Multistage High-pressure Immersion
Centrifugal Pump

Movitec VCI

Type Series Booklet

KSB

Legal information/Copyright

Type Series Booklet Movitec VCI

Contents

Centrifugal Pumps

Multistage High-pressure Immersion Centrifugal Pumps

Movitec VCI

Main applications

- Machine tools
- Industrial washing machines
- Condensate transport

Fluids handled

- Condensate
- Cooling lubricants
- Emulsions
- Lyes
- Oil

Operating data

Operating properties

Characteristic		Value
Flow rate	Q [m³/h]	≤ 22,5
Head	H [m]	≤ 249
Fluid temperature	T [°C]	≥ -10
		≤ +120
Operating pressure	p [bar]	≤ 25

Design details

Design

- Multistage high-pressure immersion centrifugal pump

Optional:

- Blind stages

Installation

- Vertical installation

Drive

- Surface-cooled KSB squirrel-cage motor
- Thermal class F to IEC 34-1
- Efficiency class IE3 to IEC 60034-30 (≥ 0.75 kW)
- Enclosure IP55
- Frequency 50 Hz/60 Hz

Optional:

- Harting connector, type HAN 10E

Bearings

- Plain bearings

Shaft seal

- Uncooled, maintenance-free mechanical seal in cartridge design

Designation

Designation example

Position																															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
M	o	v	i	t	e	c	V	C	I	0	6	/	1	2	-	1	8	A	A	1	3	C	S	0	7	1	A	5	C	A	
See name plate and data sheet																		See data sheet													

Designation key

Position	Code	Description	
1-7	Type series		
	Movitec	Movitec	
8-9	Design		
	VC	Grey cast iron	EN-GJL-250
	V-	Stainless steel	304 - 304
10	Connections		
	I	Internal thread	
11-12	Size		
	002	2	

Position	Code	Description	
11-12	...	...	
	015	15	
14-15	Number of stages		
	01	1	
	...	...	
	30	30	
17-18	Number of blind stages		
	01	1	
	...	...	
	30	30	
19	Connection standard		
	A	Internal thread	EN ISO 228-1
20	Product generation		
	A	Movitec A VCI design	
21-22	Seal code		
	13	Q1BEGG	
	14	Q1BVGG	
	15	U3U3X4GG	
	16	U3U3VGG	
	18	U3BEGG	
	23	Q1BEGG	
	24	Q1Q1VGG	
	29	Q1Q1EGG	
23	Mechanical seal design		
	C	Cartridge mechanical seal	
24	Drive		
	0	Without motor	
	2	With PumpDrive 2	
	E	With PumpDrive 2 Eco	
	S	Standard IEC	
25-27	Motor size		
	071	IEC 071	
	080	IEC 080	
	090	IEC 090	
	100	IEC 100	
	112	IEC 112	
	132	IEC 132	
	160	IEC 160	
28	Pressure class		
	A	PN 16 / PN 25	
	B	PN 25	
29	Number of motor poles		
	5	2-pole, 50Hz	
	6	2-pole, 60 Hz	
	7	4-pole, 50Hz	
	8	4-pole, 60 Hz	
30	Motor specification		
	K	EXM IEC, Movitec	
	M	230 V, single-phase AC motor	
	O	0.37/0.55 [kW], without IE classification	
	U	230/400 V IE3	
	V	400/690 V IE3	
	W	230/400 V - IE4/IE5 (KSB SuPremE)	
	X	400/690 V - IE4/IE5 (KSB SuPremE)	
31	PumpMeter		
	A	Mit PumpMeter	
	W	Without PumpMeter	
32	Design		

Position	Code	Description
32	_[1]	Standard
	X	Non-standard (BT3D, BT3)

Materials

Overview of materials available for pump components

Part No.	Description	Material
106	Suction casing	EN-GJL-250
108	Stage casing	1.4301
160	Discharge cover	1.4301
210	Shaft	1.4057
230	Impeller	1.4301
341	Drive lantern	EN-GJL-250
412	O-ring	EPDM
525	Spacer sleeve	1.4301
529	Bearing sleeve	Tungsten carbide / aluminium oxide
905	Tie bolt	1.4057
920	Nut	1.4301
932	Circlip	1.4571

Shaft seal materials as a function of pressure and temperature

Seal type	Designation to EN 12756	Seal code	Material		T		p
			Mechanical seal	Pump elastomer	MIN [°C]	Max. [°C]	Max. [bar]
RMG12-G606	Q1BEGG-WRAS[2]	13	Sic / Ca / EPDM	EPDM WRAS / ACS	- 20	+ 100	25
RMG12-G606	Q1BVGG[2]	14	Sic / Ca / FPM	FPM	- 20	+ 120	25
RMG12-G606	U3U3X4GG	15	TuC / TuC / HNBR	HNBR	- 20	+ 120	25
RMG12-G606	U3U3VGG	16	TuC / TuC / FPM	FPM	- 20	+ 120	25
RMG12-G606	U3BEGG	18	TuC / Ca / EPDM	EPDM 559236	- 20	+ 120	25
RMG12-G606	Q1BEGG[2]	23	SiC / Ca / EPDM	EPDM	- 20	+ 100	25
MG12-G60	Q1Q1VGG	24	SiC / SiC / FPM	FPM	- 20	+ 100	10
MG12-G60	Q1Q1EGG	29	SiC / SiC / EPDM	EPDM	- 20	+ 100	10

Product benefits

- Top quality pump thanks to advanced high-precision production technology and durable high-grade materials
- Excellent reliability, enabled by compact, easy-to-replace cartridge seal and automatic return of small amounts of leakage into the tank
- An energy-saving, state-of-the-art pump solution characterised by high efficiency levels, optimum flow passage, the use of high-efficiency motors, and precision engineering of all hydraulic components
- Flexible use due to modular design, optional blind stages and versatile seal materials for a wide variety of applications, as well as numerous motor options
- Easy replacement of competitor products due to comparable dimensions
- High energy efficiency as well as low investment and maintenance costs make for low life cycle costs.

Product information

Product information as per Regulation No. 1907/2006 (REACH)

For information as per chemicals Regulation (EC) No. 1907/2006 (REACH), see http://www.ksb.com/reach.

1) Blank
2) Not suitable for fluids containing solids. This also applies to fluids which may contain particles developing as a result of salt crystallisation at low fluid temperatures.

Selection information

Blind stages can be provided, depending on the immersion depth required.
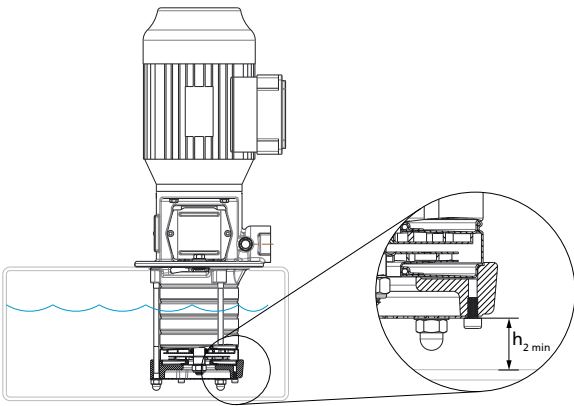
Minimum installation height

Fig. 1: Minimum installation height

Minimum installation height ($h_{2\,min}$)

Size	$h_{2\,min}$
	[mm]
2	25
4	25
6	25
10	40
15	40

Fluid handled

The actual operating conditions must always be checked (concentration, temperature, solids content). Penetration of air into the system must be avoided by all means.

If the fluid handled contains solids such as steel chips or steel chip dust, check the permissible particle concentration with KSB.

Temperature of the fluid handled

· **Permissible temperature range:** -10 °C to +90 °C

Minimum level of fluid handled
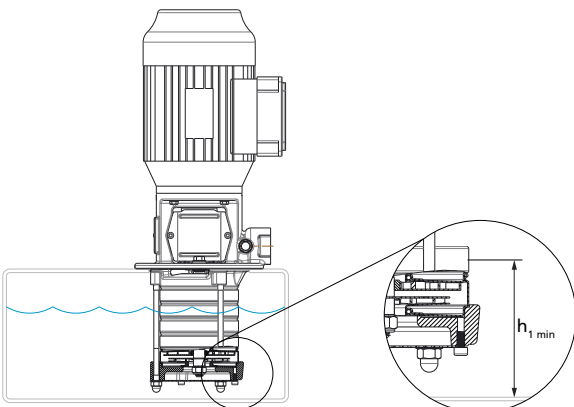
Fig. 2: Minimum level of fluid handled

Minimum level of fluid handled ($h_{1\,min}$)

Size	$h_{1\,min}$
	[mm]
2	61
4	61
6	61
10	82
15	82

Minimum flow rate

Minimum flow rate (Q_{min}) at a fluid temperature of ≤ 20 °C

Size	Q_{min}	
	50 Hz	60 Hz
	[m³/h]	[m³/h]
2	0,2	0,2
4	0,4	0,5
6	0,6	0,8
10	1,1	1,3
15	1,6	2,0
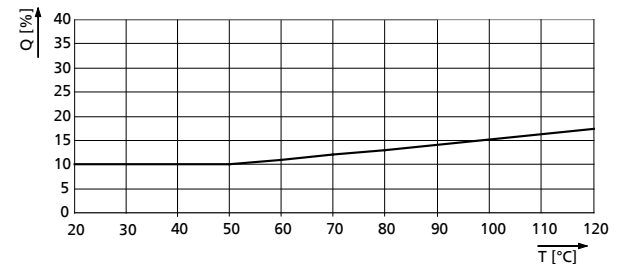
Fig. 3: Minimum flow rate required as a function of fluid temperature at a fluid temperature > +20 °C

Permissible fluids

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

Overview of product features / selection tables

Overview of fluids handled

The data refer to the chemical resistance of the materials. The relevant regulations / standards governing individual pump applications have to be complied with.

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

- **Temperature ranges:**
  - Reference temperature: +20 °C
 - For temperatures <0 °C: contact KSB.
  - For temperatures > 50 °C: check and observe the vapour pressure of the fluid handled.
  - Max. temperature = +120 °C, unless indicated otherwise.

- Max. concentration = 100 % unless indicated otherwise.

- Mechanical seal silicon carbide / carbon (Q1B): not suitable for fluids containing solid substances. This rule also covers particles developing as a result of salt crystallisation at low fluid temperatures.

- Mechanical seal tungsten carbide / tungsten carbide (U3U3): solids content max. 20 ppm (depending on particle size), with the exception of corrosive fluids. Fluids with a higher solids content are not permitted (ppm = 1 mg/kg).

- Caution: High temperatures will increase corrosion (reference temperature = +20 °C).

- The density and/or viscosity may vary. This leads to different operating conditions and affects the motor rating required.

Mechanical seal selection depending on the fluid to be handled

Substance contained	Max. percentage	$T_{max.}$	Seal code					
	[%]	[°C]	13	14	15	16	18	23
Alum, acid-free	≤ 3	+80	-	-	-	-	-	-
Alkaline solution, bottle rinsing, max. 2% sodium hydroxide	≤ 100	+40	-	-	✗	-	-	-
Alcohol								
• Butanol	≤ 100	+60	✗	-	-	-	-	✗
• Ethanol	≤ 100	+60	✗	-	-	-	-	✗
• Propanol	≤ 100	80	✗	-	-	-	-	✗
Ammonium bicarbonate	≤ 10	+40	✗	-	-	-	-	✗
Ammonium hydroxide	≤ 20	+20	✗	-	✗	-	-	✗
Calcium acetate, acid-free	≤ 10	+60	✗	-	-	-	-	✗
Calcium hydroxide, saturated solution	≤ 10	+50	-	-	-	✗	-	-
Water-oil emulsion (95 %, 5 %), free of solids	≤ 100	+80	-	✗	-	-	-	-
Ethylene glycol base anti-freeze, inhibited, closed system	≤ 20	+110	✗[3]	✗	-	✗	-	✗
	≤ 25	+110	✗[3]	✗	-	✗	-	✗
	≤ 30	+110	✗[3]	✗	-	✗	-	✗
	≤ 35	+110	✗[3]	✗	-	✗	-	✗
	≤ 40	+110	✗[3]	✗	-	✗	-	✗
	≤ 45	+110	✗[3]	✗	-	✗	-	✗
	≤ 50	+110	✗[3]	✗	-	✗	-	✗
Water-based cooling lubricant	≤ 100	+90	✗	✗	-	✗	-	-
Glycerine	≤ 40	+80	✗	✗	-	-	-	✗
Glycols (pure)	≤ 100	+100	-	-	-	-	-	-
Propylene glycol	≤ 50	+90	✗	✗	-	✗	-	✗
Diethylene glycol	≤ 100	+100	✗	✗	-	-	-	✗
Ethylene glycol	≤ 100	+100	✗	✗	-	-	-	✗
Potassium hydroxide	≤ 5	+40	-	-	✗	-	-	-
Potassium nitrate, acid-free	≤ 5	+30	-	-	✗	-	-	-
Potassium sulphate, acid-free	≤ 3	+20	-	✗	-	-	-	-
Potassium carbonate	≤ 20	+50	✗	-	-	-	-	✗
Potassium formate	≤ 20	+50	-	-	✗	-	-	-
Sodium carbonate	≤ 6	+60	✗	-	-	-	-	✗
Sodium hydroxide	≤ 5	+60	-	-	✗	-	-	-
Sodium nitrate, acid-free	≤ 10	+30	✗	-	-	-	-	✗

