

Self-priming Pump

Vitaprime

Type Series Booklet



Legal information/Copyright

Type Series Booklet Vitaprime

All rights reserved. The contents provided herein must neither be distributed, copied, reproduced, edited or processed for any other purpose, nor otherwise transmitted, published or made available to a third party without the manufacturer's express written consent.

Subject to technical modification without prior notice.

© KSB Aktiengesellschaft, Frankenthal 19/05/2017

Contents

Self-priming Pump 4

 Hygienic Pump..... 4

 Vitaprime 4

 Main applications..... 4

 Fluids handled 4

 Further information on fluids handled..... 4

 Operating data..... 4

 Designation 4

 Further information on the designation 4

 Design details 4

 Materials 5

 Coating and preservation 5

 Product benefits..... 5

 Certifications 5

 Acceptance tests and warranty 6

 Overview of fluids handled 6

 Mounting arrangements 8

 Selection charts 10

 Vitaprime, n = 1450 rpm 10

 Vitaprime, n = 1750 rpm 11

 Characteristic curves..... 12

 Vitaprime, n = 1450 rpm 12

 Vitaprime, n = 1750 rpm 14

 Dimensions 16

 Single-stage pumps 16

 Two-stage pumps 19

 Pump accessories..... 21

 Detailed designation..... 22

Self-priming Pump

Hygienic Pump

Vitaprime



Main applications

- Beverage industry and food industry
- Chemical industry/Fine chemicals
- Pharmaceutical industry
- Further industrial applications

Fluids handled

- Pure liquids not mechanically or chemically aggressive to the pump
- Liquids containing gas or vapour

Further information on fluids handled

(⇒ Page 6)

Operating data

Operating properties

Characteristic		Value	
		50 Hz	60 Hz
Flow rate	Q [m ³ /h]	≤ 58	≤ 60
Head	H [m]	≤ 45	≤ 65
Operating pressure	p [bar]	10	
Inlet pressure	p [bar]	≤ 3	
Operating temperature	T [°C]	≤ 100	
Sterilisation temperature	T [°C]	≤ 140	
Connection sizes	DN	40 - 80	

Designation

Example: VP 80-240-110404KBQT82MECCO

Designation key

Code	Description
VP	Type series
	VP Vitaprime
80	Nominal nozzle diameter [mm]
240	Nominal impeller diameter [mm]
11	Load range
040	Motor rating
	040 4 kW (power in kW × 10)
4	Number of poles
	4 4 poles
K	Mounting arrangement
	K 3-point or 4-point ball feet
BQ	Mechanical seal design
	BQ External flushing (quench)
T82	Shaft seal code
	T82 BQ1EGG
M	Piping connection
	M Threaded connection to DIN 11851
E	O-ring material variant
	E EPDM 70 (FDA, USP Class VI, 3A)
C	Casing material variant
	C 1.4409
C	Impeller material variant
	C 1.4409
O	Motor shroud
	O Without shroud

Further information on the designation

(⇒ Page 22)

Design details

Design

- Standard design with materials to Regulation (EC) No 1935/2004
- Design to ATEX

Design

- Side channel pump
- Horizontal installation
- One or two stages
- Self-priming

Pump casing

- Casing with transfer passages

Impeller type

- Open star impeller

Bearings

- Grease-packed deep groove ball bearing

Shaft seal

- Single mechanical seal to EN 12756
 - Seal type T¹⁾: pump-end seal with non-encapsulated spring surrounded by fluid handled, uni-directional
- Double mechanical seal to EN 12756
 - Seal type Q: back-to-back arrangement (pressurised barrier fluid)

Drive

- Efficiency class IE3 to IEC 60034-30

Standard design:

- KSB surface-cooled IEC frame three-phase current squirrel-cage motor
- 50 Hz winding, 220-240 V/380-420 V ≤ 2.20 kW
- 50 Hz winding, 380-420 V/660-725 V ≥ 3.00 kW
- 60 Hz winding, 440-480 V ≤ 2.60 kW
- 60 Hz winding, 440-480 V ≥ 3.60 kW
- Type of construction IM V1 ≤ 4.00 kW
- Type of construction IM V1 ≥ 5.50 kW
- IP55 enclosure
- Duty cycle: continuous duty S1
- Thermal class F with temperature sensor, 3 PTC thermistors

Explosion-proof version:

- KSB surface-cooled IEC frame three-phase current squirrel-cage motor
- 50 Hz winding, 220-240 V/380-420 V ≤ 1.85 kW
- 50 Hz winding, 380-420 V/660-725 V ≥ 2.50 kW
- Type of construction IM V1 ≤ 3.30 kW
- Type of construction IM V15 ≥ 4.60 kW
- Enclosure IP55 or IP54
- Duty cycle: continuous duty S1
- Type of protection EExe II
- Temperature class T3

Automation

Automation options:

- PumpDrive

Connections

- Axial suction nozzle, tangential discharge nozzle.

Types of connection:

- Threaded connection to DIN 11851
- Threaded connection to DIN 11853
- Threaded connection to DIN 11864-1-GS-A
- Threaded connection to SMS standard
- Threaded connection to IDF standard
- Threaded connection to RJT standard
- Tri-Clamp/Tri-Clover fitting
- Clamped connection to DIN 11864-3-NKS-A
- Clamped connection to DIN 32676-A
- Clamped connection to ISO 2852

- Flange to EN 1092-1
- Flange to DIN 11864-2-NF-A
- Flange to ASA ASME 150
- APV flange
- Varivent flange
- Other connection types on request

Materials

Pump section	Material
Pump casing ²⁾	1.4409 (AISI CF3M)
Impeller ²⁾	1.4409 (AISI CF3M)
Impeller nut ²⁾	1.4404 (AISI 316L)
Shaft ²⁾	1.4404 (AISI 316L)
Drive lantern	1.4308 (AISI 304)
Bearing assembly	Cast iron, nickel-plated or painted
Motor housing	Motor size ≤ 160 aluminium Motor size ≥ 180 grey cast iron
Motor shroud	1.4301 (AISI 304)
Ball feet	1.4308 (AISI 304)
Elastomers ²⁾	EPDM, FPM, FFP, FFKM

All materials that will be in contact with the fluid handled conform with Regulation (EC) No. 1935/2004.

Coating and preservation

- Coating and preservation to KSB standard

Product benefits

- Side channel pump for good and fast self-priming and for transporting fluids containing gas.
- Easy to clean due to little dead volume and excellent flushability
- Service-friendly design, easy and fast to dismantle
- Stub shaft allows combination with all commercial standardised motors
- Corrosion-resistant by using high-quality stainless steel
- A large variety of materials, sealing elements and connections are available to optimally match the pump to its application.
- Highly suitable for CIP/SIP cleaning processes

Certifications

Overview

Label	Effective in:	Note
	All countries	Certified quality management to ISO 9001
	All countries	Elastomers FDA, 3A, USP class VI certified

1) Hygienic design
2) Wetted component

Acceptance tests and warranty

- Materials testing
 - Material test report 2.2 on request
 - Material test report 3.1 on request
- Final inspection
 - Inspection certificate 3.1 to EN 10204 on request
- Hydraulic test against surcharge
 - To ISO 9906/2B or ISO 9906/3B
 - NPSH test
- Other tests
Other tests (e.g. vibrations, strength, noise characteristics) on request.
- Warranties
Warranties are given within the scope of the valid terms and conditions of sale and delivery.

Overview of fluids handled

 Table of fluids handled and associated material combinations
 X = standard

Fluid handled	Temperature		Seal code											Operating mode	Comment
	Min.	Max.	T19	T64	T66	T80	T81	T82	T83	T84	Q71	Q72	Q79		
	[°C]														
Alcohol, butanol															
Butanol	0	60	-	-	-	-	-	X	-	-	-	-	-	I	-
Isobutanol	0	60	-	-	-	-	-	X	-	-	-	-	-	I	-
Alcohol, ethanol															
- ³⁾	0	60	-	-	-	-	-	X	-	-	-	-	-	I	-
Alcohol, methanol															
-	0	60	-	-	-	-	-	X	-	-	X	-	-	I, BQ, DB	Provide water quench for indoor application (toxicity).
Alcohol, propanol															
1-propanol	0	60	-	-	-	-	-	X	-	-	-	-	-	I	-
2-propanol	0	60	-	-	-	-	-	X	-	-	-	-	-	I	-
Beer															
Beer mash	0	100	-	X	-	-	-	-	-	-	-	-	X	-	BQ, DB Use suitable water as liquid quench.
Beer wort	0	100	-	X	-	-	-	-	-	-	-	-	X	-	BQ, DB Use suitable water as liquid quench.
Brewer's yeast	0	30	-	X	-	-	-	-	-	-	-	-	-	B, I	
Hops	0	100	-	X	-	-	-	-	-	-	-	-	X	-	BQ, DB Use suitable water as liquid quench.
Trub (brewery)	0	90	-	X	-	-	-	-	-	-	-	-	-	B, I	
Cleaning-in-place (CIP)	0	85	-	-	-	-	-	X	-	-	-	-	-	B, I	After cleaning, flush with hot water of 90 °C max.
Beverages, alcoholic															
Spirits (40 % ethanol)	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	Brandy 40 %
Beer	0	70	-	-	-	-	-	X	-	-	-	-	-	B, I	Beer after primary fermentation
Fruit liqueur	0	60	-	X	-	-	-	-	-	-	-	-	X	-	BQ, DB Use suitable water as liquid quench.
Must	0	60	-	X	-	-	-	-	-	-	-	-	-	B, I	
Pernod	0	40	-	-	-	-	-	X	-	-	-	-	-	B, I	
Grappa	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	
Whiskey	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	
Wine (cider)	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	
Liqueur with egg yolks	0	50	-	-	-	-	-	X	-	-	-	-	-	B, I	
Herbal liqueur, alcohol content ≤ 50 %	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	
Sparkling wine	0	50	-	-	-	-	-	X	-	-	-	-	-	B, I	
Sap (juice) with 24 % ethanol	0	50	-	-	-	-	-	X	-	-	-	-	-	B, I	
Beverages, non-alcoholic															
Coke	0	20	-	-	-	-	-	X	-	-	-	-	-	B, I	≤ 12°Bx
Coke concentrate	0	20	-	X	-	-	-	-	-	-	-	-	-	B, I	≤ 65°Bx
Coffee	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	Coffee extract
Lemonade	0	90	-	X	-	-	-	-	-	-	-	-	-	B, I	≤ 65°Bx
Caffeine crystals (liquid)	20	100	-	X	-	-	-	-	-	-	-	-	-	B, I	max. 5 % caffeine
Glucose															
Unsaturated aqueous solution	0	50	-	X	-	-	-	-	-	-	-	-	X	B, BQ, DB	Observe the melting point or crystallisation point. If required, heat up the casing cover prior to commissioning/start-up. Use suitable hot water as quench liquid. Concentration < 65°Bx single mechanical seal w/o flushing is ok.

