EXEFLEX™ COLD WATER BOOSTER SETS

INVERTER CONTROLLED

- **Complete Range of Booster Sets**
- **Flow Rates up to 160 l/s**
- **Pressures up to 15 bar**
- **Single, Twin and Multiple Pump Sets**
- **Built in Dry Run Protection**
- **Pump Mounted Inverters**
- **Anti-Surge Soft Start**
- **Digital Interface on All Units**
- **GaardExe™ Surge Protection Module (Optional)**
- **EVSD Anti-Legionella Device (Optional)**

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Pumping Technology

ExeFlex™ Cold Water Booster Sets

The ExeFlex™ range of cold water booster sets utilise the quality HIL multistage pumps with a factory mounted inverter drive unit fitted to each pump. The speed of each pump is varied by means of the pump mounted frequency inverter, enabling the pumps to operate in a cascade system. The control of each pump is via a pressure transducer installed in the discharge flow manifold. This relays a 4-20 mA signal to the inverter to vary the motor speed.

The ExeFlex™ is suitable for use with BMS systems, all units incorporate high/low pressure alarm, dry run protection, auto change-over, fault history, protection against high/low voltage, over current, current surge, inverter overheat, output wire disconnection, communication error. Volt free contacts are standard.

For ease of use and set up the ExeFlex™ inverter drives have a digital interface. This panel displays output frequency, actual pressure, pressure setting, output current, transducer error, high/low pressure, low water, drive error.

Booster Set Selection

Once the required pressure and flow rates are known then the decision has to be made regarding the number of pumps preferred. Although a single pump may be seen to be the simplest option the importance of ensuring the water supply must be considered. For example, a hotel or hospital will almost certainly require a standby pump capable of supplying the full duty referred to as duty/standby (D/S). For a two pump set, or in the case of three or more pumps the duty would be shared by the number of pumps chosen, plus one as a standby. e.g. If three pumps are chosen to meet the design flow rate, then a fourth pump would be the standby. Four pumps would be referred to as duty/assist/assist/standby (D/A/A/S). The duty can also be shared amongst two or more pumps without standby and these would then be referred to as duty/assist (D/A) or duty/assist/assist (D/A/A) etc. As the flow is divided between a number of pumps the pumps will be smaller. In some instances, a triple pump set may provide a more cost effective solution compared to a twin pump set. Additionally in cases where only a 230-1-50 supply is available, then multiple smaller pumps may be the only option.

Equipment Details

Pumps

Vertical multi-stage. Three phase T.E.F.V 2900 rpm

(A limited range of 1450 rpm are available to special order request).

Pump Control Vessel

Suitable for 10 bar working pressure with replaceable E.P.D.M. rubber diaphragm. (15 bar vessel for higher pressure systems).

Manifolds

Piping is AISI 304 grade stainless steel (or AISI 316 to special order request). An option of copper pipework is available. Single pump modules use brass, bronze and stainless steel.

Voltage power supply

Three phase and option of single phase up to 2.2 kW.

Features of the ExeFlex™

- Digital interface inverter modules
- Built in dry run protection
- Pump mounted inverters (except single pump)
- IP55 steel control panel with on/off indication and MCBs
- Control Panel c/w door interlock isolator
- All booster sets are complete with isolating and non return valves
- Pump control vessel fitted as standard
- Stainless steel multistage pumps with high pressure mechanical seals in carbon-silicon carbide

Optional Items

- GaardExe™ SPM module - (see page 3)
- EVSD Anti-Legionella Device - (see page 3)
- RS485 Connectivity

Optional Additional Items

- Flexible pipe connectors
- Anti-vibration mounts
- Packaged sets assembled with integrated cold water break tanks that are WRAS Cat 5 compliant

Higher duties

This leaflet shows individual pump curves with a maximum closed valve pressure of 15 bar and with pumps of up to 22kW. For sets to suit higher pressures or higher duties as well as 5 or 6 pump sets please contact Smedegaard.

GaardExe™ SPM Module - Optional Add On

Enhanced Capability

The ExeFlex™ SPM Series of cold water booster sets is an enhancement of the well tried and tested ExeFlex™ Range. Both single and three phase booster sets may be fitted with GaardExe™ SPM Module. Further more the module offers added features including high/low pressure indication with mutable audible alarm and break tank refill timer to prevent rapid pump cycling. A BMS telemetric relay board is also available.

The GaardExe™ SP Module is designed to prevent water surge in initial start up and on start up after a power failure. Furthermore, the module will, once the system fill pressure is achieved, monitor for burst pipes. Disabling the burst pipe protection will then enable the booster set to restart even if there are open taps. The module is simple to disable for system set-up.

For additional details relating to the GaardExe™ SPM Module see separate data sheet.

EVSD Anti-legionella Device - Optional Add On

Advantages of the Expansion Vessel Safety Device

- The EVSD signals the circumstances under which the Legionella bacteria could thrive and sustain themselves
- When an alarm is generated, this might also be an indication of a technical failure or an incorrectly adjusted installation

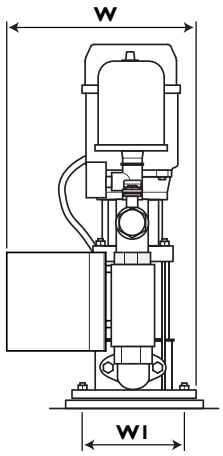
The risk of growth of Legionella, the bacterium that causes Legionnaire's Disease, increases when drinking water is stagnant for longer periods. In a booster system a leaking membrane tank or an incorrectly adjusted booster system can be a potential threat to the quality of drinking water. Especially in rooms with an average ambient temperature above 25 °C the risk is elevated.