3)   ≤ 100 °C

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Substance contained	Max. percentage	T$_{max.}$	Seal code					
	[%]	[°C]	13	14	15	16	18	23
Sodium nitrate, acid-free	≤ 10	+60	✗	-	-	-	-	-
Oil								
▪ Cutting oil	≤ 100	+90	-	✗	-	✗	-	-
▪ Silicone oil	≤ 100	-	-	✗	-		-	-
▪ Olive oil	≤ 100	+80	-	✗	-	✗	-	-
▪ Peanut oil	≤ 100	+90	-	✗	-	-	-	-
▪ Linseed oil	≤ 100	+60	-	✗	-	-	-	-
▪ Corn oil	≤ 100	+100	-	✗	-	-	-	-
▪ Rapeseed oil	≤ 100	+100	-	✗	-	-	-	-
▪ Soybean oil	≤ 100	+80	-	✗	-	✗	-	-
Trisodium phosphate	≤ 4	+80	-	✗	-	-	-	-
Water								
▪ Fire-fighting water	≤ 100	+60	-	✗	-	-	✗	-
▪ Heating water in accordance with VDI 2035	≤ 100	+100	✗	-	-	-	✗	✗
▪ Hot water treated in accordance with VdTüV 1466	≤ 100	+120	✗	-	-	-	✗	✗
▪ Boiler feed water to VdTÜV 1466	≤ 100	+120	✗	-	-	-	✗	✗
▪ Condensate treated in accordance with VdTÜV 1466	≤ 100	+120	✗	-	-	-	✗	✗
▪ Vapour condensate (brewery)	≤ 100	+120	✗	-	-	-	✗	✗
▪ Cooling water	≤ 100	+100	-	-	-	✗	-	-
▪ Tap water	≤ 100	+60	✗	-	-	-	-	-
▪ Brewing water	≤ 100	+60	✗	-	-	-	-	-
▪ Ice water (brewery)	≤ 100	+60	✗	-	-	-	-	-
▪ Hot water (brewery)	≤ 100	+60	✗	-	-	-	-	-
▪ Clean water	≤ 100	+60	✗	✗	✗	✗	✗	✗
▪ Raw water	≤ 100	+60	-	-	✗	-	-	-
▪ Grey water, slightly contaminated water	≤ 100	+60	-	-	✗	-	-	-
▪ River water	≤ 100	+60	-	-	✗	-	-	-
▪ Seawater	≤ 100	+60	-	-	✗	-	-	-
▪ Dam water	≤ 100	+60	-	-	✗	-	-	-
▪ Surface water	≤ 100	+60	-	-	✗	-	-	-
▪ Fresh water	≤ 100	+60	-	✗	-	-	-	-
▪ Barrier water	≤ 100	+70	-	-	-	✗	-	-
▪ Rinsing water	≤ 100	+70	-	-	-	✗	-	-
▪ Rainwater, with strainer	≥ 20	+60	-	-	-	✗	-	-
▪ Water containing lime	≤ 100	+90	-	-	✗	-	-	-
▪ Water containing oil	≤ 100	+90	-	✗	-	✗	-	-
▪ Water-glycol mixture	≤ 100	+100	-	-	-	-	-	-

Technical data

Movitec VCI B, n = 2900 rpm

14 = mechanical seal code Q1BVGG

Technical data, 50 Hz

Movitec VCI	P_N $P_N \geq 0{,}75$ kW = IE3 [kW]	I_N 3~230/400 V [A]	I_N 3~400/690 V [A]	14 Mat. No.	[kg]
02/02-02 B	0,37	1,64/0,94	-	48239986	15,6
02/03-03 B	0,37	1,64/0,94	-	48239987	15,9
02/04-04 B	0,37	1,64/0,94	-	48239988	16,2
02/05-05 B	0,37	1,64/0,94	-	48239989	16,5
02/06-06 B	0,55	2,31/1,33	-	48239990	17,7
02/07-07 B	0,55	2,31/1,33	-	48239991	18
02/08-08 B	0,55	2,31/1,33	-	48239992	18,3
02/09-09 B	0,75	2,92/1,68	-	48239993	21,8
02/10-10 B	0,75	2,92/1,68	-	48239994	22,2
02/11-11 B	1,10	4,17/2,40	-	48239995	25,1
02/12-12 B	1,10	4,17/2,40	-	48239996	25,4
02/14-14 B	1,10	4,17/2,40	-	48239997	26,3
02/16-16 B	1,50	5,08/2,92	-	48239998	30,2
02/18-18 B	1,50	5,08/2,92	-	48239999	30,8
02/20-20 B	1,50	5,08/2,92	-	48240000	31,1
02/22-22 B	2,20	7,22/4,15	-	48240001	36
02/24-24 B	2,20	7,22/4,15	-	48240002	36,6
02/26-26 B	2,20	7,22/4,15	-	48240003	37,2
02/28-28 B	2,20	7,22/4,15	-	48240004	37,8
02/30-30 B	2,20	7,22/4,15	-	48240005	38,4
04/02-02 B	0,37	1,64/0,94	-	48240006	15,6
04/03-03 B	0,55	2,31/1,33	-	48240007	16,8
04/04-04 B	0,55	2,31/1,33	-	48240008	17,1
04/05-05 B	0,75	2,92/1,68	-	48240009	20,7
04/06-06 B	1,10	4,17/2,40	-	48240010	23,6
04/07-07 B	1,10	4,17/2,40	-	48240011	23,9
04/08-08 B	1,50	5,08/2,92	-	48240012	27,6
04/09-09 B	1,50	5,08/2,92	-	48240013	27,9
04/10-10 B	1,50	5,08/2,92	-	48240014	28,3
04/11-11 B	2,20	7,22/4,15	-	48240015	30,9
04/12-12 B	2,20	7,22/4,15	-	48240016	31,2
04/14-14 B	2,20	7,22/4,15	-	48240017	32,1
04/16-16 B	3,00	-	5,59/3,24	48240018	41,5
04/18-18 B	3,00	-	5,59/3,24	48240019	42,1
04/20-20 B	3,00	-	5,59/3,24	48240020	43,2
04/22-22 B	4,00	-	7,45/4,32	48240021	48,8
04/24-24 B	4,00	-	7,45/4,32	48240022	49,4
04/26-26 B	4,00	-	7,45/4,32	48240023	66
04/26-28 B	4,00	-	7,45/4,32	48240024	68,1
04/26-30 B	4,00	-	7,45/4,32	48240025	68,2
06/02-02 B	0,37	1,64/0,94	-	48240026	15,7
06/03-03 B	0,75	2,92/1,68	-	48240027	20,1
06/04-04 B	1,10	4,17/2,40	-	48240028	23,1
06/05-05 B	1,10	4,17/2,40	-	48240029	23,5
06/06-06 B	1,50	5,08/2,92	-	48240030	27,2
06/07-07 B	1,50	5,08/2,92	-	48240031	27,6
06/08-08 B	2,20	7,22/4,15	-	48240032	30,3
06/09-09 B	2,20	7,22/4,15	-	48240033	30,6
06/10-10 B	2,20	7,22/4,15	-	48240034	31
06/11-11 B	3,00	-	5,59/3,24	48240035	40,5
06/12-12 B	3,00	-	5,59/3,24	48240036	40,8

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10   Movitec VCI

Movitec VCI	P_N	I_N	I_N	14	
	$P_N \geq 0.75$ kW = IE3	3~230/400 V	3~400/690 V		
	[kW]	[A]	[A]	Mat. No.	[kg]
06/14-14 B	3,00	-	5,59/3,24	48240037	41,5
06/16-16 B	4,00	-	7,45/4,32	48240038	63,5
06/18-18 B	4,00	-	7,45/4,32	48240039	64,2
06/20-20 B	5,50	-	10,00/5,80	48240040	91,7
06/22-22 B	5,50	-	10,00/5,80	48240041	92
06/24-24 B	5,50	-	10,00/5,80	48240042	93,4
06/26-26 B	5,50	-	10,00/5,80	48240043	93,8
06/28-28 B	5,50	-	10,00/5,80	48240044	94,1
06/26-30 B	5,50	-	10,00/5,80	48240045	94,4
10/01-02 B	0,75	2,92/1,68	-	48240106	18,9
10/02-02 B	0,75	2,92/1,68	-	48240107	18,8
10/03-03 B	1,10	4,17/2,40	-	48240108	22,5
10/04-04 B	1,50	5,08/2,92	-	48240109	33,8
10/05-05 B	2,20	7,22/4,15	-	48240110	37,4
10/06-06 B	2,20	7,22/4,15	-	48240111	38
10/07-07 B	3,00	-	5,59/3,24	48240112	46,5
10/08-08 B	3,00	-	5,59/3,24	48240113	47,2
10/09-09 B	4,00	-	7,45/4,32	48240114	52,8
10/10-10 B	4,00	-	7,45/4,32	48240115	53,7
10/11-11 B	4,00	-	7,45/4,32	48240116	54,3
10/13-13 B	5,50	-	10,00/5,80	48240117	95,6
10/15-15 B	5,50	-	10,00/5,80	48240118	96,9
10/17-17 B	7,50	-	13,40/7,74	48240119	106,9
10/19-19 B	7,50	-	13,40/7,74	48240120	108,4
10/21-21 B	7,50	-	13,40/7,74	48240121	109,7
15/01-02 B	1,10	4,17/2,40	-	48240138	21,6
15/02-02 B	2,20	7,22/4,15	-	48240139	34,4
15/03-03 B	3,00	-	5,59/3,24	48240140	43,7
15/04-04 B	4,00	-	7,45/4,32	48240141	49,5
15/05-05 B	5,50	-	10,00/5,80	48240142	89,6
15/06-06 B	5,50	-	10,00/5,80	48240143	90,4
15/07-07 B	7,50	-	13,40/7,74	48240144	97,4
15/08-08 B	7,50	-	13,40/7,74	48240145	98,1
15/09-09 B	11,00	-	19,30/11,20	48240146	196,6
15/10-10 B	11,00	-	19,30/11,20	48240147	197,4
15/11-11 B	11,00	-	19,30/11,20	48240148	198,1
15/13-13 B	15,00	-	26,20/15,20	48240149	206,5
15/15-15 B	15,00	-	26,20/15,20	48240150	208
15/17-17 B	15,00	-	26,20/15,20	48240151	213,1
15/17-19 B	15,00	-	26,20/15,20	48240152	213,7
15/17-21 B	15,00	-	26,20/15,20	48240153	214,4

Movitec VCI B, n = 3500 rpm

14 = mechanical seal code Q1BVGG

Technical data, 60 Hz

Movitec VCI	P_N	I_N	14	
	$P_N \geq 0.75$ kW = IE3	3~230/400 V		
	[kW]	[A]	Mat. No.	[kg]
02/02-02 B	0,37	1,54/0,89	48240046	15,6
02/03-03 B	0,37	1,54/0,89	48240047	15,9
02/04-04 B	0,55	2,29/1,32	48240048	17
02/05-05 B	0,75	2,87/1,65	48240049	20,6
02/06-06 B	0,75	2,87/1,65	48240050	20,9
02/07-07 B	1,10	4,11/2,36	48240051	23,8
02/08-08 B	1,10	4,11/2,36	48240052	24,1
02/09-09 B	1,10	4,11/2,36	48240053	24,4

Movitec VCI	P_N	I_N	14	
	$P_N \geq 0,75$ kW = IE3	3~230/400 V		
	[kW]	[A]	Mat. No.	[kg]
02/10-10 B	1,50	5,01/2,88	48240054	28,1
02/11-11 B	1,50	5,01/2,88	48240055	28,4
02/12-12 B	1,50	5,01/2,88	48240056	28,7
02/14-14 B	2,20	7,12/4,09	48240057	31,9
02/16-16 B	2,20	7,12/4,09	48240058	32,7
02/18-18 B	2,20	7,12/4,09	48240059	33,1
02/20-20 B	3,00	9,57/5,51	48240060	44,6
02/22-22 B	3,00	9,57/5,51	48240061	45,2
02/22-24 B	3,00	9,57/5,51	48240062	45,5
02/22-26 B	3,00	9,57/5,51	48240063	45,8
02/22-28 B	3,00	9,57/5,51	48240064	46,1
02/22-30 B	3,00	9,57/5,51	48240065	63,6
04/02-02 B	0,55	2,29/1,32	48240066	16,4
04/03-03 B	0,75	2,87/1,65	48240067	19,9
04/04-04 B	1,10	4,11/2,36	48240068	22,8
04/05-05 B	1,50	5,01/2,88	48240069	26,6
04/06-06 B	1,50	5,01/2,88	48240070	26,9
04/07-07 B	2,20	7,12/4,09	48240071	29,5
04/08-08 B	2,20	7,12/4,09	48240072	29,9
04/09-09 B	3,00	9,57/5,51	48240073	41,1
04/10-10 B	3,00	9,57/5,51	48240074	39,8
04/11-11 B	3,00	9,57/5,51	48240075	41,7
04/12-12 B	4,00	12,80/7,34	48240076	45,3
04/14-14 B	4,00	12,80/7,34	48240077	45,9
04/16-16 B	5,50	17,10/9,86	48240078	63,8
04/18-18 B	5,50	17,10/9,86	48240079	80,5
04/18-20 B	5,50	17,10/9,86	48240080	78,8
04/18-22 B	5,50	17,10/9,86	48240081	83,8
04/18-24 B	5,50	17,10/9,86	48240082	84
04/18-26 B	5,50	17,10/9,86	48240083	84,7
04/18-28 B	5,50	17,10/9,86	48240084	85,2
04/18-30 B	5,50	17,10/9,86	48240085	85,5
06/02-02 B	0,75	2,87/1,65	48240086	19,7
06/03-03 B	1,10	4,11/2,36	48240087	22,7
06/04-04 B	1,50	5,01/2,88	48240088	26,5
06/05-05 B	2,20	7,12/4,09	48240089	29,1
06/06-06 B	2,20	7,12/4,09	48240090	29,5
06/07-07 B	3,00	9,57/5,51	48240091	40,5
06/08-08 B	3,00	9,57/5,51	48240092	41,1
06/09-09 B	4,00	12,80/7,34	48240093	44,8
06/10-10 B	4,00	12,80/7,34	48240094	45,1
06/11-11 B	4,00	12,80/7,34	48240095	45,5
06/12-12 B	5,50	17,10/9,86	48240096	79,2
06/14-14 B	5,50	17,10/9,86	48240097	79,9
06/16-16 B	7,50	22,90/13,20	48240098	95,8
06/18-18 B	7,50	22,90/13,20	48240099	96,5
06/18-20 B	7,50	22,90/13,20	48240100	96,8
06/18-22 B	7,50	22,90/13,20	48240101	97,1
06/18-24 B	7,50	22,90/13,20	48240102	97,4
06/18-26 B	7,50	22,90/13,20	48240103	97,8
06/18-28 B	7,50	22,90/13,20	48240104	98,1
06/18-30 B	7,50	22,90/13,20	48240105	98,4
10/01-02 B	0,75	2,87/1,65	48240122	18,9
10/02-02 B	1,50	5,01/2,88	48240123	32
10/03-03 B	2,20	7,12/4,09	48240124	35,4
10/04-04 B	3,00	9,57/5,51	48240125	46
10/05-05 B	4,00	12,80/7,34	48240126	49,9