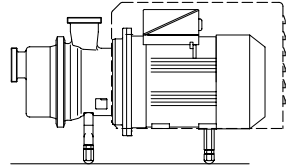
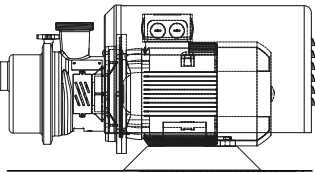
3) No details specified


Fluid handled	Temperature		Seal code											Operating mode	Comment
	Min.	Max.	T19	T64	T66	T80	T81	T82	T83	T84	Q71	Q72	Q79		
	[°C]														
Glycerine															
Concentration ≤ 40 %	0	100	-	-	-	-	-	X	-	-	-	-	-	B, I	
Glycol (pure)															
Diethylene glycol	0	60	-	-	-	-	-	X	-	-	-	X	-	B, I, DB	Provide water quench for indoor application (toxicity).
Ethylene glycol	0	60	-	-	-	-	-	X	-	-	-	X	-	B, I, BQ	Glycol Provide water quench for indoor application (toxicity).
Urea (carbamide)															
Concentration ≤ 35%	0	80	-	-	X	-	-	-	-	-	-	-	X	BQ, DB	Use suitable water as cooling liquid.
Foodstuff (liquid)															
Egg (liquid)	0	20	-	-	-	-	-	-	-	-	-	X	-	BQ, DB	If containing sugar, use Q72 (U2U2EGG).
Foodstuff (aqueous)															
Malt	0	100	-	X	-	-	-	-	-	-	-	X	-	BQ, DB	Use suitable water as liquid quench.
Dairy products															
Chocolate milk	0	90	-	-	-	X	-	-	-	-	-	-	-	B, I	
Sweetened condensed milk	0	90	-	-	-	-	X	-	-	-	-	-	-	B, I	
Skimmed milk (fresh, sour)	0	90	-	-	-	X	-	-	-	-	-	-	-	B, I	
Milk	0	90	-	-	-	X	-	-	-	-	-	-	-	B, I	
Cream (sweet, sour)	0	90	-	-	-	X	-	-	-	-	-	-	-	B, I	
Sweet permeate (milk)	0	90	-	-	-	X	-	-	-	-	-	-	-	B, I	
Sodium hydroxide															
Concentration 0 to 50 %	0	80	-	-	-	-	-	X	-	-	-	-	-	B, I	Observe the melting point or crystallisation point. If required, heat up the casing cover prior to commissioning/start-up. Use suitable hot water as continuous quench liquid.
Fruit pulp															
Apricot purée with 40 % water	0	20	-	-	-	-	-	-	-	-	-	X	-	BQ, DB	Use suitable water as liquid quench.
Oil, vegetable oil															
Anise oil	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Cotton seed oil	5	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Peanut oil	5	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Lavender oil	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Linseed oil	0	60	-	-	-	X	-	-	-	-	-	-	-	B, I	
Linseed oil with ≤ 3% H ₂ SO ₄	0	20	-	-	-	X	-	-	-	-	-	-	-	B, I	
Corn oil	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Olive oil	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Palm oil	45	100	-	-	-	X	-	-	-	-	-	-	-	B, I	Melting point = +27 °C to +42 °C T85 (Q1U2VGG) recommended for temperatures above 70 °C.
Rapeseed oil	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Castor oil	26	100	-	-	-	X	-	-	-	-	-	-	-	B, I	Info: viscosity = 700 mm ² /s at 25 °C
Soybean oil	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Sunflower oil	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Edible oil	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	Non-heatable pumps can be used if the melting point < ambient temperature. Check the melting point and viscosity with the customer.
Walnut oil	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Juice (fruit and sugar solutions)															
Fruit juice	0	60	-	X	-	-	-	-	-	-	-	-	-	B, I	Apple juice
Vegetable juice	0	100	-	X	-	-	-	-	-	-	-	-	-	B, I	
Orange juice	0	60	-	X	-	-	-	-	-	-	-	-	-	B, I	
Pressed sap	0	50	-	X	-	-	-	-	-	-	-	-	-	B, I	
Sugar solutions	0	100	-	X	-	-	-	-	-	-	-	-	-	B, I	Sugar solution > 65 Bx (for single seal)
	0	95	-	X	-	-	-	-	-	-	-	X	-	DB, BQ	Use suitable water as barrier fluid, concentration > 65°Bx.
Acid, malic acid															
Unsaturated aqueous solution	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	Solubility = 65 % at 40 °C and 72.8 % at 60 °C
Acid, citric acid															

Fluid handled	Temperature		Seal code											Operating mode	Comment
	Min.	Max.	T19	T64	T66	T80	T81	T82	T83	T84	Q71	Q72	Q79		
	[°C]														
Concentration 1 to 50 %	0	80	-	-	-	-	-	X	-	-	-	-	-	B, I	
Acid, acetic acid															
Concentration 1 to 25 %	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	Vinegar
Concentration ≤ 30%	0	20	-	-	-	-	-	X	-	-	X	-	-	BQ, DB	Use suitable water as liquid quench.
Concentration ≤ 50%	0	20	-	-	-	-	-	X	-	-	X	-	-	BQ, DB	Use suitable water as liquid quench.
Acid															
Unsaturated aqueous solution	0	100	-	-	-	X	-	-	-	-	-	-	-	B, I	
Acid, tannic acid															
Concentration 1 to 50%	0	100	-	-	-	-	-	X	-	-	-	-	-	B, I	
Acid, lactic acid															
Concentration 1 to 50%	0	60	-	-	-	X	-	-	-	-	-	-	-	B, I	
Acid, oxalic acid															
Concentration ≤ 5%	0	20	-	-	-	-	-	X	-	-	X	-	-	BQ, DB	Use suitable water as liquid quench.
Acid, tartaric acid															
Concentration ≤ 8%	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	
Concentration ≤ 50%	0	60	-	-	-	-	-	X	-	-	-	-	-	B, I	
Sorbitol (solution)															
Unsaturated aqueous solution	0	80	X	-	-	-	-	-	-	-	-	-	X	DB, BQ	Mechanical seal for solutions up to 40 % max. Use suitable water as liquid quench.
Water, desalinated															
De-ionised water	0	110	-	-	-	-	-	X	-	-	-	-	-	B, I	Water quality: conductivity > 10 µS/cm < 250 µS/cm, SiO ₂ content < 10 mg/l, solids content 5 mg/l max.
Drinking water															
Mash, schnapps	0	110	-	-	-	-	-	X	-	-	-	-	-	B, I	
Ice water (brewery)	0	110	-	-	-	-	-	X	-	-	-	-	-	B, I	
Tap water	0	110	-	-	-	-	-	X	-	-	-	-	-	B, I	
Hot water (brewery)	0	110	-	-	-	-	-	X	-	-	-	-	-	I	
Water															
Pure water	0	110	-	-	-	-	-	X	-	-	-	-	-	B, I	

Mounting arrangements

Mounting arrangement

Mounting arrangement	Illustration	Description
K		Horizontal installation, close-coupled pump set <ul style="list-style-type: none"> ▪ Axial suction nozzle, tangential discharge nozzle ▪ Mounted on 3-point ball feet up to a drive rating of 4 kW. ▪ Mounted on 4-point ball feet for drive ratings from 5.5 to 22 kW. ▪ Alternatively mounted on round base feet
M		Horizontal installation, close-coupled pump set <ul style="list-style-type: none"> ▪ Axial suction nozzle, tangential discharge nozzle ▪ Mounted on a motor foot for drive ratings from 0.33 to 22 kW.

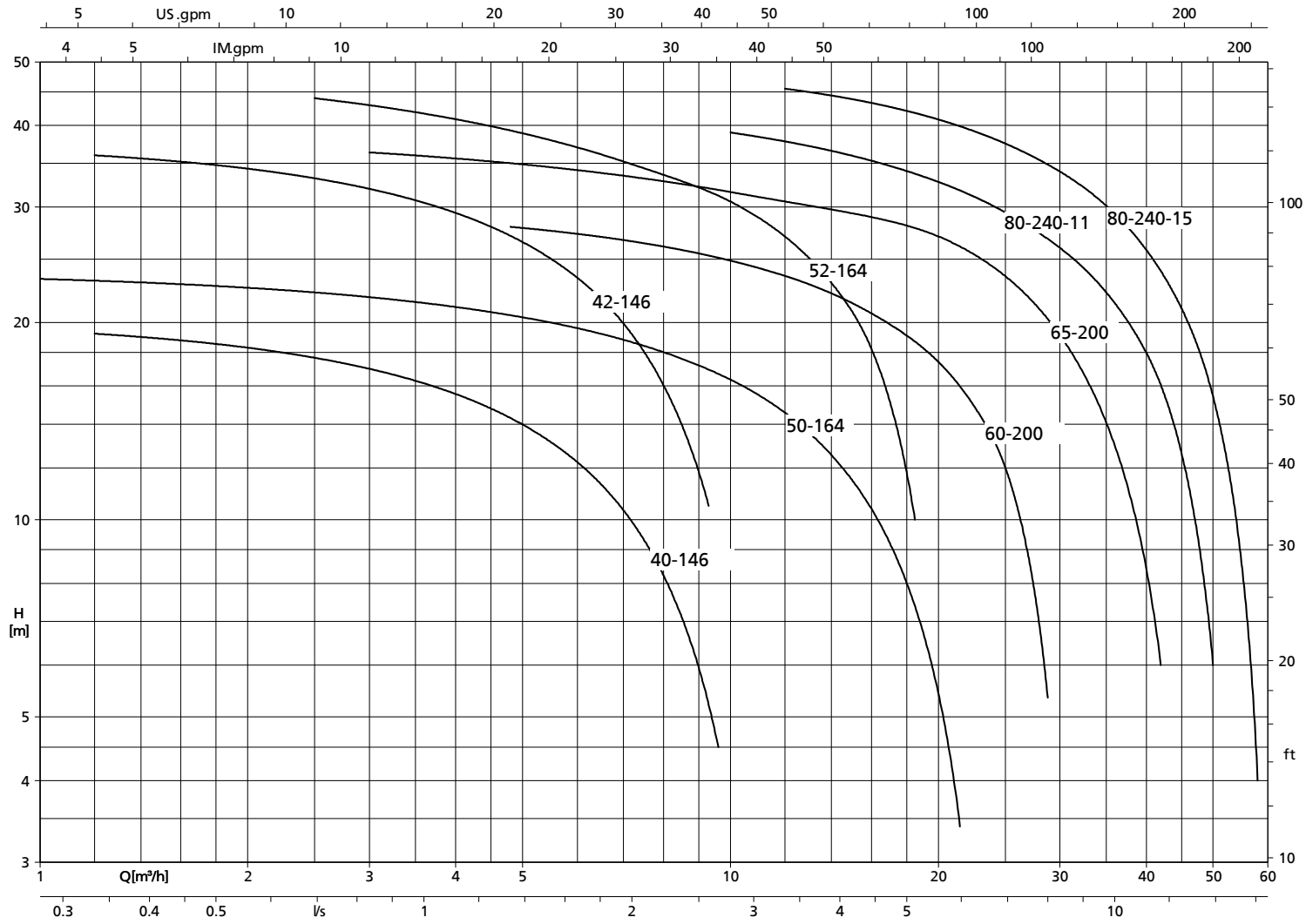
 Vertical installation requires a mechanical seal with flushing system.