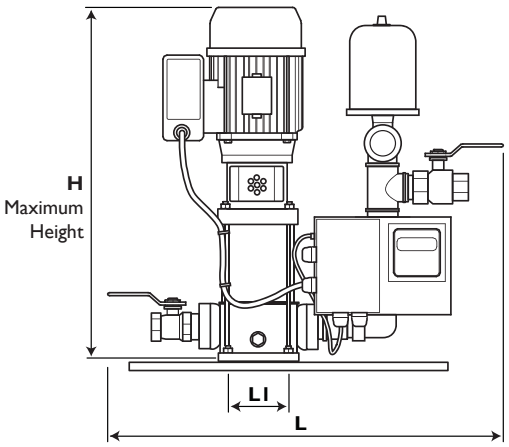
Easy Control for Every Situation

To control water quality in booster systems, Smedegaard offers the EVSD, which detects the refreshment of water by registering the filling and consequently, the draining of the membrane tank. When water fails to move in and out of the expansion vessel then a signal is sent to the Building Management System, alternatively an acoustic or optical alarm can be generated. By means of a reset button on the EVSD-Control module, the signal can be cancelled. Optionally, the booster set may be switched off through its control panel.

** In certain countries regulations state that the membrane tank must be filled and emptied 30 times per 24 hours. Check your local regulations.*

ExeFlex™ Single Pump





Dimensions in millimetres

For the Exeflex™ single unit refer to the pump curves on the following pages to select the required model

Series	L	L1	H	W	W1	Weight (Max)
3	429	100	827	248	180	35
5	459	100	870	281	180	47
7	459	100	835	281	180	47
12	547	130	974	312	215	74
24	594	130	963	318	215	80

Pump Selection

All pump curves shown on the following pages relate to single pump duties, not multiple pump complete booster set duties. For multiple pump applications it is necessary to decide if a standby pump is to be used. In cases where a standby pump is utilised then divide the set duty by the number of pumps required to meet the specified flow rate of the booster set.

For example if a duty/assist/standby unit is required and the booster set duty has a flow rate of 6 litres per second divide this by two which equals 3 litres per second and choose the pump curve relative to this which in the case would be the Series 12. The pressure requirement is always a constant, so if 5 bar set is required then the pump model is the Series 12-50. In order establish full model reference please refer to the model identification chart opposite. The example detailed here of a three pump booster set in three phase power supply would give a model identification of ExeFlex 12-60/3T.

Model Identification

ExeFlex 24 40/3T SPM

- GaardExe SP Module
- Three Phase or (S) Single Phase
- Number of Pumps
- Pump Duty (See graphs)
- Pump Series
- Booster Set Range

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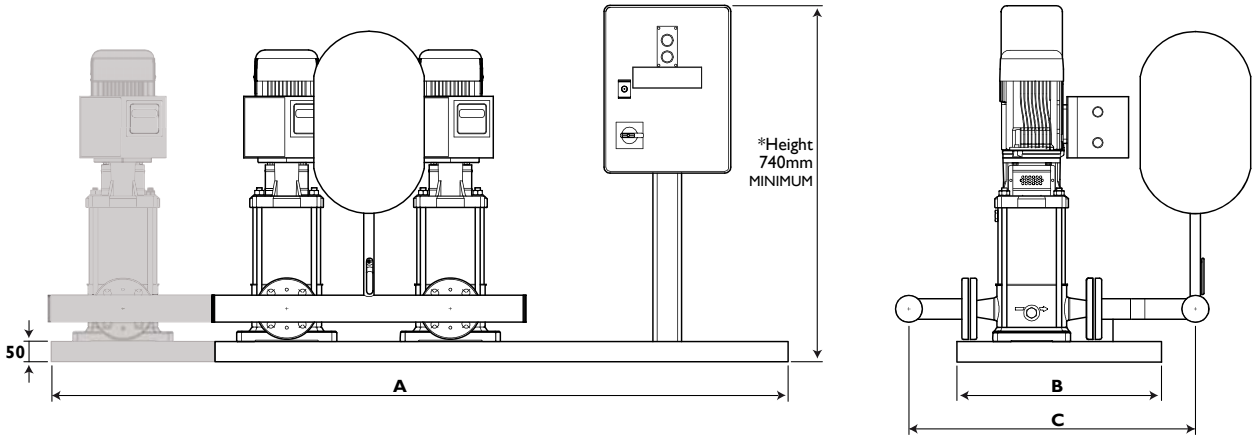
ExeFlex™ Series 3