Movitec VCI	P_N	I_N	14	
	$P_N \geq 0{,}75$ kW = IE3	3~230/400 V		
	[kW]	[A]	Mat. No.	[kg]
10/06-06 B	4,00	12,80/7,34	48240127	50,6
10/07-07 B	5,50	17,10/9,86	48240128	84,2
10/08-08 B	5,50	17,10/9,86	48240129	84,8
10/09-09 B	7,50	22,90/13,20	48240130	98,3
10/10-10 B	7,50	22,90/13,20	48240131	99,1
10/11-11 B	7,50	22,90/13,20	48240132	99,8
10/13-13 B	11,00	33,20/19,10	48240133	198,9
10/15-15 B	11,00	33,20/19,10	48240134	200,2
10/15-17 B	11,00	33,20/19,10	48240135	204,4
10/15-19 B	11,00	33,20/19,10	48240136	205,2
10/15-21 B	11,00	33,20/19,10	48240137	205,8
15/01-02 B	2,20	7,12/4,09	48240154	34,5
15/02-02 B	3,00	9,57/5,51	48240155	44,1
15/03-03 B	5,50	17,10/9,86	48240156	81,6
15/04-04 B	7,50	22,90/13,20	48240157	94,3
15/05-05 B	7,50	22,90/13,20	48240158	95,1
15/06-06 B	11,00	33,20/19,10	48240159	194,4
15/07-07 B	11,00	33,20/19,10	48240160	195,2
15/08-08 B	15,00	44,90/25,80	48240161	202,9
15/09-09 B	15,00	44,90/25,80	48240162	203,6
15/10-10 B	15,00	44,90/25,80	48240163	204,4
15/11-11 B	18,50	54,50/31,30	48240164	231,1
15/11-13 B	18,50	54,50/31,30	48240165	235,4
15/11-15 B	18,50	54,50/31,30	48240166	236
15/11-17 B	18,50	54,50/31,30	48240167	236,7
15/11-19 B	18,50	54,50/31,30	48240168	237,1
15/11-21 B	18,50	54,50/31,30	48240169	238

Selection chart

Movitec VCI B; n = 2900 rpm

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Movitec VCI B; n = 3500 rpm

KSB
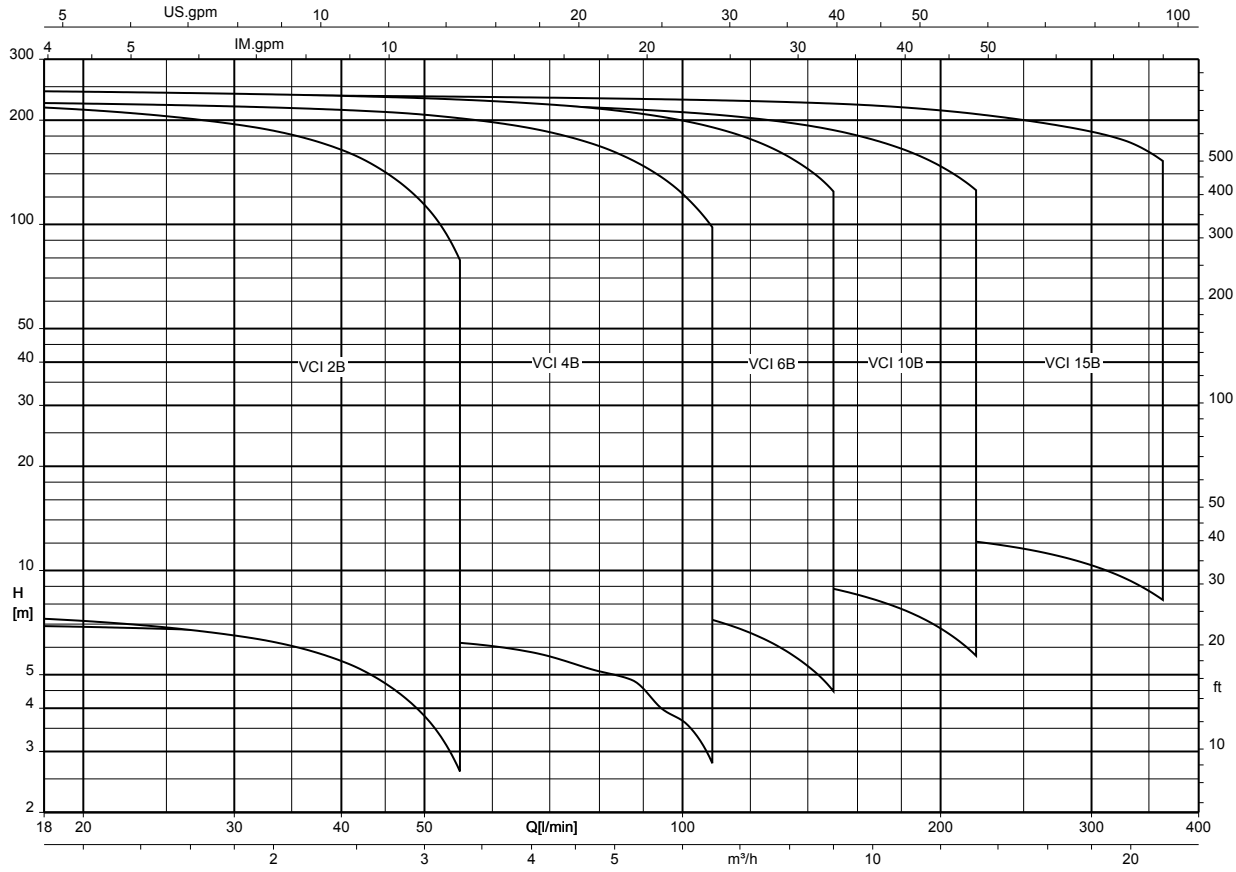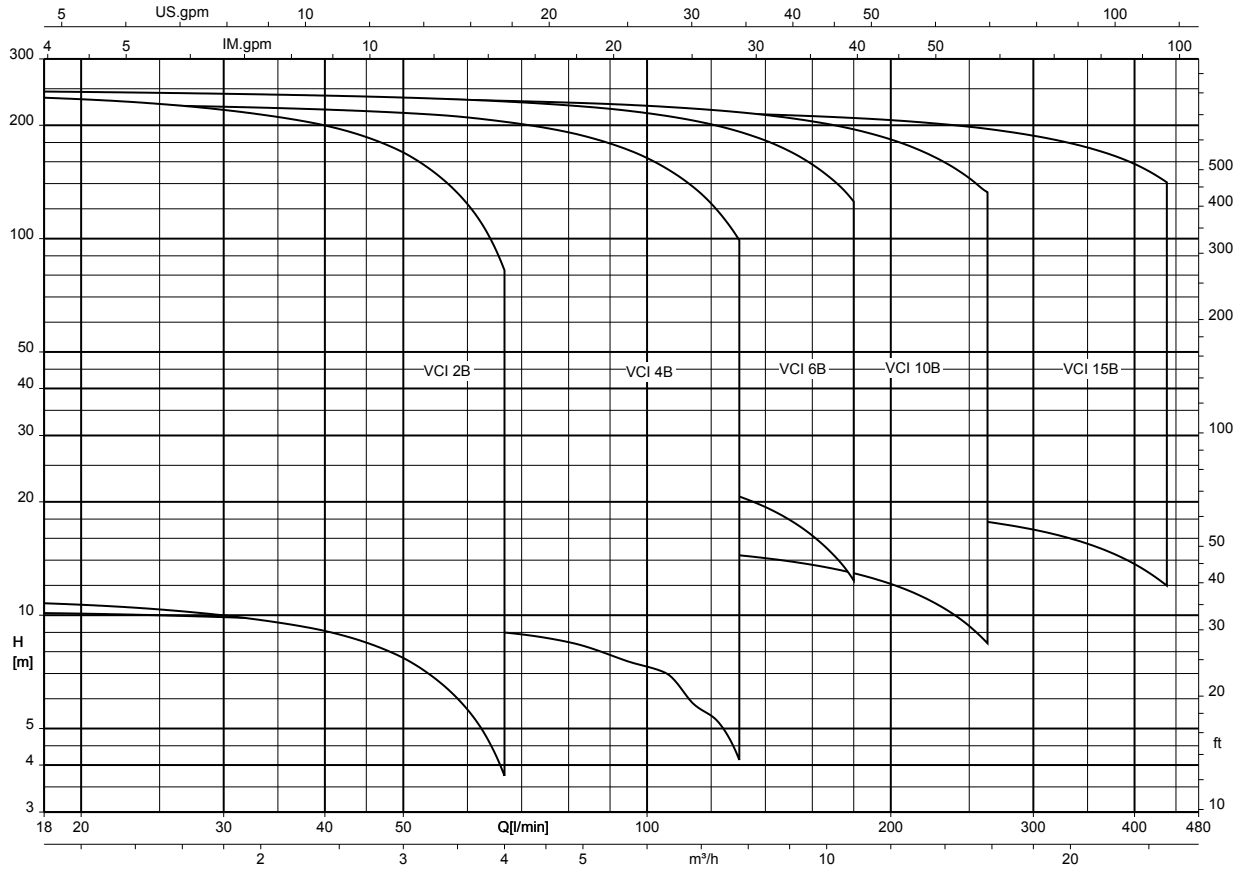
Characteristic curves

n = 2900 rpm

Movitec VCI, 2B, n = 2900 rpm

Fig. 4: ρ = 1000 kg/m³
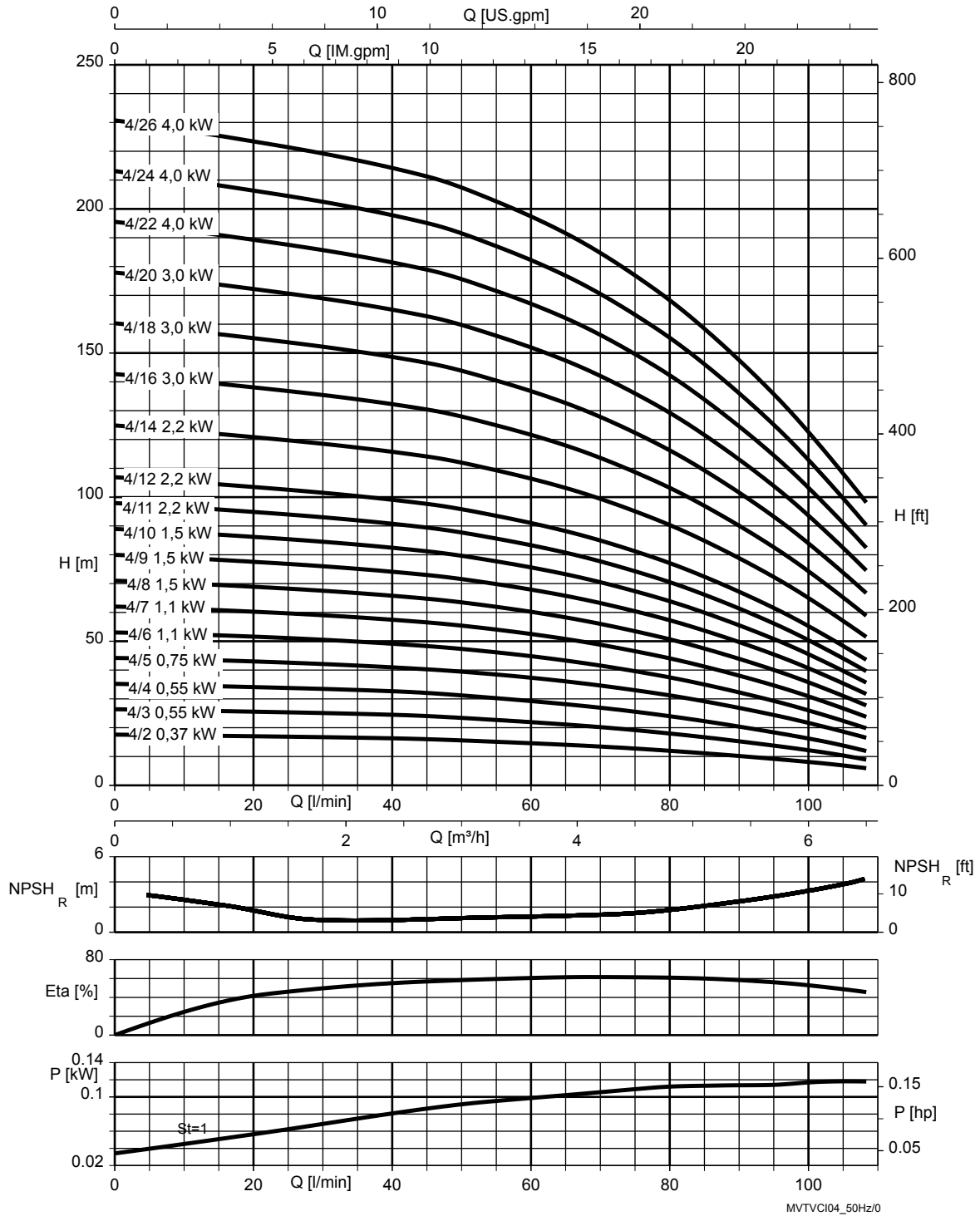
St = 1	P per stage

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Movitec VCI, 4B, n = 2900 rpm

Fig. 5: ρ = 1000 kg/m³

St = 1	P per stage

Movitec VCI, 6B, n = 2900 rpm

Curves labelled (top to bottom):
- 6/26 5,5 kW
- 6/24 5,5 kW
- 6/22 5,5 kW
- 6/20 5,5 kW
- 6/18 4,0 kW
- 6/16 4,0 kW
- 6/14 3,0 kW
- 6/12 3,0 kW
- 6/11 3,0 kW
- 6/10 2,2 kW
- 6/9 2,2 kW
- 6/8 2,2 kW
- 6/7 1,5 kW
- 6/6 1,5 kW
- 6/5 1,1 kW
- 6/4 1,1 kW
- 6/3 0,75 kW
- 6/2 0,37 kW