Mounting arrangements per pump size

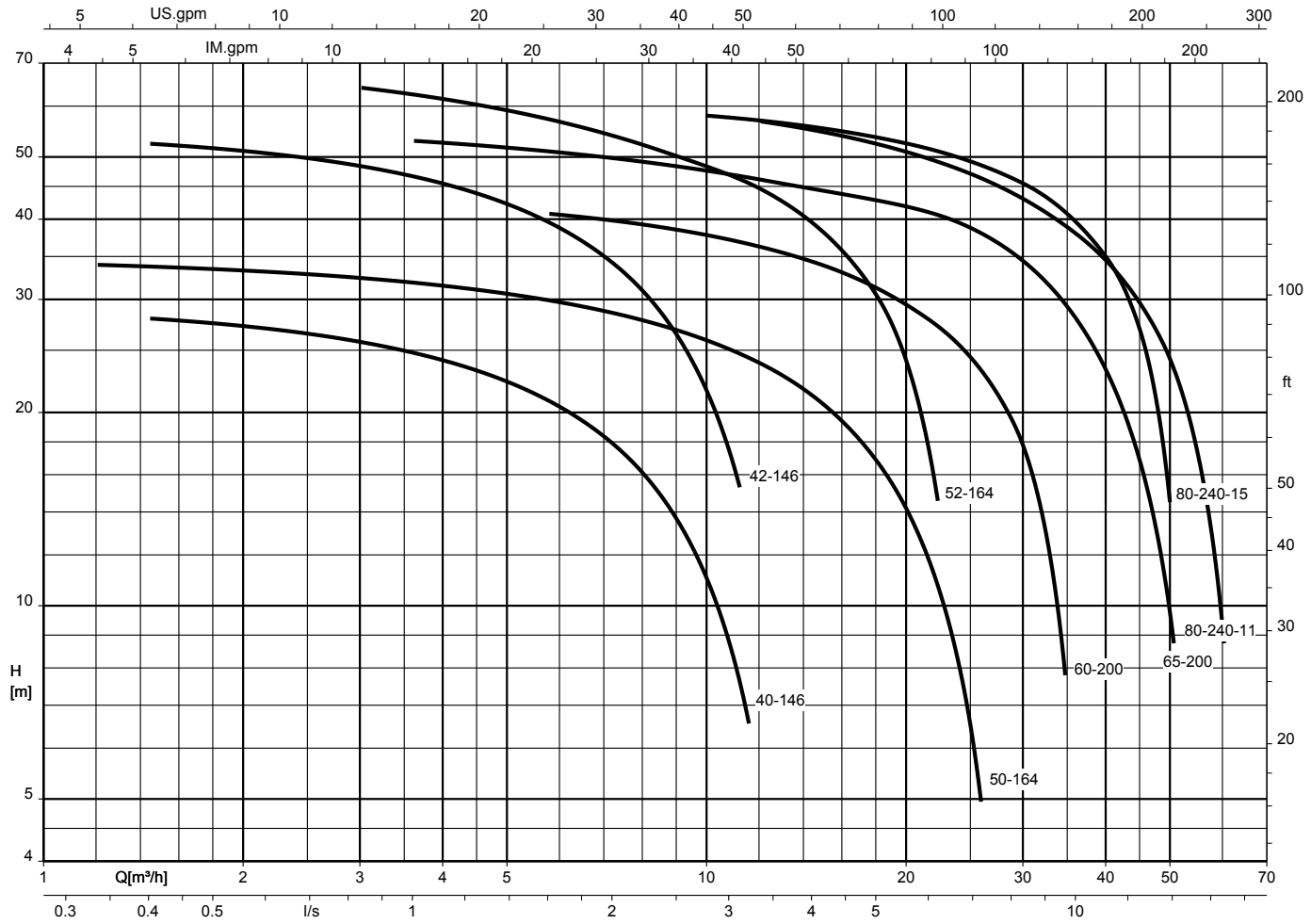
Size	Ball feet	Round base feet	Motor feet
40 - 146	X	X	X
42 - 146	X	X	X
50 - 164	X	X	X
52 - 164	X	X	X
60 - 200	X	X	X
65 - 200	X	X	X
80 - 240 - 11	X	X	X
80 - 240 - 15	X	X	X