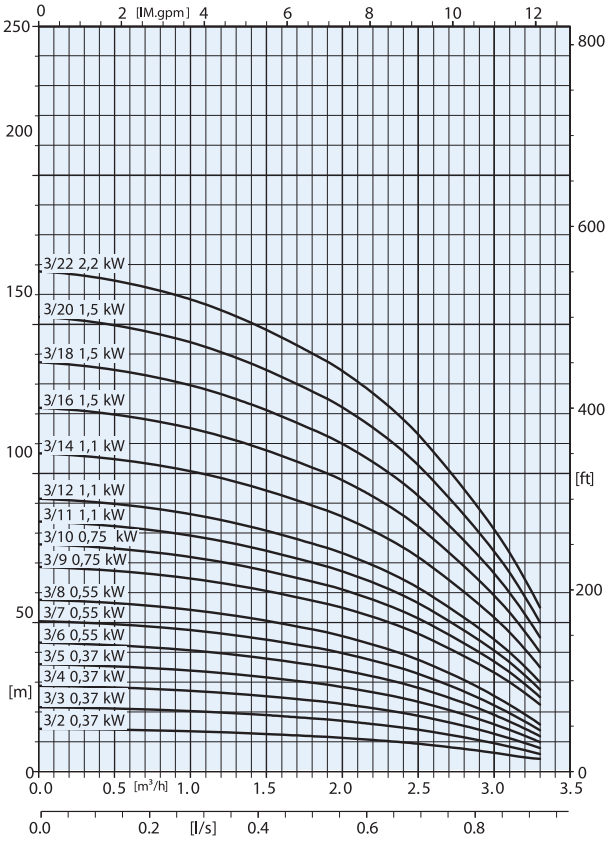


**Minimum height equals panel height. See table A page 10 for set height of models 3-1 1/3-22.*

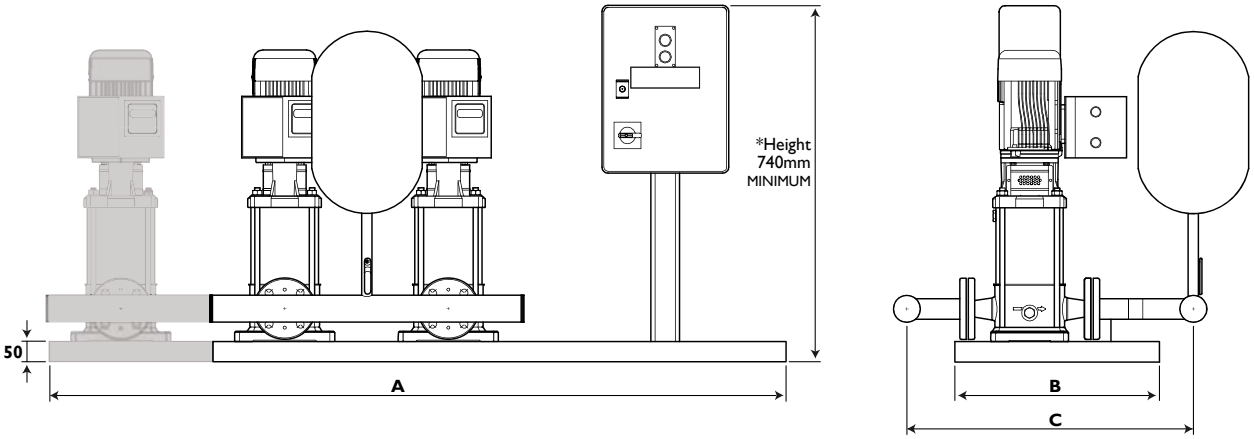
Series	No. of pumps	A	B	C	Connections	Max Dry Wt. Kg (Approx.)
3	2	900	420	555	1.5″	135
	3	1400	500	567	2″	180
	4	1800	500	583	2.5″	225

For 5 and 6 Pump Sets - Contact Smedegaard

Series 3



ExeFlex™ Series 5 & 7



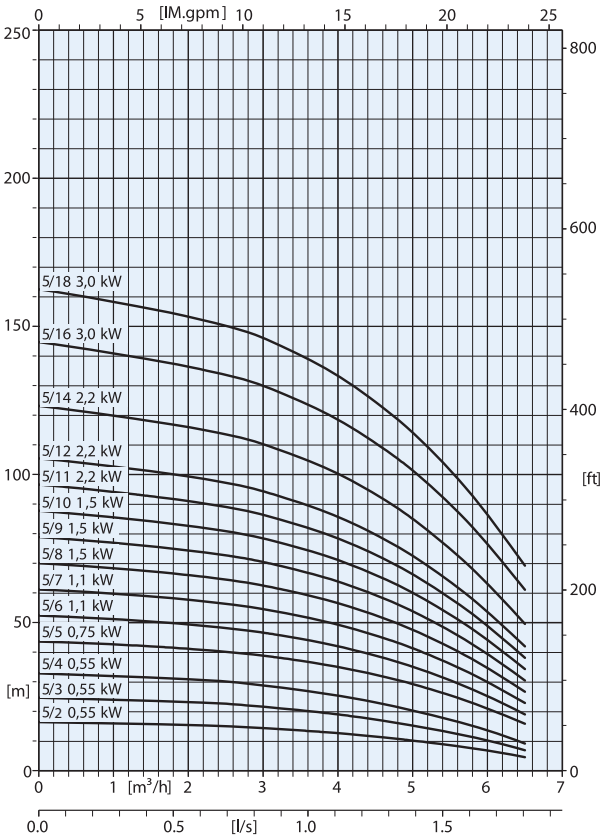
**Minimum height equals panel height. See table A page 10 for set height of models 5/10-5/18 and 7/8-7/16.*

