidenced by test report. This test is always carried out using the original motor.
The NPSH or the suction head are not measured.

Materials testing

Certificate of Compliance with the Order (corresponds to EN 10204)

In the certificate of compliance with the order the manufacturing or processing works confirms by way of an informal report without specifying test results that the delivery complies with the stipulations of the purchase order (certificate to 2.2 and 3.1 available upon request).

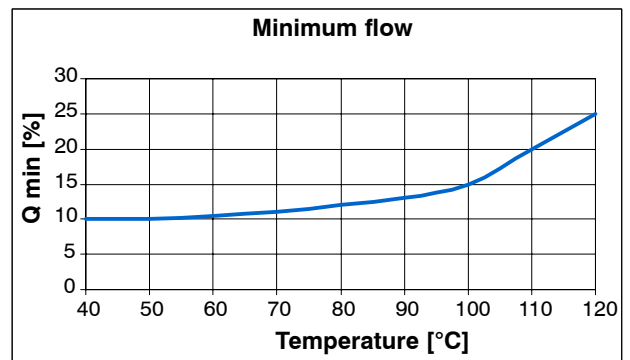
Characteristic Curves ²⁾

The characteristic curves are based on the following principles:

- Tolerances to ISO 9906, Class 2 / Annex A.
- The motors used for the measurements are standard KSB motors ¹⁾.
- The characteristic curves were obtained with deaerated water at a temperature of 20 °C and a density of 1.0 kg/dm³ ¹⁾.
- The characteristic curves are valid for a kinematic viscosity of 1 mm²/s (1 cst) ¹⁾.
- A minimum permissible flow must be maintained to prevent the pump from overheating (see graph).

Movitec VCF	Q _{min} in m ³ /h
2	0.3
4	0.6
10	1.2
18	2.4
65	6.1

The following curve shows the minimum flow, corresponding to a percentage of the optimum flow Q_{opt}, as a function of the temperature of the medium pumped (flow rate at best efficiency point).



- Maximum pressure at the discharge nozzle: 25 bar – head at zero flow point with round flange (VCF).

● NPSH

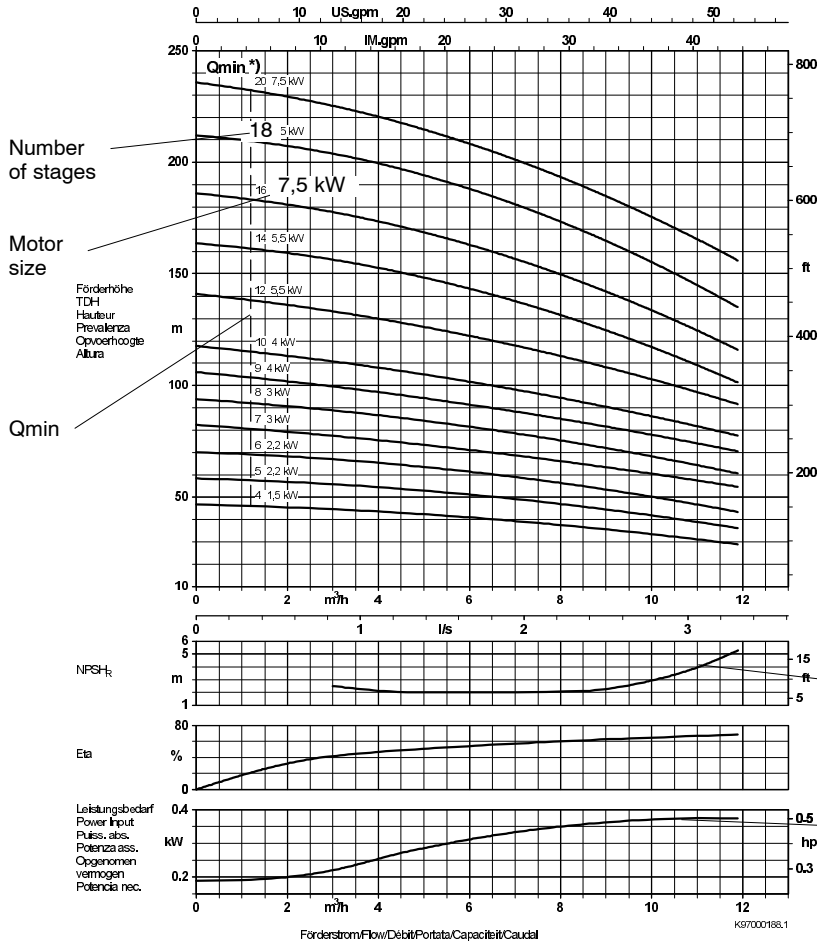
The NPSH values of the individual characteristic curves are minimum values corresponding to the cavitation limit; they refer to deaerated water.

A safety allowance of at least 0.5 m must be added when selecting the pump to compensate for measuring inaccuracies and minor manufacturing deviations. The NPSH curve reflects mean values.

- 1) In case of different parameters, the performance data must be corrected accordingly.
- 2) See example on the following page.

Example

Baureihe-Größe Type-Size Modello	Tipo Serie Tipo	Nennrotationszahl Nom. speed Velocità di rotazione nom. Nominal rotational Vitesse nom. Revoluciones nom.	Laufrollen- Impeller Dia. Diamètre de roue	Ø Giarante Ø Wasser Ø Rodete	 KSB Aktiengesellschaft 67225 Frankfurt/alm Johann-Klein-Straße 9 67227 Frankfurt/alm
Movitec VCF 10		≈2900 1/min	100 mm		
Projekt Project Projet	Projekt Project Proyecto	Angebots-Nr. Project No. No. de offre	Offerte-Nr. Offer No. Offerta-No.	Pos.-Nr. Item No. No. de pos.	Pos.-Nr. Position Pos.-Nr.



NPSH required. A safety allowance of 0.5 m must be added to the NPSH value of the characteristic curve when selecting the system.

Power input per stage at a density of $\rho = 1 \text{ kg/dm}^3$

Combination of Hydraulics Movitec VCF 18

01	108.01 Stage casing								
02	108.02 Stage casing with ceramic bearing								
04	108.04 Stage casing bottom								
05	108.05 Stage casing Upper								
06	108.06 Stage casing Upper without vanes								
	Impeller location								

no. of casings									
17									05
16									02
15								05	01
14								02	01
13							05	01	01
12						02	01	02	
11					05	01	01	01	
10				02	01	01	01		
9			05	01	01	01	01		
8		05	02	01	01	02	01		
7		05	02	01	01	02	01	02	
6		05	02	01	01	02	01	01	
5	05	01	01	01	01	01	01	01	
4	01	01	01	01	01	01	01	01	
3	01	01	01	01	01	01	01	01	
2	02	01	02	02	02	02	02	02	
1	04	04	04	04	04	04	04	04	

Movitec VCF 18-	4	5	6	7	8	10	12	14	16
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Combination of Hydraulics Movitec VCF 65

01	171.01 Diffuser								
02	171.02 Diffuser with ceramic bearing								
550	550 Disc Bottom								
	Impeller location								

no. of diffusers									
10									01
9								01	02
8							01	02	01
7						01	02	01	02
6					01	02	01	02	01
5				01	02	01	02	01	02
4			01	02	01	02	01	02	01
3		01	02	01	01	01	01	01	01
2	02	02	01	02	01	02	02	02	02
1	550	550	550	550	550	550	550	550	550

Movitec VCF 65-	1	2	3	4	5	6	7	8	9
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Recommended Spare Parts Stock for 2 Years' Continuous Operation

Number of pumps of identical size (including stand-by pumps) ->		2	3	4	5	6 and 7	8 and 9	10 and more
Part No.	Description	Quantity of spare parts						%
10-5	Stage casing compl. with bearing Kit Stage casing with bearing (108.02) + bearing sleeve (529) + impeller (230) + spacer sleeve, short (525.01)	1 set			2 sets		3 sets	30
433	1 Mechanical seal 433 2 O-rings 412.01 1 O-ring 412.05 (only for cartridge seal) 1 O-ring 412.06 (only for cartridge seal)	1 set			2 sets		3 sets	30

List of Media Handled

The data refer to the materials' chemical resistance. Relevant regulations / standards for pump applications have to be complied with.

The actual operating conditions must always be checked (concentration, temperature, solids content).

The penetration of air into the system must be avoided by all means.

If the operating conditions differ from the data given (e.g. mixed products) or if the media are not included in the table below, please contact KSB.