Selection charts

Vitaprime, n = 1450 rpm



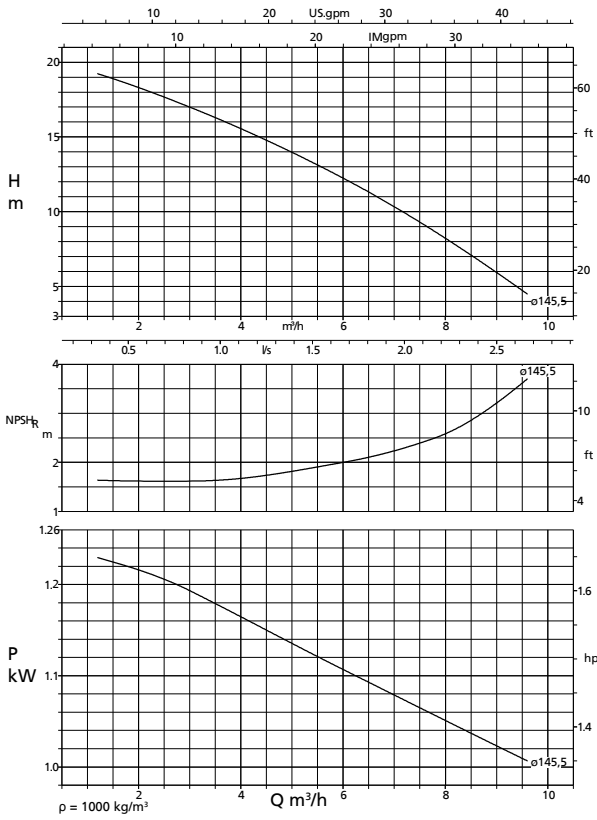
Vitaprime, n = 1750 rpm



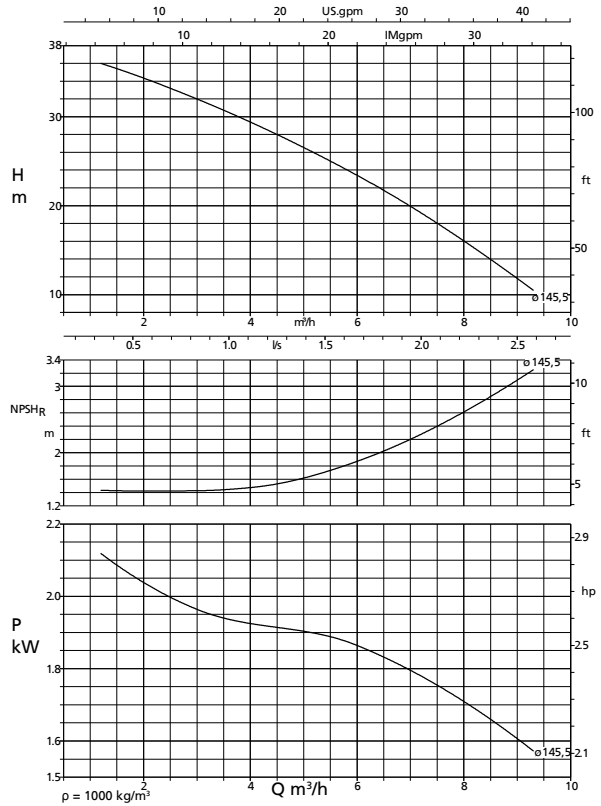
Characteristic curves

Vitaprime, n = 1450 rpm

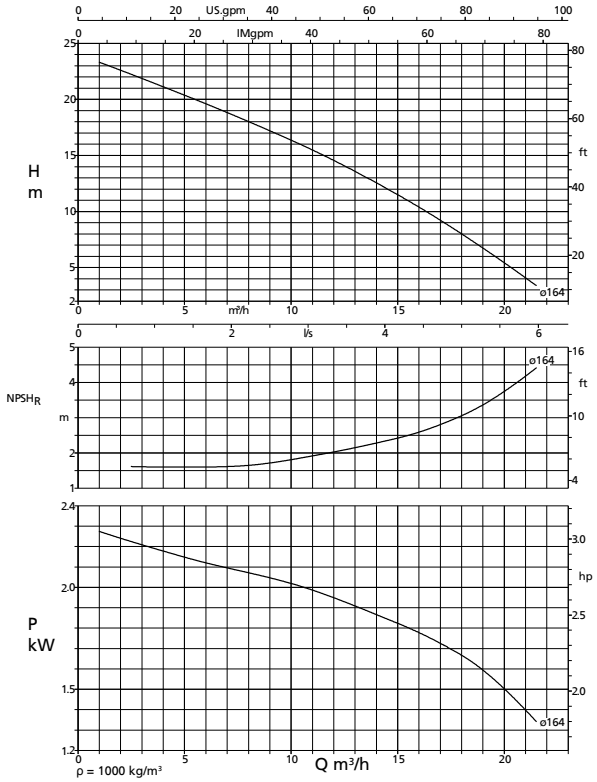
Vitaprime 40-146



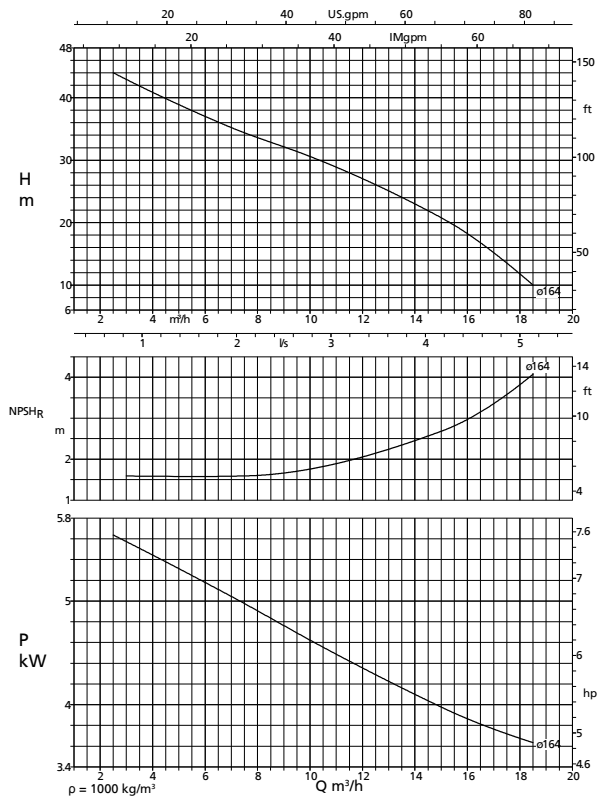
Vitaprime 42-146



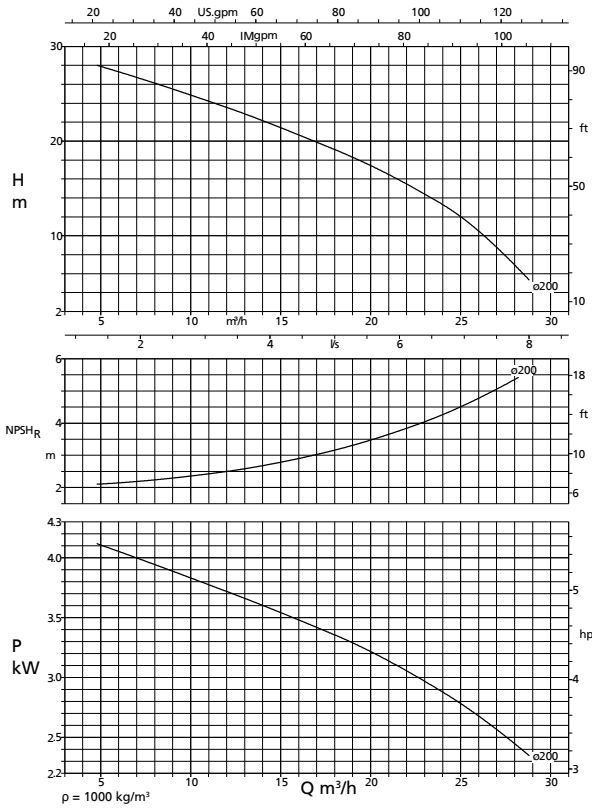
Vitaprime 50-164



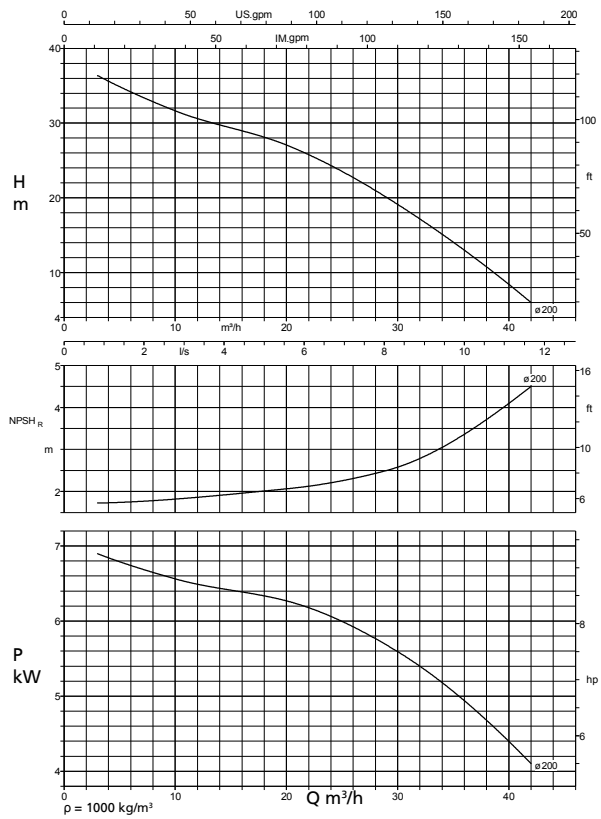
Vitaprime 52-164



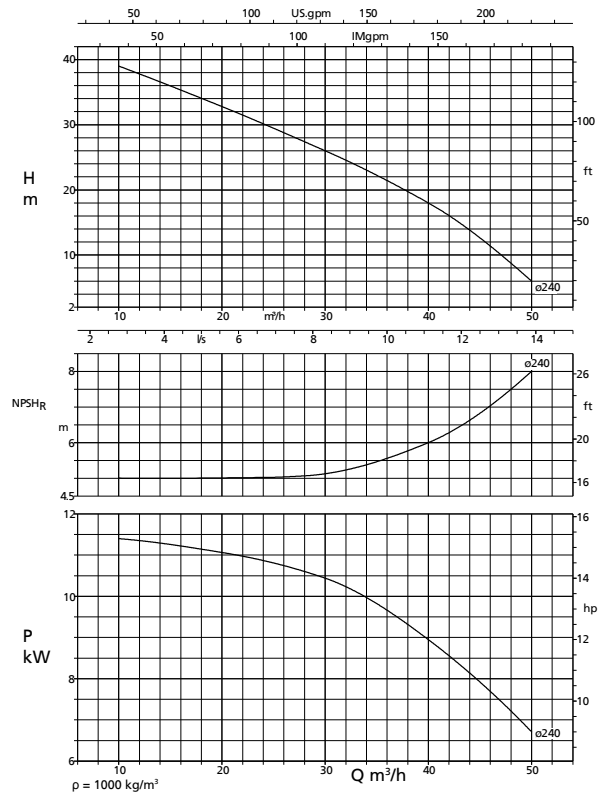
Vitaprime 60-200



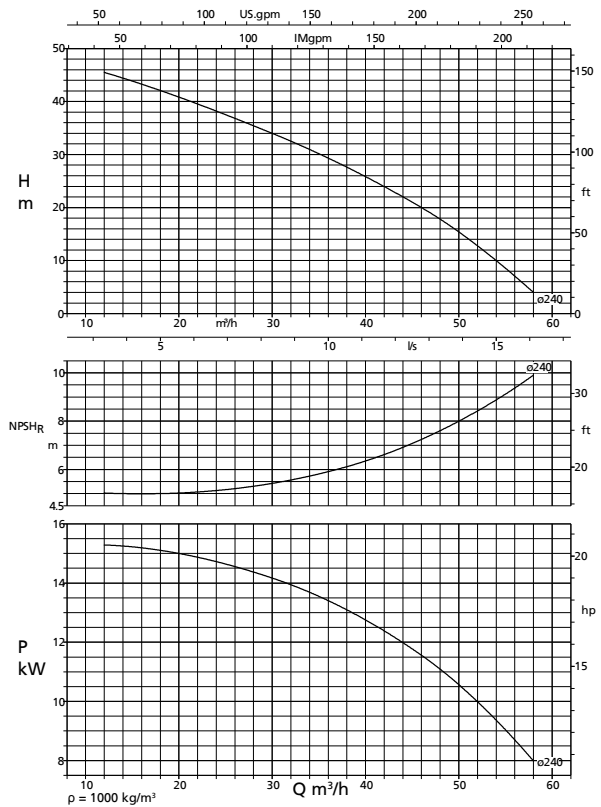
Vitaprime 65-200



Vitaprime 80-240-11

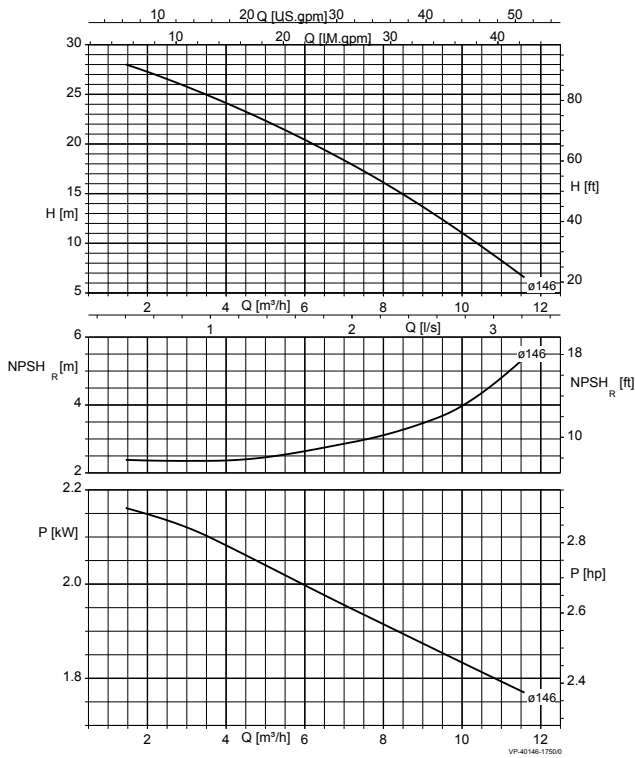


Vitaprime 80-240-15

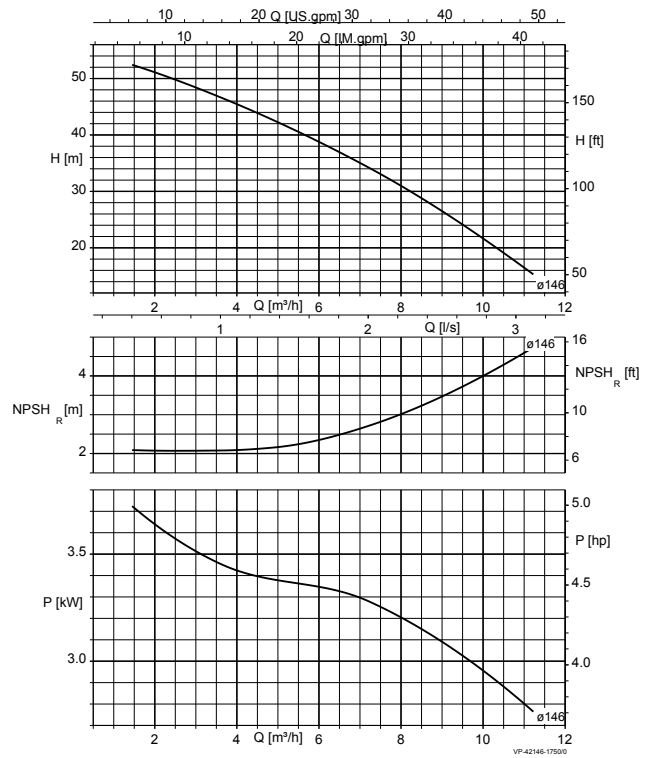


Vitaprime, n = 1750 rpm

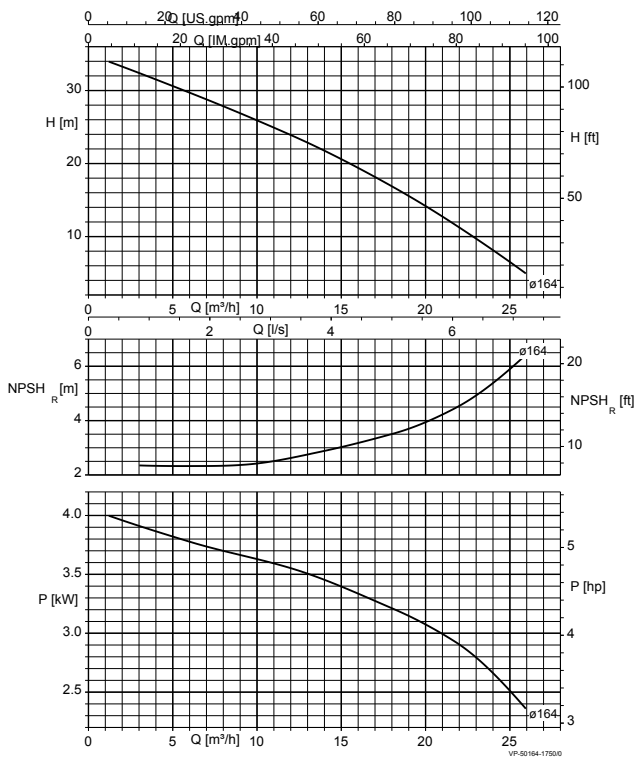
Vitaprime 40-146



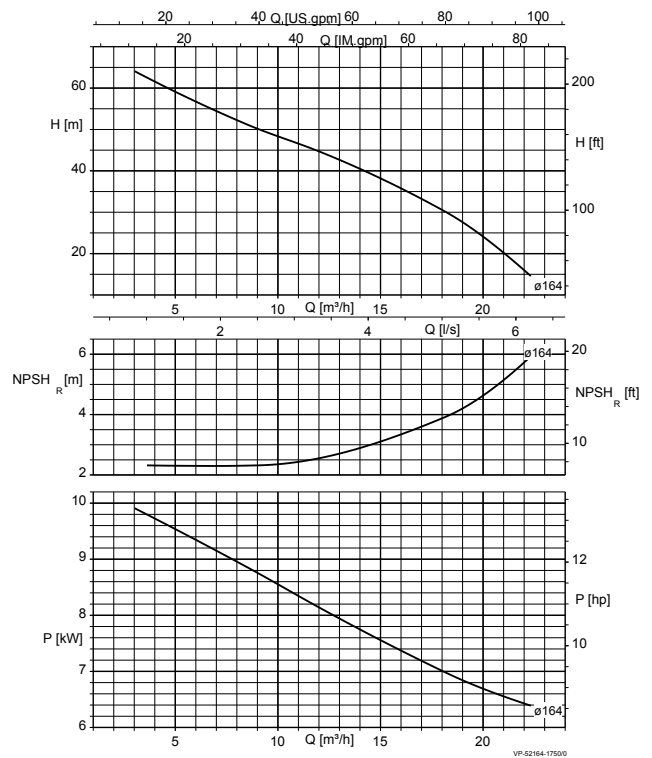
Vitaprime 42-146



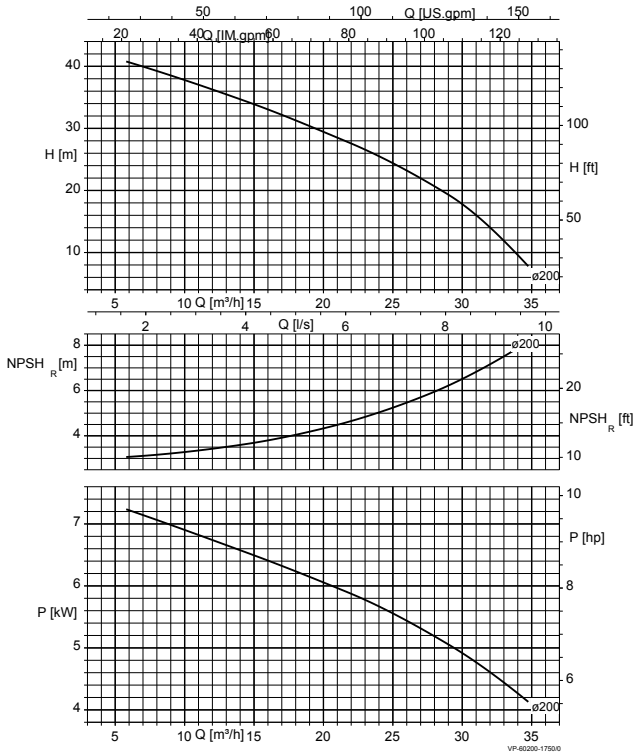
Vitaprime 50-164



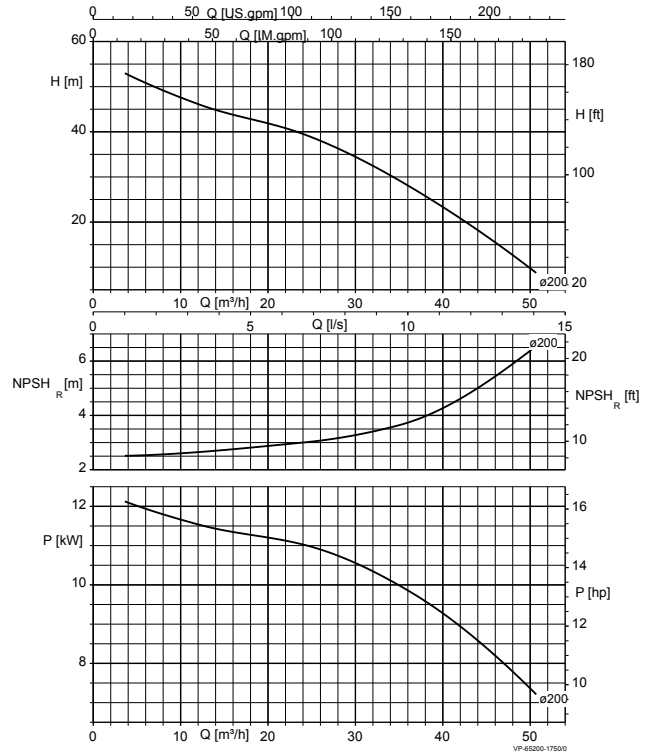
Vitaprime 52-164



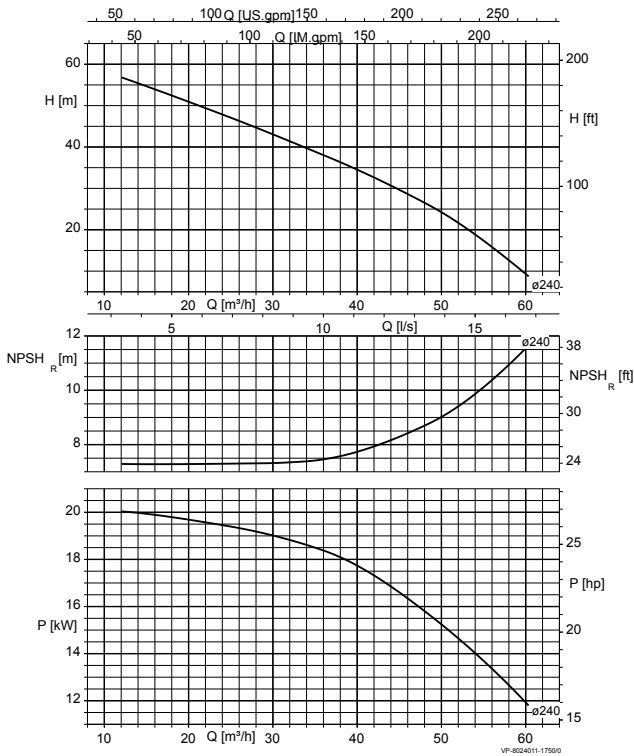
Vitaprime 60-200



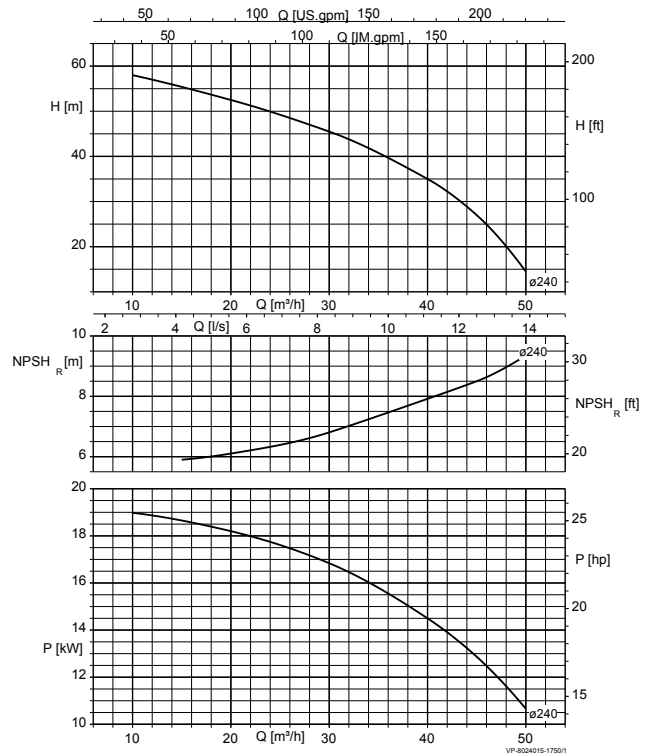
Vitaprime 65-200



Vitaprime 80-240-11



Vitaprime 80-240-15



Dimensions

Single-stage pumps

Pump set with motor shroud, with 3-point ball feet

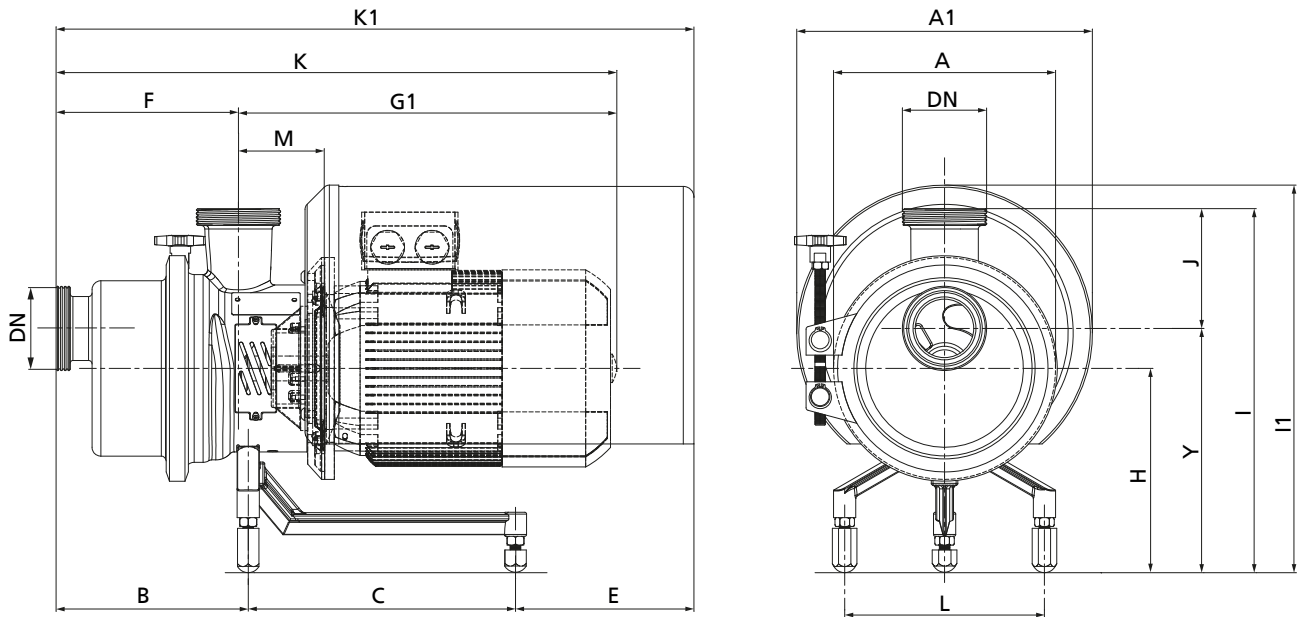


Fig. 1: Pump set with motor shroud, with 3-point ball feet

Dimensions

Size	Motor	[kW]	DN	[mm]															
				A	A1	B	C	E	F	G1	K1	K	H	J	I	I1	Y	L	M