St=1

MVTVCI06_50Hz/0
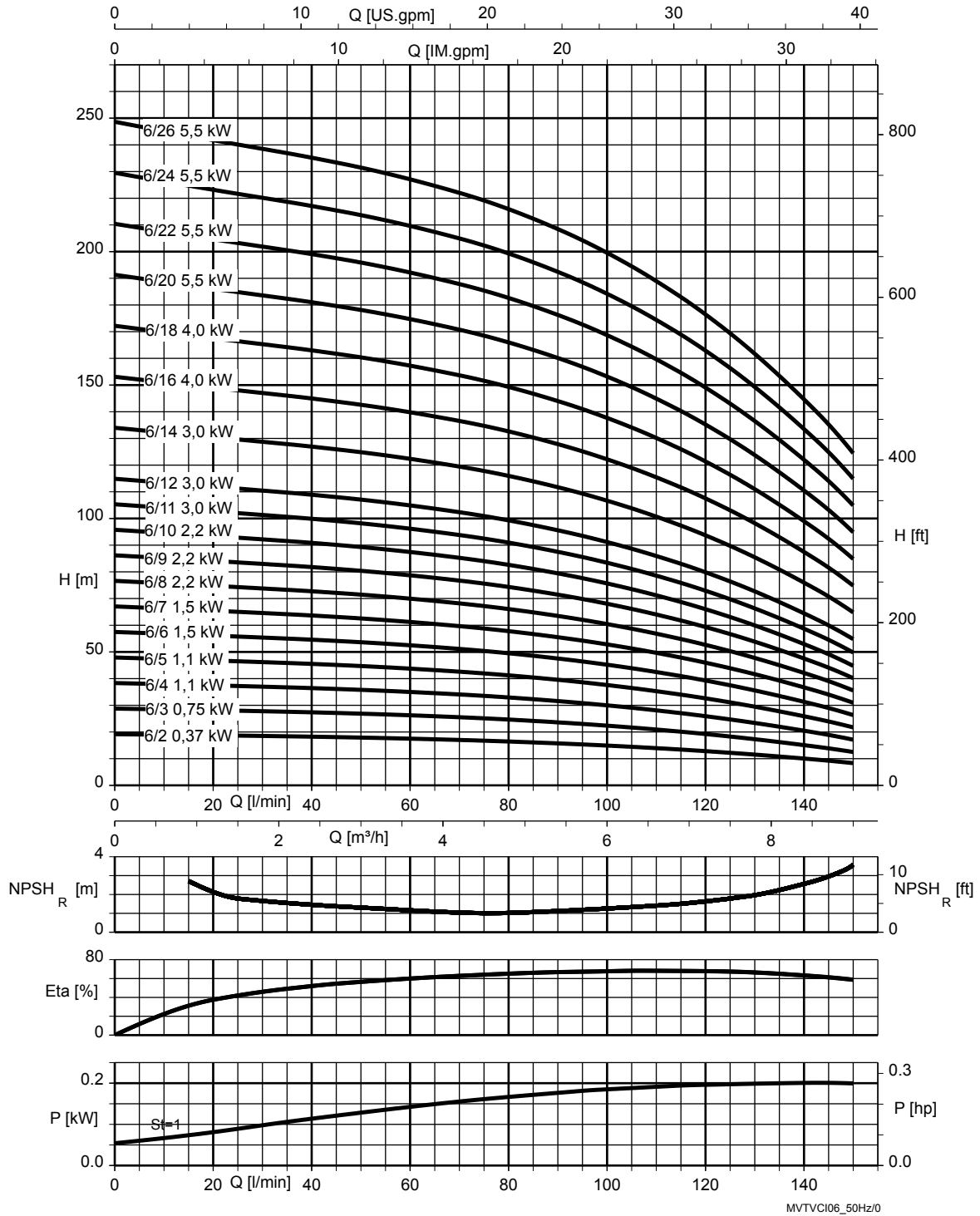
Fig. 6: ρ = 1000 kg/m³

St = 1	P per stage

Movitec VCI, 10B, n = 2900 rpm
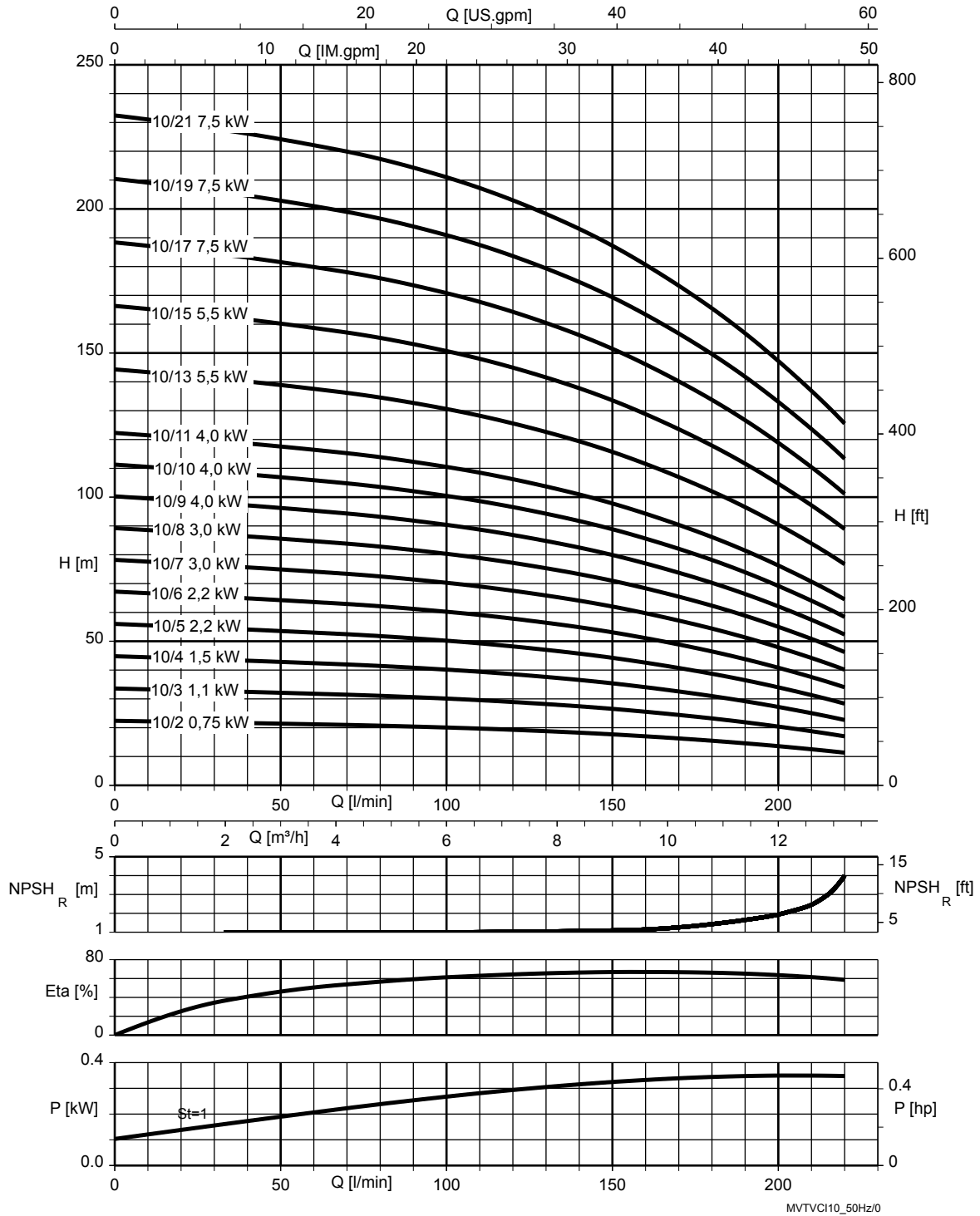
Fig. 7: ρ = 1000 kg/m³

St = 1	P per stage

Movitec VCI, 15B, n = 2900 rpm
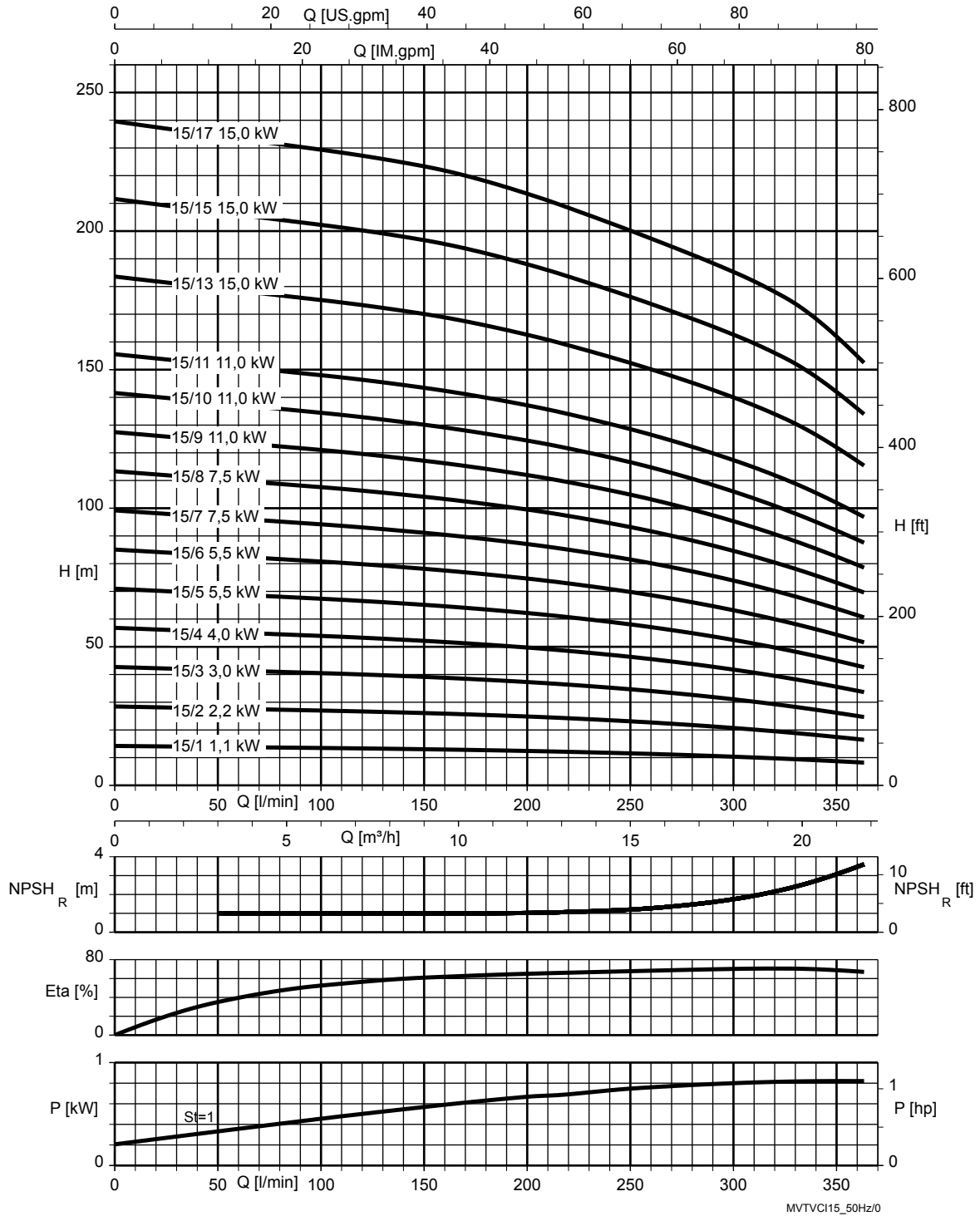
Fig. 8: ρ = 1000 kg/m³

St = 1	P per stage

n = 3500 rpm

Movitec VCI, 2B, n = 3500 rpm
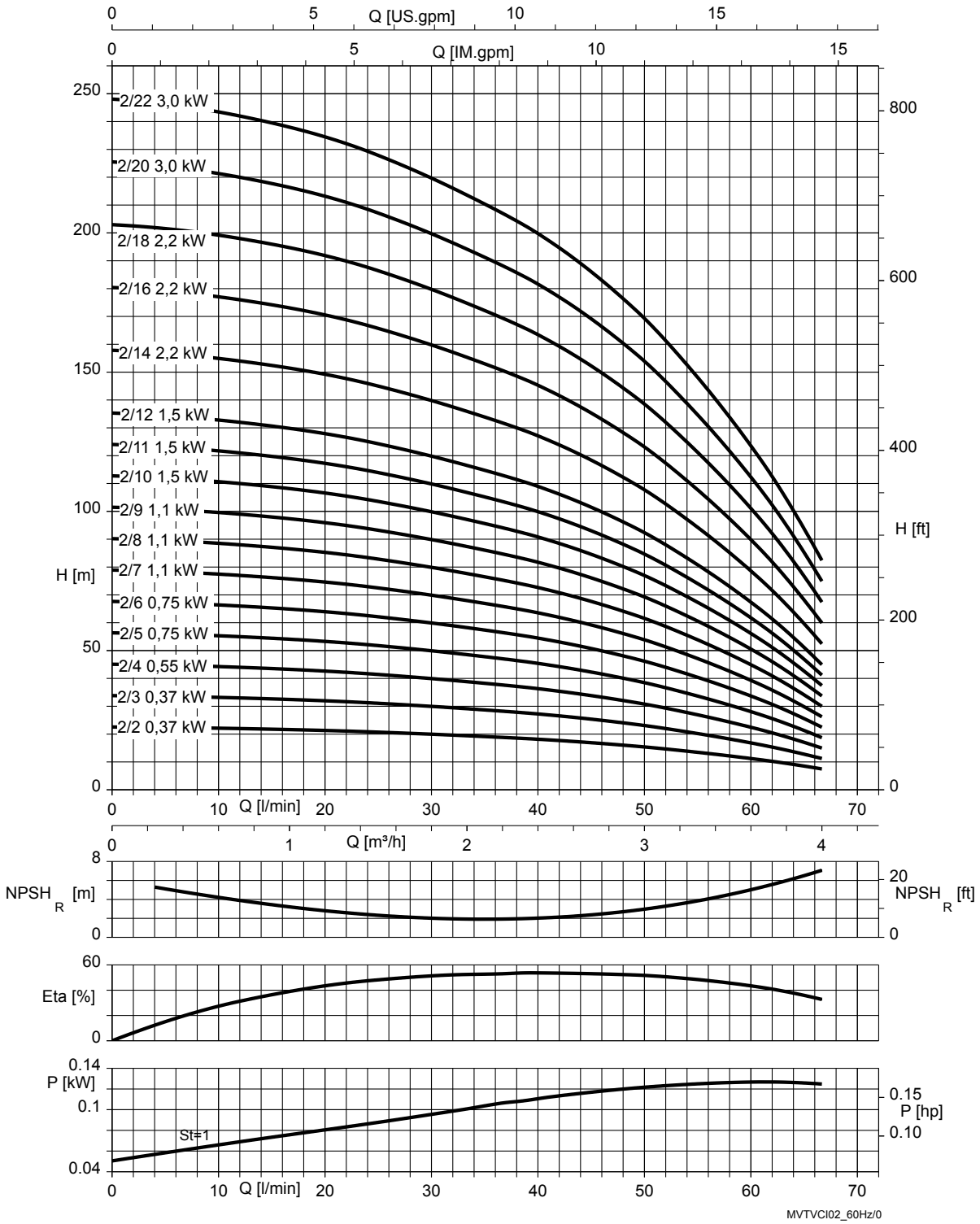
Fig. 9: ρ = 1000 kg/m³