Basic data:

- Room temperature means a temperature between +10 °C and + 30 °C.
- Temperature ranges:
 - The reference temperature is 20 °C.
 - In the case of temperatures ≤ 0 °C, please contact KSB.
 - If the temperature exceeds > 50 °C, check and observe the fluid's vapour pressure.
 - Max. temperature = 120 °C, unless indicated otherwise.
- Max. concentration = 100 %, unless indicated otherwise.
- Solids content max. 20 ppm (depending of particle size), with the exception of corrosive media. Media with a higher abrasive solids content are as a rule not permitted (ppm = 1 mg/kg).

Medium handled	Content max. %	Temperature max. in °C	Mechanical seal variant
			18
Water: boiler feed water, fully desalinated boiler feed water, partly desalinated boiler water (pH < 11.5)			VCF VCF VCF

Movitec VCF with standard KSB motor 1~230 V


Pump size	Number of stages	Seal code	Motor rating	Rated current	Round flange Movitec VCF	
			kW	I _{nom} in A	Ident No.	kg
2 poles						
Movitec VCF 2	4	18	0.55	4.5	47 110 766	22.2
Movitec VCF 2	5	18	0.55	4.5	47 110 767	22.6
Movitec VCF 2	6	18	0.75	6.9	47 110 768	25.9
Movitec VCF 2	7	18	0.75	6.9	47 110 769	26.4
Movitec VCF 2	8	18	1.1	8.7	47 110 770	28.2
Movitec VCF 2	9	18	1.1	8.7	47 110 771	28.6
Movitec VCF 2	10	18	1.1	8.7	47 110 772	29.1
Movitec VCF 2	11	18	1.1	8.7	47 110 773	29.6
Movitec VCF 2	13	18	1.5	11.0	47 110 774	34.1
Movitec VCF 2	15	18	1.5	11.0	47 110 775	35.0
Movitec VCF 2	16	18	2.2	15.2	47 110 776	38.5
Movitec VCF 2	18	18	2.2	15.2	47 110 777	39.4
Movitec VCF 2	20	18	2.2	15.2	47 110 778	40.4
Movitec VCF 4	4	18	0.75	6.9	47 110 808	26.5
Movitec VCF 4	5	18	0.75	6.9	47 110 809	27.0
Movitec VCF 4	6	18	1.1	8.7	47 110 810	28.7
Movitec VCF 4	7	18	1.1	8.7	47 110 811	29.2
Movitec VCF 4	8	18	1.5	11.0	47 110 812	33.3
Movitec VCF 4	9	18	1.5	11.0	47 110 813	33.7
Movitec VCF 4	10	18	1.5	11.0	47 110 814	34.2
Movitec VCF 4	11	18	2.2	15.2	47 110 815	37.7
Movitec VCF 4	13	18	2.2	15.2	47 110 816	38.6
Movitec VCF 4	15	18	2.2	15.2	47 110 817	39.5
Movitec VCF 10	4	18	1.5	11.0	47 110 849	39.6
Movitec VCF 10	5	18	2.2	15.2	47 110 850	43.3
Movitec VCF 10	6	18	2.2	15.2	47 110 851	44.0

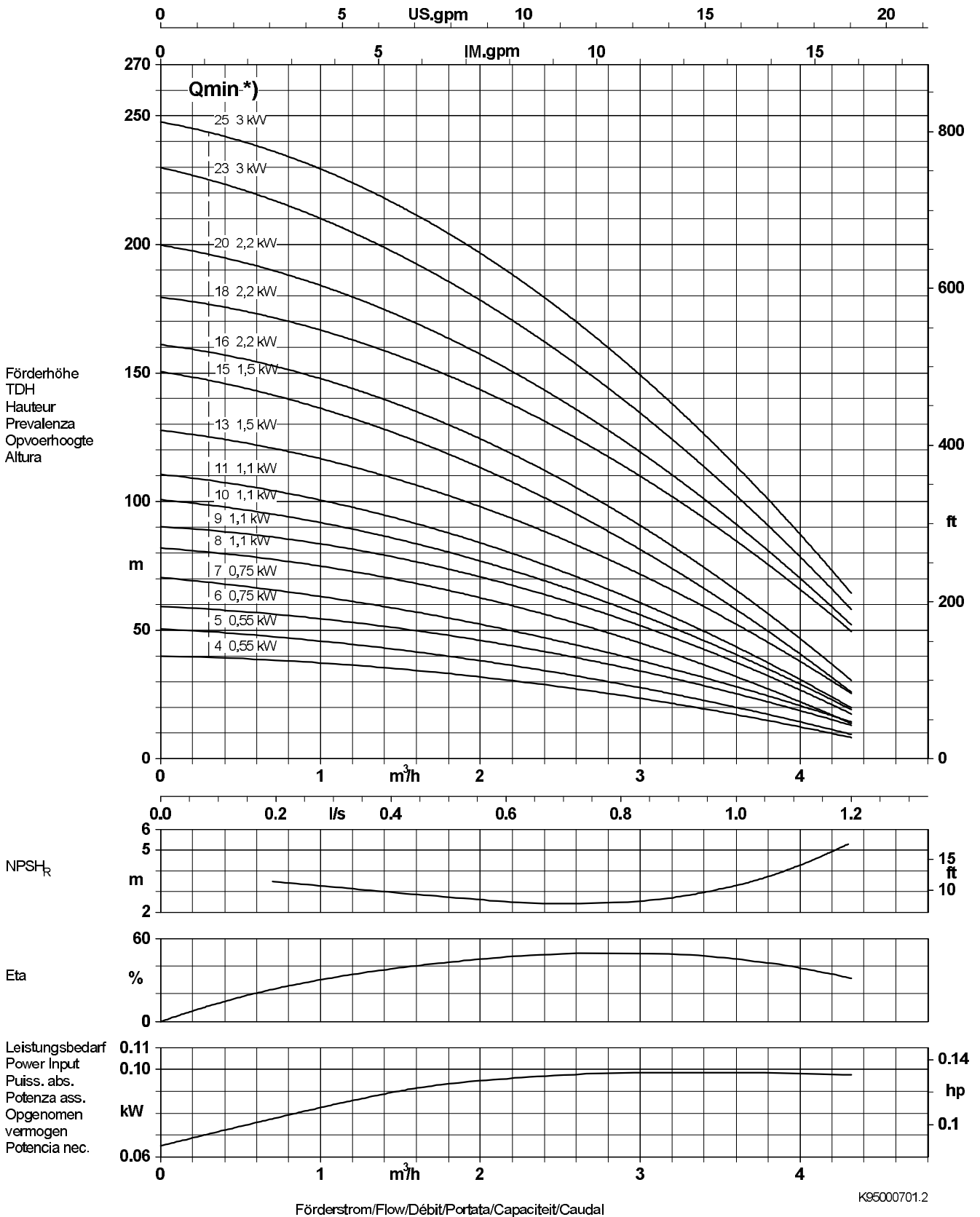
Movitec VCF with standard KSB motor 3~230/400 V up to 2.2 kW, from 3 kW 3~400/692 V