40-146	90S	1,1	40	200	302	176	190	224	150	394,5	590	544,5	162	110	307	346	197	178	97,5
40-146	90L	1,5	40	200	302	176	190	224	150	434,5	590	584,5	162	110	307	346	197	178	97,5
40-146	100L	2,2	40	250	330	176	301	183	150	474,0	670	624	190	110	335	335	225	225	103,5
40-146	100L	3,0	40	250	330	176	301	183	150	474,0	670	624	190	110	335	335	225	225	103,5
42-146	100L	2,2	40	250	330	234	301	183	208	474,0	728	682	190	110	335	335	225	225	103,5
42-146	100L	3,0	40	250	330	234	301	183	208	474,0	728	682	190	110	335	335	225	225	103,5
42-146	112M	4,0	40	250	330	234	301	183	208	457,5	728	665,5	190	110	335	335	225	225	103,5
50-164	100L	2,2	50	250	330	196	301	202	175	477,0	698	652	228	114	378	433	264	225	106,5
50-164	100L	3,0	50	250	330	196	301	202	175	477,0	698	652	228	114	378	433	264	225	106,5
50-164	112M	4,0	50	250	330	196	301	202	175	460,5	698	635,5	228	114	378	433	264	225	106,5
60-200	112M	4,0	65	250	330	215	301	202	211	451,0	718	662	228	135	408	433	273	225	97

Pump set with motor shroud, with 4-point ball feet

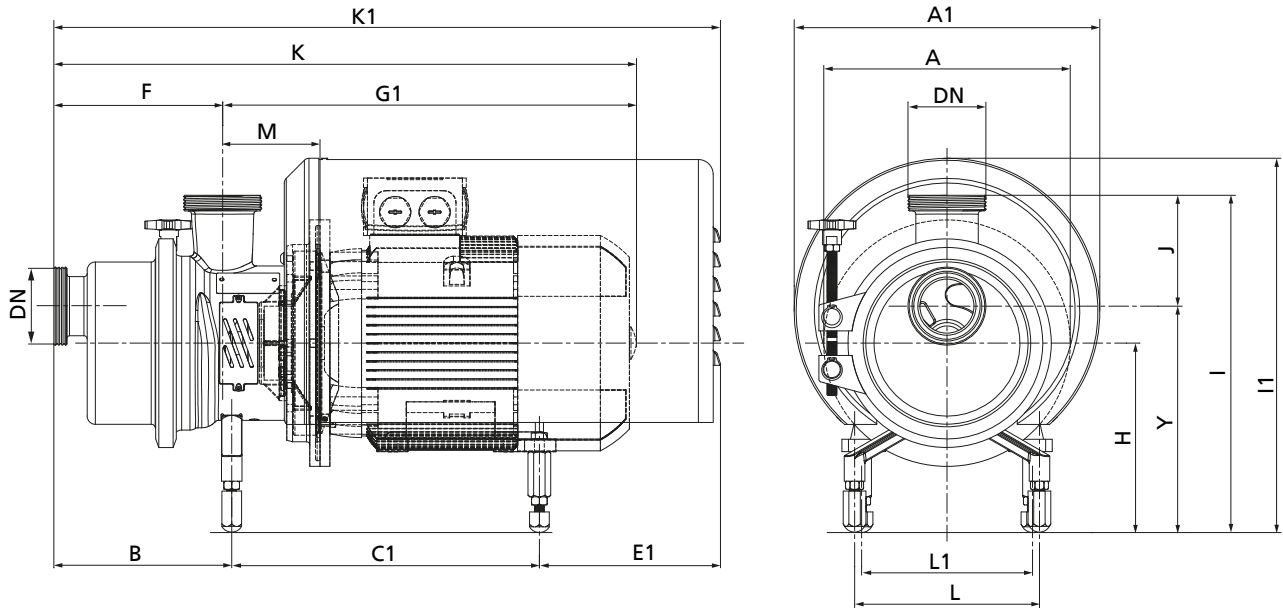


Fig. 2: Pump set with motor shroud, with 4-point ball feet

Dimensions

Size	Motor	[kW]	DN	[mm]																
				A	A1	B	C1	E1	F	G1	K1	K	H	J	I	I1	Y	L	L1	M
50-164	132S	5,5	50	300	370	196	336	227	175	513	797	688	228	114	378	450	264	225	216	128
50-164	132M	7,5	50	300	370	196	374	265	175	563	797	738	228	114	378	450	264	225	216	128