St = 1	P per stage

Movitec VCI, 4B, n = 3500 rpm

MVTVCI04_60Hz/0
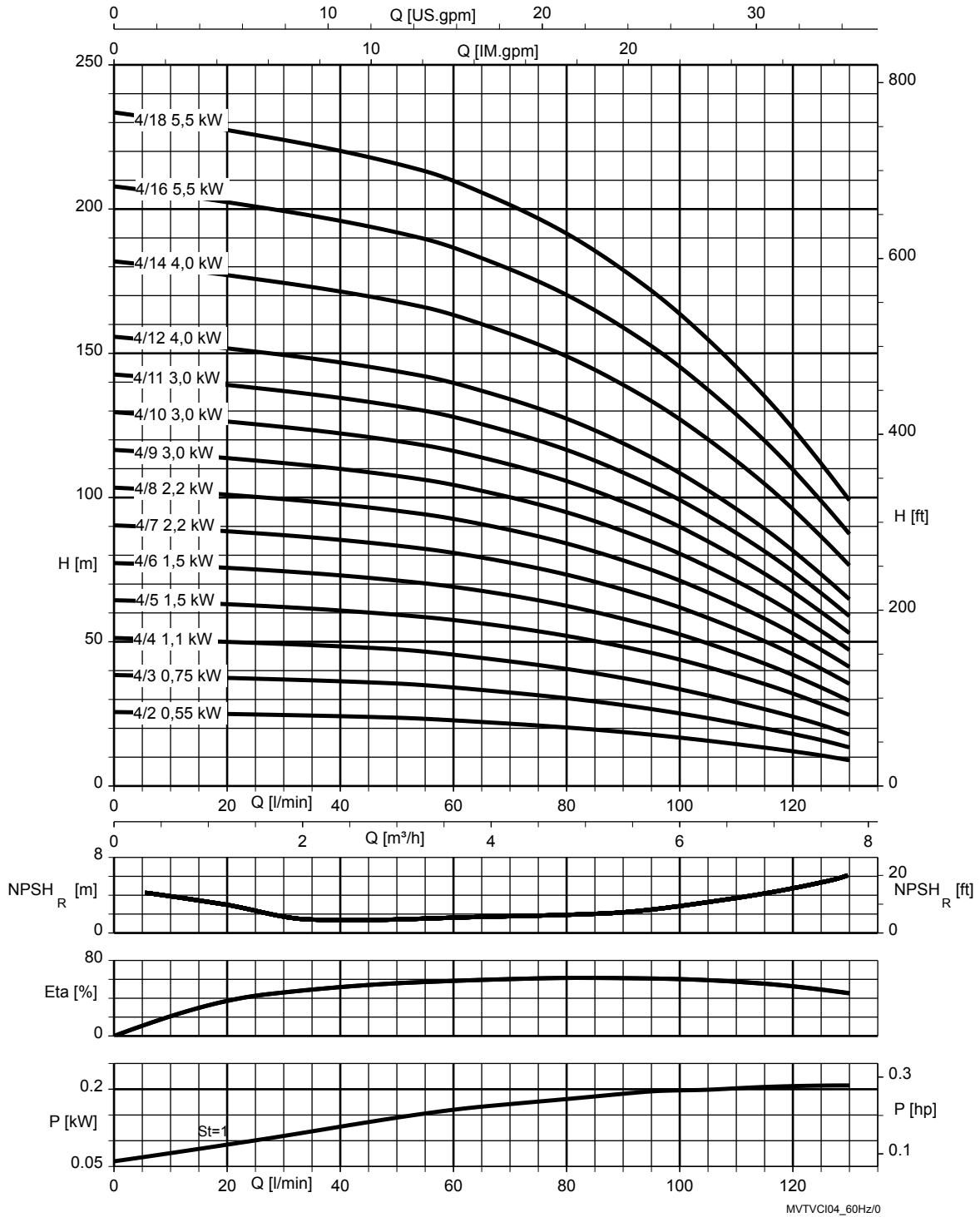
Fig. 10: ρ = 1000 kg/m³

St = 1	P per stage

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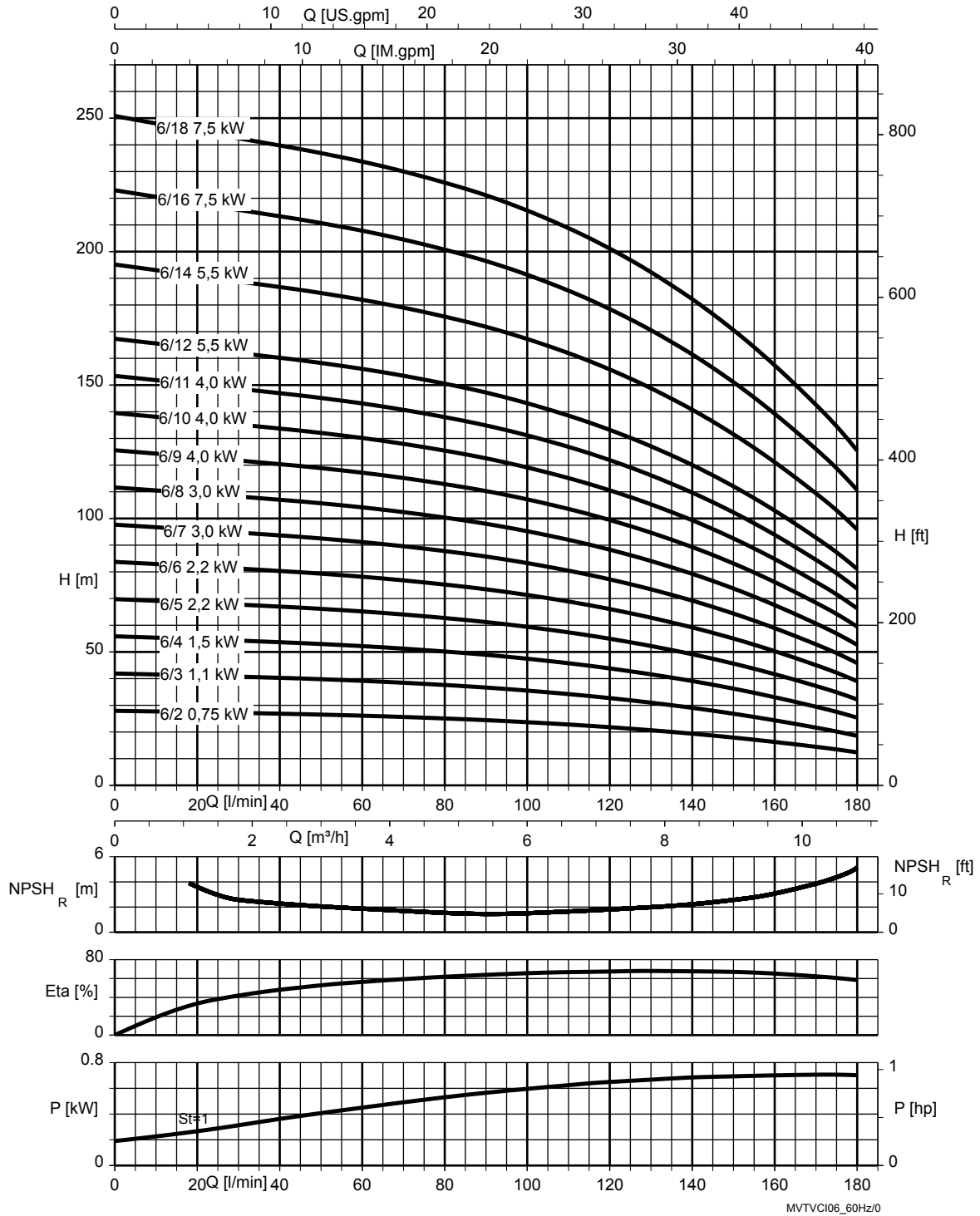
Movitec VCI, 6B, n = 3500 rpm

Fig. 11: ρ = 1000 kg/m³

St = 1	P per stage

Movitec VCI, 10B, n = 3500 rpm

Fig. 12: ρ = 1000 kg/m³

St = 1	P per stage

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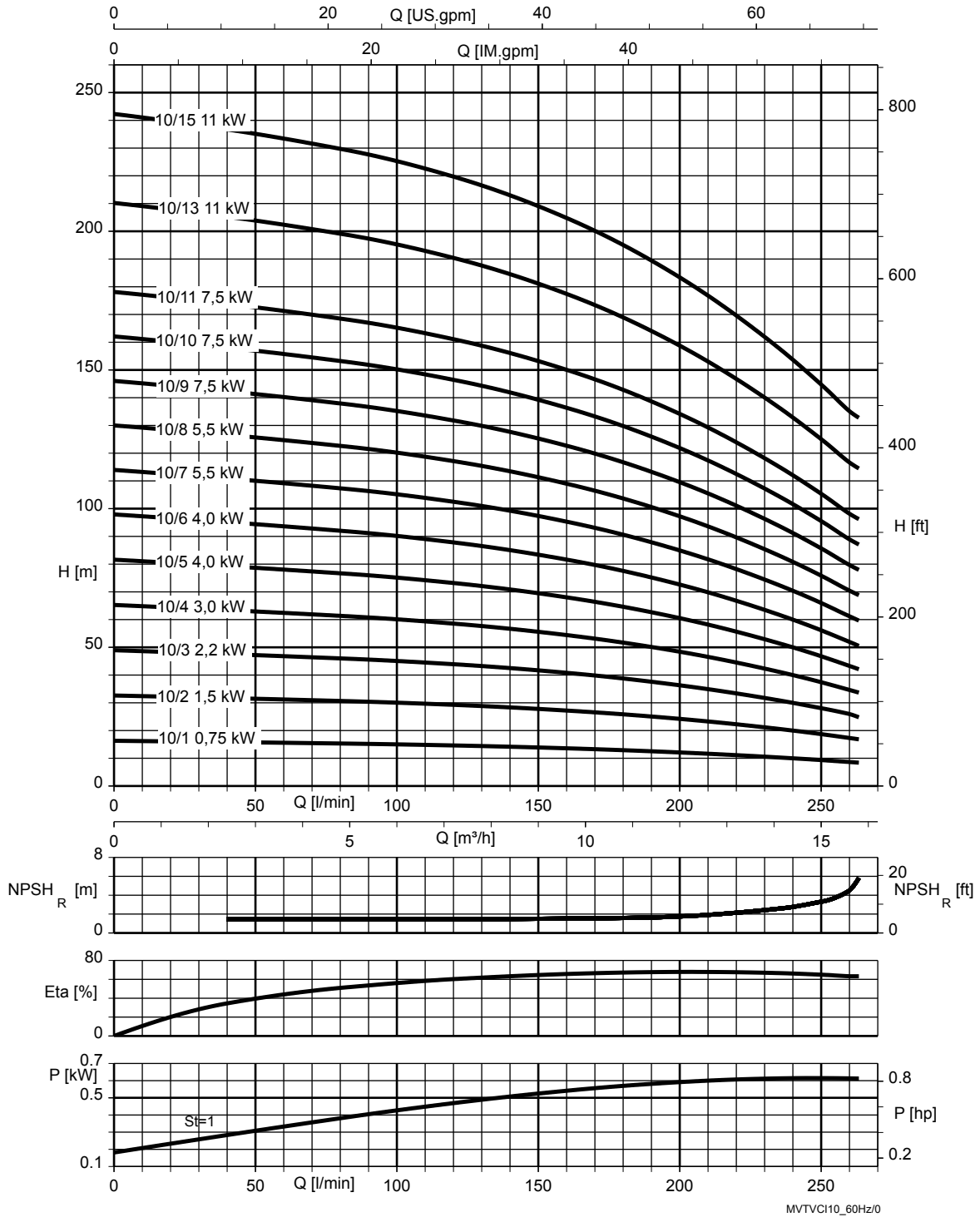
Movitec VCI, 15B, n = 3500 rpm
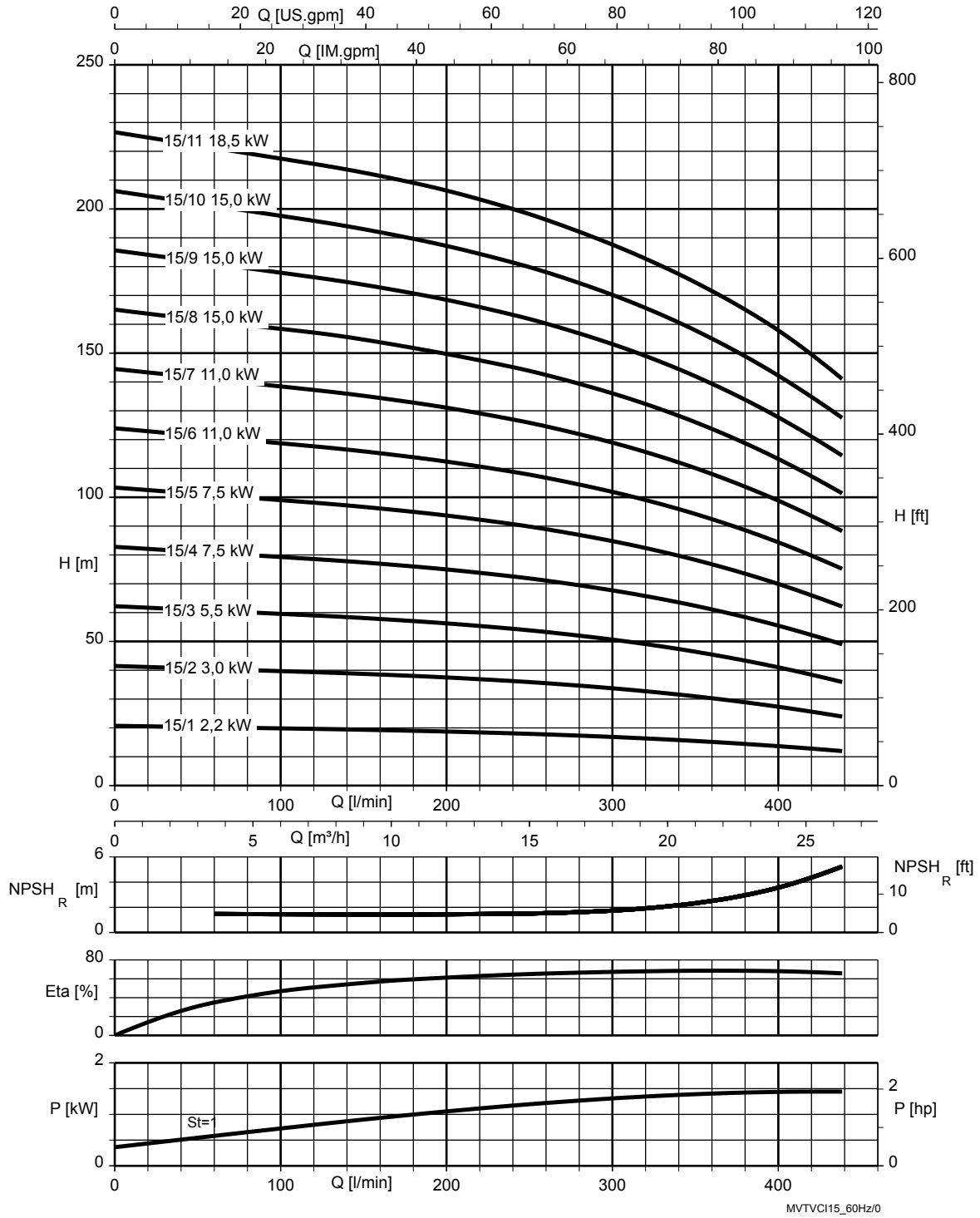
Fig. 13: ρ = 1000 kg/m³