Series	No. of pumps	A	B	C	Connections	Max Dry Wt. Kg (Approx.)
5	2	900	420	555	1.5″	135
	3	1400	500	567	2″	180
	4	1800	500	583	2.5″	225

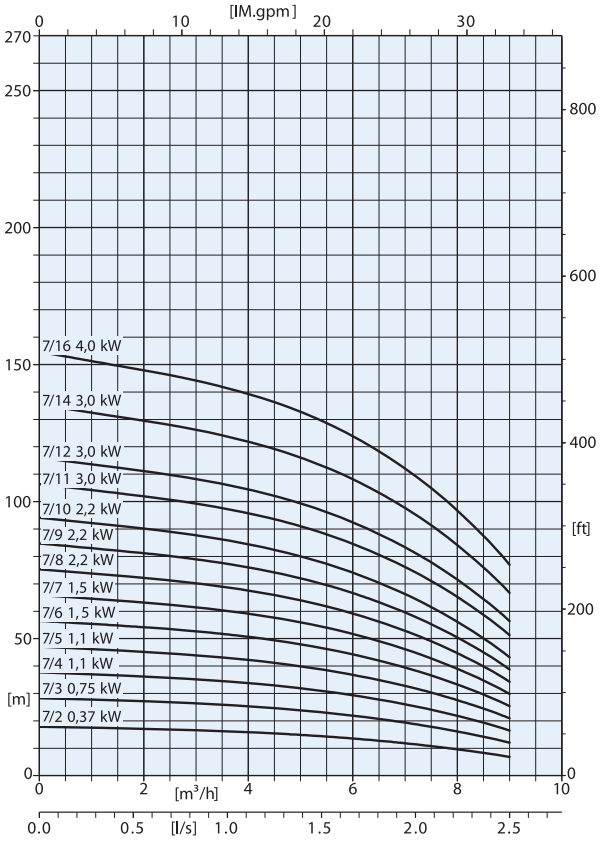
Series	No. of pumps	A	B	C	Connections	Max Dry Wt. Kg (Approx.)
7	2	900	420	555	1.5″	159
	3	1400	500	567	2″	216
	4	1800	500	583	2.5″	273

For 5 and 6 Pump Sets - Contact Smedegaard

Series 5



Series 7



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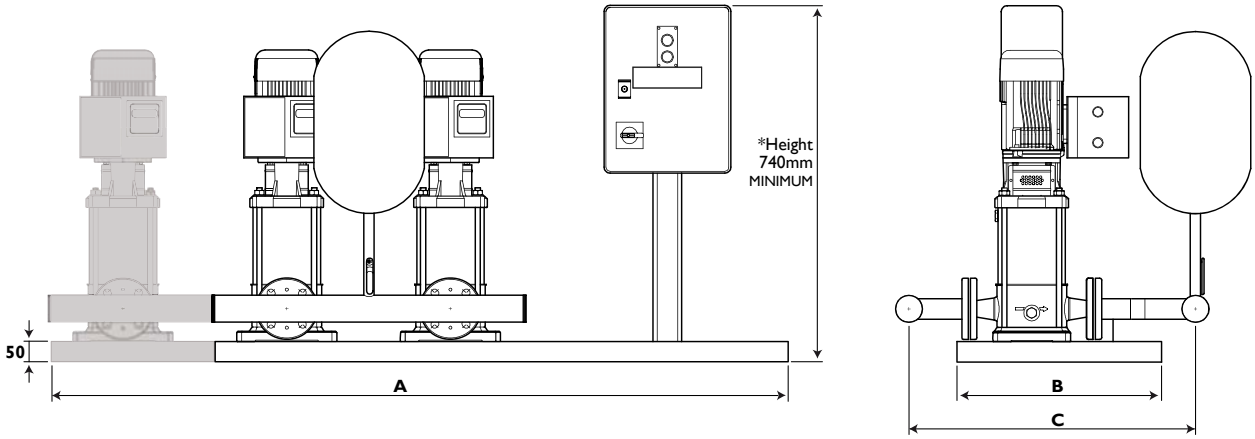
ExeFlex™ Series 12 & 24



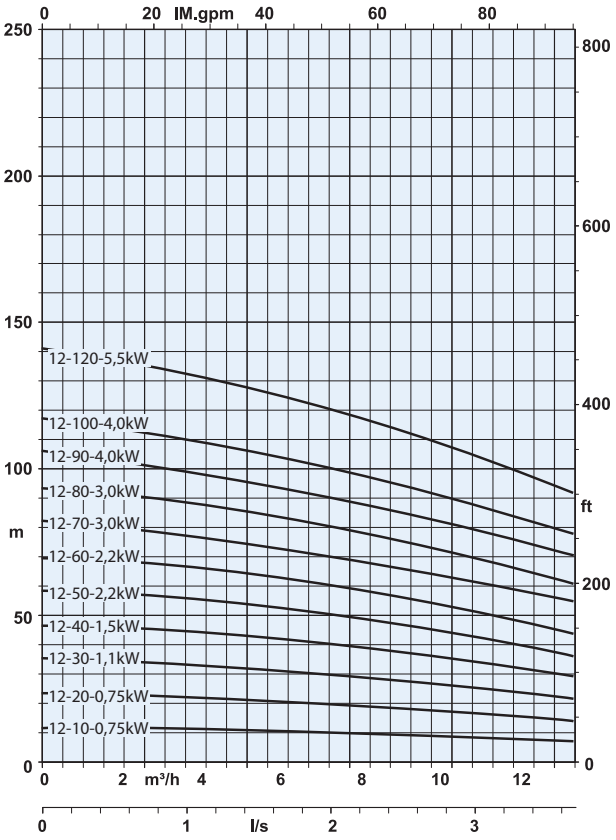
**Minimum height equals panel height. See table A page 10 for set height of models 12-60/12-120 and 24-30/24-100.*