52-164	132S	5,5	50	300	370	258	336	227	237	513	859	750	228	114	378	450	264	225	216	128
52-164	132M	7,5	50	300	370	258	374	265	237	553,5	859	800	228	114	378	450	264	225	216	128
60-200	132S	5,5	65	300	370	215	337	226	211	503,5	816	714,5	228	135	408	450	273	225	216	118,5
60-200	132M	7,5	65	300	370	215	375	264	211	657	816	764,5	228	135	408	450	273	225	216	118,5
60-200	160M	11	65	350	480	215	470	337	211	717	1022	868	228	135	408	523	273	225	254	163
60-200	160L	15	65	350	480	215	514	293	211	553,5	1022	928	228	135	408	523	273	225	254	163
65-200	132S	5,5	65	300	370	215	337	226	211	503,5	816	714,5	228	135	408	450	273	225	216	118,5
65-200	132M	7,5	65	300	370	215	375	264	211	657	816	764,5	228	135	408	450	273	225	216	118,5
65-200	160M	11	65	350	480	215	470	337	211	717	1022	868	228	135	408	523	273	225	254	163
65-200	160L	15	65	350	480	215	514	293	211	692,5	1022	928	228	135	408	523	273	225	254	163
80-240-11	160M	11	80	350	480	267	498	334	245	752,5	1099	937,5	228	160	446	523	286	225	254	198,5
80-240-11	160L	15	80	350	480	267	542	290	245	752,5	1099	997,5	228	160	446	523	286	225	254	198,5
80-240-15	160L	15	80	350	480	267	542	290	245	782,5	1099	997,5	228	160	446	523	286	225	254	198,5
80-240-15	180M	18,5	80	350	400	267	576	254	245	752,5	1097	1027,5	230	160	448	588	288	225	279	194,5
80-240-15	180L	22	80	350	400	267	576	254	245	752,5	1097	997,5	230	160	448	588	288	225	279	194,5

