

SPEEDMAN® VARIABLE SPEED PUMP SET

DEPEND ON
DAVEY

WATER PRODUCTS



VARIABLE SPEED PUMP SET

PRODUCT DESCRIPTION

Variable speed / constant pressure system consisting of a Davey VM vertical multistage pump with Speedman controller, VSD unit, pressure transducer, 24 litre pressure tank, inlet and discharge manifolds, isolating and non-return valves, all mounted on a stainless steel base.

APPLICATIONS

Pumping of clean, non-aggressive liquids, free of fibres in suspension, suitable for applications such as:-

- Agriculture & Turf Watering
- Commercial & Industrial Processes
- Pressure Boosting in Commercial buildings
- Water Supply – Rural & Industrial
- Commercial – High Pressure Washing & Water Treatment

FEATURES & BENEFITS

- Provides constant pressure via variable speed control for single pumps up to 30kW.
- Simple dial adjustable set point to allow the operator to adjust the set point to suit individual applications.
- Incorporates high & low pressure shutdown protection with adjustable delay timers.
- High & low pressure settings automatically track set point changes for ease of adjustment.
- Automatic sensing of “no flow” condition via pressure boosting to protect the pump.
- LED display shows pump operation, status and fault conditions. Indicators include power on, pump running, VSD fault, high pressure and low pressure faults and no flow testing.
- On-Off switch.
- Selectable manual control for commissioning.
- Remote start input for control via an irrigation controller, or external sensor.
- Programmable output relays for external communications of fault conditions, lag pump or jockey pump operation.

OPERATING LIMITS

Capacities to	110m ³ /hr (1833lpm)
Pressure heads to	160m
Maximum suction pressure	Refer pg 2
Liquid temperature range	0° to +70°C
Power supply – single phase	up to 2.2kW
Power supply – three phase	up to 30kW
Pump Rotation	Anti-clockwise (top view)

TECHNICAL SPECIFICATIONS

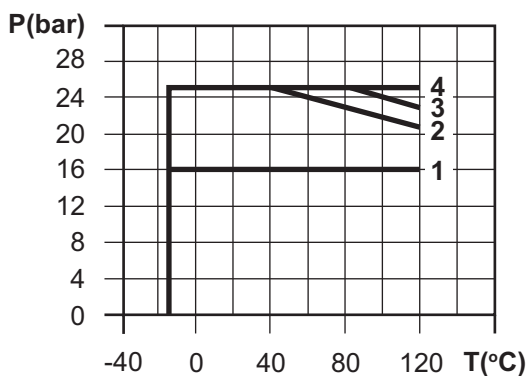
MAXIMUM INLET PRESSURE

Model	Maximum Inlet Pressure
VM3-8	6 bar
VM3-12 & above	10 bar
Up to VM5-10	10 bar
VM5-12 & above	15 bar
Up to VM10-6	6 bar
VM10-8 & above	10 bar
VM16-2 and VM16-3	6 bar
VM16-4 & above	10 bar
VM32-2A	3 bar
VM32-3 to VM32-4	4 bar
VM32-6 to VM32-10	10 bar
VM32-12	15 bar
VM65-2A	4 bar
VM65-2 to VM65-3	10 bar
VM65-4A and VM65-5	15 bar
Up to VM90-3A	10 bar
VM90-3 & above	15 bar

MAXIMUM WORKING PRESSURE

Model	Curve Number
Up to VM3-23	1
Up to VM5-16	1
Up to VM10-12	1
VM10-14	3
Up to VM16-8	1
VM16-11	3
Up to VM32-6	1
VM32-8	4
VM65 range	1
Up to VM90-4	1

The following figure shows the limitation of working pressure and temperature of VM pumps. Pumps should only be operated within the region shown by the curves below.