Pump size	Number of stages	Seal code	Motor rating kW	Rated current I _{nom} in A	Round flange Movitec VCF	
					Ident No.	kg
2 poles						
Movitec VCF 2	4	18	0.55	2.6 / 1.5	47 110 779	22.2
Movitec VCF 2	5	18	0.55	2.6 / 1.5	47 110 780	22.6
Movitec VCF 2	6	18	0.75	3.7 / 2.1	47 110 781	25.9
Movitec VCF 2	7	18	0.75	3.7 / 2.1	47 110 782	26.4
Movitec VCF 2	8	18	1.1	5.1 / 2.9	47 110 783	28.2
Movitec VCF 2	9	18	1.1	5.1 / 2.9	47 110 784	28.6
Movitec VCF 2	10	18	1.1	5.1 / 2.9	47 110 785	29.1
Movitec VCF 2	11	18	1.1	5.1 / 2.9	47 110 786	29.6
Movitec VCF 2	13	18	1.5	7.6 / 4.4	47 110 787	34.1
Movitec VCF 2	15	18	1.5	7.6 / 4.4	47 110 788	35.0
Movitec VCF 2	16	18	2.2	10.4 / 6.0	47 110 789	38.5
Movitec VCF 2	18	18	2.2	10.4 / 6.0	47 110 790	39.4
Movitec VCF 2	20	18	2.2	10.4 / 6.0	47 110 791	40.4
Movitec VCF 2	23	18	3	7.0 / 4.1	47 110 794	51.7
Movitec VCF 2	25	18	3	7.0 / 4.1	47 110 795	52.7
Movitec VCF 4	4	18	0.75	3.7 / 2.1	47 110 818	26.5
Movitec VCF 4	5	18	0.75	3.7 / 2.1	47 110 819	27.0
Movitec VCF 4	6	18	1.1	5.1 / 2.9	47 110 820	28.7
Movitec VCF 4	7	18	1.1	5.1 / 2.9	47 110 821	29.2
Movitec VCF 4	8	18	1.5	7.6 / 4.4	47 110 822	33.3
Movitec VCF 4	9	18	1.5	7.6 / 4.4	47 110 823	33.7
Movitec VCF 4	10	18	1.5	7.6 / 4.4	47 110 824	34.2
Movitec VCF 4	11	18	2.2	10.4 / 6.0	47 110 825	37.7
Movitec VCF 4	13	18	2.2	10.4 / 6.0	47 110 826	38.6
Movitec VCF 4	15	18	2.2	10.4 / 6.0	47 110 827	39.5
Movitec VCF 4	16	18	3	7.0 / 4.1	47 110 833	50.0
Movitec VCF 4	18	18	3	7.0 / 4.1	47 110 834	50.9
Movitec VCF 4	20	18	3	7.0 / 4.1	47 110 835	51.8
Movitec VCF 4	23	18	4	9.0 / 5.2	47 110 836	62.2
Movitec VCF 4	25	18	4	9.0 / 5.2	47 110 837	63.2
Movitec VCF 10	4	18	1.5	7.6 / 4.4	47 110 852	39.6
Movitec VCF 10	5	18	2.2	10.4 / 6.0	47 110 853	43.3
Movitec VCF 10	6	18	2.2	10.4 / 6.0	47 110 854	44.0
Movitec VCF 10	7	18	3	7.0 / 4.1	47 110 864	54.9
Movitec VCF 10	8	18	3	7.0 / 4.1	47 110 865	55.6
Movitec VCF 10	9	18	4	9.0 / 5.2	47 110 866	65.3
Movitec VCF 10	10	18	4	9.0 / 5.2	47 110 867	66.0
Movitec VCF 10	12	18	5.5	11.8 / 6.8	47 110 868	73.5
Movitec VCF 10	14	18	5.5	11.8 / 6.8	47 110 869	74.9
Movitec VCF 10	16	18	5.5	11.8 / 6.8	47 110 870	76.3
Movitec VCF 10	18	18	7.5	14.3 / 8.3	47 110 871	81.7
Movitec VCF 10	20	18	7.5	14.3 / 8.3	47 110 872	83.1
Movitec VCF 18	12	18	11	26.6 / 15.4	47 110 896	150.2
Movitec VCF 18	14	18	15	31.7 / 18.3	47 110 897	166.0
Movitec VCF 18	16	18	15	31.7 / 18.3	47 110 898	167.8
Movitec VCF 65	1	18	3	7.0 / 4.1	47 110 199	81.5
Movitec VCF 65	2	18	5.5	11.8 / 6.8	47 110 200	100.0
Movitec VCF 65	3	18	7.5	14.3 / 8.3	47 110 201	107.4
Movitec VCF 65	4	18	11	26.6 / 15.4	47 110 202	177.0
Movitec VCF 65	5	18	15	31.7 / 18.3	47 110 203	194.4
Movitec VCF 65	6	18	15	31.7 / 18.3	47 110 204	197.8
Movitec VCF 65	7	18	18.5	40.5 / 23.4	47 110 205	216.1
Movitec VCF 65	8	18	22	44.5 / 25.7	47 110 206	255.5
Movitec VCF 65	9	18	22	44.5 / 25.7	47 110 207	258.9


Movitec VCF with standard KSB motor 3~230/400 V from 3 kW

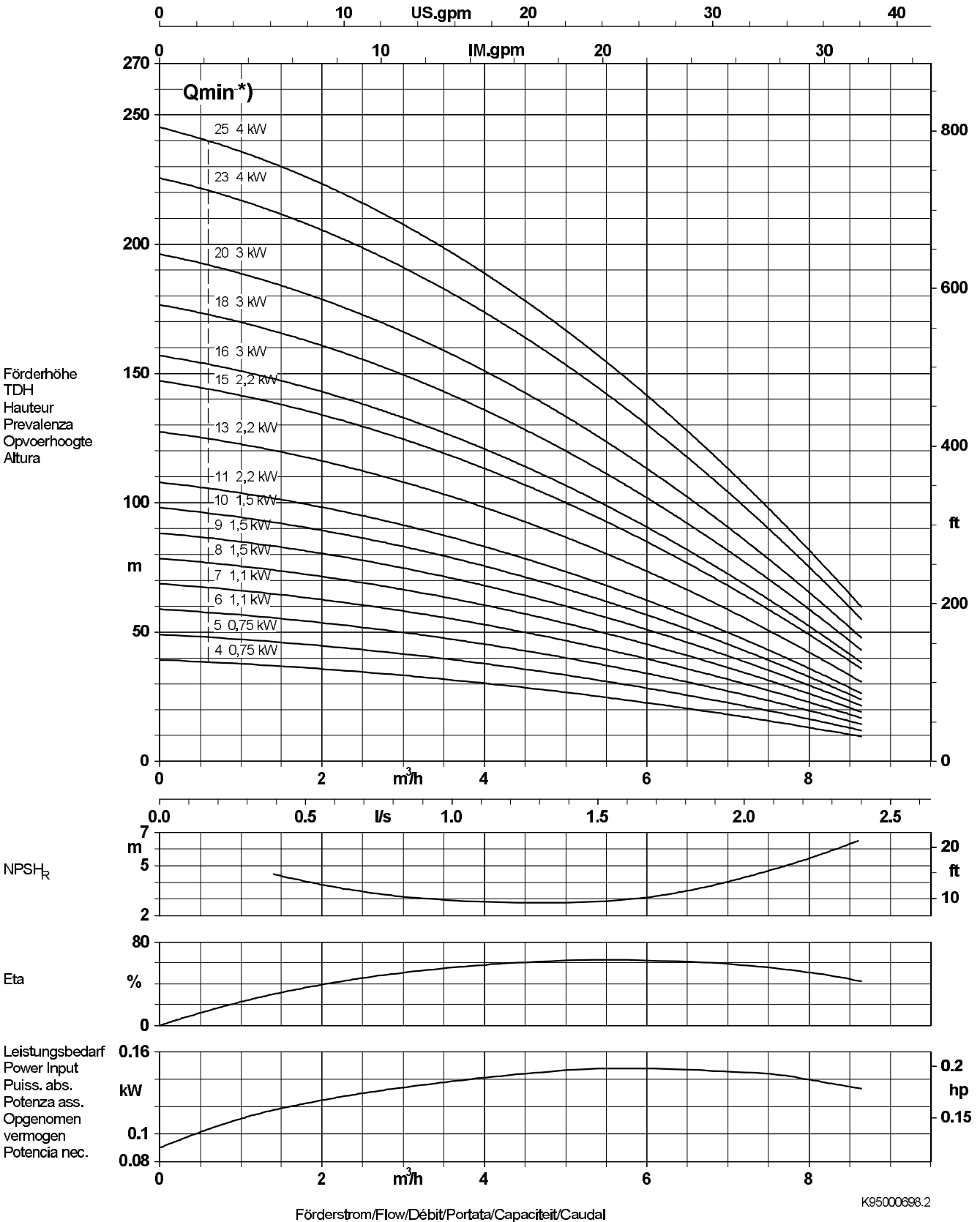
Pump size	Number of stages	Seal code	Motor rating	Rated current	Round flange Movitec VCF	
			kW	I _{nom} in A	Ident No.	kg
2 poles						
Movitec VCF 2	23	18	3	12.1 / 7.0	47 110 792	51.7
Movitec VCF 2	25	18	3	12.1 / 7.0	47 110 793	52.7
Movitec VCF 4	16	18	3	12.1 / 7.0	47 110 828	50.0
Movitec VCF 4	18	18	3	12.1 / 7.0	47 110 829	50.9
Movitec VCF 4	20	18	3	12.1 / 7.0	47 110 830	51.8
Movitec VCF 4	23	18	4	15.6 / 9.0	47 110 831	62.2
Movitec VCF 4	25	18	4	15.6 / 9.0	47 110 832	63.2
Movitec VCF 10	7	18	3	12.1 / 7.0	47 110 855	54.9
Movitec VCF 10	8	18	3	12.1 / 7.0	47 110 856	55.6
Movitec VCF 10	9	18	4	15.6 / 9.0	47 110 857	65.3
Movitec VCF 10	10	18	4	15.6 / 9.0	47 110 858	66.0
Movitec VCF 10	12	18	5.5	20.4 / 11.8	47 110 859	73.5
Movitec VCF 10	14	18	5.5	20.4 / 11.8	47 110 860	74.9
Movitec VCF 10	16	18	7.5	24.8 / 14.3	47 110 861	80.3
Movitec VCF 10	18	18	7.5	24.8 / 14.3	47 110 862	81.7
Movitec VCF 10	20	18	7.5	24.8 / 14.3	47 110 863	83.1
Movitec VCF 18	4	18	4	15.6 / 9.0	47 110 881	66.8
Movitec VCF 18	5	18	5.5	20.4 / 11.8	47 110 882	73.7
Movitec VCF 18	6	18	5.5	20.4 / 11.8	47 110 883	74.6
Movitec VCF 18	7	18	7.5	24.8 / 14.3	47 110 884	79.5
Movitec VCF 18	8	18	7.5	24.8 / 14.3	47 110 885	80.4
Movitec VCF 18	10	18	11	46.1 / 26.6	47 110 886	148.4
Movitec VCF 18	12	18	11	46.1 / 26.6	47 110 887	150.2
Movitec VCF 18	14	18	15	54.9 / 31.7	47 110 888	166.0
Movitec VCF 18	16	18	15	54.9 / 31.7	47 110 889	167.8
Movitec VCF 65	1	18	3	12.1 / 7.0	47 110 190	81.5
Movitec VCF 65	2	18	5.5	20.4 / 11.8	47 110 191	100.0
Movitec VCF 65	3	18	7.5	24.8 / 14.3	47 110 192	107.4
Movitec VCF 65	4	18	11	46.1 / 26.6	47 110 193	177.0
Movitec VCF 65	5	18	15	54.9 / 31.7	47 110 194	194.4
Movitec VCF 65	6	18	15	54.9 / 31.7	47 110 195	197.8
Movitec VCF 65	7	18	18.5	70.1 / 40.5	47 110 196	216.1
Movitec VCF 65	8	18	22	77.1 / 44.5	47 110 197	255.5
Movitec VCF 65	9	18	22	77.1 / 44.5	47 110 198	258.9