Pump set with motor shroud, on motor feet

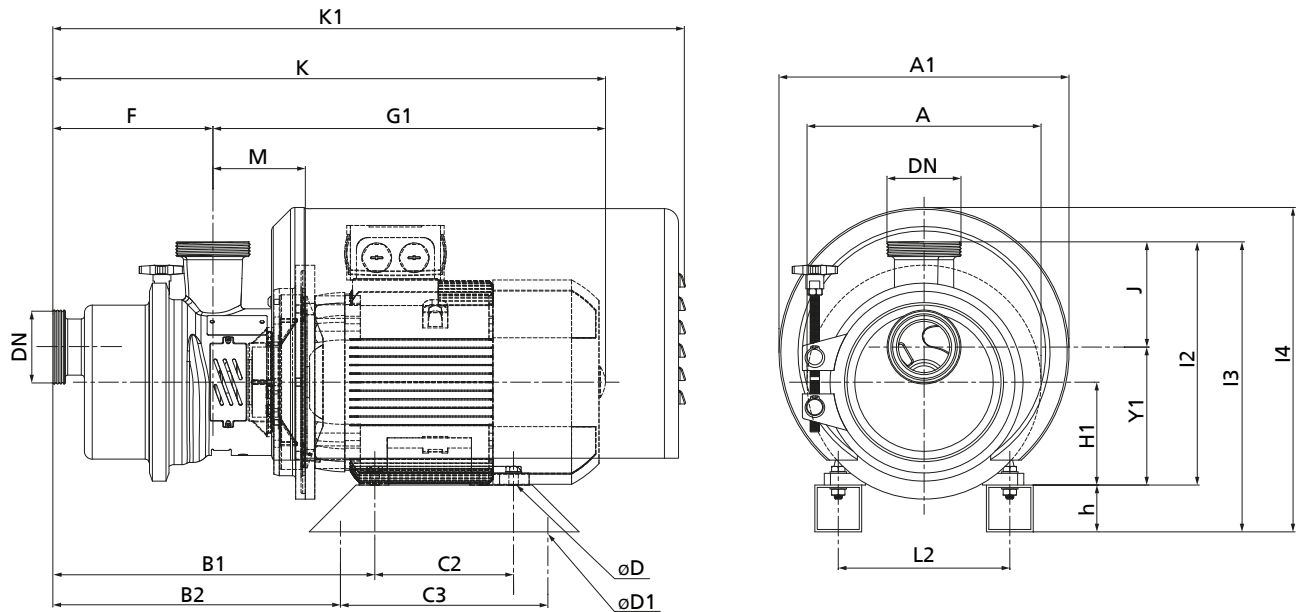


Fig. 3: Pump set with motor shroud, on motor feet

Dimensions

Size	Motor	[kW]	DN	[mm]																				
				A	A1	B1	B2	C2	C3	D	D1	F	G1	K1	K	h	H1	J	I2	I3	I4	Y1	L2	M
40-146	90S	1,1	40	200	302	306	269	100	200	10	10	150	394,5	590	544,5	40	90	110	235	275	314	125	140	97,5
40-146	90L	1,5	40	200	302	306	269	125	200	10	10	150	434,5	590	584,5	40	90	110	235	275	314	125	140	97,5
40-146	100L	2,2	40	250	330	313	268	140	230	12	12	150	474	670	624	50	100	110	245	295	355	135	160	103,5
40-146	100L	3	40	250	330	313	268	140	230	12	12	150	474	670	624	50	100	110	245	295	355	135	160	103,5
42-146	100L	2,2	40	250	330	371	326	140	230	12	12	208	474	728	682	50	100	110	245	295	355	135	160	103,5
42-146	100L	3	40	250	330	371	326	140	230	12	12	208	474	728	682	50	100	110	245	295	355	135	160	103,5
42-146	112M	4	40	250	330	378	333	140	230	12	12	208	457,5	728	665,5	50	112	110	257	307	367	147	160	103,5
50-164	100L	2,2	50	250	330	344	299	140	230	12	12	175	477	698	652	50	100	114	250	300	355	136	160	106,5
50-164	100L	3	50	250	330	344	299	140	230	12	12	175	477	698	652	50	100	114	250	300	355	136	160	106,5
50-164	112M	4	50	250	330	351	306	140	230	12	12	175	460,5	698	635,5	50	112	114	262	312	367	148	190	106,5
50-164	132S	5,5	50	300	370	392	346	140	266	12	12	175	513	797	688	60	132	114	282	342	414	168	216	128
50-164	132M	7,5	50	300	370	392	346	178	266	12	12	175	563	797	738	60	132	114	282	342	414	168	216	128
52-164	132S	5,5	50	300	370	454	408	140	266	12	12	237	513	859	750	60	132	114	282	342	414	168	216	128
52-164	132M	7,5	50	300	370	454	408	178	266	12	12	237	563	859	800	60	132	114	282	342	414	168	216	128
60-200	112M	4	65	250	330	371	326	140	230	12	12	211	451	718	662	50	112	135	292	342	367	157	190	97
60-200	132S	5,5	65	300	370	412	368	140	266	12	12	211	503,5	816	714,5	60	132	135	312	372	414	177	216	118,5
60-200	132M	7,5	65	300	370	412	368	178	266	12	12	211	553,5	816	764,5	60	132	135	312	372	414	177	216	118,5
60-200	160M	11	65	350	480	475	430	210	330	15	14	211	657	1022	868	60	160	135	340	400	483	205	254	163
60-200	160L	15	65	350	480	475	430	254	330	15	14	211	717	1022	928	60	160	135	340	400	483	205	254	163
65-200	132S	5,5	65	300	370	412	368	140	266	12	12	211	503,5	816	714,5	60	132	135	312	372	414	177	216	118,5
65-200	132M	7,5	65	300	370	412	368	178	266	12	12	211	553,5	816	764,5	60	132	135	312	372	414	177	216	118,5
65-200	160M	11	65	350	480	475	430	210	330	15	14	211	657	1022	868	60	160	135	340	400	483	205	254	163
65-200	160L	15	65	350	480	475	430	254	330	15	14	211	717	1022	928	60	160	135	340	400	483	205	254	163
80-240-11	160M	11	80	350	480	552	507	210	330	15	14	245	692,5	1099	937,5	60	160	160	378	438	483	218	254	198,5
80-240-11	160L	15	80	350	480	552	507	254	330	15	14	245	752,5	1099	997,5	60	160	160	378	438	483	218	254	198,5
80-240-15	160L	15	80	350	480	552	507	254	330	15	14	245	752,5	1099	997,5	60	160	160	378	438	483	218	254	198,5
80-240-15	180M	18,5	80	350	400	561	506	241	387	15	15	245	782,5	1097	1027,5	60	180	160	398	458	585	218	279	194,5
80-240-15	180L	22	80	350	400	561	506	241	387	15	15	245	752,5	1097	997,5	60	180	160	398	458	585	218	279	194,5

Two-stage pumps

Pump set with motor shroud, on 3-point ball feet

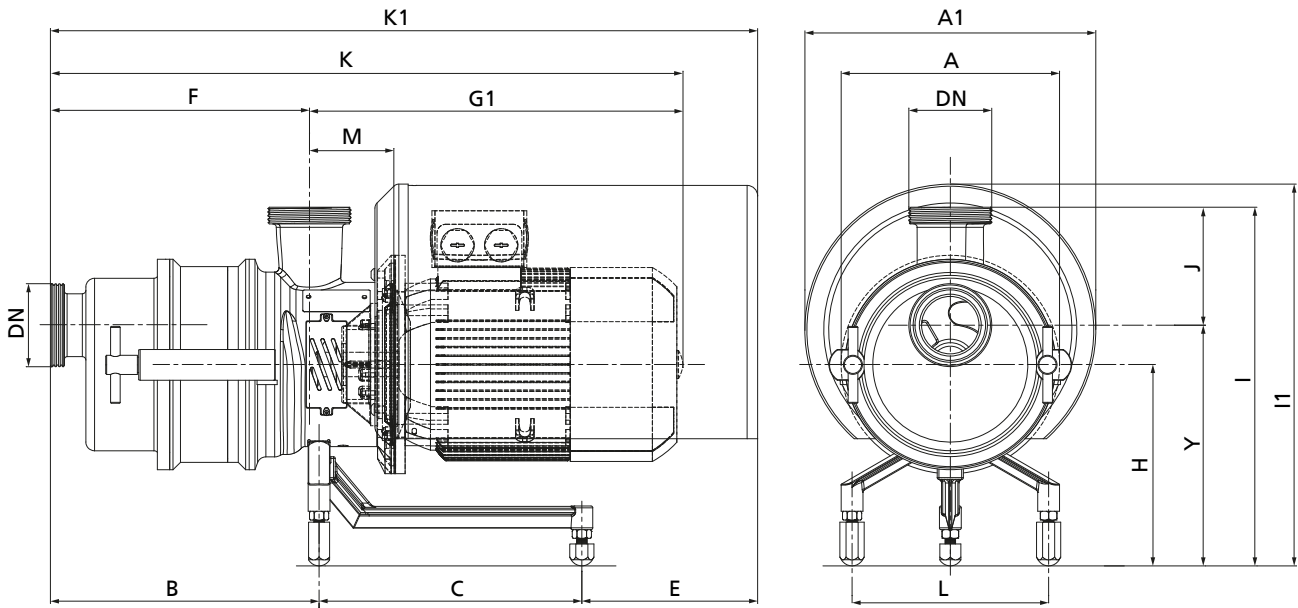


Fig. 4: Pump set with motor shroud, on 3-point ball feet

Dimensions

Size	Motor	[kW]	DN	[mm]															
				A	A1	B	C	E	F	G1	K1	K	H	J	I	I1	Y	L	M
42-146	100L	2,2	40	250	330	234	301	183	208	474	728	682	190	110	335	335	225	225	103,5
42-146	100L	3,0	40	250	330	234	301	183	208	474	728	682	190	110	335	335	225	225	103,5
42-146	112M	4,0	40	250	330	234	301	183	208	457,5	728	665,5	190	110	335	335	225	225	103,5