MATERIALS OF CONSTRUCTION

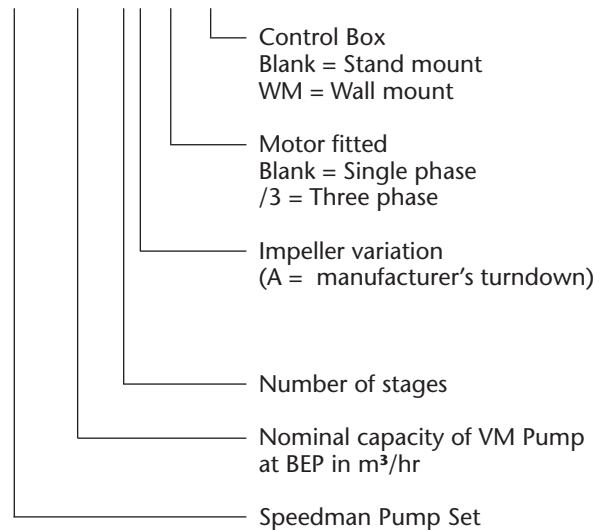
PART	MATERIAL
Pump base	Cast iron
Suction & discharge casing	304 stainless steel
Motor support lantern	Cast iron
Impellers	304 stainless steel
Stages (casing)	304 stainless steel
Outside sleeve	304 stainless steel
Pump shaft	316L stainless steel
Intermediate bearing	Tungsten carbide
Mechanical seal	Silicon carbide/carbon/EPDM
Orings (casing)	EPDM
Plugs (drainage & priming)	316L stainless steel
Impeller neck rings	Teflon

* Special version with 316L stainless steel & viton orings on request

NOTE: 304 stainless steel, (Z6 CN 18.9) and **316L stainless steel** (Z2 CND 17.12) are recommended materials that are highly resistant to corrosion. Suitable for pumping clean, clear non-viscous liquids, containing no fibres or solids. Maximum sand/silica concentration 40 g/m³.

IDENTIFICATION OF THE PUMP SET

SMAN 32 - 2A/3 WM



ALTITUDE & TEMPERATURE VS LOSS OF HEAD

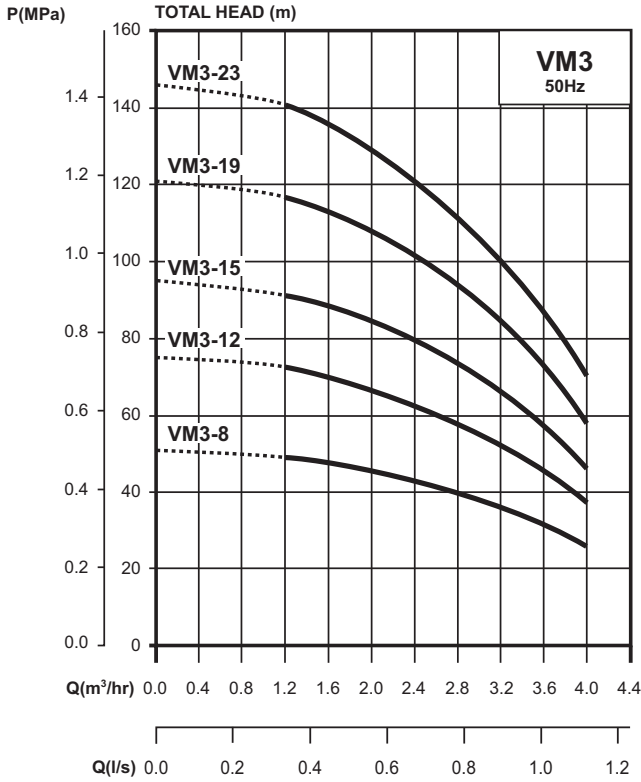
Guide only. Altitude and temperature losses are added.