Baureihe-Größe Type-Size Modèle	Tipo Serie Tipo	Nenn Drehzahl Nom. speed Vitesse nom.	Velocità di rotazione nom. Nominaal toerental Revoluciones nom.	Lauf rad-Ø Impeller Dia. Diamètre de roue	Ø Girante Ø Waaier Ø Rodete	 KSB KSB Aktiengesellschaft 67225 Frankenthal Johann-Klein-Straße 9 67227 Frankenthal
Movitec VCF 2		≈ 2900 1/min		92 mm		
Projekt Project Projet	Progetto Projekt Proyecto	Angebots-Nr. Project No. No. de l'offre	Offerta-No. Offertenr. Offerta-No.	Pos.-Nr. Item No. No. de pos.	Pos.-Nr. Positiennr. Pos.-Nr.	




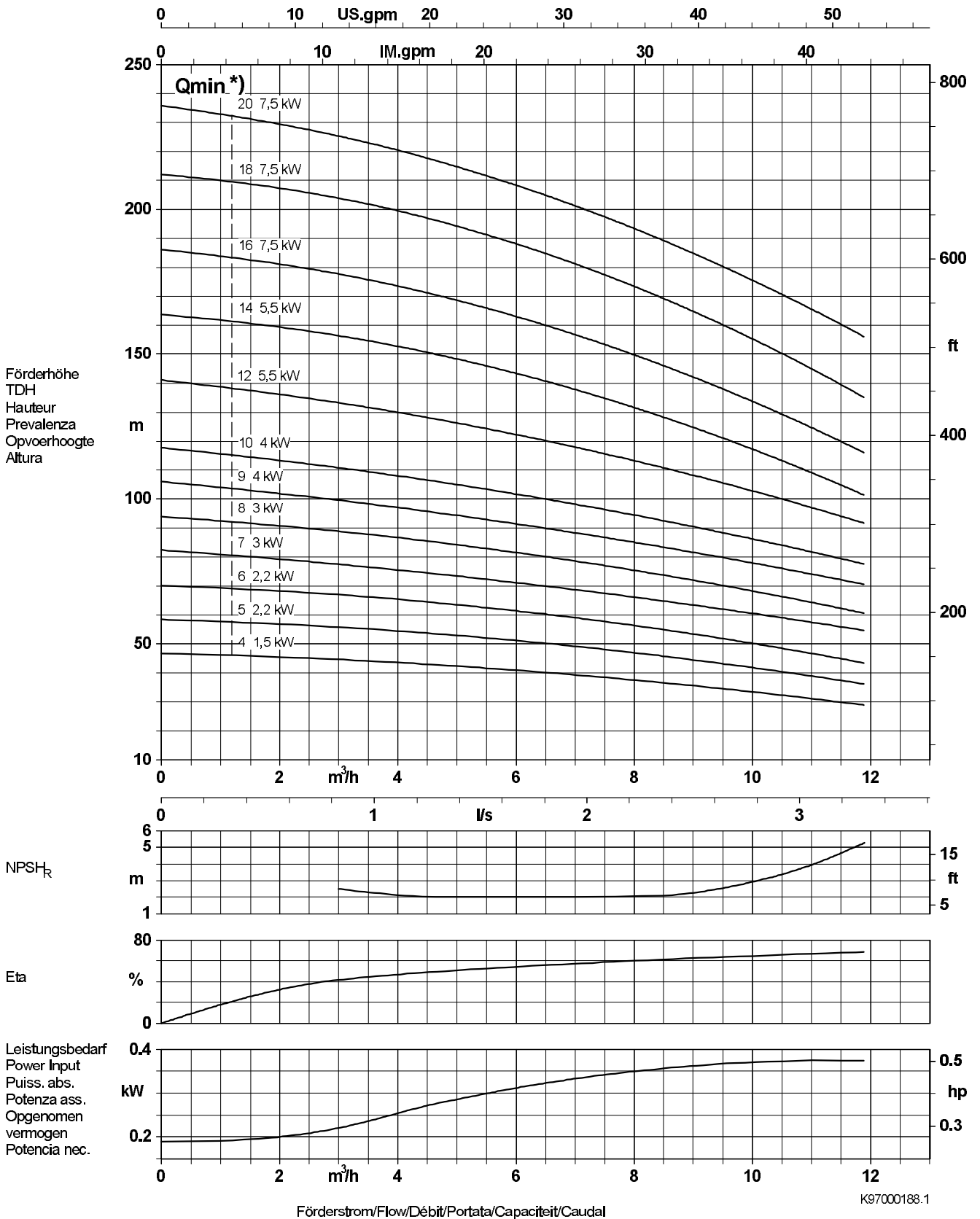
*) Qmin up to 40 °C, temperatures >40 °C see table page 5

Baureihe-Größe Type-Size Modèle	Tipo Serie Tipo	Nenn Drehzahl Nom. speed Vitesse nom.	Velocità di rotazione nom. Nominaal toerental Revoluciones nom.	Lauf rad- \varnothing Impeller Dia. Diamètre de roue	\varnothing Girante \varnothing Waaier \varnothing Rodete	 KSB KSB Aktiengesellschaft 67225 Frankenthal Johann-Klein-Straße 9 67227 Frankenthal
Movitec VCF 4		≈ 2900 1/min		92 mm		
Projekt Project Projet	Progetto Projekt Proyecto	Angebots-Nr. Project No. No. de offre	Offerta-No. Offertenr. Offerta-No.	Pos.-Nr. Item No. No. de pos.	Pos.-Nr. Positiennr. Pos.-Nr.	