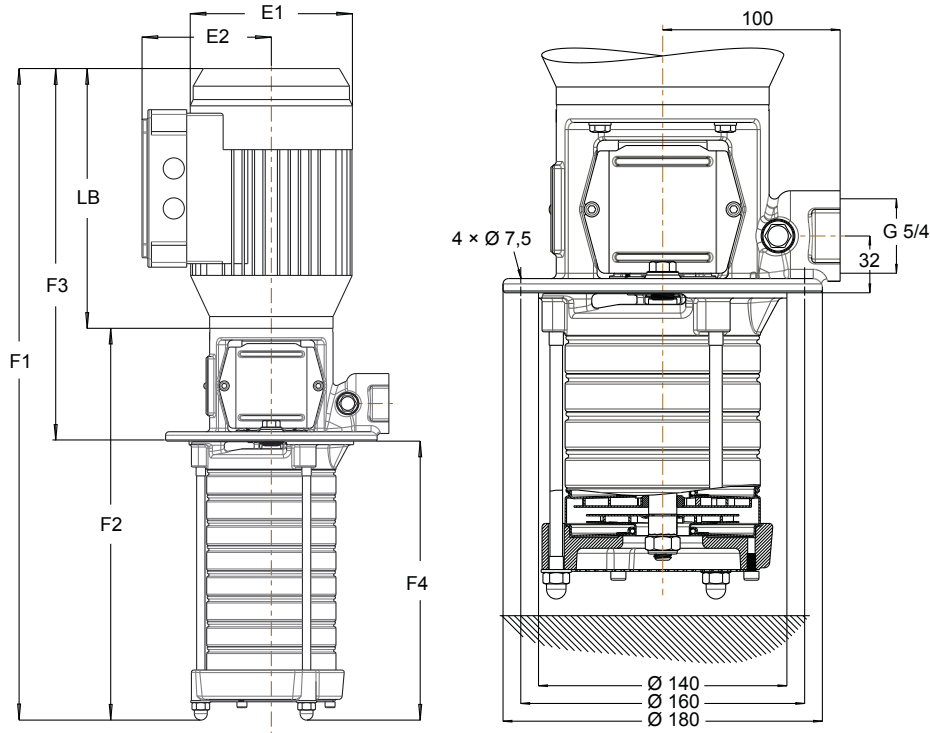| St = 1	P per stage

Dimensions and connections

Movitec VCI 2B, n = 2900 rpm

Fig. 14: Dimensions / connections Movitec VCI 2B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 2/16-22: F3 = 373 mm, F4 = 560 mm

Dimensions [mm]

Movitec VCI	E1	E2	LB	F1	F2	F3	F4
02/02-02 B	138	109	221	447	226	317	130
02/03-03 B	138	109	221	468	247	317	151
02/04-04 B	138	109	221	490	269	317	173
02/05-05 B	138	109	221	511	290	317	194
02/06-06 B	138	109	221	533	312	317	216
02/07-07 B	138	109	221	554	333	317	237
02/08-08 B	138	109	221	576	355	317	259
02/09-09 B	157	133	257	643	386	363	280
02/10-10 B	157	133	257	665	408	363	302
02/11-11 B	157	133	257	686	429	363	323
02/12-12 B	157	133	257	708	451	363	345
02/14-14 B	157	133	257	751	494	363	388
02/16-16 B	180	145	257	804	547	373	431
02/18-18 B	180	145	257	847	590	373	474
02/20-20 B	180	145	257	890	633	373	517
02/22-22 B	180	145	310	986	676	426	560
02/24-24 B	180	145	310	1029	719	426	603

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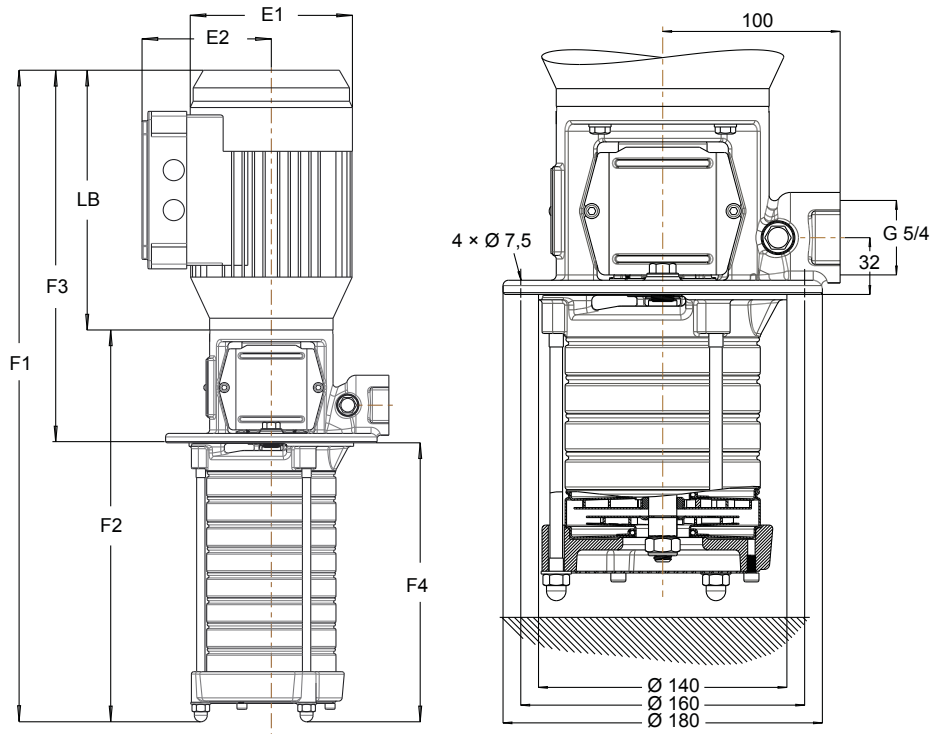| Movitec VCI	E1	E2	LB	F1	F2	F3	F4
02/26-26 B	180	145	310	1072	762	426	646
02/28-28 B	180	145	310	1115	805	426	689
02/30-30 B	180	145	310	1158	848	426	732

Movitec VCI 2B, n = 3500 rpm

Fig. 15: Dimensions / connections Movitec VCI 2B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 2/16-22: F3 = 426 mm, F4 = 560 mm

Dimensions [mm]

| Movitec VCI	E1	E2	LB	F1	F2	F3	F4
02/02-02 B	138	109	221	447	226	317	130
02/03-03 B	138	109	221	468	247	317	151
02/04-04 B	138	109	221	490	269	317	173
02/05-05 B	157	133	257	557	300	363	194
02/06-06 B	157	133	257	579	322	363	216
02/07-07 B	157	133	257	600	343	363	237
02/08-08 B	157	133	257	622	365	363	259
02/09-09 B	180	145	257	643	386	363	280
02/10-10 B	180	145	257	675	418	373	302
02/11-11 B	180	145	257	696	439	373	323
02/12-12 B	180	145	257	718	461	373	345
02/14-14 B	180	145	310	814	504	426	388
02/16-16 B	180	145	310	857	547	426	431
02/18-18 B	180	145	310	900	590	426	474
02/20-20 B	200	155	318	961	643	444	517
02/22-22 B	200	155	318	1004	686	444	560
02/22-24 B	200	155	318	1047	729	444	603
02/22-26 B	200	155	318	1090	772	444	646
02/22-28 B	200	155	318	1133	815	444	689
02/22-30 B	200	155	318	1176	856	444	732

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Movitec VCI 4B, n = 2900 rpm
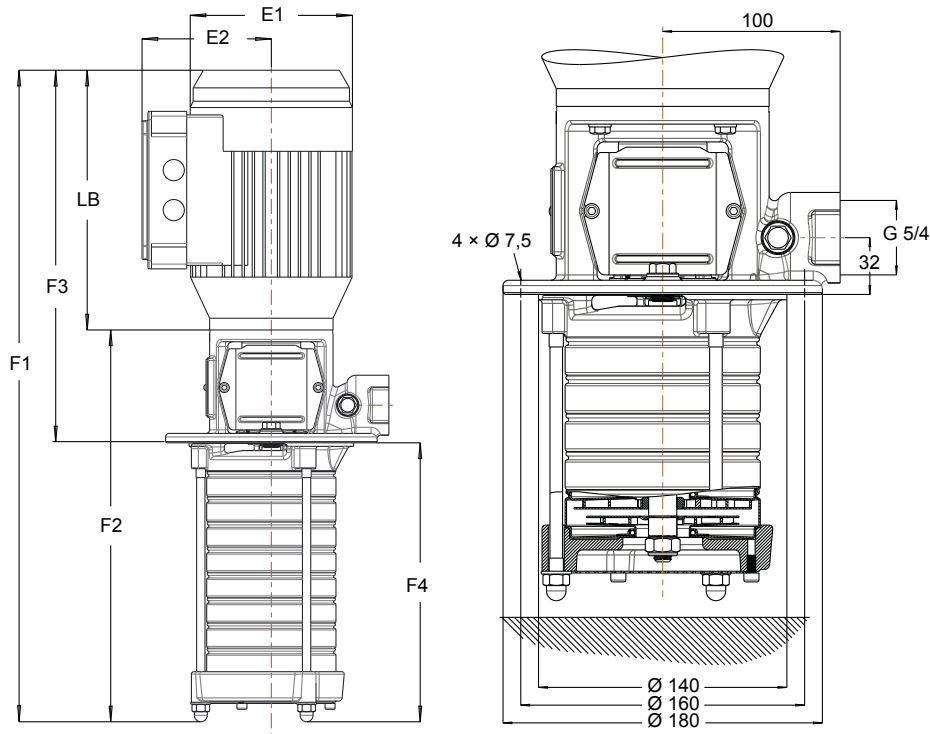
Fig. 16: Dimensions / connections Movitec VCI 4B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 4/16-22: F3 = 444 mm, F4 = 560 mm

Dimensions [mm]

| Movitec VCI	E1	E2	LB	F1	F2	F3	F4
04/02-02 B	138	109	221	447	226	317	130
04/03-03 B	138	109	221	468	247	317	151
04/04-04 B	138	109	221	490	269	317	173
04/05-05 B	157	133	257	557	300	363	194
04/06-06 B	157	133	257	579	322	363	216
04/07-07 B	157	133	257	600	343	363	237
04/08-08 B	180	145	257	632	375	373	259
04/09-09 B	180	145	257	653	396	373	280
04/10-10 B	180	145	257	675	418	373	302
04/11-11 B	180	145	310	749	439	426	323
04/12-12 B	180	145	310	771	461	426	345
04/14-14 B	180	145	310	814	504	426	388
04/16-16 B	200	155	318	875	557	444	431
04/18-18 B	200	155	318	918	600	444	474
04/20-20 B	200	155	318	961	643	444	517
04/22-22 B	223	166	325	1011	686	451	560
04/24-24 B	223	166	325	1054	729	451	603
04/26-26 B	223	166	325	1097	772	451	646
04/26-28 B	223	166	325	1140	815	451	689
04/26-30 B	223	166	325	1183	858	451	732