Altitude	Loss of head	Temperature	Loss of head
0m	0m	20°C	0.20m
500m	0.60m	30°C	0.40m
1000m	1.15m	40°C	0.70m
1500m	1.70m	50°C	1.20m
2000m	2.20m	60°C	1.90m
2500m	2.65m	70°C	3.10m
3000m	3.20m	80°C	4.70m
		90°C	7.10m
		100°C	10.30m

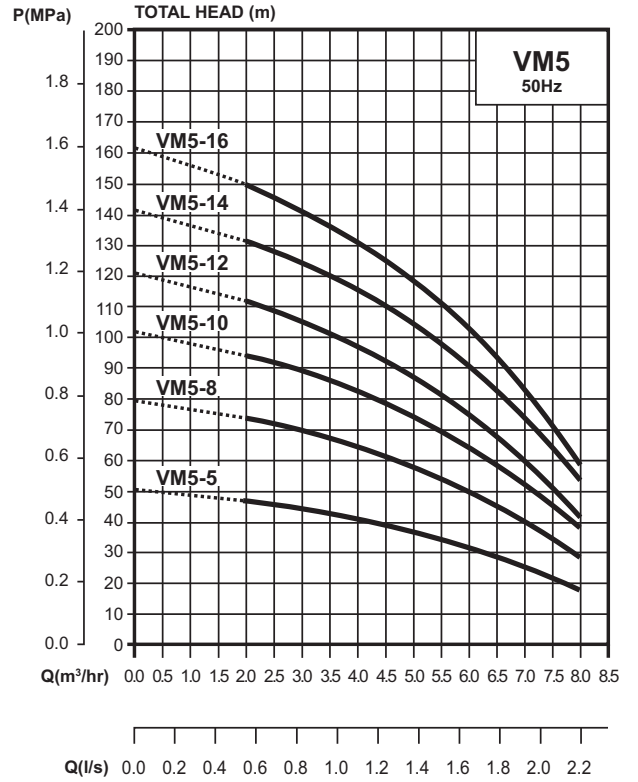
TECHNICAL SPECIFICATIONS