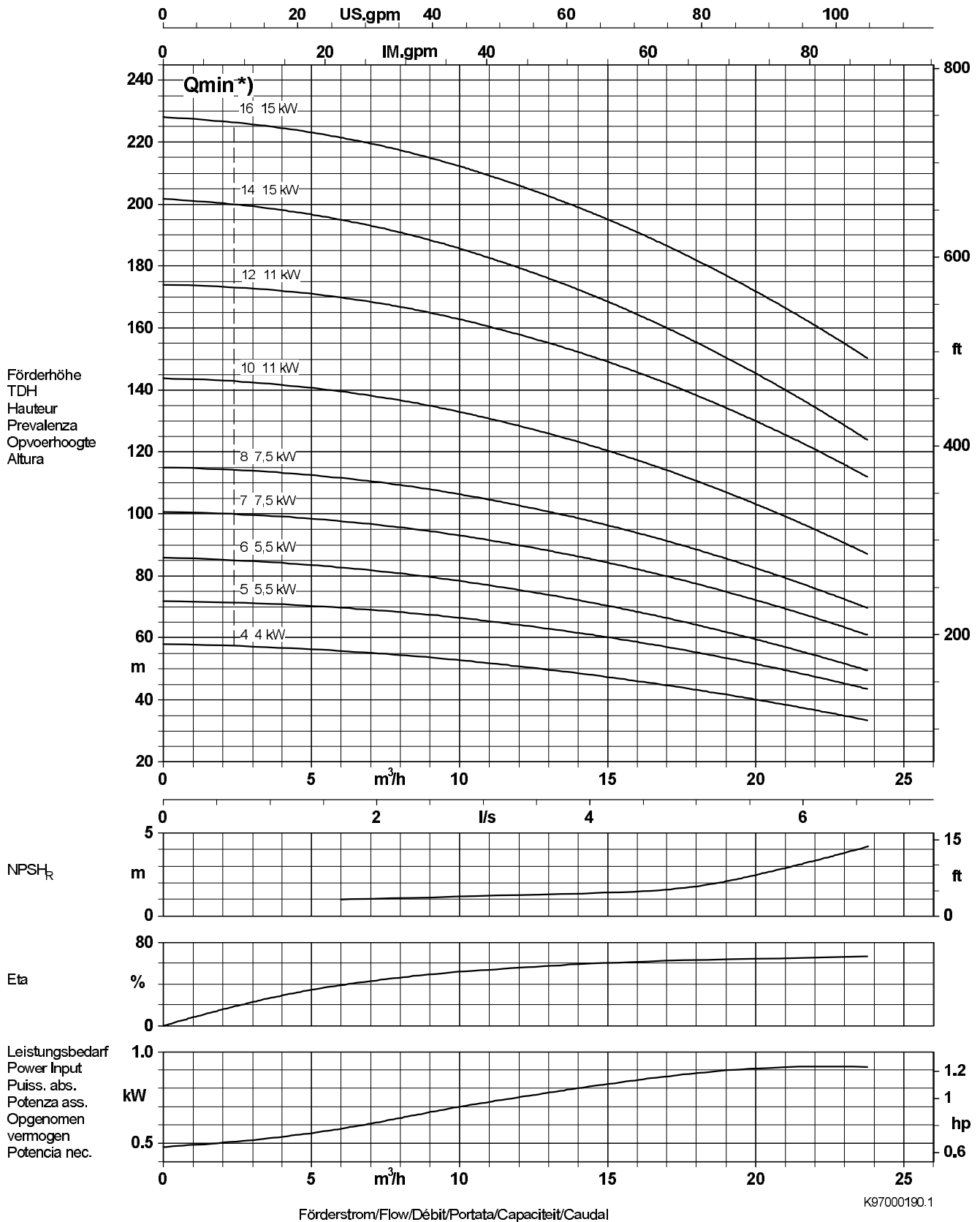
*) Qmin up to 40 °C, temperatures >40 °C see table page 5

Baureihe-Größe Type-Size Modèle	Tipo Serie Tipo	Nenn Drehzahl Nom. speed Vitesse nom.	Velocità di rotazione nom. Nominaal toerental Revoluciones nom.	Lauf rad-Ø Impeller Dia. Diamètre de roue	Ø Girante Ø Waaier Ø Rodete	 KSB Aktiengesellschaft 67225 Frankenthal Johann-Klein-Straße 9 67227 Frankenthal
Movitec VCF 10		≈ 2900 1/min		100 mm		
Projekt Project Projet	Progetto Projekt Proyecto	Angebots-Nr. Project No. No. de l'offre	Offerta-No. Offertenr. Offerta-No.	Pos.-Nr. Item No. No. de pos.	Pos.-Nr. Positiennr. Pos.-Nr.	




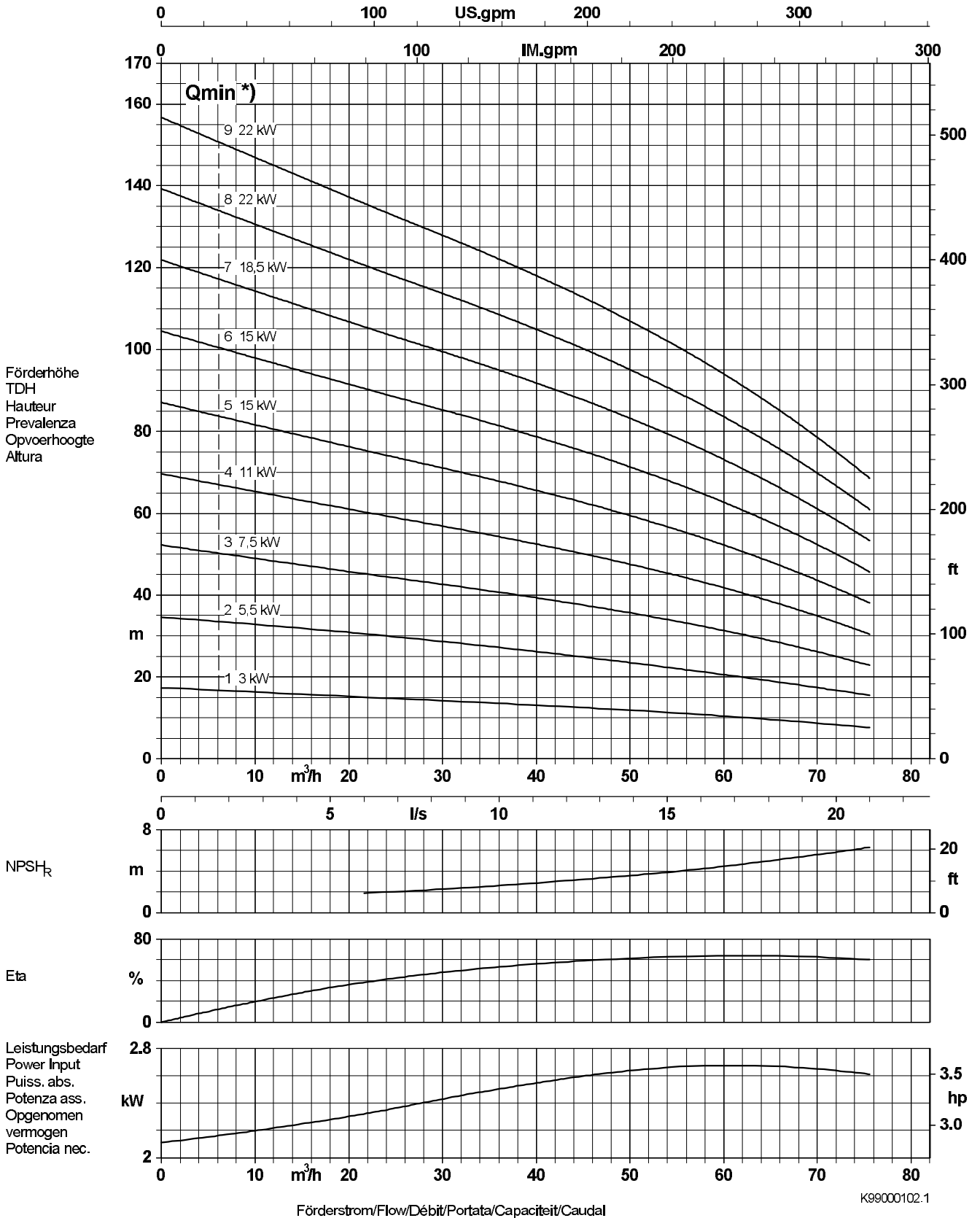
*) Qmin up to 40 °C, temperatures >40 °C see table page 5

Baureihe-Größe Type-Size Modèle	Tipo Serie Tipo	Nennrehzahl Nom. speed Vitesse nom.	Velocità di rotazione nom. Nominaal toerental Revoluciones nom.	Lauftrad-ø Impeller Dia. Diamètre de roue	ø Girante ø Waaier ø Rodete	 KSB Aktiengesellschaft 67225 Frankenthal Johann-Klein-Straße 9 67227 Frankenthal
Movitec VCF 18		≈ 2900 1/min		110 mm		
Projekt Project Projet	Progetto Projekt Projecto	Angebots-Nr. Project No. No. de l'offre	Offerta-No. Offertenr. Offerta-No.	Pos.-Nr. Item No. No. de pos.	Pos.-Nr. Positiën. Pos.-Nr.	