Series	No. of pumps	A	B	C	Connections	Max Dry Wt. Kg (Approx.)
12	2	900	420	638	2″	243
	3	1400	500	638	2″	340
	4	1800	500	654	2.5″	436

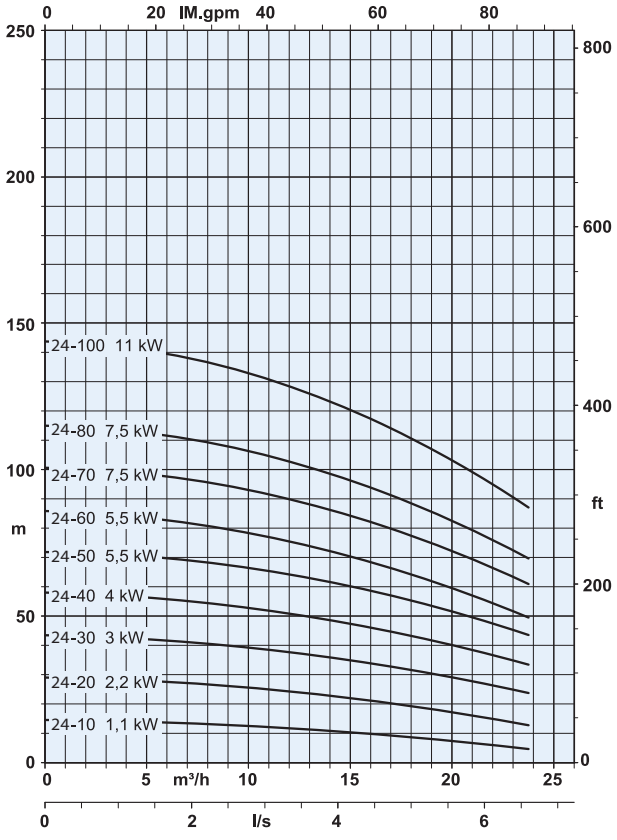
Series	No. of pumps	A	B	C	Connections	Max Dry Wt. Kg (Approx.)
24	2	1200	500	785	2.5″	391
	3	1800	500	798	3″	553
	4	2200	500	798	3″	713