HYDRAULIC PERFORMANCE

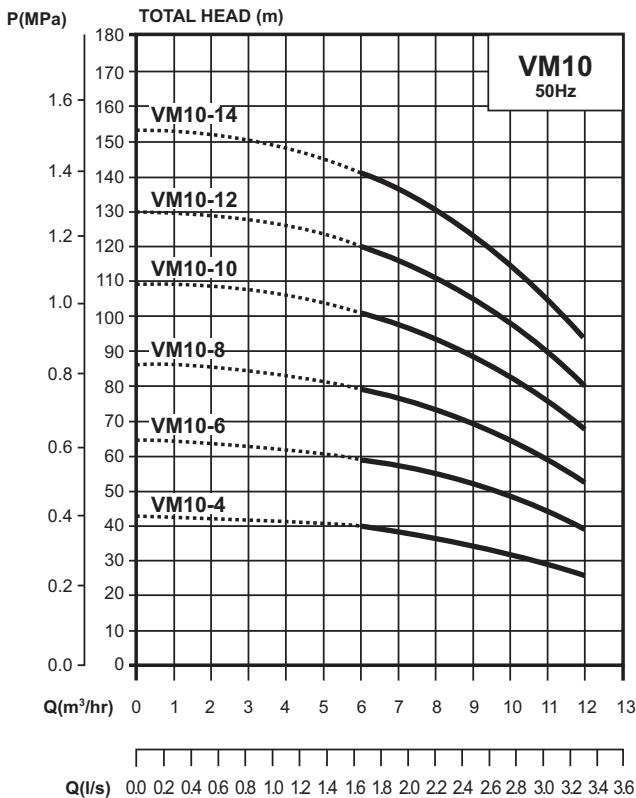
VM3, 2 POLE 50Hz



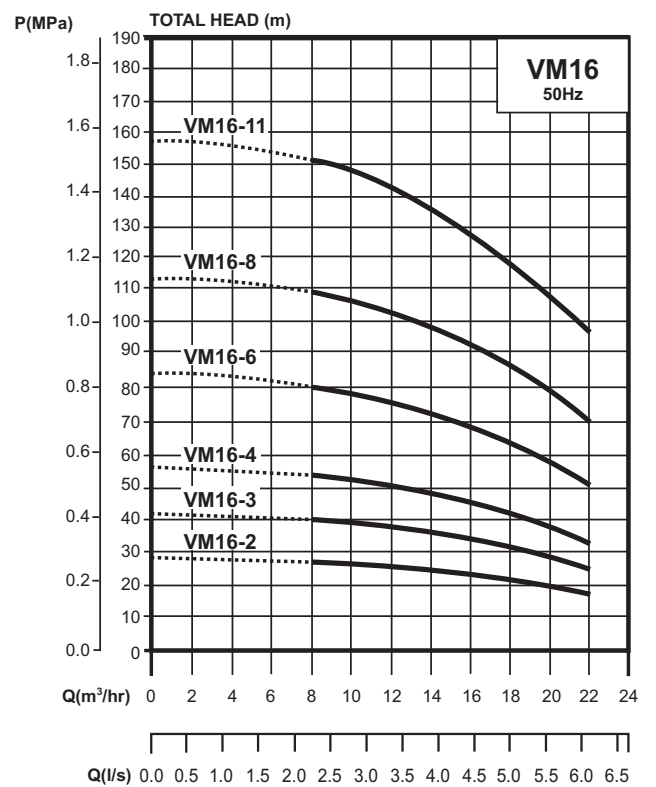
VM5, 2 POLE 50Hz



VM10, 2 POLE 50Hz



VM16, 2 POLE 50Hz

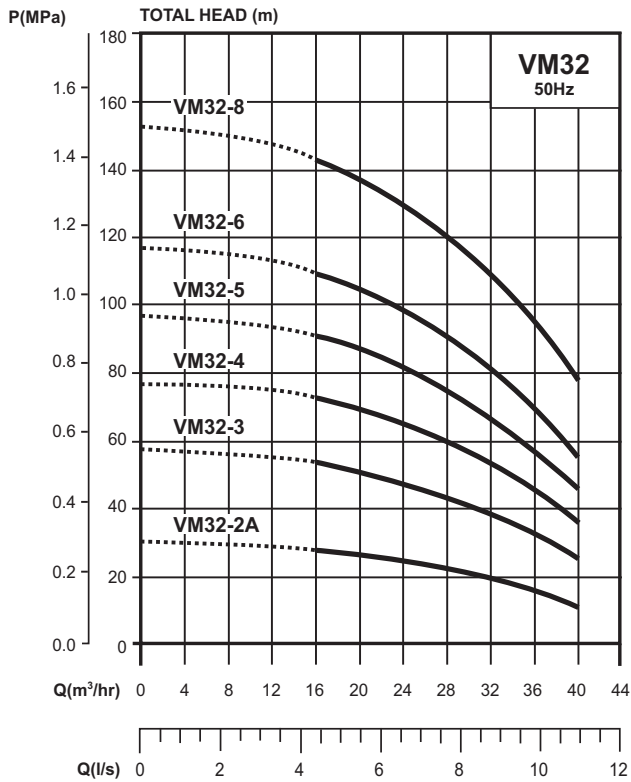


NOTE: CURVE TOLERANCE IN CONFORMITY WITH ISO9906 APPENDIX A.