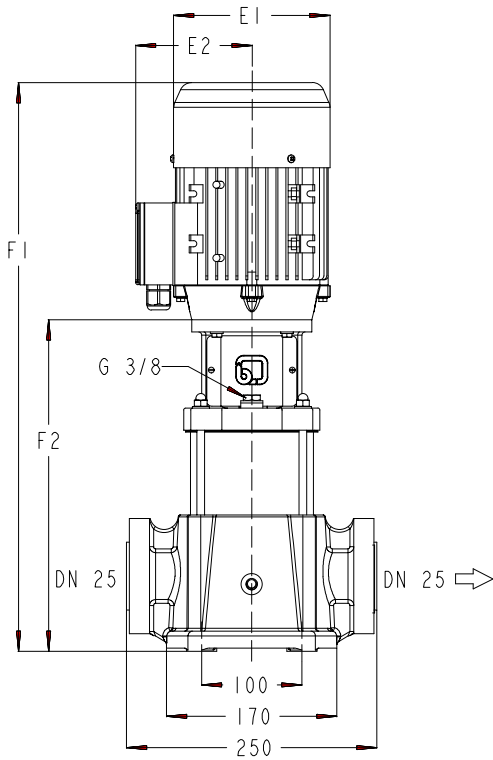


*) Qmin up to 40 °C, temperatures >40 °C see table page 5

Baureihe-Größe Type-Size Modèle	Tipo Serie Tipo	Nennrehzahl Nom. speed Vitesse nom.	Velocità di rotazione nom. Nominaal toerental Revoluciones nom.	Laufrad-Ø Impeller Dia. Diamètre de roue	Ø Girante Ø Waaier Ø Rodete	 KSB KSB Aktiengesellschaft 67225 Frankenthal Johann-Klein-Straße 9 67227 Frankenthal
Movitec V (C/S) F 65		≈ 2900 1/min		126/131 mm		
Projekt Project Projet	Progetto Project Proyecto	Angebots-Nr. Project No. No. de l'offre	Offerta-No. Offertenr. Offerta-No.	Pos.-Nr. Item No. No. de pos.	Pos.-Nr. Positiennr. Pos.-Nr.	

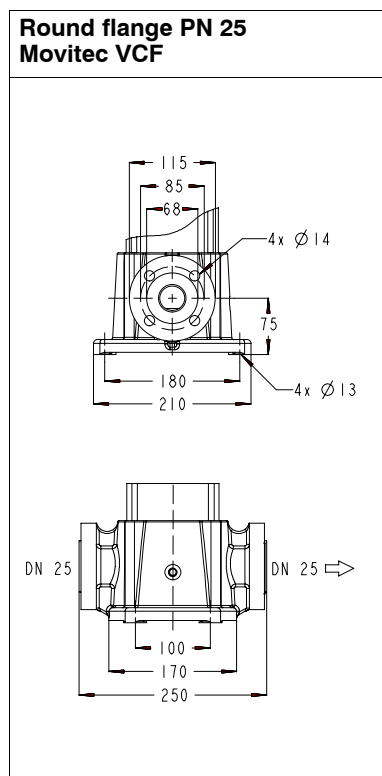


*) Qmin up to 40 °C, temperatures >40 °C see table page 5

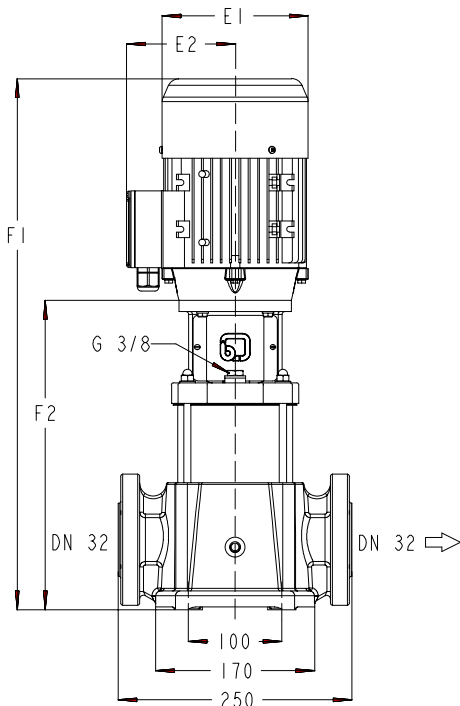
Dimension Tables
Movitec VCF 2 2900 1/min


VCF 2 No. of stages	E1	E2	Round flange	
			F1	F2
1	134	107	476	257
2	134	107	476	257
3	134	107	497	278
4	134	107	542	299
5	134	107	563	320
6	150	115	585	351
7	150	115	606	372
8	150	115	657	393
9	150	115	678	414
10	150	115	699	435
11	150	115	720	456
13	176	136	783	508
15	176	136	825	550
16	176	136	846	571
18	176	136	888	613
20	176	136	930	655
23	194	147	1044	728
25	194	147	1086	770

Dimensions in mm

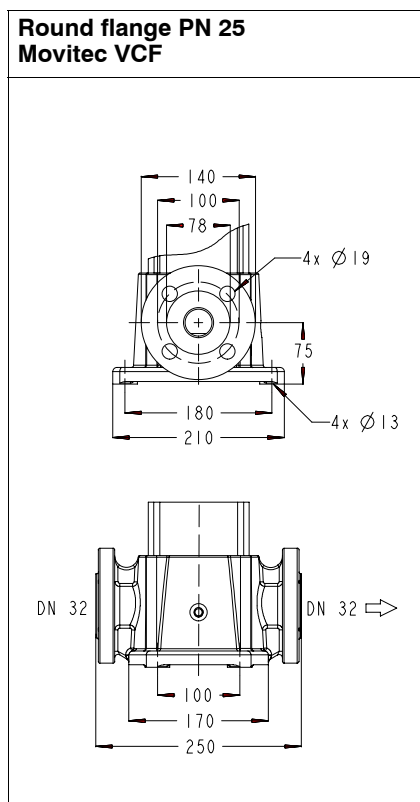
Flange Variants


Terminal Box Position for all pump sizes see page 23

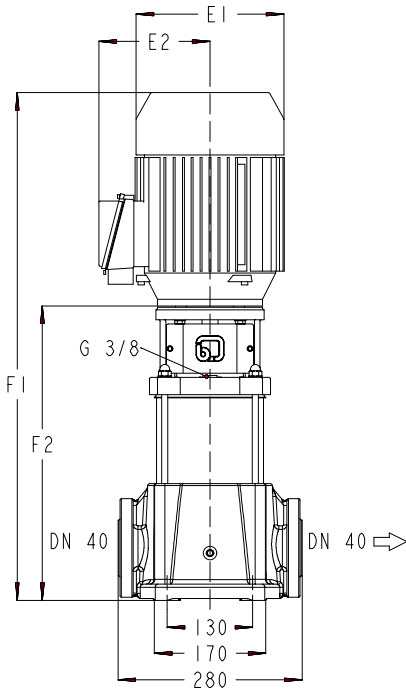
Dimension Tables
Movitec VCF 4 2900 1/min


VCF 4	Round flange			
	No. of stages	E1	E2	F1
1	134	107	476	257
2	134	107	476	257
3	134	107	521	278
4	150	115	543	309
5	150	115	564	330
6	150	115	615	351
7	150	115	636	372
8	176	136	678	403
9	176	136	699	424
10	176	136	720	445
11	176	136	741	466
13	176	136	783	508
15	176	136	825	550
16	194	147	897	581
18	194	147	939	623
20	194	147	981	665
23	233	162	1052	728
25	233	162	1094	770

Dimensions in mm

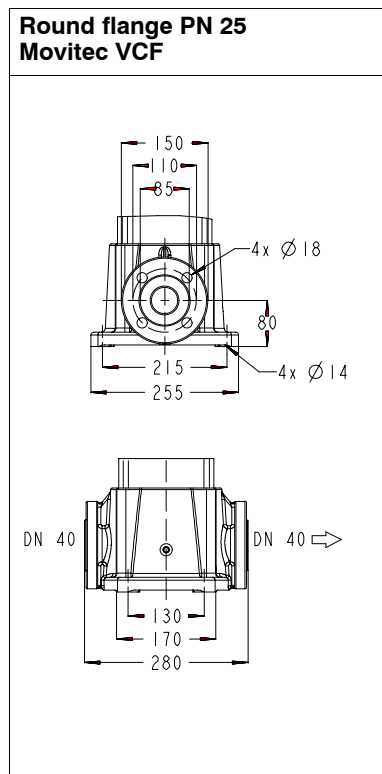
Flange Variants


Terminal Box Position for all pump sizes see page 23

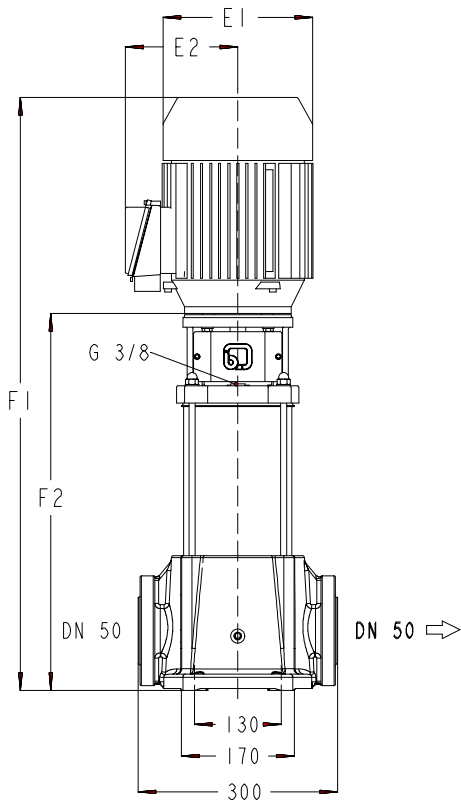
Dimension Tables
Movitec VCF 10 2900 1/min