For 5 and 6 Pump Sets - Contact Smedegaard

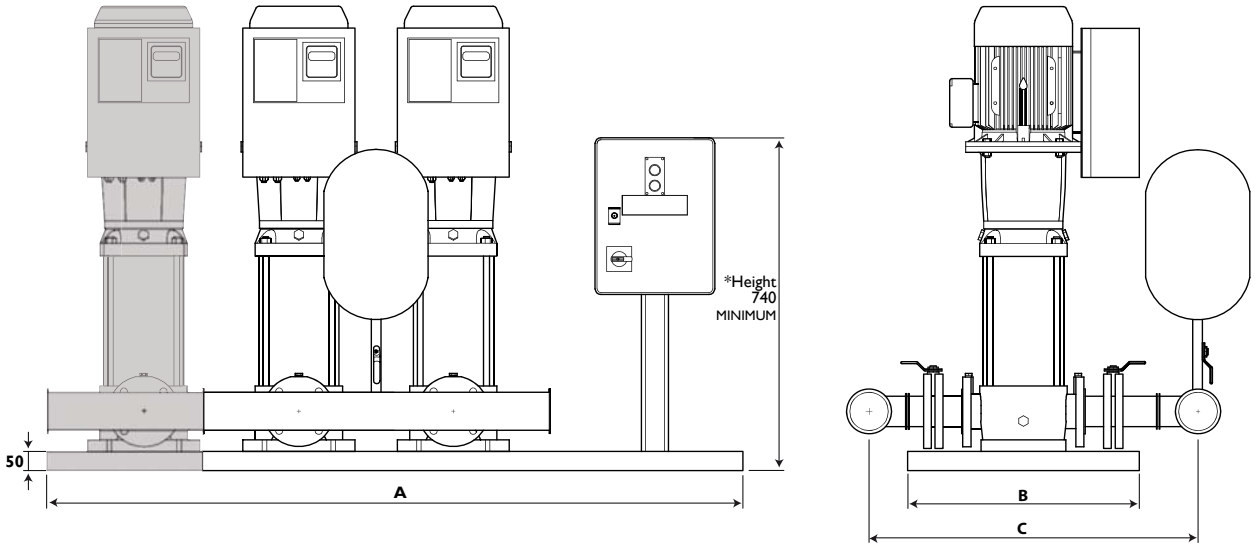
Series 12



Series 24



ExeFlex™ Series 36 & 50



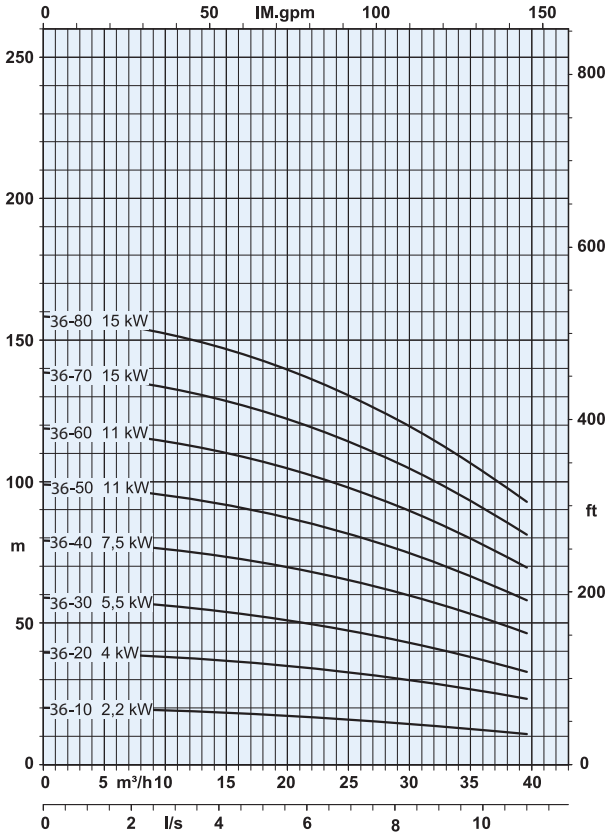
**Minimum height equals panel height. See table A page 10 for set height of models 36-10/36-80 and 50-10/50-70-1.*

Series	No. of pumps	A	B	C	Connections	Max Dry Wt. Kg (Approx.)
36	2	1200	500	937	3″	579
	3	1800	500	962	100mm	829
	4	2200	500	962	100mm	1082

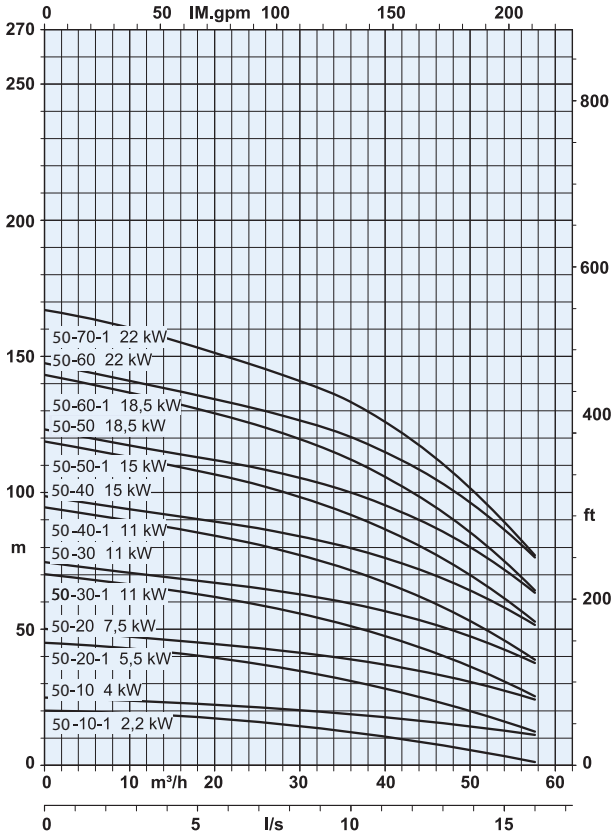
Series	No. of pumps	A	B	C	Connections	Max Dry Wt. Kg (Approx.)
50	2	1500	500	792	100mm	608
	3	2000	500	843	150mm	903
	4	2500	500	843	150mm	1203

For 5 and 6 Pump Sets - Contact Smedegaard

Series 36



Series 50



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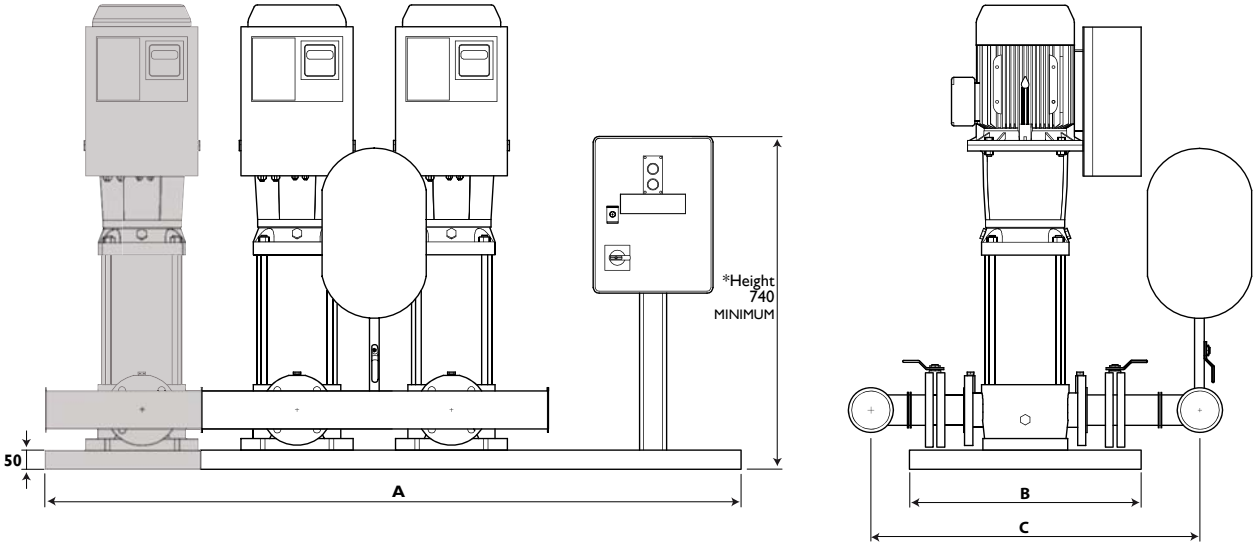
ExeFlex™ Series 80 & 90