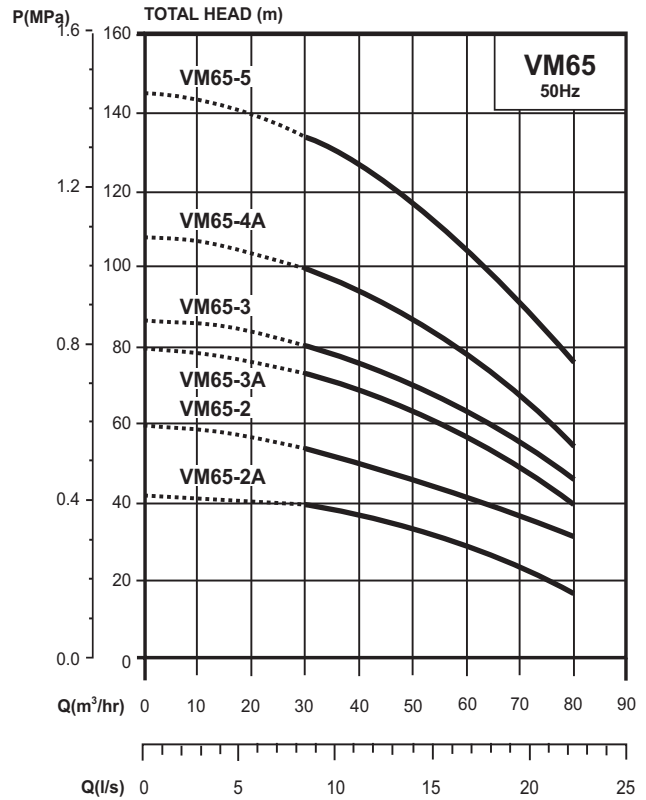
TECHNICAL SPECIFICATIONS

HYDRAULIC PERFORMANCE

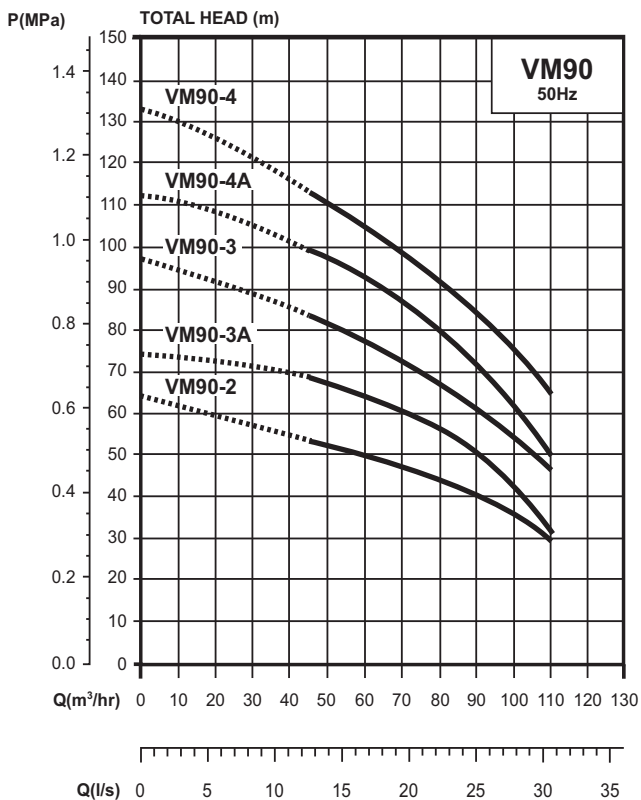
VM32, 2 POLE 50Hz



VM65, 2 POLE 50Hz



VM90, 2 POLE 50Hz



PRESSURE BOOSTING

The Speedman pumpset uses pressure boosting to determine when there is flow in the system. Periodically, it will momentarily boost the pressure and then watch for the pressure to decay back to the set point. If there is no decay within a set time period the system deems there is no-flow and shuts down.

OPTIONS

Boost frequency setting: 40, 80, 120 or 160 seconds

Boost pressure setting: 3%, 6%, 12% and 18%

Boost decay test time: 2, 10, 30 and 60 seconds

NOTE: CURVE TOLERANCE IN CONFORMITY WITH ISO9906 APPENDIX A.