VCF 10				
No. of stages	E1	E2	F1	F2
1	150	115	556	322
2	150	115	556	322
3	150	115	613	349
4	176	136	661	386
5	176	136	688	413
6	176	136	715	440
7	194	147	793	477
8	194	147	820	504
9	233	162	855	531
10	233	162	882	558
12	233	162	961	632
14	233	162	1015	686
16	233	162	1097	740
18	233	162	1151	794
20	233	162	1205	848

Dimensions in mm

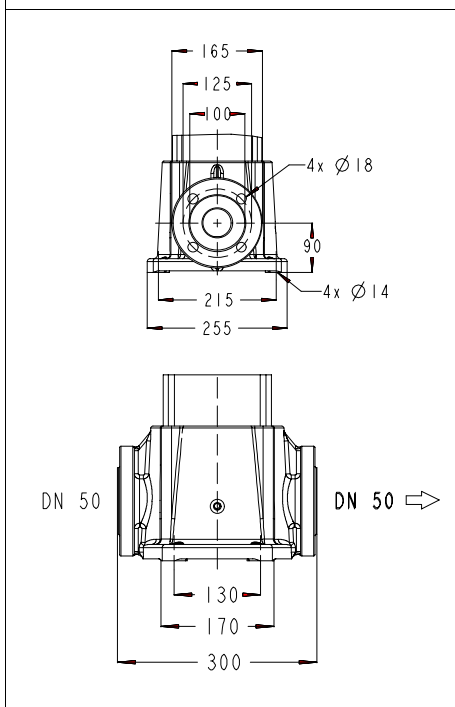
Flange Variant


Terminal Box Position for all pump sizes see page 23

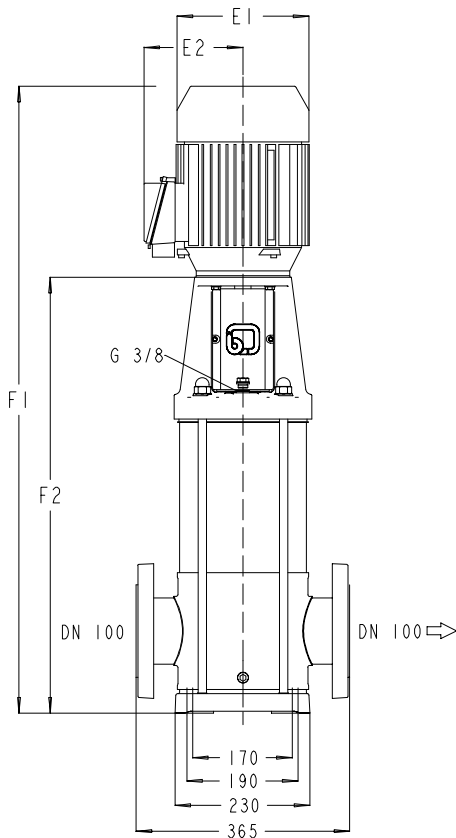
Dimension Tables
Movitec VCF 18 2900 1/min


VCF 18				
No. of stages	E1	E2	F1	F2
1	150	115	611	347
2	176	136	632	357
3	194	147	717	401
4	233	162	760	436
5	233	162	819	490
6	233	162	854	525
7	233	162	916	559
8	233	162	951	594
10	315	206	1195	693
12	315	206	1264	762
14	315	206	1333	831
16	315	206	1402	900

Dimensions in mm

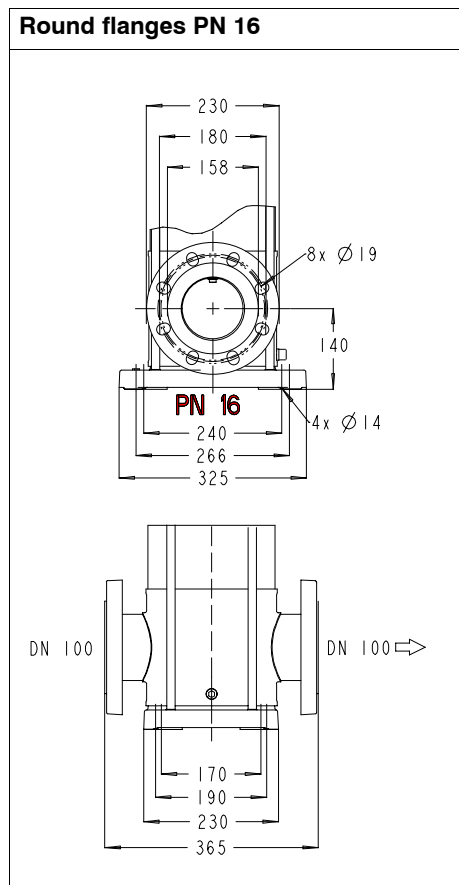
Flange Variants
Round flange PN 25
Movitec VCF


Terminal Box Position for all pump sizes see page 23

Dimension Tables
Movitec VCF 65 2900 1/min


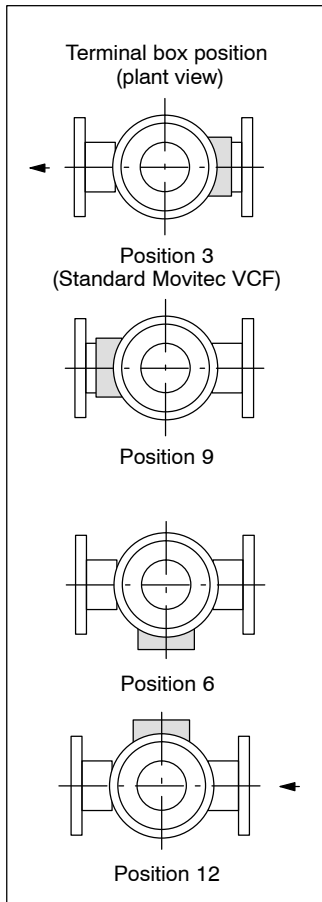
VCF 65	No. of stages	E1	E2	Round flanges PN 16	
				F1	F2
	1	194	147	886	570
	2	233	162	1008	679
	3	233	162	1125	768
	4	315	206	1389	887
	5	315	206	1478	976
	6	315	206	1567	1065
	7	315	206	1700	1154
	8	350	225	1838	1243
	9	350	225	1927	1332