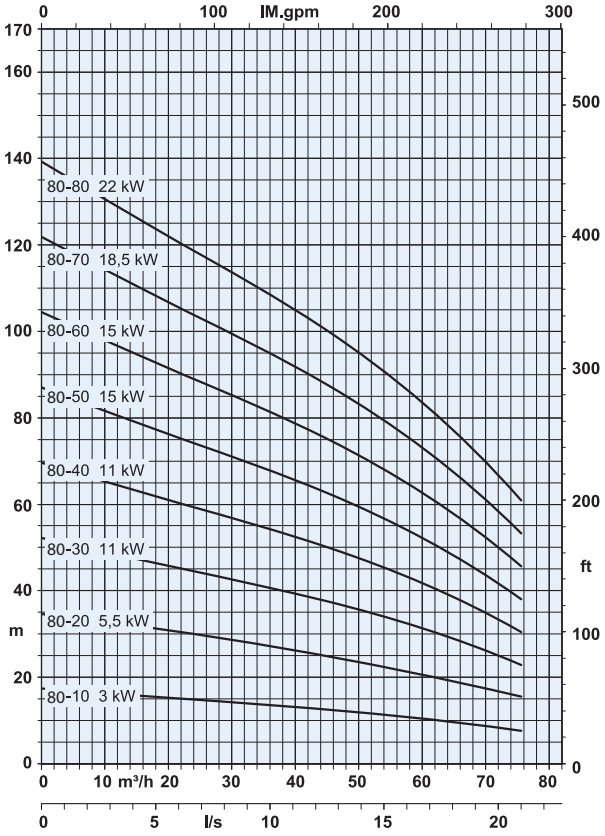
**Minimum height equals panel height. See table A page 10 for set height of models 80-10/80-80 and 90-1-1/90-30.*

Series	No. of pumps	A	B	C	Connections	Max Dry Wt. Kg (Approx.)
80	2	1500	500	930	150mm	760
	3	2000	500	930	150mm	1087
	4	2500	500	981	200mm	1460

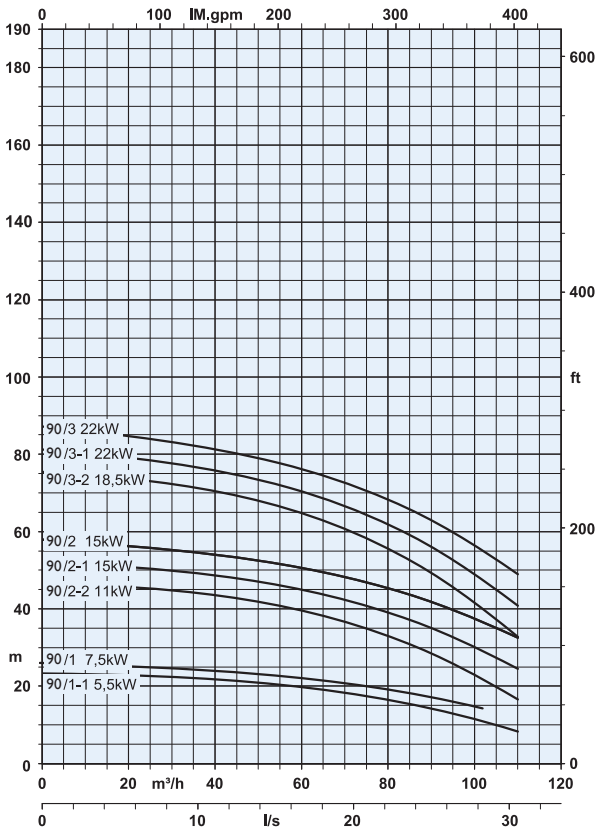
Series	No. of pumps	A	B	C	Connections	Max Dry Wt. Kg (Approx.)
90	2	1500	500	945	150mm	774
	3	2000	500	996	150mm	1138
	4	2500	500	996	200mm	1505

For 5 and 6 Pump Sets - Contact Smedegaard

Series 80



Series 90



ExeFlex™ Additional Data Tables

Individual Pump Electrical Data

2850 RPM		Max. Starts [h^{-1}]		FLC (Amps)*	
kW	dBA	230V	415V	230V	415V
0.37	58	10	50	2.9	1.4
0.55	58	10	50	4.5	1.5
0.75	65	10	50	6.9	2.1
1.10	65	10	50	8.7	3.3
1.50	65	10	30	11	4.4
2.20	65	10	30	15.2	6
3.00	66		20		7.7
4.00	69		20		9.7
5.50	69		15		12
7.50	69		12		15.5
11.00	76		11		30.5
15.00	76		10		31.7
18.50	76		10		40.5
22.00	76		10		44.5
30.00	84		6		56.3
37.00	84		6		65.3

*Please note the FLC figures given are per pump. It may be necessary to multiply this figure by the number of pumps on the booster sets.