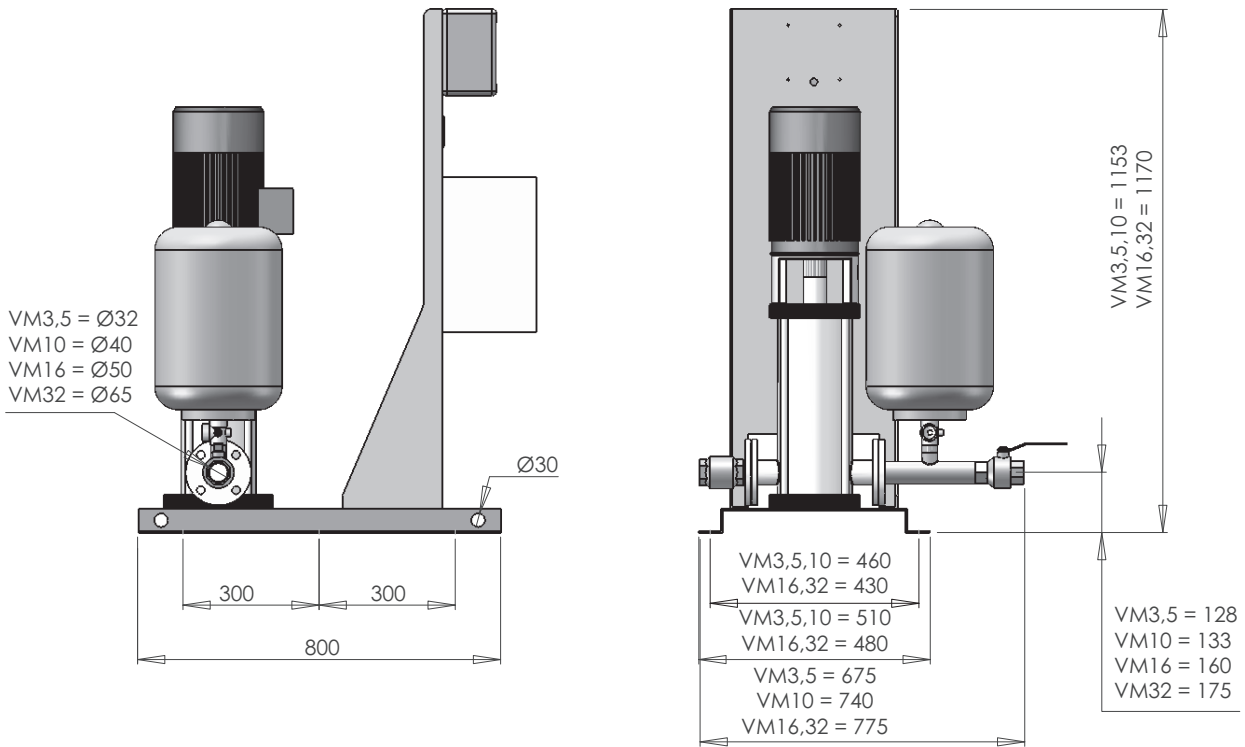
TECHNICAL SPECIFICATIONS

DIMENSIONS

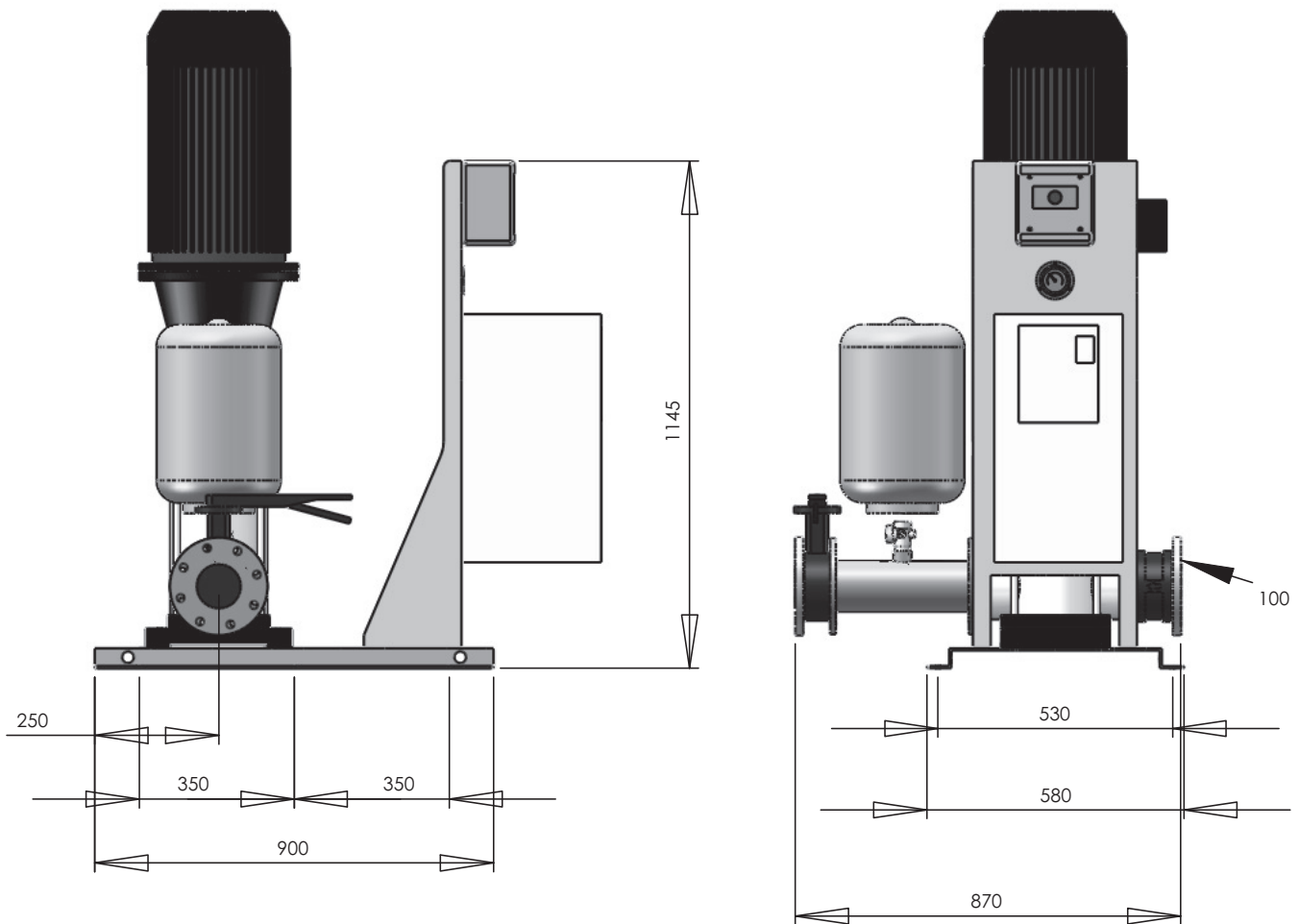
Pump	Model	Motor kW	Height mm	Length mm	Width mm	Pipe DN mm
3-8	SMAN3-8	0.75	1153	860	690	32
3-12	SMAN3-12	1.1	1153	860	690	32
3-15	SMAN3-15	1.5	1153	860	690	32
3-19	SMAN3-19	2.2	1153	860	690	32
3-23	SMAN3-23	2.2	1153	876	690	32
5-5	SMAN5-5	1.1	1153	860	690	32
5-8	SMAN5-8	1.5	1153	860	690	32
5-10	SMAN5-10	2.2	1153	860	690	32
5-12	SMAN5-12	3.0	1153	876	690	32
5-14	SMAN5-14	3.0	1153	876	690	32
5-16	SMAN5-16	3.0	1153	876	690	32
10-4	SMAN10-4	1.5	1153	860	720	40
10-6	SMAN10-6	2.2	1153	876	720	40
10-8	SMAN10-8	3.0	1153	876	720	40
10-10	SMAN10-10	4.0	1153	876	720	40
10-12	SMAN10-12	5.5	1233	876	720	40
10-14	SMAN10-14	5.5	1233	876	720	40
16-2	SMAN16-2	2.2	1170	875	735	50
16-3	SMAN16-3	3.0	1170	875	735	50
16-4	SMAN16-4	4.0	1170	875	735	50