Movitec VCI 4B, n = 3500 rpm
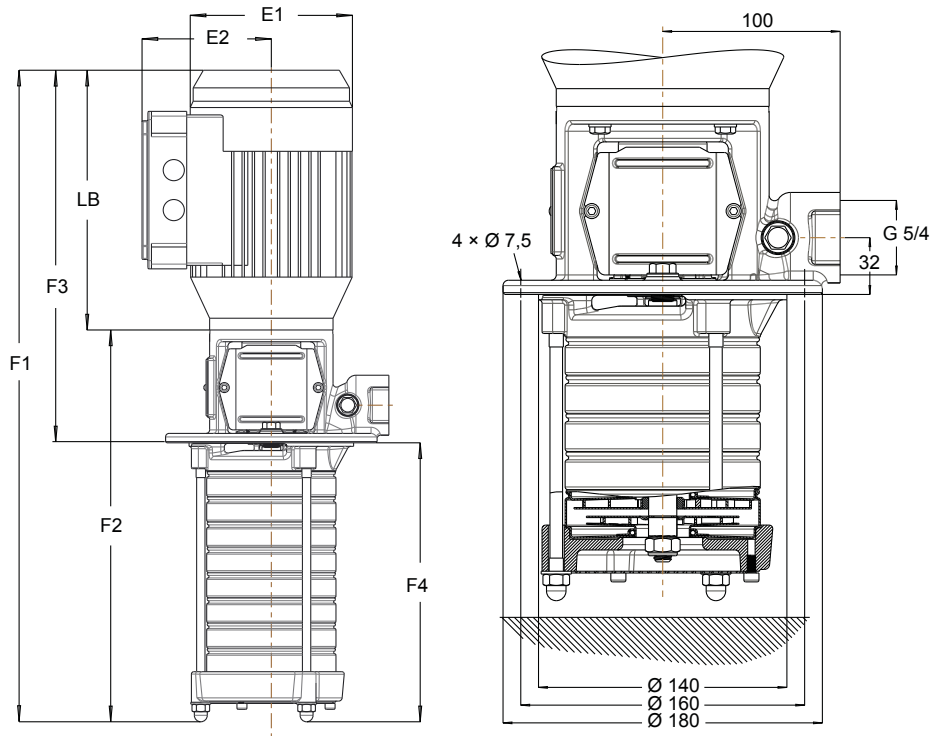
Fig. 17: Dimensions / connections Movitec VCI 4B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 4/16-22: F3 = 552 mm, F4 = 560 mm

Dimensions [mm]

| Movitec VCI	E1	E2	LB	F1	F2	F3	F4
04/02-02 B	138	109	221	447	226	317	130
04/03-03 B	157	133	257	514	257	363	151
04/04-04 B	157	133	257	536	279	363	173
04/05-05 B	180	145	257	567	310	373	194
04/06-06 B	180	145	257	589	332	373	216
04/07-07 B	180	145	310	663	353	426	237
04/08-08 B	180	145	310	685	375	426	259
04/09-09 B	200	155	318	724	406	444	280
04/10-10 B	200	155	318	746	428	444	302
04/11-11 B	200	155	318	767	449	444	323
04/12-12 B	223	166	325	796	471	451	345
04/14-14 B	223	166	325	839	514	451	388
04/16-16 B	260	190	350	983	633	552	431
04/18-18 B	260	190	350	1026	676	552	474
04/18-20 B	260	190	350	1069	719	552	517
04/18-22 B	260	190	350	1112	762	552	560
04/18-24 B	260	190	350	1155	805	552	603
04/18-26 B	260	190	350	1198	848	552	646
04/18-28 B	260	190	350	1241	891	552	689
04/18-30 B	260	190	350	1284	934	552	732

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Movitec VCI 6B, n = 2900 rpm
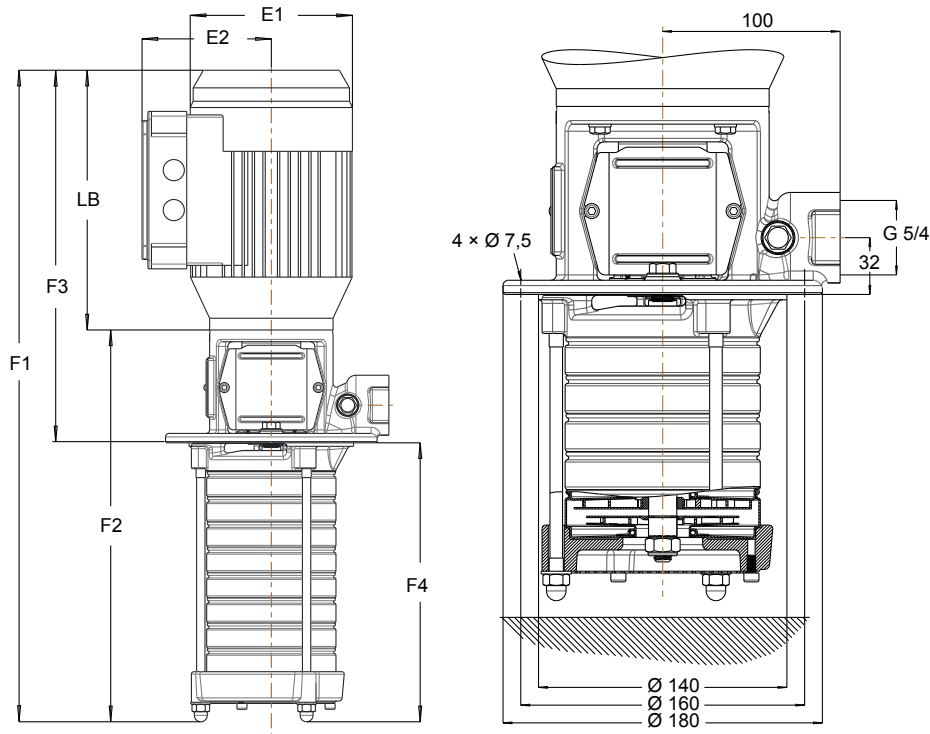
Fig. 18: Dimensions / connections Movitec VCI 6B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 6/16-22: F3 = 451 mm, F4 = 640 mm

Dimensions [mm]

| Movitec VCI	E1	E2	LB	F1	F2	F3	F4
06/02-02 B	138	109	221	457	236	317	140
06/03-03 B	157	133	257	528	271	363	165
06/04-04 B	157	133	257	553	296	363	190
06/05-05 B	157	133	257	578	321	363	215
06/06-06 B	180	145	257	613	356	373	240
06/07-07 B	180	145	257	638	381	373	265
06/08-08 B	180	145	310	716	406	426	290
06/09-09 B	180	145	310	741	431	426	315
06/10-10 B	180	145	310	766	456	426	340
06/11-11 B	200	155	318	809	491	444	365
06/12-12 B	200	155	318	834	516	444	390
06/14-14 B	200	155	318	884	566	444	440
06/16-16 B	223	166	325	941	616	451	490
06/18-18 B	223	166	325	991	666	451	540
06/20-20 B	260	190	350	1142	792	552	590
06/22-22 B	260	190	350	1192	842	552	640
06/24-24 B	260	190	350	1242	892	552	690
06/26-26 B	260	190	350	1292	942	552	740
06/28-28 B	260	190	350	1342	992	552	790
06/26-30 B	260	190	350	1392	1042	552	840

Movitec VCI 6B, n = 3500 rpm
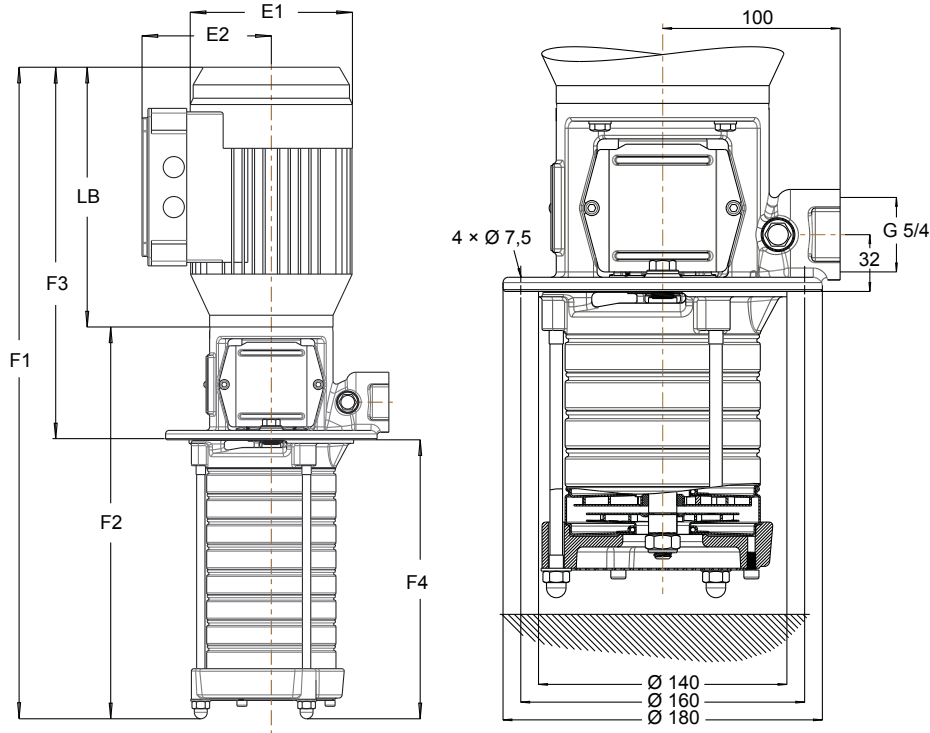
Fig. 19: Dimensions / connections Movitec VCI 6B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 6/16-22: F3 = 589 mm, F4 = 640 mm

Dimensions [mm]

| Movitec VCI	E1	E2	LB	F1	F2	F3	F4
06/02-02 B	157	133	257	503	246	363	140
06/03-03 B	157	133	257	528	271	363	165
06/04-04 B	180	145	257	563	306	373	190
06/05-05 B	180	145	310	641	331	426	215
06/06-06 B	180	145	310	666	356	426	240
06/07-07 B	200	155	318	709	391	444	265
06/08-08 B	200	155	318	734	416	444	290
06/09-09 B	223	166	325	766	441	451	315
06/10-10 B	223	166	325	791	466	451	340
06/11-11 B	223	166	325	816	491	451	365
06/12-12 B	260	190	350	942	592	552	390
06/14-14 B	260	190	350	992	642	552	440
06/16-16 B	260	190	387	1079	692	589	490
06/18-18 B	260	190	387	1129	742	589	540
06/18-20 B	260	190	387	1179	792	589	590
06/18-22 B	260	190	387	1229	842	589	640
06/18-24 B	260	190	387	1279	892	589	690
06/18-26 B	260	190	387	1329	942	589	740
06/18-28 B	260	190	387	1379	992	589	790
06/18-30 B	260	190	387	1429	1042	589	840

Movitec VCI 10B, n = 2900 rpm
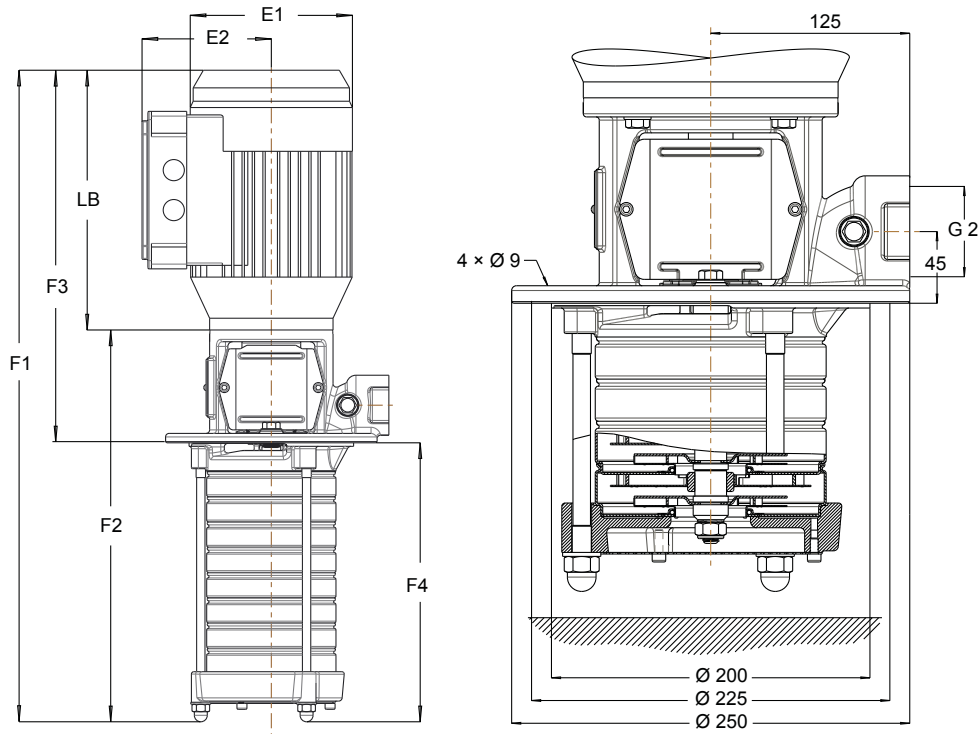
Fig. 20: Dimensions / connections Movitec VCI 10B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 10/15-21: F3 = 597 mm, F4 = 657 mm

Dimensions [mm]

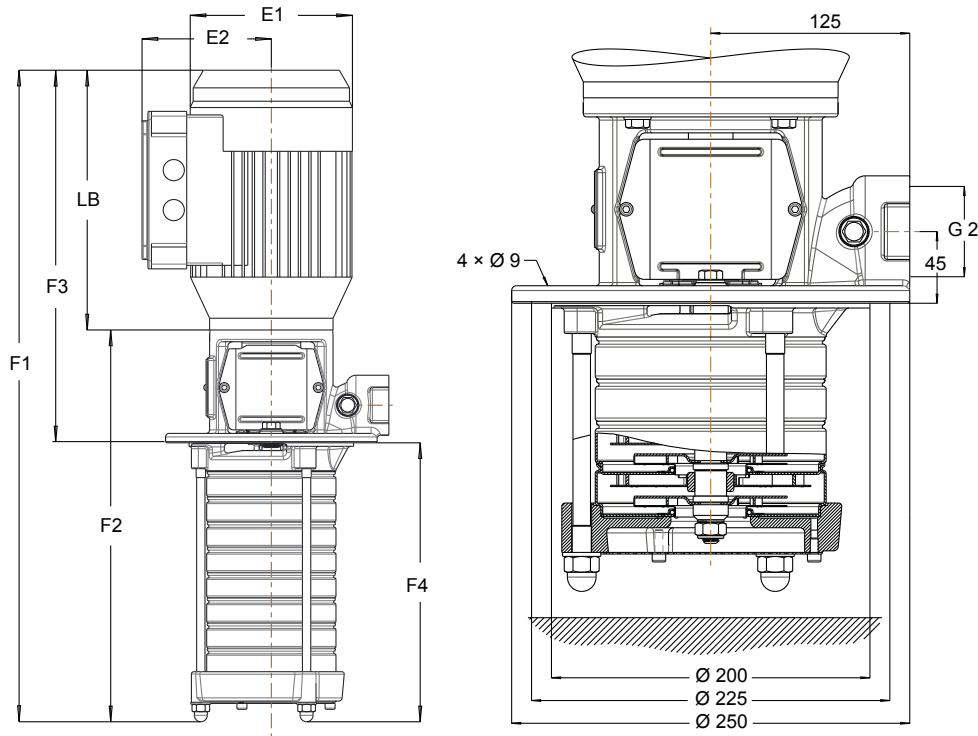| Movitec VCI	E1	E2	LB	F1	F2	F3	F4
10/01-02 B	157	133	257	520	263	366	154
10/02-02 B	157	133	257	520	263	366	154
10/03-03 B	157	133	257	547	290	366	181
10/04-04 B	180	145	257	583	326	376	207
10/05-05 B	180	145	310	663	353	429	234
10/06-06 B	180	145	310	716	406	429	260
10/07-07 B	200	155	318	734	416	447	287
10/08-08 B	200	155	318	760	442	447	313
10/09-09 B	223	166	325	793	468	454	339
10/10-10 B	223	166	325	820	495	454	366
10/11-11 B	223	166	325	846	521	454	392
10/13-13 B	260	190	350	1005	655	560	445
10/15-15 B	260	190	350	1058	708	560	498
10/17-17 B	260	190	387	1148	761	597	551
10/19-19 B	260	190	387	1201	814	597	604
10/21-21 B	260	190	387	1254	867	597	657