Pump set with motor shroud, on 4-point ball feet

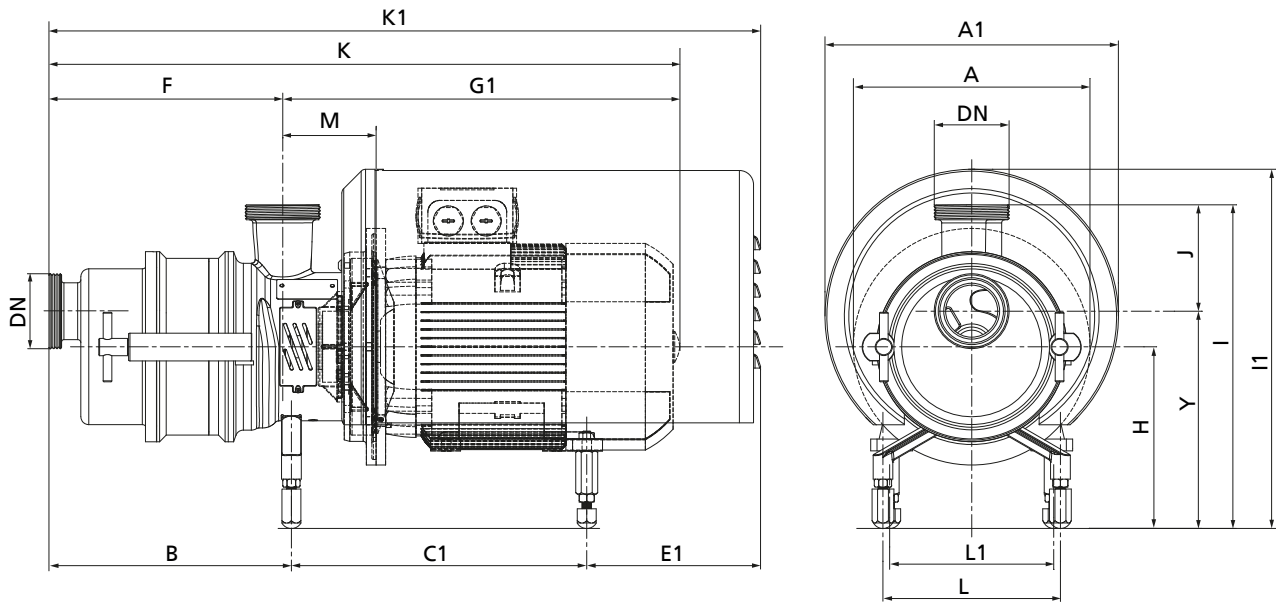


Fig. 5: Pump set with motor shroud, on 4-point ball feet

Dimensions

Size	Motor	[kW]	DN	A	A1	B	C1	E1	F	G1	K1	K	H	J	I	I1	Y	L	L1	M
				[mm]																
52-164	132S	5,5	50	300	370	258	336	227	237	513	859	750	228	114	378	450	264	225	216	128
52-164	132M	7,5	50	300	370	258	374	265	237	563	859	800	228	114	378	450	264	225	216	128

Pump set with motor shroud, on motor feet

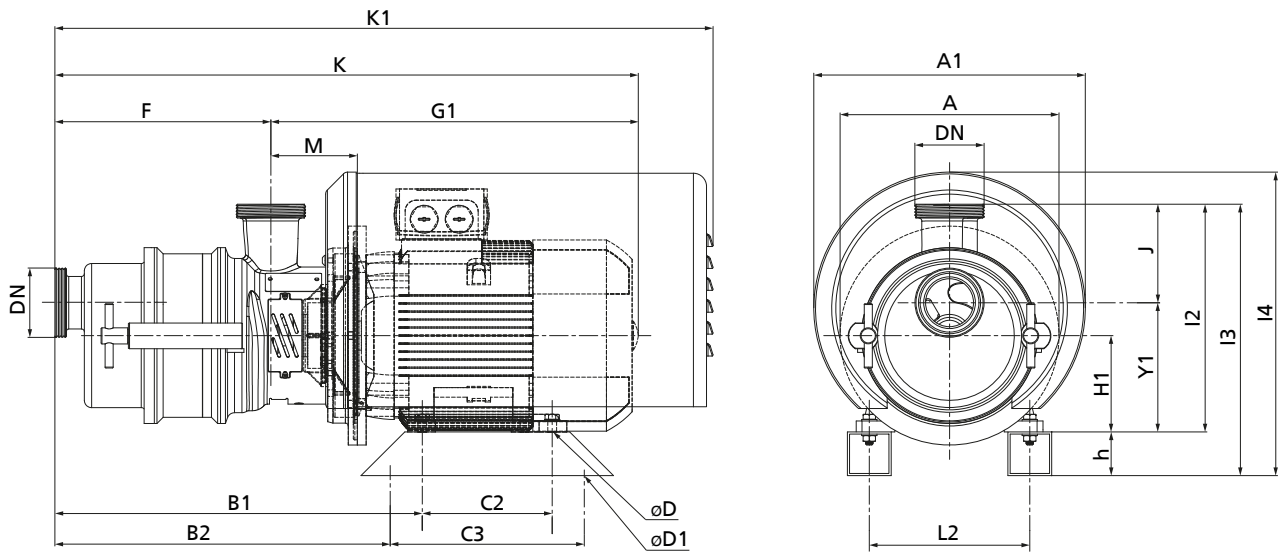


Fig. 6: Pump set with motor shroud, on motor feet

Dimensions

Size	Motor	[kW]	DN	[mm]																				
				A	A1	B1	B2	C2	C3	D	D1	F	G1	K1	K	h	H1	J	I2	I3	I4	Y1	L2	M
42-146	100L	2,2	40	250	330	371	326	140	230	12	12	208	474	728	682	50	100	110	245	295	355	135	160	103,5
42-146	100L	3,0	40	250	330	371	326	140	230	12	12	208	474	728	682	50	100	110	245	295	355	135	160	103,5
42-146	112M	4,0	40	250	330	378	333	140	230	12	12	208	457,5	728	665,5	50	112	110	257	307	367	147	160	103,5
52-164	132S	5,5	50	300	370	454	408	140	266	12	12	237	513	859	750	60	132	114	282	342	414	168	216	128
52-164	132M	7,5	50	300	370	454	408	178	266	12	12	237	563	859	800	60	132	114	282	342	414	168	216	128

Pump accessories

- Motor shroud made of stainless steel
- Vertically adjustable ball feet or machine mounts
- Residual drainage of pump casing
- Noise reduction valve
- Mounted on a trolley, with switch and power cable
- System for supplying the mechanical seal

Detailed 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
V	P			8	0	-	2	4	0	-	1	1	0	4	0	4	K	B	Q	T	8	2	M	E	C	C	O		O	A
See name plate and data sheet																												See data sheet		

Designation key

Position	Code	Description
1-4	Pump type	
	V P	Vitaprime
5-13	Size	
	80	Nominal nozzle diameter [mm]
	240	Nominal impeller diameter [mm]
	11	Load range
14-16	Motor rating	
	0 0 7	0.7 kW
	0 4 0	4 kW
	1 8 5	18.5 kW
17	Number of poles	
	4	4 poles
18	Mounting arrangement	
	K	Ball feet
	T	Round base feet
	M	Motor foot
	V	Trolley
	B	Motor plate
19-20	Seal code	
	B Q	External flushing (quench)
	B	Dead end, without flushing system
	D B	Double mechanical seal
21-23	Seal code	
	T 1 8	U2U2VGG
	T 1 9	U2U2EGG
	T 6 4	U2Q1EGG
	T 6 9	BQ1M3GG
	T 6 6	Q1Q1M3GG
	T 6 8	U2Q1VGG
	T 8 0	BQ1VGG
	T 8 1	Q1Q1VGG
	T 8 2	BQ1EGG
	T 8 3	Q1Q1EGG
	T 8 4	Q1U2EGG
	T 8 5	Q1U2VGG
	H 0	BGEGG
	H 0 D	BGVGG
	H 1	BQ1EGG
	H 1 D	BQ1VGG
	H 2	Q1U2EGG
	H 2 D	Q1U2VGG
	H 3	Q1Q1EGG
	H 3 D	Q1Q1VGG
	H 4	U2U2EGG
	H 5	QQEGG**
	H A	U2U2EGG
	H 7	U2U2VGG*
	H 8	U2U2VGG
	H 9	BQ1VGG*
Q 7 0	BGEGG	
Q 7 1	BU2EGG	

Position	Code	Description
21-23	Q 7 2	U2U2EGG
	Q 7 4	U2U2VGG
	Q 7 8	U2U2VGG
	Q 7 9	U2U2M3GG
24	Piping connection	
	M	Threaded connection to DIN 11851
	E	Threaded connection to DIN 11853
	B	Threaded connection to DIN 11864-1-GS-A
	S	Threaded connection to SMS standard
	I	Threaded connection to IDF standard
	F	Threaded connection to RJT standard
	U	Tri-Clamp fitting
	D	Clamped connection to DIN 11864-3A
	T	Clamped connection to DIN 32676-A
	V	Clamped connection to ISO 2852
	L	Flange to EN 1092-1
	C	Flange to DIN 11864-2A
	Z	Flange to ASA ASME 150
A	APV flange	
G	Varivent flange	
25	O-ring material (casing/impeller)	
	E	EPDM 70 (FDA, USP Class VI, 3A)
	V	FPM 75 (FDA, USP Class VI, 3A)
	P	PTFE (FDA)
	M	FEP (encapsulated) (FDA)
	K	Kalrez (FFKM) (FDA)
26	Casing material	
	C	1.4409
27	Impeller material	
	C	1.4409
28	Motor shroud	
	S	With shroud
	O	Without shroud
29	Special design	
	⁴⁾	Standard
	X	Special design, incl. ATEX
30	Drain	
	O	No drain
	P	Casing drain via pipeline
	V	Casing drain via valve
	D	Casing drain with plug
31	Generation	
	A	Generation A, current

4) Blank



KSB Aktiengesellschaft
Johann-Klein-Straße 9 • 67227 Frankenthal (Germany)
Tel. +49 6233 86-0
www.ksb.com