Dimensions in mm

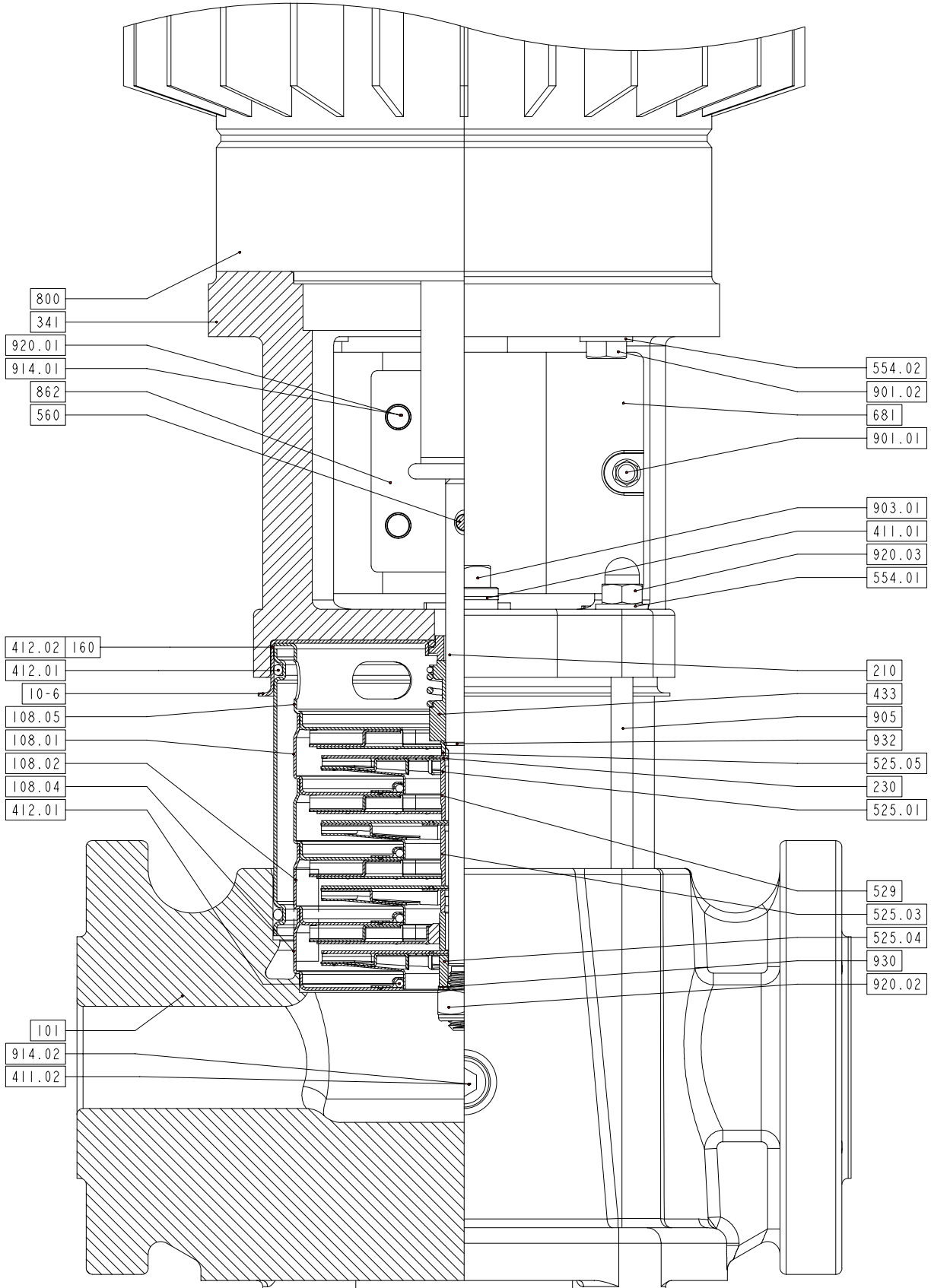
Flange Variants


Terminal Box Position for all pump sizes see page 23

Terminal Box Position for all Pump Sizes



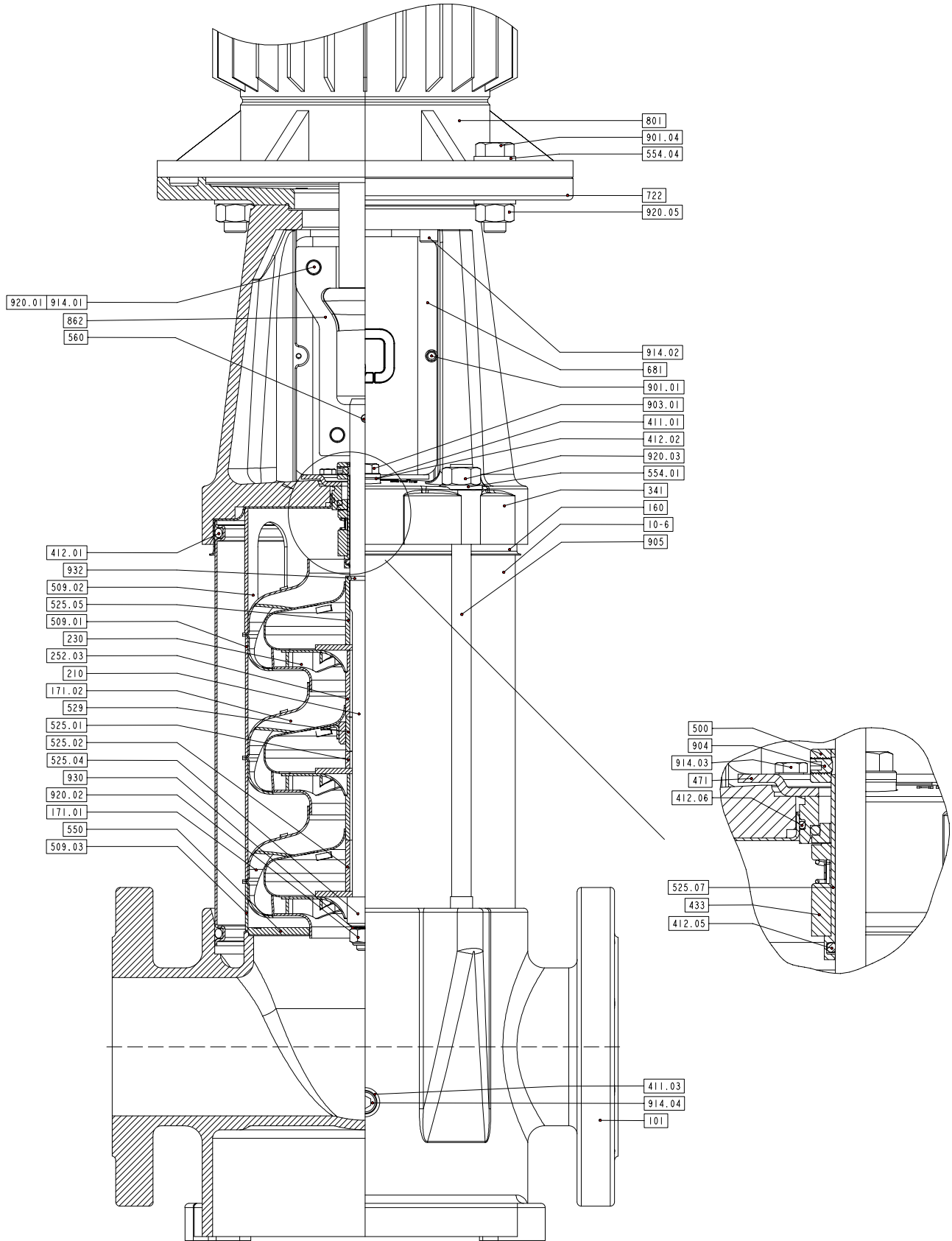
Sectional Drawing
Movitec VCF 2, 4, 10, 18



20040174

Part No.	Description
10-6	Pump shroud
101	Pump casing
108,01	Stage casing
108,02	Stage casing with ceramic bearing
108,04	Stage casing, bottom
108,05	Stage casing, upper
160	Cover
210	Shaft
230	Impeller
341	Motor stool
411,01	Joint ring
411,02	Joint ring
412,01	O-ring
412,02	O-ring
412,03	O-ring
433	Mechanical seal
509,01	Intermediate ring
525,01	Spacer sleeve, short
525,03	Spacer sleeve, long
525,04	Spacer sleeve, end
525,05	Spacer sleeve, seal
529	Bearing sleeve
554,01	Washer
554,02	Washer
560	Pin
681	Coupling guard
800	Motor ($\geq 5,5$ kW 801 Flange motor)
862	Coupling shell
901,01	Hexagon head bolt
901,02	Hexagon head bolt
903,01	Screwed plug
905	Tie bolt
914,01	Hexagon socket head cap screw
914,02	Hexagon socket head cap screw
920,01	Nut
920,02	Nut Lock with non metallic insert
920,03	Nut
930	Safety device nord-Lock
932	Circlip (1/1)

Sectional Drawing
Movitec VCF 65



20040437-A

Part No. Description

10-6	Pump shroud
101	Pump casing
160	Cover
171.01	Diffuser
171.02	Diffuser, with ceramic bearing
210	Shaft
230	Impeller
341	Motor stool
411.01	Joint ring
411.02	Joint ring
412.01	O-ring
412.02	O-ring
412.03	O-ring
412.05	O-ring
412.06	O-ring
433	Mechanical seal
471	Seal cover
500	Ring Cartridge
509.01	Intermediate ring
509.02	Intermediate ring, upper
509.03	Intermediate ring, lower
525.01	Spacer sleeve, short
525.02	Spacer sleeve, middle
525.03	Spacer sleeve, long
525.04	Spacer sleeve, end
525.05	Spacer sleeve, seal
525.06	Spacer sleeve, seaextension
525.07	Spacer sleeve, cartridge
529	Bearing sleeve
550	Disc Bottom
554.01	Washer
560	Pin
681	Coupling guard
800	Motor ($\geq 5,5$ kW 801 Flange motor)
862	Coupling shell
901.01	Hexagon head bolt
903.01	Screwed plug
904	Grub screw
905	Tie bolt
914.01	Hexagon socket head cap screw
914.02	Hexagon socket head cap screw
914.03	Hexagon socket head cap screw
920.01	Nut
920.02	Nut Lock with non metallic insert
920.03	Nut
930	Safety device, nord-Lock
932	Circlip (1/2)