16-6	SMAN16-6	5.5	1170	875	735	50
16-8	SMAN16-8	7.5	1200	875	735	50
16-11	SMAN16-11	11.0	1425	982	735	50
32-2A	SMAN32-2A	3.0	1170	875	760	65
32-3	SMAN32-3	5.5	1170	875	760	65
32-4	SMAN32-4	7.5	1215	985	760	65
32-5	SMAN32-5	11.0	1450	985	760	65
32-6	SMAN32-6	11.0	1520	985	760	65
32-8	SMAN32-8	15.0	1660	985	760	65
65-2A	SMAN65-2A	7.5	1145	938	870	100 (Table E)
65-2	SMAN65-2	11.0	1289	1045	870	100 (Table E)
65-3A	SMAN65-3A	15.0	1371	1045	870	100 (Table E)
65-3	SMAN65-3	18.5	1431	1045	870	100 (Table E)
65-4A	SMAN65-4A	22.0	1515	1045	870	100 (Table E)
65-5	SMAN65-5	30.0	1706	1045	870	100 (Table E)
90-2	SMAN90-2	15.0	1308	1045	870	100 (Table E)
90-3A	SMAN90-3A	18.5	1460	1045	870	100 (Table E)
90-3	SMAN90-3	22.0	1500	1045	870	100 (Table E)
90-4A	SMAN90-4A	30.0	1662	1045	870	100 (Table E)
90-4	SMAN90-4	30.0	1662	1045	870	100 (Table E)