Movitec VCI 10B, n = 3500 rpm

Fig. 21: Dimensions / connections Movitec VCI 10B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 10/15-21: F3 = 744 mm, F4 = 657 mm

Dimensions [mm]

Movitec VCI	E1	E2	LB	F1	F2	F3	F4
10/01-02 B	157	133	257	520	263	366	154
10/02-02 B	180	145	257	530	272	376	154
10/03-03 B	180	145	310	610	300	429	181
10/04-04 B	200	155	318	654	336	447	207
10/05-05 B	223	166	325	688	363	454	234
10/06-06 B	223	166	325	741	416	454	260
10/07-07 B	260	190	350	847	497	560	287
10/08-08 B	260	190	350	873	523	560	313
10/09-09 B	260	190	387	938	549	597	339
10/10-10 B	260	190	387	963	576	597	366
10/11-11 B	260	190	387	989	602	597	392
10/13-13 B	315	260	504	1189	685	744	445
10/15-15 B	315	260	504	1242	738	744	498
10/15-17 B	315	260	504	1295	791	744	551
10/15-19 B	315	260	504	1348	844	744	604
10/15-21 B	315	260	504	1401	897	744	657

Movitec VCI 15B, n = 2900 rpm

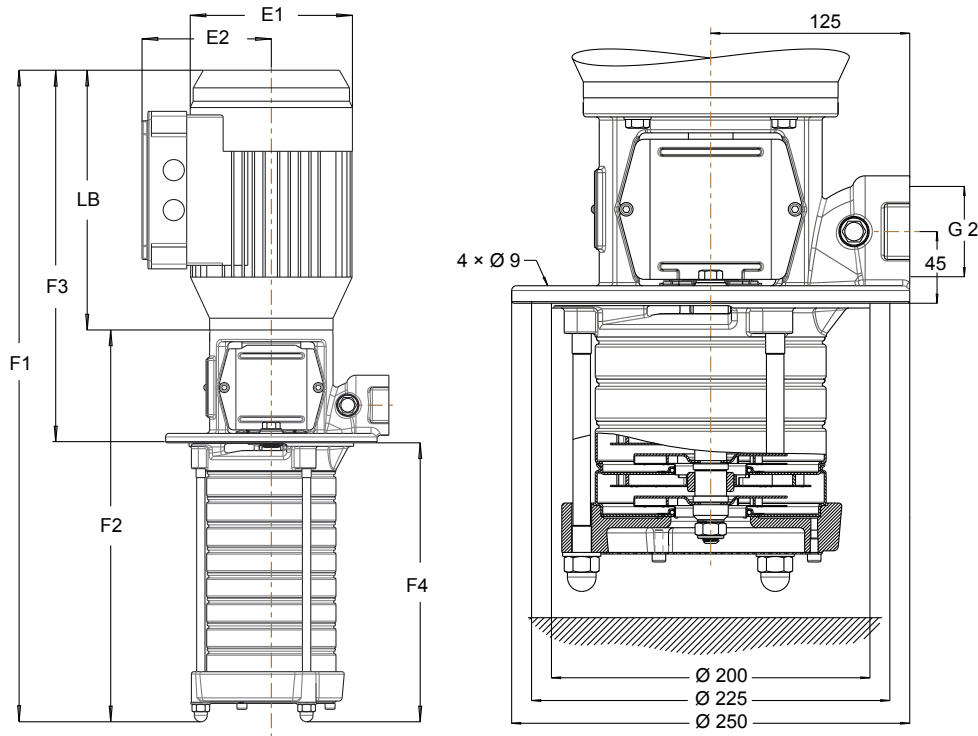**Fig. 22:** Dimensions / connections Movitec VCI 15B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 15/17-21: F3 = 744 mm, F4 = 657 mm

Dimensions [mm]

| Movitec VCI	E1	E2	LB	F1	F2	F3	F4
15/01-02 B	157	133	257	527	263	366	154
15/02-02 B	180	145	310	553	273	429	154
15/03-03 B	200	155	318	626	310	447	181
15/04-04 B	223	166	325	660	336	454	207
15/05-05 B	260	190	350	773	444	560	234
15/06-06 B	260	190	350	799	470	560	260
15/07-07 B	260	190	387	874	497	597	287
15/08-08 B	260	190	387	900	523	597	313
15/09-09 B	315	260	504	1077	579	744	339
15/10-10 B	315	260	504	1104	606	744	366
15/11-11 B	315	260	504	1130	632	744	392
15/13-13 B	315	260	504	1183	685	744	445
15/15-15 B	315	260	504	1236	738	744	498
15/17-17 B	315	260	504	1289	791	744	551
15/17-19 B	315	260	504	1342	844	744	604
15/17-21 B	315	260	504	1395	897	744	657

Movitec VCI 15B, n = 3500 rpm
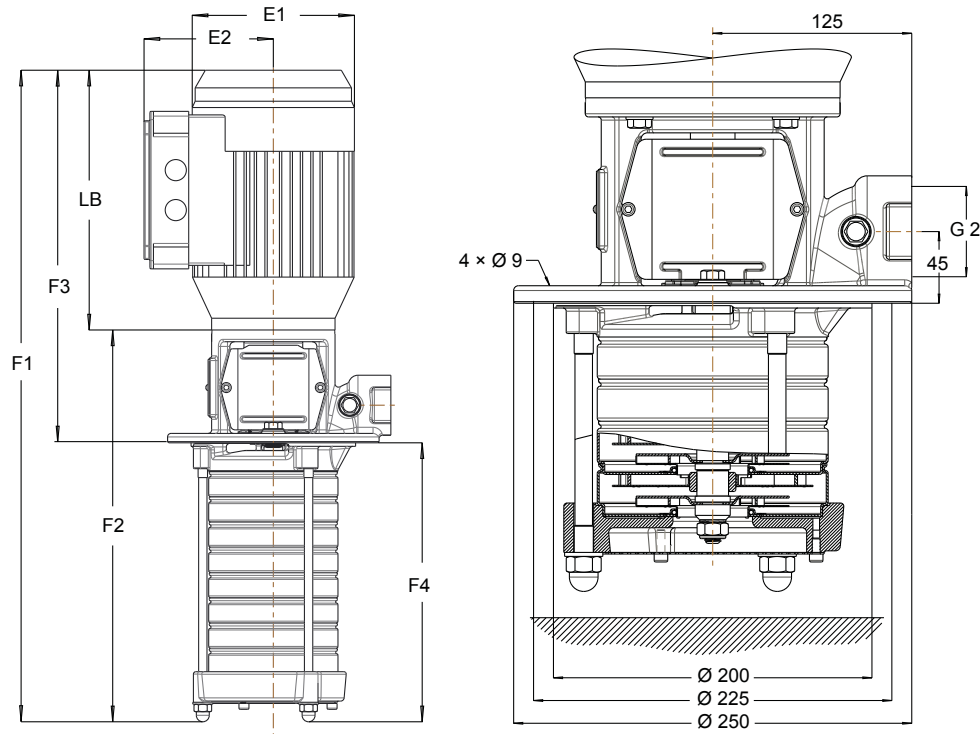
Fig. 23: Dimensions / connections Movitec VCI 15B

Calculation of pump (set) length

Feature	Pump length	Pump set length
Pump without blind stage	F1	F2
Pump with blind stage	F3 + F4	F3 + F4 - LB

- F3 [mm]: depends on number of impellers
- F4 [mm]: depends on the number of stages (incl. blind stages)

Example: Movitec VCI 15/17-21: F3 = 788 mm, F4 = 657 mm

Dimensions [mm]

Movitec VCI	E1	E2	LB	F1	F2	F3	F4
15/01-02 B	180	145	310	553	273	429	154
15/02-02 B	200	155	318	599	283	447	154
15/03-03 B	260	190	350	720	391	560	181
15/04-04 B	260	190	387	794	417	597	207
15/05-05 B	260	190	387	821	444	597	234
15/06-06 B	315	260	504	998	500	744	260
15/07-07 B	315	260	504	1025	527	744	287
15/08-08 B	315	260	504	1051	553	744	313
15/09-09 B	315	260	504	1077	579	744	339
15/10-10 B	315	260	504	1104	606	744	366
15/11-11 B	315	265	548	1212	632	788	392
15/11-13 B	315	265	548	1265	685	788	445
15/11-15 B	315	265	548	1318	738	788	498
15/11-17 B	315	265	548	1371	791	788	551
15/11-19 B	315	265	548	1424	844	788	604
15/11-21 B	315	265	548	1477	897	788	657

General assembly drawing with list of components
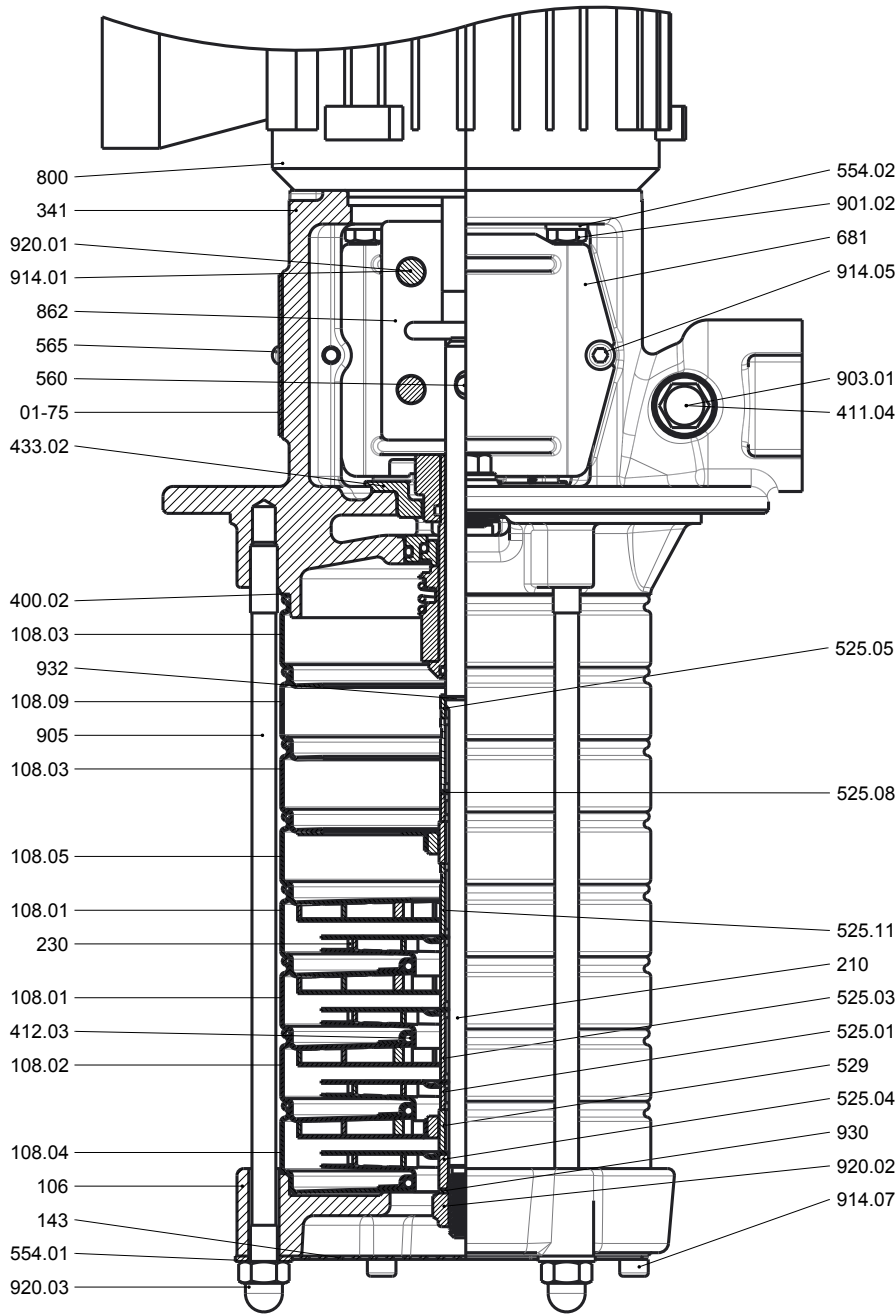
Fig. 24: General assembly drawing

List of components

Part No.	Description	Part No.	Description
01-75	Name plate	554.01/.02	Washer
106	Suction casing	560	Pin
108.01/.02/.03/ .04/.05/.09	Stage casing	565	Rivet
143	Suction strainer	681	Coupling guard
210	Shaft	800	Motor
230	Impeller	862	Coupling shell
341	Drive lantern	901.02	Hexagon head bolt
400.02	Gasket	903.01	Screw plug
411.04	Joint ring	905	Tie bolt
412.03	O-ring	914.01/.05/.07	Hexagon socket head cap screw

Part No.	Description	Part No.	Description
433.02	Mechanical seal	920.01/.03	Nut
525.01/.03/.04/.05/.08/.11	Spacer sleeve	930.02	Safety device
529	Bearing sleeve	932	Circlip

30/08/2019

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