Table A: ExeFlex™ Booster Set Heights (All models are 740 mm high, except those detailed below)

Pump Ref.	Height	Pump Ref.	Height	Pump Ref.	Height	Pump Ref.	Height	Pump Ref.	Height
3/11	769	7/8	768	24-30	765	50-10-1	789	80-10	859
3/12	791	7/9	793	24-40	809	50-10	831	80-20	996
3/14	834	7/10	818	24-50	882	50-20-1	918	80-30	1112
3/16	883	7/11	885	24-60	917	50-20	945	80-40	1299
3/18	926	7/12	910	24-70	978	50-30-1	1167	80-50	1388
3/20	969	7/14	960	24-80	1013	50-30	1167	80-60	1477
3/22	1041	7/16	1019	24-100	1180	50-40-1	1215	80-70	1606
5/10	754	12-60	771	36-10	789	50-40	1215	80-80	1735
5/11	804	12-70	841	36-20	879	50-50-1	1264	90/1-1	1020
5/12	826	12-80	868	36-30	967	50-50	1304	90/1	1048
5/14	869	12-90	904	36-40	1042	50-60-1	1352	90/2-2	1332
5/16	954	12-100	931	36-50	1264	50-60	1392	90/2-1	1332
5/18	997	12-120	1024	36-60	1312	50-70-1	1441	90/2	1332
				36-80	1361			90/3-2	1485
								90/3-1	1534
								90/3	1534

Please note: Should footprint requirements dictate that a more compact unit be required we are able to offer to special order a modification of the control panel location on the booster set which would reduce the length by at least 400 millimetres. Contact Smedegaards technical team for more information.

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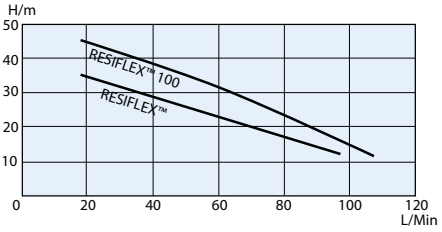
Other Smedegaard 'FlexDrive' Inverter Control Booster Sets

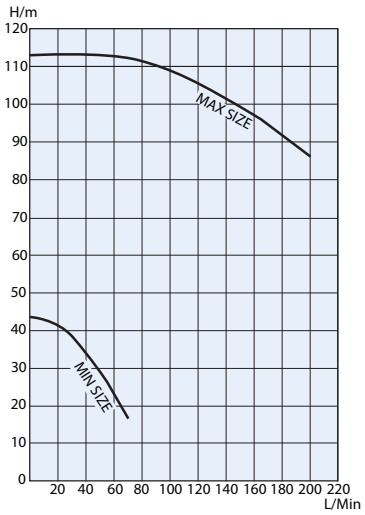
ResiFlex™

- Compact design 595mm x 595mm footprint, 1950mm high
- Electronic variable speed pump control to ensure energy efficiency, soft starting and reduced noise
- Manual bypass with double check valve for emergency use
- Insulated break tank for potable water, actual 200 litre capacity
- All components accessible from front for ease of maintenance
- Sturdy welded steel frame with leveling feet
- Low water pump protection
- Sealed lid with screened vent
- Fully packaged



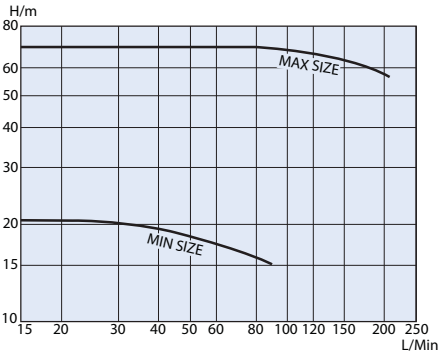
FalFlex™ Wall Mounted Booster Sets

- Compact space saving wall mount design
- Electronic variable speed pump control
- Twin pump duty/assist and duty standby operation
- 230-1-50 and 400-3-50 options
- Rubber lined support brackets to reduce noise transmission
- Flow rates up to 3 l/s per pump
- Pressures up to 10 Bar
- Connection for low water level float switch
- Flexible connections available



FlowFlex™

- A comprehensive range of one, two or three Booster Sets
- Flow rates up to 4 l/s per pump
- Pressures up to 6 bar
- Electronic variable speed pump control
- Non inverter pressure switch control available
- Automatic control panels available for twin pump sets
- Pressure regulating valves available
- Anti-vibration mountings available
- Flexible pipe connections available
- Suction break tank low-level switch



Individual Technical Sales Leaflets Available Upon Request

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Smedgaard equipment can be found at all these sites

It is Smedegaard's policy to continually improve and develop its product range. We reserve the right to change specifications without prior notice. Whilst every care has been taken to ensure the data is correct, no responsibility can be taken for inaccuracies or misprints.

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