TECHNICAL SPECIFICATIONS

VM3, 5, 10, 16 and 32



VM65 and VM90



Specific dimensions for each model available on request

TECHNICAL SPECIFICATIONS

MOTOR TECHNICAL SPECIFICATIONS

Motor 1 Phase	Frame	IP Rating	FLC 240 V	Start/LRC Ratio	RPM	Eff %	Bearings	
							Drive End	Non-D/End
0.75	80 V18	IP55	4.38	5.83	2815	72	6204-ZZ	6204-ZZ
1.1	80 V18	IP55	6.38	5.65	2830	75	6204-ZZ	6204-ZZ
1.5	90 V18	IP55	8.08	5.57	2850	76	6205-ZZ	6205-ZZ
2.2	90 V18	IP55	12.0	4.59	2830	77	6205-ZZ	6205-ZZ

Motor 3 Phase	Frame	IP Rating	FLC 415 V	Start/LRC Ratio	RPM	Eff %	Bearings	
							Drive End	Non-D/End
0.75	80 V18	IP55	1.6	5.5	2800	89.0	6204-ZZ	6204-ZZ
1.1	80 V18	IP55	2.2	6.2	2828	82.4	6204-ZZ	6204-ZZ
1.5	90 V18	IP55	3.1	5.3	2800	78.0	6205-ZZC3	6205-ZZC3
2.2	90 V18	IP55	4.2	6.7	2800	85.0	6205-ZZC3	6205-ZZC3
3.0	100 V18	IP55	5.7	6.8	2853	86.2	6205-ZZC3	6205-ZZC3
4.0	112 V18*	IP55	7.3	6.7	2902	86.8	6306-S	6306-S
5.5	132 V1*	IP55	9.8	7.4	2916	89.9	7308B	6308ZZC3
7.5	132 V1*	IP55	13.3	7.4	2892	87.0	7308B	6308ZZC3
11.0	160 V1*	IP55	19.4	7.9	2925	88.3	7309B	6309ZZC3
15.0	160 V1*	IP55	25.5	8.4	2931	89.3	7309B	6309ZZC3
18.5	160 V1*	IP55	31.3	8.3	2938	91.4	7309B	6309ZZC3
22.0	180 V1*	IP55	36.8	7.7	2951	90.4	6311	7311
32.0	200 V1*	IP55	49.4	7.9	2950	91.4	6312	7312

*Special motor bearings fitted for thrust management.



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